



PUMA ENERGY CARIBE, LLC

July 18, 2017

Delivered via Hand delivered

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Subject:

Comments to the December 2016 Semi- Annual RCRA Report for the former CAPECO site facility in Bayamon Puerto Rico.

Dear Mr. Cuevas:

Puma Energy Caribe LLC is pleased to submit the Revised Semi Annual RCRA groundwater sampling report of the 76 monitoring wells located at our Bayamon Facility.

This submittal is in accordance with the comments from USEPA dated May 5, 2017.

Please feel free to contact me at 787.705.7929 or 787.600.5943 should you have any question or require additional information regarding this document.

Sincerely,

PUMA Energy Caribe, LLC

A handwritten signature in blue ink, appearing to read "BTD", written over a circular stamp.

Brenda Toraño Díaz, PE
EHS Manager
Enclosures

Response to Comments on December 2016 Report

Comment from Environmental Quality Board	Completed Date and Addressed
<p>a. There are discrepancies on the water level data for some of the monitoring wells between Table 1 and the field data sheets of the corresponding wells. The discrepancies are presented in the table below. Please correct accordingly.</p>	<p>Values in Table 1 corrected according to field forms. No other information was found indicating values were different than the ones in the field forms.</p>
<p>b. There are some discrepancies regarding the sampling date between table 1 and the respective field data sheet for wells presented in the table below. Please transcribe accordingly for future reports.</p>	<p>Values in Table 1 corrected according to field forms. No other information was found indicating values were different than the ones in the field forms.</p>
<p>Table 2: Please refer to the comment on the previous (June 2016) sampling event report review regarding the quantitation limit being above the RSL or MCL for some of the contaminants, it is indispensable that the laboratory quantitation limits need to be below RSL/MCL.</p>	<p>Pace Analytical Labs, has meet in many times with the PREQB and have explained that is not possible reach the requested levels (we have included the letter that the Lab sent PREQB. Appendix F) but we will make note and follow up with the laboratory.</p>
<p>All of the field data sheets present no data for the parameters on the first row of recorded depth. For future events please provide an explanation for any inconsistencies during field activities on the remarks section of the field sheet.</p>	<p>Note Taken for future events. Take note that the first line of the field data sheets indicates it is the initial reading of water level in which no water volume has been collected. See Item 6 of Section VI: Procedure, of the SOP: Low-Flow Groundwater Purging and Sampling Procedures for Monitoring Wells</p>
<p>Again, some of the field data sheets indicate that the bailer method was used instead of the low flow method, which increased turbidity (>50 NTU) in various wells. As mentioned in the previous sampling event report review, the bailer method tends to increase turbidity, which may misrepresent contaminant levels. Please clarify the rationale for using the bailer method, we recommend the sole use of the low flow method in order to better represent contaminant levels in samples.</p>	<p>Note taken for future events. MW-83B2 had a considerable column, and a whaler pump was used to purge it. It was switched to bailer to sample. For MW-P121 and MW-P124, peristaltic pump or whaler are not powerful enough to lift the water that was approximately at 33.40 and 32.80 ft.</p>
<p>Some of samples exceeded the EPA method holding time, for example wells MW-57A, MW-AD01 and MW-AD03, while in other cases there was no sufficient sample for running a spiked sample. Please correct accordingly and/or provide an explanation for these types of inconsistencies.</p>	<p>These sample were shipped via FEDEX on December 20, 2016 weather conditions delayed the delivery to avoid we have moved the sampling to November</p>

Puma Energy Caribe, LLC

SEMIANNUAL SAMPLING REPORT DECEMBER 2016

Former Caribbean Petroleum Corporation
Refinery/Terminal – Bayamón, Puerto Rico

April 2017

Revised: July 14, 2017



**SEMIANNUAL
SAMPLING REPORT –
DECEMBER 2016**

Former CAPECO Refinery/Terminal
Bayamón, Puerto Rico

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B0063767

Date:

April 4, 2017

July 14, 2017 Revised

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Efraín Calderón, Jr

Operation Manager Environmental

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VERSION CONTROL, OPTIONAL

Issue	Revision No	Date Issued	Page No	Description	Reviewed by
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- A. The Standard Operating Procedures
- B. Field Notes
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- D. Chain of Custody and Laboratory Results
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- F. Pace Analytical Services Explanation letter

ACRONYMS AND ABBREVIATIONS

Arcadis	Arcadis Caribe, PSC
bgs	below ground surface
amsl	above mean sea level
CAPECO	Caribbean Petroleum Corporation
DRO	diesel range organics
GRO	gasoline range organics
HASP	health and safety plan
ORO	oil range organics
PREQB	Puerto Rico Environmental Quality Board
Puma	Puma Energy Caribe, LLC
QA/QC	quality assurance/quality control
RCRA	Resource Conservation and Recovery Act
RFI	Resource Conservation and Recovery Act Facility Investigation
SOP	standard operation procedures
SWMU	solid waste management unit
TPH	total petroleum hydrocarbons
USEPA	United States Environmental Protection Agency
WWTP	wastewater treatment plant

EXECUTIVE SUMMARY

Arcadis Caribe, PSC prepared this Bi-annual Groundwater Sampling Report for the December 2016 groundwater sampling event on behalf of Puma Energy Caribe, LLC (Puma) to satisfy the activities stipulated in the Agreement with the New Purchaser (Agreement) dated 2011 (Docket Num. RCRA-02-2011-7305) between Puma and the United States Environmental Protection Agency (USEPA). This Agreement served as a modification to the 1995 Administrative Order on Consent, Docket Num. II RCRA-95-3008(h)-0303 that was in place prior to the May 2011 purchase by Puma.

On November 2015, USEPA concurred with Puma's recommendation to implement a periodic groundwater sampling consisting of a semiannual event monitoring 73 wells; beginning on 2016 and annually for three years thereafter.

This report provides a summary of the groundwater sampling field activities performed and the results of the first semiannual sampling event from December 2016 thru January 2017. Additionally, a summary of general results is presented for the monitoring well samples collected in which analytical data revealed detected concentrations for several Total Petroleum Hydrocarbons, Volatile Organic Compounds, Metals and Semi-Volatile Organic Compounds throughout the facility operations area and undeveloped wetland area.

1 INTRODUCTION

Site Description

Puma Energy Caribe, LLC (Facility) is located at Road PR-28, Km. 2, Luchetti Industrial Park in Bayamón, Puerto Rico; approximately 3 miles to the south of the Atlantic Ocean coast. The land use on adjacent properties is primarily commercial or industrial. Commercial and industrial properties border the Facility to the south and west; the U.S. Army facility Fort Buchanan is to the east; and Highway PR-22 to the north.

The entire Facility encompasses approximately 179 acres, of which 115 acres are developed as a petroleum products storage facility, including operational buildings, administrative offices, parking areas, and a wastewater treatment plant to the north. The Facility has an aboveground pipeline for the transfer of fuel from loading docks on San Juan Bay and to customers at the Luis Muñoz Marín International Airport. Liquid propane gas storage and a distribution area was recently incorporated to the activities of the Facility. The remainder of the property is undeveloped, and includes an undeveloped wetland area and Las Lajas Creek to the north of the operations area. **Figure 1** shows the general location and topography of the Facility and surrounding areas.

Purpose

When the Facility was acquired by Puma in May 2011, Puma assumed the responsibility of executing Corrective Action activities required under Resource Conservation Recovery Act (RCRA) Agreement. The required activities were stipulated in the Agreement with the New Purchaser dated 2011 (Docket Num. RCRA-02-2011-7305) between Puma and the USEPA, which served as a modification to the 1995 Administrative Order on Consent (Order), Docket Num. II RCRA-95-3008(h)-0303 that was in place prior to the May 2011 purchase by Puma.

On November 2015, USEPA concurred with Puma's recommendation to implement a periodic groundwater sampling consisting of a semiannual sampling event for the first year, beginning 2016 and annually for three years thereafter.

Arcadis prepared this report on behalf of Puma for the Facility.

This report provides a summary of the groundwater sampling field activities performed and the results of the first semiannual sampling event from December 2016 thru January 2017. Additionally, a summary of general results is presented for the 70 out of 73 groundwater samples collected in which analytical data revealed detected concentrations for several Total Petroleum Hydrocarbons, Volatile Organic Compounds, Metals and Semi-Volatile Organic Compounds throughout the facility operations area and undeveloped wetland area.

2 HYDROGEOLOGY

The Facility is located on alluvium deposits (Qa), consisting of sand, clay, and sandy clay based on the USGS Geologic Map of the Bayamón Quadrangle (Monroe 1973).

2.1 Water Bearing Zones

Two general hydrogeologic units have been described at the Facility (Geraghty and Miller, Inc. 1989). The uppermost clay unit (Zone A) contains a low permeability semi-perched layer and a permeable carbonate water-bearing zone. The general horizontal groundwater flow direction in Zone A is to the north, although localized mounds and depressions reportedly occur in the central portion of the Facility.

The underlying carbonate sediment layer also contains a water-bearing zone (Zone B). Groundwater flow in Zone B is generally in the north to northwest direction. The potentiometric surface of groundwater for wells completed in the carbonate sediment layer is generally higher than water level elevations measured in Zone A (i.e., the water table wells). The groundwater gradient is generally towards the north; see **Figures 4 and 5**.

3 DECEMBER 2016 GROUNDWATER SAMPLING EVENT

3.1 Groundwater Sampling Procedures

Groundwater sampling included, purging and sampling to collect a representative sample from each well purged by removing three times their volume to be sampled with a disposable and dedicated bailer or using the low flow procedure after attaining stabilization of indicator parameters. Prior to sampling activities, a round of groundwater levels was documented by field personnel.

Personnel used dedicated and disposable nitrile gloves. The staff changed gloves between samples to avoid cross contamination. The standard operating procedures followed during groundwater sampling activities are provided in **Appendix A**. Personnel labeled the samples, and placed them inside an ice-filled cooler for shipment to Pace Analytical Laboratory.

Field activities at the Facility started in December 19, 2016 and ended in January 19, 2017. A total of 70 of 73 groundwater monitoring wells were sampled in this period (**Figure 2**). Each groundwater sample was collected from the existing monitoring wells located through the Facility including two additional wells, recently installed in June 2016 as required by USEPA as part of the RCRA RFI Supplemental Sampling at the wastewater treatment plant area. The distribution of the wells is throughout the Facility operations area and Undeveloped Wetland Area. Samples were collected following the Arcadis Standard Operating Procedures (**Appendix A**) and were identified using the well identification number. See **Figure 2** for monitoring well identification numbers and locations. Field notes by Arcadis personnel are available in **Appendix B**, a photolog of the sampling activities is included in **Appendix C**. Arcadis' personnel performed the sampling event during the month of December 2016 and January 2017.

Static water levels and product thickness were measured in monitoring wells with an ORS oil/water interface probe. This instrument employs two-wire electrodes, and is marked every 0.01 feet (ft).

3.1.1 Groundwater Sampling

The sampled wells are listed in **Table 1**. Collected samples were analyzed by Pace Analytical Laboratory for total petroleum hydrocarbons: gasoline range organics (GRO), diesel range organics (DRO), and oil range organics (ORO) by the USEPA's Method 8015M and 8021; Volatile Organic Compounds by USEPA's Method 8260; Metals by USEPA's Method 6010, Mercury by USEPA's Method 7470; Semi-Volatile Organic Compounds by USEPA's Method 8270. Laboratory reports can be found in **Appendix D**.

A low flow peristaltic purging/sampling pump was used to sample wells. The tubing used was a combination of Tygon and Teflon 3/16 ID. Tubing was replaced for each well to avoid cross contamination. The pump intake was placed approximately 1 foot below the water table. In wells that had a screen length that was entirely submerged, the pump intake was placed approximately 1 foot below the top of the screen. To ensure well samples were representative of the formation, 3 to 4 well casing volumes were purged from each well before sampling, or stabilization of field measurements.

Ground water samples were collected in laboratory-supplied containers; labeled and stored in coolers with ice in double-zip locked bags. The samples were relinquished to CPC at the end of each sampling

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day. Chain-of-Custody Forms were filled out every sampling day. Copies of Chain-of-Custody Forms are included in **Appendix D**.

3.2 Field Measurements

During well purging, field measurements for pH, Temperature (C^o), Dissolved Oxygen (mg/L – milligrams per liter), Oxygen-Reduction Potential (ORP), Specific Conductivity (µmhos/cm, millisiemens/cm) were taken at approximately every ¼ well volume. The measurements from purged groundwater were taken from the pump discharge. Electronic water quality measuring devices were utilized for this activity. **Table 1** presents measurements of water level, and presence / thickness of floating product, if any.

Water and product thickness were measured using an ORS Water/Oil interphase probe and were recorded in the field Groundwater monitoring sheets included in **Appendix B**. Copies of Field Calibration Logs are included in **Appendix E**.

3.3 Decontamination

Except for the ORS and the water quality meters, all equipment was dedicated for each well. Therefore, minimal decontamination was required. Decontamination consisted of a rinse with D.I. water followed by a laboratory grade (micro) detergent and a final rinse with D.I. water. This was also done to the dedicated tubing before it was discarded.

All decontamination and purged water was left on-site to be treated at the Wastewater Treatment Plant.

4 RESULTS

4.1 Groundwater Elevations

Prior to sampling ground-water level and LNAPL measurements obtained from 73 monitoring wells during the months of June to August, show groundwater elevations ranging from 1.6 to 30.3 ft. amsl. The lowest groundwater elevations were obtained at the undeveloped wetland area wells ranging from 1.6 to 7.7 ft. amsl, while at the Facility operations area ranged from 4.4 to 30.3 ft. amsl, being the highest groundwater elevations located at the southern perimeter. The general groundwater flow direction is determined to be towards the north. See **Figures 3 and 4** for contour maps and flow directions.

4.2 Groundwater Analytical Results Summary

Groundwater analytical results obtained from the laboratory reports are presented in **Table 2** and **Figure 6**. The analytical results are compared to the USEPA May 2016 Tap water Regional Screening Levels (Tap water RSLs) and Maximum Contaminant Levels (MCLs), obtained from the May 2016 RSL Summary Table (<https://www.epa.gov/risk/regional-screening-levels-rsls-generic-tables-may-2016>), and the USEPA May 2016 Commercial Vapor Intrusion Screening Levels (Commercial VISLs), obtained from the VISL Calculator (<https://www.epa.gov/vaporintrusion/vapor-intrusion-screening-levels-visl>). Tap water RSLs and Commercial VISLs were calculated assuming either a target hazard quotient of 0.1 or target cancer risk of 1×10^{-6} .

The Facility receives potable water and sanitary sewerage services from the Puerto Rico Aqueduct and Sewer Authority (PRASA). Furthermore, there are no known downgradient wells used for public or private drinking water supply within 2 miles of the site. As such, the comparison of groundwater analytical results to potable water screening levels and MCLs is conservative, and does not indicate a potential for risk to human health on-site. Similarly, there are a limited number of occupied buildings on-site. None of the analytical results that are greater than the Commercial VISLs were reported at wells within 100 feet of occupied buildings.

Analytical results for 15 analytes in 37 samples collected from monitoring wells in the Facility Operations Area are greater than one or more of the corresponding screening levels; see **Figure 5**. Below, are the results, summarized by monitoring well:

- AD-1
 - Total arsenic was detected at a concentration greater than the Tap water RSL and the MCL.
 - Naphthalene was detected at a concentration greater than the Tap water RSL.
- AD-4
 - Naphthalene was detected at a concentration greater than the Tap water RSL.
- B-9
 - Total arsenic was detected at a concentration greater than the Tap water RSL, but less than the MCL.

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- DP1
 - Total arsenic was detected at a concentration greater than the Tap water RSL, but less than the MCL. Total vanadium was detected at a concentration greater than the Tap water RSL.
- EB-101
 - Total arsenic was detected at a concentration greater than the Tap water RSL, but less than the MCL. Naphthalene was detected at a concentration greater than the Tap water RSL.
- EB-103
 - MTBE was detected at a concentration greater than the Tap water RSL.
- EB-104
 - Total arsenic was detected at a concentration greater than the Tap water RSL, but less than the MCL. MTBE was detected at a concentration greater than the Tap water RSL.
- EB-105
 - Total arsenic was detected at a concentration greater than the Tap water RSL and MCL.
- EB-106
 - Total arsenic was detected at a concentration greater than the Tap water RSL, but less than the MCL.
- MW-MP2
 - Total vanadium was detected at a concentration greater than the Tap water RSL.
- MW-MP3
 - Total arsenic was detected at a concentration greater than the Tap water RSL, but less than the MCL. Total lead was detected at a concentration greater than the Tap water RSL, but less than the MCL. Total vanadium was detected at a concentration greater than the Tap water RSL.
- MW-MP4
 - Total arsenic was detected at a concentration greater than the Tap water RSL, but less than the MCL.
- MP-5A
 - Total arsenic was detected at a concentration greater than the Tap water RSL, but less than the MCL. Trichloroethene was detected at a concentration greater than the Tap water RSL, but less than the MCL.
- MW-MP8
 - Total arsenic was detected at a concentration greater than the Tap water RSL, but less than the MCL.
- MW-16C

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- Total arsenic was detected at a concentration greater than the Tap water RSL, but less than the MCL. Total vanadium was detected at a concentration greater than the Tap water RSL. Trichloroethene was detected at a concentration greater than the Tap water RSL but less than the MCL.
- MW-20B
 - Total arsenic and total mercury were detected at a concentration greater than the Tap water RSL, but less than the MCL.
- MW-21B
 - Total vanadium was detected at a concentration greater than the Tap water RSL.
- MW-33A
 - Total arsenic was detected at a concentration greater than the Tap water RSL, but less than the MCL. Naphthalene was detected at a concentration greater than the Tap water RSL.
- MW-48B
 - Total arsenic was detected at a concentration greater than the Tap water RSL, but less than the MCL. Total lead was detected at a concentration greater than the Tap water RSL and MCL. Total vanadium was detected at a concentration greater than the Tap water RSL.
- MW-57A
 - Total arsenic was detected at a concentration greater than the Tap water RSL, but less than the MCL. Naphthalene was detected at a concentration greater than the Tap water RSL.
- MW-65A
 - Total arsenic was detected at a concentration greater than the Tap water RSL, but less than the MCL.
- MW-83A
 - Total arsenic was detected at a concentration greater than the Tap water RSL, but less than the MCL.
- MW-83B2
 - Trichloroethene was detected at a concentration greater than the Tap water RSL, MCL, and Commercial VISL. However, no buildings are located within 100 feet of this VISL exceedance.
- MW-88A
 - Naphthalene was detected at a concentration greater than the Tap water RSL.
- MW-75B
 - Total mercury was detected at a concentration greater than the Tap water RSL, but less than the MCL.
- MW-76B2

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- Benzo(a)anthracene was detected at a concentration greater than the Tap water RSL.
- MW-77B
 - Total arsenic was detected at a concentration greater than the Tap water RSL but less than the MCL. Total vanadium was detected at a concentration greater than the Tap water RSL.
- MW-78B
 - Vinyl chloride was detected at a concentration greater than the Tap water RSL, but less than the MCL.
- MW-86A
 - Total arsenic was detected at a concentration greater than the Tap water RSL but less than the MCL.
- MW-91A
 - Total arsenic was detected at a concentration greater than the Tap water RSL, but less than the MCL. Naphthalene was detected at a concentration greater than the Tap water RSL and Commercial VISL. Benzene and ethylbenzene were detected at a concentration greater than the Tap water RSL, MCL, and Commercial VISL. o-Xylene and m&p-xylenes were detected at a concentration greater than the Tap water RSL but less than the MCL. No occupied buildings are located within 100 feet of this well.
- MW-98A
 - Naphthalene was detected at a concentration greater than the Tap water RSL.
- MW-B1
 - Total arsenic was detected at a concentration greater than the Tap water RSL, but less than the MCL. Total vanadium was detected at a concentration greater than the Tap water RSL.
- PMW-116
 - Total arsenic was detected at a concentration greater than the Tap water RSL but less than the MCL.
- PMW-118
 - Total mercury was detected at a concentration greater than the Tap water RSL, but less than the MCL. Chloroform and cis-1,2-dichloroethene were detected at a concentration greater than the Tap water RSL, but less than the MCL. Trichloroethene was detected at a concentration greater than the Tap water RSL, MCL, and Commercial VISL. However, no buildings are located within 100 feet of this well.
- PMW-119
 - Trichloroethene was detected at a concentration greater than the Tap water RSL and Commercial VISL, but less than the MCL. No buildings are located within 100 feet of this well.
- PMW-121

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- Total arsenic was detected at a concentration greater than the Tap water RSL, but less than the MCL. Total lead was detected at a concentration greater than the Tap water RSL and MCL. Total mercury was detected at a concentration greater than the Tap water RSL and equal to the MCL. Total vanadium was detected at a concentration greater than the Tap water RSL. Trichloroethene was detected at a concentration greater than the Tap water RSL and Commercial VISL, but less than the MCL. However, no buildings are located within 100 feet of this VISL exceedance.
- PMW-124
 - Total arsenic was detected at a concentration greater than the Tap water RSL, but less than the MCL. Total mercury was detected at a concentration greater than the Tap water RSL and MCL. Total vanadium was detected at a concentration greater than the Tap water RSL.

Analytical results for 10 analytes in 11 samples collected from monitoring wells in the Undeveloped Wetland Area are greater than one or more of the corresponding screening levels. These results are summarized below by monitoring well:

- MW-114A
 - Total arsenic was detected at a concentration greater than the Tap water RSL, but less than the MCL.
- MW-13A
 - Total arsenic was detected at a concentration greater than the Tap water RSL, but less than the MCL. Naphthalene was detected at a concentration greater than the Tap water RSL. Benzene and ethylbenzene were detected at concentrations greater than the Tap water RSL, but less than the MCL. MTBE was detected at a concentration greater than the Tap water RSL.
- MW-13B2
 - Total arsenic was detected at a concentration greater than the Tap water RSL, but less than the MCL.
- MW-15A
 - Total arsenic was detected at a concentration greater than the Tap water RSL, but less than the MCL.
- MW-15B
 - Total arsenic was detected at a concentration greater than the Tap water RSL, but less than the MCL.
- MW-15B2
 - Total arsenic was detected at a concentration greater than the Tap water RSL and the MCL.
- MW-17B
 - Total vanadium was detected at a concentration greater than the Tap water RSL. 1,2-Dibromo-3-chloropropane was detected at a concentration greater than the Tap water RSL, MCL, and

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Commercial VISL. However, this well is located within the Undeveloped Wetland Area, and therefore, no buildings are located within 100 feet of this well.

- MW-37A
 - Total arsenic and mercury were detected at a concentration greater than the Tap water RSL, but less than the MCL. Naphthalene was detected at a concentration greater than the Tap water RSL and Commercial VISL. Benzene was detected at a concentration greater than the Tap water RSL, MCL, and Commercial VISL. Ethylbenzene was detected at a concentration greater than the Tap water RSL and Commercial VISL, but less than the MCL. m&p-Xylenes were detected at a concentration greater than the Tap water RSL, but less than the MCL. No buildings are located within 100 feet of this well.
- MW-38A
 - Chloroform was detected at a concentration greater than the Tap water RSL, but less than the MCL.
- MW-84A
 - Total arsenic was detected at a concentration greater than the Tap water RSL and the MCL.
- MW-84B2
 - Total arsenic was detected at a concentration greater than the Tap water RSL and MCL. Total mercury was detected at a concentration greater than the Tap water RSL, but less than the MCL. Total vanadium was detected at a concentration greater than the Tap water RSL.
- MW-110AB
 - Total arsenic was detected at a concentration greater than the Tap water RSL, but less than the MCL. Total vanadium was detected at a concentration greater than the Tap water RSL.
- MW-110B2
 - Total arsenic was detected at a concentration greater than the Tap water RSL, but less than the MCL.
- MW-111A
 - Total arsenic was detected at a concentration greater than the Tap water RSL, but less than the MCL.

Analytical results for 3 analytes in 2 samples collected from monitoring wells in the WWTP Area are greater than one or more of the corresponding screening levels. These results are summarized below by monitoring well:

- WWTP-1
 - Total arsenic was detected at a concentration greater than the Tap water RSL, but less than the MCL. Naphthalene was detected at a concentration greater than the Tap water RSL.
- WWTP-2

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- Total arsenic was detected at a concentration greater than the Tap water RSL, but less than the MCL. Total vanadium was detected at a concentration greater than the Tap water RSL.

Table 3 presents the analytical results for the samples duplicates. Other Quality Assurance and Quality Control (QA/QC) samples results are included in **Appendix D**.

The results of this second Semiannual event confirmed that no LNAPL has extended beyond the site boundaries. However, during the second semiannual event of 2016 free phase product was detected in four (4) wells out of seventy-three (73) monitoring wells: two wells in the tank farm area, one in avenue D and one well in the former WWTP. Nevertheless, comparison of 2009, 2011, 2014 and 2016 free phase product data revealed a decline in thickness in wells and it appears to be confined to the well immediate area.

TABLES



Table 1. Sampled Wells
Water Levels and LNAPL Thickness

Monitoring Well	Sample Date	Product Level (Feet BLS)	Water Level (feet BLS)	Product Thickness (inches)
MW-42B	1/19/2017	23.69	23.80	0.11
MW-40B	1/19/2017	12.28	13.69	1.41
MW-91A	12/27/2016		7.53	
MW-18D	12/27/2016		10.80	
MW-87A	12/27/2016		6.36	
MW-88A	12/27/2016		5.90	
MW-99A	12/27/2016		10.43	
MW-98A	12/27/2016		4.93	
MW-T9	12/27/2016	4.38	4.60	0.22
MW-30A	1/5/2017		6.02	
MW-48B	12/20/2016		5.76	
MW-P 119	12/20/2016		11.15	
MW-P118	12/21/2016		6.52	
MW-83B2	12/20/2016		5.55	
MW-83A	1/17/2017		3.86	
MW-75B2	1/18/2017		2.00	
MW-114A	12/20/2017		2.95	
MW-AD2	12/20/2016	4.34	4.35	0.01
MW-AD1	12/20/2016		3.62	
MW-57A	12/20/2016		2.92	
MW-AD3	12/20/2016		3.94	
MW-AD4	12/21/2016		6.28	
MW-33A	12/21/2016		5.80	
MW-P116	12/21/2016		3.58	
MW-P117	12/21/2016		3.38	
MW-65A	12/21/2016		3.14	
MW-15A	12/22/2016		1.84	
MW-15B2	12/22/2016		6.05	
MW-15B	12/22/2016		6.38	

Table 1. Sampled Wells
Water Levels and LNAPL Thickness

Monitoring Well	Sample Date	Product Level (Feet BLS)	Water Level (feet BLS)	Product Thickness (inches)
MW-86A	12/29/2016		4.30	
MW-MP8	1/4/2017		6.37	
MW-MP9	1/4/2017		3.87	
MW-MP4	1/4/2017		6.25	
MW-MP3	1/4/2017		3.66	
MW-MP2	1/4/2017		3.73	
MW-DP1	12/29/2016		2.11	
MW-MP5A	12/29/2016		4.87	
MW-DP5	1/3/2017		2.87	
MW-EB107	1/3/2017		4.67	
MW-EB108	1/3/2017		5.68	
MW-EB103	1/3/2017		6.96	
MW-EB104	1/3/2017		7.72	
MW-EB105	1/3/2017		7.80	
MW-EB106	1/3/2017		8.23	
MW-EB102	12/28/2016		7.28	
MW-EB101	12/28/2016		3.92	
MW-B9	1/3/2017		2.20	
MW-B1	12/28/2016		1.50	
MW-P120	12/19/2016		13.20	
MW-P122	12/19/2016		14.83	
MW-P123	12/19/2016		8.70	
MW-P124	12/19/2016		32.83	
MW-P121	12/19/2016		33.40	
MW-16C	12/28/2016		6.25	
MW-109A	1/5/2017		9.80	
MW-76A	1/12/2017		8.45	
MW-76B2	1/12/2017		5.93	
MW-17B	1/18/2017		4.22	

Table 1. Sampled Wells
Water Levels and LNAPL Thickness

Monitoring Well	Sample Date	Product Level (Feet BLS)	Water Level (feet BLS)	Product Thickness (inches)
MW-78B	1/17/2017		7.10	
MW-37A	1/12/2017		6.65	
MW-13B2	1/12/2017		12.84	
MW-13A	1/12/2017		6.93	
MW-110B2	1/17/2017		6.02	
MW-110AB	1/17/2017		7.42	
MW-111A	1/17/2017		9.30	
MW-63A	1/18/2017		2.97	
MW-38A	1/18/2017		4.45	
MW-84A	1/18/2017		5.03	
MW-84B2	1/18/2017		2.52	
MW-77B	1/19/2017		6.80	
MW-20B	1/19/2017		9.25	
MW-21B	1/19/2017		11.80	
WWTP-1	12/28/2016		5.92	
WWTP-2	12/28/2016		6.53	

Table 2
 Groundwater Sample Analytical Results
 Former Caribbean Petroleum Corporation Refinery/Terminal
 Bayamon, Puerto Rico

Location: Sample Name: Sample Date:					AD-1	AD-3	AD-4	B-9	DP-1	DP5	EB-101	EB-102	EB-103	EB-104	EB-105	EB-106	EB-107	EB-108	MP2	MP3	MP4	MP5A	MP8	MP9	MW-109A	
Sample Name: Sample Date:					MW-AD-01	MW-AD-3	MW-AD-4	MW-B9	MW-DP1	MW-DP5	EB-101	EB-102	MW-EB103	MW-EB104	MW-EB105	MW-EB106	MW-EB107	MW-EB108	MW-MP2	MW-MP3	MW-MP4	MW-MP5A	MW-MP8	MW-MP9	MW-109A	
Sample Date:					12/20/2016	12/20/2016	12/21/2016	1/3/2017	1/4/2017	12/29/2016	12/28/2016	12/28/2016	1/3/2017	1/3/2017	1/3/2017	1/3/2017	1/3/2017	1/3/2017	1/3/2017	1/4/2017	1/4/2017	1/5/2017	12/29/2016	1/4/2017	1/4/2017	1/5/2017
Analyte	CAS Number	Units	May 2016 USEPA Tapwater RSL	USEPA MCL	May 2016 USEPA Commercial VISL																					
Arsenic	7440-38-2	mg/l	0.000052	0.01	--	0.0010 U	0.0010 U	0.0028	0.0032	0.0010 U	0.0013	0.0010 U	0.0010 U	0.0052	0.0014	0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.0096	0.0010 U	0.0070	0.0019	0.0010 U	0.0010 U	
Chromium	7440-47-3	mg/l	2.2	0.1	--	0.0011	0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.0013	0.0010 U	0.0010 U	0.0017	0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.0013	0.0036	0.0010 U	0.0010 U	0.0010 U	0.0010 U	
Lead	7439-92-1	mg/l	0.015	0.015	--	0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.022	0.0010 U	0.0010 U	0.0010 U	0.0010 U	
Mercury	7487-94-7	mg/l	0.00057	0.002	--	0.00020 U	0.00020 U	0.00020 U	0.00020 U	0.00020 U	0.00020 U	0.00020 U	0.00020 U	0.00020 U	0.00020 U	0.00020 U	0.00020 U	0.00020 U	0.00020 U	0.00020 U	0.00020 U	0.00020 U	0.00020 U	0.00020 U	0.00020 U	
Vanadium	7440-62-2	mg/l	0.0086	--	--	0.0062	0.0050 U	0.0050 U	0.0050 U	0.0050 U	0.0050 U	0.0050 U	0.0050 U	0.0050 U	0.0050 U	0.0050 U	0.0050 U	0.0050 U	0.0050 U	0.012	0.010	0.0050 U	0.0050 U	0.0050 U	0.0050 U	
Acenaphthene	83-32-9	mg/l	0.053	--	--	0.0015	0.00010 U	0.00013	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00014	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	
Anthracene	120-12-7	mg/l	0.18	--	--	0.00017	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00013	0.00010 U	0.00010 U	0.00011	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00011	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	
Benzo(a)anthracene	56-55-3	mg/l	0.000012	--	--	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	
Benzo(a)pyrene	50-32-8	mg/l	0.000034	0.0002	--	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	
Benzo(b)fluoranthene	205-99-2	mg/l	0.000034	--	--	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	
Benzo(g,h,i)perylene	191-24-2	mg/l	--	--	--	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	
Benzo(k)fluoranthene	207-08-9	mg/l	0.00034	--	--	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	
Chrysene	218-01-9	mg/l	0.0034	--	--	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	
Fluoranthene	206-44-0	mg/l	0.08	--	--	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	
Fluorene	86-73-7	mg/l	0.029	--	--	0.0031	0.00010 U	0.00017	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	
Naphthalene	91-20-3	mg/l	0.00017	--	0.02	0.015	0.00010 U	0.00092	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	
Phenanthrene	85-01-8	mg/l	--	--	--	0.0016	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00043	0.00010 U	0.00010 U	0.00010 U	0.00026	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	
Pyrene	129-00-0	mg/l	0.012	--	--	0.0032	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	
Gasoline Range Organics	--	mg/l	--	--	--	0.0500 U	0.0500 U	0.110	0.0500 U	0.0500 U	0.0500 U	0.0500 U	0.0500 U	0.0712	0.0884	0.0500 U	0.0500 U	0.0500 U	0.0500 U	0.0500 U	0.0500 U	0.0500 U	0.0500 U	0.0500 U	0.0500 U	
Diesel Range Organic (C10-C28)	--	mg/l	--	--	--	0.50 U	0.25 U	0.25 U	0.25 U	0.25 U	0.50 U	0.50 U	0.50 U	0.25 U	0.25 U	0.25 U	0.26	0.25 U	0.25 U	0.25 U	0.25 U	0.50 U	0.50 U	0.25 U	0.50 U	
Oil Range Organics (>C28-C40)	--	mg/l	6	--	--	1.0 U	0.50 U	0.50 U	0.50 U	0.50 U	1.0 U	1.0 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	1.0 U	1.0 U	0.50 U	0.50 U		
Acetone	67-64-1	mg/l	1.4	--	9500	0.0250	0.0379	0.0416	0.0053	0.0082	0.0120	0.0252	0.0088	0.0156	0.0062	0.00394	0.0164	0.0040 U	0.0059	0.0094	0.0049	0.0050	0.0079	0.0083	0.0155	
Benzene	71-43-2	mg/l	0.00046	0.005	0.0069	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	
Bromodichloromethane	75-27-4	mg/l	0.00013	0.08	0.0038	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	
Bromoforn	75-25-2	mg/l	0.0033	0.08	0.01	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	
Bromomethane	74-83-9	mg/l	0.00075	--	0.0073	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	
2-Butanone (MEK)	78-93-3	mg/l	0.56	--	940	0.0020 U	0.0020 U	0.0020 U	0.0020 U	0.0020 U	0.0020 U	0.0020 U	0.0020 U	0.0020 U	0.0020 U	0.0020 U	0.0020 U	0.0020 U	0.0020 U	0.0020 U	0.0020 U	0.0020 U	0.0020 U	0.0020 U	0.0020 U	
Carbon Disulfide	75-15-0	mg/l	0.081	--	0.52	0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.0010 U	
Carbon Tetrachloride	56-23-5	mg/l	0.00046	0.005	0.0018	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	
CFC-11	75-69-4	mg/l	0.52	--	--	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	
CFC-12	75-71-8	mg/l	0.02	--	0.0031	0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.0010 U	
Chlorobenzene	108-90-7	mg/l	0.0078	0.1	0.17	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	
Chlorodibromomethane	124-48-1	mg/l	0.00087	0.08	--	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	
Chloroethane	75-00-3	mg/l	2.1	--	9.7	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	
Chloroform	67-66-3	mg/l	0.00022	0.08	0.0036	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	
Chloromethane	74-87-3	mg/l	0.019	--	0.11	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	
1,2-Dibromo-3-chloropropane	96-12-8	mg/l	0.0000033	0.0002	0.00034	0.00020 U	0.0002																			

Table 2
Groundwater Sample Analytical Results
Former Caribbean Petroleum Corporation Refinery/Terminal
Bayamon, Puerto Rico

Method	Analyte	CAS Number	Units	May 2016 USEPA Tapwater RSL	USEPA MCL	May 2016 USEPA Commercial VISL	Location:		MW-65A	MW-83A	MW-83B2	MW-88A	MW-75B2	MW-76A	MW-76B2	MW-77B	MW-78B	MW-84A	MW-84B2	MW-86A	MW-87A	MW-91A	MW-98A	MW-99A	MW-110AB	MW-B1	PMW-116	PMW-117	PMW-118						
							Sample Name:	MW-65A	MW-83A	MW-83B2	MW-88A	MW-75B2	MW-76A	MW-76B2	MW-77B	MW-78B	MW-84A	MW-84B2	MW-86A	MW-87A	MW-91A	MW-98A	MW-99A	MW-110AB	MW-B1	PMW-116	PMW-117	PMW-118							
							Sample Date:	12/21/2016	12/20/2016	12/21/2016	12/27/2016	1/17/2017	1/12/2017	1/12/2017	1/19/2017	1/19/2017	1/18/2017	1/18/2017	12/29/2016	12/27/2016	12/27/2016	12/27/2016	12/27/2016	12/27/2016	12/27/2016	12/28/2016	12/21/2016	12/21/2016	12/20/2016						
Method 8010	Arsenic	7440-38-2	mg/l	0.000052	0.01	--		0.0013	0.0010 U	0.0019	0.0017	0.0010 U	0.0010 U	0.0010 U	0.0015	0.0010 U	0.012	0.0026	0.0010 U	0.0010 U	0.0041	0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.0050	0.0017	0.0010 U	0.0010 U						
	Chromium	7440-47-3	mg/l	2.2	0.1	--		0.0012	0.0010 U	0.0056	0.0010 U	0.046	0.0010 U	0.0010 U	0.0072	0.0074	0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.024	0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.0011	0.0010 U	0.0011						
	Lead	7439-92-1	mg/l	0.015	0.015	--		0.0010 U	0.0010 U	0.0013	0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.0012	0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.0066	0.0010	0.0010 U	0.0010 U						
	Mercury	7487-94-7	mg/l	0.00057	0.002	--		0.00020 U	0.00020 U	0.00020 U	0.00020 U	0.0019	0.00020 U	0.00020 U	0.00020 U	0.00093	0.00020 U	0.00020 U	0.00020 U	0.00020 U	0.00020 U	0.00020 U	0.00020 U	0.00020 U	0.00020 U	0.00020 U	0.00020 U	0.00020 U	0.0017						
	Vanadium	7440-62-2	mg/l	0.0086	--	--		0.0050 U	0.0050 U	0.0050 U	0.0050 U	0.0050 U	0.0060	0.0050 U	0.026	0.0050 U	0.0050 U	0.0050 U	0.0050 U	0.0050 U	0.0050 U	0.0050 U	0.0050 U	0.0050 U	0.0050 U	0.056	0.0050 U	0.0050 U	0.0050 U						
Method 8270	Acenaphthene	83-32-9	mg/l	0.053	--	--		0.00010 U	0.00010 U	0.00010 U	0.0013	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U						
	Anthracene	120-12-7	mg/l	0.18	--	--		0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U						
	Benzo(a)anthracene	56-55-3	mg/l	0.000012	--	--		0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U						
	Benzo(a)pyrene	50-32-8	mg/l	0.000034	0.0002	--		0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U						
	Benzo(b)fluoranthene	205-99-2	mg/l	0.000034	--	--		0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U						
	Benzo(g,h,i)perylene	191-24-2	mg/l	--	--	--		0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U						
	Benzo(k)fluoranthene	207-08-9	mg/l	0.00034	--	--		0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U						
	Chrysene	218-01-9	mg/l	0.0034	--	--		0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U						
	Fluoranthene	206-44-0	mg/l	0.08	--	--		0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U						
	Fluorene	86-73-7	mg/l	0.029	--	--		0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.0013	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U						
	Naphthalene	91-20-3	mg/l	0.00017	--	0.02		0.00010 U	0.00010 U	0.00010 U	0.00023	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U						
	Phenanthrene	85-01-8	mg/l	--	--	--		0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00073	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U						
	Pyrene	129-00-0	mg/l	0.012	--	--		0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00013	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U						
Method 8021	Gasoline Range Organics	--	mg/l	--	--	--		0.0500 U	0.0500 U	0.0500 U	0.0790	0.0500 U	0.0500 U	0.0500 U	0.0500 U	0.0500 U	0.0500 U	0.0500 U	0.0500 U	0.0500 U	0.0500 U	32.6	0.0500 U	0.0500 U	0.0500 U	0.0500 U	0.0500 U	0.0500 U	0.0500 U						
Method 8015	Diesel Range Organic (C10-C28)	--	mg/l	--	--	--		0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	4.5	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U						
	Oil Range Organics (>C28-C40)	--	mg/l	6	--	--		1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U						
Method 8260	Acetone	67-64-1	mg/l	1.4	--	9500		0.0180	0.0207	0.0207	0.0156	0.0175	0.0076	0.0057	0.0040 U	0.0040 U	0.0509	0.0040 U	0.0168	0.0071	0.040 U	0.0148	0.0156	0.0156	0.0094	0.0149	0.0164	0.0156							
	Benzene	71-43-2	mg/l	0.00046	0.005	0.0069		0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	1.08	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U						
	Bromodichloromethane	75-27-4	mg/l	0.00013	0.08	0.0038		0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.0050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U						
	Bromoform	75-25-2	mg/l	0.0033	0.08	0.51		0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.0050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U						
	Bromomethane	74-83-9	mg/l	0.00075	--	0.0073		0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.0050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U						
	2-Butanone (MEK)	78-93-3	mg/l	0.56	--	940		0.0020 U	0.0020 U	0.0020 U	0.0020 U	0.0020 U	0.0020 U	0.0020 U	0.0020 U	0.0020 U	0.0020 U	0.0020 U	0.0020 U	0.0020 U	0.0020 U	0.0020 U	0.0020 U	0.0020 U	0.0020 U	0.0020 U	0.0020 U	0.0020 U	0.0020 U						
	Carbon Disulfide	75-15-0	mg/l	0.081	--	0.52		0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.0010 U						
	Carbon Tetrachloride	56-23-5	mg/l	0.00046	0.005	0.0018		0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.0050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U						
	CFC-11	75-69-4	mg/l	0.52	--	--		0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U						
	CFC-12	75-71-8	mg/l	0.02	--	0.0031		0.0010 U	0.0010 U	0.0010 U	0.0010 U																								

Table 2
 Groundwater Sample Analytical Results
 Former Caribbean Petroleum Corporation Refinery/Terminal
 Bayamon, Puerto Rico

PMW-119 MW-P119 12/20/2016	Location: Sample Name: Sample Date:							PMW-120 MW-P120 12/19/2016	PMW-121 MW-P121 12/19/2016	PMW-122 MW-P122 12/19/2016	PMW-123 MW-P123 12/19/2016	PMW-124 MW-P124 12/19/2016	WWTP-1 WWTP-1 12/28/2016	WWTP-2 WWTP-2 12/28/2016
Method	Analyte	CAS Number	Units	May 2016 Tapwater RSL	USEPA MCL	May 2016 Commercial VISL								
0.0010 U	Method 6010	Arsenic	7440-38-2	mg/l	0.000052	0.01	--	0.0010 U	0.0034	0.0010 U	0.0010 U	0.0018	0.0020	0.0010 U
0.0010 U		Chromium	7440-47-3	mg/l	2.2	0.1	--	0.0010 U	0.058	0.0010 U	0.0010 U	0.0032	0.0010 U	0.0010 U
0.0010 U	Method 8270	Lead	7439-92-1	mg/l	0.015	0.015	--	0.0010 U	0.012	0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.0010 U
0.00023		Mercury	7487-94-7	mg/l	0.00057	0.002	--	0.00020 U	0.00062	0.00020 U	0.00043	0.0005	0.00020 U	0.00020 U
0.0050 U	Method 8015	Vanadium	7440-62-2	mg/l	0.0086	--	--	0.0050 U	0.12	0.0050 U	0.0050 U	0.0079	0.0050 U	0.0050 U
0.00010 U		Acenaphthene	83-32-9	mg/l	0.053	--	--	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.0057	0.00010 U
0.00010 U	Method 8260	Anthracene	120-12-7	mg/l	0.18	--	--	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00067	0.00010 U
0.00010 U		Benzo(a)anthracene	56-55-3	mg/l	0.000012	--	--	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U
0.00010 U	Method 8021	Benzo(a)pyrene	50-32-8	mg/l	0.000034	0.0002	--	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U
0.00010 U		Benzo(b)fluoranthene	205-99-2	mg/l	0.000034	--	--	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U
0.00010 U	Method 8015	Benzo(g,h,i)perylene	191-24-2	mg/l	--	--	--	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U
0.00010 U		Benzo(k)fluoranthene	207-08-9	mg/l	0.000034	--	--	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U
0.00010 U	Method 8015	Chrysene	218-01-9	mg/l	0.0034	--	--	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U
0.00010 U		Fluoranthene	206-44-0	mg/l	0.08	--	--	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U
0.00010 U	Method 8015	Fluorene	86-73-7	mg/l	0.029	--	--	0.00010 U	0.00010 U	0.00010 U	0.00025	0.00010 U	0.00010 U	0.00010 U
0.00010 U		Naphthalene	91-20-3	mg/l	0.00017	--	0.02	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00088	0.00010 U
0.00010 U	Method 8015	Phenanthrene	85-01-8	mg/l	--	--	--	0.00010 U	0.00010 U	0.00010 U	0.00034	0.00010 U	0.00041	0.00010 U
0.00010 U		Pyrene	129-00-0	mg/l	0.012	--	--	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U
0.0500 U	Method 8015	Gasoline Range Organics	--	mg/l	--	--	0.0500 U	0.0500 U	0.0500 U	0.0500 U	0.0500 U	0.113	0.0500 U	
0.50 U		Diesel Range Organic (C10-C28)	--	mg/l	--	--	--	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	1.0	0.50 U
1.0 U	Method 8260	Oil Range Organics (>C28-C40)	--	mg/l	6	--	--	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
0.0195		Acetone	67-64-1	mg/l	1.4	--	9500	0.0151	0.0118	0.0136	0.0113	0.0120	0.0156	0.0180
0.00050 U	Method 8260	Benzene	71-43-2	mg/l	0.00046	0.005	0.0069	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U
0.00050 U		Bromodichloromethane	75-27-4	mg/l	0.00013	0.08	0.0038	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U
0.00050 U	Method 8260	Bromoform	75-25-2	mg/l	0.0033	0.08	0.51	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U
0.00050 U		Bromomethane	74-83-9	mg/l	0.00075	--	0.0073	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U
0.0020 U	Method 8260	2-Butanone (MEK)	78-93-3	mg/l	0.56	--	940	0.0020 U	0.0020 U	0.0020 U	0.0020 U	0.0020 U	0.0020 U	0.0020 U
0.0010 U		Carbon Disulfide	75-15-0	mg/l	0.081	--	0.52	0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.0010 U
0.00050 U	Method 8260	Carbon Tetrachloride	56-23-5	mg/l	0.00046	0.005	0.0018	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U
0.00050 U		CFC-11	75-69-4	mg/l	0.52	--	--	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U
0.0010 U	Method 8260	CFC-12	75-71-8	mg/l	0.02	--	0.0031	0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.0010 U
0.00050 U		Chlorobenzene	108-90-7	mg/l	0.0078	0.1	0.17	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U
0.00050 U	Method 8260	Chlorodibromomethane	124-48-1	mg/l	0.00087	0.08	--	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U
0.00050 U		Chloroethane	75-00-3	mg/l	2.1	--	9.7	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U
0.00050 U	Method 8260	Chloroform	67-66-3	mg/l	0.00022	0.08	0.0036	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U
0.00065		Chloromethane	74-87-3	mg/l	0.019	--	0.11	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U
0.00020	Method 8260	1,2-Dibromo-3-chloropropane	96-12-8	mg/l	0.0000033	0.0002	0.00034	0.00020 U	0.00020 U	0.00020 U	0.00020 U	0.00020 U	0.00020 U	0.00020 U
0.0010 U		1,2-Dibromoethane	106-93-4	mg/l	0.0000075	0.00005	0.00077	0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.0010 U
0.00050 U	Method 8260	1,1-Dichloroethane	75-34-3	mg/l	0.0028	--	0.033	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U
0.00050 U		1,2-Dichloroethane	107-06-2	mg/l	0.00017	0.005	0.0098	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U
0.00050 U	Method 8260	1,1-Dichloroethene	75-35-4	mg/l	0.028	0.007	0.082	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U
0.0010 U		cis-1,2-Dichloroethene	156-59-2	mg/l	0.0036	0.07	--	0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.0010 U
0.00050 U	Method 8260	trans-1,2-Dichloroethene	156-60-5	mg/l	0.036	0.1	--	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U
0.00050 U		Dichloromethane	75-09-2	mg/l	0.011	0.005	2	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U
0.00050 U	Method 8260	1,2-Dichloropropane	78-87-5	mg/l	0.00044	0.005	0.011	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U
0.00050 U		cis-1,3-Dichloropropene	10061-01-5	mg/l	0.00047	--	0.021	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U
0.00050 U	Method 8260	trans-1,3-Dichloropropene	10061-02-6	mg/l	0.00047	--	0.021	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U
0.5 U		Ethanol	64-17-5	mg/l	--	--	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
0.00050 U	Method 8260	Ethylbenzene	100-41-4	mg/l	0.0015	0.7	0.015	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U
0.0010 U		Isopropylbenzene	98-82-8	mg/l	0.045	--	0.37	0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.0053	0.0010 U
0.0020 U	Method 8260	Methyl Acetate	79-20-9	mg/l	2	--	--	0.0020 U	0.0020 U	0.0020 U	0.0020 U	0.0020 U	0.0020 U	0.0020 U
0.0010 U		Methyl N-Butyl Ketone (2-Hexanone)	591-78-6	mg/l	0.0038	--	3.4	0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.0010 U
0.0010 U	Method 8260	4-Methyl-2-Pentanone	108-10-1	mg/l	0.63	--	230	0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.0010 U
0.00050 U		Methyl-tert-butylether	1634-04-4	mg/l	0.014	--	2	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.0018	0.00050 U
0.0010 U	Method 8260	Styrene (Monomer)	100-42-5	mg/l	0.12	0.1	3.9	0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.0010 U
0.2 U		tert-Butyl alcohol	75-65-0	mg/l	--	--	--	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
0.00050 U	Method 8260	1,1,2,2-Tetrachloroethane	79-34-5	mg/l	0.000076	--	0.014	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U
0.00050 U		Tetrachloroethene	127-18-4	mg/l	0.0041	0.005	0.024	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U
0.00050 U	Method 8260	Toluene	108-88-3	mg/l	0.11	1	8.1	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U
0.00050 U		1,1,1-Trichloroethane	71-55-6	mg/l	0.8	0.2	3.1	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U
0.00050 U	Method 8260	1,1,2-Trichloroethane	79-00-5	mg/l	0.000041	0.005	0.0026	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U
0.00074		Trichloroethene	79-01-6	mg/l	0.00028	0.005	0.0022	0.00050 U	0.0017	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U
0.00050 U	Method 8260	Vinyl chloride	75-01-4	mg/l	0.000019	0.002	0.0025	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U
0.0020 U		m&p-Xylenes	--	mg/l	0.019	10	0.16	0.0020 U	0.0020 U	0.0020 U	0.0020 U	0.0020 U	0.0020 U	0.0020 U
0.0010 U	Method 8260	o-Xylene	95-47-6	mg/l	0.019	10	0.21	0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.0010 U

- Notes:
- USEPA May 2016 Tapwater Regional Screening Levels (RSLs) and USEPA Maximum Contaminant Levels (MCLs) were obtained from the USEPA May 2016 Regional Screening Level Tables (<https://www.epa.gov/risk/region>)
 - USEPA May 2016 Commercial Vapor Intrusion Screening Levels (VISLs) were obtained from the USEPA May 2016 Vapor Intrusion Screening Level Calculator (<https://www.epa.gov/vaporintrusion/vapor-intrusion-screening-le>)
 - USEPA May 2016 Tapwater RSL, USEPA MCL and USEPA May 2016 Commercial VISL are based on a Target Hazard Quotient (THQ) of 0.1 or Target Cancer Risk (TCR) of 1 x 10⁻⁶.
 - The USEPA May 2016 Commercial VISL for Total Xylenes was used to evaluate m&p-Xylenes. The USEPA MCL for Total Xylenes was used to evaluate m&p-Xylenes and o-Xylene. The USEPA May 2016 Commercial VISL for
 - Bolded values are greater than the USEPA May 2016 Tapwater RSL.
 - Grey shaded values are greater than the USEPA MCL.
 - Italicized values are greater than the USEPA May 2016 Commercial VISL.
 - Abbreviations are as follows:
 mg/l = milligrams per liter
 U = The sample was analyzed for this compound, but it was not detected. The associated value is the compound quantitation limit.
 -- = value unavailable

							Location:	MW-AD-03	MW-15B	MW-B1	MW-EB105	MW-109A	MW-75B2	MW-21B
							Sample Name:	DUP001	DUP002	DUP003	DUP004	DUP005	DUP006	DUP007
							Sample Date:	12/20/2016	12/22/2016	12/28/2016	1/3/2017	1/5/2017	1/17/2017	1/19/2017
Method	Analyte	CAS Number	Units	May 2016 USEPA Tapwater RSL	USEPA MCL	May 2016 USEPA Commercial VISL								
Method 6010	Arsenic	7440-38-2	mg/l	0.000052	0.01	--	0.0032	0.0010 U	0.0066	0.0052	0.0010 U	0.0010 U	0.0010 U	
	Chromium	7440-47-3	mg/l	2.2	0.1	--	0.0010 U	0.0010 U	0.024	0.0010	0.0010 U	0.0049	0.0040	
	Lead	7439-92-1	mg/l	0.015	0.015	--	0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.0014	0.0010 U	
	Mercury	7487-94-7	mg/l	0.00057	0.002	--	0.00020 U	0.00020 U	0.00020 U	0.00020 U	0.00020 U	0.0018	0.00027	
	Vanadium	7440-62-2	mg/l	0.0086	--	--	0.0071	0.0050 U	0.0050 U	0.0050 U	0.0050 U	0.0050 U	0.0050 U	
Method 8270	Acenaphthene	83-32-9	mg/l	0.053	--	--	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	
	Anthracene	120-12-7	mg/l	0.18	--	--	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	
	Benzo(a)anthracene	56-55-3	mg/l	0.000012	--	--	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	
	Benzo(a)pyrene	50-32-8	mg/l	0.0000034	0.0002	--	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	
	Benzo(b)fluoranthene	205-99-2	mg/l	0.000034	--	--	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	
	Benzo(g,h,i)perylene	191-24-2	mg/l	--	--	--	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	
	Benzo(k)fluoranthene	207-08-9	mg/l	0.00034	--	--	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	
	Chrysene	218-01-9	mg/l	0.0034	--	--	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	
	Fluoranthene	206-44-0	mg/l	0.08	--	--	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	
	Fluorene	86-73-7	mg/l	0.029	--	--	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	
	Naphthalene	91-20-3	mg/l	0.00017	--	0.02	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	
	Phenanthrene	85-01-8	mg/l	--	--	--	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	
	Pyrene	129-00-0	mg/l	0.012	--	--	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.00010 U	0.0020	0.0010 U	
	Gasoline Range Organics	--	mg/l	--	--	--	0.07	0.0500 U	0.0500 U	0.0500 U	0.0500 U	0.0500 U	0.0500 U	
	Diesel Range Organic (C10-C28)	--	mg/l	--	--	--	0.50 U	0.50 U	0.50 U	0.26	0.50 U	0.50 U	0.50 U	
	Oil Range Organics (>C28-C40)	--	mg/l	6	--	--	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	
Method 8260	Acetone	67-64-1	mg/l	1.4	--	9500	0.0155	0.027	0.0140	0.0113	0.0200	0.0074	0.0004 U	
	Benzene	71-43-2	mg/l	0.00046	0.005	0.0069	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	
	Bromodichloromethane	75-27-4	mg/l	0.00013	0.08	0.0038	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	
	Bromofloromethane	75-25-2	mg/l	0.0033	0.08	0.51	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	
	Bromomethane	74-83-9	mg/l	0.00075	--	0.0073	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	
	2-Butanone (MEK)	78-93-3	mg/l	0.56	--	940	0.0020 U	0.0020 U	0.0020 U	0.0020 U	0.0020 U	0.0020 U	0.0020 U	
	Carbon Disulfide	75-15-0	mg/l	0.081	--	0.52	0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.0010 U	
	Carbon Tetrachloride	56-23-5	mg/l	0.00046	0.005	0.0018	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	
	CFC-11	75-69-4	mg/l	0.52	--	--	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	
	CFC-12	75-71-8	mg/l	0.02	--	0.0031	0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.0010 U	
	Chlorobenzene	108-90-7	mg/l	0.0078	0.1	0.17	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	
	Chlorodibromomethane	124-48-1	mg/l	0.00087	0.08	--	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	
	Chloroethane	75-00-3	mg/l	2.1	--	9.7	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	
	Chloroform	67-66-3	mg/l	0.00022	0.08	0.0036	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	
	Chloromethane	74-87-3	mg/l	0.019	--	0.11	0.00065	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	
	1,2-Dibromo-3-chloropropane	96-12-8	mg/l	0.0000033	0.0002	0.0034	0.0020 U	0.0020 U	0.0020 U	0.0020 U	0.0020 U	0.0020 U	0.0020 U	
	1,2-Dibromoethane	106-93-4	mg/l	0.0000075	0.00005	0.00077	0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.0010 U	
	1,1-Dichloroethane	75-34-3	mg/l	0.0028	--	0.033	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	
	1,2-Dichloroethane	107-06-2	mg/l	0.00017	0.005	0.0098	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	
	1,1-Dichloroethene	75-35-4	mg/l	0.028	0.007	0.082	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	
	cis-1,2-Dichloroethene	156-59-2	mg/l	0.0036	0.07	--	0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.0010 U	
	trans-1,2-Dichloroethene	156-60-5	mg/l	0.036	0.1	--	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	
	Dichloromethane	75-09-2	mg/l	0.011	0.005	2	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	
	1,2-Dichloropropane	78-87-5	mg/l	0.00044	0.005	0.011	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	
	cis-1,3-Dichloropropene	10061-01-5	mg/l	0.00047	--	0.021	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	
	trans-1,3-Dichloropropene	10061-02-6	mg/l	0.00047	--	0.021	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	
	Ethanol	64-17-5	mg/l	--	--	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	
	Ethylbenzene	100-41-4	mg/l	0.0015	0.7	0.015	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	
	Isopropylbenzene	98-82-8	mg/l	0.045	--	0.37	0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.0010 U	
	Methyl Acetate	79-20-9	mg/l	2	--	--	0.0020 U	0.0020 U	0.0020 U	0.0020 U	0.0020 U	0.0020 U	0.0020 U	
	Methyl N-Butyl Ketone (2-Hexanone)	591-78-6	mg/l	0.0038	--	3.4	0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.0010 U	
	4-Methyl-2-Pentanone	108-10-1	mg/l	0.63	--	230	0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.0010 U	
	Methyl-tert-butylether	1634-04-4	mg/l	0.014	--	2	0.0080	0.00050 U	0.00050 U	0.00089	0.00050 U	0.0047	0.00050 U	
	Styrene (Monomer)	100-42-5	mg/l	0.12	0.1	3.9	0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.0010 U	
	tert-Butyl alcohol	75-65-0	mg/l	--	--	--	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	
	1,1,2,2-Tetrachloroethane	79-34-5	mg/l	0.000076	--	0.014	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	
	Tetrachloroethene	127-18-4	mg/l	0.0041	0.005	0.024	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	
	Toluene	108-88-3	mg/l	0.11	1	8.1	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	
	1,1,1-Trichloroethane	71-55-6	mg/l	0.8	0.2	3.1	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	
	1,1,2-Trichloroethane	79-00-5	mg/l	0.000041	0.005	0.0026	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	
	Trichloroethene	79-01-6	mg/l	0.00028	0.005	0.0022	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00084	0.00050 U	
	Vinyl chloride	75-01-4	mg/l	0.000019	0.002	0.0025	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	0.00050 U	
	m&p-Xylenes	--	mg/l	0.019	10	0.16	0.0020 U	0.0020 U	0.0020 U	0.0020 U	0.0020 U	0.0020 U	0.0020 U	
	o-Xylene	95-47-6	mg/l	0.019	10	0.21	0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.0010 U	0.0010 U	

Notes:
 1. USEPA May 2016 Tapwater Regional Screening Levels (RSLs) and USEPA Maximum Contaminant Levels (MCLs) were obtained from the USEPA May 2016 Regional Screening Level Tables (<https://www.epa.gov/risk/regional-screening-levels-rsls-generic-tables-may-2016>).
 2. USEPA May 2016 Commercial Vapor Intrusion Screening Levels (VISLs) were obtained from the USEPA May 2016 Vapor Intrusion Screening Level Calculator (<https://www.epa.gov/vaporintrusion/vapor-intrusion-screening-levels-visl>).
 3. USEPA May 2016 Tapwater RSL, USEPA MCL and USEPA May 2016 Commercial VISL are based on a Target Hazard Quotient (THQ) of 0.1 or Target Cancer Risk (TCR) of 1×10^{-6} .
 4. The USEPA May 2016 Commercial VISL for Total Xylenes was used to evaluate m&p-Xylenes. The USEPA MCL for Total Xylenes was used to evaluate m&p-Xylenes and o-Xylene. The USEPA May 2016 Commercial VISL and Tapwater RSL for 1,3-Dichloropropene was used to evaluate cis-1,3-Dichloropropene and trans-1,3-Dichloropropene.
 5. Bolded values are greater than the USEPA May 2016 Tapwater RSL.
 6. Grey shaded values are greater than the USEPA MCL.
 7. Italicized values are greater than the USEPA May 2016 Commercial VISL.
 8. Abbreviations are as follows:
 mg/l = milligrams per liter
 U = The sample was analyzed for this compound, but it was not detected. The associated value is the compound quantitation limit.
 -- = value unavailable

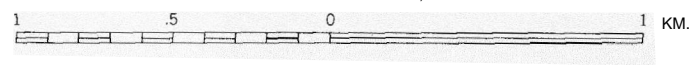
FIGURES



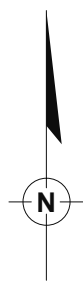


SOURCE: BAYAMON QUADRANGLE - 1969, PHOTO REVISED: 1982.

GRAPHIC SCALE: 1 : 20,000



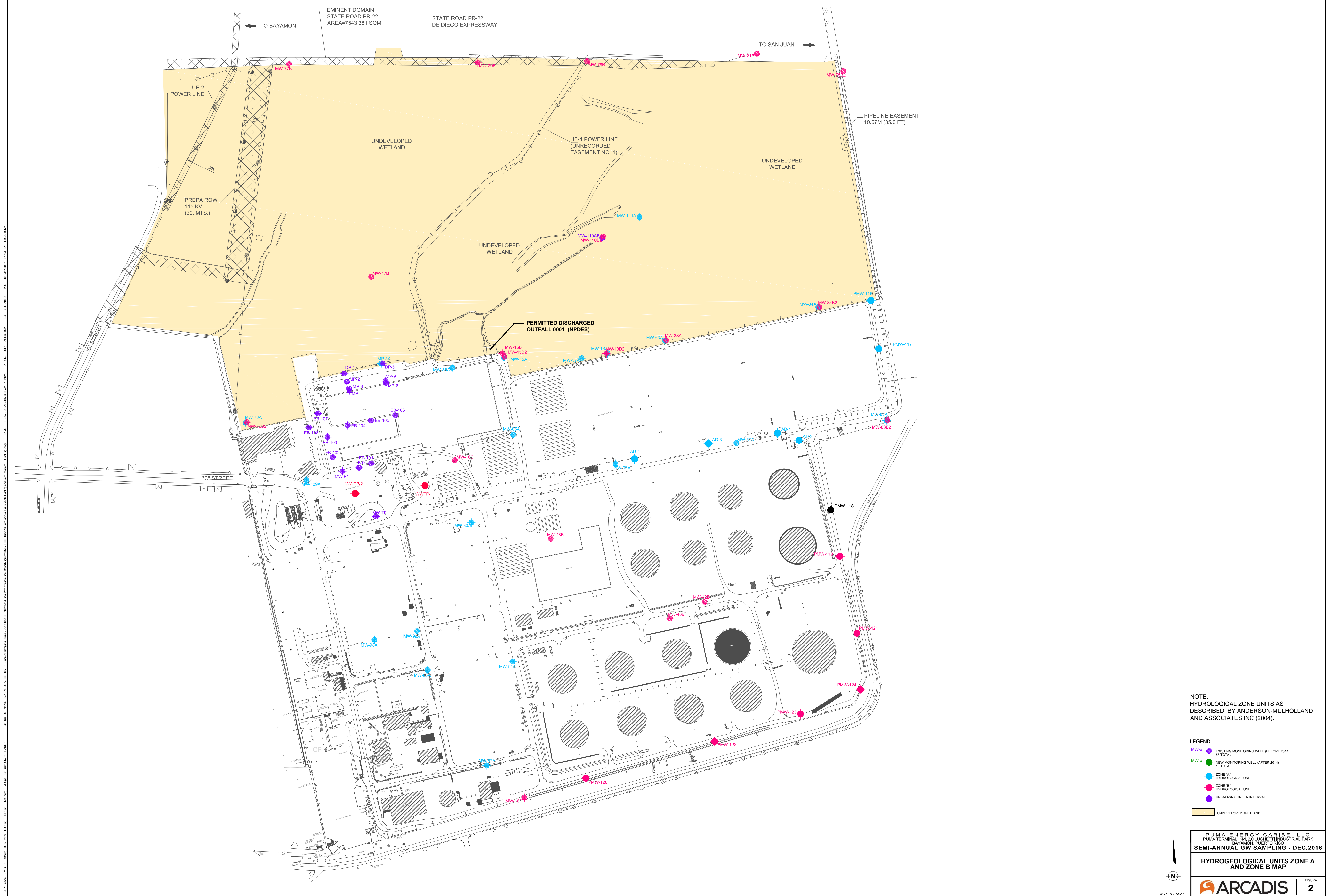
PUERTO RICO QUADRANGLE LOCATION



PUMA ENERGY CARIBE, LLC
 PUMA TERMINAL, KM. 2.0 LUCHETTI INDUSTRIAL PARK
 BAYAMON, PUERTO RICO
SEMI-ANNUAL GW SAMPLING - DEC.2016

LOCATION MAP





NOTE:
HYDROLOGICAL ZONE UNITS AS
DESCRIBED BY ANDERSON-MULLHOLLAND
AND ASSOCIATES INC (2004).

- LEGEND:
- MW-# EXISTING MONITORING WELL (BEFORE 2014)
58 TOTAL
 - MW-# NEW MONITORING WELL (AFTER 2014)
15 TOTAL
 - ZONE 'A' HYDROLOGICAL UNIT
 - ZONE 'B' HYDROLOGICAL UNIT
 - UNKNOWN SCREEN INTERVAL
 - UNDEVELOPED WETLAND

PUMA ENERGY CARIBE, LLC
PUMA TERMINAL, KM. 2.0 LUCHETTI INDUSTRIAL PARK
BAYAMON, PUERTO RICO
SEMI-ANNUAL GW SAMPLING - DEC.2016
HYDROGEOLOGICAL UNITS ZONE A
AND ZONE B MAP

PROJECT: BAYAMON, PUERTO RICO. CLIENT: PUMA ENERGY CARIBE, LLC. DATE: 12/15/16. DRAWING NO.: H2016-001. SHEET NO.: 2 OF 2. SCALE: AS SHOWN. PREPARED BY: [Name]. CHECKED BY: [Name]. APPROVED BY: [Name].



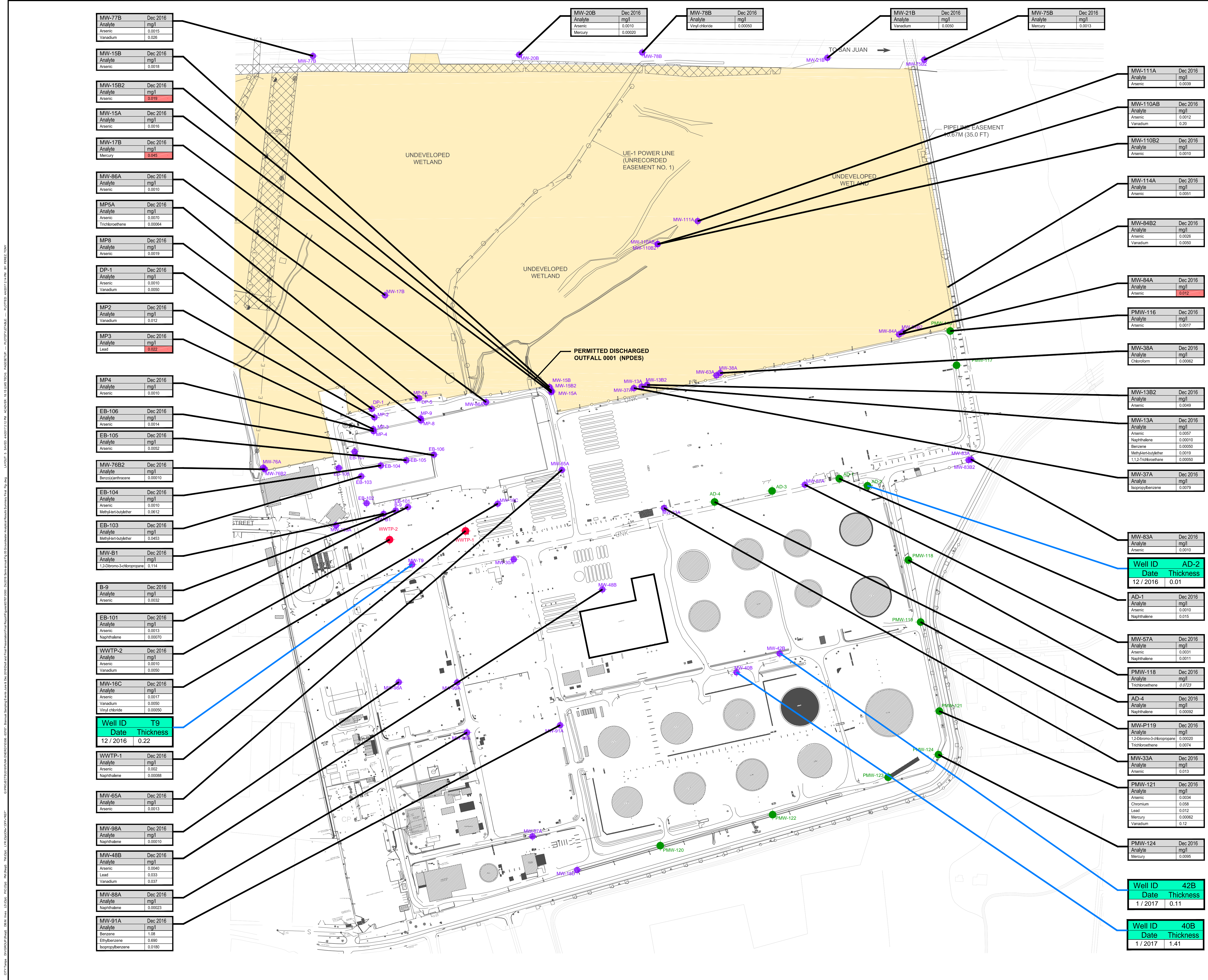
- LEGEND:**
- 10.837 GROUNDWATER ELEVATION (feet BLS)
 - GROUNDWATER CONTOUR
 - 12 GROUNDWATER CONTOUR ELEVATION
 - GROUNDWATER CASE
 - MW-# ● ZONE "A" HYDROLOGICAL UNIT
 - MW-# ● ZONE "B" HYDROLOGICAL UNIT
 - UNKNOWN SCREEN INTERVAL

PUMA ENERGY CARIBE, LLC
 PUMA TERMINAL, KM. 2.0 LUCHETTI INDUSTRIAL PARK
 BAYAMON, PUERTO RICO
SEMI-ANNUAL GW SAMPLING - DEC. 2016

**TERMINAL SITE LAYOUT
 CONTOUR MAP - AQUIFER - A**



NOT TO SCALE



Groundwater Analytical Results Box

Analyte	units	"USEPA TAPWATER RSL"	"USEPA MCL"
Arsenic	mg/l	0.000052	0.01
Chromium	mg/l	2.2	0.1
Lead	mg/l	0.015	0.015
Mercury	mg/l	0.00057	0.002
Vanadium	mg/l	0.0086	--
Benzo(a)anthracene	mg/l	0.000012	--
Naphthalene	mg/l	0.00017	--
Benzene	mg/l	0.00046	0.005
Chloroform	mg/l	0.00022	0.08
1,2-Dibromo-3-chloropropane	mg/l	0.0000033	0.0002
cis-1,2-Dichloroethene	mg/l	0.0036	0.7
Ethylbenzene	mg/l	0.0015	0.07
Methyl-tert-butylether	mg/l	0.014	--
1,1,2-Trichloroethane	mg/l	0.000041	0.005
Trichloroethene	mg/l	0.00028	0.005
Vinyl chloride	mg/l	0.000019	0.002
m&p-Xylenes	mg/l	0.019	10
o-Xylene	mg/l	0.019	10

Product thickness Results Box

Well ID	Date	Thickness
-	-	-
m / year		lineal ft

- NOTES:
- USEPA MAY 2016 TAPWATER REGIONAL SCREENING LEVELS (RSLs) AND USEPA MAXIMUM CONTAMINANT LEVELS (MCL) WERE OBTAINED FROM THE USEPA MAY 2016 REGIONAL SCREENING LEVEL TABLES (HTTPS://WWW.EPA.GOV/RISK/REGIONAL-SCREENING-LEVELS-RSLs-GENERIC-TABLES-MAY-2016).
 - USEPA MAY 2016 COMMERCIAL VAPOR INTRUSION SCREENING LEVELS (VISLs) WERE OBTAINED FROM THE USEPA MAY 2016 VAPOR INTRUSION SCREENING LEVEL CALCULATOR (HTTPS://WWW.EPA.GOV/VAPORINTRUSION/VAPOR-INTRUSION-SCREENING-LEVELS-VISLs).
 - USEPA MAY 2016 TAPWATER RSL, USEPA MCL AND USEPA MAY 2016 COMMERCIAL VISL ARE BASED ON A TARGET HAZARD QUOTIENT (THQ) OF 1 X 10-6.
 - THE USEPA MAY 2016 COMMERCIAL VISL FOR TOTAL XYLENES WAS USED TO EVALUATE M&P-XYLENES. THE USEPA MCL FOR TOTAL XYLENES WAS USED TO EVALUATE M&P-XYLENES AND O-XYLENE. THE USEPA MAY 2016 COMMERCIAL VISL AND TAPWATER RSL FOR 1,3-DICHLOROPROPENE WAS USED TO EVALUATE CIS-1,3-DICHLOROPROPENE AND TRANS-1,3-DICHLOROPROPENE.
 - VALUES ARE GREATER THAN THE USEPA MAY 2016 TAPWATER RSL.
 - SHADED (■) VALUES ARE GREATER THAN THE USEPA MCL.
 - ABBREVIATIONS ARE AS FOLLOWS:
 mg/l = MILLIGRAMS PER LITER
 -- = VALUE UNAVAILABLE

LEGEND:
 MW-# ■ EXISTING MONITORING WELL (BEFORE 2014)
 MW-# ■ NEW MONITORING WELL (2014)
 MW-# ■ NEW MONITORING WELL (2016)
 ■ UNDEVELOPED WETLAND

PUMA ENERGY CARIBE, L.L.C.
 PUMA TERMINAL, KM. 2.0 LUCIETTI INDUSTRIAL PARK
 BAYAMÓN, PUERTO RICO
 SEMI-ANNUAL GW SAMPLING - DEC 2016

APPENDIX A

The Standard Operating Procedures



Water-Level and NAPL Thickness Measurement Procedures

Rev. #: 0

Rev Date: February 27, 2009

Approval Signatures

Prepared by: Andrew Korik Date: 2/27/09
Andrew Korik

Reviewed by: Michael J Gefell Date: 2/27/09
Michael Gefell (Technical Expert)

I. Scope and Application

Monitoring well water levels and thickness of non-aqueous phase liquids (NAPLs) will be determined, as appropriate, to develop groundwater elevation contour maps and to assess the presence or absence of NAPL in wells. This SOP applies to light and/or dense NAPLs (LNAPLs and DNAPLs, respectively). In addition, because this SOP describes water-level measurement from surveyed measurement points, this SOP can be followed, to obtain surface water level measurements from surveyed measurement points.

Fluid levels will be measured using an electric water-level probe and/or NAPL-water interface probe from established reference points. Reference points are surveyed, and are established at the highest point at the top of well riser, and will be based on mean sea level, or local/onsite datum. The Operating and Maintenance (O&M) Instruction Manual for the electric water level probe and/or and interface probe should be reviewed prior to commencing work for safe and accurate operation.

II. Personnel Qualifications

Individuals conducting fluid level measurements will have been trained in the proper use of the instruments, including their use for measuring fluid levels and the bottom depth of wells. In addition, ARCADIS field sampling personnel will have current health and safety training including 40-hour HAZWOPER training, site supervisor training, site-specific training, first aid, and CPR, as needed. In addition, ARCADIS field sampling personnel will be versed in the relevant SOPs and possess the required skills and experience necessary to successfully complete the desired field work. ARCADIS field personnel will also be compliant with client-specific training requirements, such as (but not limited to) LPS or other behavior-based training, and short-service employee restrictions.

III. Equipment List

The following materials, as required, shall be available during fluid level measurements.

- photoionization detector (PID)
- appropriate health and safety equipment, as specified in the site Health and Safety Plan (HASP)

- laboratory-type soap (Alconox or equivalent), methanol/hexane rinse, potable water, distilled water, and/or other equipment that may be needed for decontamination purposes
- electronic NAPL-water interface probe
- electronic water-level meter
- 6-foot engineer's rule
- portable containers
- plastic sheeting
- field logbook and/or personal digital assistant (PDA)
- indelible ink pen
- digital camera (optional, if allowed by site policy)

IV. Cautions

Electronic water-level probes and NAPL-water interface probes can sometimes produce false-positive readings. For example, if the inside surface of the well has condensation above the water level, then an electronic water-level probe may produce a signal by contacting the side of the well rather than the true water level in the well. In addition, NAPL-water interface probes can sometimes indicate false positive signals when contacting a sediment layer on the bottom of a well. In contrast, a NAPL-water interface probe may produce a false-negative (no signal) if a floating layer of non-aqueous phase liquid (NAPL) is too thin, such as a film or sheen. To produce reliable data, the electronic water level probe and/or interface probe should be raised and lowered several times at the approximate depth where the instrument produces a tone indicating a fluid interface to verify consistent, repeatable results. In addition, a bottom-loading bailer should periodically be used to check for the presence of NAPLs rather than relying solely on the NAPL-water interface probe.

The graduated tape or cable with depth markings is designed to indicate the depth of the electronic sensor that detects the fluid interface, but not the depth of the bottom of the instrument. When using these devices to measure the total well depth, the additional length of the instrument below the electronic sensor must be added to the apparent well depth reading, as observed on the tape or cable of the instrument, to obtain the true total depth of the well. If the depth markings on the tape or cable are

worn or otherwise difficult to read, extra care must be taken in obtaining the depth readings.

V. Health and Safety Considerations

The HASP will be followed, as appropriate, to ensure the safety of field personnel. Access to wells may expose field personnel to hazardous materials such as contaminated groundwater or NAPL. Other potential hazards include stinging insects that may inhabit well heads, other biologic hazards, and potentially the use of sharp cutting tools (scissors, knife). Appropriate personal protective equipment (PPE) will be worn during these activities. Field personnel will thoroughly review client-specific health and safety requirements, which may preclude the use of fixed/folding-blade knives.

VI. Procedure

Calibration Procedures

If there is any uncertainty regarding the accuracy of the tape or cable associated with the electronic water-level probe or NAPL-water interface probe, it should be checked versus a standard length prior to use to assess if the tape or cable above the meter has been correctly calibrated by the manufacturer, and to identify evidence of tape or cable stretching, etc.

1. Measure the lengths between markers on the cable with a 6-foot engineer's rule or a fiberglass engineer's tape. The tape or cable associated with the electronic water-level probe or NAPL-water interface probe should be checked for the length corresponding to the deepest total well depth to be monitored during the data collection event.
2. If the length designations on the tape or cable associated with the electronic water-level probe or NAPL-water interface probe are found to be incorrect, the probe will not be used until it is repaired by the manufacturer.
3. Record verification of this calibration process in field logbook or PDA.

Measurement Procedures

The detailed procedure for obtaining fluid level depth measurements is as follows. Field notes on logs will be treated as secured documentation and indelible ink will be used. As a general rule, the order of measuring should proceed from the least to most contaminated monitoring wells, based on available data.

1. Identify site and well number in field logbook using indelible ink, along with date, time, personnel, and weather conditions.
2. Field personnel will avoid activities that may introduce contamination into monitoring wells. Activities such as dispensing gasoline into vehicles or generators should be accomplished well in advance of obtaining field measurements.
3. Don PPE as required by the HASP..
4. Clean the NAPL/water interface probe and cable in accordance with the appropriate cleaning procedures. Down-hole instrumentation should be cleaned prior to obtaining readings at the first monitoring well and upon completion of readings at each well.
5. Clean the NAPL/water level interface probe and cable with a soapy (Alconox) water rinse followed by a solvent rinse (if appropriate based on site-specific constituents of concern) an analyte-free water rinse Contain rinse water in a portable container that will be transferred to an on-site container.
6. Put clean plastic sheeting on the ground next to the well.
7. Unlock and open the well cover while standing upwind from the well. Place the well cap on the plastic sheeting.
8. Locate a measuring reference point on the well casing. If one is not found, initiate a reference point at the highest discernable point on the inner casing (or outer if an inner casing is not present) by notching with a hacksaw, or using an indelible marker. All down-hole measurements will be taken from the reference point established at each well on the inner casing (on the outer only if an inner casing is not present).
9. Measure to the nearest hundredth of a foot and record the height of the inner and outer casings (from reference point, as appropriate) to ground level.
10. Record the inside diameter of the well casing in the field log.
11. If an electronic water level probe is used to measure the water level, lower the probe until it emits a signal (tone and or light) indicating the top of the water surface. Gently raise and lower the instrument through this interface to confirm its depth. Measure and record the depth of the water surface, and the total well depth, to the nearest hundredth of a foot from the reference point at the top of

the well. Lower the probe to the bottom of the well to obtain a total depth measurement.

12. If a NAPL/water interface probe is being used to measure the depth and thickness of NAPL, lower the instrument until it emits a signal (tone and or light) indicating whether LNAPL is present. Continue to lower the NAPL/water level interface probe until it indicates the top of water. Lower the probe to the bottom of the well to obtain a total depth measurement. Note also of the depth indicating the bottom of water and top of DNAPL layer, if any, based on the signal emitted by the interface probe. At each fluid interface, gently raise and lower the instrument through each the interface to confirm its depth. Measure to the nearest hundredth of a foot and record the depth of each fluid interface, and the total well depth, from the reference point.
13. Clean the NAPL/water interface probe and cable in accordance with the appropriate cleaning procedures.
14. If using a bailer to confirm the presence/absence of NAPL, the bailer should either have been previously dedicated to the well, or be a new previously unused bailer.
15. Compare the depth of the well to previous records, and note any discrepancy.
16. Lock the well when all activities are completed.

VII. Waste Management

Decontamination fluids, PPE, and other disposable equipment will be properly stored on site in labeled containers and disposed of properly. Be certain that waste containers are properly labeled and documented in the field log book. Review appropriate waste management SOPs, which may be state- or client-specific.

VIII. Data Recording and Management

Fluid level measurement data will be recorded legibly on “write-in-the-rain” field notebook in indelible pen and/or a PDA. Field situations such as apparent well damage or suspected tampering, or other observations of conditions that may result in compromised data collection will be photographically documented where practicable.

IX. Quality Assurance

As described in the detailed procedure, the electronic water-level meter and/or NAPL-water interface probe will be calibrated prior to use versus an engineer's rule to ensure accurate length demarcations on the tape or cable. Fluid interface measurements will be verified by gently raising and lowering the instrument through each interface to confirm repeatable results.

X. References

No literature references are required for this SOP.

**LNAPL Thickness/Water-Level
Measurement and Manual
LNAPL Removal (Bailing or
Installation of Absorbent
Socks)**

Rev. #: 1

Rev Date: December 29, 2005

Approval Signatures

Prepared by: _____ Date: _____

Reviewed by: _____ Date: _____
(Technical Expert)

Reviewed by: _____ Date: _____
(Project Manager)

I. Scope and Application

Manual light non-aqueous phase liquid (LNAPL) removal and absorbent sock installation is appropriate for recovery of residual LNAPL or LNAPL recovery rate testing.

Monitoring well water levels and LNAPL thickness will be used, as appropriate, to develop piezometric maps and evaluate LNAPL extent migration or extent reduction. The water levels and LNAPL thickness will be obtained using an oil/water interface probe. The Operation and Maintenance (O&M) Manual for the probe should be reviewed prior to commencement of work for safe and accurate operation. LNAPL will be removed using either a bailer or absorbent sock. LNAPL and associated disposable personal protection equipment (PPE)/ materials will be stored in separate drums, labeled, and properly disposed at a licensed facility. Procedures for determining water levels and LNAPL thicknesses in monitoring wells and LNAPL removal are presented in this Standard Operating Procedure (SOP).

II. Personnel Qualifications

LNAPL removal, monitoring well water level, and LNAPL level measurements will be performed by persons trained in the proper usage of water-level measurement equipment and LNAPL handling under the guidance of an experienced field geologist, engineer, or technician.

III. Equipment List

- oil/water interface probe and O&M Manual;
- photoionization detector (PID) to measure headspace vapors;
- bailer;
- bucket;
- 15-foot length section of 1½ " outside diameter (OD) Schedule 40 PVC pipe;
- 15-foot length section of ¾" OD Schedule 40 PVC pipe;
- well opening tools (large screwdriver, small brass lock, socket set, hammer);
- well construction information for monitoring wells;

- health and safety equipment, as required by the site Health and Safety Plan (HASP), task Job Safety Analysis (JSA), and Journey Management Plan (JMP);
- cleaning brushes;
- plastic sheeting;
- measuring tape;
- non-phosphate soap;
- distilled/deionized water;
- solvent cleaner (e.g., CitraSolv™);
- watch (to record time and day);
- field notebook;
- absorbent pads;
- absorbent socks;
- appropriate LNAPL and/or absorbent material disposable containers;
- LNAPL thickness/water-level measurement and manual LNAPL removal log (LNAPL removal log; Attachment A);
- monitoring well keys; and
- tape (to loosely seal end of PVC pipe) (Note: do not use electrical tape).

IV. Cautions

Handle and store LNAPL with care to avoid spills. Use the absorbent material when handling equipment that contains or has been coated with LNAPL. Monitoring wells with viscous LNAPL (tar-like LNAPL) are extremely difficult to remove and measure depth to water. Do not use electrical tape, as this tape may contaminate water samples.

V. Health and Safety Considerations

Field activities will be performed in accordance with the site-specific HASP, JSA, and JMP, copies of which will be present on-site during such activities.

VI. Procedures

Groundwater and LNAPL Elevation Measurements

1. Identify site and well number on the LNAPL removal log (Attachment A), along with other appropriate information collected during water-level measurement.
2. Don PPE as required by the HASP.
3. Clean the oil/water interface probe and cable in accordance with the appropriate cleaning procedures.
4. Place a piece of plastic sheeting and absorbent pads adjacent to the well to use as a clean work area. Cut a hole in the center of sheeting and place the sheet around the well.
5. If LNAPL or absorbent sock is present in the well (based on a review historical data, if available), place enough absorbent pads on the plastic sheet beside the well to absorb oil that may be present when the absorbent sock and oil/water interface probe is removed from the well.
6. Unlock and open the well cover while standing upwind of the well. Remove well cap. Insert PID probe approximately 4 to 6 inches into the casing of the well headspace and cover with gloved hand. Record the PID reading on the field log. If the well headspace reading is less than 5 PID units, proceed; if the well headspace reading is greater than 5 PID units, screen the air within the breathing zone. If the PID reading in the breathing zone is below 5 PID units, proceed. If the PID reading is above 5 PID units, move upwind from the well for 5 minutes to allow the volatiles to dissipate. Repeat the breathing zone test. If the reading is still above 5 PID units, don appropriate respiratory protection in accordance with the requirements of the HASP. Record all PID readings.
7. Locate a measuring reference point on the well casing. If one is not found, initiate a reference point by notching the inner and outer casings with a hacksaw or by using a waterproof marker. All down-hole measurements will be taken from the reference points. The acronym "TIC" will designate the top of inner casing and the acronym "TOC" will designate the top of the outer casing. If a well has both

inner and outer casings, use the TIC as the reference point.

Note: The following steps describe the procedures for water-level measurement and detection of immiscible layers. For wells subject to routine monitoring (e.g., monthly monitoring locations), determining the depth of the well will be performed initially and at a maximum interval of annually thereafter.

8. If an absorbent sock is already in the well, note the presence of the sock on the log, remove the absorbent sock, and make a qualitative estimate of the volume of LNAPL present in the absorbent sock. Proceed to Step 9 after the well has equilibrated (wait up to 1 hour before measuring LNAPL thickness and water level).
9. Measure to the nearest 0.01 foot and record the height of the inner and outer casings from reference point to ground level.
10. Record the inside diameter of the well casing on the field log.
11. At all locations, **except those monitoring wells containing viscous LNAPL (see note below)**, lower the oil/water interface probe into the well to determine the existence of any light immiscible layer. Carefully record the depths of the air/light-phase and light-phase/water interfaces (to the nearest 0.01 foot) to determine the thickness of the light-phase immiscible layer (if present). If no light-phase immiscible layer is present, record the depth of the air/water interface.

Note: Use extreme caution when gauging monitoring wells with viscous LNAPL. The viscous nature of LNAPL is difficult to remove. Instead, mark a 10-foot section of PVC pipe at 1-foot intervals to estimate location of the pipe within the well and slowly lower pipe into the well until reaching the fluid/air interface. Mark the PVC pipe at the TIC and slowly remove. Measure difference between the uppermost limit of LNAPL on the pipe (if present) and the mark made at the TIC. The difference is the top of LNAPL. To get depth to water, use two sections of PVC pipe that when put one inside the other will also fit down the 2-inch diameter well (i.e., $\frac{3}{4}$ " diameter inside a $1\frac{1}{2}$ " diameter pipe with the $\frac{3}{4}$ " pipe). Make sure that the $\frac{3}{4}$ " pipe is at least 6 inches longer than the $1\frac{1}{2}$ " pipe). Tape the bottom of the two pipes such that the tape can be easily removed, but can be lowered through the LNAPL/water interface. Slowly lower the two pipes into the well until reaching the bottom (~15' below ground surface [bgs]). Push the $\frac{3}{4}$ " pipe through the $1\frac{1}{2}$ " pipe to remove the tape and allow groundwater to enter pipes. Remove the $\frac{3}{4}$ " diameter pipe and allow the water level to equilibrate inside the $1\frac{1}{2}$ " pipe (wait up to 1 hour before measuring).

Measure and record the depth of the air/water interface inside the 1½" pipe using the oil/water interface probe (to the nearest 0.01 foot) relative to the TIC.

12. If greater than ½ inch of LNAPL is measured, remove LNAPL with bailer and reinstall absorbent material (see procedures below).
13. If less than ½ inch, remove LNAPL with bailer and measure thickness during subsequent gauging event (see procedure below).

LNAPL Removal with Bailer

- a. Remove the bailer from the plastic covering and attach a string or rope to the top of the bailer.
- b. Gently lower the bailer into the LNAPL. To avoid removing groundwater, do not lower the bailer deeper than the expected LNAPL/groundwater interface. Use care not to stir up the LNAPL and groundwater.
- c. Pour the LNAPL into a bucket or container for measurement and repeat until the LNAPL thickness has been reduced to less than approximately 0.1 foot.
- d. Record the volume of LNAPL removed in the field notebook and transfer LNAPL to a labeled drum or container for disposal (see Section VII).

Installation of Absorbent Socks for LNAPL Removal

- a. Tie one end of the sock to a rope and lower into the monitoring well.
- b. Lower the sock such that the bottom of the sock is at the LNAPL/groundwater interface. In monitoring wells that are affected by tidal fluxes, allow extra length in the rope for groundwater elevation fluxes.
- c. Tie the end of the rope to the top of the well casing.
- d. Replace the absorbent sock when the sock becomes saturated, dispose of the socks in a labeled drum or container, stage drum at an approved location, and arrange for proper off-site disposal.

14. Between wells, when obtaining water-level/oil thickness measurements at more than one location, clean the instrument with a non-phosphate soap and water wash followed by a distilled/deionized water rinse. Use an appropriate solvent rinse, if necessary, to remove oil deposits.
15. Close and secure the monitoring wells and LNAPL disposal containers when all activities are completed.
16. Collect all PPE and other wastes generated for disposal. Separately containerize all PPE and disposable supplies from LNAPL (see Section VII).

VII. Waste Management

Materials generated during water-level/oil thickness measurement and LNAPL removal procedures, including disposable equipment (including absorbent pads and socks) and LNAPL, will be containerized in appropriate labeled containers or drums. Solids, such as absorbents, are to be stored separately from liquids. LNAPL from all wells may be containerized in one drum. Containerized waste labeling, storage locating procedures are detailed in a separate SOP.

VIII. Data Recording and Management

The supervising geologist/technician will be responsible for documenting site conditions and field activities using a daily field log or bound field notebook to record all relevant information in a clear and concise format which will include the following (at a minimum):

- start and finish times of water and LNAPL measurement events;
- name and location of project;
- project number, client, and site location;
- depth to water and LNAPL;
- volume and description of LNAPL removed;
- number and volume of on-site drums; and
- weather conditions.

Water-level and LNAPL measurements should be recorded on the LNAPL removal log (Attachment A). All records are to be sent to the Project Manager for review and original records are to be stored in the project files.

IX. Quality Assurance

Groundwater elevation data will be compared to historical data and if groundwater elevations are not within historical ranges, the groundwater elevation data will be confirmed by additional field measurements.

X. References

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ATTACHMENT A

**NAME OF SITE
 CITY, STATE**

LNAPL THICKNESS/WATER-LEVEL MEASUREMENT AND MANUAL LNAPL REMOVAL LOG

Well ID	MW-	MW-	MW-	MW-	MW-
Date					
Inside Diameter of Well (inches)					
Depth to LNAPL (feet)					
Depth to Water (feet)					
LNAPL Recovered from Absorbent Pad (gallons)					
LNAPL Bailed (gallons)					
Total LNAPL Recovered					
Absorbent Replaced? (yes/no)					
Notes					

Note:

1 gallon = 3,785 milliliters

Chain-of-Custody, Handling, Packing and Shipping

Rev. #: 2

Rev Date: March 6, 2009

Approval Signatures

Prepared by: Caron Koll Date: 3/6/09
Caron Koll

Reviewed by: Jane Kennedy Date: 3/6/09
Jane Kennedy (Technical Expert)

I. Scope and Application

This Standard Operating Procedure (SOP) describes the chain-of-custody, handling, packing, and shipping procedures for the management of samples to decrease the potential for cross-contamination, tampering, mis-identification, and breakage, and to insure that samples are maintained in a controlled environment from the time of collection until receipt by the analytical laboratory.

II. Personnel Qualifications

ARCADIS field sampling personnel will have current health and safety training, including 40-hour HAZWOPER training, Department of Transportation (DOT) training, site supervisor training, and site-specific training, as needed. In addition, ARCADIS field sampling personnel will be versed in the relevant SOPs and possess the skills and experience necessary to successfully complete the desired field work.

III. Equipment List

The following list provides materials that may be required for each project. Project documents and sample collection requirements should be reviewed prior to initiating field operations:

- indelible ink pens (black or blue);
- polyethylene bags (resealable-type);
- clear packing tape, strapping tape, duct tape;
- chain of custody
- DOT shipping forms, as applicable
- custody seals or tape;
- appropriate sample containers and labels,;
- insulated coolers of adequate size for samples and sufficient ice to maintain 4°C during collection and transfer of samples;
- wet ice;
- cushioning and absorbent material (i.e., bubble wrap or bags);

- temperature blank
- sample return shipping papers and addresses; and
- field notebook.

IV. Cautions

Review project requirements and select appropriate supplies prior to field mobilization.

Insure that appropriate sample containers with applicable preservatives, coolers, and packing material have been supplied by the laboratory.

Understand the offsite transfer requirements for the facility at which samples are collected.

If overnight courier service is required schedule pick-up or know where the drop-off service center is located and the hours of operation. Prior to using air transportation, confirm air shipment is acceptable under DOT and International Air Transport Association (IATA) regulation

Schedule pick-up time for laboratory courier or know location of laboratory/service center and hours of operation.

Understand DOT and IATA shipping requirements and evaluate dangerous goods shipping regulations relative to the samples being collected (i.e. complete an ARCADIS shipping determination). Review the ARCADIS SOPs for shipping, packaging and labeling of dangerous goods. Potential samples requiring compliance with this DOT regulation include:

- Methanol preservation for Volatile Organic Compounds in soil samples
- Non-aqueous phase liquids (NAPL)

V. Health and Safety Considerations

Follow health and safety procedures outlined in the project/site Health and Safety Plan (HASP).

Use caution and appropriate cut resistant gloves when tightening lids to 40 mL vials. These vials can break while tightening and can lacerate hand. Amber vials (thinner glass) are more prone to breakage.

Some sample containers contain preservatives.

- The preservatives must be retained in the sample container and should in no instance be rinsed out.
- Preservatives may be corrosive and standard care should be exercised to reduce potential contact to personnel skin or clothing. Follow project safety procedures if spillage is observed.
- If sample container caps are broken discard the bottle. Do not use for sample collection.

VI. Procedure

Chain-of-Custody Procedures

1. Prior to collecting samples, complete the chain-of-custody record header information by filling in the project number, project name, and the name(s) of the sampling technician(s) and other relevant project information. Attachment 1 provides an example chain-o- custody record
2. Chain-of-custody information MUST be printed legibly using indelible ink (black or blue).
3. After sample collection, enter the individual sample information on the chain-of-custody:
 - a. Sample Identification indicates the well number or soil location that the sample was collected from. Appropriate values for this field include well locations, grid points, or soil boring identification numbers (e.g., MW-3, X-20, SB-30). When the depth interval is included, the complete sample ID would be "SB-30 (0.5-1.0) where the depth interval is in feet. Please note it is very important that the use of hyphens in sample names and depth units (i.e., feet or inches) remain consistent for all samples entered on the chain-of-custody form. DO NOT use the apostrophe or quotes in the sample ID. Sample names may also use the abbreviations "FB," "TB," and "DUP" as prefixes or suffixes to indicate that the sample is a field blank, trip blank, or field duplicate, respectively. NOTE: The sample

nomenclature may be dictated by the project database and require unique identification for each sample collected for the project. Consult the project data management plan for additional information regarding sample identification.

- b. List the date of sample collection. The date format to be followed should be mm/dd/yy (e.g., 03/07/09) or mm/dd/yyyy (e.g. 03/07/2009).
- c. List the time that the sample was collected. The time value should be presented using military format. For example, 3:15 P.M. should be entered as 15:15.
- d. The composite field should be checked if the sample is a composite over a period of time or from several different locations and mixed prior to placing in sample containers.
- e. The "Grab". field should be marked with an "X" if the sample was collected as an individual grab sample. (e.g. monitoring well sample or soil interval).
- f. Any sample preservation should be noted.
- g. The analytical parameters that the samples are being analyzed for should be written legibly on the diagonal lines. As much detail as possible should be presented to allow the analytical laboratory to properly analyze the samples. For example, polychlorinated biphenyl (PCB) analyses may be represented by entering "PCBs" or "Method 8082." Multiple methods and/or analytical parameters may be combined for each column (e.g., PCBs/VOCs/SVOCs or 8082/8260/8270). These columns should also be used to present project-specific parameter lists (e.g., Appendix IX+3 target analyte list. Each sample that requires a particular parameter analysis will be identified by placing the number of containers in the appropriate analytical parameter column. For metals in particular, indicate which metals are required.
- h. Number of containers for each method requested. This information may be included under the parameter or as a total for the sample based on the chain of custody form used.
- i. Note which samples should be used for site specific matrix spikes.
- j. Indicate any special project requirements.

- k. Indicate turnaround time required.
 - l. Provide contact name and phone number in the event that problems are encountered when samples are received at the laboratory.
 - m. If available attach the Laboratory Task Order or Work Authorization forms
 - n. The remarks field should be used to communicate special analytical requirements to the laboratory. These requirements may be on a per sample basis such as “extract and hold sample until notified,” or may be used to inform the laboratory of special reporting requirements for the entire sample delivery group (SDG). Reporting requirements that should be specified in the remarks column include: 1) turnaround time; 2) contact and address where data reports should be sent; 3) name of laboratory project manager; and 4) type of sample preservation used.
 - o. The “Relinquished By” field should contain the signature of the sampling technician who relinquished custody of the samples to the shipping courier or the analytical laboratory.
 - p. The “Date” field following the signature block indicates the date the samples were relinquished. The date format should be mm/dd/yyyy (e.g., 03/07/2005).
 - q. The “Time” field following the signature block indicates the time that the samples were relinquished. The time value should be presented using military format. For example, 3:15 P.M. should be entered as 15:15.
 - r. The “Received By” section is signed by sample courier or laboratory representative who received the samples from the sampling technician or it is signed upon laboratory receipt from the overnight courier service.
- 3. Complete as many chain-of-custody forms as necessary to properly document the collection and transfer of the samples to the analytical laboratory.
 - 4. Upon completing the chain-of-custody forms, forward two copies to the analytical laboratory and retain one copy for the field records.
 - 5. If electronic chain-of-custody forms are utilized, sign the form and make 1 copy for ARCADIS internal records and forward the original with the samples to the laboratory.

Handling Procedures

1. After completing the sample collection procedures, record the following information in the field notebook with indelible ink:
 - project number and site name;
 - sample identification code and other sample identification information, if appropriate;
 - sampling method;
 - date;
 - name of sampler(s);
 - time;
 - location (project reference);
 - location of field duplicates and both sample identifications;
 - locations that field QC samples were collected including equipment blanks, field blanks and additional sample volume for matrix spikes; and
 - any comments.
2. Complete the sample label with the following information in indelible ink:
 - sample type (e.g., surface water);
 - sample identification code and other sample identification information, if applicable;
 - analysis required;
 - date;
 - time sampled; and
 - initials of sampling personnel;

- sample matrix; and
 - preservative added, if applicable.
3. Cover the label with clear packing tape to secure the label onto the container and to protect the label from liquid.
 4. Confirm that all caps on the sample containers are secure and tightly closed.
 5. In some instances it may be necessary to wrap the sample container cap with clear packing tape to prevent it from becoming loose.
 6. For some projects individual custody seals may be required. Custody seal evidence tape may be placed on the shipping container or they may be placed on each sample container such that the cooler or cap cannot be opened without breaking the custody seal. The custody seal should be initialed and dated prior to relinquishing the samples.

Packing Procedures

Following collection, samples must be placed on wet ice to initiate cooling to 4°C immediately. Retain samples on ice until ready to pack for shipment to the laboratory.

1. Secure the outside and inside of the drain plug at the bottom of the cooler being used for sample transport with “Duct” tape.
2. Place a new large heavy duty plastic garbage bag inside each cooler
3. Place each sample bottle wrapped in bubble wrap inside the garbage bag. VOC vials may be grouped by sample in individual resealable plastic bags). If a cooler temperature blank is supplied by the laboratory, it should be packaged following the same procedures as the samples. If the laboratory did not include a temperature blank, do not add one. Place 1 to 2 inches of cushioning material (i.e., vermiculite) at the bottom of the cooler.
4. Place the sealed sample containers upright in the cooler.
5. Package ice in large resealable plastic bags and place inside the large garbage bag in the cooler. Samples placed on ice will be cooled to and maintained at a temperature of approximately 4°C.

6. Fill the remaining space in the cooler with cushioning material such as bubble wrap. The cooler must be securely packed and cushioned in an upright position and be surrounded (Note: to comply with 49 CFR 173.4, filled cooler must not exceed 64 pounds).
7. Place the completed chain-of-custody record(s) in a large resealable bag and tape the bag to the inside of the cooler lid.
8. Close the lid of the cooler and fasten with packing tape.
9. Wrap strapping tape around both ends of the cooler.
10. Mark the cooler on the outside with the following information: shipping address, return address, "Fragile, Handle with Care" labels on the top and on one side, and arrows indicating "This Side Up" on two adjacent sides.
11. Place custody seal evidence tape over front right and back left of the cooler lid, initial and date, then cover with clear plastic tape.

Note: Procedure numbers 2, 3, 5, and 6 may be modified in cases where laboratories provide customized shipping coolers. These cooler types are designed so the sample bottles and ice packs fit snugly within preformed styrofoam cushioning and insulating packing material.

Shipping Procedures

1. All samples will be delivered by an express carrier within 48 hours of sample collection. Alternatively, samples may be delivered directly to the laboratory or laboratory service center or a laboratory courier may be used for sample pickup.
2. If parameters with short holding times are required (e.g., VOCs [EnCore™ Sampler], nitrate, nitrite, ortho-phosphate and BOD), sampling personnel will take precautions to ship or deliver samples to the laboratory so that the holding times will not be exceeded.
3. Samples must be maintained at 4°C±2°C until shipment and through receipt at the laboratory
4. All shipments must be in accordance with DOT regulations and ARCADIS dangerous goods shipping SOPs.

5. When the samples are received by the laboratory, laboratory personnel will complete the chain-of-custody by recording the date and time of receipt of samples, measuring and recording the internal temperature of the shipping container, and checking the sample identification numbers on the containers to ensure they correspond with the chain-of-custody forms.

Any deviations between the chain-of-custody and the sample containers, broken containers, or temperature excursions will be communicated to ARCADIS immediately by the laboratory.

VII. Waste Management

Not applicable

VIII. Data Recording and Management

Chain-of-custody records will be transmitted to the ARCADIS PM or designee at the end of each day unless otherwise directed by the ARCADIS PM. The sampling team leader retains copies of the chain-of-custody forms for filing in the project file. Record retention shall be in accordance with project requirements.

IX. Quality Assurance

Chain-of-custody forms will be legibly completed in accordance with the applicable project documents such as Sampling and Analysis Plan (SAP), Quality Assurance Project Plan (QAPP), Work Plan, or other project guidance documents. A copy of the completed chain-of-custody form will be sent to the ARCADIS Project Manager or designee for review.

X. References

Not Applicable

Photoionization Detector Air Monitoring and Field Screening

Rev. #: 1

Rev Date: November 8, 2009

Approval Signatures

Prepared by: (the late) Maureen Geisser

Date: July 28, 2003



Reviewed/revised by: Christopher C. Lutes
(Technical Expert)

Date: November 8, 2009

I. Scope and Application

Field screening with a photoionization detector (PID), such as an HNu™, Photovac™, MicroTIP™, or MiniRAE™, is a procedure to measure relative concentrations of volatile organic compounds (VOCs) and other compounds. Characteristics of the PID are presented in Attachment 1 and the compounds a PID can detect are presented in Attachment 2. Field screening will frequently be conducted on the following:

- Work area air to assess exposure to on-site workers of air contaminants via the air pathway;
- Well headspaces as a precautionary measure each time the well cover is opened; and
- Headspace of soil samples to assess the relative concentration of volatile organics in the sample or to select particular intervals for off-site analysis for VOCs.

II. Personnel Qualifications

Personnel performing this method should be familiar with the basic principles of quantitative analytical chemistry (such as calibration) and familiar with the particular operation of the instrument to be used.

III. Equipment List

The following materials, as required, shall be available while performing PID field screening:

- personal protective equipment (PPE), as required by the site Health and Safety Plan (HASP);
- PID and operating manual;
- PID extra battery pack and battery charger;
- calibration canisters for the PID;
- sample jars;
- Q-tips;

- aluminum foil;
- field calibration log (attached); and
- field notebook.

IV. Cautions

PIDs are sensitive to moisture and may not function under high humidity. PIDs cannot be used to indicate oxygen deficiency or combustible gases.

V. Health and Safety Considerations

Since the PIDs cannot detect all of the chemicals that may be present at a sample location, a zero reading on either instrument does not necessarily signify the absence of air contaminants. PIDs cannot be used as an indicator for oxygen deficiency.

VI. Procedure (*Note these procedures were written particular to one specific instrument model, therefore please also refer to your owners manual. However the general principles – such as always measuring both a zero and span gas after an instrument adjustment/at the beginning of the analytical day, after four hours of testing and again at the end of an analytical day can be applied to all instruments.*)

PID Calibration

PID field instruments will be calibrated and operated to yield “total organic vapor” in parts per million (ppm) (v/v) relative to benzene or isobutylene (or equivalent). Operation, maintenance, and calibration shall be performed in accordance with the manufacturer’s instructions and entered on the PID calibration and maintenance log (Attachment 3).

1. Don PPE, as required by the HASP.
2. Perform a BATTERY CHECK. Turn the FUNCTION switch to the BATTERY CHECK position. Check that the indicator is within or beyond the green battery arc. If battery is low, the battery must be charged before calibration.
3. Allow the instrument to warm up, then calibrate the PID. If equipped, turn the FUNCTION switch to the STANDBY position and rotate the ZERO

POTENTIOMETER until the meter reads zero with the instrument sampling clean air. Wait 15 to 20 seconds to confirm the adjustment. If unstable, readjust. If equipped, check to see that the SPAN POTENTIOMETER is adjusted for the probe being used (e.g., 9.8 for 10.2 electron volts [eV]). Set the FUNCTION switch to the desired ppm range (0-20, 0-200, or 0-2,000). A violet glow from the ultraviolet (UV) source should be visible at the sample inlet of the probe/sensor unit.

4. Listen for the fan operation to verify fan function.
5. Connect one end of the sampling hose to the calibration canister regulator outlet and the other end to the sampling probe of the PID. Crack the regulator valve and take a reading after 5 to 10 seconds. Adjust the span potentiometer to produce the concentration listed on the span gas cylinder. Record appropriate information on a PID Calibration and Maintenance Log (Attachment 3, or equivalent).
6. If so equipped, set the alarm at desired level.
7. Recheck the zero with fresh/clean air
8. Always recheck both zero and span after making any instrment adjustment, after four hours of screenign work and again after sample analysis.

Work Area Air Monitoring

1. Measure and record the background PID reading.
2. Measure and record the breathing space reading.

Well Headspace Screening

1. Measure and record the background PID reading.
2. Unlock and open the well cover while standing upwind of the well.
3. Remove the well cap.
4. Place the PID probe approximately 6 inches above the top of the casing.
5. Record all PID readings and proceed in accordance with the HASP.

Field Screening Procedures

Soil samples will be field screened upon collection with the PID for a relative measure of the total volatile organic concentration. The following steps define the PID field screening procedures.

1. Half-fill two clean glass jars with the sample (if sufficient quantities of soil are available) to be analyzed. Quickly cover each open top with one or two sheets of clean aluminum foil and subsequently apply screw caps to tightly seal the jars. Sixteen-ounce (approximately 500 mL) soil or "mason" type jars are preferred; jars less than 8 ounces (approximately 250 mL) total capacity may not be used.
2. Allow headspace development for at least 10 minutes. Vigorously shake jars for 15 seconds at both the beginning and end of the headspace development period. Where ambient temperatures are below 32°F (0°C), headspace development should be within a heated building.
3. Subsequent to headspace development, remove screw lid to expose the foil seal. Quickly puncture foil seal with instrument sampling probe, to a point about one-half of the headspace depth. Exercise care to avoid contact with water droplets or soil particulates.
4. Following probe insertion through foil seal, record the highest meter response for each sample as the jar headspace concentration. Using the foil seal/probe insertion method, maximum response should occur between 2 and 5 seconds. Erratic meter response may occur at high organic vapor concentrations or conditions of elevated headspace moisture, in which case headspace data should be recorded and erratic meter response noted.
5. The headspace screening data from both jar samples should be recorded and compared; generally, replicate values should be consistent to plus or minus 20%. It should be noted that in some cases (e.g., 6-inch increment soil borings), sufficient sample quantities may not be available to perform duplicate screenings. One screening will be considered sufficient for this case.
6. PID field instruments will be operated and calibrated to yield "total organic vapors" in ppm (v/v) as benzene. PID instruments must be operated with at least a 10.0 eV (+) lamp source. Operation, maintenance, and calibration will be performed in accordance with the manufacturer's specifications presented in Attachment 12-1. For jar headspace analysis, instrument calibration will be checked/adjusted at least twice per day, at the beginning and end of each day

of use. Calibration will exceed twice per day if conditions and/or manufacturer's specifications dictate.

7. Instrumentation with digital (LED/LCD) displays may not be able to discern maximum headspace response unless equipped with a "maximum hold" feature or strip-chart recorder.

VII. Waste Management

Do not dispose canisters of compressed gas, if there is still compressed gas in the canister. Return the canister to the manufacturer for proper disposal.

VIII. Data Recording and Management

Measurements will be recorded in the field notebook or boring logs at the time of measurement with notation of date, time, location, depth (if applicable), and item monitored. If a data memory is available, readings will be downloaded from the unit upon access to a computer with software to retrieve the data.

IX. Quality Assurance

After each use, the readout unit should be wiped down with a clean cloth or paper towel.

For a HNu, the UV light source window and ionization chamber should be cleaned once a month in the following manner:

1. With the PID off, disconnect the sensor/probe from the unit.
2. Remove the exhaust screw, grasp the end cap in one hand and the probe shell in the other, and pull apart.
3. Loosen the screws on top of the end cap and separate the end cap and ion chamber from the lamp and lamp housing.
4. Tilt the lamp housing with one hand over the opening so that the lamp slides out into your hand.
5. Clean the lamp with lens paper and HNu cleaning compound (except 11.7 eV). For the 11.7 eV lamp, use a chlorinated organic solvent.

6. Clean the ion chamber using methanol on a Q-tip and then dry gently at 50°C to 60°C for 30 minutes.
7. Following cleaning, reassemble by first sliding the lamp back into the lamp housing. Place ion chamber on top of the housing, making sure the contacts are properly aligned.
8. Place the end cap on top of the ion chamber and replace the two screws (tighten the screws only enough to seal the o-ring).
9. Line up the pins on the base of the lamp housing with pins inside the probe shell and slide the housing assembly into the shell.

X. References

Denahan, S.A. et. al "Relationships Between Chemical Screening Methodologies for Petroleum Contaminated Soils: Theory and Practice" *Chapter 5 In Principles and Practices for Petroleum Contaminated Soils*, E.J. Calabrese and P.T. Kostecki Eds., Lewis Publishers 1993.

Fitzgerald, J. "Onsite Analytical Screening of Gasoline Contaminated Media Using a Jar Headspace Procedure" *Chapter 4 in Principles and Practices for Petroleum Contaminated Soils*, E.J. Calabrese and P.T. Kostecki Eds., Lewis Publishers 1993.

ATTACHMENT 1

Characteristics of the Photoionization Detector (PID)

I. Introduction

PIDs are used in the field to detect a variety of compounds in air. PIDs can be used to detect leaks of volatile substances in drums and tanks, to determine the presence of volatile compounds in soil and water, and to make ambient air surveys. If personnel are thoroughly trained to operate the instrument and interpret the data, these PID instruments can be a valuable tool. Its use can help in deciding the level of protection to be worn, assist in determining the implementation of other safety procedures, and in determining subsequent monitoring or sampling locations.

Portable PIDs detect the concentration of organic gases, as well as a few inorganic gases. The basis for detection is the ionization of gaseous species. The incoming gas molecules are subjected to UV radiation, which ionizes molecules that have an ionization potential (IP) less than or equal to that rated for the UV source. Every molecule has a characteristic IP, which is the energy required to remove an electron from the molecule, thus yielding a positively charged ion and the free electron. These ions are attracted to an oppositely charged electrode, causing a current and an electric signal to the LED display. Compounds are measured on a ppm volume basis.

II. HNu PI-101 / MiniRAE or Equivalent PID

The PIDs detect the concentration of organic gases, as well as a few inorganic gases. The basis for detection is the ionization of gaseous species. The incoming gas molecules are subjected to UV radiation, which is energetic enough to ionize many gaseous compounds. Each molecule is transformed into charged ion pairs, creating a current between two electrodes. Every molecule has a characteristic IP, which is the energy required to remove an electron from the molecule, yielding a positively charged ion and the free electron.

Three probes, each containing a different UV light source, are available for use with the PID. Probe energies are typically 9.5, 10.2, and 11.7 eV, respectively. All three probes detect many aromatic and large-molecule hydrocarbons. In addition, the 10.2 eV and 11.7 eV probes detect some smaller organic molecules and some halogenated hydrocarbons. The 10.2 eV probe is the most useful for environmental response work, as it is more durable than the 11.7 eV probe and detects more compounds than the 9.5 eV probe. A listing of molecules and compounds that the HNu can detect is presented in Attachment 2.

The primary PID calibration gas is either benzene or isobutylene. The span potentiometer knob is turned to 9.8 for benzene calibration. A knob setting of zero increases the sensitivity to benzene approximately 10-fold. Its lower detection limit is in the low ppm range. Additionally, response time is rapid; the dot matrix liquid crystal displays 90% of the indicated concentration within 3 seconds.

III. Limitations

The PID instrument can monitor several vapors and gases in air. Many non-volatile liquids, toxic solids, particulates, and other toxic gases and vapors, however, cannot be detected with PIDs (such as methane). Since the PIDs cannot detect all of the chemicals that may be present at a sample location, a zero reading on either instrument does not necessarily signify the absence of air contaminants.

The PID instrument is generally not specific and their response to different compounds is relative to the calibration gases. Instrument readings may be higher or lower than the true concentration. This effect can be observed when monitoring total contaminant concentrations if several different compounds are being detected at once. In addition, the response of these instruments is not linear over the entire detection range. Therefore, care must be taken when interpreting the data. Concentrations should be reported in terms of the calibration gas and probe type.

PIDs are small, portable instruments and may not yield results as accurate as laboratory instruments. PIDs were originally designed for specific industrial applications. They are relatively easy to use and interpret when detecting total concentrations of known contaminants in air, but interpretation becomes more difficult when trying to identify the individual components of a mixture. PIDs cannot be used as an indicator for combustible gases or oxygen deficiency.

ATTACHMENT 2

Molecules and Compounds Detected by a PID

<u>Some Atoms and Simple Molecules</u>			<u>Paraffins and Cycloparaffins</u>	
	<u>IP(eV)</u>	<u>IP(eV)</u>	<u>Molecule</u>	<u>IP(eV)</u>
H	13.595 I ₂	9.28	methane	12.98
C	11.264 HF	15.77	ethane	11.65
N	14.54 HCl	12.74	propane	11.07
O	13.614 HBr	11.62	n-butane	10.63
Si	8.149 HI	10.38	i-butane	10.57
S	10.357 SO ₂	12.34	n-pentane	10.35
F	17.42 CO ₂	13.79	i-pentane	10.32
Cl	13.01 COS	11.18	2,2-dimethylpropane	10.35
Br	11.84 CS ₂	10.08	n-hexane	10.18
I	10.48 N ₂ O	12.90	2-methylpentane	10.12
H ₂	15.426 NO ₂	9.78	3-methylpentane	10.08
N ₂	15.580 O ₃	12.80	2,2-dimethylbutane	10.06
O ₂	12.075 H ₂ O	12.59	2,3-dimethylbutane	10.02
CO	14.01 H ₂ S	10.46	n-heptane	10.08
CN	15.13 H ₂ Se	9.88	2,2,4-trimethylpentane	9.86
NO	9.25 H ₂ Te	9.14	cyclopropane	10.06
CH	11.1 HCN	3.91	cyclopentane	10.53
OH	13.18 C ₂ N ₂	13.8	cyclohexane	9.88
F ₂	15.7 NH ₃	10.15	methlycyclohexane	9.8
Cl ₂	11.48 CH ₃	9.840		
Br ₂	10.55 CH ₄	12.98		

<u>Alkyl Halides</u>		<u>Alkyl Halides</u>	
<u>IP(eV)</u>	<u>IP(eV)</u>	<u>Molecule</u>	<u>IP(eV)</u>
HCl	12.74	methyl iodide	9.54
Cl ₂	11.48	diiodomethane	9.34
CH ₄	12.98	ethyl iodide	9.33
methyl chloride	11.28	1-iodopropane	9.26
dichloroemethane	11.35	2-iodopropane	9.17
trichloromethane	11.42	1-iodobutane	9.21
tetrachloromethane	11.47	2-iodobutane	9.09
ethyl chloride	10.98	1-iodo-2-methylpropane	9.18
1,2-dichloroethane	11.12	2-iodo-2-methylpropane	9.02
1-chloropropane	10.82	1-iodopentane	9.19
2-chloropropane	10.78	F ₂	15.7
1,2-dichloropropane	10.87	HF	15.77
1,3-dichloropropane	10.85	CFCl ₃ (Freon 11)	11.77
1-chlorobutane	10.67	CF ₂ Cl ₂ (Freon 12)	12.31
2-chlorobutane	10.65	CF ₃ Cl (Freon 13)	12.91
1-chloro-2-methylpropane	10.66	CHClF ₂ (Freon 22)	12.45
2-chloro-2-methylpropane	10.61	CFBR ₃	10.67
HBr	11.62	CF ₂ Br ₂	11.07
Br ₂	10.55	CH ₃ CF ₂ Cl (Genetron 101)	11.98
methyl bromide	10.53	CFCl ₂ CF ₂ Cl	11.99
dibromomethane	10.49	CF ₃ CCl ₃ (Freon 113)	11.78
tribromomethane	10.51	CFHBrCH ₂ Cr	10.75
CH ₂ BrCl	10.77	CF ₂ BrCH ₂ Br	10.83
CHBr ₂ Cl	10.59	CF ₃ CH ₂ I	10.00
ethyl bromide	10.29	n-C ₃ F ₇ I	10.36
1,1-dibromoethane	10.19	n-C ₃ F ₇ CH ₂ Cl	11.84
1-bromo-2-chloroethane	10.63	n-C ₃ F ₇ CH ₂ I	9.96
1-bromopropane	10.18		
2-bromopropane	10.075		
1,3-dibromopropane	10.07		
1-bromobutane	10.13		
2-bromobutane	9.98		
1-bromo-2-methylpropane	10.09		
2-bromo-2-methylpropane	9.89		
1-bromopentane	10.10		
HI	10.38		
I ₂	9.28		

Aliphatic Alcohol, Ether, Thiol, and Sulfides

<u>Molecule</u>	<u>IP(eV)</u>
H ₂ O	12.59
methyl alcohol	10.85
ethyl alcohol	10.48
n-propyl alcohol	10.20
i-propyl alcohol	10.16
n-butyl alcohol	10.04
dimethyl ether	10.00
diethyl ether	9.53
n-propyl ether	9.27
i-propyl ether	9.20
H ₂ S	10.46
methanethiol	9.440
ethanethiol	9.285
1-propanethiol	9.195
1-butanethiol	9.14
dimethyl sulfide	8.685
ethyl methyl sulfide	8.55
diethyl sulfide	8.430
di-n-propyl sulfide	8.30

Aliphatic Aldehydes and Ketones

<u>Molecule</u>	<u>IP(eV)</u>
CO ₂	13.79
formaldehyde	10.87
acetaldehyde	10.21
propionaldehyde	9.98
n-butyraldehyde	9.86
isobutyraldehyde	9.74
n-valeraldehyde	9.82
isovaleraldehyde	9.71
acrolein	10.10
crotonaldehyde	9.73
benzaldehyde	9.53
acetone	9.69
methyl ethyl ketone	9.53
methyl n-propyl ketone	9.39
methyl i-propyl ketone	9.32
diethyl ketone	9.32
methyl n-butyl ketone	9.34
methyl i-butyl ketone	9.30
3,3-dimethyl butanone	9.17
2-heptanone	9.33
cyclopentanone	9.26
cyclohexanone	9.14
2,3-butanedione	9.23
2,4-pentanedione	8.87

Aliphatic Acids and Esters

<u>Molecule</u>	<u>IP(eV)</u>
CO ₂	13.79
formic acid	11.05
acetic acid	10.37
propionic acid	10.24
n-butyric acid	10.16
isobutyric acid	10.02
n-valeric acid	10.12
methyl formate	10.815
ethyl formate	10.61
n-propyl formate	10.54
n-butyl formate	10.50
isobutyl formate	10.46
methyl acetate	10.27
ethyl acetate	10.11
n-propyl acetate	10.04
isopropyl acetate	9.99
n-butyl acetate	10.01
isobutyl acetate	9.97
sec-butyl acetate	9.91
methyl propionate	10.15
ethyl propionate	10.00
methyl n-butyrate	10.07
methyl isobutyrate	9.98

Aliphatic Amines and Amides

<u>Molecule</u>	<u>IP(eV)</u>
NH ₃	10.15
methyl amine	8.97
ethyl amine	8.86
n-propyl amine	8.78
i-propyl amine	8.72
n-butyl amine	8.71
i-butyl amine	8.70
s-butyl amine	8.70
t-butyl amine	8.64
dimethyl amine	8.24
diethyl amine	8.01
di-n-propyl amine	7.84
di-i-propyl amine	7.73
di-n-butyl amine	7.69
trimethyl amine	7.82
triethyl amine	7.50
tri-n-propyl amine	7.23
formamide	10.25
acetamide	9.77
N-methyl acetamide	8.90
N,N-dimethyl formamide	9.12
N,N-dimethyl acetamide	8.81
N,N-diethyl formamide	8.89
N,N-diethyl acetamide	8.60

Other Aliphatic Molecules with N Atom

<u>Molecule</u>	<u>IP(eV)</u>
nitromethane	11.08
nitroethane	10.88
1-nitropropane	10.81
2-nitropropane	10.71
HCN	13.91
acetonitrile	12.22
propionitrile	11.84
n-butyronitrile	11.67
acrylonitrile	10.91
3-butene-nitrile	10.39
ethyl nitrate	11.22
n-propyl nitrate	
methyl thiocyanate	10.065
ethyl thiocyanate	9.89
methyl isothiocyanate	9.25
ethyl isothiocyanate	9.14

Olefins, Cyclo-olefins, Acetylenes

<u>Molecule</u>	<u>IP(eV)</u>
ethylene	10.515
propylene	9.73
1-butene	9.58
2-methylpropene	9.23
trans-2-butene	9.13
cis-2-butene	9.13
1-pentene	9.50
2-methyl-1-butene	9.12
3-methyl-1-butene	9.51
3-methyl-2-butene	8.67
1-hexene	9.46
1,3-butadiene	9.07
isoprene	8.845
cyclopentene	9.01
cyclohexene	8.945
4-methylcyclohexene	8.91
4-cinylcyclohexene	8.93
cyclo-octatetraene	7.99
acetylene	11.41
propyne	10.36
1-butyne	10.18

Some Derivatives of Olefins

<u>Molecule</u>	<u>IP(eV)</u>
vinyl chloride	9.995
cis-dichloroethylene	9.65
trans-dichloroethylene	9.66
trichloroethylene	9.45
tetrachloroethylene	9.32
vinyl bromide	9.80
1,2-dibromoethylene	9.45
tribromoethylene	9.27
3-chloropropene	10.04
2,3-dichloropropene	9.82
1-bromopropene	9.30
3-bromopropene	9.7
CF ₃ CCl=CClCF ₃	10.36
n-C ₅ F ₁₁ CF=CF ₂	10.48
acrolein	10.10
crotonaldehyde	9.73
mesityl oxide	9.08
vinyl methyl ether	8.93
allyl alcohol	9.67
vinyl acetate	9.19

Aromatic Compounds

<u>Molecule</u>	<u>IP(eV)</u>
benzene	9.245
toluene	8.82
ethyl benzene	8.76
n-propyl benzene	8.72
i-propyl benzene	8.69
n-butyl benzene	8.69
s-butyl benzene	8.68
t-butyl benzene	8.68
o-xylene	8.56
m-xylene	8.56
p-xylene	8.445
mesitylene	8.40
durene	8.025
styrene	8.47
alpha-methyl styrene	8.35
ethynylbenzene	8.815
naphthalene	8.12
1-methylnaphthalene	7.69
2-methylnaphthalene	7.955
biphenyl	8.27
phenol	8.50
anisole	8.22
phenetole	8.13
benzaldehyde	9.53
acetophenone	9.27
benzenethiol	8.33
phenyl isocyanate	8.77

Aromatic Compounds

<u>Molecule</u>	<u>IP(eV)</u>
phenyl isothiocyanate	8.520
benzonitrile	9.705
nitrobenzene	9.92
aniline	7.70
fluoro-benzene	9.195
chloro-benzene	9.07
bromo-benzene	8.98
iodo-benzene	8.73
o-dichlorobenzene	9.07
m-dichlorobenzene	9.12
p-dichlorobenzene	8.94
1-chloro-2-fluorobenzene	9.155
1-chloro-3-fluorobenzene	9.21
1-chloro-4-fluorobenzene	8.99
o-fluorotoluene	8.915
m-fluorotoluene	8.915
p-fluorotoluene	8.785
o-chlorotoluene	8.83
m-chlorotoluene	8.83
p-chlorotoluene	8.70
o-bromotoluene	8.79
m-bromotoluene	8.81
p-bromotoluene	8.67
o-iodotoluene	8.62
m-iodotoluene	8.61
p-iodotoluene	8.50
benzotrifluoride	9.68
o-fluorophenol	8.66

Heterocyclic Molecules

<u>Molecule</u>	<u>IP(eV)</u>
furan	8.89
2-methyl furan	8.39
2-furaldehyde	9.21
tetrahydrofuran	9.54
dihydropyran	8.34
tetrahydropyran	9.26
thiophene	8.860
2-chlorothiophene	8.68
2-bromothiophene	8.63
pyrrole	8.20
pyridine	9.32
2-picoline	9.02
3-picoline	9.04
4-picoline	9.04
2,3-lutidine	8.85
2,4-lutidine	8.85
2,6-lutidine	8.85

Miscellaneous Molecules

<u>Molecule</u>	<u>IP(eV)</u>
ethylene oxide	10.565
propylene oxide	10.22
p-dioxane	9.13
dimethoxymethane	10.00
diethoxymethane	9.70
1,1-dimethoxyethane	9.65
propiolactone	9.70
methyl disulfide	8.46
ethyl disulfide	8.27
diethyl sulfite	9.68
thiolacetic acid	10.00
acetyl chloride	11.02
acetyl bromide	10.55
cyclo-C ₆ H ₁₁ CF ₃	10.46
(n-C ₃ F ₇)(CH ₃)C=O	10.58
trichlorovinylsilane	10.79
(C ₂ F ₅) ₃ N	11.7
isoprene	9.08
phosgene	11.77

Notes:

Reference: HNu Systems, Inc., 1985

IP = Ionization Potential

**Low-Flow Groundwater
Purging and Sampling
Procedures for Monitoring
Wells**

Rev. #: 4

Rev Date: February 2, 2011

Approval Signatures

Prepared by: *Daniel A. Lipson* Date: 2/2/2011

Reviewed by: *Michael J. Goffall* Date: 2/2/2011
(Technical Expert)

I. Scope and Application

Groundwater samples will be collected from monitoring wells to evaluate groundwater quality. The protocol presented in this standard operating procedure (SOP) describes the procedures to be used to purge monitoring wells and collect groundwater samples. This protocol has been developed in accordance with the United States Environmental Protection Agency (USEPA) Region I Low Stress (Low Flow) Purging and Sampling Procedures for the Collection of Groundwater Samples from Monitoring Wells (USEPA SOP No. GW0001; July 30, 1996). Both filtered and unfiltered groundwater samples may be collected using this low-flow sampling method. Filtered samples will be obtained using a 0.45-micron disposable filter. No wells will be sampled until well development has been performed in accordance with the procedures presented in the SOP titled Monitoring Well Development, unless that well has been sampled or developed within the prior 1-year time period. Groundwater samples will not be collected within 1 week following well development.

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 - bladder pump (e.g., Marschalk System 1, QED Well Wizard, Geotech, etc.).
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 - Submersible pumps such as Grundfos require a pump controller to run the pump
 - Bladder pumps require a pump controller and a gas source (e.g., air compressor or compressed N₂ or CO₂ gas cylinders).
- Teflon[®] tubing or Teflon[®]-lined polyethylene tubing of an appropriate size for the pump being used. For peristaltic pumps, dedicated Tygon[®] tubing (or other type as specified by the manufacturer) will also be used through the pump apparatus.
- Water-level probe (e.g., Solinist Model 101).
- Water-quality (temperature/pH/specific conductivity/ORP/turbidity/dissolved oxygen) meter and flow-through measurement cell. Several brands may be used, including:
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- Appropriate water sample containers (supplied by the laboratory).
- Appropriate blanks (trip blank supplied by the laboratory).
- 0.45-micron disposable filters (if field filtering is required).
- Large glass mixing container (if sampling with a bailer).
- Teflon[®] stirring rod (if sampling with a bailer).
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- Groundwater sampling log (attached) or bound field logbook.

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Use caution when removing well caps as well may be under pressure, cap can dislodge forcefully and cause injury.

Use caution when opening protective casing on stickup wells as wasps frequently nest inside the tops of the covers. Also watch for fire ant mounds near well pads when sampling in the south or western U.S.

VI. Procedure

Groundwater will be purged from the wells using an appropriate pump. Peristaltic pumps will initially be used to purge and sample all wells when applicable. If the depth to water is below the sampling range of a peristaltic pump (approximately 25 feet), submersible pumps or bladder pumps will be used provided the well is constructed with a casing diameter greater than or equal to 2 inches (the minimum well diameter capable of accommodating such pumps). Bladder pumps are preferred over peristaltic and submersible pumps if sampling of VOCs is required to prevent volatilization. For smaller diameter wells where the depth to water is below the sampling range of a

peristaltic pump, alternative sampling methods (i.e., bailing or small diameter bladder pumps) will be used to purge and sample the groundwater. Purge water will be collected and containerized.

1. Calibrate field instruments according to manufacturer procedures for calibration.
2. Measure initial depth to groundwater prior to placement of pumps.
3. Prepare and install pump in well: For submersible and non-dedicated bladder pumps, decontaminate pump according to site decontamination procedures. Non-dedicated bladder pumps will require a new Teflon[®] bladder and attachment of an air line, sample discharge line, and safety cable prior to placement in the well. Attach the air line tubing to the air port on the top of the bladder pump. Attach the sample discharge tubing to the water port on the top of the bladder pump. Care should be taken not to reverse the air and discharge tubing lines during bladder pump set-up as this could result in bladder failure or rupture. Attach and secure a safety cable to the eyebolt on the top of bladder pump (if present, depending on pump model used). Slowly lower pump, safety cable, tubing, and electrical lines into the well to a depth corresponding to the approximate center of the saturated screen section of the well. Take care to avoid twisting and tangling of safety cable, tubing, and electrical lines while lowering pump into well; twisted and tangled lines could result in the pump becoming stuck in the well casing. Also, make sure to keep tubing and lines from touching the ground or other surfaces while introducing them into the well as this could lead to well contamination. If a peristaltic pump is being used, slowly lower the sampling tubing into the well to a depth corresponding to the approximate center of the saturated screen section of the well. The pump intake or sampling tube must be kept at least 2 feet above the bottom of the well to prevent mobilization of any sediment present in the bottom of the well.
4. If using a bladder pump, connect the air line to the pump controller output port. The pump controller should then be connected to a supply line from an air compressor or compressed gas cylinder using an appropriate regulator and air hose. Take care to tighten the regulator connector onto the gas cylinder (if used) to prevent leaks. Teflon tape may be used on the threads of the cylinder to provide a tighter seal. Once the air compressor or gas cylinder is connected to the pump controller, turn on the compressor or open the valve on the cylinder to begin the gas flow. Turn on the pump controller if an on/off switch is present and verify that all batteries are charged and fully operating before beginning to pump.
5. Connect the pump discharge water line to the bottom inlet port on the flow-through cell connected to the water quality meter.

6. Measure the water level again with the pump in the well before starting the pump. Start pumping the well at 200 to 500 milliliters (mL) per minute (or at lower site-specific rate if specified). The pump rate should be adjusted to cause little or no water level drawdown in the well (less than 0.3 feet below the initial static depth to water measurement) and the water level should stabilize. The water level should be monitored every 3 to 5 minutes (or as appropriate, lower flow rates may require longer time between readings) during pumping if the well diameter is of sufficient size to allow such monitoring. Care should be taken not to break pump suction or cause entrainment of air in the sample. Record pumping rate adjustments and depths to water. If necessary, pumping rates should be reduced to the minimum capabilities of the pump to avoid pumping the well dry and/or to stabilize indicator parameters. A steady flow rate should be maintained to the extent practicable. Groundwater sampling records from previous sampling events (if available) should be reviewed prior to mobilization to estimate the optimum pumping rate and anticipated drawdown for the well in order to more efficiently reach a stabilized pumping condition.

If the recharge rate of the well is very low, alternative purging techniques should be used, which will vary based on the well construction and screen position. For wells screened across the water table, the well should be pumped dry and sampling should commence as soon as the volume in the well has recovered sufficiently to permit collection of samples. For wells screened entirely below the water table, the well should be pumped until a stabilized level (which may be below the maximum displacement goal of 0.3 feet) can be maintained and monitoring for stabilization of field indicator parameters can commence. If a lower stabilization level cannot be maintained, the well should be pumped until the drawdown is at a level slightly higher than the bentonite seal above the well screen. Sampling should commence after one well volume has been removed and the well has recovered sufficiently to permit collection of samples.

During purging, monitor the field indicator parameters (e.g., turbidity, temperature, specific conductance, pH, etc.) every 3 to 5 minutes (or as appropriate). Field indicator parameters will be measured using a flow-through analytical cell or a clean container such as a glass beaker. Record field indicator parameters on the groundwater sampling log. The well is considered stabilized and ready for sample collection when turbidity values remain within 10% (or within 1 NTU if the turbidity reading is less than 10 NTU), the specific conductance and temperature values remain within 3%, ORP readings remain within ± 10 mV and pH remains within 0.1 units for three consecutive readings collected at 3- to 5-minute intervals (or other appropriate interval, alternate stabilization goals may exist in different geographic regions, consult the site-specific Work Plan for stabilization criteria). If the field indicator parameters do not stabilize within 1 hour of the start of purging, but the groundwater turbidity is

below the goal of 50 NTU and the values for all other parameters are within 10%, the well can be sampled. If the parameters have stabilized but the turbidity is not in the range of the 50 NTU goal, the pump flow rate should be decreased to a minimum rate of 100 mL/min to reduce turbidity levels as low as possible. Dissolved oxygen is extremely susceptible to various external influences (including temperature or the presence of bubbles on the DO meter); care should be taken to minimize the agitation or other disturbance of water within the flow-through cell while collecting these measurements. If air bubbles are present on the DO probe or in the discharge tubing, remove them before taking a measurement. If dissolved oxygen values are not within acceptable range for the temperature of groundwater (Attachment 1), then again check for and remove air bubbles on probe before re-measuring. If the dissolved oxygen value is 0.00 or less, then the meter should be serviced and re-calibrated. If the dissolved oxygen values are above possible results, then the meter should be serviced and re-calibrated.

During extreme weather conditions, stabilization of field indicator parameters may be difficult to obtain. Modifications to the sampling procedures to alleviate these conditions (e.g., measuring the water temperature in the well adjacent to the pump intake) will be documented in the field notes. If other field conditions exist that preclude stabilization of certain parameters, an explanation of why the parameters did not stabilize will also be documented in the field logbook.

7. Complete the sample label(s) and cover the label(s) with clear packing tape to secure the label onto the container.
8. After the indicator parameters have stabilized, collect groundwater samples by diverting flow out of the unfiltered discharge tubing into the appropriate labeled sample container. If a flow-through analytical cell is being used to measure field parameters, the flow-through cell should be disconnected after stabilization of the field indicator parameters and prior to groundwater sample collection. Under no circumstances should analytical samples be collected from the discharge of the flow-through cell. When the container is full, tightly screw on the cap. Samples should be collected in the following order: VOCs, TOC, SVOCs, metals and cyanide, and others (or other order as defined in the site-specific Work Plan).
9. If sampling for total and filtered metals and/or PCBs, a filtered and unfiltered sample will be collected. Install an in-line, disposable 0.45-micron particle filter on the discharge tubing after the appropriate unfiltered groundwater sample has been collected. Continue to run the pump until an initial volume of "flush" water has been run through the filter in accordance with the manufacturer's directions (generally 100 to 300 mL). Collect filtered groundwater sample by diverting flow

out of the filter into the appropriately labeled sample container. When the container is full, tightly screw on the cap.

10. Secure with packing material and store at 4°C in an insulated transport container provided by the laboratory.
11. Record on the groundwater sampling log or bound field logbook the time sampling procedures were completed, any pertinent observations of the sample (e.g., physical appearance, and the presence or lack of odors or sheens), and the values of the stabilized field indicator parameters as measured during the final reading during purging (Attachment 2 – Example Sampling Log).
12. Turn off the pump and air compressor or close the gas cylinder valve if using a bladder pump set-up. Slowly remove the pump, tubing, lines, and safety cable from the well. Do not allow the tubing or lines to touch the ground or any other surfaces which could contaminate them.
13. If tubing is to be dedicated to a well, it should be folded to a length that will allow the well to be capped and also facilitate retrieval of the tubing during later sampling events. A length of rope or string should be used to tie the tubing to the well cap. Alternatively, if tubing and safety line are to be saved and reused for sampling the well at a later date they may be coiled neatly and placed in a clean plastic bag that is clearly labeled with the well ID. Make sure the bag is tightly sealed before placing it in storage.
14. Secure the well and properly dispose of personal protective equipment (PPE) and disposable equipment.
15. Complete the procedures for packaging, shipping, and handling with associated chain-of-custody.
16. Complete decontamination procedures for flow-through analytical cell and submersible or bladder pump, as appropriate.
17. At the end of the day, perform calibration check of field instruments.

If it is not technically feasible to use the low-flow sampling method, purging and sampling of monitoring wells may be conducted using the bailer method as outlined below:

1. Don appropriate PPE (as required by the HASP).
2. Place plastic sheeting around the well.

3. Clean sampling equipment.
4. Open the well cover while standing upwind of the well. Remove well cap and place on the plastic sheeting. Insert PID probe approximately 4 to 6 inches into the casing or the well headspace and cover with gloved hand. Record the PID reading in the field log. If the well headspace reading is less than 5 PID units, proceed; if the headspace reading is greater than 5 PID units, screen the air within the breathing zone. If the breathing zone reading is less than 5 PID units, proceed. If the PID reading in the breathing zone is above 5 PID units, move upwind from well for 5 minutes to allow the volatiles to dissipate. Repeat the breathing zone test. If the reading is still above 5 PID units, don appropriate respiratory protection in accordance with the requirements of the HASP. Record all PID readings. For wells that are part of the regular weekly monitoring program and prior PID measurements have not resulted in a breathing zone reading above 5 PID units, PID measurements will be taken monthly.
5. Measure the depth to water and determine depth of well by examining drilling log data or by direct measurement. Calculate the volume of water in the well (in gallons) by using the length of the water column (in feet), multiplying by 0.163 for a 2-inch well or by 0.653 for a 4-inch well. For other well diameters, use the formula:

$$\text{Volume (in gallons)} = \pi \text{ TIMES well radius (in feet) squared TIMES length of water column (in feet) TIMES } 7.481 \text{ (gallons per cubic foot)}$$
6. Measure a length of rope or twine at least 10 feet greater than the total depth of the well. Secure one end of the rope to the well casing and secure the other end to the bailer. Test the knots and make sure the rope will not loosen. Check bailers so that all parts are intact and will not be lost in the well.
7. Lower bailer into well and remove one well volume of water. Contain all water in appropriate containers.
8. Monitor the field indicator parameters (e.g., turbidity, temperature, specific conductance, and pH). Measure field indicator parameters using a clean container such as a glass beaker or sampling cups provided with the instrument. Record field indicator parameters on the groundwater sampling log.
9. Repeat Steps 7 and 8 until three or four well volumes have been removed. Examine the field indicator parameter data to determine if the parameters have stabilized. The well is considered stabilized and ready for sample collection when turbidity values remain within 10% (or within 1 NTU if the turbidity reading is less than 10 NTU), the specific conductance and temperature values remain

within 3%, and pH remains within ± 0.1 units for three consecutive readings collected once per well volume removed.

10. If the field indicator parameters have not stabilized, remove a maximum of five well volumes prior to sample collection. Alternatively, five well volumes may be removed without measuring the field indicator parameters.
11. If the recharge rate of the well is very low, wells screened across the water table may be bailed dry and sampling should commence as soon as the volume in the well has recovered sufficiently to permit collection of samples. For wells screened entirely below the water table, the well should only be bailed down to a level slightly higher than the bentonite seal above the well screen. The well should not be bailed completely dry, to maintain the integrity of the seal. Sampling should commence as soon as the well volume has recovered sufficiently to permit sample collection.
12. Following purging, allow water level in well to recharge to a sufficient level to permit sample collection.
13. Complete the sample label and cover the label with clear packing tape to secure the label onto the container.
14. Slowly lower the bailer into the screened portion of the well and carefully retrieve a filled bailer from the well causing minimal disturbance to the water and any sediment in the well.
15. The sample collection order (as appropriate) will be as follows:
 - a. VOCs;
 - b. TOC;
 - c. SVOCs;
 - d. metals and cyanide; and
 - e. others.
16. When sampling for volatiles, collect water samples directly from the bailer into 40-mL vials with Teflon[®]-lined septa.
17. For other analytical samples, remove the cap from the large glass mixing container and slowly empty the bailer into the large glass mixing container. The

sample for dissolved metals and/or filtered PCBs should either be placed directly from the bailer into a pressure filter apparatus or pumped directly from the bailer with a peristaltic pump, through an in-line filter, into the pre-preserved sample bottle.

18. Continue collecting samples until the mixing container contains a sufficient volume for all laboratory samples.
19. Mix the entire sample volume with the Teflon[®] stirring rod and transfer the appropriate volume into the laboratory jar(s). Secure the sample jar cap(s) tightly.
20. If sampling for total and filtered metals and/or PCBs, a filtered and unfiltered sample will be collected. Sample filtration for the filtered sample will be performed in the field using a peristaltic pump prior to preservation. Install new medical-grade silicone tubing in the pump head. Place new Teflon[®] tubing into the sample mixing container and attach to the intake side of pump tubing. Attach (clamp) a new 0.45-micron filter (note the filter flow direction). Turn the pump on and dispense the filtered liquid directly into the laboratory sample bottles.
21. Secure with packing material and store at 4°C in an insulated transport container provided by the laboratory.
22. After sample containers have been filled, remove one additional volume of groundwater. Measure the pH, temperature, turbidity, and conductivity. Record on the groundwater sampling log or bound field logbook the time sampling procedures were completed, any pertinent observations of the sample (e.g., physical appearance, and the presence or lack of odors or sheens), and the values of the field indicator parameters.
23. Remove bailer from well, secure well, and properly dispose of PPE and disposable equipment.
24. If a bailer is to be dedicated to a well, it should be secured inside the well above the water table, if possible. Dedicated bailers should be tied to the well cap so that inadvertent loss of the bailer will not occur when the well is opened.
25. Complete the procedures for packaging, shipping, and handling with associated chain-of-custody.

VII. Waste Management

Materials generated during groundwater sampling activities, including disposable equipment, will be placed in appropriate containers. Containerized waste will be disposed of by the client consistent with the procedures identified in the HASP.

VIII. Data Recording and Management

Initial field logs and chain-of-custody records will be transmitted to the ARCADIS PM at the end of each day unless otherwise directed by the PM. The groundwater team leader retains copies of the groundwater sampling logs.

IX. Quality Assurance

In addition to the quality control samples to be collected in accordance with this SOP, the following quality control procedures should be observed in the field:

- Collect samples from monitoring wells in order of increasing concentration, to the extent known based on review of historical site information if available.
- Equipment blanks should include the pump and tubing (if using disposable tubing) or the pump only (if using tubing dedicated to each well).
- Collect equipment blanks after wells with higher concentrations (if known) have been sampled.
- Operate all monitoring instrumentation in accordance with manufacturer's instructions and calibration procedures. Calibrate instruments at the beginning of each day and verify the calibration at the end of each day. Record all calibration activities in the field notebook.
- Clean all groundwater sampling equipment prior to use in the first well and after each subsequent well using procedures for equipment decontamination.

X. References

United States Environmental Protection Agency (USEPA). 1986. RCRA Groundwater Monitoring Technical Enforcement Guidance Document (September 1986).

USEPA Region II. 1998. *Ground Water Sampling Procedure Low Stress (Low Flow) Purging and Sampling*.

USEPA. 1991. Handbook Groundwater, Volume II Methodology, Office of Research and Development, Washington, DC. USEPN62S, /6-90/016b (July, 1991).

U.S. Geological Survey (USGS). 1977. National Handbook of Recommended Methods for Water-Data Acquisition: USGS Office of Water Data Coordination. Reston, Virginia.

Attachment 1

Groundwater Sampling Log

Attachment 2

Oxygen Solubility in Fresh Water

Temperature (degrees C)	Dissolved Oxygen (mg/L)
0	14.6
1	14.19
2	13.81
3	13.44
4	13.09
5	12.75
6	12.43
7	12.12
8	11.83
9	11.55
10	11.27
11	11.01
12	10.76
13	10.52
14	10.29
15	10.07
16	9.85
17	9.65
18	9.45
19	9.26
20	9.07
21	8.9
22	8.72
23	8.56
24	8.4
25	8.24
26	8.09
27	7.95
28	7.81
29	7.67
30	7.54
31	7.41
32	7.28
33	7.16
34	7.05
35	6.93

Reference: Vesilind, P.A., *Introduction to Environmental Engineering*, PWS Publishing Company, Boston, 468 pages (1996).

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Store and/or stage empty and full sample containers and coolers out of direct sunlight.

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Use caution when opening protective casing on stickup wells as wasps frequently nest inside the tops of the covers. Also watch for fire ant mounds near well pads when sampling in the south or western U.S.

VI. Procedure

Groundwater will be purged from the wells using an appropriate pump. Peristaltic pumps will initially be used to purge and sample all wells when applicable. If the depth to water is below the sampling range of a peristaltic pump (approximately 25 feet), submersible pumps or bladder pumps will be used provided the well is constructed with a casing diameter greater than or equal to 2 inches (the minimum well diameter capable of accommodating such pumps). Bladder pumps are preferred over peristaltic and submersible pumps if sampling of VOCs is required to prevent volatilization. For smaller diameter wells where the depth to water is below the sampling range of a

peristaltic pump, alternative sampling methods (i.e., bailing or small diameter bladder pumps) will be used to purge and sample the groundwater. Purge water will be collected and containerized.

1. Calibrate field instruments according to manufacturer procedures for calibration.
2. Measure initial depth to groundwater prior to placement of pumps.
3. Prepare and install pump in well: For submersible and non-dedicated bladder pumps, decontaminate pump according to site decontamination procedures. Non-dedicated bladder pumps will require a new Teflon[®] bladder and attachment of an air line, sample discharge line, and safety cable prior to placement in the well. Attach the air line tubing to the air port on the top of the bladder pump. Attach the sample discharge tubing to the water port on the top of the bladder pump. Care should be taken not to reverse the air and discharge tubing lines during bladder pump set-up as this could result in bladder failure or rupture. Attach and secure a safety cable to the eyebolt on the top of bladder pump (if present, depending on pump model used). Slowly lower pump, safety cable, tubing, and electrical lines into the well to a depth corresponding to the approximate center of the saturated screen section of the well. Take care to avoid twisting and tangling of safety cable, tubing, and electrical lines while lowering pump into well; twisted and tangled lines could result in the pump becoming stuck in the well casing. Also, make sure to keep tubing and lines from touching the ground or other surfaces while introducing them into the well as this could lead to well contamination. If a peristaltic pump is being used, slowly lower the sampling tubing into the well to a depth corresponding to the approximate center of the saturated screen section of the well. The pump intake or sampling tube must be kept at least 2 feet above the bottom of the well to prevent mobilization of any sediment present in the bottom of the well.
4. If using a bladder pump, connect the air line to the pump controller output port. The pump controller should then be connected to a supply line from an air compressor or compressed gas cylinder using an appropriate regulator and air hose. Take care to tighten the regulator connector onto the gas cylinder (if used) to prevent leaks. Teflon tape may be used on the threads of the cylinder to provide a tighter seal. Once the air compressor or gas cylinder is connected to the pump controller, turn on the compressor or open the valve on the cylinder to begin the gas flow. Turn on the pump controller if an on/off switch is present and verify that all batteries are charged and fully operating before beginning to pump.
5. Connect the pump discharge water line to the bottom inlet port on the flow-through cell connected to the water quality meter.

6. Measure the water level again with the pump in the well before starting the pump. Start pumping the well at 200 to 500 milliliters (mL) per minute (or at lower site-specific rate if specified). The pump rate should be adjusted to cause little or no water level drawdown in the well (less than 0.3 feet below the initial static depth to water measurement) and the water level should stabilize. The water level should be monitored every 3 to 5 minutes (or as appropriate, lower flow rates may require longer time between readings) during pumping if the well diameter is of sufficient size to allow such monitoring. Care should be taken not to break pump suction or cause entrainment of air in the sample. Record pumping rate adjustments and depths to water. If necessary, pumping rates should be reduced to the minimum capabilities of the pump to avoid pumping the well dry and/or to stabilize indicator parameters. A steady flow rate should be maintained to the extent practicable. Groundwater sampling records from previous sampling events (if available) should be reviewed prior to mobilization to estimate the optimum pumping rate and anticipated drawdown for the well in order to more efficiently reach a stabilized pumping condition.

If the recharge rate of the well is very low, alternative purging techniques should be used, which will vary based on the well construction and screen position. For wells screened across the water table, the well should be pumped dry and sampling should commence as soon as the volume in the well has recovered sufficiently to permit collection of samples. For wells screened entirely below the water table, the well should be pumped until a stabilized level (which may be below the maximum displacement goal of 0.3 feet) can be maintained and monitoring for stabilization of field indicator parameters can commence. If a lower stabilization level cannot be maintained, the well should be pumped until the drawdown is at a level slightly higher than the bentonite seal above the well screen. Sampling should commence after one well volume has been removed and the well has recovered sufficiently to permit collection of samples.

During purging, monitor the field indicator parameters (e.g., turbidity, temperature, specific conductance, pH, etc.) every 3 to 5 minutes (or as appropriate). Field indicator parameters will be measured using a flow-through analytical cell or a clean container such as a glass beaker. Record field indicator parameters on the groundwater sampling log. The well is considered stabilized and ready for sample collection when turbidity values remain within 10% (or within 1 NTU if the turbidity reading is less than 10 NTU), the specific conductance and temperature values remain within 3%, ORP readings remain within ± 10 mV and pH remains within 0.1 units for three consecutive readings collected at 3- to 5-minute intervals (or other appropriate interval, alternate stabilization goals may exist in different geographic regions, consult the site-specific Work Plan for stabilization criteria). If the field indicator parameters do not stabilize within 1 hour of the start of purging, but the groundwater turbidity is

below the goal of 50 NTU and the values for all other parameters are within 10%, the well can be sampled. If the parameters have stabilized but the turbidity is not in the range of the 50 NTU goal, the pump flow rate should be decreased to a minimum rate of 100 mL/min to reduce turbidity levels as low as possible. Dissolved oxygen is extremely susceptible to various external influences (including temperature or the presence of bubbles on the DO meter); care should be taken to minimize the agitation or other disturbance of water within the flow-through cell while collecting these measurements. If air bubbles are present on the DO probe or in the discharge tubing, remove them before taking a measurement. If dissolved oxygen values are not within acceptable range for the temperature of groundwater (Attachment 1), then again check for and remove air bubbles on probe before re-measuring. If the dissolved oxygen value is 0.00 or less, then the meter should be serviced and re-calibrated. If the dissolved oxygen values are above possible results, then the meter should be serviced and re-calibrated.

During extreme weather conditions, stabilization of field indicator parameters may be difficult to obtain. Modifications to the sampling procedures to alleviate these conditions (e.g., measuring the water temperature in the well adjacent to the pump intake) will be documented in the field notes. If other field conditions exist that preclude stabilization of certain parameters, an explanation of why the parameters did not stabilize will also be documented in the field logbook.

7. Complete the sample label(s) and cover the label(s) with clear packing tape to secure the label onto the container.
8. After the indicator parameters have stabilized, collect groundwater samples by diverting flow out of the unfiltered discharge tubing into the appropriate labeled sample container. If a flow-through analytical cell is being used to measure field parameters, the flow-through cell should be disconnected after stabilization of the field indicator parameters and prior to groundwater sample collection. Under no circumstances should analytical samples be collected from the discharge of the flow-through cell. When the container is full, tightly screw on the cap. Samples should be collected in the following order: VOCs, TOC, SVOCs, metals and cyanide, and others (or other order as defined in the site-specific Work Plan).
9. If sampling for total and filtered metals and/or PCBs, a filtered and unfiltered sample will be collected. Install an in-line, disposable 0.45-micron particle filter on the discharge tubing after the appropriate unfiltered groundwater sample has been collected. Continue to run the pump until an initial volume of "flush" water has been run through the filter in accordance with the manufacturer's directions (generally 100 to 300 mL). Collect filtered groundwater sample by diverting flow

out of the filter into the appropriately labeled sample container. When the container is full, tightly screw on the cap.

10. Secure with packing material and store at 4°C in an insulated transport container provided by the laboratory.
11. Record on the groundwater sampling log or bound field logbook the time sampling procedures were completed, any pertinent observations of the sample (e.g., physical appearance, and the presence or lack of odors or sheens), and the values of the stabilized field indicator parameters as measured during the final reading during purging (Attachment 2 – Example Sampling Log).
12. Turn off the pump and air compressor or close the gas cylinder valve if using a bladder pump set-up. Slowly remove the pump, tubing, lines, and safety cable from the well. Do not allow the tubing or lines to touch the ground or any other surfaces which could contaminate them.
13. If tubing is to be dedicated to a well, it should be folded to a length that will allow the well to be capped and also facilitate retrieval of the tubing during later sampling events. A length of rope or string should be used to tie the tubing to the well cap. Alternatively, if tubing and safety line are to be saved and reused for sampling the well at a later date they may be coiled neatly and placed in a clean plastic bag that is clearly labeled with the well ID. Make sure the bag is tightly sealed before placing it in storage.
14. Secure the well and properly dispose of personal protective equipment (PPE) and disposable equipment.
15. Complete the procedures for packaging, shipping, and handling with associated chain-of-custody.
16. Complete decontamination procedures for flow-through analytical cell and submersible or bladder pump, as appropriate.
17. At the end of the day, perform calibration check of field instruments.

If it is not technically feasible to use the low-flow sampling method, purging and sampling of monitoring wells may be conducted using the bailer method as outlined below:

1. Don appropriate PPE (as required by the HASP).
2. Place plastic sheeting around the well.

3. Clean sampling equipment.
4. Open the well cover while standing upwind of the well. Remove well cap and place on the plastic sheeting. Insert PID probe approximately 4 to 6 inches into the casing or the well headspace and cover with gloved hand. Record the PID reading in the field log. If the well headspace reading is less than 5 PID units, proceed; if the headspace reading is greater than 5 PID units, screen the air within the breathing zone. If the breathing zone reading is less than 5 PID units, proceed. If the PID reading in the breathing zone is above 5 PID units, move upwind from well for 5 minutes to allow the volatiles to dissipate. Repeat the breathing zone test. If the reading is still above 5 PID units, don appropriate respiratory protection in accordance with the requirements of the HASP. Record all PID readings. For wells that are part of the regular weekly monitoring program and prior PID measurements have not resulted in a breathing zone reading above 5 PID units, PID measurements will be taken monthly.
5. Measure the depth to water and determine depth of well by examining drilling log data or by direct measurement. Calculate the volume of water in the well (in gallons) by using the length of the water column (in feet), multiplying by 0.163 for a 2-inch well or by 0.653 for a 4-inch well. For other well diameters, use the formula:

$$\text{Volume (in gallons)} = \pi \text{ TIMES well radius (in feet) squared TIMES length of water column (in feet) TIMES } 7.481 \text{ (gallons per cubic foot)}$$
6. Measure a length of rope or twine at least 10 feet greater than the total depth of the well. Secure one end of the rope to the well casing and secure the other end to the bailer. Test the knots and make sure the rope will not loosen. Check bailers so that all parts are intact and will not be lost in the well.
7. Lower bailer into well and remove one well volume of water. Contain all water in appropriate containers.
8. Monitor the field indicator parameters (e.g., turbidity, temperature, specific conductance, and pH). Measure field indicator parameters using a clean container such as a glass beaker or sampling cups provided with the instrument. Record field indicator parameters on the groundwater sampling log.
9. Repeat Steps 7 and 8 until three or four well volumes have been removed. Examine the field indicator parameter data to determine if the parameters have stabilized. The well is considered stabilized and ready for sample collection when turbidity values remain within 10% (or within 1 NTU if the turbidity reading is less than 10 NTU), the specific conductance and temperature values remain

within 3%, and pH remains within ± 0.1 units for three consecutive readings collected once per well volume removed.

10. If the field indicator parameters have not stabilized, remove a maximum of five well volumes prior to sample collection. Alternatively, five well volumes may be removed without measuring the field indicator parameters.
11. If the recharge rate of the well is very low, wells screened across the water table may be bailed dry and sampling should commence as soon as the volume in the well has recovered sufficiently to permit collection of samples. For wells screened entirely below the water table, the well should only be bailed down to a level slightly higher than the bentonite seal above the well screen. The well should not be bailed completely dry, to maintain the integrity of the seal. Sampling should commence as soon as the well volume has recovered sufficiently to permit sample collection.
12. Following purging, allow water level in well to recharge to a sufficient level to permit sample collection.
13. Complete the sample label and cover the label with clear packing tape to secure the label onto the container.
14. Slowly lower the bailer into the screened portion of the well and carefully retrieve a filled bailer from the well causing minimal disturbance to the water and any sediment in the well.
15. The sample collection order (as appropriate) will be as follows:
 - a. VOCs;
 - b. TOC;
 - c. SVOCs;
 - d. metals and cyanide; and
 - e. others.
16. When sampling for volatiles, collect water samples directly from the bailer into 40-mL vials with Teflon[®]-lined septa.
17. For other analytical samples, remove the cap from the large glass mixing container and slowly empty the bailer into the large glass mixing container. The

sample for dissolved metals and/or filtered PCBs should either be placed directly from the bailer into a pressure filter apparatus or pumped directly from the bailer with a peristaltic pump, through an in-line filter, into the pre-preserved sample bottle.

18. Continue collecting samples until the mixing container contains a sufficient volume for all laboratory samples.
19. Mix the entire sample volume with the Teflon[®] stirring rod and transfer the appropriate volume into the laboratory jar(s). Secure the sample jar cap(s) tightly.
20. If sampling for total and filtered metals and/or PCBs, a filtered and unfiltered sample will be collected. Sample filtration for the filtered sample will be performed in the field using a peristaltic pump prior to preservation. Install new medical-grade silicone tubing in the pump head. Place new Teflon[®] tubing into the sample mixing container and attach to the intake side of pump tubing. Attach (clamp) a new 0.45-micron filter (note the filter flow direction). Turn the pump on and dispense the filtered liquid directly into the laboratory sample bottles.
21. Secure with packing material and store at 4°C in an insulated transport container provided by the laboratory.
22. After sample containers have been filled, remove one additional volume of groundwater. Measure the pH, temperature, turbidity, and conductivity. Record on the groundwater sampling log or bound field logbook the time sampling procedures were completed, any pertinent observations of the sample (e.g., physical appearance, and the presence or lack of odors or sheens), and the values of the field indicator parameters.
23. Remove bailer from well, secure well, and properly dispose of PPE and disposable equipment.
24. If a bailer is to be dedicated to a well, it should be secured inside the well above the water table, if possible. Dedicated bailers should be tied to the well cap so that inadvertent loss of the bailer will not occur when the well is opened.
25. Complete the procedures for packaging, shipping, and handling with associated chain-of-custody.

VII. Waste Management

Materials generated during groundwater sampling activities, including disposable equipment, will be placed in appropriate containers. Containerized waste will be disposed of by the client consistent with the procedures identified in the HASP.

VIII. Data Recording and Management

Initial field logs and chain-of-custody records will be transmitted to the ARCADIS PM at the end of each day unless otherwise directed by the PM. The groundwater team leader retains copies of the groundwater sampling logs.

IX. Quality Assurance

In addition to the quality control samples to be collected in accordance with this SOP, the following quality control procedures should be observed in the field:

- Collect samples from monitoring wells in order of increasing concentration, to the extent known based on review of historical site information if available.
- Equipment blanks should include the pump and tubing (if using disposable tubing) or the pump only (if using tubing dedicated to each well).
- Collect equipment blanks after wells with higher concentrations (if known) have been sampled.
- Operate all monitoring instrumentation in accordance with manufacturer's instructions and calibration procedures. Calibrate instruments at the beginning of each day and verify the calibration at the end of each day. Record all calibration activities in the field notebook.
- Clean all groundwater sampling equipment prior to use in the first well and after each subsequent well using procedures for equipment decontamination.

X. References

United States Environmental Protection Agency (USEPA). 1986. RCRA Groundwater Monitoring Technical Enforcement Guidance Document (September 1986).

USEPA Region II. 1998. *Ground Water Sampling Procedure Low Stress (Low Flow) Purging and Sampling*.

USEPA. 1991. Handbook Groundwater, Volume II Methodology, Office of Research and Development, Washington, DC. USEPN62S, /6-90/016b (July, 1991).

U.S. Geological Survey (USGS). 1977. National Handbook of Recommended Methods for Water-Data Acquisition: USGS Office of Water Data Coordination. Reston, Virginia.

Attachment 1

Groundwater Sampling Log

Attachment 2

Oxygen Solubility in Fresh Water

Temperature (degrees C)	Dissolved Oxygen (mg/L)
0	14.6
1	14.19
2	13.81
3	13.44
4	13.09
5	12.75
6	12.43
7	12.12
8	11.83
9	11.55
10	11.27
11	11.01
12	10.76
13	10.52
14	10.29
15	10.07
16	9.85
17	9.65
18	9.45
19	9.26
20	9.07
21	8.9
22	8.72
23	8.56
24	8.4
25	8.24
26	8.09
27	7.95
28	7.81
29	7.67
30	7.54
31	7.41
32	7.28
33	7.16
34	7.05
35	6.93

Reference: Vesilind, P.A., *Introduction to Environmental Engineering*, PWS Publishing Company, Boston, 468 pages (1996).

Investigation-Derived Waste Handling and Storage

Rev. #: 2

Rev Date: March 6, 2009

Approval Signatures

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(Technical Expert)

I. Scope and Application

The objective of this Standard Operating Procedure (SOP) is to describe the procedures to manage investigation-derived wastes (IDW), both hazardous and non-hazardous, generated during site activities, which may include, but are not limited to - drilling, trenching/excavation, construction, demolition, monitoring well sampling, soil sampling, decontamination and remediation. Please note that this SOP is intended for materials that have been deemed a solid waste as defined by 40 CFR § 261.2 (which may include liquids, solids, and sludges). In some cases, field determinations will be made based on field screening or previous data that materials are not considered a solid waste. IDW may include soil, groundwater, drilling fluids, decontamination liquids, personal protective equipment (PPE), sorbent materials, construction and demolition debris, and disposable sampling materials that may have come in contact with potentially impacted materials. IDW will be collected and staged at the point of generation. Quantities small enough to be containerized in 55-gallon drums will be taken to a designated temporary storage area (discussed in further detail under Drum Storage) onsite pending characterization and disposal. Waste materials will be analyzed for constituents of concern to evaluate proper disposal methods. PPE and disposable sampling equipment will be placed in DOT-approved drums prior to disposal and typically does not require laboratory analysis. This SOP describes the necessary equipment, field procedures, materials, regulatory references, and documentation procedures necessary for proper handling and storage of IDW up to the time it is properly disposed. The procedures for handling IDW are based on the United States Environmental Protection Agency's Guide to Management of Investigation Derived Wastes (USEPA, 1992). IDW is assumed to be contaminated with the site constituents of concern (COCs) until analytical evidence indicates otherwise. IDW will be managed to ensure the protection of human health and the environment and will comply with all applicable or relevant and appropriate requirements (ARAR). The following Laws and Regulations on Hazardous Waste Management are potential ARAR for this site.

State Laws and Regulations

- To Be Determined Based on Location of Site and Location of Treatment, Storage, and/or Disposal Facility (TSDF) to be utilized

Federal Laws and Regulations

- Resource Conservation and Recovery Act (RCRA) 42 USC § 6901-6987
- Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) 42 USC § 9601-9675

- Superfund Amendments and Reauthorization Act (SARA)
- Department of Transportation (DOT) Hazardous Materials Transportation

Pending characterization, IDW will be stored appropriately within each area of contamination (AOC). Under RCRA, "storage" is defined as the holding of hazardous waste for a temporary period, at the end of which the hazardous waste is treated, disposed of, or stored elsewhere" (40 CFR § 260.10). The onsite waste staging area will be in a secure and controlled area. Waste characterization can either be based on generator knowledge, such as using materials safety data sheets (MSDS'), or can be based upon analytical results. The laboratory used for waste characterization analysis must have the appropriate state and federal certifications and be approved by ARCADIS and Client. IDW will be classified as RCRA hazardous or non-regulated under RCRA based on the waste characterization.

If IDW is characterized as RCRA hazardous waste, RCRA and DOT requirements must be followed for packaging, labeling, transporting, storing, and record keeping as described in 40 CFR § 262 and 49 CFR § 171-178. Wastes judged to potentially meet the criteria for hazardous wastes shall be stored in DOT approved packaging. Waste material classified as RCRA non-hazardous may be handled and disposed of as an industrial waste.

Liquid wastes judged to potentially meet the criteria for hazardous wastes shall be stored in DOT approved 55 gallon drums or other approved containers that are compatible with the type of material stored therein. Solid materials deemed to potentially meet hazardous criteria will be drummed where practicable. Large quantities of potentially hazardous solid materials must be containerized (such as in a roll-off box) for up to a maximum of 90 or 180 days as described in the Excavated Solids Section. Waste material classified as non-hazardous may be handled and disposed of as an industrial waste and is not subject to the 90-day or 180-day on-site storage limitation.

This is a standard (i.e., typically applicable) operating procedure which may be varied or changed as required, dependent upon site conditions, equipment limitations, or limitations imposed by the procedure. The ultimate procedure employed will be documented in the project work plans or reports. If changes to the sampling procedures are required due to unanticipated field conditions, the changes will be discussed with the Project Manager and Client as soon as practicable and documented in the report.

II. Personnel Qualifications

ARCADIS field sampling personnel will have current health and safety training including 40-hour HAZWOPER training, site supervisor training, site-specific training, first aid, and CPR, as needed. ARCADIS personnel may sign manifests on a case-to-case basis for clients, provided the appropriate agreement is in place between ARCADIS and the client documenting that ARCADIS is not the generator, but is acting as authorized representative for the generator. ARCADIS personnel who sign hazardous waste manifests will have the current DOT hazardous materials transportation training according to 49 CFR § 172.704. ARCADIS field personnel will also comply with client-specific training such as LPS. In addition, ARCADIS field sampling personnel will be versed in the relevant SOPs and possess the required skills and experience necessary to successfully complete the desired field work.

III. Equipment List

The following materials, as required, shall be available for IDW handling and storage:

Appropriate personal protective equipment as specified in the Site Health and Safety Plan

- 55-gallon steel drums, DOT 1A2 or equivalent
- $\frac{3}{4}$ -inch socket wrench
- Hammer
- Leather gloves
- Drum dolly
- Appropriate drum labels (outdoor waterproof self adhesive)
- Polyethylene storage tank
- Appropriate labeling, packing, chain-of-custody forms, and shipping materials as specified in the *Chain-of-Custody SOP* and *Field Sampling Handling, Packing, and Shipping SOP*.
- Indelible ink and/or permanent marking pens
- Plastic sheeting

- Appropriate sample containers, labels, and forms
- Stainless-steel bucket auger
- Stainless steel spatula or knife
- Stainless steel hand spade
- Stainless steel scoop
- Digital camera
- Field logbook.

IV. Cautions

- Filled drums can be very heavy, always use appropriate moving techniques and equipment.
- Similar media will be stored in the same drums to aid in sample analysis and disposal.
- Drum lids must be secured to prevent rainwater from entering the drums.
- Drums containing solid material may not contain any free liquids.
- Waste containers stored for extended periods of time may be subject to deterioration. Drum over packs may be used as secondary containment.
- All drums must be in good condition to prevent potential leakage and facilitate subsequent disposal. Inspect the drums for dents and rust, and verify the drum has a secure lid prior to use.

V. Health and Safety Considerations

- Appropriate personal protective equipment must be worn by all field personnel within the designated work area.
- Air monitoring may be required during certain field activities as required in the Site Health and Safety Plan.

- If excavating in potentially hazardous areas is possible, contingency plans should be developed to address the potential for encountering gross contamination or non-aqueous phase liquids.
- ARCADIS field personnel will be familiar and compliant with Client-specific health and safety requirements such as Chevron's hand safety policy including the prohibition of fixed and/or folding blade knives.

VI. Procedure

Waste storage and handling procedures to be used depend upon the type of generated waste. For this reason, IDW should be stored in a secure location onsite in separate 55-gallon storage drums, solids can be stockpiled onsite (if non-hazardous), and purge water may be stored in polyethylene tanks. Waste materials such as broken sample bottles or equipment containers and wrappings will be stored in 55-gallon drums unless they were not in contact with sample media.

Management of IDW

Minimization of IDW should be considered by the Project Manager during all phases of the project. Site managers may want to consider techniques such as replacing solvent-based cleaners with aqueous-based cleaners for decontamination of equipment, reuse of equipment (where it can be decontaminated), limitation of traffic between exclusion and support zones, and drilling methods and sampling techniques that generate little waste. Alternative drilling and subsurface sampling methods may include the use of small diameter boreholes, as well as borehole testing methods such as a core penetrometer or direct push technique instead of coring (EPA, 1993).

Drum Storage

Drums containing hazardous waste shall be stored in accordance with the requirements of 40 CFR 265 Subpart I (for containers) and 265 Subpart DD (for containment buildings). All 55-gallon drums will be stored at a secure, centralized on-site location that is readily accessible for vehicular pick-up. Drums confirmed as, or believed to contain hazardous waste will be stored over an impervious surface provided with secondary containment. The storage location will, for drums containing liquid, have a containment system that can contain at least the larger of 10% of the aggregate volume of staged materials or 100% of the volume of the largest container. Drums will be closed during storage and be in good condition in accordance with the Guide to Management of Investigation-Derived Wastes (USEPA, 1992).

Hazardous Waste Determination

Waste material must be characterized to determine if it meets any of the federal definitions of hazardous waste as required by 40 CFR § 262.11. If the waste does not meet any of the federal definitions, it must then be established if any state-specific hazardous waste criteria exist/apply.

Generator Status

Once hazardous waste determination has been made, the generator status will be determined. Large quantity generators (LQG) are generators who generate more than 1,000 kilograms of hazardous waste in a calendar month. Small quantity generators (SQG) of hazardous waste are generators who generate greater than 100 kilograms but less than 1,000 kilograms of hazardous waste in a calendar month. Conditionally exempt small quantity generators (CESQG) are generators who generate less than 100 kilograms of hazardous waste per month. Please note that a generator status may change from month to month and that a notice of this change is usually required by the generator's state agency.

Accumulation Time for Hazardous Waste

A LQG may accumulate hazardous waste on site for 90 days or less without a permit and without having interim status provided that such accumulation is in compliance with specifications in 40 CFR § 262.34. A SQG may accumulate hazardous waste on site for 180 days or less without a permit or without having interim status subject to the requirements of 40 CFR § 262.34(d). CESQG requirements are found in 40 CFR § 261.5. **NOTE:** The CESQG and SQG provisions of 40 CFR § 261.5, 262.20(e), 262.42(b) and 262.44 may not be recognized by some states (e.g. Rhode Island).

State-specific regulations must be reviewed and understood prior to the generation of hazardous waste.

Satellite Accumulation of Hazardous Waste

Satellite accumulation (SAA) shall mean the accumulation of as much as fifty-five (55) gallons of hazardous waste, or the accumulation of as much as one quart of acutely hazardous waste, in containers at or near any point of generation where the waste initially accumulates, which is under the control of the operator of the process generating the waste, without a permit or interim status and without complying with the requirements of 40 CFR § 262.34(a) and without any storage time limit, provided that the generator complies with 40 CFR § 262.34(c)(1)(i).

Once more than 55 gallons of hazardous waste accumulates in SAA, the generator has three days to move this waste into storage.

Storage recommendations for hazardous waste include:

- Ignitable Hazardous wastes must be >50 feet from the property line per 40 CFR § 265.176 (LQG generators only).
- Hazardous waste must be stored on a concrete slab (asphalt is acceptable if there are no free liquids in the waste) per 40 CFR § 265.176.
- Drainage must be directed away from the accumulation area.
- Area must be properly vented.
- Area must be secure.

Drum/Container Labeling

Drums will be labeled on both the side and lid of the drum using a permanent marking pen. Old drum labels must be removed to the extent possible, descriptions crossed out should any information remain, and new labels affixed on top of the old labels. Other containers used to store various types of waste (polyethylene tanks, roll-off boxes, end-dump trailers, etc.) will be labeled with an appropriate "Waste Container" or "Testing in Progress" label pending characterization. Drums and containers will be labeled as follows:

- Appropriate waste characterization label (Testing In Progress, Hazardous, or Non-Hazardous)
- Waste generator's name (e.g., client name)
- Project name
- Name and telephone number of ARCADIS project manager
- Composition of contents (e.g., used oil, acetone 40%, toluene 60%)
- Media (e.g., solid, liquid)
- Accumulation start date

- Drum number of total drums as reconciled with the Drum Inventory maintained in the field log book.

IDW containers will remain closed except when adding or removing waste. Immediately upon beginning to place waste into the drum/container, a "Waste Container" or "Testing in Progress" label will be filled out to include the information specified above, and affixed to the container. Once the contents of the container are identified as either non-hazardous or hazardous, the following additional labels will be applied. Containers with waste determined to be non-hazardous will be labeled with a green and white "Non-Hazardous Waste" label over the "Waste Container" label. Containers with waste determined to be hazardous will be stored in an onsite storage area and will be labeled with the "Hazardous Waste" label and affixed over the "Waste Container" label. The ACCUMULATION DATE for the hazardous waste is the date the waste is first placed in the container and is the same date as the date on the "Waste Container" label. DOT hazardous class labels must be applied to all hazardous waste containers for shipment offsite to an approved disposal or recycling facility. In addition a DOT proper shipping name shall be included on the hazardous waste label. The transporter should be equipped with the appropriate DOT placards. However, placarding or offering placards to the initial transporter is the responsibility of the generator per 40 CFR § 262.33.

Inspections and Documentation

All IDW will be documented as generated on a Drum Inventory Log maintained in the field log book. The Drum Inventory will record the generation date, type, quantity, matrix and origin (e.g. Boring-1, Test Pit 3, etc) of materials in every drum, as well as a unique identification number for each drum. The drum inventory will be used during drum pickup to assist with labeling of drums. The drum storage area and any other areas of temporarily staged waste, such as soil/debris piles, will be inspected weekly. The weekly inspections will be recorded in the field notebook or on a Weekly Inspection Log. Digital photographs will be taken upon the initial generation and drumming/staging of waste, and final labeling after characterization to document compliance with labeling and storage protocols, and condition of the container. Evidence of damage, tampering or other discrepancy should be documented photographically.

Emergency Response and Notifications

Specific procedures for responding to site emergencies will be detailed in the HASP. If the generator is designated as a LQG, a Contingency Plan will need to be prepared to include emergency response and notification procedures per 40 CFR § 265 Subpart D. In the event of a fire, explosion, or other release which could threaten human health

outside of the site or when Client or ARCADIS has knowledge of a spill that has reached surface water, Client or ARCADIS must immediately notify the National Response Center (800-424-8802) in accordance with 40 CFR § 262.34. Other notifications to state agencies may also be necessary.

Drilling Soil Cuttings and Muds

Soil cuttings are solid to semi-solid soils generated during trenching activities, subsurface soil sampling, or installation of monitoring wells. Depending on the drilling method, drilling fluids known as "muds" may be used to remove soil cuttings. Drilling fluids flushed from the borehole must be directed into a settling section of a mud pit. This allows reuse of the decanted fluids after removal of the settled sediments. Soil cuttings will be labeled and stored in 55-gallon drums with bolt-sealed lids.

Excavated Solids

Excavated solids may include, but are not limited to soil, fill and construction and demolition debris. Excavated solids may be temporarily stockpiled onsite as long as the material is a RCRA non-hazardous waste and the solids will be treated onsite pursuant to a certified, authorized, or permitted treatment method, or properly disposed off-site. Stockpiled materials characterized as hazardous must be immediately containerized and removed from the site within 90 days of generation (except for soils using satellite accumulation). Excavated solids should be stockpiled and maintained in a secure area onsite. At a minimum, the floor of the stockpile area will be covered with a 20-mil high density polyethylene liner that is supported by a foundation or at least a 60-mil high density polyethylene liner that is not supported by a foundation. The excavated material will not contain free liquids. The owner/operator will provide controls for windblown dispersion, run-on control, and precipitation runoff. The run-on control system will prevent flow onto the active portion of the pile during peak discharge from at least a 25-year storm and the run-off management system will collect and control at least the water volume resulting from a 24-hour, 25-year storm (EPA, 1992). Additionally, the stockpile area will be inspected on a weekly basis and after storm events. Individual states may require that the stockpile be inspected/certified by a licensed professional engineer. Stockpiled material will be covered with a 6-mil polyvinyl chloride (PVC) liner. The stockpile cover will be secured in place with appropriate material (concrete blocks, weights, etc.) to prevent the movement of the cover. Excavated solids may also be placed in roll off containers and covered with a 6-mil PVC liner pending results for waste characterization.

Decontamination Solutions

Decontamination solutions are generated during the decontamination of personal protective equipment and sampling equipment. Decontamination solutions may range from detergents, organic solvents and acids used to decontaminate small field sampling equipment to steam cleaning rinsate used to wash heavy field equipment. These solutions are to be labeled and stored in 55-gallon drums with bolt-sealed lids.

Disposable Equipment

Disposable equipment includes personal protective equipment (tyvek coveralls, gloves, booties and APR cartridges) and disposable sampling equipment such as trowels or disposable bailers. If the media sampled exhibits hazardous characteristics per results of waste characterization sampling, disposable equipment will also be disposed of as a hazardous waste. These materials will be stored onsite in labeled 55-gallon drums pending analytical results for waste characterization.

Purge Water

Purge water includes groundwater generated during well development, groundwater sampling, or aquifer testing. The volume of groundwater generated will dictate the appropriate storage procedure. Monitoring well development and groundwater sampling may generate three well volumes of groundwater or more. This volume will be stored in labeled 55-gallon drums. Aquifer tests may generate significantly greater volumes of groundwater depending on the well yield and the duration of the test. Therefore, large-volume portable polyethylene tanks will be considered for temporary storage pending groundwater-waste characterization.

Purged Water Storage Tank Decontamination and Removal

The following procedures will be used for inspection, cleaning, and offsite removal of storage tanks used for temporary storage of purge water. These procedures are intended to be used for rented portable tanks such as Baker Tanks or Rain for Rent containers. Storage tanks will be made of inert polyethylene materials.

The major steps for preparing a rented tank for return to a vendor include characterizing the purge water, disposing of the purge water, decontaminating the tank, final tank inspection, and mobilization. Decontamination and inspection procedures are describe in further detail below.

- Tank Cleaning: Most vendors require that tanks be free of any sediment and water before returning, a professional cleaning service may be required. Each

specific vendor should be consulted concerning specific requirements for returning tanks.

- Tank Inspection: After emptying the tank, purged water storage tanks should be inspected for debris, chemical staining, and physical damage. The vendors require that tanks be returned in the original condition (i.e., free of sediment, staining and no physical damage).

VII. Waste Characterization Sampling and Shipping

Soil/Solids Characterization

Waste characterization will be conducted in accordance with waste hauler, waste handling facility, and state/federal requirements. In general, RCRA hazardous wastes are those solid wastes determined by a Toxicity Characteristic Leaching Procedure (TCLP) test or to contain levels of certain toxic metals, pesticides, or other organic chemicals above specific federally regulated thresholds. If the one or more of 40 toxic compounds listed in Table I of 40 CFR § 261.24 are detected in the sample at levels above the maximum unregulated concentrations, the waste must be characterized as a toxic hazardous waste. Wastes can also be considered "listed" hazardous waste depending on site-specific processes.

Composite soil samples will be collected at a frequency of one sample per 10 cubic yard basis for stockpiled soil or one per 55-gallon drum for containerized. A four point composite sample will be collected per 10 cubic yards of stockpiled material and for each drum. Sample and composite frequencies may be adjusted in accordance with the waste handling facility's requirements. Waste characterization samples may be analyzed for the TCLP volatile organic compounds (VOCs), TCLP semi-volatile organic compounds (SVOCs), TCLP RCRA metals, and polychlorinated biphenyls, as well as corrosivity (pH), reactivity and flammability (flashpoint). Additional samples may be collected and analyzed by the laboratory on a contingency basis.

Wastewater Characterization

Waste characterization will be conducted in accordance with the requirements of the waste hauler, waste handling facility, and state/federal governments. In general, purge water should be analyzed by methods appropriate for the known contaminants, if any, that have been historically detected in the monitoring wells. Samples will be collected and analyzed in accordance with the requirements of the waste disposal facility.

Wastewater characterization samples may be analyzed for TCLP volatile organic compounds (VOCs), TCLP semi-volatile organic compounds (SVOCs), TCLP RCRA

metals, and polychlorinated biphenyls, as well as corrosivity (pH), reactivity and flammability (flashpoint). Additional samples may be collected and analyzed by the laboratory on a contingency basis.

Sample Handling and Shipping

All samples will be appropriately labeled, packed, and shipped, and the chain-of-custody will be filled out in accordance with the Chain-of-Custody SOP and Field Sampling Handling, Packing, and Shipping SOP and Hazardous Materials Packaging and Shipping SOP.

It should be noted that additional training is required for packaging and shipping of hazardous and/or dangerous materials. Please reference the following ARCADIS intranet team page for more information: <http://team/sites/hazmat/default.aspx>.

Preparing Waste Shipment Documentation (Hazardous and Non-Hazardous)

Waste profiles will be prepared by the ARCADIS PM and forwarded, along with laboratory analytical data to the Client PM for approval/signature. The Client PM will then return the profile to ARCADIS who will then forward to the waste removal contractor for preparation of a manifest. The manifest will be reviewed by ARCADIS prior to forwarding to the Client PM for approval. Upon approval of the manifest, the Client PM will return the original signed manifest directly to the waste contractor or to the ARCADIS PM for forwarding to the waste contractor.

Final drum labeling and pickup will be supervised by an ARCADIS representative who is experienced with waste labeling procedures. The ARCADIS representative will have a copy of the drum inventory maintained in the field book and will reconcile the drum inventory with the profile numbers on the labels and on the manifest. Different profile numbers will be generated for different matrices or materials in the drums. For example, the profile number for drill cuttings will be different than the profile number for purge water. **When there are multiple profiles it is critical that the proper label, with the profile number appropriate to a specific material be affixed to the proper drums.** A copy of the ARCADIS drum inventory will be provided to the waste transporter during drum pickup and to the facility receiving the waste.

VIII. Data Recording and Management

Waste characterization sample handling, packing, and shipping procedures will be documented in accordance with the *Quality Assurance Project Plan*, if one exists. Copies of the chains-of-custody forms will be maintained in the project file.

Following waste characterization, IDW containers will be re-labeled with the appropriate waste hazardous or non-hazardous waste labels and the client will initiate disposal at the appropriate waste disposal facility.

IX. Quality Assurance

The chain-of-custody and sample labels for waste characterization samples will be filled out in accordance with the *Quality Assurance Project Plan*.

X. References

United States Environmental Protection Agency (USEPA). 1992. Guide to Management of Investigation-Derived Wastes. Office of Remedial and Emergency Response. Hazardous Site Control Division. January 1992.

USEPA. 1991. *Guide to Discharging CERCLA Aqueous Wastes to Publicly Owned Treatment Works (POTWs)*. Office of Remedial and Emergency Response. Hazardous Site Control Division OS-220W. March 1991.

Field Log Book Entries

Rev. #: 0

Rev Date: 11 August 2009

Approval Signatures

Prepared by: Andrew Kamik Date: 8/11/09

Reviewed by: Michael J. DeFill Date: 8/11/09
(Technical Expert)

I. Scope and Application

This ARCADIS Standard Operating Procedure covers the entries needed in a field log book for environmental investigations.

This SOP does not address all of the entries that may be needed for a specific project, and does not address health and safety, equipment decontamination, field parameter measurements, sample preservation, chain-of-custody, or laboratory analysis. For direction on requirements in these areas, refer to other ARCADIS SOPs, the project work plans including the quality assurance project plan, sampling plan, and health and safety plan, as appropriate.

II. Personnel Qualifications

ARCADIS personnel participating in fieldwork and making entries into the field log book should have a minimum of one (1) year of field experience (or be under the supervision and accompanied in the field by someone who does) and current health and safety training including 40-hour HAZWOPER training, site supervisor training, site-specific training, first aid, and CPR, as needed. Field personnel will also be compliant with client-specific training requirements. In addition, ARCADIS field sampling personnel will be versed in the relevant SOPs and possess the required skills and experience necessary to successfully complete the desired field work.

III. Equipment List

- Field Log Book
- Ball point (medium point) pen with blue or black ink (black preferred). A fine point Sharpie pen may be used if the ink does not bleed through the page and become visible on back side of the page. If weather conditions prevent the use of a pen, indicate so in the log and use an alternate writing instrument .
- Zip-lock baggie or other weather-proof container to protect the field log book from the elements.

IV. Cautions

All entries in the field log must be legible and archivable. Do not leave the field log book exposed to the elements or other conditions that might moisten the pages and smear/dissolve the entries. When not in the field, the log book should be stored in a location that is easily accessible to field crews.

V. Health and Safety Considerations

ARCADIS field personnel will be familiar and compliant with Client-specific health and safety requirements.

VI. Procedure

- Print legibly. Do not use cursive writing.
- The name of the project, project number and project location should be written in indelible ink on the outside of the field log book.
- On the inside of the front cover, write "If Found, Please Return to ARCADIS" and include the appropriate address and phone number, the name of the person to which the book is assigned, and the name of the project manager.
- Reserve the first page of the book for a Table of Contents.
- Reserve the last five (5) pages of the book for important contacts, notes, reminders, etc.
- Each day of field work, the following should be recorded in the field log book as applicable:
 - a) Project Name
 - b) Date and time arrived
 - c) Work Site Location
 - d) Names of people on-site related to the project including ARCADIS employees, visitors, subcontractor employees, agency personnel, client representative, etc.
 - e) Describe the work to be performed briefly, and list the equipment on-site
 - f) Indicate the health and safety (H&S) level to be used
 - g) Record instrument calibrations and checks
 - h) Record time and general content of H&S briefing
 - i) Describe the weather conditions, including temperature, precipitation, and wind speed and direction
 - j) List periodic time entries in the far left hand column of each page
 - k) Minimize unused space on each page
- The tailgate meeting must be recorded in the log book and the tailgate form completed. If H&S monitoring is performed, record the time and results of initial and followup monitoring.

- Note factual observations including collection of QA/QC samples, delays, well damage, accidents, work plan deviations, instrument problems, and problem resolutions.
- Describe work performed and how documented such as photographs, sample core logs, water sampling logs, etc.
- Describe bases for field decisions including pertinent conversations with visitors, regulators, or project personnel.
- Note final instrument calibrations and checks.
- Sign the log book at the end of each day at a minimum. Draw a line to the end of the page to indicate no further entries on that page. Sign the bottom of each page if possible.
- If an entry to the log book is changed, strike out the deleted text or item with a single line such that the entry remains legible, and initial and date the change. Such changes should only be made by the same person that made the initial entry.
- Field log book entries must be made in the field at the site, not at a later time at a different location. Supplemental entries to the log book may be made at a later date. The supplemental entry must be clearly identified as such and the entry must be signed and dated as described in this SOP.
- Problems noted in the field log book must be brought to the attention of the project manager and task manager in a timely fashion. Problems may be reported in person, on the telephone, or in a written daily log form. If daily logs are prepared and you will not be able to personally give the daily log to the project manager, send the daily log via FAX or overnight courier to the project manager and task manager.

VII. Waste Management

Investigation-derived waste will be managed as described in the Investigation-Derived Waste Handling and Storage SOP. A drum/waste inventory should be maintained on a pre-designated page in the field log book.

VIII. Data Recording and Management

Each page of the field log book should be scanned for electronic/digital archiving at periodic intervals. This will ensure that copies of the field notes are available in the event the field book is lost or damaged, and that field data can be easily disseminated to others without the risk of physically sending the field log book. Field log books that are full should be archived with the project files, and readily retrievable.

IX. Quality Assurance

Be mindful that the field log book may be produced in court. All entries should be legible (as discussed above). Entries should also be in English, unless working in a country where English is not the predominant language or you are directed otherwise by the project manager.

X. References

Not Applicable

Measuring Basic Water Quality Parameters In-Situ

Rev. #: 01

Rev Date: March 17, 2004

Approval Signatures

Prepared by: _____

Date: _____

Reviewed by: _____

Date: _____

I. Scope and Application

This Standard Operating Procedure (SOP) describes the procedures for calibrating and operating a water quality meter. Temperature, pH, specific conductivity, dissolved oxygen, ORP, and turbidity of groundwater and surface water will be measured in-situ with a combination water quality meter (Horiba U22 or equivalent). This SOP describes equipment, field procedures, materials, and documentation procedures. Groundwater quality parameters will be measured in-situ during the collection of groundwater quality samples. This SOP should be followed in conjunction with the *Groundwater Monitoring Well Sampling Procedures SOP*.

This is a standard (i.e., typically applicable) operating procedure which may be varied or changed as required, dependent upon site conditions, equipment limitations, or limitations imposed by the procedure. The ultimate procedure employed will be documented in the work plans or reports.

II. Personnel Qualifications

ARCADIS field sampling personnel will have current health and safety training including 40-hour HAZWOPER training, site supervisor training, site-specific training, first aid, and CPR, as needed. In addition, ARCADIS field sampling personnel will be versed in the relevant SOPs and possess the required skills and experience necessary to successfully complete the desired field work.

III. Equipment List

The following materials, as required, shall be available during field measurement of water quality:

- Appropriate personal protective equipment as specified in the Site Health and Safety Plan
- Equipment decontamination supplies (See *Field Sampling Equipment Decontamination Procedures SOP*)
- Water quality meter, Horiba U22 or equivalent
- Replacement parts for the meter, including dissolved oxygen membrane
- Extra batteries

- Calibration/maintenance log(s)
- Calibration solutions
- Thermometer
- Distilled water
- Disposable plastic beakers
- Fine-end screw driver
- Field logbook.

IV. Cautions

Monitoring probes should not be placed in sample shipping containers to reduce the risk of contaminating a sample. A representative sub-sample should be used to measure the field water quality parameters.

Calibration standards must be stored properly. Check and replace all calibration standards per manufacturer suggestions to ensure accurate meter readings.

V. Health and Safety Considerations

Calibration solutions may contain hazardous chemicals. An MSDS should accompany all calibration solutions.

VI. Procedure

Calibration Procedures

The meter will be calibrated following the manufacturer's instructions. Calibration information will be recorded in the field logbook and a calibration log will be completed.

Operation Procedures

The meter will be operated following the manufacturer's instructions. Readings will be recorded in the field logbook.

Maintenance Procedures

The meter will be maintained according to the manufacturer's instructions. Maintenance information will be recorded in the field notebook. A replacement meter and probes will be available on-site or ready for overnight shipment, as necessary.

VII. Waste Management

Rinse water, PPE, and other residual material generated during the equipment decontamination will be placed in appropriate containers. Containerized waste and calibration solutions will be disposed of consistent with appropriate procedures as outlined in the *Handling and Storage of Investigation-Derived Waste SOP*.

VIII. Data Recording and Management

Field parameters will be recorded on the Low Flow Groundwater Monitoring Purge Log and in the field logbook for three-volume groundwater sampling in accordance with the specifications outlined in the *Quality Assurance Project Plan*.

All readings taken, calibration procedures, calibration checks, and adjustments will be documented in the field logbook. In addition, a calibration log will be completed for each day in which these procedures were conducted. These logs will be filed in the Laboratory Calibration Log Book.

All readings taken and adjustments made during calibrations and calibration checks will be recorded in the field notebook, along with the date and time at which the procedure was completed. The serial number of the meter and calibration solutions shall be recorded if applicable.

IX. Quality Assurance

Groundwater quality parameters should be measured prior to sample collection. If down-hole water quality meters are used, they will be decontaminated as specified in the *Field Sampling Equipment Decontamination Procedures SOP* (CalEPA, 1995).

X. References

California Environmental Protection Agency (CalEPA). 1995. *Representative Sampling of Groundwater for Hazardous Substances*. Guidance Manual for Ground Water Investigations. July 1995.

APPENDIX B

Field Notes



Lunes 12/19/16
 0630 Salimos para el Terminal
 Tiempo - nublado
 STAFF - A. Colon / M. Flores
 0648 Llegamos al Terminal
 0700 Se obtiene permiso
 0734 Se realiza safety meeting
 0800 Se comienza a calibrar
 el YSI y M3A
 0812 Comenzo a llover bien
 fuerte
 0831 paro de llover
 0857 Se termino de calibrar
 el YSI
 0900 vamos a comprar Hielo
 0912 llegamos
 0916 Se hablo con Raquel
 para notificar el area
 de trabajo
 0958 Se colecto EB-121916 del
 Tubing se puso en nevera
TB-121916
 1110 Se colecto muestra MW-P120
 1206 Se colecto muestra MW-P122
 1221 Salimos a almorzar

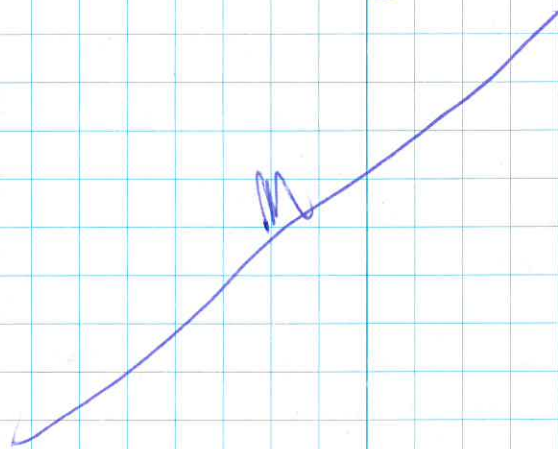
Lunes 12/19/16
 1250 Llegamos al Terminal
 1421 Se colecto muestra MW-P123
 1445 Se monto bomba peristaltica
 en pozo MW-P124 no se
 pudo se va a hacer a
 bailer
 1545 Se colecta muestra MW-P124
 1627 Se colecta muestra MW-P121
 1645 Se erro FB-121916
 1650 Salimos del terminal para
 la oficina
 1706 Llegamos a la oficina
 para subir carro y
 poner baterias a carga
 1730 Terminamos Nota se
 hablo con Rita para entregar
 muestras Martes y Juergo

- Mantos 12/20/16
- 0620 STAFF Aicadisi M.F/A.C
weather cloud i
- 0641 Salimos para el terminal
- ~~0700~~ 0700 Se obtuvo permiso de
trabajo
- 0710 Se realizo safety meeting
- 0751 Se termino de calibrar
YS1 y m3A
- 0805 Se puso el TB-122016 en
nevera
- 0812 Salimos a comprar
hielo
- 0820 Regresamos
- 0833 Se colecto EB-122016
- 0918 Se colecto muestra MW-P119
- 1009 Se tomo muestra MW-P118
- 1113 Se tomo muestra MW-83A
- 1124 nos Fuimos a almorzar
- 1150 Regresamos
- 1200 Comenzo a llover
- 1212 paro de llover A.C
- 1312 Se tomo muestra MW-AD-01
- 1320 El ADI tiene producto AD-01
- 1430 se tomo muestra MW-53A y

Mantos

12/20/16

- Duplicado DU0001 de este
punto
- 1516 Se tomo muestra MW-AD-03
- 1525 Se cerro el FB-122016
Nota M.H. del pozo no cierra
debido a moho
- 1548 nos Fuimos a entregar
muestras
- 1554 llegamos al laboratorio
- 1615 Se entregaron muestras
- 1645 llegamos a la oficina
para poner a cargar
equipos
- 1700 nos Fuimos



Miércoles

12/21/16

- 0625 Staff : Arcado
Weather Sunny
- 0642 Salimos para el Terminal
- 0655 Llegamos al Terminal
- 0710 Se obtuvo permiso por Oscar Velazquez
- 0730 Se realiza charla de Seguridad
- 0754 Se paso en nevera TB-122116
- 0815 Se termino de calibrar el NSA y YSI
- 0828 Salimos a comprar hielo
- 0846 Regresamos para montar cisterna
- 0917 Se colecto EB-122116 del Tubing
- 0959 Se colecto muestra MW-4382
- 1015 Llegamos al MW-AD-4
- 1056 Se tomo muestra MW-AD-4
- 1144 Se tomo muestra MW-33A
- 1155 nos fuimos a almorzar
- 1216 Fuimos a almacen a unstar tubing
- 1248 llegamos al terminal

Miércoles

12/21/16

- 1255 se comenzo setup en AW-P116
- 1405 se tomo muestra MW-P116
- 1521 se tomo muestra MW-P117
- ~~1555 se paso en nevera TAC~~
- 1609 se tomo muestra MW-65A
- 1615 se cerro EB-122116
- 1626 Fuimos a descargar cisterna
- 1645 se termino de descargar
- 1650 nos fuimos para la oficina
- 1706 llegamos a la oficina

Jueves 12/22/16

0630 STARD Arcadis A.C. / M.F
Weather sunny

0644 Llegamos al Terminal

0703 se obtuvo permiso

0714 se realiza safety meeting

0754 se termina de calibrar
YSI y MSA

0810 se puso en nevera JB-122216

0814 Salimos a comprar
hielo y gasolina paraguas

0828 llegamos al terminal

0842 se tomo EB-122216 del Tubing

0938 se tomo muestra MW-15A

1023 se tomo muestra MW-15B2

1142 se tomo muestra MW-15B y

Duplicado DUPO02 MW-15B(M5)

MW-15B(M5D)

1150 se cerró EB-122216

1158 nos fuimos a almorzar

1225 Regresamos para recoger
basura y preparar cajas
para entregar

1254 nos fuimos para el laboratorio
y se recogieron botellas

Jueves

12/22/16

1315 se entregó muestras

1340 nos fuimos para la
oficina

1400 llegamos para preparar
neveras y cargar cajas

Montes 12/27/16

- 0630 Staff: Arcadio A.C. / M.F.
weather: Nublado
- 0645 Llegamos al terreno
- 0706 se obtuvo permiso de trabajo
- 0722 se realizo charra de seguridad
- 0815 se termino de calibrar PSI y nSA
- 0825 salimos a comprar hielo
- 0840 llegamos al MW-13D
- 0845 se puso en nueva el
FB-122716
- 0854 se tomo el EB-122716 del Tubing
- 0934 se tomo muestra MW-13D
- 1029 se tomo muestra MW-67A
- 1118 se tomo muestra MW-91A
- 1125 nos fuimos a almorzar
- 1145 Regresamos
- 1253 se tomo muestra del MW-88A
- 1346 se tomo muestra del MW-98A
- 1503 se tomo muestra del MW-98A
- 1553 se tomo muestra del MW-30A
- 1558 se cerro FB-122716
- 1615 se termino de Revoje

Montes

12/27/16

- 1628 salimos a comprar hielo
- 1649 nos fuimos para la Oficina
- 1715 llegamos a la Oficina

Miércoles 12/28/16

- 0622 STAFF: Arcadio A.C. / M.F
weather: cloud
- 0645 llegamos al Terminal
- 0705 Se obtuvo permiso de trabajo
- 0719 se realizo charla de seguridad
- 0800 se termino de calibrar el YSI y MSA
- 0814 nos fuimos a comprar hielo
- 0835 llegamos al Terminal
- 0840 se verifico T-9 tiene producto DTP-4.38 / DTW-4.60
- 0851 se tomo el EB-122816 del Tubing
- 0927 se tomo muestra MW-16C
- 0937 llegamos al WWTP-1
- 1019 se tomo muestra WWTP-1
- 1031 nota no se pudo abrir el pozo EB-101 el pozo tiene el candado atorado
- 1131 se tomo muestra del MW-B1 y duplicado DUP003
- 1149 nos fuimos a almorzar
- 1210 nos fuimos a H.D. a comprar

Miércoles

12/28/16

- Mantillo, candado, hard sanitico
- 1240 llegamos al terminal
- 1333 se tomo muestra del MWTP-2
- 1337 llegamos al EB-101 se abrio candado con martillo
- 1416 se tomo muestra EB-101
- 1459 se tomo muestra EB-102
- 1505 se como el Field Blank FB-122816
- Nota: 10520 se puso el FB-122816 en nevera
- 1550 se entregaron muestras en el laboratorio
- 1620 nos fuimos para la oficina

Jueves 12/29/16

- 0630 Staff Arcadio M.F./A.C.
Weather sunny
- 0645 Se busco tubing y nos fuimos para el Terminal
- 0715 se obtuvo permiso de trabajo
- 0740 se realizo charla de seguridad
- 0825 se termino de calibrar el Y51 y M3A
- 0833 nos fuimos a comprar hielo y hechar gasolina
- 0850 llegamos al Terminal
- 0856 se puso en nevera el TB-122916
- 0906 se tomo el EB-122916
- 0950 se tomo muestra MW-86A
- 1044 se tomo muestra MW-MP5A
- 1131 se tomo muestra MW-DP5
- 1142 se cerro el EB-122916
- 1200 nos fuimos a almorzar
- 1220 Regresamos para dejar equipos y preparar muestra (caderas)
- 1400 se entregaron muestras

Martes

01/03/17

- 0630 Staff Arcadio M.F./A.C.
- 0642 Nos fuimos para el Terminal
- 0709 obtuvimos permisos de trabajos
- 0715 se realizo charla de seguridad
- 0821 se calibro el M3A y Y51 fuimos a comprar hielo
- 0835 llegamos al terminal
- 0840 se puso en nevera el TB-010317
- 0848 se tomo el EB-010317 del tubing
- 0935 se tomo muestra del MW-B9
- 0942 llegamos al EB-103
- 1027 se tomo muestra MW-EB103
- 1126 se tomo muestra MW-EB104
- 1136 nos fuimos a almorzar
- 1200 Regresamos
- 1205 llegamos al EB105
- 1345 se tomo muestra MW-EB105

martes

01/03/19

y DW0004 MW-EB105 (MS)
~~MW-EB-M1~~ MW-EB105 (MSD)

1428 Se tomo muestra del
MW-EB106

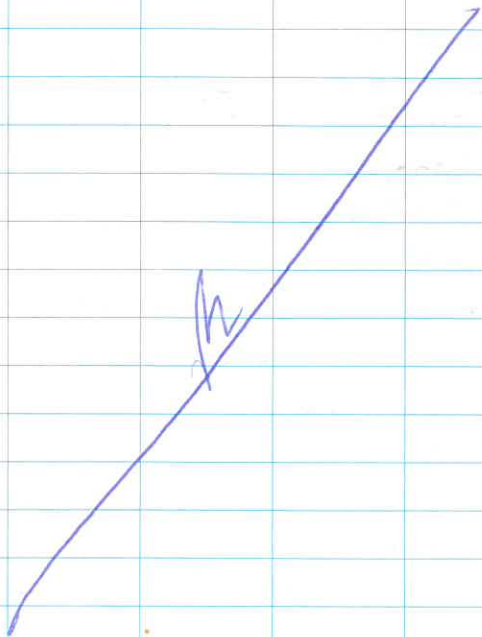
1511 se tomo muestra MW-EB107

1601 se tomo muestra del MW-EB108

1610 se cerro el FB-010317

1628 fuimos a votar en
 basura

1645 nos fuimos para la
 oficina



Miércoles

01/04/19

0630 staff Arcadis A.L. M.F.
 weather sunny

0645 llegamos al Terminal

0706 obtuvimos permiso de
 trabajo

0720 se realice charla de
 Seguridad

0780 se termino de calibrar
 PSI y MSA

0830 fuimos a comprar
 hielo

0844 Regresamos

0856 se tomo el EB-010411 y
 se puso en nevera el
FB-010417

0936 se tomo muestra del MW-DPI

1025 se tomo muestra del
MW-MP2

1030 llegamos al MW-MP4

1052 el pozo se seco nos vamos
 a mover al MW-MP3

1146 se tomo muestra del MW-MP3
 se verifico de MP2 si tiene sin
 recargar

Rite in the Rain

Montes

01/04/17

- 1333 se tomo muestra del **MW-MP9**
 1340 se puso en nevera adicinal
 el **TB-010417-2**
 1422 se tomo muestra **MW-MP9**
 1430 se cerro el **FB-010417**
 1445 nos fuimos a entregar
 muestras
 1508 se entregaron muestras
 1533 nos fuimos para
 la oficina
 1602 llegamos a la
 oficina

Jheres

01/05/17

- 0630 staff Arcadis A.C. / MF
 Weather Sunny
 0705 obtuvimos el permiso de
 trabajo
 0716 se realizo charla de
 seguridad
 0820 se termino de calibrar
 el mSA 7 751
 0823 nos fuimos a comprar
 hielo
 0834 Regresamos al Termino
 0836 se puso en nevera el
TB-010517
 0846 se realizo el **FB-010517**
 0942 se tomo muestra del **MW-48A**
 0953 llegamos al MW-109A
 condado no abre
 0959 se logra abrir el condado
 1105 se tomo muestra **MW-109A**
 y Duplicado **DUPOOS**
 1134 se tomo muestra **MW-MP1**
 1138 se cerro el **FB-010517**
 1142 vamos a verificar pozos del
 Welland para verificar si hay

Jueves 01/05/17

- que cortar el area verde
- 1159 Fuimos a hablar con Raquel Velazquez para notificar que hay que dar mantenimiento a los pozos
- 1212 nos fuimos del Terminal
- 1250 se entregaron muestras
- 1315 nos fuimos para la Oficina
- 1338 llegamos a la oficina

01/05/17

- 0630 Staff Arcadio A.C. M.F
- 0650 se compro hielo y gasolina
- 0710 llegamos al Terminal
se obtuvo permiso
- 0835 se logro acceso al wetland
- 0948 se realizo charla de seguridad
- 1450 se termino limpieza de los pozos en area de wetland

Miércoles 01/11/17

- 0625 Staff: Arcadio A.C. MF
weather rain
- 0650 llegamos al Terminal
- 0710 se obtuvo permiso de Trabajo
- 0720 se realizó charla de seguridad
- 0725 Comenzo a llover Fuerte
- 0730 se calibro el msa
- 0745 dejo de llover
- 0828 continua lloviendo se va a suspender por hoy
- 0850 vamos para la oficina

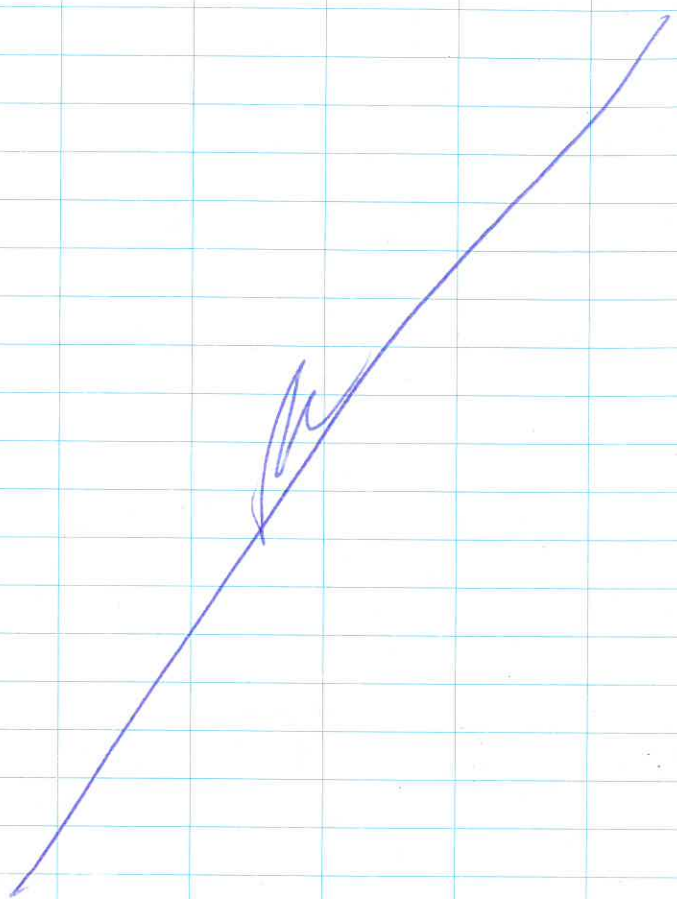


Jueves 01/12/17

- 0630 Staff Arcadio A.C. / M.F.
weather cloud
- 0649 llegamos al Terminal
- 0706 se obtuvo permiso de trabajo
- 0720 se realizó charla de seguridad
- 0750 se compro hielo y gasolina
- 0800 llegamos al Terminal
- 0820 se colecto EB-011217
nota caso se puso el TB-01220
- 0941 se tomo muestra MW-76B2
- 1035 se tomo muestra MW-70A
- 1040 Fuimos a buscar llaves con Ravel pero no se encuentran hay que pedir a un operador que nos habra
- 1142 se consiguió llave por Richi
- 1245 se tomo muestra del MW-13A
- 1346 se tomo muestra del MW-15B2
- 1438 se tomo muestra del MW-35A
- 1448 se cerro El EB-011217

01/12/11

- 1518 nos Fuimos para el laborab
 1540 se entrego muestra en
 el laboratorio
 1601 nos Fuimos para la oficina
 1624 llegamos a la oficina



Montes

01/12/11

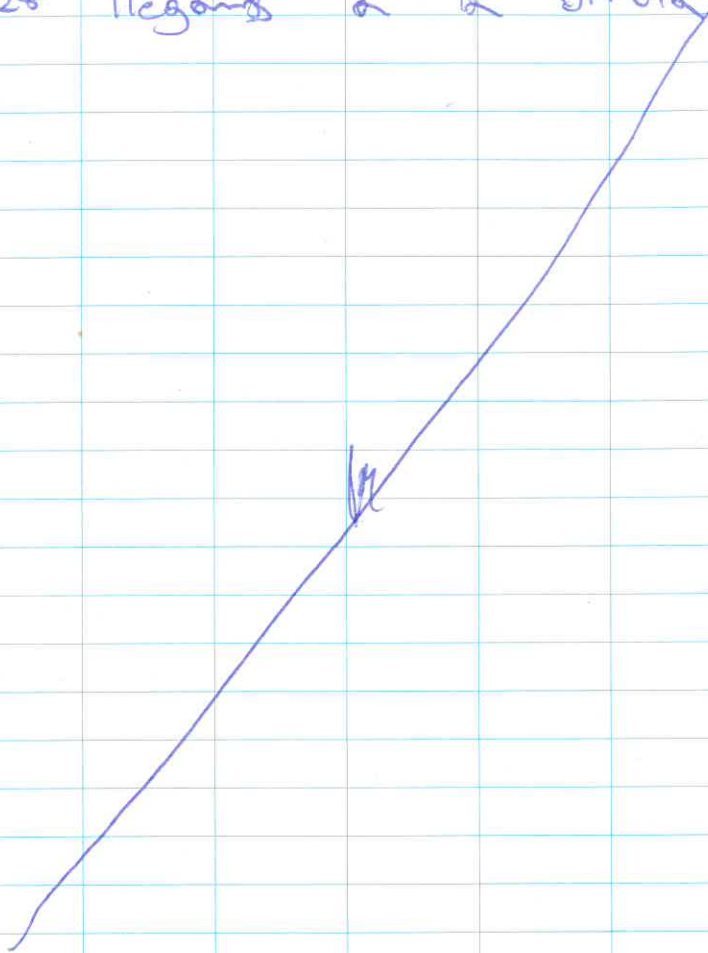
- 0625 Staff Arcadio M.F / A.L.
 0648 se obtuvo permiso de
 trabajo
 0650 creather: Rain
 0800 se realizo charla de
 seguridad
 0828 se termino de calibrar
 YSI y msa
 0906 se busco llaver del
 porton donde Roque
 0915 se compro hielo
 0922 se puso en nevera el
 [TB-011217]
 0946 se tomo el [EB-011117]
 1049 se tomo muestra del [MW-110AB]
 1138 se tomo muestra del [MW-110B2]
 1236 se tomo muestra del [MW-111A]
 1250 Fuimos a walgreens a
 comprar baterias para el
 YSI
 1318 llegamos al terminap
 1450 se tomo muestra del [MW-15B2]
 y Duplicado ~~MW-15B2~~ DUPO06
 [MW-15B2(MS)] [MW-15B2(MSD)]

Rite in the Rain.

Martes

01/17/17

- 1621 se tomo muestra **MW-114A**
 1630 se cerro el **FB-011717**
 1648 se entrego **RAM** a Royal
 1705 nos Fuimos del Terminal
 1728 llegamos a la oficina



Miercoles

01/18/17

- 0630 staff Arcadis M.F / A.C.
 0648 salimos para el Terminal
 0658 llegamos al Terminal
 weather cloudy
 0710 se obtuvo permiso de
 trabajos
 0715 se realizo charla de seguridad
 0811 se termino de calibrar
 el YSI y MSA
 0820 vamos a comprar hielo
 0840 Regresamos de comprar
 hielo
 0900 de buses llave donde
 Ramel volvera
 0912 se puso el nevera el
TB-011817
 0922 se tomo el **EA-011817** del Tubing
 1033 se tomo muestra del **MW-63A**
 1116 se tomo muestra del **MW-38A**
 1231 se tomo muestra del **MW-84B2**
 1323 se tomo muestra **MW-84A**
 1415 se entrego muestras en
 laboratorio y recoger vials
 1438 llegamos al Terminal

Rite in the Rain

Miércoles 01/18/17

- 1334 se tomó muestra MW-17B
 nota tenía sheen
- 1542 se cerró el FB-011817
- 1612 Fuimos a entregar
 llaves a Rael
- 1628 Fuimos a desmontar
 envijos
- 1652 Nos fuimos para la
 Oficina

Jueves 01/19/17

- 0630 staff arcadis A.C. / M.E
 weather sunny
- 0648 llegamos al Terminal
- 0754 se obtuvo permiso de
 trabajo
- 01 Nota 0730 se realizó charla
 de seguridad
- 0904 se buscó llave del los
 portones donde Rael
- 0915 se buscó dron para
 agua
- 1000 se colectó el EB-011917
 Nota 0937 se compró hielo
 y se puso el TB-011917
- 1110 se tomó muestra MW-17B
- 1225 se tomó muestra del MW-20B
- 1315 se tomó muestra del MW-17B
- 1356 se tomó muestra MW-21B y
 duplicado Duplicat
- 1402 se cerró el FB-011917
- 1428 llegamos al Terminal para
 descargar el agua de los
 pozos en la planta de
 tratamiento

Jueves

01/09/09

- 1435 Se verificó el MW 40B
WDTW - 13.69 DTP 12.28
- 1445 Se verificó el MW-42B
DTW 23.80 DTP 23.67
- 1519 nos fuimos del Terminal
- 1539 se entregaron muestras
- 1609 llegamos a la oficina

Groundwater Monitoring Field Data Sheet

Project Name: Plano Terminal Project Number: B002.1605B
 Location: Bayamon P.P Date: 01/19/11
 Arcadis PR Team: A.C. M.T
 Well ID: MW-21B Well casing Dia.: 2" Weather: Sunny

WELL CASING VOLUMES (per foot of water column)

1-1/4"=0.06 1-1/2"=0.09 2"=0.16 2-1/2"=0.26 3"=0.37 3-1/2"=0.5 4"=0.65 6"=1.47

Well Data

Well Depth:	<u>67.60</u>	ft. TOC	Gallons per foot:	<u>0.16</u>	gal
Depth to Water:	<u>11.80</u>	ft. TOC	Gallons per well casing (Well Volume):	<u>8.92</u>	gal
Depth to SPH:	<u>ND</u>	ft. TOC	Three well volumes (x3):	<u>26.78</u>	gal
Water Column in Well:	<u>55.80</u>	ft.	Placement of Pump Intake:	<u>90</u>	ft. TOC

Well Purging Information and Field Parameters

Well Purging Method: Peristaltic Pump - Number _____ Monsoon Pump - Number _____ Other whaler

Time	Depth to Groundwater (ft)	Flow Rate (ml/min)	Cumulative Volume (gal)	pH	Temp. (°C)	ORP mV	Turbidity (NTU)	Cond. (mS/cm)	D.O. (mg/L)	D.O. (%)
1321	11.80	100/min	Initial							
1330	11.84	100/min	9.06	9.06	26.59	2215	-16.5	1008	1.46	
1339	11.84	100/min	18.06	6.92	26.52	336.8	-11.5	0.993	2.18	
1348	11.84	100/min	27.06	6.99	26.02	304.9	-16.5	0.513	1.17	
1356										

Sampling Data

Sampling Method: Peristaltic Pump-Number: _____ Other: _____ Sampling Time: 1356

Color: Clear Grey Light Grey Light Brown Brown Other: _____

Odor: Mild Strong -- Specify: None Visual Turbidity: Clear Low Medium High

Sample Parameters	Container Description	Preservative	Filtered y/n
<u>CRD</u>	<u>2 vial 40ml</u>	<u>HCl</u>	
<u>VOCS</u>	<u>2 vial 40ml</u>	<u>HCl</u>	<u>N</u>
<u>PRO/ORO</u>	<u>2 500ml</u>	<u>N</u>	<u>N</u>
<u>SVOCs</u>	<u>2 250ml</u>	<u>N</u>	<u>N</u>
<u>metals/mercury</u>	<u>2 7 650ml</u>	<u>HNO₃</u>	<u>N</u>
<u>Dissolved metals</u>	<u>1 125 125ml</u>	<u>N</u>	<u>N</u>

Remarks: 0.0 pm se tomo duplicada DADPOO / FB-011911-1402

Sampler(s) Signature: [Signature]

ASTM-D6771-02: Stabilization of Parameters:

pH	Temp	Conductivity	Dissolved Oxygen	Eh or ORP	Turbidity
± 0.2 pH	± 0.2 °C	3% of reading	± 10% of reading or ± 0.2 mg/L, whichever is greater	± 20 mV	± 10% of the previous reading or ± 1.0 NTU whichever is greater

Groundwater Monitoring Field Data Sheet

Project Name: Anna Terminal Project Number: E002-1605A
 Location: Bayamon P.R. Date: 01/19/19
 Arcadis PR Team: A.C. M.F
 Well ID: MW-28A Well casing Dia.: 2" Weather: Sunny

WELL CASING VOLUMES (per foot of water column)

1-1/4"=0.06 1-1/2"=0.09 2"=0.16 2-1/2"=0.26 3"=0.37 3-1/2"=0.5 4"=0.65 6"=1.47

Well Data

Well Depth:	<u>87</u>	ft. TOC	Gallons per foot:	<u>0.16</u>	gal
Depth to Water:	<u>7.10</u>	ft. TOC	Gallons per well casing (Well Volume):	<u>12.08</u>	gal
Depth to SPH:	<u>ND</u>	ft. TOC	Three well volumes (x3):	<u>38.00</u>	gal
Water Column in Well:	<u>19.9</u>	ft.	Placement of Pump Intake:	<u>41</u>	ft. TOC

Well Purging Information and Field Parameters

Well Purging Method: Peristaltic Pump - Number _____ Monsoon Pump - Number _____ Other whaler

Time	Depth to Groundwater (ft)	Flow Rate (ml/min)	Cumulative Volume (gal)	pH	Temp. (°C)	ORP mV	Turbidity (NTU)	Cond. (mS/cm)	D.O. (mg/L)	D.O. (%)
<u>1232</u>	<u>7.10</u>	<u>100/min</u>	<u>initial</u>							
<u>1246</u>	<u>13.05</u>	<u>100/min</u>	<u>12</u>	<u>6.87</u>	<u>26.72</u>	<u>395.0</u>	<u>-12.6</u>	<u>1.366</u>	<u>1.27</u>	
<u>1258</u>	<u>13.11</u>	<u>100/min</u>	<u>24</u>	<u>6.01</u>	<u>26.90</u>	<u>395.8</u>	<u>-16.8</u>	<u>2.432</u>	<u>1.03</u>	
<u>1310</u>	<u>13.11</u>	<u>100/min</u>	<u>36</u>	<u>6.90</u>	<u>26.38</u>	<u>404.0</u>	<u>-20.3</u>	<u>2.463</u>	<u>1.81</u>	
<u>1315</u>										

Sampling Data

Sampling Method: Peristaltic Pump-Number: _____ Other: _____ Sampling Time: 1315

Color: Clear Grey Light Grey Light Brown Brown Other: _____

Odor: Mild Strong -- Specify: none Visual Turbidity: Clear Low Medium High

Sample Parameters	Container Description	Preservative	Filtered y/n
<u>URO</u>	<u>2 vial 40ml</u>	<u>HCl</u>	
<u>VOCS</u>	<u>2 vial 40ml</u>	<u>HCl</u>	<u>N</u>
<u>DRO/ORS</u>	<u>2 500 mL</u>	<u>N</u>	<u>N</u>
<u>SVOC</u>	<u>2 250 mL</u>	<u>N</u>	<u>N</u>
<u>Metals /Mercury</u>	<u>1 250 mL</u>	<u>HNO3</u>	<u>N</u>
<u>Dissolved Metals</u>	<u>1 125 mL</u>	<u>N</u>	<u>N</u>

Remarks: 0.0 ppm

Sampler(s) Signature: [Signature]

ASTM-D6771-02: Stabilization of Parameters:

pH	Temp	Conductivity	Dissolved Oxygen	Eh or ORP	Turbidity
± 0.2 phu	± 0.2 °C	3% of reading	± 10% of reading or ± 0.2 mg/L, whichever is greater	± 20 mV	± 10% of the previous reading or ± 1.0 NTU whichever is greater

Groundwater Monitoring Field Data Sheet

Project Name: Puma Terminal Project Number: E002-1605-B
 Location: Bayanna P.8 Date: 01/19/10
 Arcadis PR Team: A.G. MR
 Well ID: MW-20B Well casing Dia.: 2" Weather: Sunny

WELL CASING VOLUMES (per foot of water column)

1-1/4"=0.06 1-1/2"=0.09 **2"=0.16** 2-1/2"=0.26 3"=0.37 3-1/2"=0.5 4"=0.65 6"=1.47

Well Data

Well Depth:	<u>84</u>	ft. TOC	Gallons per foot:	<u>0.16</u>	gal
Depth to Water:	<u>4.25</u>	ft. TOC	Gallons per well casing (Well Volume):	<u>12.96</u>	gal
Depth to SPH:	<u>ND</u>	ft. TOC	Three well volumes (x3):	<u>38.28</u>	gal
Water Column in Well:	<u>79.75</u>	ft.	Placement of Pump Intake:	<u>44</u>	ft. TOC

Well Purging Information and Field Parameters

Well Purging Method: Peristaltic Pump - Number _____ Monsoon Pump - Number _____ Other wheeler

Time	Depth to Groundwater (ft)	Flow Rate (ml/min)	Cumulative Volume (gal)	pH	Temp. (°C)	ORP (mV)	Turbidity (NTU)	Cond. (mS/cm)	D.O. (mg/L)	D.O. (%)
1137	4.25	100/min	Initial							
1150	4.45	100/min	13.02	6.11	26.02	201.6	-13.1	1.404	1.61	
1203	4.45	100/min	26.02	6.99	25.68	332.0	-17.7	1.427	1.51	
1216	4.45	100/min	39.02	6.98	25.62	383.0	-18.6	1.425	1.53	
122										

Sampling Data

Sampling Method: Peristaltic Pump-Number: _____ Other: _____ Sampling Time: 1221/1225

Color: Clear Grey Light Grey Light Brown Brown Other: _____

Odor: Mild Strong -- Specify: None Visual Turbidity: Clear Low Medium High

Sample Parameters	Container Description	Preservative	Filtered y/n
G.B.G	2 vials 40 ml	HCl	
VOCS	2 vials 40 ml	HCl	N
DRO/PBO	2 500 ml	N	N
S.VOC's	2 250 ml	N	N
metals /mercury	2 125 ml	HNO ₃	N
Dissolved Metals	1 125 ml	N	N

Remarks: 0.0 ppm

Sampler(s) Signature: [Signature]

ASTM-D6771-02: Stabilization of Parameters:

pH	Temp	Conductivity	Dissolved Oxygen	Eh or ORP	Turbidity
± 0.2 phu	± 0.2 °C	3% of reading	± 10% of reading or ± 0.2 mg/L, whichever is greater	± 20 mV	± 10% of the previous reading or ± 1.0 NTU whichever is greater

Groundwater Monitoring Field Data Sheet

Project Name: Puma Terminal Project Number: E002.1605B
 Location: Bayamon P.R. Date: 01/19/10
 Arcadis PR Team: A.C. M.F.
 Well ID: MW-11B Well casing Dia.: 2" Weather: Sunny

WELL CASING VOLUMES (per foot of water column)

1-1/4"=0.06 1-1/2"=0.09 2"=0.16 2-1/2"=0.26 3"=0.37 3-1/2"=0.5 4"=0.65 6"=1.47

Well Data

Well Depth:	<u>106.90</u>	ft. TOC	Gallons per foot:	<u>0.16</u>	gal
Depth to Water:	<u>6.80</u>	ft. TOC	Gallons per well casing (Well Volume):	<u>16.00</u>	gal
Depth to SPH:	<u>ND</u>	ft. TOC	Three well volumes (x3):	<u>48.04</u>	gal
Water Column in Well:	<u>100.10</u>	ft.	Placement of Pump Intake:		ft. TOC

Well Purging Information and Field Parameters

Well Purging Method: Peristaltic Pump - Number _____ Monsoon Pump - Number _____ Other whaler

Time	Depth to Groundwater (ft)	Flow Rate (ml/min)	Cumulative Volume (gal)	pH	Temp. (°C)	ORP mV	Turbidity (NTU)	Cond. (mS/cm)	D.O. (mg/L)	D.O. (%)
1020	6.80	16.4 6.40	Initial							
1036	12.94	16.4 x min	16.4	6.36	26.02	260.3	10.5	0.521	2.81	
1052	13.00	16.4 x min	32	7.36	25.95	301.9	151.0	0.541	1.90	
1105	13.10	16.4 x min	48.4	7.42	26.04	341.2	115.5	0.551	1.35	

Sampling Data

Sampling Method: Peristaltic Pump-Number: _____ Other: _____ Sampling Time: 1115

Color: Clear Grey Light Grey Light Brown Brown Other: _____

Odor: Mild Strong -- Specify: None Visual Turbidity: Clear Low Medium High

Sample Parameters	Container Description	Preservative	Filtered y/n
<u>GR0</u>	<u>2 vial none</u>	<u>HCl</u>	
<u>VOC's</u>	<u>2 vial none</u>	<u>HCl</u>	<u>N</u>
<u>DR0/080</u>	<u>2 500 ml</u>	<u>N</u>	<u>N</u>
<u>SR0's</u>	<u>2 250 ml</u>	<u>N</u>	<u>N</u>
<u>metals / mercury</u>	<u>1 250 ml</u>	<u>HNO3</u>	<u>N</u>
<u>Dissolved Metals</u>	<u>1 125 ml</u>	<u>N</u>	<u>N</u>

Remarks: 0.0 ppm

Sampler(s) Signature: [Signature]

ASTM-D6771-02: Stabilization of Parameters:

pH	Temp	Conductivity	Dissolved Oxygen	Eh or ORP	Turbidity
± 0.2 phu	± 0.2 °C	3% of reading	± 10% of reading or ± 0.2 mg/L, whichever is greater	± 20 mV	± 10% of the previous reading or ± 1.0 NTU whichever is greater

Groundwater Monitoring Field Data Sheet

Project Name: Pura Terminal Project Number: E002.1605A
 Location: Bayamon P.R. Date: 01/18/15
 Arcadis PR Team: A.C. M.F.
 Well ID: MW-17B Well casing Dia.: 2" Weather: Sunny

WELL CASING VOLUMES (per foot of water column)

1-1/4"=0.06 1-1/2"=0.09 2"=0.16 2-1/2"=0.26 3"=0.37 3-1/2"=0.5 4"=0.65 6"=1.47

Well Data

Well Depth:	<u>56.10</u>	ft. TOC	Gallons per foot:	<u>0.16</u>	gal
Depth to Water:	<u>4.22</u>	ft. TOC	Gallons per well casing (Well Volume):	<u>8.30</u>	gal
Depth to SPH:	<u>ND</u>	ft. TOC	Three well volumes (x3):	<u>24.90</u>	gal
Water Column in Well:	<u>51.88</u>	ft.	Placement of Pump Intake:	<u>35</u>	ft. TOC

Well Purging Information and Field Parameters

Well Purging Method: Peristaltic Pump - Number _____ Monsoon Pump - Number _____ Other Whaler

Time	Depth to Groundwater (ft)	Flow Rate (ml/min)	Cumulative Volume (gal)	pH	Temp. (°C)	ORP mV	Turbidity (NTU)	Cond. (mS/cm)	D.O. (mg/L)	D.O. (%)
1500	<u>4.22</u>	<u>1.06L/min</u>	<u>17.12L</u>							
1508	<u>16.45</u>	<u>1.06L/min</u>	<u>8.0L</u>	<u>6.22</u>	<u>25.59</u>	<u>268.5</u>	<u>468.6</u>	<u>0.523</u>	<u>1.59</u>	
1516	<u>16.60</u>	<u>1.06L/min</u>	<u>16.0L</u>	<u>6.48</u>	<u>25.60</u>	<u>335.8</u>	<u>263.6</u>	<u>0.541</u>	<u>1.23</u>	
1524	<u>16.70</u>	<u>1.06L/min</u>	<u>24.0L</u>	<u>6.15</u>	<u>25.16</u>	<u>360.5</u>	<u>1022.8</u>	<u>0.551</u>	<u>1.06</u>	
15										

Sampling Data

Sampling Method: Peristaltic Pump-Number: _____ Other: _____ Sampling Time: 1534

Color: Clear Grey Light Grey Light Brown Brown Other: _____

Odor: Mild Strong -- Specify: _____ Visual Turbidity: Clear Low Medium High

Sample Parameters	Container Description	Preservative	Filtered y/n
<u>GBD</u>	<u>2 vials 40ml</u>	<u>HCl</u>	
<u>VOC'S</u>	<u>2 vials 40ml</u>	<u>HCl</u>	<u>N</u>
<u>DRO/ORO</u>	<u>2 500ml</u>	<u>N</u>	<u>N</u>
<u>5 VOC'S</u>	<u>2 250ml</u>	<u>N</u>	<u>N</u>
<u>Metals / Mercury</u>	<u>1 250 ml</u>	<u>HNO₃</u>	<u>N</u>
<u>Dissolved Metals</u>		<u>N</u>	<u>N</u>

Remarks: 0.0M Nota se observa sheen

Sampler(s) Signature: [Signature]

ASTM-D6771-02: Stabilization of Parameters:

pH	Temp	Conductivity	Dissolved Oxygen	Eh or ORP	Turbidity
± 0.2 phu	± 0.2 °C	3% of reading	± 10% of reading or ± 0.2 mg/L, whichever is greater	± 20 mV	± 10% of the previous reading or ± 1.0 NTU whichever is greater

Groundwater Monitoring Field Data Sheet

Project Name: Puma Terminal Project Number: E002, 1605A
 Location: Boyanon P.O Date: 01/18/17
 Arcadis PR Team: A.C. M.F
 Well ID: MW-34A Well casing Dia.: 2" Weather: Sunny

WELL CASING VOLUMES (per foot of water column)

1-1/4"=0.06 1-1/2"=0.09 2"=0.16 2-1/2"=0.26 3"=0.37 3-1/2"=0.5 4"=0.65 6"=1.47

Well Data

Well Depth:	<u>55.20</u>	ft. TOC	Gallons per foot:	<u>0.16</u>	gal
Depth to Water:	<u>5.03</u>	ft. TOC	Gallons per well casing (Well Volume):	<u>8.02</u>	gal
Depth to SPH:	<u>ND</u>	ft. TOC	Three well volumes (x3):	<u>24.08</u>	gal
Water Column in Well:	<u>50.17</u>	ft.	Placement of Pump Intake:	<u>30.00</u>	ft. TOC

Well Purging Information and Field Parameters

Well Purging Method: Peristaltic Pump - Number 12383 Monsoon Pump - Number _____ Other _____

Time	Depth to Groundwater (ft)	Flow Rate (ml/min)	Cumulative Volume (gal)	pH	Temp. (°C)	ORP mV	Turbidity (NTU)	Cond. (mS/cm)	D.O. (mg/L)	D.O. (%)
1246	5.03	160ml/mw	initial							
1249	4.98	160ml/mw	480	6.61	29.39	319.1	-32.2	0.969	0.31	
1252	4.98	160ml/mw	960	6.65	29.39	210.1	-40.9	0.968	0.50	
1255	4.98	160ml/mw	1440	6.68	29.43	143.6	-40.9	0.969	0.42	
1258	4.97	160ml/mw	1920	6.72	29.44	96.8	-31.1	0.990	0.39	
1301	4.98	160ml/mw	2400	6.72	29.53	95.2	-40.9	0.990	0.35	
1304	4.98	160ml/mw	2880	6.73	29.31	58.4	-30.1	0.992	0.34	
1307	4.98	160ml/mw	3360	6.73	29.19	44.0	-30.1	0.969	0.32	
1310	4.98	160ml/mw	3840	6.75	29.28	40.0	-30.9	0.990	0.32	

Sampling Data

Sampling Method: Peristaltic Pump - Number: 12383 Other: _____ Sampling Time: 1323

Color: Clear Grey Light Grey Light Brown Brown Other: _____

Odor: Mild Strong -- Specify: _____ Visual Turbidity: Clear Low Medium High

Sample Parameters	Container Description	Preservative	Filtered y/n
<u>U-RO</u>	<u>2 vials 40ml</u>	<u>HCl</u>	<u>N</u>
<u>VOG's</u>	<u>2 vials 40ml</u>	<u>HCl</u>	<u>N</u>
<u>ORO/ORO</u>	<u>2 500ml GAL</u>	<u>N</u>	<u>N</u>
<u>SVOC's</u>	<u>2 250 ml</u>	<u>N</u>	<u>N</u>
<u>Metals / Mercury</u>	<u>1 250 ml</u>	<u>HNO₃</u>	<u>N</u>
<u>Dissolved Metals</u>	<u>1 125 ml</u>	<u>N</u>	<u>N</u>

Remarks: 0.0 ppm

Sampler(s) Signature: M

ASTM-D6771-02: Stabilization of Parameters:

pH	Temp	Conductivity	Dissolved Oxygen	Eh or ORP	Turbidity
± 0.2 phu	± 0.2 °C	3% of reading	± 10% of reading or ± 0.2 mg/L, whichever is greater	± 20 mV	± 10% of the previous reading or ± 1.0 NTU whichever is greater

Groundwater Monitoring Field Data Sheet

Project Name: Puna Terminal Project Number: E002.1605B
 Location: Bayman P.R. Date: 01/18/17
 Arcadis PR Team: A.C. M.E.
 Well ID: MW-84B2 Well casing Dia.: 2" Weather: Sunny

WELL CASING VOLUMES (per foot of water column)

1-1/4"=0.06 1-1/2"=0.09 2"=0.16 2-1/2"=0.26 3"=0.37 3-1/2"=0.5 4"=0.65 6"=1.47

Well Data

Well Depth:	<u>18.50</u>	ft. TOC	Gallons per foot:	<u>0.16</u>	gal
Depth to Water:	<u>2.52</u>	ft. TOC	Gallons per well casing (Well Volume):	<u>2.55</u>	gal
Depth to SPH:	<u>ND</u>	ft. TOC	Three well volumes (x3):	<u>7.67</u>	gal
Water Column in Well:	<u>15.98</u>	ft.	Placement of Pump Intake:	<u>10.50</u>	ft. TOC

Well Purging Information and Field Parameters

Well Purging Method: Peristaltic Pump - Number 12383 Monsoon Pump - Number _____ Other _____

Time	Depth to Groundwater (ft)	Flow Rate (ml/min)	Cumulative Volume (gal)	pH	Temp. (°C)	ORP mV	Turbidity (NTU)	Cond. (mS/cm)	D.O. (mg/L)	D.O. (%)
<u>1152</u>	<u>2.52</u>	<u>160ml/min</u>	<u>160ml</u>							
<u>1155</u>	<u>4.15</u>	<u>160ml/min</u>	<u>480</u>	<u>5.51</u>	<u>29.62</u>	<u>361.3</u>	<u>-6.4</u>	<u>0.455</u>	<u>1.20</u>	
<u>1158</u>	<u>4.82</u>	<u>160ml/min</u>	<u>960</u>	<u>5.56</u>	<u>29.35</u>	<u>396.2</u>	<u>-34.7</u>	<u>0.455</u>	<u>0.94</u>	
<u>1201</u>	<u>5.53</u>	<u>160ml/min</u>	<u>1440</u>	<u>5.56</u>	<u>29.4</u>	<u>420.7</u>	<u>-37.6</u>	<u>0.458</u>	<u>0.78</u>	
<u>1204</u>	<u>6.32</u>	<u>160ml/min</u>	<u>1920ml</u>	<u>5.57</u>	<u>29.56</u>	<u>438.6</u>	<u>-32.9</u>	<u>0.460</u>	<u>0.68</u>	
<u>1207</u>	<u>6.96</u>	<u>160ml/min</u>	<u>2400ml</u>	<u>5.58</u>	<u>29.37</u>	<u>450.6</u>	<u>-38.1</u>	<u>0.461</u>	<u>0.65</u>	
<u>1210</u>	<u>7.48</u>	<u>160ml/min</u>	<u>2800ml</u>	<u>5.58</u>	<u>29.40</u>	<u>459.8</u>	<u>-38.0</u>	<u>0.464</u>	<u>0.59</u>	
<u>1213</u>	<u>8.05</u>	<u>160ml/min</u>	<u>3360ml</u>	<u>5.58</u>	<u>29.46</u>	<u>467.1</u>	<u>-37.7</u>	<u>0.467</u>	<u>0.58</u>	

Sampling Data

Sampling Method: Peristaltic Pump-Number: _____ Other: _____ Sampling Time: 1231

Color: Clear Grey Light Grey Light Brown Brown Other: _____

Odor: Mild Strong -- Specify: NONE Visual Turbidity: Clear Low Medium High

Sample Parameters	Container Description	Preservative	Filtered y/n
<u>689</u>	<u>2 vials 40 ml</u>	<u>HCl</u>	
<u>1063</u>	<u>2 vials 40 ml</u>	<u>HCl</u>	<u>N</u>
<u>DRO/ORO</u>	<u>2 500ml</u>	<u>N</u>	<u>N</u>
<u>5 rocks</u>	<u>2 250 ml</u>	<u>N</u>	<u>N</u>
<u>Mercury / metals</u>	<u>1 250 ml</u>	<u>HNO₃</u>	<u>N</u>
<u>Dissolved Metals</u>	<u>1 250 ml</u>	<u>N</u>	<u>N</u>

Remarks: 0.000m

Sampler(s) Signature: [Signature]

ASTM-D6771-02: Stabilization of Parameters:

pH	Temp	Conductivity	Dissolved Oxygen	Eh or ORP	Turbidity
± 0.2 phu	± 0.2 °C	3% of reading	± 10% of reading or ± 0.2 mg/L, whichever is greater	± 20 mV	± 10% of the previous reading or ± 1.0 NTU whichever is greater

Groundwater Monitoring Field Data Sheet

Project Name: Pump Terminal Project Number: E002.1605B
 Location: Bayamon P.R. Date: 01/18/17
 Arcadis PR Team: A.L. MIF
 Well ID: MW-38A Well casing Dia.: 2" Weather: Sunny

WELL CASING VOLUMES (per foot of water column)

1-1/4"=0.06 1-1/2"=0.09 2"=0.16 2-1/2"=0.26 3"=0.37 3-1/2"=0.5 4"=0.65 6"=1.47

Well Data

Well Depth:	<u>25.50</u>	ft. TOC	Gallons per foot:	<u>0.16</u>	gal
Depth to Water:	<u>4.45</u>	ft. TOC	Gallons per well casing (Well Volume):	<u>3.26</u>	gal
Depth to SPH:	<u>ND</u>	ft. TOC	Three well volumes (x3):	<u>10.10</u>	gal
Water Column in Well:	<u>21.05</u>	ft.	Placement of Pump Intake:	<u>15</u>	ft. TOC

Well Purging Information and Field Parameters

Well Purging Method: Peristaltic Pump - Number 12383 Monsoon Pump - Number _____ Other _____

Time	Depth to Groundwater (ft)	Flow Rate (ml/min)	Cumulative Volume (gal)	pH	Temp. (°C)	ORP mV	Turbidity (NTU)	Cond. (mS/cm)	D.O. (mg/L)	D.O. (%)
<u>1036</u>	<u>4.45</u>	<u>160ml/min</u>	<u>160</u>							
<u>1039</u>	<u>6.29</u>	<u>160ml/min</u>	<u>480</u>	<u>4.39</u>	<u>27.49</u>	<u>465.8</u>	<u>-29.2</u>	<u>0.208</u>	<u>0.90</u>	
<u>1042</u>	<u>5.07</u>	<u>160ml/min</u>	<u>960</u>	<u>4.38</u>	<u>27.40</u>	<u>461.4</u>	<u>-40.3</u>	<u>0.206</u>	<u>0.92</u>	
<u>1045</u>	<u>5.14</u>	<u>160ml/min</u>	<u>1440</u>	<u>4.39</u>	<u>28.68</u>	<u>465.9</u>	<u>-41.2</u>	<u>0.206</u>	<u>0.89</u>	
<u>1048</u>	<u>5.18</u>	<u>160ml/min</u>	<u>1920</u>	<u>4.38</u>	<u>28.21</u>	<u>493.5</u>	<u>-39.5</u>	<u>0.206</u>	<u>0.89</u>	
			<u>2400</u>							

Sampling Data

Sampling Method: Peristaltic Pump-Number: 12383 Other: _____ Sampling Time: 1116

Color: Clear Grey Light Grey Light Brown Brown Other: _____

Odor: Mild Strong -- Specify: none Visual Turbidity: Clear Low Medium High

Sample Parameters	Container Description	Preservative	Filtered y/n
<u>GRD</u>	<u>2 vial 40 ml</u>	<u>HCl</u>	
<u>RO's</u>	<u>2 vial 40 ml</u>	<u>HCl</u>	<u>N</u>
<u>DRO /ORO</u>	<u>2 500 ml</u>	<u>N</u>	<u>N</u>
<u>SVOC's</u>	<u>2 250 ml</u>	<u>N</u>	<u>N</u>
<u>Metals, Mercury</u>	<u>1 250 ml</u>	<u>HNO3</u>	<u>N</u>
<u>Dissolved metals</u>	<u>1 125 ml</u>	<u>N</u>	<u>N</u>

Remarks: 0.0'

Sampler(s) Signature: [Signature]

ASTM-D6771-02: Stabilization of Parameters:

pH	Temp	Conductivity	Dissolved Oxygen	Eh or ORP	Turbidity
± 0.2 phu	± 0.2 °C	3% of reading	± 10% of reading or ± 0.2 mg/L, whichever is greater	± 20 mV	± 10% of the previous reading or ± 1.0 NTU whichever is greater

Groundwater Monitoring Field Data Sheet

Project Name: Puma Terminal Project Number: E002.1605B
 Location: Bayamon P.R. Date: 01/18/17
 Arcadis PR Team: _____
 Well ID: MW-63A Well casing Dia.: 4" Weather: cloud

WELL CASING VOLUMES (per foot of water column)

1-1/4"=0.06 1-1/2"=0.09 2"=0.16 2-1/2"=0.26 3"=0.37 3-1/2"=0.5 4"=0.65 6"=1.47

Well Data

Well Depth:	<u>20.60</u>	ft. TOC	Gallons per foot:	<u>0.65</u>	gal
Depth to Water:	<u>2.97</u>	ft. TOC	Gallons per well casing (Well Volume):	<u>11.45</u>	gal
Depth to SPH:	<u>ND</u>	ft. TOC	Three well volumes (x3):	<u>34.35</u>	gal
Water Column in Well:	<u>17.63</u>	ft.	Placement of Pump Intake:	<u>11.05</u>	ft. TOC

Well Purging Information and Field Parameters

Well Purging Method: Peristaltic Pump - Number 12383 Monsoon Pump - Number _____ Other _____

Time	Depth to Groundwater (ft)	Flow Rate (ml/min)	Cumulative Volume (gal)	pH	Temp. (°C)	ORP mV	Turbidity (NTU)	Cond. (mS/cm)	D.O. (mg/L)	D.O. (%)
1002	<u>2.97</u>	<u>160ml/min</u>	<u>Initial</u>							
1005	<u>3.60</u>	<u>160ml/min</u>	<u>480</u>	<u>4.07</u>	<u>27.25</u>	<u>418.4</u>	<u>3.8</u>	<u>0.423</u>	<u>0.82</u>	
1008	<u>3.80</u>	<u>160ml/min</u>	<u>960</u>	<u>4.06</u>	<u>27.07</u>	<u>426.1</u>	<u>-6.1</u>	<u>0.422</u>	<u>0.76</u>	
1011	<u>4.00</u>	<u>160ml/min</u>	<u>1440</u>	<u>4.05</u>	<u>26.99</u>	<u>435.3</u>	<u>-28.9</u>	<u>0.423</u>	<u>0.67</u>	
1014	<u>4.20</u>	<u>160ml/min</u>	<u>1920</u>	<u>4.06</u>	<u>27.30</u>	<u>440.4</u>	<u>-27.1</u>	<u>0.423</u>	<u>0.66</u>	
1017	<u>4.40</u>	<u>160ml/min</u>	<u>2400</u>	<u>4.06</u>	<u>27.11</u>	<u>445.8</u>	<u>-25.1</u>	<u>0.423</u>	<u>0.67</u>	

Sampling Data

Sampling Method: Peristaltic Pump - Number: 12383 Other: _____ Sampling Time: 1033

Color: Clear Grey Light Grey Light Brown Brown Other: _____

Odor: Mild Strong -- Specify: NONE Visual Turbidity: Clear Low Medium High

Sample Parameters	Container Description	Preservative	Filtered y/n
<u>CRD</u>	<u>2 vials 40ml</u>	<u>HCl</u>	
<u>VOCS</u>	<u>2 vials 40ml</u>	<u>HCl</u>	<u>N</u>
<u>DRD/ORD</u>	<u>2 500 mL</u>	<u>N</u>	<u>N</u>
<u>SVOC'S</u>	<u>2 250 mL</u>	<u>N</u>	<u>N</u>
<u>Metals / Mercury</u>	<u>1 250 mL</u>	<u>HNO3</u>	<u>N</u>
<u>Dissolved Metals</u>	<u>1 125 mL</u>	<u>N</u>	<u>N</u>

Remarks: 0.0 PPM

Sampler(s) Signature: [Signature]

ASTM-D6771-02: Stabilization of Parameters:

pH	Temp	Conductivity	Dissolved Oxygen	Eh or ORP	Turbidity
± 0.2 pH	± 0.2 °C	3% of reading	± 10% of reading or ± 0.2 mg/L, whichever is greater	± 20 mV	± 10% of the previous reading or ± 1.0 NTU whichever is greater

Groundwater Monitoring Field Data Sheet

Project Name: Puma Terminal Project Number: E002.1605B
 Location: Bayamon P.R. Date: 01/17/11
 Arcadis PR Team: A.C. MF
 Well ID: MW-114A Well casing Dia.: 2" Weather: Sunny

WELL CASING VOLUMES (per foot of water column)

1-1/4"=0.06 1-1/2"=0.09 2"=0.16 2-1/2"=0.26 3"=0.37 3-1/2"=0.5 4"=0.65 6"=1.47

Well Data

Well Depth:	<u>14.30</u>	ft. TOC	Gallons per foot:	<u>0.16</u>	gal
Depth to Water:	<u>2.95</u>	ft. TOC	Gallons per well casing (Well Volume):	<u>1.87</u>	gal
Depth to SPH:	<u>ND</u>	ft. TOC	Three well volumes (x3):	<u>5.44</u>	gal
Water Column in Well:	<u>11.35</u>	ft.	Placement of Pump Intake:	<u>8.60</u>	ft. TOC

Well Purging Information and Field Parameters

Well Purging Method: Peristaltic Pump - Number 12383 Monsoon Pump - Number _____ Other _____

Time	Depth to Groundwater (ft)	Flow Rate (ml/min)	Cumulative Volume (gal)	pH	Temp. (°C)	ORP mV	Turbidity (NTU)	Cond. (mS/cm)	D.O. (mg/L)	D.O. (%)
1523	2.95	160ml/min	initial							
1526	3.40	160ml/min	480	6.45	26.22	319.7	105.3	1.608	0.70	
1529	3.80	160ml/min	960	6.43	26.10	281.8	48.8	1.604	0.47	
1532	4.00	160ml/min	1440	6.43	25.68	260.7	32.1	1.591	0.37	
1535	4.10	160ml/min	2400	6.43	25.65	249.7	43.0	1.590	0.30	
1538	4.05	160ml/min	2880	6.44	25.91	229.9	-52.1	1.515	0.34	
1541	4.05	160ml/min	3360	6.44	25.79	210.3	-50.8	1.569	0.34	
1544	4.05	160ml/min	3840	6.45	25.77	205.2	-54.2	1.559	0.33	
1547	4.05	160ml/min	4320	6.41	26.14	158.3	-54.4	1.470	0.31	
1550	4.05	160ml/min	4800	6.51	26.05	139.7	-48.1	1.301	0.31	
1553	4.05	160ml/min	5280	6.53	25.92	138.1	-35.1	1.349	0.31	

Sampling Method: Peristaltic Pump - Number 12383 Other: _____ Sampling Time: 1621

Color: Clear Grey Light Grey Light Brown Brown Other: _____
 Odor: Mild Strong -- Specify: None Visual Turbidity: Clear Low Medium High

Sample Parameters	Container Description	Preservative	Filtered y/n
<u>CO₂</u>	<u>2 vial 40ml</u>	<u>H₂S</u>	
<u>VOCS</u>	<u>2 vial 40ml</u>	<u>HCl</u>	<u>N</u>
<u>DBO / ORP</u>	<u>2 500 ml</u>	<u>N</u>	<u>N</u>
<u>Svocs</u>	<u>2 250 ml</u>	<u>N</u>	<u>N</u>
<u>metals Mercury</u>	<u>1 250 ml</u>	<u>HNO₃</u>	<u>N</u>
<u>Dissolved Metals</u>			<u>N</u>

Remarks: 0.0 ppm

Sampler(s) Signature: MF
1556 4.05 160ml/min 5160 6.54 26.02 130.1 -33.1 1.309 0.31
1557 4.05 160ml/min 6240 6.54 26.00 125.1 -32.1 1.230 0.31

ASTM-D6771-02: Stabilization of Parameters:

pH	Temp	Conductivity	Dissolved Oxygen	Eh or ORP	Turbidity
± 0.2 phu	± 0.2 °C	3% of reading	± 10% of reading or ± 0.2 mg/L, whichever is greater	± 20 mV	± 10% of the previous reading or ± 1.0 NTU whichever is greater

Groundwater Monitoring Field Data Sheet

Project Name: Puma Terminal Project Number: E002.16058
 Location: Bayamon Date: 01/19/19
 Arcadis PR Team: AC / ME
 Well ID: MW-95B2 Well casing Dia.: 2" Weather: sunny

WELL CASING VOLUMES (per foot of water column)

1-1/4"=0.06 1-1/2"=0.09 2"=0.16 2-1/2"=0.26 3"=0.37 3-1/2"=0.5 4"=0.65 6"=1.47

Well Data

Well Depth:	<u>56.00</u>	ft. TOC	Gallons per foot:	<u>0.16</u>	gal
Depth to Water:	<u>2.00</u>	ft. TOC	Gallons per well casing (Well Volume):	<u>11.84</u>	gal
Depth to SPH:	<u>10</u>	ft. TOC	Three well volumes (x3):	<u>35.52</u>	gal
Water Column in Well:	<u>54</u>	ft.	Placement of Pump Intake:	<u>39</u>	ft. TOC

Well Purging Information and Field Parameters

Well Purging Method: Peristaltic Pump - Number _____ Monsoon Pump - Number _____ Other Whaler 1536MA13

Time	Depth to Groundwater (ft)	Flow Rate (ml/min)	Cumulative Volume (gal)	pH	Temp. (°C)	ORP mV	Turbidity (NTU)	Cond. (mS/cm)	D.O. (mg/L)	D.O. (%)
1404	2.00	<u>1.54</u>	<u>Initial</u>							
1412	2.28	<u>1.54</u>	<u>480</u>	<u>6.80</u>	<u>21.47</u>	<u>228.9</u>	<u>-64.2</u>	<u>1.195</u>	<u>2.20</u>	
1420	2.28	<u>1.54</u>	<u>960</u>	<u>6.85</u>	<u>26.25</u>	<u>301.1</u>	<u>-57.5</u>	<u>1.163</u>	<u>1.32</u>	
1428	2.28	<u>1.54</u>	<u>360</u>	<u>6.89</u>	<u>25.83</u>	<u>392.4</u>	<u>-56.7</u>	<u>1.168</u>	<u>1.44</u>	

Sampling Data

Sampling Method: Peristaltic Pump-Number: _____ Other: _____ Sampling Time: 1450

Color: Clear Grey Light Grey Light Brown Brown Other: _____

Odor: Mild Strong -- Specify: None Visual Turbidity: Clear Low Medium High

Sample Parameters	Container Description	Preservative	Filtered y/n
<u>CO3</u>	<u>2 vial 40ml</u>	<u>HC</u>	
<u>VOCS</u>	<u>2 vials 40ml</u>	<u>HCl</u>	<u>N</u>
<u>DRO/ORO</u>	<u>2 500 mL</u>	<u>N</u>	<u>N</u>
<u>SVOC's</u>	<u>2 250 mL</u>	<u>N</u>	<u>N</u>
<u>Metals / Mercury</u>	<u>1 250 mL</u>	<u>HNO3</u>	<u>N</u>
<u>Dissolved Metals</u>			<u>N</u>

Remarks: 0.0 ppm MW-95B2 (MS) / MW-95B2 (MSD) [DUP006]

Sampler(s) Signature: M

ASTM-D6771-02: Stabilization of Parameters:

pH	Temp	Conductivity	Dissolved Oxygen	Eh or ORP	Turbidity
± 0.2 pH	± 0.2 °C	3% of reading	± 10% of reading or ± 0.2 mg/L, whichever is greater	± 20 mV	± 10% of the previous reading or ± 1.0 NTU whichever is greater

Groundwater Monitoring Field Data Sheet

Project Name: Puma Terminal Project Number: E002.1605B
 Location: Bayamon P.R. Date: 01/13/11
 Arcadis PR Team: A.G. M.F.
 Well ID: MW-111A Well casing Dia.: 2" Weather: Sunny

WELL CASING VOLUMES (per foot of water column)

1-1/4"=0.06 1-1/2"=0.09 2"=0.16 2-1/2"=0.26 3"=0.37 3-1/2"=0.5 4"=0.65 6"=1.47

Well Data

Well Depth:	<u>17.2</u>	ft. TOC	Gallons per foot:	<u>0.16</u>	gal
Depth to Water:	<u>14.9.30</u>	ft. TOC	Gallons per well casing (Well Volume):	<u>1.26</u>	gal
Depth to SPH:	<u>N/D</u>	ft. TOC	Three well volumes (x3):	<u>3.80</u>	gal
Water Column in Well:	<u>2.9</u>	ft.	Placement of Pump Intake:	<u>13.25</u>	ft. TOC

Well Purging Information and Field Parameters

Well Purging Method: Peristaltic Pump - Number 12383 Monsoon Pump - Number _____ Other _____

Time	Depth to Groundwater (ft)	Flow Rate (ml/min)	Cumulative Volume (gal)	pH	Temp. (°C)	ORP mV	Turbidity (NTU)	Cond. (mS/cm)	D.O. (mg/L)	D.O. (%)
1156	9.30	160ml/min	Initial							
1159	9.70	160ml/min	460	7.09	25.82	5.4	52.4	1.954	4.94	
1202	9.90	160ml/min	960	7.09	25.82	5.4	52.4	1.954	4.94	
1205	10.08	160ml/min	1440	5.55	25.75	14.8	563.1	3.402	0.41	
1208	10.24	160ml/min	2400	5.53	25.73	10.8	590.1	3.400	0.38	
1211	10.48	160ml/min	2880	5.52	25.70	60.3	528.2	3.398	0.37	
1214	10.51	160ml/min	3360	5.52	25.68	54.5	521.8	3.397	0.35	

Sampling Data

Sampling Method: Peristaltic Pump-Number: _____ Other: _____ Sampling Time: 1230

Color: Clear Grey Light Grey Light Brown Brown Other: _____

Odor: Mild Strong -- Specify: None Visual Turbidity: Clear Low Medium High

Sample Parameters	Container Description	Preservative	Filtered y/n
<u>WBO</u>	<u>2 vial 40ml</u>	<u>HCl</u>	
<u>VOCS</u>	<u>2 vial 100ml</u>	<u>HCl</u>	<u>N</u>
<u>DRO/ORO</u>	<u>2 500 ml</u>	<u>N</u>	<u>N</u>
<u>SVOCS</u>	<u>2 250 ml</u>	<u>N</u>	<u>N</u>
<u>Metals/Mercury</u>	<u>1 250 ml</u>	<u>HNO₃</u>	<u>N</u>
<u>Dissolved Metals</u>	<u>1 125 ml</u>	<u>N</u>	<u>N</u>

Remarks: Nota: el Instrumento se habia quedado Finisado la pantalla

Sampler(s) Signature: [Signature] 0.0 ppm

ASTM-D6771-02: Stabilization of Parameters:

pH	Temp	Conductivity	Dissolved Oxygen	Eh or ORP	Turbidity
± 0.2 phu	± 0.2 °C	3% of reading	± 10% of reading or ± 0.2 mg/L, whichever is greater	± 20 mV	± 10% of the previous reading or ± 1.0 NTU whichever is greater

Groundwater Monitoring Field Data Sheet

Project Name: Puma Terminal Project Number: E002.1605B
 Location: Bayamon P.R. Date: 01/17/11
 Arcadis PR Team: A.C. M.F.
 Well ID: MM-110B2 Well casing Dia.: 2" Weather: Sunny

WELL CASING VOLUMES (per foot of water column)

1-1/4"=0.06 1-1/2"=0.09 **2"=0.16** 2-1/2"=0.26 3"=0.37 3-1/2"=0.5 4"=0.65 6"=1.47

Well Data

Well Depth:	<u>91</u>	ft. TOC	Gallons per foot:	<u>0.16</u>	gal
Depth to Water:	<u>6.62</u>	ft. TOC	Gallons per well casing (Well Volume):	<u>13.50</u>	gal
Depth to SPH:	<u>ND</u>	ft. TOC	Three well volumes (x3):	<u>40.50</u>	gal
Water Column in Well:	<u>84.38</u>	ft.	Placement of Pump Intake:	<u>49</u>	ft. TOC

Well Purging Information and Field Parameters

Well Purging Method: Peristaltic Pump - Number 12343 Monsoon Pump - Number _____ Other 1500MA13 whaler

Time	Depth to Groundwater (ft)	Flow Rate (ml/min)	Cumulative Volume (gal)	pH	Temp. (°C)	ORP mV	Turbidity (NTU)	Cond. (mS/cm)	D.O. (mg/L)	D.O. (%)
1100	<u>6.62</u>	<u>1/2 gal/min</u>	<u>Initial</u>							
1101	<u>6.33</u>	<u>1/2 gal/min</u>	<u>13.50</u>	<u>7.34</u>	<u>25.95</u>	<u>37.1</u>	<u>-52.5</u>	<u>1.947</u>	<u>1.85</u>	
1114	<u>6.30</u>	<u>1/2 gal/min</u>	<u>27</u>	<u>7.09</u>	<u>25.82</u>	<u>5.4</u>	<u>-52.4</u>	<u>1.954</u>	<u>4.94</u>	
1121	<u>6.30</u>	<u>1/2 gal/min</u>	<u>40</u>	<u>7.09</u>	<u>25.82</u>	<u>5.4</u>	<u>-52.4</u>	<u>1.954</u>	<u>4.94</u>	

Sampling Data

Sampling Method: Peristaltic Pump - Number: 12 Other: _____ Sampling Time: 1138

Color: Clear Grey Light Grey Light Brown Brown Other: _____
 Odor: Mild Strong -- Specify: _____ Visual Turbidity: Clear Low Medium High

Sample Parameters	Container Description	Preservative	Filtered y/n
<u>CO₂</u>	<u>2 vial 40 ml</u>	<u>HCl</u>	
<u>VOCS</u>	<u>2 vial 40 ml</u>	<u>HCl</u>	<u>N</u>
<u>DRG/ORG</u>	<u>2 500 ml</u>	<u>N</u>	<u>N</u>
<u>SrO₂</u>	<u>2 250 ml</u>	<u>N</u>	<u>N</u>
<u>metals / mercury</u>	<u>1 250 ml</u>	<u>HNO₃</u>	<u>N</u>
<u>Dissolved Metals</u>	<u>1 125 ml</u>	<u>N</u>	<u>N</u>

Remarks: 0.0 PPM
 Sampler(s) Signature: [Signature]

ASTM-D6771-02: Stabilization of Parameters:

Temp	Conductivity	Dissolved Oxygen	Eh or ORP	Turbidity
± 0.2 °C	3% of reading	± 10% of reading or ± 0.2 mg/L, whichever is greater	± 20 mV	± 10% of the previous reading or ± 1.0 NTU whichever is greater

Groundwater Monitoring Field Data Sheet

Project Name: Puma Terminal Project Number: E002-1605B
 Location: Bayamon D.B. Date: 01/13/19
 Arcadis PR Team: A.L. M.F.
 Well ID: MW-110AB Well casing Dia.: 2" Weather: Sunny

WELL CASING VOLUMES (per foot of water column)

1-1/4"=0.06 1-1/2"=0.09 2"=0.16 2-1/2"=0.26 3"=0.37 3-1/2"=0.5 4"=0.65 6"=1.47

Well Data

Well Depth:	<u>15.20</u> ft. TOC	Gallons per foot:	<u>0.16</u> gal
Depth to Water:	<u>2.42</u> ft. TOC	Gallons per well casing (Well Volume):	<u>1.24</u> gal
Depth to SPH:	<u>NB</u> ft. TOC	Three well volumes (x3):	<u>3.75</u> gal
Water Column in Well:	<u>2.78</u> ft.	Placement of Pump Intake:	<u>11.30</u> ft. TOC

Well Purging Information and Field Parameters

Well Purging Method: Peristaltic Pump - Number 12383 Monsoon Pump - Number _____ Other _____

Time	Depth to Groundwater (ft)	Flow Rate (ml/min)	Cumulative Volume (gal)	pH	Temp. (°C)	ORP mV	Turbidity (NTU)	Cond. (mS/cm)	D.O. (mg/L)	D.O. (%)
1002	<u>2.42</u>	<u>160ml/min</u>	<u>Initial</u>							
1005	<u>2.40</u>	<u>160ml/min</u>	<u>160</u>	<u>6.60</u>	<u>25.91</u>	<u>35.5</u>	<u>-5.0</u>	<u>2.370</u>	<u>0.68</u>	
1008	<u>2.40</u>	<u>160ml/min</u>	<u>320</u>	<u>6.69</u>	<u>26.09</u>	<u>66.9</u>	<u>-38.8</u>	<u>4.181</u>	<u>0.52</u>	
1011	<u>2.40</u>	<u>160ml/min</u>	<u>480</u>	<u>6.71</u>	<u>26.07</u>	<u>-99.0</u>	<u>-26.9</u>	<u>4.051</u>	<u>0.45</u>	
1014	<u>2.40</u>	<u>160ml/min</u>	<u>640</u>	<u>6.73</u>	<u>26.08</u>	<u>-90.2</u>	<u>-34.4</u>	<u>3.816</u>	<u>0.41</u>	
1017	<u>2.40</u>	<u>160ml/min</u>	<u>800</u>	<u>6.74</u>	<u>26.15</u>	<u>-102.9</u>	<u>-38.8</u>	<u>3.636</u>	<u>0.38</u>	
1020	<u>2.40</u>	<u>160ml/min</u>	<u>960</u>	<u>6.74</u>	<u>26.05</u>	<u>-129.8</u>	<u>-45.9</u>	<u>3.505</u>	<u>0.35</u>	
1023	<u>2.40</u>	<u>160ml/min</u>	<u>1120</u>	<u>6.82</u>	<u>26.00</u>	<u>-154.2</u>	<u>-45.7</u>	<u>3.406</u>	<u>0.33</u>	
1026	<u>2.40</u>	<u>160ml/min</u>	<u>1280</u>	<u>6.84</u>	<u>26.95</u>	<u>-171.3</u>	<u>-52.1</u>	<u>3.325</u>	<u>0.31</u>	
1029	<u>2.40</u>	<u>160ml/min</u>	<u>1440</u>	<u>6.85</u>	<u>25.97</u>	<u>-186.3</u>	<u>-52.4</u>	<u>3.205</u>	<u>0.29</u>	
1032	<u>2.40</u>	<u>160ml/min</u>	<u>1600</u>	<u>6.86</u>	<u>26.24</u>	<u>-177.8</u>	<u>-54.7</u>	<u>3.237</u>	<u>0.28</u>	

Sampling Method: Peristaltic Pump-Number: 12383 Other: _____ Sampling Time: 1049

Color: Clear Grey Light Grey Light Brown Brown Other: _____
 Odor: Mild Strong -- Specify: _____ Visual Turbidity: Clear Low Medium High

Sample Parameters	Container Description	Preservative	Filtered y/n
<u>WDO, VOCs</u>	<u>2 vial 40ml</u>	<u>HCl</u>	
<u>WDO, OPs</u>	<u>2 vial 40ml</u>	<u>HCl</u>	<u>N</u>
<u>DRP/OPs</u>	<u>2 500ml</u>	<u>N</u>	<u>N</u>
<u>SVOCs</u>	<u>2 250ml</u>	<u>N</u>	<u>N</u>
<u>Metals/Mercury</u>	<u>1 250ml</u>	<u>HNO3</u>	<u>N</u>
<u>Dissolved Metals</u>	<u>1 125ml</u>	<u>N</u>	<u>N</u>

Remarks: 0.0 ppm
 Sampler(s) Signature: [Signature]

ASTM-D6771-02: Stabilization of Parameters:

pH	Temp	Conductivity	Dissolved Oxygen	Eh or ORP	Turbidity
± 0.2 phu	± 0.2 °C	3% of reading	± 10% of reading or ± 0.2 mg/L, whichever is greater	± 20 mV	± 10% of the previous reading or ± 1.0 NTU whichever is greater

Groundwater Monitoring Field Data Sheet

Project Name: Puma Terminal Project Number: E002.1605B
 Location: Boyanan P.B Date: 01/12/19
 Arcadis PR Team: A.C M.F
 Well ID: MW-30A Well casing Dia.: 2" Weather: Sunny

WELL CASING VOLUMES (per foot of water column)

1-1/4"=0.06 1-1/2"=0.09 2"=0.16 2-1/2"=0.26 3"=0.37 3-1/2"=0.5 4"=0.65 6"=1.47

Well Data

Well Depth:	<u>29.20</u> ft. TOC	Gallons per foot:	<u>0.16</u> gal
Depth to Water:	<u>6.65</u> ft. TOC	Gallons per well casing (Well Volume):	<u>3.28</u> gal
Depth to SPH:	<u>ND</u> ft. TOC	Three well volumes (x3):	<u>9.86</u> gal
Water Column in Well:	<u>20.55</u> ft.	Placement of Pump Intake:	<u>17.00</u> ft. TOC

Well Purging Information and Field Parameters

Well Purging Method: Peristaltic Pump - Number 12383 Monsoon Pump - Number _____ Other _____

Time	Depth to Groundwater (ft)	Flow Rate (ml/min)	Cumulative Volume (gal)	pH	Temp. (°C)	ORP mV	Turbidity (NTU)	Cond. (mS/cm)	D.O. (mg/L)	D.O. (%)
1403	6.65	160ml/min	Initial							
1406	8.30	160ml/min	480	6.96	28.20	-50.8	-31.5	0.695	0.65	
1409	8.65	160ml/min	960	6.99	28.19	-63.5	-25.5	0.696	0.55	
1412	9.10	160ml/min	1440	6.99	28.03	-75.0	-43.0	0.696	0.46	
1415	9.55	160ml/min	1920	6.99	28.09	-81.2	-30.3	0.697	0.44	
1418	9.95	160ml/min	2400	6.99	28.01	-93.2	-40.1	0.698	0.40	
1421	10.26	160ml/min	2880	6.98	28.12	-99.5	-32.3	0.699	0.40	

Sampling Data

Sampling Method: Peristaltic Pump-Number: 12383 Other: _____ Sampling Time: 1438

Color: Clear Grey Light Grey Light Brown Brown Other: _____

Odor: Mild Strong -- Specify: _____ Visual Turbidity: Clear Low Medium High

Sample Parameters	Container Description	Preservative	Filtered y/n
ARQ	2 vial 40ml	HCl	
VOCs	2 vial 40ml	HCl	N
ARO/OAG	2 500 ml	N	N
Svoc's	2 250 ml	N	N
metals / mercury	1 250 ml	HNO ₃	N
Dissolved metals	1 125 ml	N	N

Remarks: 138 PPM

Sampler(s) Signature: [Signature]

ASTM-D6771-02: Stabilization of Parameters:

pH	Temp	Conductivity	Dissolved Oxygen	Eh or ORP	Turbidity
± 0.2 phu	± 0.2 °C	3% of reading	± 10% of reading or ± 0.2 mg/L, whichever is greater	± 20 mV	± 10% of the previous r. ± 1.0 NTU whichever is g.

Groundwater Monitoring Field Data Sheet

Project Name: Purum Terunji Project Number: E002.1605B
 Location: Bryannan P.R. Date: 01/12/19
 Arcadis PR Team: A.C. M.F.
 Well ID: MW-13B2 Well casing Dia.: 2" Weather: Sunny

WELL CASING VOLUMES (per foot of water column)

1-1/4"=0.06 1-1/2"=0.09 2"=0.16 2-1/2"=0.26 3"=0.37 3-1/2"=0.5 4"=0.65 6"=1.47

Well Data

Well Depth:	<u>53.10</u>	ft. TOC	Gallons per foot:	<u>0.16</u>	gal
Depth to Water:	<u>12.89</u>	ft. TOC	Gallons per well casing (Well Volume):	<u>6.44</u>	gal
Depth to SPH:	<u>ND</u>	ft. TOC	Three well volumes (x3):	<u>19.32</u>	gal
Water Column in Well:	<u>40.26</u>	ft.	Placement of Pump Intake:	<u>31</u>	ft. TOC

Well Purging Information and Field Parameters

Well Purging Method: Peristaltic Pump - Number 12343 Monsoon Pump - Number _____ Other _____

Time	Depth to Groundwater (ft)	Flow Rate (ml/min)	Cumulative Volume (gal)	pH	Temp. (°C)	ORP mV	Turbidity (NTU)	Cond. (mS/cm)	D.O. (mg/L)	D.O. (%)
1304	12.84	160ml/min	(initial)							
1307	12.82	160ml/min	480	7.42	28.45	-28.7	-40.0	0.645	0.76	
1310	12.82	160ml/min	960	7.43	28.43	-41.8	-39.9	0.635	0.62	
1313	12.82	160ml/min	1440	7.49	28.45	-45.6	-43.3	0.628	0.53	
1316	12.82	160ml/min	1920	7.55	28.45	-47.1	-39.9	0.635	0.50	
1319	12.82	160ml/min	2400	7.61	28.48	-52.8	-39.8	0.638	0.44	
1322	12.82	160ml/min	2880	7.64	28.39	-65.6	-35.2	0.640	0.43	
1325	12.82	160ml/min	3360	7.65	28.26	-67.5	-33.5	0.643	0.39	
1328	12.82	160ml/min	3840	7.66	28.13	-68.5	-33.4	0.643	0.39	

Sampling Data

Sampling Method: Peristaltic Pump - Number: 12343 Other: _____ Sampling Time: 1346

Color: Clear Grey Light Grey Light Brown Brown Other: _____

Odor: Mild Strong -- Specify: _____ Visual Turbidity: Clear Low Medium High

Sample Parameters	Container Description	Preservative	Filtered y/n
ORP	2 vial 40ml	HCl	
VOCS	2 vial 40ml	HCl	N
BRO/ORP	2 500 ml	N	N
Svocs	2 250 ml	N	N
Metals /mercury	1 250 ml	HNO ₃	N
Dissolved metal	1 125 ml	N	N

Remarks: 40.0 ppm

Sampler(s) Signature: [Signature]

ASTM-D6771-02: Stabilization of Parameters:

pH	Temp	Conductivity	Dissolved Oxygen	Eh or ORP	Turbidity
± 0.2 phu	± 0.2 °C	3% of reading	± 10% of reading or ± 0.2 mg/L, whichever is greater	± 20 mV	± 10% of the previous reading or ± 1.0 NTU whichever is greater

Groundwater Monitoring Field Data Sheet

Project Name: Puma Terminal Project Number: E002.16058
 Location: Bayamon P.R. Date: 01/12/15
 Arcadis PR Team: A.C. MF
 Well ID: MW-BA Well casing Dia.: 2" Weather: Sunny

WELL CASING VOLUMES (per foot of water column)

1-1/4"=0.06 1-1/2"=0.09 2"=0.16 2-1/2"=0.26 3"=0.37 3-1/2"=0.5 4"=0.65 6"=1.47

Well Data

Well Depth:	<u>18.25</u>	ft. TOC	Gallons per foot:	<u>0.16</u>	gal
Depth to Water:	<u>6.93</u>	ft. TOC	Gallons per well casing (Well Volume):	<u>1.81</u>	gal
Depth to SPH:	<u>ND</u>	ft. TOC	Three well volumes (x3):	<u>5.43</u>	gal
Water Column in Well:	<u>11.32</u>	ft.	Placement of Pump Intake:	<u>12.50</u>	ft. TOC

Well Purging Information and Field Parameters

Well Purging Method: Peristaltic Pump - Number 12383 Monsoon Pump - Number _____ Other _____

Time	Depth to Groundwater (ft)	Flow Rate (ml/min)	Cumulative Volume (gal)	pH	Temp. (°C)	ORP mV	Turbidity (NTU)	Cond. (mS/cm)	D.O. (mg/L)	D.O. (%)
1212	6.93	160ml/min	Initial							
1215	7.05	160ml/min	480	6.25	21.75	31.1	-31.3	3.184	2.46	
1218	7.13	160ml/min	960	6.26	21.63	5.2	-21.0	3.200	2.00	
1221	7.24	160ml/min	1440	6.27	21.58	-9.4	-19.0	3.223	1.64	
1224	7.32	160ml/min	1920	6.28	21.51	-10.6	13.3	3.240	1.41	
1227	7.40	160ml/min	2400	6.27	21.45	-16.4	3.56	3.258	1.18	
1230	7.47	160ml/min	2880	6.29	21.41	-19.8	3.06	3.259	1.03	
1233	7.54	160ml/min	3360	6.30	21.38	-23.3	55.06	3.200	0.90	
1236	7.62	160ml/min	3840	6.30	21.35	-25.6	55.06	3.257	0.80	
1239	7.70	160ml/min	4320	6.30	21.35	-28.1	55.09	3.258	0.76	

Sampling Data

Sampling Method: Peristaltic Pump-Number: 12383 Other: _____ Sampling Time: 1245

Color: Clear Grey Light Grey Light Brown Brown Other: _____

Odor: Mild Strong -- Specify: None Visual Turbidity: Clear Low Medium High

Sample Parameters	Container Description	Preservative	Filtered y/n
<u>NO3</u>	<u>2 vial 40ml</u>	<u>HCl</u>	
<u>VOC's</u>	<u>2 vial 40ml</u>	<u>HCl</u>	<u>N</u>
<u>DRO/ORG</u>	<u>2 500 ml</u>	<u>N</u>	<u>N</u>
<u>SVOC's</u>	<u>2 250 ml</u>	<u>N</u>	<u>N</u>
<u>Mercury/Metal</u>	<u>1 250 ml</u>	<u>HNO3</u>	<u>N</u>
<u>Dissolved Metals</u>	<u>1 125 ml</u>	<u>N</u>	<u>N</u>

Remarks: 0.0 PPN

Sampler(s) Signature: [Signature]

ASTM-D6771-02: Stabilization of Parameters:

Temp	Conductivity	Dissolved Oxygen	Eh or ORP	Turbidity
± 0.2 °C	3% of reading	± 10% of reading or ± 0.2 mg/L, whichever is greater	± 20 mV	± 10% of the previous reading or ± 1.0 NTU whichever is greater

Groundwater Monitoring Field Data Sheet

Project Name: Alma Terminus Project Number: E002.1605B
 Location: Bayamon P.R. Date: 01/12/17
 Arcadis PR Team: A.C. M.F.
 Well ID: MW-96A Well casing Dia.: 2" Weather: Sunny / cloud

WELL CASING VOLUMES (per foot of water column)

1-1/4"=0.06 1-1/2"=0.09 2"=0.16 2-1/2"=0.26 3"=0.37 3-1/2"=0.5 4"=0.65 6"=1.47

Well Data

Well Depth:	<u>58.60</u>	ft. TOC	Gallons per foot:	<u>0.16</u>	gal
Depth to Water:	<u>8.45</u>	ft. TOC	Gallons per well casing (Well Volume):	<u>8.02</u>	gal
Depth to SPH:	<u>ND</u>	ft. TOC	Three well volumes (x3):	<u>24.06</u>	gal
Water Column in Well:	<u>50.15</u>	ft.	Placement of Pump Intake:	<u>30</u>	ft. TOC

Well Purging Information and Field Parameters

Well Purging Method: Peristaltic Pump - Number 12383 Monsoon Pump - Number _____ Other _____

Time	Depth to Groundwater (ft)	Flow Rate (ml/min)	Cumulative Volume (gal)	pH	Temp. (°C)	ORP mV	Turbidity (NTU)	Cond. (mS/cm)	D.O. (mg/L)	D.O. (%)
0951	8.45	160ml/min	Initial							
0954	8.47	160ml/min	480	6.74	26.37	15.1	0.0	0.651	0.92	
0957	8.47	160ml/min	960	6.70	26.47	-2.0	0.0	0.659	0.62	
1000	8.47	160ml/min	1440	6.58	26.98	9.6	0.0	0.661	0.52	
1003	8.47	160ml/min	1920	6.39	26.55	32.3	0.0	0.659	0.47	
1006	8.47	160ml/min	2400	6.38	26.55	36.6	0.0	0.659	0.46	
1009	8.47	160ml/min	2880	6.34	26.60	49.9	0.0	0.659	0.43	
1012	8.47	160ml/min	3360	6.33	26.67	58.5	0.0	0.659	0.40	
1015	8.47	160ml/min	3840	6.32	26.67	68.7	0.0	0.659	0.38	
1018	8.47	160ml/min	4320 4320	6.32	26.60	75.7	0.0	0.659	0.36	

Sampling Data

Sampling Method: Peristaltic Pump-Number: 12383 Other: _____ Sampling Time: 1035

Color: Clear Grey Light Grey Light Brown Brown Other: _____
 Odor: Mild Strong -- Specify: None Visual Turbidity: Clear Low Medium High

Sample Parameters	Container Description	Preservative	Filtered y/n
<u>CO₂</u>	<u>2 vial 40ml</u>	<u>HCl</u>	
<u>CO₃</u>	<u>2 vial 40ml</u>	<u>HCl</u>	<u>N</u>
<u>DR/ORG</u>	<u>2 500 ml</u>	<u>N</u>	<u>N</u>
<u>3 vials</u>	<u>2 250 ml</u>	<u>N</u>	<u>N</u>
<u>Metals /mercury</u>	<u>1 250 ml</u>	<u>HNO₃</u>	<u>N</u>
<u>Dissolved Metals</u>	<u>1 125 ml</u>	<u>N</u>	<u>N</u>

Remarks: 0.0 ppm

Sampler(s) Signature: MM

ASTM-D6771-02: Stabilization of Parameters:

pH	Temp	Conductivity	Dissolved Oxygen	Eh or ORP	Turbidity
± 0.2 phu	± 0.2 °C	3% of reading	± 10% of reading or ± 0.2 mg/L, whichever is greater	± 20 mV	± 10% of the previous reading or ± 1.0 NTU whichever is grez

Groundwater Monitoring Field Data Sheet

Project Name: Puma Terminal Project Number: E002-1605B
 Location: Bayamon P.R. Date: 01/12/17
 Arcadis PR Team: A.C. M.F.
 Well ID: MW-0602 Well casing Dia.: 2" Weather: Sunny

WELL CASING VOLUMES (per foot of water column)

1-1/4"=0.06 1-1/2"=0.09 2"=0.16 2-1/2"=0.26 3"=0.37 3-1/2"=0.5 4"=0.65 6"=1.47

Well Data

Well Depth:	<u>15.47</u> ft. TOC	Gallons per foot:	<u>0.16</u> gal
Depth to Water:	<u>5.93</u> ft. TOC	Gallons per well casing (Well Volume):	<u>1.83</u> gal
Depth to SPH:	<u>N/A</u> ft. TOC	Three well volumes (x3):	<u>5.50</u> gal
Water Column in Well:	<u>11.47</u> ft.	Placement of Pump Intake:	<u>11.55</u> ft. TOC

Well Purging Information and Field Parameters

Well Purging Method: Peristaltic Pump - Number 12383 Monsoon Pump - Number _____ Other _____

Time	Depth to Groundwater (ft)	Flow Rate (ml/min)	Cumulative Volume (gal)	pH	Temp. (°C)	ORP mV	Turbidity (NTU)	Cond. (mS/cm)	D.O. (mg/L)	D.O. (%)
0848	5.93	160ml/min	Initial							
0851	6.00	160ml/min	480	6.02	26.45	253.9	0.0	0.458	0.68	
0854	6.00	160ml/min	960	6.03	26.44	200.9	0.0	0.457	0.57	
0857	6.00	160ml/min	1440	6.03	26.39	168.4	0.0	0.459	0.50	
0900	6.00	160ml/min	1920	6.03	26.36	128.4	0.0	0.459	0.44	
0903	6.00	160ml/min	2400	6.04	26.36	87.8	0.0	0.461	0.39	
0906	6.00	160ml/min	2880	6.04	26.39	70.4	0.0	0.462	0.36	
0909	6.00	160ml/min	3360	6.05	26.35	57.1	0.0	0.472	0.35	
0912	6.00	160ml/min	3840	6.07	26.37	42.6	0.0	0.482	0.34	
0915	6.00	160ml/min	4320	6.10	26.33	31.9	0.0	0.507	0.32	
0918	6.00	100ml/min	4800	6.11	26.31	24.9	0.0	0.511	0.32	

Sampling Data

Sampling Method: Peristaltic Pump - Number: 12383 Other: _____ Sampling Time: 0941

Color: Clear Grey Light Grey Light Brown Brown Other: _____
 Odor: Mild Strong -- Specify: None Visual Turbidity: Clear Low Medium High

Sample Parameters	Container Description	Preservative	Filtered y/n
<u>680</u>	<u>2 vial 40ml</u>	<u>HCl</u>	
<u>Vac's</u>	<u>2 vial 40ml</u>	<u>HCl</u>	<u>N</u>
<u>DRO/ORS</u>	<u>2 500ml</u>	<u>N</u>	<u>N</u>
<u>5 vac's</u>	<u>2 250ml</u>	<u>N</u>	<u>N</u>
<u>Metals / Mercury</u>	<u>1 250ml</u>	<u>HNO₃</u>	<u>N</u>
<u>Dissolved Metals</u>	<u>1 125 ml</u>	<u>N</u>	<u>N</u>

Remarks: 0.0 App

Sampler(s) Signature: [Signature]

0921 6.0 160ml/min 5280 6.14 26.33 17.3 0.0 0.524 0.31

ASTM-D6771-02: Stabilization of Parameters:

pH	Temp	Conductivity	Dissolved Oxygen	Eh or ORP	Turbidity
± 0.2 phu	± 0.2 °C	3% of reading	± 10% of reading or ± 0.2 mg/L, whichever is greater	± 20 mV	± 10% of the previous reading or ± 1.0 NTU whichever is greater

Groundwater Monitoring Field Data Sheet

Project Name: Puma Terminal Project Number: E002-1605A
 Location: Oranman P.R. Date: 01/05/17
 Arcadis PR Team: A.C. M.F.
 Well ID: MW-48B Well casing Dia.: 4" Weather: Sunny

WELL CASING VOLUMES (per foot of water column)

1-1/4"=0.06 1-1/2"=0.09 2"=0.16 2-1/2"=0.26 3"=0.37 3-1/2"=0.5 **4"=0.65** 6"=1.47

Well Data

Well Depth:	<u>15.90</u>	ft. TOC	Gallons per foot:	<u>0.65</u>	gal
Depth to Water:	<u>5.96</u>	ft. TOC	Gallons per well casing (Well Volume):	<u>6.59</u>	gal
Depth to SPH:	<u>ND</u>	ft. TOC	Three well volumes (x3):	<u>19.77</u>	gal
Water Column in Well:	<u>10.14</u>	ft.	Placement of Pump Intake:	<u>11</u>	ft. TOC

Well Purging Information and Field Parameters

Well Purging Method: Peristaltic Pump - Number 12383 Monsoon Pump - Number _____ Other _____

Time	Depth to Groundwater (ft)	Flow Rate (ml/min)	Cumulative Volume (gal)	pH	Temp. (°C)	ORP mV	Turbidity (NTU)	Cond. (mS/cm)	D.O. (mg/L)	D.O. (%)
<u>0909</u>	<u>5.96</u>	<u>160ml/min</u>	<u>initial</u>							
<u>0912</u>	<u>6.26</u>	<u>160ml/min</u>	<u>480</u>	<u>6.96</u>	<u>28.77</u>	<u>364.3</u>	<u>0.0</u>	<u>0.570</u>	<u>2.32</u>	
<u>0915</u>	<u>6.48</u>	<u>160ml/min</u>	<u>960</u>	<u>7.07</u>	<u>28.76</u>	<u>386.6</u>	<u>0.0</u>	<u>0.571</u>	<u>2.26</u>	
<u>0916</u>	<u>6.73</u>	<u>160ml/min</u>	<u>1440</u>	<u>7.11</u>	<u>28.83</u>	<u>386.6</u>	<u>0.0</u>	<u>0.571</u>	<u>2.21</u>	
<u>0921</u>	<u>6.96</u>	<u>160ml/min</u>	<u>1920</u>	<u>7.13</u>	<u>24.76</u>	<u>396.1</u>	<u>0.0</u>	<u>0.572</u>	<u>2.18</u>	

Sampling Data

Sampling Method: Peristaltic Pump-Number: 12383 Other: _____ Sampling Time: 0947

Color: Clear Grey Light Grey Light Brown Brown Other: _____

Odor: Mild Strong -- Specify: None Visual Turbidity: Clear Low Medium High

Sample Parameters	Container Description	Preservative	Filtered y/n
<u>LRO</u>	<u>2 vials 40ml</u>	<u>HCl</u>	
<u>vol</u>	<u>2 vials 40ml</u>	<u>HCl</u>	<u>N</u>
<u>DRD/ORS</u>	<u>2 500 ml</u>	<u>N</u>	<u>N</u>
<u>3 vials</u>	<u>2 250 ml</u>	<u>N</u>	<u>N</u>
<u>Mercury /metals</u>	<u>1 250 ml</u>	<u>HNO₃</u>	<u>N</u>
<u>Dissolved metals</u>	<u>1 125 ml</u>	<u>N</u>	<u>N</u>

Remarks: 0.0 ppm

Sampler(s) Signature: MV

ASTM-D6771-02: Stabilization of Parameters:

pH	Temp	Conductivity	Dissolved Oxygen	Eh or ORP	Turbidity
± 0.2 phu	± 0.2 °C	3% of reading	± 10% of reading or ± 0.2 mg/L, whichever is greater	± 20 mV	± 10% of the previous reading or ± 1.0 NTU whichever is greater

Groundwater Monitoring Field Data Sheet

Project Name: Puma Terminal Project Number: E0021605B
 Location: Bayamon P.R. Date: 01/05/19
 Arcadis PR Team: A.C. / M.F.
 Well ID: MV-109A Well casing Dia.: 2" Weather: Sunny

WELL CASING VOLUMES (per foot of water column)

1-1/4"=0.06 1-1/2"=0.09 2"=0.16 2-1/2"=0.26 3"=0.37 3-1/2"=0.5 4"=0.65 6"=1.47

Well Data

Well Depth:	<u>14.10</u>	ft. TOC	Gallons per foot:	<u>0.16</u>	gal
Depth to Water:	<u>9.80</u>	ft. TOC	Gallons per well casing (Well Volume):	<u>1.665</u>	gal
Depth to SPH:	<u>N/D</u>	ft. TOC	Three well volumes (x3):	<u>3.50</u>	gal
Water Column in Well:	<u>9.30</u>	ft.	Placement of Pump Intake:	<u>13.50</u>	ft. TOC

Well Purging Information and Field Parameters

Well Purging Method: Peristaltic Pump - Number 12383 Monsoon Pump - Number _____ Other _____

Time	Depth to Groundwater (ft)	Flow Rate (ml/min)	Cumulative Volume (gal)	pH	Temp. (°C)	ORP mV	Turbidity (NTU)	Cond. (mS/cm)	D.O. (mg/L)	D.O. (%)
1016	9.80	160ml/min	initial							
1019	10.23	160ml/min	480	6.96	30.03	452.1	0.0	0.574	4.79	
1022	10.42	160ml/min	960	6.88	29.80	456.2	0.0	0.573	4.43	
1025	10.53	160ml/min	1440	6.84	30.08	492.1	0.0	0.573	4.28	
1028	10.65	160ml/min	1920	6.81	30.01	504.0	0.0	0.570	3.91	
1031	10.78	160ml/min	2400	6.74	29.63	515.4	0.0	0.568	3.82	
1034	10.90	160ml/min	2880	6.75	29.70	523.3	0.0	0.565	3.52	

Sampling Data

Sampling Method: Peristaltic Pump - Number: 12383 Other: _____ Sampling Time: 1105

Color: Clear Grey Light Grey Light Brown Brown Other: _____

Odor: Mild Strong -- Specify: None Visual Turbidity: Clear Low Medium High

Sample Parameters	Container Description	Preservative	Filtered y/n
WRD	2 vials 40ml	HCl	
VOCS	2 vials 40ml	HCl	N
DDO/DO	2 500 ml	N	N
5 VOC's Metals/Mercury	2 250 ml	N	N
Metals/Mercury	1 250 ml	HNO ₃	N
Dissolved Metals	1 125 ml	N	N

Remarks: 0.0 ppm / DUPOOS - Duplicate

Sampler(s) Signature: [Signature]

ASTM-D6771-02: Stabilization of Parameters:

pH	Temp	Conductivity	Dissolved Oxygen	Eh or ORP	Turbidity
± 0.2 phu	± 0.2 °C	3% of reading	± 10% of reading or ± 0.2 mg/L, whichever is greater	± 20 mV	± 10% of the previous reading or ± 1.0 NTU whichever is greater

Groundwater Monitoring Field Data Sheet

Project Name: Puma Termino Project Number: E002-1605A
 Location: Bayamon P.R. Date: 01/04/14
 Arcadis PR Team: A.C / M.F.
 Well ID: MW-MD4 Well casing Dia.: 1 1/2 Weather: Sunny

WELL CASING VOLUMES (per foot of water column)

1-1/4"=0.06 1-1/2"=0.09 2"=0.16 2-1/2"=0.26 3"=0.37 3-1/2"=0.5 4"=0.65 6"=1.47

Well Data

Well Depth:	<u>11.09</u>	ft. TOC	Gallons per foot:	<u>1 1/2 0.09</u>	gal
Depth to Water:	<u>6.25</u>	ft. TOC	Gallons per well casing (Well Volume):	<u>0.42</u>	gal
Depth to SPH:	<u>MD</u>	ft. TOC	Three well volumes (x3):	<u>1.28</u>	gal
Water Column in Well:	<u>4.75</u>	ft.	Placement of Pump Intake:	<u>8.50</u>	ft. TOC

Well Purging Information and Field Parameters

Well Purging Method: Peristaltic Pump - Number 12883 Monsoon Pump - Number _____ Other _____

Time	Depth to Groundwater (ft)	Flow Rate (ml/min)	Cumulative Volume (gal)	pH	Temp. (°C)	ORP (mV)	Turbidity (NTU)	Cond. (mS/cm)	D.O. (mg/L)	D.O. (%)
1039	6.25	160ml/min	120gal							
1042	8.60	160ml/min	430	6.86	21.77	380.4	0.0	1.513	0.26	
1045	9.51	160ml/min	960	6.80	28.04	402.4	0.0	1.512	0.25	
1048	10.29	160ml/min	1440	6.78	27.16	412.6	0.0	1.511	0.84	
1051	10.32	160ml/min	1920	6.76	27.88	421.5	0.0	1.516	1.00	
* 1109	10.68									
* 1122	10.40									
* 1139	10.20									

well DRY

Sampling Data

Sampling Method: Peristaltic Pump - Number: 12883 Other: _____ Sampling Time: 1139

Color: Clear Grey Light Grey Light Brown Brown Other: _____

Odor: Mild Strong -- Specify: None Visual Turbidity: Clear Low Medium High

Sample Parameters	Container Description	Preservative	Filtered y/n
<u>CR3</u>	<u>2 vial</u>	<u>HCl</u>	
<u>VOCS</u>	<u>2 vial</u>	<u>HCl</u>	<u>N</u>
<u>ARO/ORO</u>	<u>2 500ml</u>	<u>N</u>	<u>N</u>
<u>SVOCs</u>	<u>2 250 ml</u>	<u>N</u>	<u>N</u>
<u>metals / mercury</u>	<u>1 250 ml</u>	<u>HNO3</u>	<u>N</u>
<u>Dissolved Metals</u>	<u>1 125 ml</u>	<u>N</u>	<u>N</u>

Remarks: 0.0 ppm 1109 See comments a media la recarga del pozo

Sampler(s) Signature: AM 01/05/14 DTM 6.45

ASTM-D6771-02: Stabilization of Parameters:

pH	Temp	Conductivity	Dissolved Oxygen	Eh or ORP	Turbidity
± 0.2 phu	± 0.2 °C	3% of reading	± 10% of reading or ± 0.2 mg/L, whichever is greater	± 20 mV	± 10% of the previous reading or ± 1.0 NTU whichever is greater

Groundwater Monitoring Field Data Sheet

Project Name: Purwa Terminal Project Number: E002, 1605B
 Location: Bayann P.P Date: 01/04/17
 Arcadis PR Team: A.C. M.F
 Well ID: MW-MP9 Well casing Dia.: 1/2 Weather: Sunny

WELL CASING VOLUMES (per foot of water column)

1-1/4"=0.06 1-1/2"=0.09 2"=0.16 2-1/2"=0.26 3"=0.37 3-1/2"=0.5 4"=0.65 6"=1.47

Well Data

Well Depth:	<u>14.10</u>	ft. TOC	Gallons per foot:	<u>0.09</u>	gal
Depth to Water:	<u>3.87</u>	ft. TOC	Gallons per well casing (Well Volume):	<u>0.92</u>	gal
Depth to SPH:	<u>ND</u>	ft. TOC	Three well volumes (x3):	<u>2.76</u>	gal
Water Column in Well:	<u>10.23</u>	ft.	Placement of Pump Intake:	<u>9.</u>	ft. TOC

Well Purging Information and Field Parameters

Well Purging Method: Peristaltic Pump - Number 12883 Monsoon Pump - Number _____ Other _____

Time	Depth to Groundwater (ft)	Flow Rate (ml/min)	Cumulative Volume (gal)	pH	Temp. (°C)	ORP mV	Turbidity (NTU)	Cond. (mS/cm)	D.O. (mg/L)	D.O. (%)
1346	3.87	160ml/min	160							
1349	6.02	160ml/min	480	5.74	28.90	377.9	0.0	0.838	0.65	
1352	6.08	160ml/min	960	5.68	28.81	406.8	0.0	0.899	0.53	
1355	6.10	160ml/min	1440	5.54	28.69	443.3	0.0	1.297	0.48	
1358	6.06	160ml/min	1920	5.47	28.78	473.2	0.0	1.629	0.46	
1401	6.94	160ml/min	2400	5.45	28.94	490.1	0.0	1.888	0.44	
1404	6.94	160ml/min	2880	5.44	28.98	509.7	0.0	1.888	0.45	
1407	6.94	160ml/min	3360	5.44	28.94	513.8	0.0	1.903	0.45	
1410	6.94	160ml/min	3840	5.42	28.84	524.2	0.0	1.930	0.47	

Sampling Data

Sampling Method: Peristaltic Pump-Number: 12883 Other: _____ Sampling Time: 1422

Color: Clear Grey Light Grey Light Brown Brown Other: _____

Odor: Mild Strong -- Specify: _____ Visual Turbidity: Clear Low Medium High

Sample Parameters	Container Description	Preservative	Filtered y/n
VOI	2 vials 40ml	HCl	
GRD	2 vials 40ml	HCl	N
BRO/ORO	2 500 ml	N	N
SROCS	2 250 ml	N	N
Mercury / metals	1 250 ml	HNO ₃	N
Dissolved metals	1 125 ml	N	N

Remarks: 0.0 ppm / FB-010417 - 1430

Sampler(s) Signature: [Signature]

ASTM-D6771-02: Stabilization of Parameters:

pH	Temp	Conductivity	Dissolved Oxygen	Eh or ORP	Turbidity
± 0.2 phu	± 0.2 °C	3% of reading	± 10% of reading or ± 0.2 mg/L, whichever is greater	± 20 mV	± 10% of the pre ± 1.0 NTU w/

Groundwater Monitoring Field Data Sheet

Project Name: Puma Terminal Project Number: E002-1605B
 Location: Bayamon P.R. Date: 01/04/19
 Arcadis PR Team: A.L. M.F.
 Well ID: MW-MP8 Well casing Dia.: 2" Weather: Sunny

WELL CASING VOLUMES (per foot of water column)

1-1/4"=0.06 1-1/2"=0.09 2"=0.16 2-1/2"=0.26 3"=0.37 3-1/2"=0.5 4"=0.65 6"=1.47

Well Data

Well Depth: <u>26.10</u> ft. TOC	Gallons per foot: <u>0.16</u> gal
Depth to Water: <u>6.37</u> ft. TOC	Gallons per well casing (Well Volume): <u>3.15</u> gal
Depth to SPH: <u>ND</u> ft. TOC	Three well volumes (x3): <u>9.45</u> gal
Water Column in Well: <u>19.73</u> ft.	Placement of Pump Intake: <u>16</u> ft. TOC

Well Purging Information and Field Parameters

Well Purging Method: Peristaltic Pump - Number 12485 Monsoon Pump - Number _____ Other _____

Time	Depth to Groundwater (ft)	Flow Rate (ml/min)	Cumulative Volume (gal)	pH	Temp. (°C)	ORP mV	Turbidity (NTU)	Cond. (mS/cm)	D.O. (mg/L)	D.O. (%)
1307	6.37	160ml/min	inical	---	---	---	---	---	---	---
1310	8.00	160ml/min	480	6.99	29.58	402.1	0.0	0.912	5.94	
1313	8.85	160ml/min	960	6.94	29.38	429.1	0.0	0.913	5.98	
1316	9.47	160ml/min	1440	6.92	29.27	445.1	0.0	0.912	5.07	
1319		160ml	1920	6.92	29.20	449.1	0.0	0.912	5.04	

Sampling Data

Sampling Method: Peristaltic Pump - Number: 12483 Other: _____ Sampling Time: 1333

Color: Clear Grey Light Grey Light Brown Brown Other: _____

Odor: Mild Strong -- Specify: none Visual Turbidity: Clear Low Medium High

Sample Parameters	Container Description	Preservative	Filtered y/n
GRO	2 vial 40 mL	HCl	
VOC	2 vial 40 mL	HCl	N
DBP/ORG	2 500 mL	N	N
SVOC'S	2 250 mL	N	N
Metals / Mercury	1 250 mL	HNO ₃	N
Dissolved Metals	1 125 mL	N	N

Remarks: 0.0 ppm

Sampler(s) Signature: My

ASTM-D6771-02: Stabilization of Parameters:

pH	Temp	Conductivity	Dissolved Oxygen	Eh or ORP	Turbidity
± 0.2 phu	± 0.2 °C	3% of reading	± 10% of reading or ± 0.2 mg/L, whichever is greater	± 20 mV	± 10% of the previous reading or ± 1.0 NTU whichever is greater

Groundwater Monitoring Field Data Sheet

Project Name: Puma Terminal Project Number: E002.1605B
 Location: Bayamon P.R. Date: 01/04/19
 Arcadis PR Team: A.C. M.F.
 Well ID: MW-MP3 Well casing Dia.: 1 1/2" Weather: Sunny

WELL CASING VOLUMES (per foot of water column)

1-1/4"=0.06 1-1/2"=0.09 2"=0.16 2-1/2"=0.26 3"=0.37 3-1/2"=0.5 4"=0.65 6"=1.47

Well Data

Well Depth:	<u>14.10</u>	ft. TOC	Gallons per foot:	<u>0.09</u>	gal
Depth to Water:	<u>3.66</u>	ft. TOC	Gallons per well casing (Well Volume):	<u>0.93</u>	gal
Depth to SPH:	<u>ND</u>	ft. TOC	Three well volumes (x3):	<u>2.81</u>	gal
Water Column in Well:	<u>10.44</u>	ft.	Placement of Pump Intake:	<u>9.</u>	ft. TOC

Well Purging Information and Field Parameters

Well Purging Method: Peristaltic Pump - Number 12883 Monsoon Pump - Number _____ Other _____

Time	Depth to Groundwater (ft)	Flow Rate (ml/min)	Cumulative Volume (gal)	pH	Temp. (°C)	ORP mV	Turbidity (NTU)	Cond. (mS/cm)	D.O. (mg/L)	D.O. (%)
1104	3.66	160ml/min	initial							
1107	4.53	160ml/min	480	6.89	27.50	416.2	0.0	0.791	0.69	
1110	4.78	160ml/min	960	6.05	27.45	318.1	0.0	0.735	0.61	
1113	5.11	160ml/min	1440	6.14	27.45	316.1	0.0	0.706	0.56	
1116	5.65	160ml/min	1920	6.21	27.52	248.1	0.0	0.692	0.63	
1119	6.21	160ml/min	2400	6.26	27.65	148.1	0.0	0.689	0.72	
1122	6.91	160ml/min	2880	6.29	27.56	68.1	0.0	0.693	0.73	
1125	6.94	160ml/min	3360	6.30	27.68	9.1	0.0	0.688	0.97	
1128	8.70	160ml/min	3840	6.34	27.67	3.1	0.0	0.679	2.08	
1131	8.99	160ml/min		6.36	27.99	6.8	0.0	0.676	2.28	

Sampling Data

Sampling Method: Peristaltic Pump-Number: 12883 Other: _____ Sampling Time: 1146

Color: Clear Grey Light Grey Light Brown Brown Other: _____
 Odor: Mild Strong -- Specify: None Visual Turbidity: Clear Low Medium High

Sample Parameters	Container Description	Preservative	Filtered y/n
<u>CR6</u>	<u>2 vial 40 ml</u>	<u>HCl</u>	
<u>VOCS</u>	<u>2 vial 40 ml</u>	<u>HCl</u>	<u>N</u>
<u>DRO/ORO</u>	<u>2 500 mL</u>	<u>N</u>	<u>N</u>
<u>SVOCs</u>	<u>2 250 mL</u>	<u>N</u>	<u>N</u>
<u>Metals / Mercury</u>	<u>1 250 mL</u>	<u>HNO3</u>	<u>N</u>
<u>Dissolved metals</u>	<u>1 125 mL</u>	<u>N</u>	<u>N</u>

Remarks: 0.0 ppm

Sampler(s) Signature: lm

ASTM-D6771-02: Stabilization of Parameters:

pH	Temp	Conductivity	Dissolved Oxygen	Eh or ORP	Turbidity
± 0.2 phu	± 0.2 °C	3% of reading	± 10% of reading or ± 0.2 mg/L, whichever is greater	± 20 mV	± 10% of the previous reading or ± 1.0 NTU whichever is greater

Groundwater Monitoring Field Data Sheet

Project Name: Pump Tunnel Project Number: E002.1605B
 Location: Bayern P.S Date: 01/04/13
 Arcadis PR Team: AC M.R
 Well ID: MW-MP2 Well casing Dia.: 1 1/2" Weather: Sunny

WELL CASING VOLUMES (per foot of water column)

1-1/4"=0.06 1-1/2"=0.09 2"=0.16 2-1/2"=0.26 3"=0.37 3-1/2"=0.5 4"=0.65 6"=1.47

Well Data

Well Depth:	<u>9.10</u>	ft. TOC	Gallons per foot:	<u>0.09</u>	gal
Depth to Water:	<u>3.73</u>	ft. TOC	Gallons per well casing (Well Volume):	<u>0.45</u>	gal
Depth to SPH:	<u>ND</u>	ft. TOC	Three well volumes (x3):	<u>1.44</u>	gal
Water Column in Well:	<u>5.37</u>	ft.	Placement of Pump Intake:	<u>6.5</u>	ft. TOC

Well Purging Information and Field Parameters

Well Purging Method: Peristaltic Pump - Number 12483 Monsoon Pump - Number _____ Other _____

Time	Depth to Groundwater (ft)	Flow Rate (ml/min)	Cumulative Volume (gal)	pH	Temp. (°C)	ORP mV	Turbidity (NTU)	Cond. (mS/cm)	D.O. (mg/L)	D.O. (%)
0948	3.73	(60ml/min)	(initial)	---	---	---	---	---	---	---
0951	4.41	160ml/min	480	7.24	21.58	400.1	0.0	0.727	0.65	
0954	4.54	160ml/min	960	7.20	21.50	412.4	0.0	0.728	0.71	
0957	4.59	160ml/min	1440	7.29	21.19	422.4	0.0	0.729	0.64	
1000	4.90	160ml/min	1920	7.18	21.55	432.5	0.0	0.729	0.63	
1003	5.48	160ml/min	2400	7.17	21.70	443.5	0.0	0.721	0.65	
1006	5.29	160ml/min	2880	7.17	21.79	447.8	0.0	0.723	0.63	

Sampling Data

Sampling Method: Peristaltic Pump-Number: 12483 Other: _____ Sampling Time: 1025

Color: Clear Grey Light Grey Light Brown Brown Other: _____

Odor: Mild Strong -- Specify: None Visual Turbidity: Clear Low Medium High

Sample Parameters	Container Description	Preservative	Filtered y/n
<u>DBO</u>	<u>2 160ml 40m</u>	<u>HCl</u>	
<u>VOC</u>	<u>2 160ml 40m</u>	<u>HCl</u>	<u>N</u>
<u>DRO/OBO</u>	<u>2 1500ml 4</u>	<u>N</u>	<u>N</u>
<u>SVOC's</u>	<u>2 250ml</u>	<u>N</u>	<u>N</u>
<u>Mercury/metals</u>	<u>1 150 ml</u>	<u>HNO₃</u>	<u>N</u>
<u>Dissolved Metals</u>	<u>1 125 ml</u>	<u>N</u>	<u>N</u>

Remarks: 0.0. PPM

Sampler(s) Signature: [Signature]

ASTM-D6771-02: Stabilization of Parameters:

pH	Temp	Conductivity	Dissolved Oxygen	Eh or ORP	Turbidity
± 0.2 phu	± 0.2 °C	3% of reading	± 10% of reading or ± 0.2 mg/L, whichever is greater	± 20 mV	± 10% of the previous reading or ± 1.0 NTU whichever is greater

Groundwater Monitoring Field Data Sheet

Project Name: Puma Terminal Project Number: E0021605A
 Location: Bayamon P.R. Date: 01/04/19
 Arcadis PR Team: A.C., MP
 Well ID: MW-DP1 Well casing Dia.: 1 1/2 Weather: Sunny

WELL CASING VOLUMES (per foot of water column)

1-1/4"=0.06 1-1/2"=0.09 2"=0.16 2-1/2"=0.26 3"=0.37 3-1/2"=0.5 4"=0.65 6"=1.47

Well Data

Well Depth:	<u>9.0</u>	ft. TOC	Gallons per foot:	<u>0.09</u>	gal
Depth to Water:	<u>2.11</u>	ft. TOC	Gallons per well casing (Well Volume):	<u>0.62</u>	gal
Depth to SPH:	<u>ND</u>	ft. TOC	Three well volumes (x3):	<u>1.86</u>	gal
Water Column in Well:	<u>6.89</u>	ft.	Placement of Pump Intake:	<u>5.50</u>	ft. TOC

Well Purging Information and Field Parameters

Well Purging Method: Peristaltic Pump - Number 12553 Monsoon Pump - Number _____ Other _____

Time	Depth to Groundwater (ft)	Flow Rate (ml/min)	Cumulative Volume (gal)	pH	Temp. (°C)	ORP mV	Turbidity (NTU)	Cond. (mS/cm)	D.O. (mg/L)	D.O. (%)
0907	<u>2.11</u>	<u>160ml/min</u>	<u>1110</u>							
0910	<u>3.55</u>	<u>160ml/min</u>	<u>1480</u>	<u>6.96</u>	<u>29.36</u>	<u>316.8</u>	<u>0.0</u>	<u>0.502</u>	<u>0.72</u>	
0913	<u>4.00</u>	<u>160ml/min</u>	<u>960</u>	<u>7.04</u>	<u>29.28</u>	<u>269.5</u>	<u>0.0</u>	<u>0.530</u>	<u>0.05</u>	
0916	<u>4.22</u>	<u>160ml/min</u>	<u>1440</u>	<u>7.06</u>	<u>29.23</u>	<u>238.5</u>	<u>0.0</u>	<u>0.510</u>	<u>0.51</u>	
0919	<u>4.53</u>	<u>160ml/min</u>	<u>1920</u>	<u>7.09</u>	<u>29.18</u>	<u>215.6</u>	<u>0.0</u>	<u>0.524</u>	<u>0.51</u>	
0922	<u>4.71</u>	<u>160ml/min</u>	<u>2400</u>	<u>7.07</u>	<u>29.19</u>	<u>205.2</u>	<u>0.0</u>	<u>0.524</u>	<u>0.52</u>	
0925	<u>4.83</u>	<u>160ml/min</u>	<u>2880</u>	<u>7.07</u>	<u>29.22</u>	<u>200.4</u>	<u>0.0</u>	<u>0.524</u>	<u>0.52</u>	

Sampling Data

Sampling Method: Peristaltic Pump-Number: 12553 Other: _____ Sampling Time: 0936

Color: Clear Grey Light Grey Light Brown Brown Other: _____

Odor: Mild Strong -- Specify: None Visual Turbidity: Clear Low Medium High

Sample Parameters	Container Description	Preservative	Filtered y/n
<u>CRP</u>	<u>2 vials 40 ml</u>	<u>HCl</u>	
<u>VOCS</u>	<u>2 vials 40 ml</u>	<u>HCl</u>	<u>N</u>
<u>DRO/ORS</u>	<u>2 500ml</u>	<u>N</u>	<u>N</u>
<u>SVOCS</u>	<u>2 250ml</u>	<u>N</u>	<u>N</u>
<u>metals Mercury</u>	<u>1 250 ml</u>	<u>HNO₃</u>	<u>N</u>
<u>Dissolved Metals</u>	<u>1 125 ml</u>	<u>N</u>	<u>N</u>

Remarks: 0.0 ppm

Sampler(s) Signature: [Signature]

ASTM-D6771-02: Stabilization of Parameters:

pH	Temp	Conductivity	Dissolved Oxygen	Eh or ORP	Turbidity
± 0.2 phu	± 0.2 °C	3% of reading	± 10% of reading or ± 0.2 mg/L, whichever is greater	± 20 mV	± 10% of the previous reading or ± 1.0 NTU whichever is greater

Groundwater Monitoring Field Data Sheet

Project Name: Puma Terminal Project Number: E002-16259
 Location: Bayamon P.R. Date: 01/03/17
 Arcadis PR Team: A.C. MF
 Well ID: MW-EB108 Well casing Dia.: 2" Weather: Sunny

WELL CASING VOLUMES (per foot of water column)

1-1/4"=0.06 1-1/2"=0.09 2"=0.16 2-1/2"=0.26 3"=0.37 3-1/2"=0.5 4"=0.65 6"=1.47

Well Data

Well Depth:	<u>19.50</u>	ft. TOC	Gallons per foot:	<u>0.16</u>	gal
Depth to Water:	<u>4.77</u>	ft. TOC	Gallons per well casing (Well Volume):	<u>2.35</u>	gal
Depth to SPH:	<u>ND</u>	ft. TOC	Three well volumes (x3):	<u>7.07</u>	gal
Water Column in Well:	<u>14.73</u>	ft.	Placement of Pump Intake:	<u>12.13</u>	ft. TOC

Well Purging Information and Field Parameters

Well Purging Method: Peristaltic Pump - Number 12383 Monsoon Pump - Number _____ Other _____

Time	Depth to Groundwater (ft)	Flow Rate (ml/min)	Cumulative Volume (gal)	pH	Temp. (°C)	ORP mV	Turbidity (NTU)	Cond. (mS/cm)	D.O. (mg/L)	D.O. (%)
<u>1534</u>	<u>4.77</u>	<u>160ml/min</u>	<u>160</u>							
<u>1537</u>	<u>4.83</u>	<u>160ml/min</u>	<u>320</u>	<u>5.06</u>	<u>31.10</u>	<u>461.4</u>	<u>0.0</u>	<u>0.252</u>	<u>0.62</u>	
<u>1540</u>	<u>4.83</u>	<u>160ml/min</u>	<u>480</u>	<u>5.06</u>	<u>31.01</u>	<u>482.2</u>	<u>0.0</u>	<u>0.250</u>	<u>0.51</u>	
<u>1543</u>	<u>4.83</u>	<u>160ml/min</u>	<u>640</u>	<u>5.05</u>	<u>30.87</u>	<u>500.8</u>	<u>0.0</u>	<u>0.253</u>	<u>0.44</u>	
<u>1546</u>	<u>4.83</u>	<u>160ml/min</u>	<u>800</u>	<u>5.05</u>	<u>30.92</u>	<u>512.5</u>	<u>0.0</u>	<u>0.255</u>	<u>0.40</u>	
<u>1549</u>	<u>4.83</u>	<u>160ml/min</u>	<u>960</u>	<u>5.05</u>	<u>30.98</u>	<u>518.0</u>	<u>0.0</u>	<u>0.256</u>	<u>0.39</u>	

Sampling Data

Sampling Method: Peristaltic Pump - Number: 12383 Other: _____ Sampling Time: 1601

Color: Clear Grey Light Grey Light Brown Brown Other: _____

Odor: Mild Strong -- Specify: None Visual Turbidity: Clear Low Medium High

Sample Parameters	Container Description	Preservative	Filtered y/n
<u>URO</u>	<u>2 vial 40m</u>	<u>HCL</u>	
<u>VOC</u>	<u>2 vial 40m</u>	<u>HCl</u>	<u>N</u>
<u>DRO/ORO</u>	<u>2 500 ml</u>		<u>N</u>
<u>S.VOC's</u>	<u>2 250 ml</u>		<u>N</u>
<u>Metals Mercury</u>	<u>2 250 ml</u>	<u>HNO₃</u>	<u>N</u>
<u>Dissolved Metals</u>	<u>1 125 ml</u>		<u>N</u>

Remarks: 0.0 ppm

Sampler(s) Signature: [Signature]

ASTM-D6771-02: Stabilization of Parameters:

pH	Temp	Conductivity	Dissolved Oxygen	Eh or ORP	Turbia
± 0.2 phu	± 0.2 °C	3% of reading	± 10% of reading or ± 0.2 mg/L, whichever is greater	± 20 mV	± 10% o ± 1.0 NT

Groundwater Monitoring Field Data Sheet

Project Name: Puma Terminal Project Number: E002-1605B
 Location: Bayamon P.R. Date: 01/03/17
 Arcadis PR Team: A.C, M.F
 Well ID: MW-EB109 Well casing Dia.: Ø 1.6 2" Weather: Sunny

WELL CASING VOLUMES (per foot of water column)

1-1/4"=0.06 1-1/2"=0.09 2"=0.16 2-1/2"=0.26 3"=0.37 3-1/2"=0.5 4"=0.65 6"=1.47

Well Data

Well Depth:	<u>23.10</u>	ft. TOC	Gallons per foot:	<u>0.16</u>	gal
Depth to Water:	<u>4.60</u>	ft. TOC	Gallons per well casing (Well Volume):	<u>2.96</u>	gal
Depth to SPH:	<u>ND</u>	ft. TOC	Three well volumes (x3):	<u>8.88</u>	gal
Water Column in Well:	<u>18.5</u>	ft.	Placement of Pump Intake:	<u>14</u>	ft. TOC

Well Purging Information and Field Parameters

Well Purging Method: Peristaltic Pump - Number 12383 Monsoon Pump - Number _____ Other _____

Time	Depth to Groundwater (ft)	Flow Rate (ml/min)	Cumulative Volume (gal)	pH	Temp. (°C)	ORP mV	Turbidity (NTU)	Cond. (mS/cm)	D.O. (mg/L)	D.O. (%)
1445	4.60	160ml/min	initial							
1448	4.78	160ml/min	480	4.43	29.60	456.5	0.0	0.693	1.57	
1451	4.78	160ml/min	960	4.44	29.69	469.2	0.0	0.717	0.93	
1454	4.78	160ml/min	1440	4.43	29.65	484.1	0.0	0.725	0.76	
1457	4.78	160ml/min	1920	4.45	29.80	481.2	0.0	0.725	0.66	
1500	4.78	160ml/min	2400	4.44	29.77	487.2	0.0	0.731	0.62	
1503	4.78	160ml/min	2880	4.43	29.72	491.2	0.0	0.731	0.61	

Sampling Data

Sampling Method: Peristaltic Pump-Number: 12383 Other: _____ Sampling Time: 1511

Color: Clear Grey Light Grey Light Brown Brown Other: _____
 Odor: Mild Strong -- Specify: none Visual Turbidity: Clear Low Medium High

Sample Parameters	Container Description	Preservative	Filtered y/n
VOL	2 vial 40ml	HCl	
CRN	2 vial 40ml	HCl	N
DRO/ORN	2 500 ml	N	N
Svoc's	2 250 ml	N	N
mercury metals	1 250 ml	HNO ₃	N
Dissolved metals	1 125 ml	N	N

Remarks: 0.0 PPM

Sampler(s) Signature: [Signature]

ASTM-D6771-02: Stabilization of Parameters:

pH	Temp	Conductivity	Dissolved Oxygen	Eh or ORP	Turbidity
± 0.2 phu	± 0.2 °C	3% of reading	± 10% of reading or ± 0.2 mg/L, whichever is greater	± 20 mV	±

ous reading or
ever is greater

Groundwater Monitoring Field Data Sheet

Project Name: Puma Terminal Project Number: E002-1605B
 Location: Aguaon P.P. Date: 01/03/17
 Arcadis PR Team: A.C. M.F.
 Well ID: MW-EB106 Well casing Dia.: 2" Weather: Sunny

WELL CASING VOLUMES (per foot of water column)

1-1/4"=0.06 1-1/2"=0.09 2"=0.16 2-1/2"=0.26 3"=0.37 3-1/2"=0.5 4"=0.65 6"=1.47

Well Data

Well Depth:	<u>22.11</u>	ft. TOC	Gallons per foot:	<u>0.16</u>	gal
Depth to Water:	<u>7.80</u>	ft. TOC	Gallons per well casing (Well Volume):	<u>2.29</u>	gal
Depth to SPH:	<u>ND</u>	ft. TOC	Three well volumes (x3):	<u>6.88</u>	gal
Water Column in Well:	<u>14.31</u>	ft.	Placement of Pump Intake:	<u>15</u>	ft. TOC

Well Purging Information and Field Parameters

Well Purging Method: Peristaltic Pump - Number 12383 Monsoon Pump - Number _____ Other _____

Time	Depth to Groundwater (ft)	Flow Rate (ml/min)	Cumulative Volume (gal)	pH	Temp. (°C)	ORP mV	Turbidity (NTU)	Cond. (mS/cm)	D.O. (mg/L)	D.O. (%)
1350	<u>7.80</u>	<u>160 ml/min</u>	<u>Initial</u>							
1400	<u>8.14</u>	<u>160 ml/min</u>	<u>480</u>	<u>6.85</u>	<u>28.40</u>	<u>424.0</u>	<u>0.0</u>	<u>1.938</u>	<u>2.99</u>	
1403	<u>8.28</u>	<u>160 ml/min</u>	<u>960</u>	<u>6.84</u>	<u>28.26</u>	<u>439.1</u>	<u>0.0</u>	<u>1.945</u>	<u>2.49</u>	
1406	<u>8.22</u>	<u>160 ml/min</u>	<u>1440</u>	<u>6.65</u>	<u>28.16</u>	<u>450.9</u>	<u>0.0</u>	<u>1.983</u>	<u>2.11</u>	
1409	<u>8.28</u>	<u>160 ml/min</u>	<u>1920</u>	<u>6.61</u>	<u>28.10</u>	<u>456.1</u>	<u>0.0</u>	<u>2000</u>	<u>2.06</u>	
1412	<u>8.13</u>	<u>160 ml/min</u>	<u>2400</u>	<u>6.55</u>	<u>28.11</u>	<u>461.0</u>	<u>0.0</u>	<u>2020</u>	<u>1.81</u>	
1415	<u>8.13</u>	<u>160 ml/min</u>	<u>2880</u>	<u>6.56</u>	<u>28.21</u>	<u>465.5</u>	<u>0.0</u>	<u>2025</u>	<u>1.10</u>	
1418	<u>8.13</u>	<u>160 ml/min</u>	<u>3360</u>	<u>6.56</u>	<u>28.09</u>	<u>469.8</u>	<u>0.0</u>	<u>2039</u>	<u>1.60</u>	

Sampling Data

Sampling Method: Peristaltic Pump-Number: 12383 Other: _____ Sampling Time: 1428

Color: Clear Grey Light Grey Light Brown Brown Other: _____

Odor: Mild Strong -- Specify: None Visual Turbidity: Clear Low Medium High

Sample Parameters	Container Description	Preservative	Filtered y/n
<u>689</u>	<u>2 vial 40ml</u>	<u>HCl</u>	
<u>VOCS</u>	<u>2 vial 40ml</u>	<u>HCl</u>	<u>N</u>
<u>DEO/OAS</u>	<u>2 500ml</u>	<u>N</u>	<u>N</u>
<u>3 VOCS</u>	<u>2 250ml</u>	<u>N</u>	<u>N</u>
<u>Metals /mercury</u>	<u>1 250 ml</u>	<u>HNO₃</u>	<u>N</u>
<u>Dissolved Metals</u>	<u>1 125 ml</u>	<u>N</u>	<u>N</u>

Remarks: 0.0 PPM

Sampler(s) Signature: AM

ASTM-D6771-02: Stabilization of Parameters:

pH	Temp	Conductivity	Dissolved Oxygen	Eh or ORP	Turbid'
± 0.2 phu	± 0.2 °C	3% of reading	± 10% of reading or ± 0.2 mg/L, whichever is greater	± 20 mV	± 10% ± 1.0 N ₁

Groundwater Monitoring Field Data Sheet

Project Name: Puma Terminal Project Number: E002-1695B
 Location: Bayamon J.R Date: 01/03/17
 Arcadis PR Team: A.C. M.F
 Well ID: MW-EB105 Well casing Dia.: 2" Weather: Sunny
EB105

WELL CASING VOLUMES (per foot of water column)

1-1/4"=0.06 1-1/2"=0.09 2"=0.16 2-1/2"=0.26 3"=0.37 3-1/2"=0.5 4"=0.65 6"=1.47

Well Data

Well Depth:	<u>22.10</u>	ft. TOC	Gallons per foot:		gal
Depth to Water:	<u>7.72</u>	ft. TOC	Gallons per well casing (Well Volume):	<u>2.30</u>	gal
Depth to SPH:	<u>ND</u>	ft. TOC	Three well volumes (x3):	<u>6.90</u>	gal
Water Column in Well:	<u>14.38</u>	ft.	Placement of Pump Intake:	<u>15</u>	ft. TOC

Well Purging Information and Field Parameters

Well Purging Method: Peristaltic Pump - Number 12343 Monsoon Pump - Number _____ Other _____

Time	Depth to Groundwater (ft)	Flow Rate (ml/min)	Cumulative Volume (gal)	pH	Temp. (°C)	ORP mV	Turbidity (NTU)	Cond. (mS/cm)	D.O. (mg/L)	D.O. (%)
<u>1238</u>	<u>7.72</u>	<u>160ml/min</u>	<u>Initial</u>							
<u>1241</u>	<u>9.00</u>	<u>160ml/min</u>	<u>480</u>	<u>7.08</u>	<u>28.83</u>	<u>112.8</u>	<u>0.0</u>	<u>1.417</u>	<u>2.69</u>	
<u>1244</u>	<u>9.57</u>	<u>160ml/min</u>	<u>960</u>	<u>7.08</u>	<u>28.48</u>	<u>109.4</u>	<u>0.0</u>	<u>1.410</u>	<u>2.28</u>	
<u>1247</u>	<u>10.05</u>	<u>160ml/min</u>	<u>1440</u>	<u>7.08</u>	<u>28.37</u>	<u>117.2</u>	<u>0.0</u>	<u>1.406</u>	<u>2.00</u>	
<u>1250</u>	<u>10.22</u>	<u>160ml/min</u>	<u>1920</u>	<u>7.09</u>	<u>28.07</u>	<u>106.8</u>	<u>0.0</u>	<u>1.405</u>	<u>2.12</u>	

Sampling Data

Sampling Method: Peristaltic Pump-Number: 12343 Other: _____ Sampling Time: 1345

Color: Clear Grey Light Grey Light Brown Brown Other: _____

Odor: Mild Strong -- Specify: None Visual Turbidity: Clear Low Medium High

Sample Parameters	Container Description	Preservative	Filtered y/n
<u>WAS</u>	<u>2 vial 40ml</u>	<u>HCl</u>	
<u>WOL</u>	<u>2 vial 40ml</u>	<u>HCl</u>	<u>N</u>
<u>DRO/ORO</u>	<u>2 500 ml</u>	<u>N</u>	<u>N</u>
<u>suoc's</u>	<u>2 250 ml</u>	<u>N</u>	<u>N</u>
<u>metals/mercury</u>	<u>1 250 ml</u>	<u>HNO₃</u>	<u>N</u>
<u>Dissolved metals</u>	<u>1 125 ml</u>	<u>N</u>	<u>N</u>

Remarks: 0.0 ppm Se toma el **DUP004**, MW-EB105 (MS), MW-EB10

Sampler(s) Signature: (M)

ASTM-D6771-02: Stabilization of Parameters:

pH	Temp	Conductivity	Dissolved Oxygen	Eh or ORP	Turbidity
± 0.2 phu	± 0.2 °C	3% of reading	± 10% of reading or ± 0.2 mg/L, whichever is greater	± 20 mV	± 10% of the pr ± 1.0 NTU which

Groundwater Monitoring Field Data Sheet

Project Name: Prima Terminal Project Number: E002.1605B
 Location: Bayamon P.R. Date: 01/03/10
 Arcadis PR Team: A.C. M.F.
 Well ID: EB-104 Well casing Dia.: 2" Weather: Sunny

WELL CASING VOLUMES (per foot of water column)

1-1/4"=0.06 1-1/2"=0.09 2"=0.16 2-1/2"=0.26 3"=0.37 3-1/2"=0.5 4"=0.65 6"=1.47

Well Data

Well Depth:	_____	ft. TOC	Gallons per foot:	_____	gal
Depth to Water:	_____	ft. TOC	Gallons per well casing (Well Volume):	_____	gal
Depth to SPH:	_____	ft. TOC	Three well volumes (x3):	_____	gal
Water Column in Well:	_____	ft.	Placement of Pump Intake:	_____	ft. TOC

Well Purging Information and Field Parameters

Well Purging Method: Peristaltic Pump - Number _____ Monsoon Pump - Number _____ Other _____

Time	Depth to Groundwater (ft)	Flow Rate (ml/min)	Cumulative Volume (gal)	pH	Temp. (°C)	ORP mV	Turbidity (NTU)	Cond. (mS/cm)	D.O. (mg/L)	D.O. (%)
1113	12.28	160ml/min	4800	5.92	21.97	121.6	0.0	2.338	0.90	
1116	12.65	160ml/min	5280	5.90	24.05	113.9	0.0	2.340	0.84	
1119	13.00	160ml/min	5760	5.84	28.03	110.6	0.0	2.352	0.85	

Sampling Data

Sampling Method: Peristaltic Pump-Number: _____ Other: _____ Sampling Time: 1126

Color: Clear Grey Light Grey Light Brown Brown Other: _____

Odor: Mild Strong -- Specify: _____ Visual Turbidity: Clear Low Medium High

Sample Parameters	Container Description	Preservative	Filtered y/n
		HCl	N
			N
			N
		HNO ₃	N
			N

Remarks: _____

Sampler(s) Signature: _____

ASTM-D6771-02: Stabilization of Parameters:

pH	Temp	Conductivity	Dissolved Oxygen	Eh or ORP	Turbid
± 0.2 phu	± 0.2 °C	3% of reading	± 10% of reading or ± 0.2 mg/L, whichever is greater	± 20 mV	± 10% ± 1.0 N.

Groundwater Monitoring Field Data Sheet

Project Name: Puma Terminal Project Number: E002-1605B
 Location: Bayamon P.R. Date: 01/03/17
 Arcadis PR Team: A.C. M.A.
 Well ID: EB-104 Well casing Dia.: 2" Weather: Sunny
MW-EB104

WELL CASING VOLUMES (per foot of water column)

1-1/4"=0.06 1-1/2"=0.09 2"=0.16 2-1/2"=0.26 3"=0.37 3-1/2"=0.5 4"=0.65 6"=1.47

Well Data

Well Depth:	<u>29.10</u>	ft. TOC	Gallons per foot:	<u>0.16</u>	gal
Depth to Water:	<u>6.96</u>	ft. TOC	Gallons per well casing (Well Volume):	<u>3.22</u>	gal
Depth to SPH:	<u>ND</u>	ft. TOC	Three well volumes (x3):	<u>9.66</u>	gal
Water Column in Well:	<u>20.14</u>	ft.	Placement of Pump Intake:	<u>17</u>	ft. TOC

Well Purging Information and Field Parameters

Well Purging Method: Peristaltic Pump - Number 12383 Monsoon Pump - Number _____ Other _____

Time	Depth to Groundwater (ft)	Flow Rate (ml/min)	Cumulative Volume (gal)	pH	Temp. (°C)	ORP mV	Turbidity (NTU)	Cond. (mS/cm)	D.O. (mg/L)	D.O. (%)
1043	6.96	160ml/min	120							
1046	6.60	160ml/min	480	6.23	28.57	442.3	55.6	2.329	1.06	
1049	9.07	160ml/min	960	6.15	28.09	490.2	135.6	2.319	1.37	
1052	9.51	160ml/min	1440	6.15	27.89	434.6	1.26	2.318	1.25	
1055	10.08	160ml/min	1920	6.14	27.87	428.3	80.2	2.318	1.25	
1058	10.53	160ml/min	2400	6.08	27.61	400.1	109.1	2.318	1.10	
1101	10.92	160ml/min	2880	5.97	27.74	281.5	96.3	2.332	1.00	
1104	11.53	160ml/min	3360	5.96	27.82	215.7	8.1	2.331	0.85	
1107	11.80	160ml/min	3840	5.94	27.88	153.6	10.92	2.332	0.92	
1110	11.90	160ml/min	4320	5.94	27.91	136.8	1.3	2.335	0.9	

Sampling Data

Sampling Method: Peristaltic Pump-Number: 12383 Other: _____ Sample:

Color: Clear Grey Light Grey Light Brown Brown Other: _____

Odor: Mild Strong -- Specify: None Visual Turbidity: Clear

Sample Parameters	Container Description	Preservative
<u>VOCS</u>	<u>2 vial 40ml</u>	<u>HCl</u>
<u>URO</u>	<u>2 vial 40ml</u>	<u>HCl</u>
<u>DRO/ORO</u>	<u>2 500 ml</u>	<u>N</u>
<u>SROC's</u>	<u>2 250 ml</u>	<u>N</u>
<u>metals / Mercury</u>	<u>1 250 ml</u>	<u>HNO3</u>
<u>Dissolved metals</u>	<u>1 125 ml</u>	<u>N</u>

Remarks: 0.0 ppm

Sampler(s) Signature: [Signature]

ASTM-D6771-02: Stabilization of Para

pH	Temp	Conductivity	Dissolved Oxygen
± 0.2 phu	± 0.2 °C	3% of reading	± 10% of reading or ± 0.2 mg/L, whichever is greater

Groundwater Monitoring Field Data Sheet

Project Name: Anna Terminal Project Number: E002.1605B
 Location: Bayman P.B Date: 01/03/2017
 Arcadis PR Team: A.C. M.F
 Well ID: MW-89 Well casing Dia.: 2" Weather: Sunny

WELL CASING VOLUMES (per foot of water column)

1-1/4"=0.06 1-1/2"=0.09 2"=0.16 2-1/2"=0.26 3"=0.37 3-1/2"=0.5 4"=0.65 6"=1.47

Well Data

Well Depth:	<u>15.50</u>	ft. TOC	Gallons per foot:	<u>0.16</u>	gal
Depth to Water:	<u>2.20</u>	ft. TOC	Gallons per well casing (Well Volume):	<u>2.12</u>	gal
Depth to SPH:	<u>NA</u>	ft. TOC	Three well volumes (x3):	<u>6.38</u>	gal
Water Column in Well:	<u>13.3</u>	ft.	Placement of Pump Intake:	<u>9</u>	ft. TOC

Well Purging Information and Field Parameters

Well Purging Method: Peristaltic Pump - Number 12383 Monsoon Pump - Number _____ Other _____

Time	Depth to Groundwater (ft)	Flow Rate (ml/min)	Cumulative Volume (gal)	pH	Temp. (°C)	ORP mV	Turbidity (NTU)	Cond. (mS/cm)	D.O. (mg/L)	D.O. (%)
0854	2.20	160ml/min	initial	---	---	---	---	---	---	---
0857	4.05	160ml/min	480	7.04	21.63	-109.4	0.0	0.563	0.64	---
0900	4.56	160ml/min	960	7.12	21.69	-121.9	0.0	0.567	0.51	---
0903	5.60	160ml/min	1440	7.16	21.54	-132.9	0.0	0.582	0.41	---
0906	6.25	160ml/min	1920	7.16	21.01	-136.0	0.0	0.599	0.39	---
0909	6.93	160ml/min	2400	7.15	21.35	-133.0	0.0	0.620	0.39	---
0912	6.94	160ml/min	2880	7.12	21.39	-123.0	0.0	0.648	0.58	---
0915	8.85	160ml/min	3360	7.08	21.51	-102.3	0.0	0.695	0.43	---
0918	9.40	160ml/min	3840	7.11	21.13	-120.5	0.0	0.641	0.91	---
0921	9.91	160ml/min	4320	7.11	21.17	-120.3	0.0	0.642	0.88	---
0924	10.86	160ml/min	4800	7.12	21.21	-113.0	0.0	0.660	1.00	---

Sampling Method: Peristaltic Pump-Number: 12383 Other: _____ Sampling Time: 0938

Color: Clear Grey Light Grey Light Brown Brown Other: _____

Odor: Mild Strong -- Specify: None Visual Turbidity: Clear Low Medium High

Sample Parameters	Container Description	Preservative	Filtered y/n
<u>CRD</u>	<u>2 vials 40 ml</u>	<u>HCl</u>	<u>N</u>
<u>VOC's</u>	<u>2 vials 40 ml</u>	<u>HCl</u>	<u>N</u>
<u>DRO/ORO</u>	<u>2 500ml</u>	<u>N</u>	<u>N</u>
<u>3voc's</u>	<u>2 250 ml</u>	<u>N</u>	<u>N</u>
<u>Metals Mercury</u>	<u>2 250 ml</u>	<u>HNO₃</u>	<u>N</u>
<u>Dissolved Metals</u>	<u>1 125 ml</u>	<u>N</u>	<u>N</u>

Remarks: 0.0 VOL.

Sampler(s) Signature: [Signature]

ASTM-D6771-02: Stabilization of Parameters:

pH	Temp	Conductivity	Dissolved Oxygen	Eh or ORP
± 0.2 phu	± 0.2 °C	3% of reading	± 10% of reading or ± 0.2 mg/L, whichever is greater	± 20 mV

Groundwater Monitoring Field Data Sheet

Project Name: Puma Terminal Project Number: E002-1605B
 Location: Bayamon P.R. Date: 01/03/19

Arcadis PR Team: _____

Well ID: MW-EB103 Well casing Dia.: 2" Weather: Sunny

WELL CASING VOLUMES (per foot of water column)

1-1/4"=0.06 1-1/2"=0.09 2"=0.16 2-1/2"=0.26 3"=0.37 3-1/2"=0.5 4"=0.65 6"=1.47

Well Data

Well Depth:	<u>21.10</u>	ft. TOC	Gallons per foot:	<u>0.16</u>	gal
Depth to Water:	<u>5.68</u>	ft. TOC	Gallons per well casing (Well Volume):	<u>3.42</u>	gal
Depth to SPH:	<u>ND</u>	ft. TOC	Three well volumes (x3):	<u>10.28</u>	gal
Water Column in Well:	<u>21.42</u>	ft.	Placement of Pump Intake:	<u>15</u>	ft. TOC

Well Purging Information and Field Parameters

Well Purging Method: Peristaltic Pump - Number 12343 Monsoon Pump - Number _____ Other _____

Time	Depth to Groundwater (ft)	Flow Rate (ml/min)	Cumulative Volume (gal)	pH	Temp. (°C)	ORP mV	Turbidity (NTU)	Cond. (mS/cm)	D.O. (mg/L)	D.O. (%)
0952	5.68	160ml/min	initial	5.91	28.71	246.6				
0955	6.19	160ml/min	460	5.91	28.71	246.6	0.0	1.804	1.48	
0958	6.28	160ml/min	620	5.60	28.66	297.1	0.0	1.810	1.12	
1001	6.37	160ml/min	780	5.57	28.58	330.3	0.0	1.811	0.89	
1004	6.44	160ml/min	940	5.54	28.61	361.4	0.0	1.810	0.74	
1007	6.52	160ml/min	1100	5.54	28.62	382.8	0.0	1.810	0.67	
1010	6.58	160ml/min	1260	5.53	28.41	400.0	0.0	1.813	0.59	
1013	6.66	160ml/min	1420	5.51	28.29	423.3	0.0	1.805	0.48	
1016	6.73	160ml/min	1580	5.51	28.47	425.9	0.0	1.807	0.44	
1019	6.79	160ml/min	1740	5.50	28.60	424.6	0.0	1.807	0.42	

Sampling Data

Sampling Method: Peristaltic Pump - Number: 12343 Other: _____ Sampling Time: 1021

Color: Clear Grey Light Grey Light Brown Brown Other: _____

Odor: Mild Strong -- Specify: None Visual Turbidity: Clear Low Medium High

Sample Parameters	Container Description	Preservative	Filtered y/n
VOC's	2 vials 40ml	HCl	
GRD	2 vials 40ml	HCl	N
DRO/ORG	2 500 ml	N	N
SVO's	2 250 ml	N	N
Metals / Mercury	1 250 ml	HNO ₃	N
Dissolved Metals	1 125 ml	N	N

Remarks: 0.0 ppm

Sampler(s) Signature: MM

ASTM-D6771-02: Stabilization of Parameters:

pH	Temp	Conductivity	Dissolved Oxygen	Eh or ORP	Turbidity
± 0.2 phu	± 0.2 °C	3% of reading	± 10% of reading or ± 0.2 mg/L, whichever is greater	± 20 mV	± 10% of ± 1.0 NTU

Groundwater Monitoring Field Data Sheet

Project Name: Alma Terminal Project Number: E002-1605A
 Location: Bayamon P.R. Date: 12/29/16
 Arcadis PR Team: A.C. APF
 Well ID: MW-DPS Well casing Dia.: 2" Weather: Sunny

WELL CASING VOLUMES (per foot of water column)

1-1/4"=0.06 1-1/2"=0.09 2"=0.16 2-1/2"=0.26 3"=0.37 3-1/2"=0.5 4"=0.65 6"=1.47

Well Data

Well Depth:	<u>20.5</u>	ft. TOC	Gallons per foot:	<u>0.16</u>	gal
Depth to Water:	<u>2.87</u>	ft. TOC	Gallons per well casing (Well Volume):	<u>2.82</u>	gal
Depth to SPH:	<u>ND</u>	ft. TOC	Three well volumes (x3):	<u>8.46</u>	gal
Water Column in Well:	<u>17.63</u>	ft.	Placement of Pump Intake:	<u>11</u>	ft. TOC

Well Purging Information and Field Parameters

Well Purging Method: Peristaltic Pump - Number 12883 Monsoon Pump - Number _____ Other _____

Time	Depth to Groundwater (ft)	Flow Rate (ml/min)	Cumulative Volume (gal)	pH	Temp. (°C)	ORP mV	Turbidity (NTU)	Cond. (mS/cm)	D.O. (mg/L)	D.O. (%)
1055	2.87	160ml/min	120							
1058	3.58	160ml/min	480	6.64	28.49	132.5	0.0	0.262	3.58	
1101	3.67	160ml/min	960	6.49	28.36	186.1	0.0	0.259	5.59	
1104	3.75	160ml/min	1440	6.40	28.38	238.9	0.0	0.259	5.46	
1107	3.84	160ml/min	1920	6.05	28.31	296.4	0.0	0.256	4.08	
1110	3.90	160ml/min	2400	5.67	28.51	312.0	0.0	0.255	2.53	
1113	3.98	160ml/min	2880	5.52	28.36	344.0	0.0	0.252	1.63	
1116	3.95	160ml/min	3360	5.43	28.26	362.3	0.0	0.252	1.19	
1119	3.97	160ml/min	3840	5.45	28.25	383.7	0.0	0.252	1.09	
1122	<u>4.01</u>	160ml/min	4320	5.45	28.22	388.0	0.0	0.253	0.99	
1125	4.06	160ml/min	4800	5.48	28.28	403.5	0.0	0.254	0.84	

Sampling Method: Peristaltic Pump-Number: 12883 Other: _____ Sampling Time: 1130

Color: Clear Grey Light Grey Light Brown Brown Other: _____

Odor: Mild Strong -- Specify: None Visual Turbidity: Clear Low Medium High

Sample Parameters	Container Description	Preservative	Filtered y/n
CRD	2 vials	HCl	
VOG's	2 vials	HCl	N
DRD/ORD	2 500 ml	N	N
SVOG's	2 250ml	N	N
metals/mercury	1 250ml	HNO ₃	N
Dissolved metals	1 125 ml		N

Remarks: 0.0 PPM

Sampler(s) Signature: M

ASTM-D6771-02: Stabilization of Parameters:

pH	Temp	Conductivity	Dissolved Oxygen	Eh or ORP	Turbidity
± 0.2 phu	± 0.2 °C	3% of reading	± 10% of reading or ± 0.2 mg/L, whichever is greater	± 20 mV	± 10% of the previous reading or ± 1.0 NTU whichever is greater

Groundwater Monitoring Field Data Sheet

Project Name: Puma Terminal Project Number: E002.1605D
 Location: Daymon P.R Date: 12/29/16
 Arcadis PR Team: A.C. M.P
 Well ID: MW-MPSA Well casing Dia.: 2" Weather: Sunny

WELL CASING VOLUMES (per foot of water column)

1-1/4"=0.06 1-1/2"=0.09 2"=0.16 2-1/2"=0.26 3"=0.37 3-1/2"=0.5 4"=0.65 6"=1.47

Well Data

Well Depth:	<u>63.70</u>	ft. TOC	Gallons per foot:	<u>0.16</u>	gal
Depth to Water:	<u>4.87</u>	ft. TOC	Gallons per well casing (Well Volume):	<u>9.41</u>	gal
Depth to SPH:	<u>ND</u>	ft. TOC	Three well volumes (x3):	<u>28.23</u>	gal
Water Column in Well:	<u>58.83</u>	ft.	Placement of Pump Intake:	<u>30</u>	ft. TOC

Well Purging Information and Field Parameters

Well Purging Method: Peristaltic Pump - Number 12883 Monsoon Pump - Number _____ Other _____

Time	Depth to Groundwater (ft)	Flow Rate (ml/min)	Cumulative Volume (gal)	pH	Temp. (°C)	ORP mV	Turbidity (NTU)	Cond. (mS/cm)	D.O. (mg/L)	D.O. (%)
1019	<u>4.87</u>	<u>160ml/min</u>	<u>160</u>	<u>6.85</u>	<u>28.66</u>	<u>-54.9</u>	<u>0.0</u>	<u>0.869</u>	<u>0.82</u>	
1022	<u>4.85</u>	<u>160ml/min</u>	<u>320</u>	<u>6.86</u>	<u>28.56</u>	<u>-68.0</u>	<u>0.0</u>	<u>0.867</u>	<u>0.69</u>	
1025	<u>4.86</u>	<u>160ml/min</u>	<u>480</u>	<u>6.87</u>	<u>28.57</u>	<u>-91.1</u>	<u>0.0</u>	<u>0.868</u>	<u>0.61</u>	
1024	<u>4.86</u>	<u>160ml/min</u>	<u>640</u>	<u>6.88</u>	<u>28.47</u>	<u>-69.8</u>	<u>0.0</u>	<u>0.867</u>	<u>0.54</u>	
1031	<u>4.86</u>	<u>160ml/min</u>	<u>800</u>	<u>6.88</u>	<u>28.51</u>	<u>-91.2</u>	<u>0.0</u>	<u>0.866</u>	<u>0.52</u>	
1034	<u>4.86</u>	<u>160ml/min</u>	<u>960</u>	<u>6.88</u>	<u>28.42</u>	<u>-91.9</u>	<u>0.0</u>	<u>0.867</u>	<u>0.49</u>	
1037	<u>4.86</u>	<u>160ml/min</u>	<u>1120</u>							

Sampling Data

Sampling Method: Peristaltic Pump-Number: 12883 Other: _____ Sampling Time: 1047

Color: Clear Grey Light Grey Light Brown Brown Other: _____

Odor: Mild Strong -- Specify: None Visual Turbidity: Clear Low Medium High

Sample Parameters	Container Description	Preservative	Filtered y/n
<u>ORP</u>	<u>2 vial 40ml</u>	<u>HCl</u>	
<u>DOC</u>	<u>2 vial 40ml</u>	<u>HCl</u>	<u>N</u>
<u>DRO/OM</u>	<u>2 500 ml</u>	<u>N</u>	<u>N</u>
<u>SvOC's</u>	<u>2 250 ml</u>	<u>N</u>	<u>N</u>
<u>Metals/Mercury</u>	<u>1 250 ml</u>	<u>HNO₃</u>	<u>N</u>
<u>Dissolved metals</u>	<u>1 125 ml</u>	<u>N</u>	<u>N</u>

Remarks: 0.0 PPM

Sampler(s) Signature: M

ASTM-D6771-02: Stabilization of Parameters:

pH	Temp	Conductivity	Dissolved Oxygen	Eh or ORP	Turbidity
± 0.2 phu	± 0.2 °C	3% of reading	± 10% of reading or ± 0.2 mg/L, whichever is greater	± 20 mV	± 10% of the previous reading or ± 1.0 NTU whichever is greater

Groundwater Monitoring Field Data Sheet

Project Name: Puma Terminal Project Number: E002.1605D
 Location: Bayamon P.R. Date: 12/29/16
 Arcadis PR Team: A.C. MF
 Well ID: MW-56A Well casing Dia.: 2" Weather: SUNNY

WELL CASING VOLUMES (per foot of water column)

1-1/4"=0.06 1-1/2"=0.09 2"=0.16 2-1/2"=0.26 3"=0.37 3-1/2"=0.5 4"=0.65 6"=1.47

Well Data

Well Depth:	<u>24.0</u>	ft. TOC	Gallons per foot:	<u>0.16</u>	gal
Depth to Water:	<u>4.30</u>	ft. TOC	Gallons per well casing (Well Volume):	<u>3.15</u>	gal
Depth to SPH:	<u>ND</u>	ft. TOC	Three well volumes (x3):	<u>9.45</u>	gal
Water Column in Well:	<u>19.7</u>	ft.	Placement of Pump Intake:	<u>14.</u>	ft. TOC

Well Purging Information and Field Parameters

Well Purging Method: Peristaltic Pump - Number 12383 Monsoon Pump - Number _____ Other _____

Time	Depth to Groundwater (ft)	Flow Rate (ml/min)	Cumulative Volume (gal)	pH	Temp. (°C)	ORP mV	Turbidity (NTU)	Cond. (mS/cm)	D.O. (mg/L)	D.O. (%)
<u>0920</u>	<u>4.30</u>	<u>160ml/min</u>	<u>initial</u>							
<u>0930</u>	<u>4.29</u>	<u>160ml/min</u>	<u>480</u>	<u>6.30</u>	<u>28.68</u>	<u>13.6</u>	<u>0.0</u>	<u>1.196</u>	<u>0.91</u>	
<u>0933</u>	<u>4.84</u>	<u>160ml/min</u>	<u>960</u>	<u>6.22</u>	<u>28.69</u>	<u>-9.6</u>	<u>0.0</u>	<u>1.301</u>	<u>0.55</u>	
<u>0936</u>	<u>4.86</u>	<u>160ml/min</u>	<u>1440</u>	<u>6.18</u>	<u>28.63</u>	<u>-10.6</u>	<u>0.0</u>	<u>1.445</u>	<u>0.47</u>	
<u>0939</u>	<u>4.86</u>	<u>160ml/min</u>	<u>1920</u>	<u>6.15</u>	<u>28.59</u>	<u>-12.4</u>	<u>0.0</u>	<u>1.480</u>	<u>0.43</u>	
<u>0942</u>	<u>4.86</u>	<u>160ml/min</u>	<u>2400</u>	<u>6.14</u>	<u>28.57</u>	<u>-13.1</u>	<u>0.0</u>	<u>1.493</u>	<u>0.41</u>	
<u>0945</u>	<u>4.86</u>	<u>160ml/min</u>	<u>2880</u>	<u>6.13</u>	<u>28.56</u>	<u>-12.8</u>	<u>0.0</u>	<u>1.510</u>	<u>0.38</u>	

Sampling Data

Sampling Method: Peristaltic Pump-Number: 12383 Other: _____ Sampling Time: 0950

Color: Clear Grey Light Grey Light Brown Brown Other: _____

Odor: Mild Strong -- Specify: None Visual Turbidity: Clear Low Medium High

Sample Parameters	Container Description	Preservative	Filtered y/n
<u>280</u>	<u>2 vial 40ml</u>	<u>HCl</u>	
<u>NO2</u>	<u>2 vial 40ml</u>	<u>HCl</u>	<u>N</u>
<u>DRO/OPS</u>	<u>2 500 ml</u>	<u>N</u>	<u>N</u>
<u>SVOCs</u>	<u>2 250 ml</u>	<u>N</u>	<u>N</u>
<u>Metals /mercury</u>	<u>1 250 ml</u>	<u>HNO3</u>	<u>N</u>
<u>Dissolved Metals</u>	<u>1 125 ml</u>	<u>N</u>	<u>N</u>

Remarks: 0.0 ppm

Sampler(s) Signature: [Signature]

ASTM-D6771-02: Stabilization of Parameters:

pH	Temp	Conductivity	Dissolved Oxygen	Eh or ORP	Turbidity
± 0.2 pH	± 0.2 °C	3% of reading	± 10% of reading or ± 0.2 mg/L, whichever is greater	± 20 mV	± 10% of the previous reading or ± 1.0 NTU whichever is greater

Groundwater Monitoring Field Data Sheet

Project Name: Puma Terminal Project Number: E002-1605B
 Location: Bayamon P.R. Date: 12/28/16
 Arcadis PR Team: A.C. MIF
 Well ID: EB-102 Well casing Dia.: 2" Weather: Sunny

WELL CASING VOLUMES (per foot of water column)

1-1/4"=0.06 1-1/2"=0.09 2"=0.16 2-1/2"=0.26 3"=0.37 3-1/2"=0.5 4"=0.65 6"=1.47

Well Data

Well Depth:	<u>27.11</u>	ft. TOC	Gallons per foot:	<u>0.16</u>	gal
Depth to Water:	<u>2.98</u>	ft. TOC	Gallons per well casing (Well Volume):	<u>3.09</u>	gal
Depth to SPH:	<u>ND</u>	ft. TOC	Three well volumes (x3):	<u>9.27</u>	gal
Water Column in Well:	<u>19.33</u>	ft.	Placement of Pump Intake:	<u>11.5</u>	ft. TOC

Well Purging Information and Field Parameters

Well Purging Method: Peristaltic Pump - Number 12343 Monsoon Pump - Number _____ Other _____

Time	Depth to Groundwater (ft)	Flow Rate (ml/min)	Cumulative Volume (gal)	pH	Temp. (°C)	ORP mV	Turbidity (NTU)	Cond. (mS/cm)	D.O. (mg/L)	D.O. (%)
1430	<u>7.74</u>	<u>160ml/min</u>	<u>initial</u>							
1433	<u>8.11</u>	<u>160ml/min</u>	<u>480</u>	<u>5.18</u>	<u>28.89</u>	<u>381.6</u>	<u>0.0</u>	<u>0.989</u>	<u>1.88</u>	
1436	<u>8.90</u>	<u>160ml/min</u>	<u>960</u>	<u>5.12</u>	<u>28.94</u>	<u>430.3</u>	<u>0.0</u>	<u>0.993</u>	<u>1.74</u>	
1439	<u>9.09</u>	<u>160ml/min</u>	<u>1440</u>	<u>5.10</u>	<u>28.92</u>	<u>459.1</u>	<u>0.0</u>	<u>1.001</u>	<u>1.56</u>	
1442	<u>9.19</u>	<u>160ml/min</u>	<u>1920</u>	<u>5.08</u>	<u>28.56</u>	<u>464.1</u>	<u>0.0</u>	<u>1.013</u>	<u>1.23</u>	
1445	<u>9.23</u>	<u>160ml/min</u>	<u>2400</u>	<u>5.06</u>	<u>28.31</u>	<u>469.2</u>	<u>0.0</u>	<u>1.018</u>	<u>1.06</u>	
1448	<u>9.33</u>	<u>160ml/min</u>	<u>2880</u>	<u>5.05</u>	<u>28.33</u>	<u>466.2</u>	<u>0.0</u>	<u>1.020</u>	<u>1.10</u>	

Sampling Data

Sampling Method: Peristaltic Pump-Number: 12343 Other: _____ Sampling Time: 1459

Color: Clear Grey Light Grey Light Brown Brown Other: _____

Odor: Mild Strong -- Specify: None Visual Turbidity: Clear Low Medium High

Sample Parameters	Container Description	Preservative	Filtered
<u>DRO</u>	<u>2 vial 400</u>	<u>HCl</u>	
<u>ROCKS</u>	<u>2 vial 400</u>	<u>HCl</u>	
<u>DRO/ORS</u>	<u>2 500 ml</u>	<u>N</u>	
<u>SROC'S</u>	<u>2 250 ml</u>	<u>N</u>	
<u>Metals /mercury</u>	<u>1 250 ml</u>	<u>HNO₃</u>	
<u>Dissolved metals</u>	<u>1 125 ml</u>	<u>N</u>	

Remarks: 0.0 ppm

Sampler(s) Signature: [Signature]

ASTM-D6771-02: Stabilization of Parameters:

pH	Temp	Conductivity	Dissolved Oxygen	Eh or ORP
± 0.2 phu	± 0.2 °C	3% of reading	± 10% of reading or ± 0.2 mg/L, whichever is greater	± 20 mV

Groundwater Monitoring Field Data Sheet

Project Name: Puma Terminal Project Number: E002-1605B
 Location: Bapman P.B. Date: 12/28/16
 Arcadis PR Team: A.C. A.E
 Well ID: EB-101 Well casing Dia.: 2" Weather: Sunny

WELL CASING VOLUMES (per foot of water column)

1-1/4"=0.06 1-1/2"=0.09 2"=0.16 2-1/2"=0.26 3"=0.37 3-1/2"=0.5 4"=0.65 6"=1.47

Well Data

Well Depth: <u>25.2</u> ft. TOC	Gallons per foot: <u>0.16</u> gal
Depth to Water: <u>3.42</u> ft. TOC	Gallons per well casing (Well Volume): <u>3.48</u> gal
Depth to SPH: <u>N/A</u> ft. TOC	Three well volumes (x3): <u>10.45</u> gal
Water Column in Well: <u>21.78</u> ft.	Placement of Pump Intake: <u>14.30</u> ft. TOC

Well Purging Information and Field Parameters

Well Purging Method: Peristaltic Pump - Number 12383 Monsoon Pump - Number _____ Other _____

Time	Depth to Groundwater (ft)	Flow Rate (ml/min)	Cumulative Volume (gal)	pH	Temp. (°C)	ORP mV	Turbidity (NTU)	Cond. (mS/cm)	D.O. (mg/L)	D.O. (%)
1348	3.42	160ml/min	Initial							
1351	3.47	160ml/min	460	6.13	28.04	-89.0	-89.9	0.485	0.26	
1354	3.93	160ml/min	960	6.91	28.45	-84.9	-6.5	0.495	0.55	
1357	3.98	160ml/min	1440	6.82	28.46	-709.1	-20.2	0.509	0.40	
1400	4.00	160ml/min	1920	6.82	28.91	-711.6	-29.3	0.508	0.39	
1403	4.02	160ml/min	2400	6.80	28.88	-712.6	-28.2	0.511	0.35	
1406	4.04	160ml/min	2880	6.78	28.89	-712.6	-29.8	0.511	0.35	

Sampling Data

Sampling Method: Peristaltic Pump-Number: 12383 Other: _____ Sampling Time: 1416

Color: Clear Grey Light Grey Light Brown Brown Other: _____

Odor: Mild Strong -- Specify: None Visual Turbidity: Clear Low Medium High

Sample Parameters	Container Description	Preservative	Filtered y/n
<u>CRD</u>	<u>2 vial 40ml</u>	<u>HCl</u>	
<u>VOG's</u>	<u>2 vial 40ml</u>	<u>HCl</u>	<u>N</u>
<u>DRO/OAN</u>	<u>2 500 mL</u>	<u>N</u>	<u>N</u>
<u>5 VOL's</u>	<u>2 250 mL</u>	<u>N</u>	<u>N</u>
<u>Metals / Mercury</u>	<u>1 250 mL</u>	<u>HNO₃</u>	<u>N</u>
<u>Dissolved Metals</u>	<u>1 125 mL</u>	<u>N</u>	<u>N</u>

Remarks: 0.0 ppm

Sampler(s) Signature: M

ASTM-D6771-02: Stabilization of Parameters:

pH	Temp	Conductivity	Dissolved Oxygen	Eh or ORP
± 0.2 phu	± 0.2 °C	3% of reading	± 10% of reading or ± 0.2 mg/L, whichever is greater	± 20 mV

Groundwater Monitoring Field Data Sheet

Project Name: Puma Terminal Project Number: E002-1605B
 Location: Bayamon P.R. Date: 12/28/16
 Arcadis PR Team: A.C. / M.F.
 Well ID: NW-TP-2 Well casing Dia.: 2" Weather: Sunny

WELL CASING VOLUMES (per foot of water column)

1-1/4"=0.06 1-1/2"=0.09 2"=0.16 2-1/2"=0.26 3"=0.37 3-1/2"=0.5 4"=0.65 6"=1.47

Well Data

Well Depth:	<u>19.00</u>	ft. TOC	Gallons per foot:	<u>0.16</u>	gal
Depth to Water:	<u>6.53</u>	ft. TOC	Gallons per well casing (Well Volume):	<u>1.99</u>	gal
Depth to SPH:	<u>ND</u>	ft. TOC	Three well volumes (x3):	<u>5.98</u>	gal
Water Column in Well:	<u>12.47</u>	ft.	Placement of Pump Intake:	<u>12.75</u>	ft. TOC

Well Purging Information and Field Parameters

Well Purging Method: Peristaltic Pump - Number 12383 Monsoon Pump - Number _____ Other _____

Time	Depth to Groundwater (ft)	Flow Rate (ml/min)	Cumulative Volume (gal)	pH	Temp. (°C)	ORP mV	Turbidity (NTU)	Cond. (mS/cm)	D.O. (mg/L)	D.O. (%)
1302	6.53	160ml/min	160							
1305	7.68	160ml/min	480	6.93	28.95	131.9	0.0	1.405	0.98	
1308	7.65	160ml/min	960	6.64	28.93	246.9	0.0	1.406	0.96	
1311	7.70	160ml/min	1440	6.66	28.03	321.7	0.0	1.402	0.64	
1314	7.83	160ml/min	1920	6.66	28.55	302.2	0.0	1.404	0.56	
1317	8.05	160ml/min	2400	6.68	28.61	384.3	0.0	1.401	0.49	
1320	8.31	160ml/min	2880	6.70	28.69	403.7	0.0	1.402	0.45	
1323	8.52	160ml/min	3360	6.71	28.70	422.7	0.0	1.398	0.43	

Sampling Data

Sampling Method: Peristaltic Pump-Number: 12383 Other: _____ Sampling Time: 1333

Color: Clear Grey Light Grey Light Brown Brown Other: _____
 Odor: Mild Strong -- Specify: _____ Visual Turbidity: Clear Low Medium High

Sample Parameters	Container Description	Preservative	Filtered y/n
VOCs	2 vials 40ml	NaCl	✓
GR0	2 vials 40ml	HCl	N
DRO/ORS	2 500 ml	~	N
SVOCS	2 250 ml	~	N
Metal/Mercury	1 250 ml	HNO ₃	N
Dissolved Metals	1 125 ml	~	N

Remarks: 0.0 ppm
 Sampler(s) Signature: [Signature]

ASTM-D6771-02: Stabilization of Parameters:

pH	Temp	Conductivity	Dissolved Oxygen	Eh or ORP	Turbidity
± 0.2 phu	± 0.2 °C	3% of reading	± 10% of reading or ± 0.2 mg/L, whichever is greater	± 20 mV	± 10% of the previous read ± 1.0 NTU whichever is gr

Groundwater Monitoring Field Data Sheet

Project Name: Puma Terminal Project Number: E002.1605D
 Location: Oranmu P.R Date: 12/28/16
 Arcadis PR Team: A.C. M.P
 Well ID: MN-B1 Well casing Dia.: 2" Weather: Sunny

WELL CASING VOLUMES (per foot of water column)

1-1/4"=0.06 1-1/2"=0.09 2"=0.16 2-1/2"=0.26 3"=0.37 3-1/2"=0.5 4"=0.65 6"=1.47

Well Data

Well Depth:	<u>14.30</u>	ft. TOC	Gallons per foot:	<u>0.16</u>	gal
Depth to Water:	<u>1.50</u>	ft. TOC	Gallons per well casing (Well Volume):	<u>2.0</u>	gal
Depth to SPH:	<u>ND</u>	ft. TOC	Three well volumes (x3):	<u>6.1</u>	gal
Water Column in Well:	<u>12.8</u>	ft.	Placement of Pump Intake:	<u>8</u>	ft. TOC

Well Purging Information and Field Parameters

Well Purging Method: Peristaltic Pump - Number 12383 Monsoon Pump - Number _____ Other _____

Time	Depth to Groundwater (ft)	Flow Rate (ml/min)	Cumulative Volume (gal)	pH	Temp. (°C)	ORP mV	Turbidity (NTU)	Cond. (mS/cm)	D.O. (mg/L)	D.O. (%)
1052	1.50	160ml/min	initial			295.3				
1055	3.18	160ml/min	480	6.83	28.01	325.1	0.0	0.625	0.56	
1058	5.05	160ml/min	960	6.80	27.96	325.1	21.6	0.627	0.45	
1101	5.64	160ml/min	1440	6.82	28.01	341.1	8.6	0.630	0.44	
1104	6.85	160ml/min	1920	6.83	28.21	358.1	0.0	0.641	0.53	
1107	7.05	160ml/min	2400	6.82	28.21	310.9	54.1	0.645	0.55	
1110	7.77	160ml/min	2880	6.83	28.10	337.1	0.0	0.648	0.60	

Sampling Data

Sampling Method: Peristaltic Pump-Number: 12383 Other: _____ Sampling Time: 1131

Color: Clear Grey Light Grey Light Brown Brown Other: _____

Odor: Mild Strong -- Specify: LOW Visual Turbidity: Clear Low Medium High

Sample Parameters	Container Description	Preservative	Filtered y/n
<u>VOL'S</u>	<u>2 vial 40ml</u>	<u>HCl</u>	
<u>CRS</u>	<u>2 vial 40ml</u>	<u>HCl</u>	<u>N</u>
<u>ARO/ORO</u>	<u>2 500 ml</u>	<u>N</u>	<u>N</u>
<u>SvOC'S</u>	<u>2 250 ml</u>	<u>N</u>	<u>N</u>
<u>metal /mercury</u>	<u>1 250 ml</u>	<u>HNO3</u>	<u>N</u>
<u>Dissolved metal</u>	<u>1 125 ml</u>	<u>N</u>	<u>N</u>

Remarks: 0.0 vol Duplicate (DUP003-)

Sampler(s) Signature: MM

ASTM-D6771-02: Stabilization of Parameters:

pH	Temp	Conductivity	Dissolved Oxygen	Eh or ORP	Turbidity
± 0.2 phu	± 0.2 °C	3% of reading	± 10% of reading or ± 0.2 mg/L, whichever is greater	± 20 mV	± 10% of the previous reading or ± 1.0 NTU whichever is greater

Groundwater Monitoring Field Data Sheet

Project Name: Purton Terminal Project Number: E002-1605B
 Location: Bayamon P.R. Date: 12/28/16
 Arcadis PR Team: A.L. / M.P.
 Well ID: WWTD-1 Well casing Dia.: 2" Weather: Sunny

WELL CASING VOLUMES (per foot of water column)

1-1/4"=0.06 1-1/2"=0.09 2"=0.16 2-1/2"=0.26 3"=0.37 3-1/2"=0.5 4"=0.65 6"=1.47

Well Data

Well Depth:	<u>16.46</u>	ft. TOC	Gallons per foot:	<u>0.16</u>	gal
Depth to Water:	<u>5.42</u>	ft. TOC	Gallons per well casing (Well Volume):	<u>1.76</u>	gal
Depth to SPH:	<u>N/A</u>	ft. TOC	Three well volumes (x3):	<u>5.29</u>	gal
Water Column in Well:	<u>11.04</u>	ft.	Placement of Pump Intake:	<u>11.00</u>	ft. TOC

Well Purging Information and Field Parameters

Well Purging Method: Peristaltic Pump - Number 12383 Monsoon Pump - Number _____ Other _____

Time	Depth to Groundwater (ft)	Flow Rate (ml/min)	Cumulative Volume (gal)	pH	Temp. (°C)	ORP mV	Turbidity (NTU)	Cond. (mS/cm)	D.O. (mg/L)	D.O. (%)
0949	<u>5.42</u>	<u>160ml/min</u>	<u>0 initial</u>							
0952	<u>5.75</u>	<u>160ml/min</u>	<u>480</u>	<u>6.52</u>	<u>29.41</u>	<u>-107.9</u>	<u>0.0</u>	<u>0.603</u>	<u>0.55</u>	
0955	<u>5.75</u>	<u>160ml/min</u>	<u>960</u>	<u>6.39</u>	<u>29.18</u>	<u>-93.4</u>	<u>0.0</u>	<u>0.593</u>	<u>0.45</u>	
0958	<u>5.76</u>	<u>160ml/min</u>	<u>1440</u>	<u>6.36</u>	<u>29.10</u>	<u>-93.1</u>	<u>19.0</u>	<u>0.590</u>	<u>0.41</u>	
1001	<u>5.76</u>	<u>160ml/min</u>	<u>1920</u>	<u>6.35</u>	<u>29.09</u>	<u>-94.1</u>	<u>-20.0</u>	<u>0.589</u>	<u>0.35</u>	
1004	<u>5.76</u>	<u>160ml/min</u>	<u>2400</u>	<u>6.35</u>	<u>29.32</u>	<u>-96.8</u>	<u>-28.0</u>	<u>0.570</u>	<u>0.35</u>	
1009	<u>5.77</u>	<u>160ml/min</u>	<u>2880</u>	<u>6.35</u>	<u>29.50</u>	<u>-100.0</u>	<u>-30.1</u>	<u>0.590</u>	<u>0.32</u>	
1012	<u>5.77</u>	<u>160ml/min</u>	<u>3360</u>	<u>6.30</u>	<u>29.60</u>	<u>-99.9</u>	<u>-27.1</u>	<u>0.591</u>	<u>0.31</u>	

Sampling Data

Sampling Method: Peristaltic Pump - Number: 12383 Other: _____ Sampling Time: 1019

Color: Clear Grey Light Grey Light Brown Brown Other: _____

Odor: Mild Strong -- Specify: _____ Visual Turbidity: Clear Low Medium High

Sample Parameters	Container Description	Preservative	Filtered y/n
<u>VOCS</u>	<u>2 vials 40ml</u>	<u>HC</u>	
<u>CRD</u>	<u>2 vials 40ml</u>	<u>HCl</u>	<u>N</u>
<u>DRO/ORO</u>	<u>2 500ml</u>	<u>N</u>	<u>N</u>
<u>SVOC's</u>	<u>2 250ml</u>	<u>N</u>	<u>N</u>
<u>Metal Mercury</u>	<u>1 250 ml</u>		<u>N</u>
<u>Dissolved Metals</u>	<u>1 125 ml</u>	<u>HNO₃</u>	<u>N</u>

Remarks: 15.2 PPM

Sampler(s) Signature: AM

ASTM-D6771-02: Stabilization of Parameters:

pH	Temp	Conductivity	Dissolved Oxygen	Eh or ORP	Turbidity
± 0.2 phu	± 0.2 °C	3% of reading	± 10% of reading or ± 0.2 mg/L, whichever is greater	± 20 mV	± 10% of the previous reading or ± 1.0 NTU whichever is greater

Groundwater Monitoring Field Data Sheet

Project Name: Pump Terminal Project Number: E002.1605B
 Location: Bayaman P.R. Date: 12/28/16
 Arcadis PR Team: A.C. M, F
 Well ID: MW-16C Well casing Dia.: 2" Weather: Sunny

WELL CASING VOLUMES (per foot of water column)

1-1/4"=0.06 1-1/2"=0.09 2"=0.16 2-1/2"=0.26 3"=0.37 3-1/2"=0.5 4"=0.65 6"=1.47

Well Data

Well Depth:	<u>60.8</u>	ft. TOC	Gallons per foot:	<u>0.16</u>	gal
Depth to Water:	<u>6.25</u>	ft. TOC	Gallons per well casing (Well Volume):	<u>8.22</u>	gal
Depth to SPH:	<u>ND</u>	ft. TOC	Three well volumes (x3):	<u>26.14</u>	gal
Water Column in Well:	<u>54.55</u>	ft.	Placement of Pump Intake:	<u>33.50</u>	ft. TOC

Well Purging Information and Field Parameters

Well Purging Method: Peristaltic Pump - Number 12883 Monsoon Pump - Number _____ Other _____

Time	Depth to Groundwater (ft)	Flow Rate (ml/min)	Cumulative Volume (gal)	pH	Temp. (°C)	ORP mV	Turbidity (NTU)	Cond. (mS/cm)	D.O. (mg/L)	D.O. (%)
0904	6.25	160ml/min	initial	12.04	28.99	146.4	0.0	3.851	1.71	
0907	7.20	160ml/min	480	12.04	28.99	146.4	0.0	3.851	1.71	
0910	7.12	160ml/min	960	12.05	28.99	134.5	0.0	3.932	1.71	
0913	6.95	160ml/min	1440	12.05	29.03	131.5	0.0	3.957	1.35	
0916	6.83	160ml/min	1920	12.04	29.02	133.9	0.0	3.971	1.25	
0919	6.80	160ml/min	2400	12.03	28.96	140.4	0.0	3.973	1.25	

Sampling Data

Sampling Method: Peristaltic Pump-Number: 12883 Other: _____ Sampling Time: 0929

Color: Clear Grey Light Grey Light Brown Brown Other: _____

Odor: Mild Strong -- Specify: Low Visual Turbidity: Clear Low Medium High

Sample Parameters	Container Description	Preservative	Filtered y/n
VOCS	2 40ml 40m	HCl	
U-RO	2 40ml 40m	HCl	N
DRO/ORO	2 500ml	N	N
SVOCS	2 250ml	N	N
Metal Mercury	1 250ml	HNO ₃	N
Dissolved Metals	1 125ml	N	N

Remarks: 10 PPM VOL.

Sampler(s) Signature: MM

ASTM-D6771-02: Stabilization of Parameters:

pH	Temp	Conductivity	Dissolved Oxygen	Eh or ORP	Turbidity
± 0.2 phu	± 0.2 °C	3% of reading	± 10% of reading or ± 0.2 mg/L, whichever is greater	± 20 mV	± 10% of the previous reading or ± 1.0 NTU whichever is greater

Groundwater Monitoring Field Data Sheet

Project Name: Puma Terminal 1 Project Number: E002.1605B
 Location: Bayamon P.R. Date: 12/28/16
 Arcadis PR Team: A.C. M.F
 Well ID: T-9 Well casing Dia.: 4" Weather: Sunny

WELL CASING VOLUMES (per foot of water column)

1-1/4"=0.06 1-1/2"=0.09 2"=0.16 2-1/2"=0.26 3"=0.37 3-1/2"=0.5 4"=0.65 6"=1.47

Well Data

Well Depth:	<u>12.0</u>	ft. TOC	Gallons per foot:	_____	gal
Depth to Water:	<u>4.60</u>	ft. TOC	Gallons per well casing (Well Volume):	_____	gal
Depth to SPH:	<u>4.38</u>	ft. TOC	Three well volumes (x3):	_____	gal
Water Column in Well:	_____	ft.	Placement of Pump Intake:	_____	ft. TOC

Well Purging Information and Field Parameters

Well Purging Method: Peristaltic Pump - Number 12383 Monsoon Pump - Number _____ Other _____

Time	Depth to Groundwater (ft)	Flow Rate (ml/min)	Cumulative Volume (gal)	pH	Temp. (°C)	ORP mV	Turbidity (NTU)	Cond. (mS/cm)	D.O. (mg/L)	D.O. (%)
<i>Product</i>										

Sampling Data

Sampling Method: Peristaltic Pump - Number: 12383 Other: _____ Sampling Time: _____

Color: Clear Grey Light Grey Light Brown Brown Other: _____

Odor: Mild Strong -- Specify: _____ Visual Turbidity: Clear Low Medium High

Sample Parameters	Container Description	Preservative	Filtered y/n
		HCl	N
			N
			N
		HNO ₃	N
			N

Remarks: 100 PPM VOL

Sampler(s) Signature: AM

ASTM-D6771-02: Stabilization of Parameters:

pH	Temp	Conductivity	Dissolved Oxygen	Eh or ORP	Turbidity
± 0.2 phu	± 0.2 °C	3% of reading	± 10% of reading or ± 0.2 mg/L, whichever is greater	± 20 mV	± 10% of the previous reading or ± 1.0 NTU whichever is greater

Groundwater Monitoring Field Data Sheet

Project Name: Purma Terminal Project Number: E002.1605B
 Location: Bayamon P.R. Date: 12/29/16
 Arcadis PR Team: A.C. M.F
 Well ID: MW-30A Well casing Dia.: 2" Weather: Sunny

WELL CASING VOLUMES (per foot of water column)

1-1/4"=0.06 1-1/2"=0.09 2"=0.16 2-1/2"=0.26 3"=0.37 3-1/2"=0.5 4"=0.65 6"=1.47

Well Data

Well Depth:	<u>11.11</u>	ft. TOC	Gallons per foot:	<u>0.16</u>	gal
Depth to Water:	<u>ACHT + 6.02</u>	ft. TOC	Gallons per well casing (Well Volume):	<u>0.81</u>	gal
Depth to SPH:	<u>ND</u>	ft. TOC	Three well volumes (x3):	<u>2.43</u>	gal
Water Column in Well:	<u>5.09</u>	ft.	Placement of Pump Intake:	<u>8.50</u>	ft. TOC

Well Purging Information and Field Parameters

Well Purging Method: Peristaltic Pump - Number 12383 Monsoon Pump - Number _____ Other _____

Time	Depth to Groundwater (ft)	Flow Rate (ml/min)	Cumulative Volume (gal)	pH	Temp. (°C)	ORP mV	Turbidity (NTU)	Cond. (mS/cm)	D.O. (mg/L)	D.O. (%)
1522	<u>6.02</u>	<u>160ml/min</u>	<u>initial</u>							
1525	<u>7.60</u>	<u>160ml/min</u>	<u>480</u>	<u>6.98</u>	<u>28.82</u>	<u>428.</u>	<u>0.0</u>	<u>0.416</u>	<u>0.61</u>	
1528	<u>7.44</u>	<u>160ml/min</u>	<u>960</u>	<u>7.09</u>	<u>28.55</u>	<u>439.0</u>	<u>0.0</u>	<u>0.416</u>	<u>0.49</u>	
1531	<u>8.04</u>	<u>160ml/min</u>	<u>1440</u>	<u>7.13</u>	<u>28.43</u>	<u>448.310</u>	<u>0.0</u>	<u>0.416</u>	<u>0.41</u>	
1534	<u>8.25</u>	<u>160ml/min</u>	<u>1920</u>	<u>7.16</u>	<u>28.53</u>	<u>391.3</u>	<u>0.0</u>	<u>0.422</u>	<u>0.34</u>	
1537	<u>8.40</u>	<u>160ml/min</u>	<u>2400</u>	<u>7.16</u>	<u>28.92</u>	<u>341.7</u>	<u>0.0</u>	<u>0.429</u>	<u>0.36</u>	
1540	<u>8.53</u>	<u>160ml/min</u>	<u>2880</u>	<u>7.16</u>	<u>28.88</u>	<u>340.5</u>	<u>0.0</u>	<u>0.431</u>	<u>0.39</u>	
1543	<u>8.74</u>	<u>160ml/min</u>	<u>3360</u>	<u>7.17</u>	<u>28.89</u>	<u>330.4</u>	<u>0.0</u>	<u>0.435</u>	<u>0.41</u>	

Sampling Data

Sampling Method: Peristaltic Pump-Number: 12383 Other: _____ Sampling Time: 1553

Color: Clear Grey Light Grey Light Brown Brown Other: _____

Odor: Mild Strong -- Specify: None low Visual Turbidity: Clear Low Medium High

Sample Parameters	Container Description	Preservative	Filtered y/n
<u>VOL'S</u>	<u>2 vials 40ml</u>	<u>HCl</u>	<u>N</u>
<u>ARD</u>	<u>2 vials 40ml</u>	<u>HCl</u>	<u>N</u>
<u>DRO/ORS</u>	<u>2 500 ml</u>	<u>N</u>	<u>N</u>
<u>SVOL'S</u>	<u>2 250 ml</u>	<u>N</u>	<u>N</u>
<u>metals /mercury</u>	<u>1 250 ml</u>	<u>HNO₃</u>	<u>N</u>
<u>Dissolved Metals</u>	<u>1 125 ml</u>	<u>N</u>	<u>N</u>

Remarks: 0.0 vol

Sampler(s) Signature: MV

ASTM-D6771-02: Stabilization of Parameters:

pH	Temp	Conductivity	Dissolved Oxygen	Eh or ORP	Turbidity
± 0.2 phu	± 0.2 °C	3% of reading	± 10% of reading or ± 0.2 mg/L, whichever is greater	± 20 mV	± 10% of the previous reading / ± 1.0 NTU whichever is greater

Groundwater Monitoring Field Data Sheet

Project Name: Para Terminal Project Number: E002-1605B
 Location: Bayamon P.R Date: 12/29/16
 Arcadis PR Team: A.C. M.F
 Well ID: MW-94A Well casing Dia.: 2" Weather: Sunny

WELL CASING VOLUMES (per foot of water column)

1-1/4"=0.06 1-1/2"=0.09 2"=0.16 2-1/2"=0.26 3"=0.37 3-1/2"=0.5 4"=0.65 6"=1.47

Well Data

Well Depth:	<u>12.0</u>	ft. TOC	Gallons per foot:	<u>0.16</u>	gal
Depth to Water:	<u>4.93</u>	ft. TOC	Gallons per well casing (Well Volume):	<u>1.93</u>	gal
Depth to SPH:	<u>N/A</u>	ft. TOC	Three well volumes (x3):	<u>5.79</u>	gal
Water Column in Well:	<u>12.0</u>	ft.	Placement of Pump Intake:	<u>11</u>	ft. TOC

Well Purging Information and Field Parameters

Well Purging Method: Peristaltic Pump - Number 12383 Monsoon Pump - Number _____ Other _____

Time	Depth to Groundwater (ft)	Flow Rate (ml/min)	Cumulative Volume (gal)	pH	Temp. (°C)	ORP mV	Turbidity (NTU)	Cond. (mS/cm)	D.O. (mg/L)	D.O. (%)
1430	4.93	160ml/min	initial	4						
1433	6.05	160ml/min	480	4.29	28.91	430.1	0.0	0.699	2.94	
1436	6.30	160ml/min	960	4.30	28.86	442.9	0.0	0.669	2.55	
1439	6.60	160ml/min	1440	4.32	28.85	450.3	0.0	0.672	2.25	
1442	6.82	160ml/min	1920	4.31	28.98	459.3	0.0	0.670	1.94	
1445	7.00	160ml/min	2400	4.34	28.88	458.9	0.0	0.669	1.83	
1448	7.15	160ml/min	2880	4.36	28.63	460.3	0.0	0.669	1.60	
1451	7.15	160ml/min	3360	4.42	28.54	462.4	0.0	0.662	1.44	
1454	7.15	160ml/min	3840	4.54	28.64	453.4	0.0	0.660	1.80	

Sampling Data

Sampling Method: Peristaltic Pump-Number: 12383 Other: _____ Sampling _____

Color: Clear Grey Light Grey Light Brown Brown Other: _____

Odor: Mild Strong -- Specify: none Visual Turbidity: Clear Low _____

Sample Parameters	Container Description	Preservative
<u>VOCS</u>	<u>2 vials 40ml</u>	<u>HCl</u>
<u>GR0</u>	<u>2 vials 40ml</u>	<u>HCl</u>
<u>DRO/ORO</u>	<u>2 500 ml</u>	<u>N</u>
<u>SVOC's</u>	<u>2 250 ml</u>	<u>N</u>
<u>metals /mercury</u>	<u>1 250 ml</u>	<u>HNO₃</u>
<u>Dissolved Metals</u>	<u>1 125 ml</u>	<u>N</u>

Remarks: 0.0 vol

Sampler(s) Signature: [Signature]

ASTM-D6771-02: Stabilization of Parameters:

pH	Temp	Conductivity	Dissolved Oxygen	Eh
± 0.2 phu	± 0.2 °C	3% of reading	± 10% of reading or ± 0.2 mg/L, whichever is greater	± 20 mV

Groundwater Monitoring Field Data Sheet

Project Name: Puma Terminal Project Number: E002-1650
 Location: Bayamon PR Date: 12/20/16
 Arcadis PR Team: A.C. M.F.
 Well ID: MW-99A Well casing Dia.: 2" Weather: Sunny

WELL CASING VOLUMES (per foot of water column)

1-1/4"=0.06 1-1/2"=0.09 2"=0.16 2-1/2"=0.26 3"=0.37 3-1/2"=0.5 4"=0.65 6"=1.47

Well Data

Well Depth:	<u>19.90</u>	ft. TOC	Gallons per foot:	<u>0.16</u>	gal
Depth to Water:	<u>10.43</u>	ft. TOC	Gallons per well casing (Well Volume):	<u>1.16</u>	gal
Depth to SPH:	<u>NA</u>	ft. TOC	Three well volumes (x3):	<u>3.48</u>	gal
Water Column in Well:	<u>7.27</u>	ft.	Placement of Pump Intake:	<u>14</u>	ft. TOC

Well Purging Information and Field Parameters

Well Purging Method: Peristaltic Pump - Number 12383 Monsoon Pump - Number _____ Other _____

Time	Depth to Groundwater (ft)	Flow Rate (ml/min)	Cumulative Volume (gal)	pH	Temp. (°C)	ORP mV	Turbidity (NTU)	Cond. (mS/cm)	D.O. (mg/L)	D.O. (%)
1216	10.43	160ml/min	170							
1219	10.90	160ml/min	480	4.76	29.01	347.8	0.0	0.229	5.05	
1222	10.91	160ml/min	960	4.51	29.18	367.4	0.0	0.230	4.91	
1225	10.91	160ml/min	1440	4.56	29.53	376.3	0.0	0.230	4.96	
1228	10.99	160ml/min	1920	4.74	28.85	396.1	0.0	0.226	4.20	
1231	11.30	160ml/min	2400	4.61	28.87	401.9	0.0	0.226	4.62	
1234	11.38	160ml/min	2880	4.54	28.82	411.2	0.0	0.226	4.49	

Sampling Data

Sampling Method: Peristaltic Pump-Number: 12383 Other: _____ Sampling Time: 1346

Color: Clear Grey Light Grey Light Brown Brown Other: _____

Odor: Mild Strong -- Specify: None Visual Turbidity: Clear Low Medium High

Sample Parameters	Container Description	Preservative	Filtered y/n
<u>VOC's</u>	<u>2 vials 40ml</u>	<u>HCl</u>	
<u>GR0</u>	<u>2 vials 40ml</u>	<u>HCl</u>	N
<u>DR0/RO</u>	<u>2 500 mL</u>	<u>N</u>	N
<u>SVOC's</u>	<u>2 250 mL</u>	<u>N</u>	N
<u>Metals / Mercury</u>	<u>1 250 mL</u>	<u>HNO3</u>	N
<u>Dissolved Metals</u>	<u>1 125 mL</u>	<u>N</u>	N

Remarks: 0.0 VOC

Sampler(s) Signature: [Signature]

ASTM-D6771-02: Stabilization of Parameters:

pH	Temp	Conductivity	Dissolved Oxygen	Eh or ORP	Turbid
± 0.2 phu	± 0.2 °C	3% of reading	± 10% of reading or ± 0.2 mg/L, whichever is greater	± 20 mV	± 10° ± 1

Groundwater Monitoring Field Data Sheet

Project Name: Puma Terminal Project Number: E002.1605B
 Location: Bayamon P.R. Date: 12/29/16
 Arcadis PR Team: A.C. MF
 Well ID: MW-88A Well casing Dia.: 2" Weather: Sunny

WELL CASING VOLUMES (per foot of water column)

1-1/4"=0.06 1-1/2"=0.09 2"=0.16 2-1/2"=0.26 3"=0.37 3-1/2"=0.5 4"=0.65 6"=1.47

Well Data

Well Depth:	<u>17.6</u>	ft. TOC	Gallons per foot:	<u>0.16</u>	gal
Depth to Water:	<u>5.40</u>	ft. TOC	Gallons per well casing (Well Volume):	<u>1.95</u>	gal
Depth to SPH:	<u>N/A</u>	ft. TOC	Three well volumes (x3):	<u>5.85</u>	gal
Water Column in Well:	<u>12.20</u>	ft.	Placement of Pump Intake:	<u>11.50</u>	ft. TOC

Well Purging Information and Field Parameters

Well Purging Method: Peristaltic Pump - Number 123.83 Monsoon Pump - Number _____ Other _____

Time	Depth to Groundwater (ft)	Flow Rate (ml/min)	Cumulative Volume (gal)	pH	Temp. (°C)	ORP mV	Turbidity (NTU)	Cond. (mS/cm)	D.O. (mg/L)	D.O. (%)
1219	5.40	160ml/min	Initial							
1222	6.30	160ml/min	480	5.66	30.00	109.5	86.1	1.172	1.68	
1225	6.54	160ml/min	960	5.66	29.91	110.1	64.5	1.168	1.31	
1228	6.85	160ml/min	1440	5.68	29.85	111.8	21.4	1.159	0.98	
1231	7.04	160ml/min	1920	5.75	29.74	106.1	40.4	1.125	0.82	
1234	7.04	160ml/min	2400	5.84	29.56	96.1	39.4	1.092	0.91	
1237	7.01	160ml/min	2880	5.88	29.50	89.9	45.2	1.062	0.64	
1240	7.43	160ml/min	3360	5.94	29.57	81.4	29.3	1.060	0.51	
1243	7.01	160ml/min	3840	5.96	29.50	72.0	36.2	1.048	0.49	

Sampling Data

Sampling Method: Peristaltic Pump-Number: 12383 Other: _____ Sampling Time: 1253

Color: Clear Grey Light Grey Light Brown Brown Other: _____

Odor: Mild Strong -- Specify: None Visual Turbidity: Clear Low Medium High

Sample Parameters	Container Description	Preservative	Filtered y/n
<u>VOLs</u>	<u>2 vials 400</u>	<u>HCl</u>	
<u>GRD</u>	<u>2 vials 400</u>	<u>HCl</u>	<u>N</u>
<u>SVOLs</u>	<u>2 250 ml</u>	<u>N</u>	<u>N</u>
<u>P10/GRD</u>	<u>2 500 ml</u>	<u>N</u>	<u>N</u>
<u>metals/mercury</u>	<u>1 250 ml</u>	<u>HNO3</u>	<u>N</u>
<u>Dissolved metals</u>	<u>1 125</u>	<u>N</u>	<u>N</u>

Remarks: _____

Sampler(s) Signature: MF

ASTM-D6771-02: Stabilization of Parameters:

pH	Temp	Conductivity	Dissolved Oxygen	Eh or ORP	Turbidity
± 0.2 phu	± 0.2 °C	3% of reading	± 10% of reading or ± 0.2 mg/L, whichever is greater	± 20 mV	± 10% of the previous reading or ± 1.0 NTU whichever is greater

Groundwater Monitoring Field Data Sheet

Project Name: Puma Terminal Project Number: E 002-1605B
 Location: Bayamon P.R. Date: 12/27/16
 Arcadis PR Team: A.C. M.F.
 Well ID: MW-91.A Well casing Dia.: 2" Weather: cloud

WELL CASING VOLUMES (per foot of water column)

1-1/4"=0.06 1-1/2"=0.09 2"=0.16 2-1/2"=0.26 3"=0.37 3-1/2"=0.5 4"=0.65 6"=1.47

Well Data

Well Depth:	<u>17.50</u>	ft. TOC	Gallons per foot:	<u>0.16</u>	gal
Depth to Water:	<u>7.55</u>	ft. TOC	Gallons per well casing (Well Volume):	<u>1.57</u>	gal
Depth to SPH:	<u>N/A</u>	ft. TOC	Three well volumes (x3):	<u>4.71</u>	gal
Water Column in Well:	<u>9.95</u>	ft.	Placement of Pump Intake:	<u>12.5</u>	ft. TOC

Well Purging Information and Field Parameters

Well Purging Method: Peristaltic Pump - Number 12383 Monsoon Pump - Number _____ Other _____

Time	Depth to Groundwater (ft)	Flow Rate (ml/min)	Cumulative Volume (gal)	pH	Temp. (°C)	ORP mV	Turbidity (NTU)	Cond. (mS/cm)	D.O. (mg/L)	D.O. (%)
<u>1049</u>	<u>7.55</u>	<u>160ml/min</u>	<u>Initial</u>							
<u>1052</u>	<u>8.02</u>	<u>160ml/min</u>	<u>480</u>	<u>5.77</u>	<u>20.03</u>	<u>8.0</u>	<u>0.0</u>	<u>0.543</u>	<u>3.02</u>	
<u>1055</u>	<u>8.42</u>	<u>160ml/min</u>	<u>960</u>	<u>5.78</u>	<u>30.02</u>	<u>9.1</u>	<u>0.0</u>	<u>0.544</u>	<u>2.66</u>	
<u>1058</u>	<u>8.72</u>	<u>160ml/min</u>	<u>1440</u>	<u>5.77</u>	<u>29.92</u>	<u>9.0</u>	<u>0.0</u>	<u>0.567</u>	<u>2.85</u>	
<u>1101</u>	<u>8.95</u>	<u>160ml/min</u>	<u>1920</u>	<u>5.77</u>	<u>29.83</u>	<u>12.0</u>	<u>0.0</u>	<u>0.570</u>	<u>1.92</u>	
<u>1104</u>	<u>8.83</u>	<u>160ml/min</u>	<u>2400</u>	<u>5.77</u>	<u>29.83</u>	<u>12.0</u>	<u>0.0</u>	<u>0.560</u>	<u>1.77</u>	
<u>1107</u>	<u>9.10</u>	<u>160ml/min</u>	<u>2880</u>	<u>5.78</u>	<u>29.89</u>	<u>11.0</u>	<u>0.0</u>	<u>0.550</u>	<u>1.58</u>	
<u>1110</u>	<u>9.26</u>	<u>160ml/min</u>	<u>3360</u>	<u>5.79</u>	<u>29.97</u>	<u>9.8</u>	<u>0.0</u>	<u>0.560</u>	<u>1.35</u>	

Sampling Data

Sampling Method: Peristaltic Pump - Number: 12383 Other: _____ Sampling Time: 1148

Color: Clear Grey Light Grey Light Brown Brown Other: _____

Odor: Mild Strong -- Specify: _____ Visual Turbidity: Clear Low Medium High

Sample Parameters	Container Description	Preservative	Filtered y/n
<u>VOCS</u>	<u>2 vials 40ml</u>	<u>HCl</u>	
<u>URO</u>	<u>2 vials 40ml</u>	<u>HCl</u>	<u>N</u>
<u>SVOCS</u>	<u>2 250ml ml</u>	<u>N</u>	<u>N</u>
<u>metals mercury</u>	<u>1 250 ml</u>	<u>HNO3</u>	<u>N</u>
<u>DRO URO</u>	<u>2 500 ml</u>	<u>HNO3</u>	<u>N</u>
<u>Dissolved Metals</u>	<u>1 250 ml</u>	<u>N</u>	<u>N</u>

Remarks: 155 ppm VOC

Sampler(s) Signature: [Signature]

ASTM-D6771-02: Stabilization of Parameters:

pH	Temp	Conductivity	Dissolved Oxygen	Eh or ORP	Turbidity
± 0.2 phu	± 0.2 °C	3% of reading	± 10% of reading or ± 0.2 mg/L, whichever is greater	± 20 mV	± 10% of 1 ± 1.0 NTU

Groundwater Monitoring Field Data Sheet

Project Name: Anna Terminal Project Number: E002.1605B
 Location: Bayamon Date: 12/29/16
 Arcadis PR Team: A.C.
 Well ID: MW-47A Well casing Dia.: 2" Weather: clouds

WELL CASING VOLUMES (per foot of water column)

1-1/4"=0.06 1-1/2"=0.09 2"=0.16 2-1/2"=0.26 3"=0.37 3-1/2"=0.5 4"=0.65 6"=1.47

Well Data

Well Depth:	<u>22.30</u>	ft. TOC	Gallons per foot:	<u>0.16</u>	gal
Depth to Water:	<u>6.36</u>	ft. TOC	Gallons per well casing (Well Volume):	<u>2.55</u>	gal
Depth to SPH:	<u>NA</u>	ft. TOC	Three well volumes (x3):	<u>7.65</u>	gal
Water Column in Well:	<u>15.94</u>	ft.	Placement of Pump Intake:	<u>14.</u>	ft. TOC

Well Purging Information and Field Parameters

Well Purging Method: Peristaltic Pump - Number 12383 Monsoon Pump - Number _____ Other _____

Time	Depth to Groundwater (ft)	Flow Rate (ml/min)	Cumulative Volume (gal)	pH	Temp. (°C)	ORP mV	Turbidity (NTU)	Cond. (mS/cm)	D.O. (mg/L)	D.O. (%)
0956	6.36	160ml/min	initial							
0959	6.38	160ml/min	480	6.96	29.05	353.5	2.4	0.675	2.73	
1002	6.35	160ml/min	960	6.92	28.93	381.7	0.0	0.674	2.71	
1005	6.34	160ml/min	1440	6.90	28.90	393.6	0.0	0.680	2.29	
1008	6.34	160ml/min	1920	6.90	28.87	409.9	10.0	0.682	2.17	
1011	6.38	160ml/min	2400	6.89	28.99	418.8	62.6	0.684	2.10	
1014	6.38	160ml/min	2880	6.88	28.78	422.9	51.2	0.685	2.07	
1017	6.35	160ml/min	3360	6.91	28.50	431.7	68.2	0.682	2.23	

Sampling Data

Sampling Method: Peristaltic Pump-Number: 12383 Other: _____ Sampling Time: 1029

Color: Clear Grey Light Grey Light Brown Brown Other: _____

Odor: Mild Strong -- Specify: None Visual Turbidity: Clear Low Medium High

Sample Parameters	Container Description	Preservative	Filtered y/n
<u>VOCS</u>	<u>2 vials 40m</u>	<u>HCl</u>	
<u>G-RO</u>	<u>2 vials 40m</u>	<u>HCl</u>	<u>N</u>
<u>DRD/ORD</u>	<u>2 500 ml</u>	<u>N</u>	<u>N</u>
<u>SVOCs</u>	<u>2 150ml</u>	<u>N</u>	<u>N</u>
<u>Metals Mercury</u>	<u>1 250ml</u>	<u>HNO3</u>	<u>N</u>
<u>Dissolved Metals</u>	<u>1 125 ml</u>	<u>N</u>	<u>N</u>

Remarks: 0.0 VOC

Signature: MM

ASTM-D6771-02: Stabilization of Parameters:

Temp	Conductivity	Dissolved Oxygen	Eh or ORP	Turbidity
± 0.2 °C	3% of reading	± 10% of reading or ± 0.2 mg/L, whichever is greater	± 20 mV	± 10% of the previous reading or ± 1.0 NTU whichever is greater

Groundwater Monitoring Field Data Sheet

Project Name: Porta Terminal Project Number: E002, 1605B
 Location: Bayamon P.R Date: 12/27/16
 Arcadis PR Team: A.C. MIF
 Well ID: MW-18D Well casing Dia.: 2 1/2" Weather: cloud

WELL CASING VOLUMES (per foot of water column)

1-1/4"=0.06 1-1/2"=0.09 2"=0.16 2-1/2"=0.26 3"=0.37 3-1/2"=0.5 4"=0.65 6"=1.47

Well Data

Well Depth:	<u>42.27</u>	ft. TOC	Gallons per foot:	<u>0.16</u>	gal
Depth to Water:	<u>10.80</u>	ft. TOC	Gallons per well casing (Well Volume):	<u>5.03</u>	gal
Depth to SPH:	<u>N/A</u>	ft. TOC	Three well volumes (x3):	<u>15.10</u>	gal
Water Column in Well:	<u>31.47</u>	ft.	Placement of Pump Intake:	<u>26</u>	ft. TOC

Well Purging Information and Field Parameters

Well Purging Method: Peristaltic Pump - Number 12383 Monsoon Pump - Number _____ Other _____

Time	Depth to Groundwater (ft)	Flow Rate (ml/min)	Cumulative Volume (gal)	pH	Temp. (°C)	ORP mV	Turbidity (NTU)	Cond. (mS/cm)	D.O. (mg/L)	D.O. (%)
0900	<u>10.80</u>	<u>160/min</u>	<u>Initial</u>							
0903	<u>11.00</u>	<u>160/min</u>	<u>480</u>	<u>6.86</u>	<u>27.77</u>	<u>214.1</u>	<u>4.8</u>	<u>1005</u>	<u>1.25</u>	
0906	<u>11.00</u>	<u>160/min</u>	<u>960</u>	<u>6.84</u>	<u>27.85</u>	<u>248.1</u>	<u>4.3</u>	<u>1.045</u>	<u>0.85</u>	
0909	<u>11.00</u>	<u>160/min</u>	<u>1440</u>	<u>6.83</u>	<u>28.18</u>	<u>265.6</u>	<u>0.0</u>	<u>1.054</u>	<u>0.67</u>	
0911	<u>11.00</u>	<u>160/min</u>	<u>1920</u>	<u>6.82</u>	<u>28.40</u>	<u>284.9</u>	<u>0.0</u>	<u>1.061</u>	<u>0.55</u>	
0914	<u>11.00</u>	<u>160/min</u>	<u>2400</u>	<u>6.82</u>	<u>28.50</u>	<u>298.6</u>	<u>0.0</u>	<u>1.063</u>	<u>0.45</u>	
0917	<u>11.00</u>	<u>160/min</u>	<u>2880</u>	<u>6.83</u>	<u>28.46</u>	<u>311.1</u>	<u>10.5</u>	<u>1.063</u>	<u>0.45</u>	
0920	<u>11.00</u>	<u>160/min</u>	<u>3360</u>	<u>6.82</u>	<u>28.51</u>	<u>326.9</u>	<u>0.0</u>	<u>1.065</u>	<u>0.42</u>	
0923	<u>11.00</u>	<u>160/min</u>	<u>3840</u>	<u>6.81</u>	<u>28.52</u>	<u>329.5</u>	<u>0.0</u>	<u>1.065</u>	<u>0.41</u>	

Sampling Data

Sampling Method: Peristaltic Pump - Number: 12383 Other: _____ Sampling Time: 0934

Color: Clear Grey Light Grey Light Brown Brown Other: _____

Odor: Mild Strong -- Specify: NONE Visual Turbidity: Clear Low Medium High

Sample Parameters	Container Description	Preservative	Filtered y/n
<u>Voc's</u>	<u>2 vials 40ml</u>	<u>HC</u>	
<u>GRD</u>	<u>2 vials 40ml</u>	<u>HCl</u>	<u>N</u>
<u>DRO/ORO</u>	<u>2 500ml</u>	<u>N</u>	<u>N</u>
<u>SVOC's</u>	<u>2 250ml</u>	<u>N</u>	<u>N</u>
<u>Metals Mercury</u>	<u>0.250ml</u>	<u>HNO3</u>	<u>N</u>
<u>Dissolved Metals</u>	<u>1 125 ml</u>	<u>N</u>	<u>N</u>

Remarks: 0.0 Voc

Sampler(s) Signature: [Signature]

ASTM-D6771-02: Stabilization of Parameters:

	Temp	Conductivity	Dissolved Oxygen	Eh or ORP	Turbidity
2 phu	± 0.2 °C	3% of reading	± 10% of reading or ± 0.2 mg/L, whichever is greater	± 20 mV	± 10% of the previous reading or ± 1.0 NTU whichever is greater

Groundwater Monitoring Field Data Sheet

Project Name: Puma Terminal Project Number: E 002.16058
 Location: Carolina P.R. Date: 12/22/16
 Arcadis PR Team: A.C. M.F.
 Well ID: MW-1502 Well casing Dia.: 2" Weather: Sunny

WELL CASING VOLUMES (per foot of water column)

1-1/4"=0.06 1-1/2"=0.09 2"=0.16 2-1/2"=0.26 3"=0.37 3-1/2"=0.5 4"=0.65 6"=1.47

Well Data

Well Depth:	<u>50.30</u>	ft. TOC	Gallons per foot:	<u>0.16</u>	gal
Depth to Water:	<u>6.05</u>	ft. TOC	Gallons per well casing (Well Volume):	<u>2.88</u>	gal
Depth to SPH:	<u>M/A</u>	ft. TOC	Three well volumes (x3):	<u>21.24</u>	gal
Water Column in Well:	<u>44.25</u>	ft.	Placement of Pump Intake:	<u>25</u>	ft. TOC

Well Purging Information and Field Parameters

Well Purging Method: Peristaltic Pump - Number 123.83 Monsoon Pump - Number _____ Other _____

0951

Time	Depth to Groundwater (ft)	Flow Rate (ml/min)	Cumulative Volume (gal)	pH	Temp. (°C)	ORP mV	Turbidity (NTU)	Cond. (mS/cm)	D.O. (mg/L)	D.O. (%)
0944	6.05	160ml/min	160ml							
0954	6.05	160ml/min	480ml	6.94	21.46	-67.7	6.0	0.810	0.88	
0957	6.05	160ml/min	960 ml	6.95	21.45	-76.9	1.1	0.811	0.60	
1000	6.05	160ml/min	1440ml	6.95	21.48	-81.5	0.0	0.811	0.49	
1003	6.05	160ml/min	1920ml	6.96	21.47	-87.3	0.0	0.811	0.41	
1006	6.05	160ml/min	2400 ml	6.96	21.45	-91.3	0.0	0.811	0.39	
1009	6.08	160ml/min	2880ml	6.96	21.46	-93.6	0.0	0.811	0.35	
1012	6.05	160ml/min	3360	6.96	21.45	-91.9	0.0	0.811	0.39	

Sampling Data

Sampling Method: Peristaltic Pump-Number: 12383 Other: _____ Sampling Time: 1023

Color: Clear Grey Light Grey Light Brown Brown Other: _____

Odor: Mild Strong -- Specify: None Visual Turbidity: Clear Low Medium High

Sample Parameters	Container Description	Preservative	Filtered y/n
<u>CRD</u>	<u>2 vial 40 ml</u>	<u>HCl</u>	
<u>VOC's</u>	<u>2 vial 40 ml</u>	<u>HCl</u>	<u>N</u>
<u>DRO/ORO</u>	<u>2 500ml</u>	<u>N</u>	<u>N</u>
<u>SVOC's</u>	<u>2 250 ml</u>	<u>N</u>	<u>N</u>
<u>Metals / Mercury</u>		<u>HNO₃</u>	<u>N</u>
<u>Dissolved Metals</u>		<u>N</u>	<u>N</u>

Remarks: _____

Sampler(s) Signature: M.F.

ASTM-D6771-02: Stabilization of Parameters:

pH	Temp	Conductivity	Dissolved Oxygen	Eh or ORP	Turbidity
± 0.2 phu	± 0.2 °C	3% of reading	± 10% of reading or ± 0.2 mg/L, whichever is greater	± 20 mV	± 10% of the previous reading or ± 1.0 NTU whichever is greater

Groundwater Monitoring Field Data Sheet

Project Name: Pyra Terminal Project Number: E002.1605B
 Location: Catara P.R. Date: 12/22/16
 Arcadis PR Team: A.C. M.F.
 Well ID: MW-15B Well casing Dia.: 2" Weather: sunny

WELL CASING VOLUMES (per foot of water column)

1-1/4"=0.06 1-1/2"=0.09 2"=0.16 2-1/2"=0.26 3"=0.37 3-1/2"=0.5 4"=0.65 6"=1.47

Well Data

Well Depth:	<u>51.5</u>	ft. TOC	Gallons per foot:	<u>0.16</u>	gal
Depth to Water:	<u>6.35</u>	ft. TOC	Gallons per well casing (Well Volume):	<u>1.21</u>	gal
Depth to SPH:	<u>N/A</u>	ft. TOC	Three well volumes (x3):	<u>21.65</u>	gal
Water Column in Well:	<u>45.12</u>	ft.	Placement of Pump Intake:	<u>28</u>	ft. TOC

Well Purging Information and Field Parameters

Well Purging Method: Peristaltic Pump - Number 12383 Monsoon Pump - Number _____ Other _____

Time	Depth to Groundwater (ft)	Flow Rate (ml/min)	Cumulative Volume (gal)	pH	Temp. (°C)	ORP mV	Turbidity (NTU)	Cond. (mS/cm)	D.O. (mg/L)	D.O. (%)
1046	6.35	160ml/min	initial							
1049	6.40	160ml/min	480ml	6.95	21.92	232.7	15.3	0.914	4.66	
1052	6.40	160ml/min	960ml	6.73	21.91	248.3	1.8	0.914	4.52	
1055	6.40	160ml/min	1440ml	6.72	21.94	263.9	0.0	0.913	4.43	
1058	6.40	160ml/min	1920ml	6.71	21.94	284.5	0.0	0.912	4.39	
1101	6.47	160ml/min	2400ml	6.70	21.81	292.0	0.0	0.911	4.34	
1104	6.40	160ml/min	2880ml	6.70	21.77	304.6	0.0	0.910	4.30	

Sampling Data

Sampling Method: Peristaltic Pump - Number: 12383 Other: _____ Sampling Time: 1142

Color: Clear Grey Light Grey Light Brown Brown Other: _____

Odor: Mild Strong -- Specify: NONE Visual Turbidity: Clear Low Medium High

Sample Parameters	Container Description	Preservative	Filtered y/n
<u>ARO</u>	<u>2 vial 40 ml</u>	<u>HCl</u>	<u>N</u>
<u>VOCS</u>	<u>2 vial 40 ml</u>	<u>HCl</u>	<u>N</u>
<u>DRO/ORO</u>	<u>2 500 ml</u>	<u>N</u>	<u>N</u>
<u>SVOC'S</u>	<u>2 250 ml</u>	<u>N</u>	<u>N</u>
<u>metals/mercury</u>	<u>1 250 ml</u>	<u>HNO₃</u>	<u>N</u>
<u>Dissolved metals</u>	<u>1 25 ml</u>	<u>N</u>	<u>N</u>

Remarks: MW-15B / MW-15B (MS) / MW-15B (MSD) MAX DUPOD

Sampler(s) Signature: [Signature]

ASTM-D6771-02: Stabilization of Parameters:

pH	Temp	Conductivity	Dissolved Oxygen	Eh or ORP	Turbidity
± 0.2 phu	± 0.2 °C	3% of reading	± 10% of reading or ± 0.2 mg/L, whichever is greater	± 20 mV	± 10% of the previous reading or ± 1.0 NTU whichever is greater

Groundwater Monitoring Field Data Sheet

Project Name: Puma Terminal Project Number: E092.16050
 Location: Ontario P.R Date: 12/22/16
 Arcadis PR Team: A.C. F.C.
 Well ID: MW-15A Well casing Dia.: 2" Weather: Sunny

WELL CASING VOLUMES (per foot of water column)

1-1/4"=0.06 1-1/2"=0.09 2"=0.16 2-1/2"=0.26 3"=0.37 3-1/2"=0.5 4"=0.65 6"=1.47

Well Data

Well Depth:	<u>25.5</u>	ft. TOC	Gallons per foot:	<u>0.16</u>	gal
Depth to Water:	<u>1.84</u>	ft. TOC	Gallons per well casing (Well Volume):	<u>3.99</u>	gal
Depth to SPH:	<u>NA</u>	ft. TOC	Three well volumes (x3):	<u>11.35</u>	gal
Water Column in Well:	<u>23.69</u>	ft.	Placement of Pump Intake:	<u>13.95</u>	ft. TOC

Well Purging Information and Field Parameters

Well Purging Method: Peristaltic Pump - Number 12383 Monsoon Pump - Number _____ Other _____

Time	Depth to Groundwater (ft)	Flow Rate (ml/min)	Cumulative Volume (gal) ml	pH	Temp. (°C)	ORP mV	Turbidity (NTU)	Cond. (mS/cm)	D.O. (mg/L)	D.O. (%)
<u>0859</u>	<u>1.84</u>	<u>160ml/min</u>	<u>initial</u>							
<u>0902</u>	<u>2.08</u>	<u>160ml/min</u>	<u>480ml</u>	<u>6.19</u>	<u>29.64</u>	<u>369.1</u>	<u>0.0</u>	<u>0.955</u>	<u>0.60</u>	
<u>0905</u>	<u>2.11</u>	<u>160ml/min</u>	<u>960ml</u>	<u>6.20</u>	<u>29.95</u>	<u>348.8</u>	<u>0.0</u>	<u>0.959</u>	<u>0.47</u>	
<u>0908</u>	<u>2.16</u>	<u>160ml/min</u>	<u>1440ml</u>	<u>6.20</u>	<u>29.86</u>	<u>304.4</u>	<u>0.0</u>	<u>0.961</u>	<u>0.39</u>	
<u>0911</u>	<u>2.18</u>	<u>160ml/min</u>	<u>1920ml</u>	<u>6.20</u>	<u>29.89</u>	<u>269.3</u>	<u>0.0</u>	<u>0.966</u>	<u>0.35</u>	
<u>0914</u>	<u>2.20</u>	<u>160ml/min</u>	<u>2400ml</u>	<u>6.20</u>	<u>29.94</u>	<u>226.0</u>	<u>0.0</u>	<u>0.990</u>	<u>0.32</u>	
<u>0917</u>	<u>2.22</u>	<u>160ml/min</u>	<u>2880ml</u>	<u>6.19</u>	<u>29.98</u>	<u>191.1</u>	<u>0.0</u>	<u>0.992</u>	<u>0.32</u>	
<u>0920</u>	<u>2.24</u>	<u>160ml/min</u>	<u>3360</u>	<u>6.19</u>	<u>29.99</u>	<u>157.6</u>	<u>0.0</u>	<u>0.994</u>	<u>0.30</u>	
<u>0923</u>	<u>2.26</u>	<u>160ml/min</u>	<u>3840</u>	<u>6.18</u>	<u>29.99</u>	<u>134.0</u>	<u>0.0</u>	<u>0.994</u>	<u>0.29</u>	
<u>0926</u>	<u>2.28</u>	<u>160ml/min</u>	<u>4320</u>	<u>6.18</u>	<u>29.99</u>	<u>130.4</u>	<u>0.0</u>	<u>0.995</u>	<u>0.28</u>	
<u>0929</u>	<u>2.33</u>	<u>160ml/min</u>	<u>4800</u>	<u>6.18</u>	<u>29.99</u>	<u>115.3</u>	<u>0.0</u>	<u>0.999</u>	<u>0.28</u>	

Sampling Method: Peristaltic Pump - Number: 12383 Other: _____ Sampling Time: 0938

Color: Clear Grey Light Grey Light Brown Brown Other: _____

Odor: Mild Strong -- Specify: None Visual Turbidity: Clear Low Medium High

Sample Parameters	Container Description	Preservative	Filtered y/n
<u>CRP</u>	<u>2 vial 40m</u>	<u>HCl</u>	
<u>VOCS</u>	<u>2 vial 40m</u>	<u>HCl</u>	<u>N</u>
<u>DRO/ORO</u>	<u>2 50m mL</u>	<u>N</u>	<u>N</u>
<u>500's SVOC's</u>	<u>2 250 mL</u>	<u>N</u>	<u>N</u>
<u>metals/mercury</u>	<u>1 250 mL</u>	<u>HNO3</u>	<u>N</u>
<u>Dissolved metals</u>	<u>1 125</u>	<u>HNO3</u>	<u>N</u>

Remarks: EB-122216 - 0842

Sampler(s) Signature: AM

ASTM-D6771-02: Stabilization of Parameters:

pH	Temp	Conductivity	Dissolved Oxygen	Eh or ORP	Turbidity
± 0.2 phu	± 0.2 °C	3% of reading	± 10% of reading or ± 0.2 mg/L, whichever is greater	± 20 mV	± 10% of the previous reading or ± 1.0 NTU whichever is greater

Groundwater Monitoring Field Data Sheet

Project Name: Puma Terminal Project Number: E002, 1605B
 Location: Catara P.R Date: 12/21/16
 Arcadis PR Team: A.C. M.P
 Well ID: MW-83B2 Well casing Dia.: 2" Weather: Sunny

WELL CASING VOLUMES (per foot of water column)

1-1/4"=0.06 1-1/2"=0.09 2"=0.16 2-1/2"=0.26 3"=0.37 3-1/2"=0.5 4"=0.65 6"=1.47

Well Data

Well Depth:	<u>63.9</u>	ft. TOC	Gallons per foot:	<u>0.16</u>	gal
Depth to Water:	<u>5.55</u>	ft. TOC	Gallons per well casing (Well Volume):	<u>9.33</u>	gal
Depth to SPH:	<u> </u>	ft. TOC	Three well volumes (x3):	<u>28.08</u>	gal
Water Column in Well:	<u>58.35</u>	ft.	Placement of Pump Intake:	<u>35.0</u>	ft. TOC

Well Purging Information and Field Parameters

Well Purging Method: Peristaltic Pump - Number _____ Monsoon Pump - Number _____ Other Pump w/aler

Time	Depth to Groundwater (ft)	Flow Rate (ml/min)	Cumulative Volume (gal)	pH	Temp. (°C)	ORP mV	Turbidity (NTU)	Cond. (mS/cm)	D.O. (mg/L)	D.O. (%)
0922	5.55	161/min	Initial	 	 	 	 	 	 	
0929		161/min	9	6.66	26.41	302.4	0.0	1.053	2.29	
0936		161/min	18	6.95	26.45	300.5	0.0	0.946	1.69	
0944	6.00 5.43	161/min	28	6.93	26.53	314.6	0.0	0.920	1.58	

Sampling Data

Sampling Method: Peristaltic Pump-Number: _____ Other: Bailer Sampling Time: 0959

Color: Clear Grey Light Grey Light Brown Brown Other: _____

Odor: Mild Strong -- Specify: None Visual Turbidity: Clear Low Medium High

Sample Parameters	Container Description	Preservative	Filtered y/n
GRO	2 vial 40 ml	HCl	
VOCs	2 vial 40ml	HCl	N
DRO/ORO	2 500ml	N	N
SVOCs	2 250ml	N	N
Metal / Mercury	1 250ml	N	N
Dissolved Metals	1 125 ml	HNO ₃	N
			N

Remarks: no vol EB-122116 / 0917

Sampler(s) Signature: M

ASTM-D6771-02: Stabilization of Parameters:

pH	Temp	Conductivity	Dissolved Oxygen	Eh or ORP	Turbidity
± 0.2 phu	± 0.2 °C	3% of reading	± 10% of reading or ± 0.2 mg/L, whichever is greater	± 20 mV	± 10% of the previous reading or ± 1.0 NTU whichever is greater

Groundwater Monitoring Field Data Sheet

Project Name: Puma Terminal Project Number: E002-1605B
 Location: Cañon P.R. Date: 12/21/16
 Arcadis PR Team: A.C. ME
 Well ID: MW-AD-4 Well casing Dia.: 2" Weather: Sunny

WELL CASING VOLUMES (per foot of water column)

1-1/4"=0.06 1-1/2"=0.09 2"=0.16 2-1/2"=0.26 3"=0.37 3-1/2"=0.5 4"=0.65 6"=1.47

Well Data

Well Depth:	<u>19.99</u>	ft. TOC	Gallons per foot:	<u>0.16</u>	gal
Depth to Water:	<u>6.28</u>	ft. TOC	Gallons per well casing (Well Volume):	<u>2.18</u>	gal
Depth to SPH:	<u>N/A</u>	ft. TOC	Three well volumes (x3):	<u>6.57</u>	gal
Water Column in Well:	<u>13.71</u>	ft.	Placement of Pump Intake:	<u>13</u>	ft. TOC

Well Purging Information and Field Parameters

Well Purging Method: Peristaltic Pump - Number 12383 Monsoon Pump - Number _____ Other _____

Time	Depth to Groundwater (ft)	Flow Rate (ml/min)	Cumulative Volume (gal)	pH	Temp. (°C)	ORP mV	Turbidity (NTU)	Cond. (mS/cm)	D.O. (mg/L)	D.O. (%)
1027	<u>6.28</u>	<u>160ml/min</u>	<u>initial</u>	<u>---</u>	<u>---</u>	<u>---</u>	<u>---</u>	<u>---</u>	<u>---</u>	<u>---</u>
1030	<u>6.25</u>	<u>160ml/min</u>	<u>480 ml</u>	<u>5.85</u>	<u>29.23</u>	<u>179.0</u>	<u>0.0</u>	<u>0.400</u>	<u>0.62</u>	<u>---</u>
1033	<u>6.40</u>	<u>160ml/min</u>	<u>960 ml</u>	<u>5.97</u>	<u>29.11</u>	<u>173.6</u>	<u>0.0</u>	<u>0.395</u>	<u>0.46</u>	<u>---</u>
1036	<u>6.60</u>	<u>160ml/min</u>	<u>1440 ml</u>	<u>5.95</u>	<u>29.16</u>	<u>163.8</u>	<u>0.0</u>	<u>0.395</u>	<u>0.39</u>	<u>---</u>
1039	<u>6.69</u>	<u>160ml/min</u>	<u>1920 ml</u>	<u>5.95</u>	<u>28.48</u>	<u>158.3</u>	<u>0.0</u>	<u>0.398</u>	<u>0.38</u>	<u>---</u>
1041	<u>6.94</u>	<u>160ml/min</u>	<u>2400 ml</u>	<u>5.95</u>	<u>28.75</u>	<u>154.3</u>	<u>0.0</u>	<u>0.402</u>	<u>0.24</u>	<u>---</u>
1044	<u>8.08</u>	<u>160ml/min</u>	<u>2880 ml</u>	<u>5.97</u>	<u>28.59</u>	<u>142.5</u>	<u>0.0</u>	<u>0.405</u>	<u>0.35</u>	<u>---</u>
				<u>---</u>						

Sampling Data

Sampling Method: Peristaltic Pump-Number: 12383 Other: _____ Sampling Time: 1056

Color: Clear Grey Light Grey Light Brown Brown Other: _____

Odor: Mild Strong -- Specify: none Visual Turbidity: Clear Low Medium High

Sample Parameters	Container Description	Preservative	Filtered y/n
<u>GRO. VOLZ</u>	<u>4 vial 40ml</u>	<u>HCl</u>	<u>N</u>
<u>DRD/GRO</u>	<u>2 500 ml</u>	<u>N</u>	<u>N</u>
<u>SVOCs</u>	<u>2 250 ml</u>	<u>N</u>	<u>N</u>
<u>metal / Mercury</u>	<u>1 250 ml</u>	<u>HNO₃</u>	<u>N</u>
<u>Dissolved Metals</u>	<u>1 125 ml</u>	<u>N - HNO₃</u>	<u>N</u>
			<u>N</u>

Remarks: _____

Sampler(s) Signature: [Signature]

ASTM-D6771-02: Stabilization of Parameters:

pH	Temp	Conductivity	Dissolved Oxygen	Eh or ORP	Turbidity
± 0.2 phu	± 0.2 °C	3% of reading	± 10% of reading or ± 0.2 mg/L, whichever is greater	± 20 mV	± 10% of the previous rea. ± 1.0 NTU whichever is gre.

Groundwater Monitoring Field Data Sheet

Project Name: Puma Terminal Project Number: E002-1605A
 Location: CATAÑO P.R. Date: 12/21/16
 Arcadis PR Team: A.C. M.F
 Well ID: MW-33A Well casing Dia.: 2" Weather: Sunny

WELL CASING VOLUMES (per foot of water column)

1-1/4"=0.06 1-1/2"=0.09 2"=0.16 2-1/2"=0.26 3"=0.37 3-1/2"=0.5 4"=0.65 6"=1.47

Well Data

Well Depth:	<u>25.33</u>	ft. TOC	Gallons per foot:	<u>0.16</u>	gal
Depth to Water:	<u>5.80</u>	ft. TOC	Gallons per well casing (Well Volume):	<u>3.12</u>	gal
Depth to SPH:	<u>N/A</u>	ft. TOC	Three well volumes (x3):	<u>9.37</u>	gal
Water Column in Well:	<u>19.53</u>	ft.	Placement of Pump Intake:	<u>15.50</u>	ft. TOC

Well Purging Information and Field Parameters

Well Purging Method: Peristaltic Pump - Number 12383 Monsoon Pump - Number _____ Other _____

Time	Depth to Groundwater (ft)	Flow Rate (ml/min)	Cumulative Volume (gal)	pH	Temp. (°C)	ORP mV	Turbidity (NTU)	Cond. (mS/cm)	D.O. (mg/L)	D.O. (%)
1113	<u>5.80</u>	<u>160ml/min</u>	<u>Initial</u>							
1116	<u>7.90</u>	<u>160ml/min</u>	<u>480 ml</u>	<u>6.33</u>	<u>29.05</u>	<u>25.2</u>	<u>0.0</u>	<u>0.231</u>	<u>0.63</u>	
1119	<u>8.70</u>	<u>160ml/min</u>	<u>960 ml</u>	<u>6.32</u>	<u>28.94</u>	<u>11.8</u>	<u>0.0</u>	<u>0.231</u>	<u>0.49</u>	
1122	<u>9.66</u>	<u>160ml/min</u>	<u>1440 ml</u>	<u>6.33</u>	<u>28.22</u>	<u>6.3</u>	<u>30.0</u>	<u>0.230</u>	<u>0.39</u>	
1125	<u>11.05</u>	<u>160ml/min</u>	<u>1920 ml</u>	<u>6.31</u>	<u>28.49</u>	<u>1.0</u>	<u>48.9</u>	<u>0.230</u>	<u>0.4936</u>	
1128	<u>11.93</u>	<u>160ml/min</u>	<u>2400 ml</u>	<u>6.33</u>	<u>28.49</u>	<u>2.3</u>	<u>30.3</u>	<u>0.230</u>	<u>0.38</u>	

Sampling Data

Sampling Method: Peristaltic Pump-Number: 12383 Other: _____ Sampling Time: 1144

Color: Clear Grey Light Grey Light Brown Brown Other: _____

Odor: Mild Strong -- Specify: NONE Visual Turbidity: Clear Low Medium High

Sample Parameters	Container Description	Preservative	Filtered y/n
<u>GRO</u>	<u>2 40ml vials</u>	<u>HCl</u>	
<u>VOCS</u>	<u>2 40ml vials</u>	<u>HCl</u>	<u>N</u>
<u>DRO/ORO</u>	<u>2 500ml</u>	<u>N</u>	<u>N</u>
<u>SVOCS</u>	<u>2 250ml</u>	<u>N</u>	<u>N</u>
<u>Metal/Mercury</u>	<u>1 250ml</u>		<u>N</u>
<u>Dissolved Metals</u>	<u>1 125ml</u>	<u>HNO₃</u>	<u>N</u>

Remarks: 0.0 VOC ppm

Sampler(s) Signature: M

ASTM-D6771-02: Stabilization of Parameters:

pH	Temp	Conductivity	Dissolved Oxygen	Eh or ORP	Tur
± 0.2 phu	± 0.2 °C	3% of reading	± 10% of reading or ± 0.2 mg/L, whichever is greater	± 20 mV	± 10% ± 1.0 NTU

Groundwater Monitoring Field Data Sheet

Project Name: Puma Terminal Project Number: 15022.1605B
 Location: Catano P.R. Date: 12/21/16
 Arcadis PR Team: A.C., M.F.
 Well ID: MW-P116 Well casing Dia.: 2" Weather: Cloud

WELL CASING VOLUMES (per foot of water column)

1-1/4"=0.06 1-1/2"=0.09 2"=0.16 2-1/2"=0.26 3"=0.37 3-1/2"=0.5 4"=0.65 6"=1.47

Well Data

Well Depth:	<u>14.18</u>	ft. TOC	Gallons per foot:	<u>0.16</u>	gal
Depth to Water:	<u>3.58</u>	ft. TOC	Gallons per well casing (Well Volume):	<u>1.94</u>	gal
Depth to SPH:	<u>N/A</u>	ft. TOC	Three well volumes (x3):	<u>5.23</u>	gal
Water Column in Well:	<u>10.90</u>	ft.	Placement of Pump Intake:	<u>9</u>	ft. TOC

Well Purging Information and Field Parameters

Well Purging Method: Peristaltic Pump - Number 12383 Monsoon Pump - Number _____ Other _____

Time	Depth to Groundwater (ft)	Flow Rate (ml/min)	Cumulative Volume (gal)	pH	Temp. (°C)	ORP mV	Turbidity (NTU)	Cond. (mS/cm)	D.O. (mg/L)	D.O. (%)
1327	3.58	160ml/min	initial							
1330	3.73	160ml/min	480ml	6.37	27.92	260.0	67.4	0.553	0.23	
1333	3.76	160ml/min	960ml	6.38	27.36	287.7	68.4	0.546	0.66	
1336	3.81	160ml/min	1440ml	6.40	27.11	310.7	59.8	0.534	0.80	
1339	3.86	160ml/min	1920ml	6.45	27.00	334.7	46.0	0.510	1.10	
1342	3.89	160ml/min	2400ml	6.50	26.94	345.5	39.4	0.499	1.29	
1345	3.93	160ml/min	2880ml	6.52	26.92	358.6	33.8	0.499	1.42	
1348	3.98	160ml/min	3360ml	6.56	26.90	369.6	30.5	0.502	1.57	
1351	4.03	160ml/min	3840ml	6.59	27.02	370	24.5	0.512	1.60	

Sampling Data

Sampling Method: Peristaltic Pump-Number: 12383 Other: _____ Sampling Time: 1405

Color: Clear Grey Light Grey Light Brown Brown Other: _____

Odor: Mild Strong -- Specify: NONE Visual Turbidity: Clear Low Medium High

Sample Parameters	Container Description	Preservative	Filtered y/n
<u>PRO</u>	<u>2 vial 40ml</u>	<u>HCl</u>	
<u>VOC's</u>	<u>2 vial 40ml</u>	<u>HCl</u>	<u>N</u>
<u>DRO/ORG</u>	<u>2 500ml</u>	<u>N</u>	<u>N</u>
<u>SVOCS</u>	<u>2 250ml</u>	<u>N</u>	<u>N</u>
<u>Metal /Mercury</u>	<u>1 250ml</u>		<u>N</u>
<u>Dissolved Metals</u>	<u>1 125ml</u>	<u>HNO₃</u>	<u>N</u>
			<u>N</u>

Remarks: 0.0 VOC ppm

Sampler(s) Signature: [Signature]

ASTM-D6771-02: Stabilization of Parameters:

pH	Temp	Conductivity	Dissolved Oxygen	Eh or ORP	Turbidity
± 0.2 phu	± 0.2 °C	3% of reading	± 10% of reading or ± 0.2 mg/L, whichever is greater	± 20 mV	± 10% of the previous ± 1.0 NTU whichever

Groundwater Monitoring Field Data Sheet

Project Name: Amn Terminal Project Number: E002.1605B
 Location: Catano P.R Date: 12/21/16
 Arcadis PR Team: A.C. M.F
 Well ID: PW-PI17 Well casing Dia.: 2" Weather: Sunny

WELL CASING VOLUMES (per foot of water column)

1-1/4"=0.06 1-1/2"=0.09 2"=0.16 2-1/2"=0.26 3"=0.37 3-1/2"=0.5 4"=0.65 6"=1.47

Well Data

Well Depth:	<u>14.4</u>	ft. TOC	Gallons per foot:	<u>0.16</u>	gal
Depth to Water:	<u>3.38</u>	ft. TOC	Gallons per well casing (Well Volume):	<u>1.96</u>	gal
Depth to SPH:	<u>ND</u>	ft. TOC	Three well volumes (x3):	<u>5.28</u>	gal
Water Column in Well:	<u>11.02</u>	ft.	Placement of Pump Intake:	<u>9</u>	ft. TOC

Well Purging Information and Field Parameters

Well Purging Method: Peristaltic Pump - Number 12383 Monsoon Pump - Number _____ Other _____

Time	Depth to Groundwater (ft)	Flow Rate (ml/min)	Cumulative Volume (gal)	pH	Temp. (°C)	ORP mV	Turbidity (NTU)	Cond. (mS/cm)	D.O. (mg/L)	D.O. (%)
1439	3.38	160ml/min	Initial							
1442	4.58	160ml/min	480ml	6.15	28.32	319.9	0.9	0.585	2.11	
1445	4.78	160ml/min	960ml	6.11	28.15	361.4	2.3	0.584	2.02	
1448	5.05	160ml/min	1440ml	6.12	28.05	382.2	2.1	0.585	1.98	
1451	5.26	160ml/min	1920ml	6.12	28.12	409.1	0.9	0.585	1.85	
1454	5.66	160ml/min	2400ml	6.10	28.19	420.0	0.9	0.580	1.77	
1459	5.98	160ml/min	2880ml	6.09	28.09	439.5	1.9	0.572	1.75	
1500	6.09	160ml/min	3360ml	5.98	27.99	490.6	5.0	0.512	1.56	
1503	6.56	160ml/min	3840ml	5.87	27.89	459.8	4.9	0.422	1.78	

Sampling Data

Sampling Method: Peristaltic Pump - Number: 12383 Other: _____ Sampling Time: 1521

Color: Clear Grey Light Grey Light Brown Brown Other: _____

Odor: Mild Strong -- Specify: NONE Visual Turbidity: Clear Low Medium High

Sample Parameters	Container Description	Preservative	Filtered y/n
<u>GRO</u>	<u>2 vial 40ml</u>	<u>HCl</u>	
<u>VOCS</u>	<u>2 vial 40ml</u>	<u>HCl</u>	<u>N</u>
<u>DRO/DRO</u>	<u>2 500ml</u>	<u>N</u>	<u>N</u>
<u>SROCS</u>	<u>2 250ml</u>	<u>N</u>	<u>N</u>
<u>Metal/Mercury</u>	<u>1 250ml</u>	<u>HNO₃</u>	<u>N</u>
<u>Dissolved Metals</u>	<u>1 125ml</u>	<u>N</u>	<u>N</u>

Remarks: 0.0 voc ppm

Sampler(s) Signature: [Signature]

ASTM-D6771-02: Stabilization of Parameters:

pH	Temp	Conductivity	Dissolved Oxygen	Eh or ORP	Turbidity
± 0.2 phu	± 0.2 °C	3% of reading	± 10% of reading or ± 0.2 mg/L, whichever is greater	± 20 mV	± 10% of the previous reading or ± 1.0 NTU whichever is gre

Groundwater Monitoring Field Data Sheet

Project Name: Anna Terminal Project Number: E002.1605B
 Location: CATAÑO P.R. Date: 12/21/16
 Arcadis PR Team: A.C. M.F.
 Well ID: MW-65A Well casing Dia.: 4" Weather: cloud

WELL CASING VOLUMES (per foot of water column)

1-1/4"=0.06 1-1/2"=0.09 2"=0.16 2-1/2"=0.26 3"=0.37 3-1/2"=0.5 4"=0.65 6"=1.47

Well Data

Well Depth:	<u>20.6</u>	ft. TOC	Gallons per foot:	<u>0.65</u>	gal
Depth to Water:	<u>3.14</u>	ft. TOC	Gallons per well casing (Well Volume):	<u>5.61</u>	gal
Depth to SPH:	<u>NA</u>	ft. TOC	Three well volumes (x3):	<u>17.02</u>	gal
Water Column in Well:	<u>17.46</u>	ft.	Placement of Pump Intake:	<u>12.00</u>	ft. TOC
	<u>6.93</u>				

Well Purging Information and Field Parameters

Well Purging Method: Peristaltic Pump - Number 12343 Monsoon Pump - Number _____ Other _____

Time	Depth to Groundwater (ft)	Flow Rate (ml/min)	Cumulative Volume (gal)	pH	Temp. (°C)	ORP mV	Turbidity (NTU)	Cond. (mS/cm)	D.O. (mg/L)	D.O. (%)
1544	3.14	160ml/min	initial							
1547	3.20	160ml/min	480ml	6.88	28.40	471.4	54.1	0.458	1.27	
1550	3.94	160ml/min	960ml	6.91	28.42	471.4	36.1	0.459	1.17	
1553	4.31	160ml/min	1440ml	6.91	28.44	470.6	20.3	0.459	1.11	
1556	4.55	160ml/min	1920ml	6.93	28.43	470.1	13.9	0.459	1.09	
1559	4.85	160ml/min	2400ml	6.93	28.42	469.7	22.8	0.459	1.08	

Sampling Data

Sampling Method: Peristaltic Pump - Number: 12343 Other: _____ Sampling Time: 1609

Color: Clear Grey Light Grey Light Brown Brown Other: _____

Odor: Mild Strong -- Specify: None Visual Turbidity: Clear Low Medium High

Sample Parameters	Container Description	Preservative	Filtered y/n
GRO	2 water 40ml	HCl	
VOC's	2 water 40ml	HCl	N
DRO/ORD	2 500 ml	N	N
SVOC's	2 250 ml	N	N
Metal/mercury	1 250 ml	HNO ₃	N
Dissolved Metals	1 125 ml	N	N

Remarks: _____

Sampler(s) Signature: M

ASTM-D6771-02: Stabilization of Parameters:

pH	Temp	Conductivity	Dissolved Oxygen	Eh or ORP	Turbidity
± 0.2 phu	± 0.2 °C	3% of reading	± 10% of reading or ± 0.2 mg/L, whichever is greater	± 20 mV	± 10% of the previous ± 1.0 NTU whichever is

Groundwater Monitoring Field Data Sheet

Project Name: Puma Terminal Project Number: E002-16050
 Location: Catania P/B Date: 12/20/16
 Arcadis PR Team: A.C. M, F
 Well ID: MW-AD03 Well casing Dia.: 2" Weather: cloud

WELL CASING VOLUMES (per foot of water column)

1-1/4"=0.06 1-1/2"=0.09 2"=0.16 2-1/2"=0.26 3"=0.37 3-1/2"=0.5 4"=0.65 6"=1.47

Well Data

Well Depth:	<u>1522</u>	ft. TOC	Gallons per foot:	<u>0.16</u>	gal
Depth to Water:	<u>3.94</u>	ft. TOC	Gallons per well casing (Well Volume):	<u>1.80</u>	gal
Depth to SPH:	<u>N/A</u>	ft. TOC	Three well volumes (x3):	<u>5.41</u>	gal
Water Column in Well:	<u>11.28</u>	ft.	Placement of Pump Intake:	<u>9.50</u>	ft. TOC

Well Purging Information and Field Parameters

Well Purging Method: Peristaltic Pump - Number 12383 Monsoon Pump - Number _____ Other _____

Time	Depth to Groundwater (ft)	Flow Rate (ml/min)	Cumulative Volume (gal)	pH	Temp. (°C)	ORP mV	Turbidity (NTU)	Cond. (mS/cm)	D.O. (mg/L)	D.O. (%)
1446	3.94	160ml/min	initial							
1449	5.10	160ml/min	480	5.68	21.61	325.9	38.2	0.358	1.98	
1452	5.41	160ml/min	960	5.65	21.55	340.4	36.9	0.359	1.89	
1455	5.57	160ml/min	1440	5.69	21.46	355.2	24.0	0.364	1.81	
1458	6.02	160ml/min	1920	5.68	21.46	365.7	31.0	0.370	1.76	
1501	6.85	160ml/min	2400	5.70	21.51	373.7	22.0	0.377	1.70	
1504	6.97	160ml/min	2880	5.72	21.57	380.4	30.5	0.384	1.62	

Sampling Data

Sampling Method: Peristaltic Pump - Number: 12383 Other: _____ Sampling Time: 1516

Color: Clear Grey Light Grey Light Brown Brown Other: _____

Odor: Mild Strong -- Specify: None Visual Turbidity: Clear Low Medium High

Sample Parameters	Container Description	Preservative	Filtered y/n
2RO	2 vial 40ml	HCl	N
VOC	2 vial 40ml	HCl	N
DRO/ORO	2 500 ml	N	N
SVOCs	2 250 ml	N	N
Metals/Mercury	1 250 ml		N
Dissolved Metal	1 125 ml	HNO ₃	N

Remarks: FB-122016 - 1525

Sampler(s) Signature: [Signature]

ASTM-D6771-02: Stabilization of Parameters:

pH	Temp	Conductivity	Dissolved Oxygen	Eh or ORP	Turbidity
± 0.2 phu	± 0.2 °C	3% of reading	± 10% of reading or ± 0.2 mg/L, whichever is greater	± 20 mV	± 10% of the previous ± 1.0 NTU whichever

Groundwater Monitoring Field Data Sheet

Project Name: Puma Terminal Project Number: E002-1605B
 Location: Cataño P.P Date: 12/20/16
 Arcadis PR Team: A.C. M.F
 Well ID: MW-P119 Well casing Dia.: 2" Weather: cloud

WELL CASING VOLUMES (per foot of water column)

1-1/4"=0.06 1-1/2"=0.09 2"=0.16 2-1/2"=0.26 3"=0.37 3-1/2"=0.5 4"=0.65 6"=1.47

Well Data

Well Depth:	<u>25.0</u>	ft. TOC	Gallons per foot:	<u>0.16</u>	gal
Depth to Water:	<u>11.15</u>	ft. TOC	Gallons per well casing (Well Volume):	<u>2.21</u>	gal
Depth to SPH:	<u>N/A</u>	ft. TOC	Three well volumes (x3):	<u>6.63</u>	gal
Water Column in Well:	<u>13.85</u>	ft.	Placement of Pump Intake:	<u>18</u>	ft. TOC

Well Purging Information and Field Parameters

Well Purging Method: Peristaltic Pump - Number 12383 Monsoon Pump - Number _____ Other _____

Time	Depth to Groundwater (ft)	Flow Rate (ml/min)	Cumulative Volume (gal)	pH	Temp. (°C)	ORP mV	Turbidity (NTU)	Cond. (mS/cm)	D.O. (mg/L)	D.O. (%)
<u>0859</u>	<u>11.15</u>	<u>160 ml/min</u>	<u>initial</u>							
<u>0902</u>	<u>12.20</u>	<u>160 ml/min</u>	<u>160</u>	<u>4.59</u>	<u>29.29</u>	<u>392.9</u>	<u>0.0</u>	<u>0.214</u>	<u>1.97</u>	
<u>0905</u>	<u>12.68</u>	<u>160 ml/min</u>	<u>320</u>	<u>4.60</u>	<u>29.40</u>	<u>395.9</u>	<u>0.0</u>	<u>0.214</u>	<u>1.88</u>	
<u>0908</u>	<u>13.27</u>	<u>160 ml/min</u>	<u>480</u>	<u>4.61</u>	<u>29.26</u>	<u>399.6</u>	<u>0.0</u>	<u>0.215</u>	<u>1.95</u>	

Sampling Data

Sampling Method: Peristaltic Pump-Number: 12383 Other: _____ Sampling Time: 0918
 Color: Clear Grey Light Grey Light Brown Brown Other: _____
 Odor: Mild Strong -- Specify: NONE Visual Turbidity: Clear Low Medium High

Sample Parameters	Container Description	Preservative	Filtered y/n
<u>VOC</u>	<u>2 vials 40ml</u>	<u>HCl</u>	<u>N</u>
<u>CRD</u>	<u>2 vials 40ml</u>	<u>HCl</u>	<u>N</u>
<u>DRO ORP</u>	<u>2 500 ml</u>	<u>N</u>	<u>N</u>
<u>SWCS</u>	<u>2 250 ml</u>	<u>N</u>	<u>N</u>
<u>Metal / Mercury</u>	<u>1 250 ml</u>	<u>HNO₃</u>	<u>N</u>
<u>Dissolved Metals</u>	<u>1 125 ml</u>	<u>N</u>	<u>N</u>

Remarks: 1.1 VOC ppm

Sampler(s) Signature: [Signature]

ASTM-D6771-02: Stabilization of Parameters:

pH	Temp	Conductivity	Dissolved Oxygen	Eh or ORP	Turbidity
± 0.2 phu	± 0.2 °C	3% of reading	± 10% of reading or ± 0.2 mg/L, whichever is greater	± 20 mV	± 10% of the previous reading or ± 1.0 NTU whichever is greater

Groundwater Monitoring Field Data Sheet

Project Name: Puma Terminal Project Number: E 002.1605B
 Location: Cañario P.R Date: 12/20/16
 Arcadis PR Team: A.C. M.F
 Well ID: MW-PI148 Well casing Dia.: 2" Weather: cloud

WELL CASING VOLUMES (per foot of water column)

1-1/4"=0.06 1-1/2"=0.09 2"=0.16 2-1/2"=0.26 3"=0.37 3-1/2"=0.5 4"=0.65 6"=1.47

Well Data

Well Depth:	<u>17.3</u> ft. TOC	Gallons per foot:	<u>0.16</u> gal
Depth to Water:	<u>6.52</u> ft. TOC	Gallons per well casing (Well Volume):	<u>1.92</u> gal
Depth to SPH:	<u>N/A</u> ft. TOC	Three well volumes (x3):	<u>5.17</u> gal
Water Column in Well:	<u>10.78</u> ft.	Placement of Pump Intake:	<u>12.0</u> ft. TOC

Well Purging Information and Field Parameters

Well Purging Method: Peristaltic Pump - Number 12383 Monsoon Pump - Number _____ Other _____

Time	Depth to Groundwater (ft)	Flow Rate (ml/min)	Cumulative Volume (gal)	pH	Temp. (°C)	ORP mV	Turbidity (NTU)	Cond. (mS/cm)	D.O. (mg/L)	D.O. (%)
0936	6.52	160ml/min	initial	5.0						
0939	6.59	160ml/min	480	4.97	30.06	434.2	46.8	0.249	0.77	
0942	6.61	160ml/min	960	4.92	30.35	438.8	93.5	0.247	0.53	
0945	6.62	160ml/min	1440	4.93	30.51	449.3	101.9	0.246	0.42	
0948	6.63	160ml/min	1920	4.89	30.53	464.7	109.2	0.244	0.38	
0951	6.63	160ml/min	2400	4.93	30.54	480.3	115.8	0.245	0.34	
0954	6.63	160ml/min	2880	4.94	30.61	492.0	111.2	0.247	0.32	
0957	6.63	160ml/min	3360	4.90	30.58	489.0	110.8	0.246	0.32	

Sampling Data

Sampling Method: Peristaltic Pump-Number: 12383 Other: _____ Sampling Time: 1009

Color: Clear Grey Light Grey Light Brown Brown Other: _____

Odor: Mild Strong -- Specify: None Visual Turbidity: Clear Low Medium High

Sample Parameters	Container Description	Preservative	Filtered y/n
<u>VOC</u>	<u>2 vial 40ml</u>	<u>HCl</u>	<u>N</u>
<u>DRD/ORD</u>	<u>2 vial 40ml</u>	<u>HCl</u>	<u>N</u>
<u>SVOCs</u>	<u>2 250 ml</u>	<u>N</u>	<u>N</u>
<u>Metal Mercury</u>	<u>1 250 ml</u>	<u>HNO₃</u>	<u>N</u>
<u>Dissolved Metals</u>	<u>1 125 ml</u>	<u>N</u>	<u>N</u>

Remarks: VOC 00 PPM

Sampler(s) Signature: M

ASTM-D6771-02: Stabilization of Parameters:

pH	Temp	Conductivity	Dissolved Oxygen	Eh or ORP	Turbidity
± 0.2 phu	± 0.2 °C	3% of reading	± 10% of reading or ± 0.2 mg/L, whichever is greater	± 20 mV	± 10% of the previous reading or ± 1.0 NTU whichever is greater

Groundwater Monitoring Field Data Sheet

Project Name: Puma Terminal Project Number: E002.1605 B
 Location: Cataño P.R. Date: 12/20/16
 Arcadis PR Team: A.C. M.F.
 Well ID: MW-83A Well casing Dia.: 2" Weather: cloud

WELL CASING VOLUMES (per foot of water column)

1-1/4"=0.06 1-1/2"=0.09 2"=0.16 2-1/2"=0.26 3"=0.37 3-1/2"=0.5 4"=0.65 6"=1.47

Well Data

Well Depth:	<u>15.23</u>	ft. TOC	Gallons per foot:	<u>0.16</u>	gal
Depth to Water:	<u>8' 3.46</u>	ft. TOC	Gallons per well casing (Well Volume):	<u>1.81</u>	gal
Depth to SPH:	<u>N/A</u>	ft. TOC	Three well volumes (x3):	<u>5.45</u>	gal
Water Column in Well:	<u>11.36</u>	ft.	Placement of Pump Intake:	<u>9.50</u>	ft. TOC

Well Purging Information and Field Parameters

Well Purging Method: Peristaltic Pump - Number 12383 Monsoon Pump - Number _____ Other _____

Time	Depth to Groundwater (ft)	Flow Rate (ml/min)	Cumulative Volume (gal)	pH	Temp. (°C)	ORP mV	Turbidity (NTU)	Cond. (mS/cm)	D.O. (mg/L)	D.O. (%)
1039	3.86	160ml/min	initial							
1042	4.02	160ml/min	489	6.59	28.32	416.4	2.2	0.650	4.28	
1045	4.88	160ml/min	960	6.60	28.10	429.4	4.5	0.652	3.84	
1048	5.15	160ml/min	1440	6.62	27.91	439.9	7.5	0.655	3.42	
1051	5.36	160 ml/min	1920	6.69	27.75	444.6	4.4	0.664	3.08	
1054	5.62	160ml/min	2400 2880	6.72	27.69	453.7	4.2	0.658	2.81	
1057	5.86	160ml/min	3360	6.77	27.78	457.2	2.0	0.659	2.60	
1100	6.15	160ml/min	3840	6.78	27.92	459.2	0.0	0.664	2.50	
1103	6.20	160ml/min	3840	6.76	27.99	460.2	2.22	0.662	2.248	

Sampling Data

Sampling Method: Peristaltic Pump-Number: 12383 Other: _____ Sampling Time: 1113

Color: Clear Grey Light Grey Light Brown Brown Other: _____

Odor: Mild Strong -- Specify: None Visual Turbidity: Clear Low Medium High

Sample Parameters	Container Description	Preservative	Filtered y/n
VOC	2 vial 40ml	HCl	N
CRP	2 vial 40ml	HCl	N
DRO/OPD	2 500 ml	N	N
Svocs	2 250 ml	N	N
Metal Mercury	1 250 ml	N	N
Dissolved metals	1 125 ml	HNO ₃	N
			N

Remarks: 0.0. VOC ppm

Sampler(s) Signature: [Signature]

ASTM-D6771-02: Stabilization of Parameters:

pH	Temp	Conductivity	Dissolved Oxygen	Eh or ORP	Turbidity
± 0.2 phu	± 0.2 °C	3% of reading	± 10% of reading or ± 0.2 mg/L, whichever is greater	± 20 mV	± 10% of the previous reading or ± 1.0 NTU whichever is greater

Groundwater Monitoring Field Data Sheet

Project Name: Puma Terminal Project Number: E002, 1605B
 Location: Ratona P.B Date: 12/20/16
 Arcadis PR Team: A.C. / M.F
 Well ID: MW-AD-01 Well casing Dia.: 2" Weather: cloud

WELL CASING VOLUMES (per foot of water column)

1-1/4"=0.06 1-1/2"=0.09 2"=0.16 2-1/2"=0.26 3"=0.37 3-1/2"=0.5 4"=0.65 6"=1.47

Well Data

Well Depth:	<u>15.32</u>	ft. TOC	Gallons per foot:	<u>0.16</u>	gal
Depth to Water:	<u>3.62</u>	ft. TOC	Gallons per well casing (Well Volume):	<u>1.87</u>	gal
Depth to SPH:	<u>N/A</u>	ft. TOC	Three well volumes (x3):	<u>5.61</u>	gal
Water Column in Well:	<u>11.70</u>	ft.	Placement of Pump Intake:	<u>9.50</u>	ft. TOC

Well Purging Information and Field Parameters

Well Purging Method: Peristaltic Pump - Number 12383 Monsoon Pump - Number _____ Other _____

Time	Depth to Groundwater (ft)	Flow Rate (ml/min)	Cumulative Volume (gal)	pH	Temp. (°C)	ORP mV	Turbidity (NTU)	Cond. (mS/cm)	D.O. (mg/L)	D.O. (%)
1239	3.62	160ml/min	160							
1242	3.72	160ml/min	320	7.30	28.14	348.8	7.9	0.382	4.62	
1245	3.72	160ml/min	480	7.26	28.07	360.8	14.2	0.379	4.05	
1248	3.72	160ml/min	640	7.21	28.06	367.0	32.8	0.378	3.62	
1251	3.72	160ml/min	800	7.29	28.04	372.0	30.5	0.377	3.19	
1254	3.72	160ml/min	960	7.27	28.04	370.3	39.7	0.377	3.82	
1257	3.72	160ml/min	1120	7.27	28.04	371.1	43.8	0.376	2.70	
1300	3.72	160ml/min	1280	7.26	27.99	374.7	70.6	0.374	2.80	

Sampling Data

Sampling Method: Peristaltic Pump-Number: 12383 Other: _____ Sampling Time: 1312

Color: Clear Grey Light Grey Light Brown Brown Other: _____

Odor: Mild Strong -- Specify: _____ Visual Turbidity: Clear Low Medium High

Sample Parameters	Container Description	Preservative	Filtered y/n
VOL	2 vial 40ml		
CRD	2 vial 40ml	HCl	N
DRD/ORD	2 500 ml	HCl	N
SVOCS	2 250 ml		N
Metal/Mercury	1 250 ml		N
Dissolved Metals	1 125 ml	HNO ₃	N
			N

Remarks: 0.0 VOL PPA

Sampler(s) Signature: M

ASTM-D6771-02: Stabilization of Parameters:

pH	Temp	Conductivity	Dissolved Oxygen	Eh or ORP	Turbidity
± 0.2 phu	± 0.2 °C	3% of reading	± 10% of reading or ± 0.2 mg/L, whichever is greater	± 20 mV	± 10% of the previous reading or ± 1.0 NTU whichever is greater

Groundwater Monitoring Field Data Sheet

Project Name: Puma Terminal Project Number: E002.16058
 Location: Cataño P.R. Date: 12/20/16
 Arcadis PR Team: A.C M.F
 Well ID: mw-57A Well casing Dia.: 4" Weather: Cloud

WELL CASING VOLUMES (per foot of water column)

1-1/4"=0.06 1-1/2"=0.09 2"=0.16 2-1/2"=0.26 3"=0.37 3-1/2"=0.5 4"=0.65 6"=1.47

Well Data

Well Depth:	<u>20.5</u>	ft. TOC	Gallons per foot:	<u>0.65</u>	gal
Depth to Water:	<u>2.42</u>	ft. TOC	Gallons per well casing (Well Volume):	<u>11.95</u>	gal
Depth to SPH:	<u>N/A</u>	ft. TOC	Three well volumes (x3):	<u>35.25</u>	gal
Water Column in Well:	<u>18.08</u>	ft.	Placement of Pump Intake:	<u>11.50</u>	ft. TOC

Well Purging Information and Field Parameters

Well Purging Method: Peristaltic Pump - Number 12383 Monsoon Pump - Number _____ Other _____

Time	Depth to Groundwater (ft)	Flow Rate (ml/min)	Cumulative Volume (gal)	pH	Temp. (°C)	ORP mV	Turbidity (NTU)	Cond. (mS/cm)	D.O. (mg/L)	D.O. (%)
1342	2.42	160ml/min	initial							
1345	2.89	160ml/min	480	6.02	28.86	7.7	110.8	0.239	0.85	
1348	3.06	160ml/min	960	5.99	28.89	11.4	68.6	0.238	0.49	
1351	3.19	160ml/min	1440	5.99	28.92	14.0	48.8	0.238	0.40	
1354	3.00	160ml/min	1920	5.98	28.95	17.2	39.8	0.238	0.34	
1357	3.00	160ml/min	2400	5.98	28.96	19.5	36.7	0.238	0.31	
1400	3.00	160ml/min	2880	5.99	28.98	19.9	44.0	0.239	0.30	
1403	3.00	160ml/min	3280	5.99	28.99	20.7	40.1	0.240	0.28	

Sampling Data

Sampling Method: Peristaltic Pump-Number: 12383 Other: _____ Sampling Time: 1430

Color: Clear Grey Light Grey Light Brown Brown Other: _____

Odor: Mild Strong -- Specify: _____ Visual Turbidity: Clear Low Medium High

Sample Parameters	Container Description	Preservative	Filtered y/n
<u>CRB</u>	<u>2 vial 40ml</u>	<u>HCl</u>	
<u>VOC</u>	<u>2 vial 40ml</u>	<u>HCl</u>	<u>N</u>
<u>DRB/DBP</u>	<u>2 500 ml</u>	<u>N</u>	<u>N</u>
<u>SVOCS</u>	<u>2 250 ml</u>	<u>N</u>	<u>N</u>
<u>Metal /Mercury</u>	<u>1 250 ml</u>	<u>HNO₃</u>	<u>N</u>
<u>Dissolved Metal</u>	<u>1 125 ml</u>	<u>N</u>	<u>N</u>

Remarks: 0.0 VOC / DUP001 - (Duplicado)

Sampler(s) Signature: [Signature]

ASTM-D6771-02: Stabilization of Parameters:

pH	Temp	Conductivity	Dissolved Oxygen	EH or ORP	Turbidity
± 0.2 phu	± 0.2 °C	3% of reading	± 10% of reading or ± 0.2 mg/L, whichever is greater	± 20 mV	± 10% of the previous reading or ± 1.0 NTU whichever is greater

Groundwater Monitoring Field Data Sheet

Project Name: Puma Terminal Project Number: E002.1605B
 Location: Cataño P.R Date: 12/20/16
 Arcadis PR Team: ACI MP
 Well ID: MW-AD-1 Well casing Dia.: 2" Weather: cloud

WELL CASING VOLUMES (per foot of water column)

1-1/4"=0.06 1-1/2"=0.09 2"=0.16 2-1/2"=0.26 3"=0.37 3-1/2"=0.5 4"=0.65 6"=1.47

Well Data

Well Depth:	_____	ft. TOC	Gallons per foot:	_____	gal
Depth to Water:	<u>4.345</u>	ft. TOC	Gallons per well casing (Well Volume):	_____	gal
Depth to SPH:	<u>4.384</u>	ft. TOC	Three well volumes (x3):	_____	gal
Water Column in Well:	_____	ft.	Placement of Pump Intake:	_____	ft. TOC

Well Purging Information and Field Parameters

Well Purging Method: Peristaltic Pump - Number _____ Monsoon Pump - Number _____ Other _____

Time	Depth to Groundwater (ft)	Flow Rate (ml/min)	Cumulative Volume (gal)	pH	Temp. (°C)	ORP mV	Turbidity (NTU)	Cond. (mS/cm)	D.O. (mg/L)	D.O. (%)
<i>products</i>										

Sampling Data

Sampling Method: Peristaltic Pump-Number: _____ Other: _____ Sampling Time: _____
 Color: Clear Grey Light Grey Light Brown Brown Other: _____
 Odor: Mild Strong -- Specify: _____ Visual Turbidity: Clear Low Medium High

Sample Parameters	Container Description	Preservative	Filtered y/n
		HCl	N
			N
			N
		HNO ₃	N
			N

Remarks: _____
 Sampler(s) Signature: _____

ASTM-D6771-02: Stabilization of Parameters:

pH	Temp	Conductivity	Dissolved Oxygen	Eh or ORP	Turbidity
± 0.2 phu	± 0.2 °C	3% of reading	± 10% of reading or ± 0.2 mg/L, whichever is greater	± 20 mV	± 10% of the previous reading or ± 1.0 NTU whichever is greater

Groundwater Monitoring Field Data Sheet

Project Name: Puma Terminal Project Number: E002.16056
 Location: La Tasa P.R Date: 12/19/16
 Arcadis PR Team: A.C. M.V
 Well ID: MW-P121 Well casing Dia.: 2" Weather: cloud

WELL CASING VOLUMES (per foot of water column)

1-1/4"=0.06 1-1/2"=0.09 2"=0.16 2-1/2"=0.26 3"=0.37 3-1/2"=0.5 4"=0.65 6"=1.47

Well Data

Well Depth:	<u>44.90</u>	ft. TOC	Gallons per foot:	<u>0.16</u>	gal
Depth to Water:	<u>33.40</u>	ft. TOC	Gallons per well casing (Well Volume):	<u>1.89</u>	gal
Depth to SPH:	<u>ND</u>	ft. TOC	Three well volumes (x3):	<u>5.52</u>	gal
Water Column in Well:	<u>11.50</u>	ft.	Placement of Pump Intake:		ft. TOC

Well Purging Information and Field Parameters

Well Purging Method: Peristaltic Pump - Number _____ Monsoon Pump - Number _____ Other Bailer

Time	Depth to Groundwater (ft)	Flow Rate (ml/min)	Cumulative Volume (gal)	pH	Temp. (°C)	ORP mV	Turbidity (NTU)	Cond. (mS/cm)	D.O. (mg/L)	D.O. (%)
<u>1550</u>	<u>33.40</u>	<u>Bailer</u>	<u>Initial</u>	<u>6.8</u>						
<u>1556</u>			<u>1.80</u>	<u>6.81</u>	<u>30.10</u>	<u>289.2</u>	<u>1251.6</u>	<u>0.644</u>	<u>295.28</u>	
<u>1600</u>			<u>3.60</u>	<u>6.81</u>	<u>29.89</u>	<u>315.5</u>	<u>1246.2</u>	<u>0.652</u>	<u>301.32</u>	
<u>1608</u>	<u>33.40</u>	<u>Bailer</u>	<u>5.40</u>	<u>6.83</u>	<u>29.60</u>	<u>419.2</u>	<u>1246.9</u>	<u>0.645</u>	<u>313.14</u>	

Sampling Data

Sampling Method: Peristaltic Pump-Number: _____ Other: Bailer Sampling Time: 1627

Color: Clear Grey Light Grey Light Brown Brown Other: _____

Odor: Mild Strong -- Specify: None Visual Turbidity: Clear Low Medium High

Sample Parameters	Container Description	Preservative	Filtered y/n
TPH-GRO	<u>2</u> Vials - 40 ml	HCl	N
TPH-DRO <u>VOC</u>	<u>2</u> 1 amber - 500 ml	<u>HCl</u> None	N
TPH-ORO-DRO	<u>2</u> 1 amber - 500 ml	None	N
<u>Lead SVOC metals / Mercury</u>	<u>2</u> 250 ml 1 plastic - 250 ml	<u>more</u> HNO ₃	N
PAH <u>Dissolved Metals</u>	<u>1</u> 125 1 amber - 500 ml <u>plastic</u>	None	N

Remarks: See Cerro FB-121916 1645

Sampler(s) Signature: [Signature]

ASTM-D6771-02: Stabilization of Parameters:

pH	Temp	Conductivity	Dissolved Oxygen	Eh or ORP	Turbidity
± 0.2 phu	± 0.2 °C	3% of reading	± 10% of reading or ± 0.2 mg/L, whichever is greater	± 20 mV	± 10% of the previous reading or ± 1.0 NTU whichever is greater

Groundwater Monitoring Field Data Sheet

Project Name: Dama Terminal Project Number: E002-16056
 Location: A.C. MF Cataño 1.8 Date: 12/19/16
 Arcadis PR Team: A.C MF
 Well ID: MW-P124 Well casing Dia.: 2" Weather: Sunny

WELL CASING VOLUMES (per foot of water column)

1-1/4"=0.06 1-1/2"=0.09 2"=0.16 2-1/2"=0.26 3"=0.37 3-1/2"=0.5 4"=0.65 6"=1.47

Well Data

Well Depth:	<u>44.20</u>	ft. TOC	Gallons per foot:	<u>0.16</u>	gal
Depth to Water:	<u>32.80</u>	ft. TOC	Gallons per well casing (Well Volume):	<u>1.82</u>	gal
Depth to SPH:	<u>/</u>	ft. TOC	Three well volumes (x3):	<u>5.40</u>	gal
Water Column in Well:	<u>11.40</u>	ft.	Placement of Pump Intake:	<u>38.50</u>	ft. TOC

Well Purging Information and Field Parameters

Well Purging Method: Peristaltic Pump - Number _____ Monsoon Pump - Number _____ Other Bailer

Time	Depth to Groundwater (ft)	Flow Rate (ml/min)	Cumulative Volume (gal)	pH	Temp. (°C)	ORP mV	Turbidity (NTU)	Cond. (mS/cm)	D.O. (mg/L)	D.O. (%)
<u>1450</u>	<u>32.80</u>	<u>Bailer</u>	<u>initial</u>	<u>/</u>	<u>/</u>	<u>/</u>	<u>/</u>	<u>/</u>	<u>/</u>	<u>/</u>
<u>1502</u>	<u>/</u>	<u>↓</u>	<u>1.80</u>	<u>6.49</u>	<u>30.00</u>	<u>435.1</u>	<u>85.4</u>	<u>0.431</u>	<u>495.96</u>	<u>/</u>
<u>1510</u>	<u>/</u>	<u>↓</u>	<u>3.60</u>	<u>6.69</u>	<u>29.32</u>	<u>445.1</u>	<u>283.1</u>	<u>0.564</u>	<u>324.61</u>	<u>/</u>
<u>1518</u>	<u>42.05</u>	<u>Bailer</u>	<u>5.40</u>	<u>6.91</u>	<u>29.25</u>	<u>446.5</u>	<u>130.1</u>	<u>0.421</u>	<u>450.81</u>	<u>/</u>

Sampling Data

Sampling Method: Peristaltic Pump-Number: _____ Other: Bailer Sampling Time: 1545

Color: Clear Grey Light Grey Light Brown Brown Other: _____

Odor: Mild Strong -- Specify: None Visual Turbidity: Clear Low Medium High

Sample Parameters	Container Description	Preservative	Filtered y/n
<u>TPH-GRO voc</u>	<u>2/4 Vials - 40 ml</u>	<u>HCl</u>	<u>N</u>
<u>TPH-DRO GRO</u>	<u>2/1 amber - 500 ml</u>	<u>None</u>	<u>N</u>
<u>TPH-ORO -DRO</u>	<u>2/1 amber - 500 ml</u>	<u>None</u>	<u>N</u>
<u>Lead - 5 voc's</u>	<u>2 plastic - 250 ml</u>	<u>HNO₃ None</u>	<u>N</u>
<u>PAH Metals / mercury</u>	<u>1/2 plastic - 250 ml</u> <u>Dissolved Metals 125</u>	<u>HNO₃ None</u>	<u>N</u>

Remarks: _____

Sampler(s) Signature: [Signature]

ASTM-D6771-02: Stabilization of Parameters:

pH	Temp	Conductivity	Dissolved Oxygen	Eh or ORP	Turbidity
± 0.2 phu	± 0.2 °C	3% of reading	± 10% of reading or ± 0.2 mg/L, whichever is greater	± 20 mV	± 10% of the previous reading or ± 1.0 NTU whichever is greater

Groundwater Monitoring Field Data Sheet

Project Name: Puma Terminal Project Number: E002.16056
 Location: Cataño P.R. Date: 12/19/16
 Arcadis PR Team: A.C. ME
 Well ID: MW-P123 Well casing Dia.: 2" Weather: Sunny

WELL CASING VOLUMES (per foot of water column)

1-1/4"=0.06 1-1/2"=0.09 2"=0.16 2-1/2"=0.26 3"=0.37 3-1/2"=0.5 4"=0.65 6"=1.47

Well Data

Well Depth:	<u>26.2</u>	ft. TOC	Gallons per foot:	<u>0.16</u>	gal
Depth to Water:	<u>8.00</u>	ft. TOC	Gallons per well casing (Well Volume):	<u>2.80</u>	gal
Depth to SPH:	<u>17.5</u>	ft. TOC	Three well volumes (x3):	<u>8.40</u>	gal
Water Column in Well:	<u>17.5</u>	ft.	Placement of Pump Intake:	<u>15.45</u>	ft. TOC

Well Purging Information and Field Parameters

Well Purging Method: Peristaltic Pump - Number 12383 Monsoon Pump - Number _____ Other _____

Time	Depth to Groundwater (ft)	Flow Rate (ml/min)	Cumulative Volume (gal)	pH	Temp. (°C)	ORP mV	Turbidity (NTU)	Cond. (mS/cm)	D.O. (mg/L)	D.O. (%)
1321	<u>8.70</u>	<u>160ml/min</u>	<u>initial</u>							
1324	<u>9.85</u>	<u>160ml/min</u>	<u>480 ml</u>	<u>5.05</u>	<u>32.10</u>	<u>342.2</u>	<u>0.0</u>	<u>0.157</u>	<u>394.43</u>	
1325	<u>9.60</u>	<u>160ml/min</u>	<u>640 ml</u>	<u>5.02</u>	<u>32.68</u>	<u>367.3</u>	<u>0.0</u>	<u>0.157</u>	<u>403.90</u>	
1330	<u>9.53</u>	<u>160ml/min</u>	<u>800 ml</u>	<u>5.03</u>	<u>33.12</u>	<u>395.8</u>	<u>0.0</u>	<u>0.156</u>	<u>378.48</u>	
1333	<u>9.35</u>	<u>160ml/min</u>	<u>960 ml</u>	<u>5.03</u>	<u>34.19</u>	<u>410.0</u>	<u>0.0</u>	<u>0.156</u>	<u>373.31</u>	
1336	<u>9.24</u>	<u>160ml/min</u>	<u>1120 ml</u>	<u>5.03</u>	<u>34.20</u>	<u>414.7</u>	<u>0.0</u>	<u>0.156</u>	<u>356.17</u>	
1339	<u>9.82</u>	<u>160ml/min</u>	<u>1280 ml</u>	<u>4.96</u>	<u>32.53</u>	<u>412.2</u>	<u>0.0</u>	<u>0.153</u>	<u>333.30</u>	
1342	<u>10.13</u>	<u>160ml/min</u>	<u>1440 ml</u>	<u>4.87</u>	<u>32.09</u>	<u>421.8</u>	<u>0.0</u>	<u>0.151</u>	<u>293.80</u>	
1345	<u>10.11</u>	<u>160ml/min</u>	<u>1600 ml</u>	<u>4.87</u>	<u>32.24</u>	<u>289.6</u>	<u>0.0</u>	<u>0.150</u>	<u>241.25</u>	

Sampling Data

Sampling Method: Peristaltic Pump-Number: 12383 Other: _____ Sampling Time: 1420

Color: Clear Grey Light Grey Light Brown Brown Other: _____

Odor: Mild Strong -- Specify: None Visual Turbidity: Clear Low Medium High

Sample Parameters	Container Description	Preservative	Filtered y/n
<u>TPH-GRO</u>	<u>2</u> 4 Vials - 40 ml	<u>HCl</u>	<u>N</u>
<u>TPH-DRO-VOL</u>	<u>2</u> 1 amber - 500 ml	<u>None</u>	<u>N</u>
<u>TPH-ORO-DRO</u>	<u>2</u> 1 amber - 500 ml	<u>None</u>	<u>N</u>
<u>Lead SVOCs</u>	<u>2</u> plastic - 250 ml	<u>HNO3</u>	<u>N</u>
<u>PAH metals/mercury</u>	<u>1</u> 2 amber - 500 ml	<u>None</u>	<u>N</u>

Remarks: VOC 0.0 ppm

Sampler(s) Signature: AMV

ASTM-D6771-02: Stabilization of Parameters:

pH	Temp	Conductivity	Dissolved Oxygen	Eh or ORP	Turbidity
± 0.2 pH	± 0.2 °C	3% of reading	± 10% of reading or ± 0.2 mg/L, whichever is greater	± 20 mV	± 10% of the previous reading or ± 1.0 NTU whichever is greater

Groundwater Monitoring Field Data Sheet

Project Name: Puma Terminal Project Number: E002-16056
 Location: Catara PB Date: 12/19/16
 Arcadis PR Team: A.C M.P
 Well ID: MW-P122 Well casing Dia.: 2" Weather: cloud

WELL CASING VOLUMES (per foot of water column)

1-1/4"=0.06 1-1/2"=0.09 2"=0.16 2-1/2"=0.26 3"=0.37 3-1/2"=0.5 4"=0.65 6"=1.47

Well Data

Well Depth: <u>26.2</u> ft. TOC	Gallons per foot: <u>0.16</u> gal
Depth to Water: <u>14.83</u> ft. TOC	Gallons per well casing (Well Volume): <u>1.81</u> gal
Depth to SPH: _____ ft. TOC	Three well volumes (x3): <u>5.43</u> gal
Water Column in Well: <u>11.37</u> ft.	Placement of Pump Intake: <u>18.75</u> ft. TOC

Well Purging Information and Field Parameters

Well Purging Method: Peristaltic Pump - Number 12383 Monsoon Pump - Number _____ Other _____

Time	Depth to Groundwater (ft)	Flow Rate (ml/min)	Cumulative Volume (gal)	pH	Temp. (°C)	ORP mV	Turbidity (NTU)	Cond. (mS/cm)	D.O. (mg/L)	D.O. (%)
1129	14.83	160 ml/min	Initial							
1132	15.68	160 ml/min	480 ml	6.76	29.59	343.6	0.0	0.619	112.38	
1135	15.76	160 ml/min	960 ml	6.74	29.48	362.8	0.0	0.620	97.54	
1138	15.84	160 ml/min	1440 ml	6.74	29.50	371.7	0.0	0.622	91.25	
1141	15.93	160 ml/min	1920 ml	6.73	29.48	380.8	0.0	0.623	86.16	
1144	16.01	160 ml/min	2400 ml	6.72	29.48	388.4	0.0	0.625	80.93	
1147	16.11	160 ml/min	2880 ml	6.74	29.50	393.7	0.0	0.628	72.89 72.89	
1150	16.14	160 ml/min	3360 ml	6.72	29.57	395.3	0.0	0.634	72.05	
1153	16.09	160 ml/min	3840 ml	6.69	29.61	403.4	0.0	0.647	67.50	

Sampling Data

Sampling Method: Peristaltic Pump-Number: 12383 Other: _____ Sampling Time: 1203

Color: Clear Grey Light Grey Light Brown Brown Other: _____

Odor: Mild Strong -- Specify: None Visual Turbidity: Clear Low Medium High

Sample Parameters	Container Description	Preservative	Filtered y/n
TPH-GRO <u>VOC</u>	<u>2</u> Vials - 40 ml	HCl	N
TPH-DRO <u>CRD</u>	<u>2</u> ^{vial 40ml} amber - 500 ml	<u>HCl</u> None	N
TPH-ORO <u>DRO</u>	<u>2</u> amber - 500 ml	None	N
Lead <u>SVOCs</u>	1 plastic - 250 ml	HNO ₃	N
PAH <u>metals mercury</u>	<u>1</u> ^{125 ml} amber - 500 ml	None	N

Remarks: VOC 0.0 ppm

Sampler(s) Signature: [Signature]

ASTM-D6771-02: Stabilization of Parameters:

pH	Temp	Conductivity	Dissolved Oxygen	Eh or ORP	Turbidity
± 0.2 phu	± 0.2 °C	3% of reading	± 10% of reading or ± 0.2 mg/L, whichever is greater	± 20 mV	± 10% of the previous reading or ± 1.0 NTU whichever is greater

Groundwater Monitoring Field Data Sheet

Project Name: Puma Terminal Project Number: E002.16056
 Location: Catara P.A Date: 12/19/16
 Arcadis PR Team: A.L. M.F
 Well ID: MWP120 Well casing Dia.: 2" Weather: cloud

WELL CASING VOLUMES (per foot of water column)

1-1/4"=0.06 1-1/2"=0.09 2"=0.16 2-1/2"=0.26 3"=0.37 3-1/2"=0.5 4"=0.65 6"=1.47

Well Data

Well Depth:	<u>26.3</u>	ft. TOC	Gallons per foot:	<u>0.16</u>	gal
Depth to Water:	<u>13.20</u>	ft. TOC	Gallons per well casing (Well Volume):	<u>2.10</u>	gal
Depth to SPH:	<u>13.1</u>	ft. TOC	Three well volumes (x3):	<u>6.30</u>	gal
Water Column in Well:	<u>13.1</u>	ft.	Placement of Pump Intake:	<u>19.05</u>	ft. TOC

Well Purging Information and Field Parameters

Well Purging Method: Peristaltic Pump - Number 12383 Monsoon Pump - Number _____ Other _____

Time	Depth to Groundwater (ft)	Flow Rate (ml/min)	Cumulative Volume (gal) ml	pH	Temp. (°C)	ORP mV	Turbidity (NTU)	Cond. (mS/cm)	D.O. (mg/L)	D.O. (%)
1035	13.20	160ml/min	0	6.79	29.09	337.9	0.0	0.843	82.64	✓
1038	13.40	160ml/min	480 ml	6.79	29.09	337.9	0.0	0.843	82.64	✓
1041	13.39	160ml/min	960 ml	6.83	29.04	336.8	0.0	0.846	65.87	✓
1044	13.40	160ml/min	1440 ml	6.82	28.99	340.1	0.0	0.845	53.39	✓
1047	13.40	160ml/min	1920 ml	6.83	28.95	346.8	0.0	0.844	46.75	✓
1050	13.40	160ml/min	2400 ml	6.83	28.94	354.1	0.0	0.842	44.96	✓
1053										

Sampling Data

Sampling Method: Peristaltic Pump-Number: 12383 Other: _____ Sampling Time: 1110

Color: Clear Grey Light Grey Light Brown Brown Other: _____

Odor: Mild Strong -- Specify: None Visual Turbidity: Clear Low Medium High

Sample Parameters	Container Description	Preservative	Filtered y/n
TPH-GRO-VOL	2 4 Vials - 40 ml	HCl	N
TPH-DRO-GRO	2 ^{vial} amber - 500 ml	None HCl	N
TPH-ORO-DRO	2 amber - 500 ml	None	N
Lead Svoc's	1 plastic plastic - 250 ml	HNO ₃	N
PAH Metals / Mercury	1 ^{plastic} 2 amber - 500 ml 125	None	N

Remarks: VOC 0.0 PPM

Sampler(s) Signature: [Signature]

ASTM-D6771-02: Stabilization of Parameters:

pH	Temp	Conductivity	Dissolved Oxygen	Eh or ORP	Turbidity
± 0.2 phu	± 0.2 °C	3% of reading	± 10% of reading or ± 0.2 mg/L, whichever is greater	± 20 mV	± 10% of the previous reading or ± 1.0 NTU whichever is greater

Project Name and Number: Puerto Terminal 2002.16056 Project Location: Cataño P.R. Vehicle Make/Model/Lic #: Chevrolet Silverado 934305

Date	<u>12/19/16</u>	<u>12/20/16</u>	<u>12/21/16</u>	<u>12/22/16</u>
Vehicle Operator	<u>Ac</u>	<u>A.C</u>	<u>A.C</u>	<u>A.C</u>
Daily Odometer Reading	<u>32090</u>	<u>32104</u>	<u>32230</u>	<u>32320</u>

Daily	Acceptable	Deficient	N/A	Acceptable	Deficient	N/A	Acceptable	Deficient	N/A	Acceptable	Deficient	N/A	Acceptable	Deficient	N/A
Tires – condition/tread	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Tires – air pressure	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Jack/spare tire	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Light Switch	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Headlights	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Tail Lights	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Brake lights	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Turn signals	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
All glass and mirrors	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Windshield wipers	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Fuel	<input type="checkbox"/> F <input type="checkbox"/> % <input checked="" type="checkbox"/> %	<input type="checkbox"/> % <input type="checkbox"/> E	<input type="checkbox"/>	<input type="checkbox"/> F <input type="checkbox"/> % <input checked="" type="checkbox"/> %	<input type="checkbox"/> % <input type="checkbox"/> E	<input type="checkbox"/>	<input type="checkbox"/> F <input type="checkbox"/> % <input checked="" type="checkbox"/> %	<input type="checkbox"/> % <input type="checkbox"/> E	<input type="checkbox"/>	<input type="checkbox"/> F <input type="checkbox"/> % <input checked="" type="checkbox"/> %	<input type="checkbox"/> % <input checked="" type="checkbox"/> E	<input type="checkbox"/>	<input type="checkbox"/> F <input type="checkbox"/> % <input checked="" type="checkbox"/> %	<input type="checkbox"/> % <input type="checkbox"/> E	<input type="checkbox"/>
Parking brake	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Horn	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Steering wheel play	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Brakes	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Body damage	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Under vehicle – Leaks/obstructions	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Reverse warning	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Prepared for weather	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Overall vehicle cleanliness	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Weekly	Acceptable			Deficient			N/A								
Engine oil		<input checked="" type="checkbox"/>													
Coolant level		<input checked="" type="checkbox"/>													
Transmission oil level		<input checked="" type="checkbox"/>													
Brake fluid level		<input checked="" type="checkbox"/>													
Hydraulic oil		<input checked="" type="checkbox"/>													
Battery		<input checked="" type="checkbox"/>													
Belts/hoses		<input checked="" type="checkbox"/>													
Miscellaneous vehicle performance		<input checked="" type="checkbox"/>													

Trip Planning

JMP signed by all operators? Yes No

JMP located on site? Yes No

Modifications documented and approved? Yes No

Basic H&S supplies/equipment

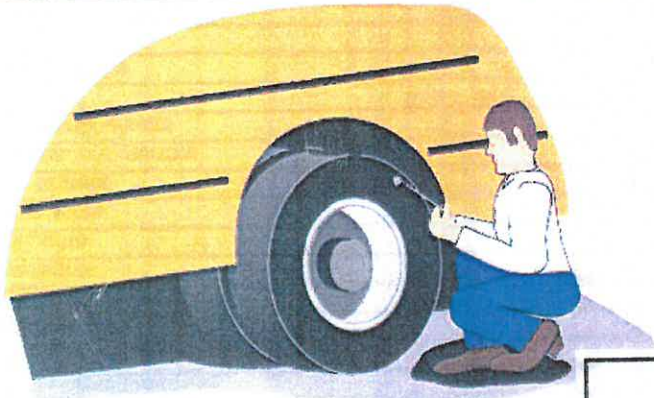
First aid kit Fire extinguisher Reflective safety vest

Camera Roadside warning equipment (flare, flag, etc.) Flashlight

If "deficient" is noted (other than fuel), please explain below and include what corrective action was taken and the date it was taken.

Safety Reminders

- Drive defensively - scan road ahead and anticipate actions of other drivers.
- Seat belts must be worn by all passengers at all times.
- Adjust seat / mirrors / headrest / steering wheel and ensure clean windows with no obstructions
- Secure loose items.
- Eliminate distractions - mobile phone use is not allowed while driving by ARCADIS policy, and is also forbidden by states, countries, regions.
- Obey all posted traffic signs / signals.
- Maintain safe following distance - use "4-second rule."
- Adjust speed / driving habits for adverse road/weather conditions.
- Limit backing up; look behind vehicle for traffic / pedestrians / parked vehicles / objects.
- Watch for pedestrians / cyclists / construction crews.
- Check mirrors frequently; stay out of other drivers' blind spots.
- Use signals prior to turns and lane changes.



Smith System®

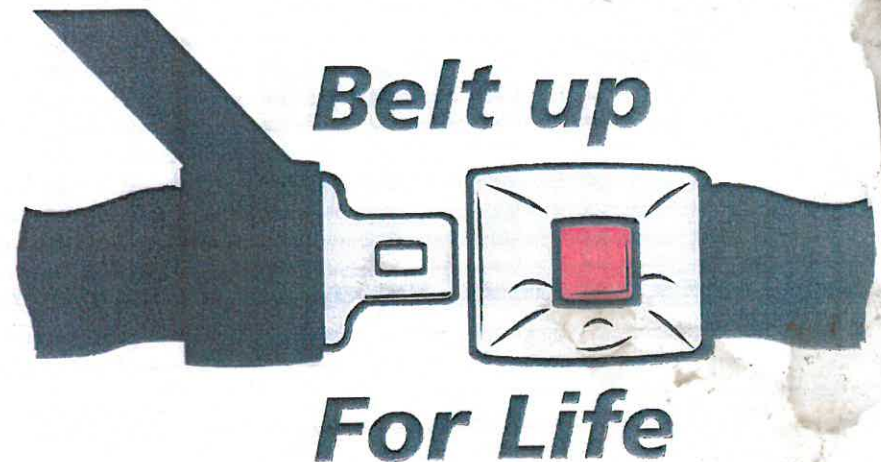
Key 1: Aim High in Steering®
Rule 1: Try not to back.
Rule 2: Plan on your departure upon your arrival.
Rule 3: The closest space isn't always the best place.

Key 2: Get The Big Picture®
Rule 4: Know what's near before you put it in gear.
Rule 5: Keep scanning as you roll or a sudden change may take its toll.

Key 3: Keep Your Eyes Moving®
Rule 6: Back Slowly. Take your time, prepare to stop on a dime.
Rule 7: To know where danger hides, don't forget about the front or the sides.

Key 4: Leave Yourself an Out®
Rule 8: Find a place with plenty of space.
Rule 9: Don't leave it to trust, back no further than you must.

Key 5: Make Sure They See You®
Rule 10: Control your fate, communicate.



Project Name and Number: 2002-1605B
Puerto Terminal

Project Location: Bayamon P.R.

Vehicle Make/Model/Lic #: Chevrolet Silverado 934305

Date	12/29/16	12/28/16	12/29/16	12
Vehicle Operator	AL	A.C.	A.C.	A.C.
Daily Odometer Reading	32551	32560	32580	32586

Daily	Acceptable			Deficient			N/A			Acceptable			Deficient			N/A		
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Tires – condition/tread	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Tires – air pressure	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Jack/spare tire	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Light Switch	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Headlights	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Tail Lights	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Brake lights	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Turn signals	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
All glass and mirrors	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Windshield wipers	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Fuel	<input type="checkbox"/> F <input type="checkbox"/> 0% <input type="checkbox"/> 1/2	<input type="checkbox"/> 1/2 <input type="checkbox"/> 3/4 <input type="checkbox"/> E	<input type="checkbox"/>	<input type="checkbox"/> F <input type="checkbox"/> 0% <input type="checkbox"/> 1/2	<input type="checkbox"/> 1/2 <input type="checkbox"/> 3/4 <input type="checkbox"/> E	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/> F <input type="checkbox"/> 0% <input type="checkbox"/> 1/2	<input type="checkbox"/> 1/2 <input type="checkbox"/> 3/4 <input type="checkbox"/> E	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/> F <input type="checkbox"/> 0% <input type="checkbox"/> 1/2	<input type="checkbox"/> 1/2 <input type="checkbox"/> 3/4 <input type="checkbox"/> E	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/> F <input type="checkbox"/> 0% <input type="checkbox"/> 1/2	<input type="checkbox"/> 1/2 <input type="checkbox"/> 3/4 <input type="checkbox"/> E	
Parking brake	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Horn	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Steering wheel play	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Brakes	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Body damage	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Under vehicle – Leaks/obstructions	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Reverse warning	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Prepared for weather	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Overall vehicle cleanliness	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Weekly	Acceptable						Deficient						N/A					
Engine oil	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Coolant level	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Transmission oil level	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Brake fluid level	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Hydraulic oil	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Battery	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Belts/hoses	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Miscellaneous vehicle performance	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

Trip Planning

JMP signed by all operators? Yes No

JMP located on site? Yes No

Modifications documented and approved? Yes No

Basic H&S supplies/equipment

First aid kit Fire extinguisher Reflective safety vest

Camera Roadside warning equipment (flare, flag, etc.) Flashlight

If "deficient" is noted (other than fuel), please explain below and include what corrective action was taken and the date it was taken.

Safety Reminders

- Drive defensively - scan road ahead and anticipate actions of other drivers.
- Seat belts must be worn by all passengers at all times.
- Adjust seat / mirrors / headrest / steering wheel and ensure clean windows with no obstructions
- Secure loose items.
- Eliminate distractions - mobile phone use is not allowed while driving by ARCADIS policy, and is also forbidden by states, countries, regions.
- Obey all posted traffic signs / signals.
- Maintain safe following distance - use "4-second rule."
- Adjust speed / driving habits for adverse road/weather conditions.
- Limit backing up; look behind vehicle for traffic / pedestrians / parked vehicles / objects.
- Watch for pedestrians / cyclists / construction crews.
- Check mirrors frequently; stay out of other drivers' blind spots.
- Use signals prior to turns and lane changes.

Smith System®

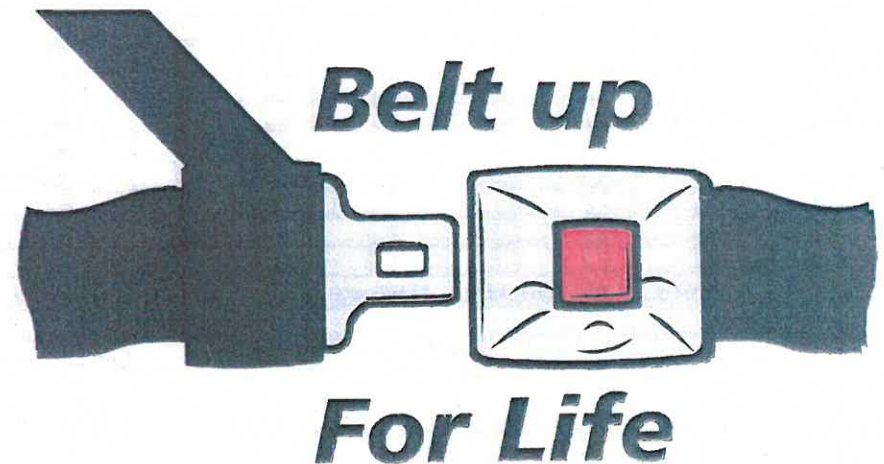
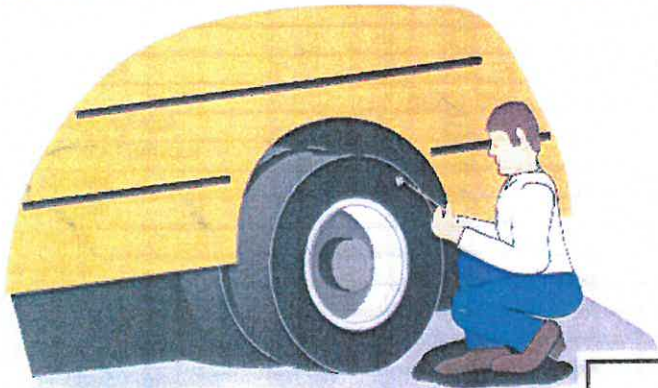
Key 1: Aim High in Steering®
Rule 1: Try not to back.
Rule 2: Plan on your departure upon your arrival.
Rule 3: The closest space isn't always the best place.

Key 2: Get The Big Picture®
Rule 4: Know what's near before you put it in gear.
Rule 5: Keep scanning as you roll or a sudden change may take its toll.

Key 3: Keep Your Eyes Moving®
Rule 6: Back Slowly. Take your time, prepare to stop on a dime.
Rule 7: To know where danger hides, don't forget about the front or the sides.

Key 4: Leave Yourself an Out®
Rule 8: Find a place with plenty of space.
Rule 9: Don't leave it to trust, back no further than you must.

Key 5: Make Sure They See You®
Rule 10: Control your fate, communicate.



Project Name and Number: <u>e002.1605B</u> <u>Pinna Terminal</u>	Project Location: <u>Bayamon P.R.</u>	Vehicle Make/Model/Lic #: <u>Chevrolette Silverado 934-305</u>
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Date	<u>01/03/13</u>	<u>01/01/13</u>	<u>01/05/13</u>
Vehicle Operator	<u>A.C</u>	<u>A.C</u>	<u>A.C</u>
Daily Odometer Reading	<u>32698</u>	<u>32820</u>	<u>33049</u>

Inspection:	Daily			Daily			Daily			Daily			Daily		
	Acceptable	Deficient	N/A	Acceptable	Deficient	N/A	Acceptable	Deficient	N/A	Acceptable	Deficient	N/A	Acceptable	Deficient	N/A
Tires – condition/tread	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Tires – air pressure	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Jack/spare tire	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Light Switch	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Headlights	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Tail Lights	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Brake lights	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Turn signals	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
All glass and mirrors	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Windshield wipers	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Fuel	<input type="checkbox"/> F <input type="checkbox"/> % <input checked="" type="checkbox"/> 1/2	<input type="checkbox"/> 1/4 <input type="checkbox"/> E	<input type="checkbox"/>	<input type="checkbox"/> F <input type="checkbox"/> % <input checked="" type="checkbox"/> 1/2	<input type="checkbox"/> 1/4 <input type="checkbox"/> E	<input type="checkbox"/>	<input type="checkbox"/> F <input type="checkbox"/> % <input checked="" type="checkbox"/> 1/2	<input type="checkbox"/> 1/4 <input type="checkbox"/> E	<input type="checkbox"/>	<input type="checkbox"/> F <input type="checkbox"/> % <input checked="" type="checkbox"/> 1/2	<input type="checkbox"/> 1/4 <input type="checkbox"/> E	<input type="checkbox"/>	<input type="checkbox"/> F <input type="checkbox"/> % <input checked="" type="checkbox"/> 1/2	<input type="checkbox"/> 1/4 <input type="checkbox"/> E	<input type="checkbox"/>
Parking brake	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Horn	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Steering wheel play	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Brakes	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Body damage	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Under vehicle – Leaks/obstructions	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Reverse warning	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Prepared for weather	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Overall vehicle cleanliness	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Weekly	Acceptable					Deficient					N/A				
Engine oil	<input checked="" type="checkbox"/>					<input type="checkbox"/>					<input type="checkbox"/>				
Coolant level	<input checked="" type="checkbox"/>					<input type="checkbox"/>					<input type="checkbox"/>				
Transmission oil level	<input checked="" type="checkbox"/>					<input type="checkbox"/>					<input type="checkbox"/>				
Brake fluid level	<input checked="" type="checkbox"/>					<input type="checkbox"/>					<input type="checkbox"/>				
Hydraulic oil	<input checked="" type="checkbox"/>					<input type="checkbox"/>					<input type="checkbox"/>				
Battery	<input checked="" type="checkbox"/>					<input type="checkbox"/>					<input type="checkbox"/>				
Belts/hoses	<input checked="" type="checkbox"/>					<input type="checkbox"/>					<input type="checkbox"/>				
Miscellaneous vehicle performance	<input checked="" type="checkbox"/>					<input type="checkbox"/>					<input type="checkbox"/>				

Trip Planning	
JMP signed by all operators?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
JMP located on site?	<input type="checkbox"/> Yes <input type="checkbox"/> No
Modifications documented and approved?	<input type="checkbox"/> Yes <input type="checkbox"/> No
Basic H&S supplies/equipment	<input checked="" type="checkbox"/> First aid kit <input checked="" type="checkbox"/> Fire extinguisher <input type="checkbox"/> Reflective safety vest <input checked="" type="checkbox"/> Camera <input type="checkbox"/> Roadside warning equipment (flare, flag, etc.) <input type="checkbox"/> Flashlight

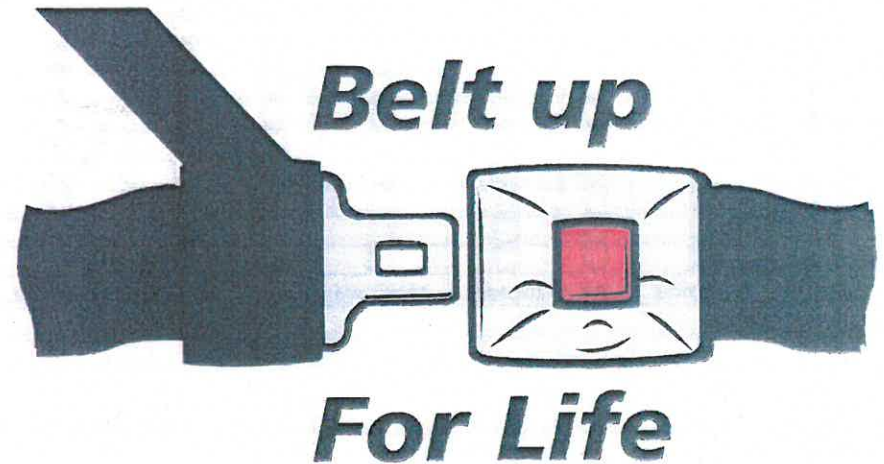
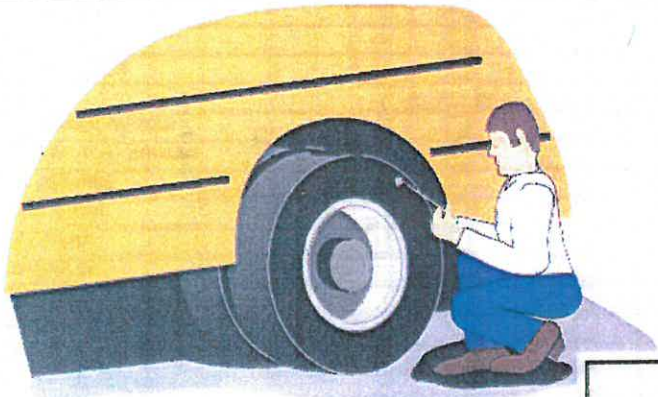
If "deficient" is noted (other than fuel), please explain below and include what corrective action was taken and the date it was taken.

Safety Reminders

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- Use signals prior to turns and lane changes.

Smith System®

- Key 1: Aim High in Steering®**
Rule 1: Try not to back.
Rule 2: Plan on your departure upon your arrival.
Rule 3: The closest space isn't always the best place.
- Key 2: Get The Big Picture®**
Rule 4: Know what's near before you put it in gear.
Rule 5: Keep scanning as you roll or a sudden change may take its toll.
- Key 3: Keep Your Eyes Moving®**
Rule 6: Back Slowly: Take your time, prepare to stop on a dime.
Rule 7: To know where danger hides, don't forget about the front or the sides.
- Key 4: Leave Yourself an Out®**
Rule 8: Find a place with plenty of space.
Rule 9: Don't leave it to trust, back no further than you must.
- Key 5: Make Sure They See You®**
Rule 10: Control your fate, communicate.



Project Name and Number: Puma Terminal E002-1605B **Project Location:** Bayamon P.R. **Vehicle Make/Model/Lic #:** Chevrolet Silverado 934-305

Date: 01/10/19 01/11/19 01/12/19
Vehicle Operator: A.L. A.C. A.L.
Daily Odometer Reading: 33433 33499 33580

Daily	Acceptable	Deficient	N/A	Acceptable	Deficient	N/A	Acceptable	Deficient	N/A	Acceptable	Deficient	N/A	Acceptable	Deficient	N/A
Tires – condition/tread	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Tires – air pressure	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Jack/spare tire	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Light Switch	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Headlights	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Tail Lights	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Brake lights	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Turn signals	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
All glass and mirrors	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Windshield wipers	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Fuel	<input type="checkbox"/> F <input type="checkbox"/> 0% <input type="checkbox"/> 1/4	<input checked="" type="checkbox"/> 1/2 <input type="checkbox"/> 3/4 <input type="checkbox"/> E	<input type="checkbox"/>	<input type="checkbox"/> F <input type="checkbox"/> 0% <input type="checkbox"/> 1/4	<input checked="" type="checkbox"/> 1/2 <input type="checkbox"/> 3/4 <input type="checkbox"/> E	<input type="checkbox"/>	<input type="checkbox"/> F <input type="checkbox"/> 0% <input type="checkbox"/> 1/4	<input checked="" type="checkbox"/> 1/2 <input type="checkbox"/> 3/4 <input type="checkbox"/> E	<input type="checkbox"/>	<input type="checkbox"/> F <input type="checkbox"/> 0% <input type="checkbox"/> 1/4	<input checked="" type="checkbox"/> 1/2 <input type="checkbox"/> 3/4 <input type="checkbox"/> E	<input type="checkbox"/>	<input type="checkbox"/> F <input type="checkbox"/> 0% <input type="checkbox"/> 1/4	<input checked="" type="checkbox"/> 1/2 <input type="checkbox"/> 3/4 <input type="checkbox"/> E	<input type="checkbox"/>
Parking brake	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Horn	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Steering wheel play	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Brakes	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Body damage	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Under vehicle – Leaks/obstructions	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Reverse warning	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Prepared for weather	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Overall vehicle cleanliness	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Weekly	Acceptable			Deficient			N/A								
Engine oil			<input checked="" type="checkbox"/>												
Coolant level			<input checked="" type="checkbox"/>												
Transmission oil level			<input checked="" type="checkbox"/>												
Brake fluid level			<input checked="" type="checkbox"/>												
Hydraulic oil			<input checked="" type="checkbox"/>												
Battery			<input checked="" type="checkbox"/>												
Belts/hoses			<input checked="" type="checkbox"/>												
Miscellaneous vehicle performance			<input checked="" type="checkbox"/>												

Trip Planning

JMP signed by all operators? Yes No

JMP located on site? Yes No

Modifications documented and approved? Yes No

Basic H&S supplies/equipment: First aid kit Fire extinguisher Reflective safety vest
 Camera Roadside warning equipment (flare, flag, etc.) Flashlight

If "deficient" is noted (other than fuel), please explain below and include what corrective action was taken and the date it was taken.

Safety Reminders

- Drive defensively - scan road ahead and anticipate actions of other drivers.
- Seat belts must be worn by all passengers at all times.
- Adjust seat / mirrors / headrest / steering wheel and ensure clean windows with no obstructions
- Secure loose items.
- Eliminate distractions - mobile phone use is not allowed while driving by ARCADIS policy, and is also forbidden by states, countries, regions.
- Obey all posted traffic signs / signals.
- Maintain safe following distance - use "4-second rule."
- Adjust speed / driving habits for adverse road/weather conditions.
- Limit backing up; look behind vehicle for traffic / pedestrians / parked vehicles / objects.
- Watch for pedestrians / cyclists / construction crews.
- Check mirrors frequently; stay out of other drivers' blind spots.
- Use signals prior to turns and lane changes.

Smith System®

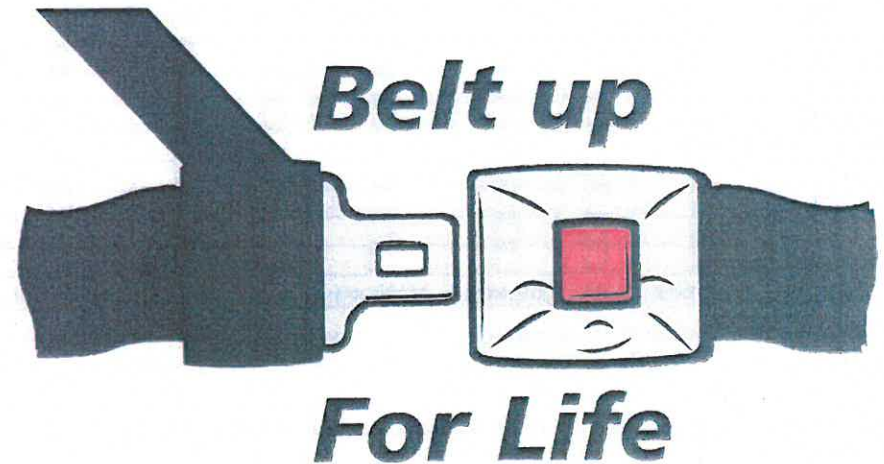
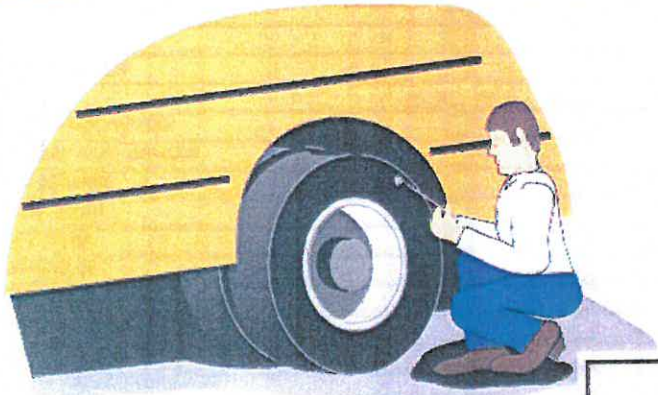
Key 1: Aim High in Steering®
Rule 1: Try not to back.
Rule 2: Plan on your departure upon your arrival.
Rule 3: The closest space isn't always the best place.

Key 2: Get The Big Picture®
Rule 4: Know what's near before you put it in gear.
Rule 5: Keep scanning as you roll or a sudden change may take its toll.

Key 3: Keep Your Eyes Moving®
Rule 6: Back Slowly. Take your time, prepare to stop on a dime.
Rule 7: To know where danger hides, don't forget about the front or the sides.

Key 4: Leave Yourself an Out®
Rule 8: Find a place with plenty of space.
Rule 9: Don't leave it to trust, back no further than you must.

Key 5: Make Sure They See You®
Rule 10: Control your fate, communicate.



Project Name and Number: Prma Terminal E002.1605B Project Location: Bayamón P.R. Vehicle Make/Model/Lic #: Chevrolet Silverado 934-305

Date	<u>01/17/11</u>	<u>01/18/11</u>	<u>01/19/11</u>		
Vehicle Operator	<u>AL</u>	<u>AL</u>	<u>AL</u>		
Daily Odometer Reading	<u>33730</u>	<u>33770</u>	<u>33811</u>		

Daily	Acceptable	Deficient	N/A	Acceptable	Deficient	N/A	Acceptable	Deficient	N/A	Acceptable	Deficient	N/A	Acceptable	Deficient	N/A
Tires – condition/tread	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Tires – air pressure	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Jack/spare tire	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Light Switch	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Headlights	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Tail Lights	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Brake lights	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Turn signals	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
All glass and mirrors	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Windshield wipers	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Fuel	<input type="checkbox"/> F <input type="checkbox"/> 0% <input type="checkbox"/> 1/2	<input checked="" type="checkbox"/> 1/4 <input type="checkbox"/> E	<input type="checkbox"/>	<input type="checkbox"/> F <input type="checkbox"/> 0% <input type="checkbox"/> 1/2	<input type="checkbox"/> 1/4 <input type="checkbox"/> E	<input type="checkbox"/>	<input type="checkbox"/> F <input type="checkbox"/> 0% <input type="checkbox"/> 1/2	<input type="checkbox"/> 1/4 <input type="checkbox"/> E	<input type="checkbox"/>	<input type="checkbox"/> F <input type="checkbox"/> 0% <input type="checkbox"/> 1/2	<input type="checkbox"/> 1/4 <input type="checkbox"/> E	<input type="checkbox"/>	<input type="checkbox"/> F <input type="checkbox"/> 0% <input type="checkbox"/> 1/2	<input type="checkbox"/> 1/4 <input type="checkbox"/> E	<input type="checkbox"/>
Parking brake	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Horn	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Steering wheel play	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Brakes	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Body damage	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Under vehicle – Leaks/obstructions	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Reverse warning	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Prepared for weather	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Overall vehicle cleanliness	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Weekly	Acceptable			Deficient			N/A								
Engine oil		<input checked="" type="checkbox"/>													
Coolant level		<input checked="" type="checkbox"/>													
Transmission oil level		<input checked="" type="checkbox"/>													
Brake fluid level		<input checked="" type="checkbox"/>													
Hydraulic oil		<input checked="" type="checkbox"/>													
Battery		<input checked="" type="checkbox"/>													
Belts/hoses		<input checked="" type="checkbox"/>													
Miscellaneous vehicle performance		<input checked="" type="checkbox"/>													

Trip Planning

JMP signed by all operators? Yes No

JMP located on site? Yes No

Modifications documented and approved? Yes No

Basic H&S supplies/equipment

First aid kit Fire extinguisher Reflective safety vest

Camera Roadside warning equipment (flare, flag, etc.) Flashlight

If "deficient" is noted (other than fuel), please explain below and include what corrective action was taken and the date it was taken.

Safety Reminders

- Drive defensively - scan road ahead and anticipate actions of other drivers.
- Seat belts must be worn by all passengers at all times.
- Adjust seat / mirrors / headrest / steering wheel and ensure clean windows with no obstructions
- Secure loose items.
- Eliminate distractions - mobile phone use is not allowed while driving by ARCADIS policy, and is also forbidden by states, countries, regions.
- Obey all posted traffic signs / signals.
- Maintain safe following distance - use "4-second rule."
- Adjust speed / driving habits for adverse road/weather conditions.
- Limit backing up; look behind vehicle for traffic / pedestrians / parked vehicles / objects.
- Watch for pedestrians / cyclists / construction crews.
- Check mirrors frequently; stay out of other drivers' blind spots.
- Use signals prior to turns and lane changes.

Smith System®

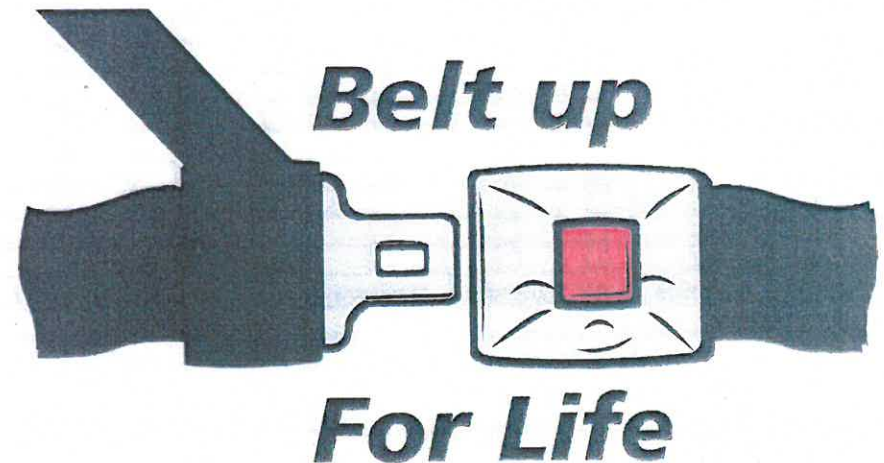
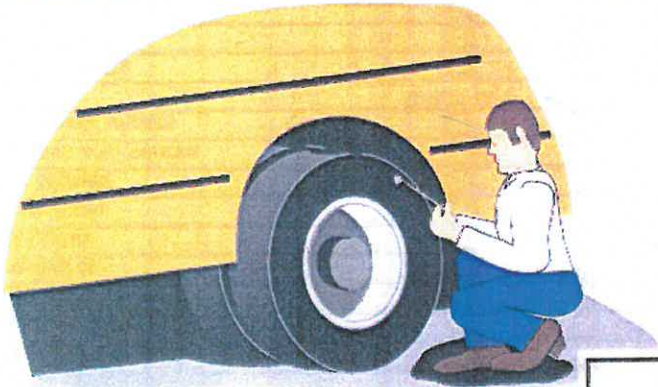
Key 1: Aim High in Steering®
 Rule 1: Try not to back.
 Rule 2: Plan on your departure upon your arrival.
 Rule 3: The closest space isn't always the best place.

Key 2: Get The Big Picture®
 Rule 4: Know what's near before you put it in gear.
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Key 3: Keep Your Eyes Moving®
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Key 4: Leave Yourself an Out®
 Rule 8: Find a place with plenty of space.
 Rule 9: Don't leave it to trust, back no further than you must.

Key 5: Make Sure They See You®
 Rule 10: Control your fate, communicate.



TAILGATE HEALTH & SAFETY MEETING FORM

This form documents the tailgate meeting conducted in accordance with the Project HASP. Personnel who perform work operations on-site during the day are required to attend this meeting and to acknowledge their attendance, at least daily.

Project Name: <u>Puma Terminal</u>		Project Location: <u>Catara P.B</u>	
Date: <u>12/19/16</u>	Time: <u>0934</u>	Conducted by: <u>A.C</u>	Signature/Title: <u>[Signature]</u>
Client:		Client Contact:	Subcontractor companies: <u>N/A</u>

TRACKING the Tailgate Meeting

Think through the Tasks (list the tasks for the day):

- | | | |
|-------------------------|--------------------------------|--|
| 1 <u>Mobilization</u> | 3 <u>Ground water sampling</u> | |
| 2 <u>Demobilization</u> | 4 <u>Equipment calibration</u> | |

Other Hazardous Activities - Check the box if there are any other ARCADIS, Client or other party activities that may pose hazards to ARCADIS operations If there are none, write "None" here: _____

If yes, describe them here: _____

How will they be controlled? _____

Pework Authorization - check activities to be conducted that require permit issuance or completion of a checklist or similar before work begins:

	Doc #		Doc #
<input type="checkbox"/> Not applicable	Doc #	<input type="checkbox"/> Working at Height	<input type="checkbox"/> Confined Space
<input type="checkbox"/> Energy Isolation (LOTO)		<input type="checkbox"/> Excavation/Trenching	<input type="checkbox"/> Hot Work
<input type="checkbox"/> Mechanical Lifting Ops		<input type="checkbox"/> Overhead & Buried Utilities	<input type="checkbox"/> Other permit

Discuss following questions (for some review previous day's post activities). **Check if yes :**

- | | | |
|---|--|---|
| <input type="checkbox"/> Incidents from day before to review? | <input type="checkbox"/> Lessons learned from the day before? | <input type="checkbox"/> Topics from Corp H&S to cover? |
| <input type="checkbox"/> Any corrective actions from yesterday? | <input type="checkbox"/> Will any work deviate from plan? | <input type="checkbox"/> Any Stop Work Interventions yesterday? |
| <input checked="" type="checkbox"/> JSAs or procedures are available? | <input type="checkbox"/> Field teams to "dirty" JSAs, as needed? | <input type="checkbox"/> If deviations, notify PM & client |
| <input type="checkbox"/> Staff has appropriate PPE? | <input type="checkbox"/> Staff knows Emergency Plan (EAP)? | <input type="checkbox"/> All equipment checked & OK? |
| | | <input type="checkbox"/> Staff knows gathering points? |

Comments: _____

Recognize the hazards (check all those that are discussed) (Examples are provided) and **Assess** the Risks (Low, Medium, High - circle risk level) - Provide an overall assessment of hazards to be encountered today and briefly list them under the hazard category.

<input checked="" type="checkbox"/> Gravity (i.e., ladder, scaffold, <u>trips</u>) (L M H)	<input checked="" type="checkbox"/> Motion (i.e., traffic, moving water) (L M H)	<input type="checkbox"/> Mechanical (i.e., augers, motors) (L M H)
<input checked="" type="checkbox"/> Electrical (i.e., utilities, lightning) (L M H)	<input checked="" type="checkbox"/> Pressure (i.e., <u>gas cylinders, wells</u>) (L M H)	<input checked="" type="checkbox"/> Environment (i.e., <u>heat, cold, ice</u>) (L M H)
<input checked="" type="checkbox"/> Chemical (i.e., fuel, acid, paint) (L M H)	<input checked="" type="checkbox"/> Biological (i.e., ticks, poison ivy) (L M H)	<input type="checkbox"/> Radiation (i.e., alpha, <u>sun, laser</u>) (L M H)
<input type="checkbox"/> Sound (i.e., machinery, generators) (L M H)	<input checked="" type="checkbox"/> Personal (i.e. alone, night, not fit) (L M H)	<input checked="" type="checkbox"/> Driving (i.e. <u>car, ATV, boat, dozer</u>) (L M H)

pump
voc
insect
Buddy system

Continue TRACK Process on Page 2

TAILGATE HEALTH & SAFETY MEETING FORM - Pg. 2

Control the hazards (Check all and discuss those methods to control the hazards that will be implemented for the day): Review the HASP, applicable JSAs, and other control processes. Discuss and document any additional control processes.

STOP WORK AUTHORITY (Must be addressed in every Tailgate meeting - (See statements below))

- | | | |
|---|---|--|
| <input type="checkbox"/> Elimination
<input type="checkbox"/> Engineering controls
<input checked="" type="checkbox"/> General PPE Usage
<input checked="" type="checkbox"/> Personal Hygiene
<input type="checkbox"/> Emergency Action Plan (EAP)
<input checked="" type="checkbox"/> JSA to be developed/used (<i>specify</i>) | <input type="checkbox"/> Substitution
<input type="checkbox"/> Administrative controls
<input type="checkbox"/> Hearing Conservation
<input type="checkbox"/> Exposure Guidelines
<input type="checkbox"/> Fall Protection
<input type="checkbox"/> TIP conducted (<i>specify job/JSA</i>) | <input type="checkbox"/> Isolation
<input checked="" type="checkbox"/> Monitoring
<input type="checkbox"/> Respiratory Protection
<input checked="" type="checkbox"/> Decon Procedures
<input type="checkbox"/> Work Zones/Site Control
<input type="checkbox"/> Traffic Control
<input type="checkbox"/> Other (<i>specify</i>) |
|---|---|--|

Signature and Certification Section - Site Staff and Visitors

Name/Company/Signature	Initial & Sign in Time	Initial & Sign out Time	I have read and understand the HASP
Marion Blue Awards M-D-T-S	0137	/	<input type="checkbox"/>
			<input type="checkbox"/>
			<input type="checkbox"/>
			<input type="checkbox"/>
			<input type="checkbox"/>
			<input type="checkbox"/>
			<input type="checkbox"/>
			<input type="checkbox"/>

<p>Important Information and Numbers</p> <p>All site staff should arrive fit for work. If not, they should report to the supervisor any restrictions or concerns.</p> <p>In the event of an injury, employees will call WorkCare at 1.800.455.6155 and then notify the field supervisor who will, in turn, notify Corp H&S at 1.720.344.3844.</p> <p>In the event of a motor vehicle accident, employees will notify the field supervisor who will then notify Corp H&S at 1.720.344.3844 and then Corp Legal at 1.720.344.3756.</p> <p>In the event of a utility strike or other damage to property of a client or 3rd party, employees will immediately notify the field supervisor, who will then immediately notify Corp Legal at 1.678.373.9556 and Corp H&S at 1.720.344.3500</p>	<p>Visitor Name/Co - not involved in work</p> <hr/> <p style="text-align: center;">In Out</p> <hr/> <p style="text-align: center;">In Out</p> <hr/> <p style="text-align: center;">In Out</p> <hr/> <p style="text-align: center;">In Out</p>	<p>I will STOP the job any time anyone is concerned or uncertain about health & safety or if anyone identifies a hazard or additional mitigation not recorded in the site, project, job or task hazard assessment.</p> <p>I will be alert to any changes in personnel, conditions at the work site or hazards not covered by the original hazard assessments.</p> <p>If it is necessary to STOP THE JOB, I will perform TRACK; and then amend the hazard assessments or the HASP as needed.</p> <p>I will not assist a subcontractor or other party with their work unless it is absolutely necessary and then only after I have done TRACK and I have thoroughly controlled the hazard.</p>
--	--	---

Post Daily Activities Review - Review at end of day or before next day's work (Check those applicable and explain:)

- Lessons learned and best practices learned today: _____
- Incidents that occurred today: _____
- Any Stop Work interventions today? _____
- Corrective/Preventive Actions needed for future work: _____
- Any other H&S issues: _____

Keep H&S 1st in all things

WorkCare - 1.800.455.6155

TAILGATE HEALTH & SAFETY MEETING FORM

This form documents the tailgate meeting conducted in accordance with the Project HASP. Personnel who perform work operations on-site during the day are required to attend this meeting and to acknowledge their attendance, at least daily.

Project Name: <u>Puma Terminal</u>		Project Location: <u>Cotoño P, 8</u>	
Date: <u>12/20/16</u>	Time: <u>0740</u>	Conducted by: <u>A. C</u>	Signature/Title: <u>[Signature]</u>
Client:		Client Contact:	Subcontractor companies: <u>N/A</u>

TRACKING the Tailgate Meeting

Think through the Tasks (list the tasks for the day):

- | | | |
|-------------------------|--------------------------------|---------|
| 1 <u>mobilization</u> | 3 <u>ground water sampling</u> | 5 _____ |
| 2 <u>demobilization</u> | 4 <u>Equipment calibration</u> | 6 _____ |

Other Hazardous Activities - Check the box if there are any other ARCADIS, Client or other party activities that may pose hazards to ARCADIS operations If there are none, write "None" here: _____

If yes, describe them here: _____

How will they be controlled? _____

Pework Authorization - check activities to be conducted that require permit issuance or completion of a checklist or similar before work begins:

	Doc #	Doc #
<input type="checkbox"/> Not applicable	Doc # _____	<input type="checkbox"/> Working at Height
<input type="checkbox"/> Energy Isolation (LOTO)	Doc # _____	<input type="checkbox"/> Confined Space
<input type="checkbox"/> Mechanical Lifting Ops	Doc # _____	<input type="checkbox"/> Excavation/Trenching
		<input type="checkbox"/> Hot Work
		<input type="checkbox"/> Overhead & Buried Utilities
		<input type="checkbox"/> Other permit

Discuss following questions (for some review previous day's post activities). **Check if yes :**

<input type="checkbox"/> Incidents from day before to review?	<input type="checkbox"/> Lessons learned from the day before?	<input type="checkbox"/> Topics from Corp H&S to cover?
<input type="checkbox"/> Any corrective actions from yesterday?	<input type="checkbox"/> Will any work deviate from plan?	<input type="checkbox"/> Any Stop Work Interventions yesterday?
<input checked="" type="checkbox"/> JSAs or procedures are available?	<input type="checkbox"/> Field teams to "dirty" JSAs, as needed?	<input type="checkbox"/> If deviations, notify PM & client
<input checked="" type="checkbox"/> Staff has appropriate PPE?	<input type="checkbox"/> Staff knows Emergency Plan (EAP)?	<input type="checkbox"/> All equipment checked & OK?
		<input type="checkbox"/> Staff knows gathering points?

Comments: _____

Recognize the hazards (check all those that are discussed) (Examples are provided) and **Assess the Risks** (Low, Medium, High - circle risk level) - Provide an overall assessment of hazards to be encountered today and briefly list them under the hazard category.

<input checked="" type="checkbox"/> Gravity (i.e., ladder, scaffold, trips) (L M H)	<input checked="" type="checkbox"/> Motion (i.e., traffic, moving water) (L M H)	<input type="checkbox"/> Mechanical (i.e., augers, motors) (L M H)
<input checked="" type="checkbox"/> Electrical (i.e., utilities, lightning) (L M H)	<input checked="" type="checkbox"/> Pressure (i.e., gas cylinders, wells) (L M H)	<input checked="" type="checkbox"/> Environment (i.e., heat, cold, ice) (L M H)
<input checked="" type="checkbox"/> Chemical (i.e., fuel, acid, paint) (L M H)	<input checked="" type="checkbox"/> Biological (i.e., ticks, poison ivy) (L M H)	<input checked="" type="checkbox"/> Radiation (i.e., alpha, sun, laser) (L M H)
<input type="checkbox"/> Sound (i.e., machinery, generators) (L M H)	<input checked="" type="checkbox"/> Personal (i.e., alone, night, not fit) (L M H)	<input checked="" type="checkbox"/> Driving (i.e., car, ATV, boat, dozer) (L M H)

Handwritten notes: amp, noise, muddy system

Continue TRACK Process on Page 2

TAILGATE HEALTH & SAFETY MEETING FORM - Pg. 2

Control the hazards (Check all and discuss those methods to control the hazards that will be implemented for the day): Review the HASP, applicable JSAs, and other control processes. Discuss and document any additional control processes.

STOP WORK AUTHORITY (Must be addressed in every Tailgate meeting - (See statements below))

<input type="checkbox"/> Elimination	<input type="checkbox"/> Substitution	<input type="checkbox"/> Isolation
<input checked="" type="checkbox"/> Engineering controls	<input type="checkbox"/> Administrative controls	<input checked="" type="checkbox"/> Monitoring
<input checked="" type="checkbox"/> General PPE Usage	<input type="checkbox"/> Hearing Conservation	<input type="checkbox"/> Respiratory Protection
<input checked="" type="checkbox"/> Personal Hygiene	<input type="checkbox"/> Exposure Guidelines	<input checked="" type="checkbox"/> Decon Procedures
<input checked="" type="checkbox"/> Emergency Action Plan (EAP)	<input type="checkbox"/> Fall Protection	<input type="checkbox"/> Work Zones/Site Control
<input checked="" type="checkbox"/> JSA to be developed/used (<i>specify</i>)	<input type="checkbox"/> TIP conducted (<i>specify job/JSA</i>)	<input type="checkbox"/> Traffic Control
		<input type="checkbox"/> Other (<i>specify</i>)

Signature and Certification Section - Site Staff and Visitors

Name/Company/Signature	Initial & Sign in Time	Initial & Sign out Time	I have read and understand the HASP
Marcos Pires Arcas M-041	0710		<input type="checkbox"/>
			<input type="checkbox"/>
			<input type="checkbox"/>
			<input type="checkbox"/>
			<input type="checkbox"/>
			<input type="checkbox"/>
			<input type="checkbox"/>
			<input type="checkbox"/>
			<input type="checkbox"/>

<p>Important Information and Numbers</p> <p>All site staff should arrive fit for work. If not, they should report to the supervisor any restrictions or concerns.</p> <p>In the event of an injury, employees will call WorkCare at 1.800.455.6155 and then notify the field supervisor who will, in turn, notify Corp H&S at 1.720.344.3844.</p> <p>In the event of a motor vehicle accident, employees will notify the field supervisor who will then notify Corp H&S at 1.720.344.3844 and then Corp Legal at 1.720.344.3756.</p> <p>In the event of a utility strike or other damage to property of a client or 3rd party, employees will immediately notify the field supervisor, who will then immediately notify Corp Legal at 1.678.373.9556 and Corp H&S at 1.720.344.3500</p>	<p>Visitor Name/Co - not involved in work</p> <table style="width: 100%; border-collapse: collapse;"> <tr><td style="border-bottom: 1px solid black; width: 50%;">In</td><td style="border-bottom: 1px solid black; width: 50%;">Out</td></tr> <tr><td style="border-bottom: 1px solid black;">In</td><td style="border-bottom: 1px solid black;">Out</td></tr> <tr><td style="border-bottom: 1px solid black;">In</td><td style="border-bottom: 1px solid black;">Out</td></tr> <tr><td style="border-bottom: 1px solid black;">In</td><td style="border-bottom: 1px solid black;">Out</td></tr> </table>	In	Out	In	Out	In	Out	In	Out	<p>I will STOP the job any time anyone is concerned or uncertain about health & safety or if anyone identifies a hazard or additional mitigation not recorded in the site, project, job or task hazard assessment.</p> <p>I will be alert to any changes in personnel, conditions at the work site or hazards not covered by the original hazard assessments.</p> <p>If it is necessary to STOP THE JOB, I will perform TRACK; and then amend the hazard assessments or the HASP as needed.</p> <p>I will not assist a subcontractor or other party with their work unless it is absolutely necessary and then only after I have done TRACK and I have thoroughly controlled the hazard.</p>
In	Out									
In	Out									
In	Out									
In	Out									

Post Daily Activities Review - Review at end of day or before next day's work (Check those applicable and explain:)

Lessons learned and best practices learned today: _____

Incidents that occurred today: _____

Any Stop Work interventions today? _____

Corrective/Preventive Actions needed for future work: _____

Any other H&S issues: _____

Keep H&S 1st in all things

WorkCare - 1.800.455.6155

TAILGATE HEALTH & SAFETY MEETING FORM

This form documents the tailgate meeting conducted in accordance with the Project HASP. Personnel who perform work operations on-site during the day are required to attend this meeting and to acknowledge their attendance, at least daily.

Project Name: <u>Puma Terminal</u>		Project Location: <u>Catara P/B</u>	
Date: <u>12/21/16</u>	Time: <u>0730</u>	Conducted by: <u>A.C.</u>	Signature/Title: <u>Mr. Ice</u>
Client:		Client Contact:	Subcontractor companies: <u>N/A</u>

TRACKING the Tailgate Meeting

Think through the Tasks (list the tasks for the day):

- | | | |
|-------------------------|--------------------------------|---------|
| 1 <u>Mobilization</u> | 3 <u>Ground water sampling</u> | 5 _____ |
| 2 <u>Demobilization</u> | 4 <u>Equipment calibration</u> | 6 _____ |

Other Hazardous Activities - Check the box if there are any other ARCADIS, Client or other party activities that may pose hazards to ARCADIS operations If there are none, write "None" here: _____

If yes, describe them here: _____

How will they be controlled? _____

Prework Authorization - check activities to be conducted that require permit issuance or completion of a checklist or similar before work begins:

	Doc #	Doc #
<input type="checkbox"/> Not applicable	Doc # _____	<input type="checkbox"/> Working at Height
<input type="checkbox"/> Energy Isolation (LOTO)	Doc # _____	<input type="checkbox"/> Confined Space
<input type="checkbox"/> Mechanical Lifting Ops	Doc # _____	<input type="checkbox"/> Excavation/Trenching
		<input type="checkbox"/> Hot Work
		<input type="checkbox"/> Overhead & Buried Utilities
		<input type="checkbox"/> Other permit

Discuss following questions (for some review previous day's post activities). **Check if yes :**

<input type="checkbox"/> Incidents from day before to review?	<input type="checkbox"/> Lessons learned from the day before?	<input type="checkbox"/> Topics from Corp H&S to cover?
<input type="checkbox"/> Any corrective actions from yesterday?	<input type="checkbox"/> Will any work deviate from plan?	<input type="checkbox"/> Any Stop Work Interventions yesterday?
<input checked="" type="checkbox"/> JSAs or procedures are available?	<input type="checkbox"/> Field teams to "dirty" JSAs, as needed?	<input type="checkbox"/> If deviations, notify PM & client
<input checked="" type="checkbox"/> Staff has appropriate PPE?	<input type="checkbox"/> Staff knows Emergency Plan (EAP)?	<input type="checkbox"/> All equipment checked & OK?
		<input type="checkbox"/> Staff knows gathering points?

Comments: _____

Recognize the hazards (check all those that are discussed) (Examples are provided) and **Assess the Risks** (Low, Medium, High - circle risk level) - Provide an overall assessment of hazards to be encountered today and briefly list them under the hazard category.

<input checked="" type="checkbox"/> Gravity (i.e., ladder, scaffold, trips) (L M H)	<input checked="" type="checkbox"/> Motion (i.e., traffic, moving water) (L M H)	<input type="checkbox"/> Mechanical (i.e., augers, motors) (L M H)
<input checked="" type="checkbox"/> Electrical (i.e., utilities, lightning) (L M H)	<input checked="" type="checkbox"/> Pressure (i.e., gas cylinders, wells) (L M H)	<input checked="" type="checkbox"/> Environment (i.e., heat, cold, ice) (L M H)
<input checked="" type="checkbox"/> Chemical (i.e., fuel, acid, paint) (L M H)	<input checked="" type="checkbox"/> Biological (i.e., ticks, poison ivy) (L M H)	<input checked="" type="checkbox"/> Radiation (i.e., alpha, sun, laser) (L M H)
<input type="checkbox"/> Sound (i.e., machinery, generators) (L M H)	<input checked="" type="checkbox"/> Personal (i.e. alone, night, not fit) (L M H)	<input checked="" type="checkbox"/> Driving (i.e., car, ATV, boat, dozer) (L M H)

rain
voc
Buddy system

Continue TRACK Process on Page 2

TAILGATE HEALTH & SAFETY MEETING FORM - Pg. 2

Control the hazards (Check all and discuss those methods to control the hazards that will be implemented for the day): Review the HASP, applicable JSAs, and other control processes. Discuss and document any additional control processes.

STOP WORK AUTHORITY (Must be addressed in every Tailgate meeting - (See statements below))

- | | | |
|---|---|--|
| <input type="checkbox"/> Elimination
<input type="checkbox"/> Engineering controls
<input checked="" type="checkbox"/> General PPE Usage
<input checked="" type="checkbox"/> Personal Hygiene
<input type="checkbox"/> Emergency Action Plan (EAP)
<input checked="" type="checkbox"/> JSA to be developed/used (<u>specify</u>) | <input type="checkbox"/> Substitution
<input type="checkbox"/> Administrative controls
<input type="checkbox"/> Hearing Conservation
<input type="checkbox"/> Exposure Guidelines
<input type="checkbox"/> Fall Protection
<input type="checkbox"/> TIP conducted (<u>specify job/JSA</u>) | <input type="checkbox"/> Isolation
<input checked="" type="checkbox"/> Monitoring
<input type="checkbox"/> Respiratory Protection
<input checked="" type="checkbox"/> Decon Procedures
<input type="checkbox"/> Work Zones/Site Control
<input type="checkbox"/> Traffic Control
<input type="checkbox"/> Other (<u>specify</u>) |
|---|---|--|

Signature and Certification Section - Site Staff and Visitors

Name/Company/Signature	Initial & Sign in Time	Initial & Sign out Time	I have read and understand the HASP
Mandal Thibault Arcadis M. Thibault	07:50		[initials]

<p>Important Information and Numbers</p> <p>All site staff should arrive fit for work. If not, they should report to the supervisor any restrictions or concerns.</p> <p>In the event of an injury, employees will call WorkCare at 1.800.455.6155 and then notify the field supervisor who will, in turn, notify Corp H&S at 1.720.344.3844.</p> <p>In the event of a motor vehicle accident, employees will notify the field supervisor who will then notify Corp H&S at 1.720.344.3844 and then Corp Legal at 1.720.344.3756.</p> <p>In the event of a utility strike or other damage to property of a client or 3rd party, employees will immediately notify the field supervisor, who will then immediately notify Corp Legal at 1.678.373.9556 and Corp H&S at 1.720.344.3500</p>	<p>Visitor Name/Co - not involved in work</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <tr><td style="width: 50%; height: 20px;">In</td><td style="width: 50%; height: 20px;">Out</td></tr> <tr><td style="height: 20px;">In</td><td style="height: 20px;">Out</td></tr> <tr><td style="height: 20px;">In</td><td style="height: 20px;">Out</td></tr> <tr><td style="height: 20px;">In</td><td style="height: 20px;">Out</td></tr> </table>	In	Out	In	Out	In	Out	In	Out	<p>I will STOP the job any time anyone is concerned or uncertain about health & safety or if anyone identifies a hazard or additional mitigation not recorded in the site, project, job or task hazard assessment.</p> <p>I will be alert to any changes in personnel, conditions at the work site or hazards not covered by the original hazard assessments.</p> <p>If it is necessary to STOP THE JOB, I will perform TRACK; and then amend the hazard assessments or the HASP as needed.</p> <p>I will not assist a subcontractor or other party with their work unless it is absolutely necessary and then only after I have done TRACK and I have thoroughly controlled the hazard.</p>
In	Out									
In	Out									
In	Out									
In	Out									

Post Daily Activities Review - Review at end of day or before next day's work (Check those applicable and explain:)

- Lessons learned and best practices learned today: _____
- Incidents that occurred today: _____
- Any Stop Work interventions today? _____
- Corrective/Preventive Actions needed for future work: _____
- Any other H&S issues: _____

Keep H&S 1st in all things

WorkCare - 1.800.455.6155

TAILGATE HEALTH & SAFETY MEETING FORM

This form documents the tailgate meeting conducted in accordance with the Project HASP. Personnel who perform work operations on-site during the day are required to attend this meeting and to acknowledge their attendance, at least daily.

Project Name: <u>Puma Terminal</u>		Project Location: <u>Catania P.R.</u>	
Date: <u>12/22/16</u>	Time: <u>0718</u>	Conducted by: <u>A.C.</u>	Signature/Title: <u>M. Tec</u>
Client:		Client Contact:	Subcontractor companies: <u>N/A</u>

TRACKING the Tailgate Meeting

Think through the Tasks (list the tasks for the day):

- | | | |
|-------------------------|--------------------------------|---------|
| 1 <u>Mobilization</u> | 3 <u>Ground water sampling</u> | 5 _____ |
| 2 <u>Demobilization</u> | 4 <u>Equipment calibration</u> | 6 _____ |

Other Hazardous Activities - Check the box if there are any other ARCADIS, Client or other party activities that may pose hazards to ARCADIS operations If there are none, write "None" here: _____

If yes, describe them here: _____

How will they be controlled? _____

Pework Authorization - check activities to be conducted that require permit issuance or completion of a checklist or similar before work begins:

	Doc #	Doc #
<input type="checkbox"/> Not applicable	Doc #	<input type="checkbox"/> Working at Height
<input type="checkbox"/> Energy Isolation (LOTO)		<input type="checkbox"/> Confined Space
<input type="checkbox"/> Mechanical Lifting Ops		<input type="checkbox"/> Excavation/Trenching
		<input type="checkbox"/> Hot Work
		<input type="checkbox"/> Overhead & Buried Utilities
		<input type="checkbox"/> Other permit

Discuss following questions (for some review previous day's post activities). **Check if yes :**

- | | | |
|---|---|---|
| <input type="checkbox"/> Incidents from day before to review? | <input type="checkbox"/> Lessons learned from the day before? | <input type="checkbox"/> Topics from Corp H&S to cover? |
| <input type="checkbox"/> Any corrective actions from yesterday? | <input type="checkbox"/> Will any work deviate from plan? | <input type="checkbox"/> Any Stop Work Interventions yesterday? |
| <input checked="" type="checkbox"/> JSAs or procedures are available? | <input type="checkbox"/> Field teams to "dirty" JSAs, as needed? | <input type="checkbox"/> If deviations, notify PM & client |
| <input checked="" type="checkbox"/> Staff has appropriate PPE? | <input checked="" type="checkbox"/> Staff knows Emergency Plan (EAP)? | <input type="checkbox"/> All equipment checked & OK? |
| | | <input type="checkbox"/> Staff knows gathering points? |

Comments: _____

Recognize the hazards (check all those that are discussed) (Examples are provided) and **Assess the Risks** (Low, Medium, High - circle risk level) - Provide an overall assessment of hazards to be encountered today and briefly list them under the hazard category.

<input checked="" type="checkbox"/> Gravity (i.e., ladder, scaffold, <u>trips</u>) (L M <u>H</u>)	<input checked="" type="checkbox"/> Motion (i.e., traffic, moving water) (L M <u>H</u>)	<input type="checkbox"/> Mechanical (i.e., augers, motors) (L M H)
<input checked="" type="checkbox"/> Electrical (i.e., utilities, lightning) (L <u>M</u> H)	<input checked="" type="checkbox"/> Pressure (i.e., <u>gas cylinders</u> , wells) (L <u>M</u> H)	<input checked="" type="checkbox"/> Environment (i.e., heat, cold, ice) (L M <u>H</u>)
<input checked="" type="checkbox"/> Chemical (i.e., fuel, acid, paint) (L M <u>H</u>)	<input checked="" type="checkbox"/> Biological (i.e., ticks, poison ivy) (L M <u>H</u>)	<input checked="" type="checkbox"/> Radiation (i.e., alpha, <u>sun</u> , laser) (L M <u>H</u>)
<input type="checkbox"/> Sound (i.e., machinery, generators) (L M H)	<input checked="" type="checkbox"/> Personal (i.e. alone, night, not fit) (L M <u>H</u>)	<input checked="" type="checkbox"/> Driving (i.e. <u>car</u> ATV, boat, dozer) (L M <u>H</u>)

prmp
voc
insect
body system

Continue TRACK Process on Page 2

TAILGATE HEALTH & SAFETY MEETING FORM - Pg. 2

Control the hazards (Check all and discuss those methods to control the hazards that will be implemented for the day): Review the HASP, applicable JSAs, and other control processes. Discuss and document any additional control processes.

STOP WORK AUTHORITY (Must be addressed in every Tailgate meeting - (See statements below))

<input type="checkbox"/> Elimination	<input type="checkbox"/> Substitution	<input type="checkbox"/> Isolation
<input type="checkbox"/> Engineering controls	<input type="checkbox"/> Administrative controls	<input checked="" type="checkbox"/> Monitoring
<input checked="" type="checkbox"/> General PPE Usage	<input type="checkbox"/> Hearing Conservation	<input type="checkbox"/> Respiratory Protection
<input checked="" type="checkbox"/> Personal Hygiene	<input type="checkbox"/> Exposure Guidelines	<input checked="" type="checkbox"/> Decon Procedures
<input checked="" type="checkbox"/> Emergency Action Plan (EAP)	<input type="checkbox"/> Fall Protection	<input type="checkbox"/> Work Zones/Site Control
<input checked="" type="checkbox"/> JSA to be developed/used (<i>specify</i>)	<input type="checkbox"/> TIP conducted (<i>specify job/JSA</i>)	<input type="checkbox"/> Traffic Control
		<input type="checkbox"/> Other (<i>specify</i>)

Signature and Certification Section - Site Staff and Visitors

Name/Company/Signature	Initial & Sign in Time	Initial & Sign out Time	I have read and understand the HASP
MARCIAL PEREZ Acudas M. P.	MP		

<p>Important Information and Numbers</p> <p>All site staff should arrive fit for work. If not, they should report to the supervisor any restrictions or concerns.</p> <p>In the event of an injury, employees will call WorkCare at 1.800.455.6155 and then notify the field supervisor who will, in turn, notify Corp H&S at 1.720.344.3844.</p> <p>In the event of a motor vehicle accident, employees will notify the field supervisor who will then notify Corp H&S at 1.720.344.3844 and then Corp Legal at 1.720.344.3756.</p> <p>In the event of a utility strike or other damage to property of a client or 3rd party, employees will immediately notify the field supervisor, who will then immediately notify Corp Legal at 1.678.373.9556 and Corp H&S at 1.720.344.3500</p>	<p>Visitor Name/Co - not involved in work</p> <table style="width: 100%; border-collapse: collapse;"> <tr><td style="border-bottom: 1px solid black;">In</td><td style="border-bottom: 1px solid black;">Out</td></tr> <tr><td style="border-bottom: 1px solid black;">In</td><td style="border-bottom: 1px solid black;">Out</td></tr> <tr><td style="border-bottom: 1px solid black;">In</td><td style="border-bottom: 1px solid black;">Out</td></tr> <tr><td style="border-bottom: 1px solid black;">In</td><td style="border-bottom: 1px solid black;">Out</td></tr> </table>	In	Out	In	Out	In	Out	In	Out	<p>I will STOP the job any time anyone is concerned or uncertain about health & safety or if anyone identifies a hazard or additional mitigation not recorded in the site, project, job or task hazard assessment.</p> <p>I will be alert to any changes in personnel, conditions at the work site or hazards not covered by the original hazard assessments.</p> <p>If it is necessary to STOP THE JOB, I will perform TRACK; and then amend the hazard assessments or the HASP as needed.</p> <p>I will not assist a subcontractor or other party with their work unless it is absolutely necessary and then only after I have done TRACK and I have thoroughly controlled the hazard.</p>
In	Out									
In	Out									
In	Out									
In	Out									

Post Daily Activities Review - Review at end of day or before next day's work (Check those applicable and explain:)

Lessons learned and best practices learned today: _____

Incidents that occurred today: _____

Any Stop Work interventions today? _____

Corrective/Preventive Actions needed for future work: _____

Any other H&S issues: _____

Keep H&S 1st in all things WorkCare - 1.800.455.6155

TAILGATE HEALTH & SAFETY MEETING FORM

This form documents the tailgate meeting conducted in accordance with the Project HASP. Personnel who perform work operations on-site during the day are required to attend this meeting and to acknowledge their attendance, at least daily.

Project Name: <u>Puna Terminal</u>		Project Location: <u>Bayamon P.R</u>	
Date: <u>12/29/16</u>	Time: <u>0922</u>	Conducted by: <u>A.C.</u>	Signature/Title: <u>[Signature]</u>
Client:		Client Contact:	Subcontractor companies: <u>N/A</u>

TRACKING the Tailgate Meeting

Think through the Tasks (list the tasks for the day):

- | | | |
|--------------------------|--------------------------------|---------|
| 1 <u>Mobilization</u> | 3 <u>Ground water sampling</u> | 5 _____ |
| 2 <u>Desmobilization</u> | 4 <u>Equipment calibration</u> | 6 _____ |

Other Hazardous Activities - Check the box if there are any other ARCADIS, Client or other party activities that may pose hazards to ARCADIS operations If there are none, write "None" here: _____

If yes, describe them here: _____

How will they be controlled? _____

Pework Authorization - check activities to be conducted that require permit issuance or completion of a checklist or similar before work begins:

	Doc #		Doc #
<input type="checkbox"/> Not applicable	Doc #	<input type="checkbox"/> Working at Height	<input type="checkbox"/> Confined Space
<input type="checkbox"/> Energy Isolation (LOTO)	_____	<input type="checkbox"/> Excavation/Trenching	<input type="checkbox"/> Hot Work
<input type="checkbox"/> Mechanical Lifting Ops	_____	<input type="checkbox"/> Overhead & Buried Utilities	<input type="checkbox"/> Other permit

Discuss following questions (for some review previous day's post activities). Check if yes :

<input type="checkbox"/> Incidents from day before to review?	<input type="checkbox"/> Lessons learned from the day before?	<input type="checkbox"/> Topics from Corp H&S to cover?
<input type="checkbox"/> Any corrective actions from yesterday?	<input type="checkbox"/> Will any work deviate from plan?	<input type="checkbox"/> Any Stop Work Interventions yesterday?
<input checked="" type="checkbox"/> JSAs or procedures are available?	<input type="checkbox"/> Field teams to "dirty" JSAs, as needed?	<input type="checkbox"/> If deviations, notify PM & client
<input type="checkbox"/> Staff has appropriate PPE?	<input type="checkbox"/> Staff knows Emergency Plan (EAP)?	<input type="checkbox"/> All equipment checked & OK?
Comments: _____		<input type="checkbox"/> Staff knows gathering points?

Recognize the hazards (check all those that are discussed) (Examples are provided) and **Assess the Risks** (Low, Medium, High - circle risk level) - Provide an overall assessment of hazards to be encountered today and briefly list them under the hazard category.

<input checked="" type="checkbox"/> Gravity (i.e., ladder, scaffold, trips) (L M H)	<input checked="" type="checkbox"/> Motion (i.e., traffic, moving water) (L M H)	<input type="checkbox"/> Mechanical (i.e., augers, motors) (L M H)
<input type="checkbox"/> Electrical (i.e., utilities, lightning) (L M H)	<input checked="" type="checkbox"/> Pressure (i.e., gas cylinders, wells) (L M H)	<input checked="" type="checkbox"/> Environment (i.e., heat, cold, ice) (L M H)
<input checked="" type="checkbox"/> Chemical (i.e., fuel, acid, paint) (L M H)	<input checked="" type="checkbox"/> Biological (i.e., ticks, poison ivy) (L M H)	<input checked="" type="checkbox"/> Radiation (i.e., alpha, sun, laser) (L M H)
<input type="checkbox"/> Sound (i.e., machinery, generators) (L M H)	<input checked="" type="checkbox"/> Personal (i.e., alone, night, not fit) (L M H)	<input checked="" type="checkbox"/> Driving (i.e., car, ATV, boat, dozer) (L M H)

Handwritten notes: Pump, VOC, Rain, insect, Andon system

Continue TRACK Process on Page 2

TAILGATE HEALTH & SAFETY MEETING FORM - Pg. 2

Control the hazards (Check all and discuss those methods to control the hazards that will be implemented for the day): Review the HASP, applicable JSAs, and other control processes. Discuss and document any additional control processes.

STOP WORK AUTHORITY (Must be addressed in every Tailgate meeting - (See statements below))

<input type="checkbox"/> Elimination <input type="checkbox"/> Engineering controls <input checked="" type="checkbox"/> General PPE Usage <input checked="" type="checkbox"/> Personal Hygiene <input checked="" type="checkbox"/> Emergency Action Plan (EAP) <input checked="" type="checkbox"/> JSA to be developed/used (<i>specify</i>)	<input type="checkbox"/> Substitution <input type="checkbox"/> Administrative controls <input type="checkbox"/> Hearing Conservation <input type="checkbox"/> Exposure Guidelines <input type="checkbox"/> Fall Protection <input type="checkbox"/> TIP conducted (<i>specify job/JSA</i>)	<input type="checkbox"/> Isolation <input checked="" type="checkbox"/> Monitoring <input type="checkbox"/> Respiratory Protection <input checked="" type="checkbox"/> Decon Procedures <input type="checkbox"/> Work Zones/Site Control <input checked="" type="checkbox"/> Traffic Control <input type="checkbox"/> Other (<i>specify</i>)
--	---	---

Signature and Certification Section - Site Staff and Visitors

Name/Company/Signature	Initial & Sign in Time	Initial & Sign out Time	I have read and understand the HASP
Marcel Flores Alvarado <i>M-FS</i>	0227		

<p>Important Information and Numbers</p> <p>All site staff should arrive fit for work. If not, they should report to the supervisor any restrictions or concerns.</p> <p>In the event of an injury, employees will call WorkCare at 1.800.455.6155 and then notify the field supervisor who will, in turn, notify Corp H&S at 1.720.344.3844.</p> <p>In the event of a motor vehicle accident, employees will notify the field supervisor who will then notify Corp H&S at 1.720.344.3844 and then Corp Legal at 1.720.344.3756.</p> <p>In the event of a utility strike or other damage to property of a client or 3rd party, employees will immediately notify the field supervisor, who will then immediately notify Corp Legal at 1.678.373.9556 and Corp H&S at 1.720.344.3500</p>	<p>Visitor Name/Co - not involved in work</p> <table style="width: 100%; border-collapse: collapse;"> <tr><td style="border-bottom: 1px solid black;">In</td><td style="border-bottom: 1px solid black;">Out</td></tr> <tr><td style="border-bottom: 1px solid black;">In</td><td style="border-bottom: 1px solid black;">Out</td></tr> <tr><td style="border-bottom: 1px solid black;">In</td><td style="border-bottom: 1px solid black;">Out</td></tr> <tr><td style="border-bottom: 1px solid black;">In</td><td style="border-bottom: 1px solid black;">Out</td></tr> </table>	In	Out	In	Out	In	Out	In	Out	<p>I will STOP the job any time anyone is concerned or uncertain about health & safety or if anyone identifies a hazard or additional mitigation not recorded in the site, project, job or task hazard assessment.</p> <p>I will be alert to any changes in personnel, conditions at the work site or hazards not covered by the original hazard assessments.</p> <p>If it is necessary to STOP THE JOB, I will perform TRACK; and then amend the hazard assessments or the HASP as needed.</p> <p>I will not assist a subcontractor or other party with their work unless it is absolutely necessary and then only after I have done TRACK and I have thoroughly controlled the hazard.</p>
In	Out									
In	Out									
In	Out									
In	Out									

Post Daily Activities Review - Review at end of day or before next day's work (Check those applicable and explain:)

Lessons learned and best practices learned today: _____

Incidents that occurred today: _____

Any Stop Work interventions today? _____

Corrective/Preventive Actions needed for future work: _____

Any other H&S issues: _____

Keep H&S 1st in all things

WorkCare - 1.800.455.6155

TAILGATE HEALTH & SAFETY MEETING FORM

This form documents the tailgate meeting conducted in accordance with the Project HASP. Personnel who perform work operations on-site during the day are required to attend this meeting and to acknowledge their attendance, at least daily.

Project Name: <u>Puma Terminal</u>		Project Location: <u>Bayamo P.R.</u>	
Date: <u>12/28/16</u>	Time: <u>0919</u>	Conducted by: <u>A. Colon</u>	Signature/Title: <u>M Taz</u>
Client:		Client Contact:	Subcontractor companies: <u>N/A</u>

TRACKING the Tailgate Meeting

Think through the Tasks (list the tasks for the day):

- | | | |
|-------------------------|--------------------------------|---------|
| 1 <u>Mobilization</u> | 3 <u>Equipment Calibration</u> | 5 _____ |
| 2 <u>Demobilization</u> | 4 <u>around water sampling</u> | 6 _____ |

Other Hazardous Activities - Check the box if there are any other ARCADIS, Client or other party activities that may pose hazards to ARCADIS operations If there are none, write "None" here: _____

If yes, describe them here: _____

How will they be controlled? _____

Pework Authorization - check activities to be conducted that require permit issuance or completion of a checklist or similar before work begins:

	Doc #	Doc #
<input type="checkbox"/> Not applicable	Doc #	<input type="checkbox"/> Working at Height
<input type="checkbox"/> Energy Isolation (LOTO)		<input type="checkbox"/> Confined Space
<input type="checkbox"/> Mechanical Lifting Ops		<input type="checkbox"/> Excavation/Trenching
		<input type="checkbox"/> Hot Work
		<input type="checkbox"/> Overhead & Buried Utilities
		<input type="checkbox"/> Other permit

Discuss following questions (for some review previous day's post activities). **Check if yes :**

<input type="checkbox"/> Incidents from day before to review?	<input type="checkbox"/> Lessons learned from the day before?	<input type="checkbox"/> Topics from Corp H&S to cover?
<input type="checkbox"/> Any corrective actions from yesterday?	<input type="checkbox"/> Will any work deviate from plan?	<input type="checkbox"/> Any Stop Work Interventions yesterday?
<input checked="" type="checkbox"/> JSAs or procedures are available?	<input type="checkbox"/> Field teams to "dirty" JSAs, as needed?	<input type="checkbox"/> If deviations, notify PM & client
<input type="checkbox"/> Staff has appropriate PPE?	<input checked="" type="checkbox"/> Staff knows Emergency Plan (EAP)?	<input type="checkbox"/> All equipment checked & OK?
		<input type="checkbox"/> Staff knows gathering points?

Comments: _____

Recognize the hazards (check all those that are discussed) (Examples are provided) and **Assess the Risks** (Low, Medium, High - circle risk level) - Provide an overall assessment of hazards to be encountered today and briefly list them under the hazard category.

<input checked="" type="checkbox"/> Gravity (i.e., ladder, scaffold, <u>trips</u>) (L M <u>H</u>)	<input checked="" type="checkbox"/> Motion (i.e., traffic, moving water) (L M <u>H</u>)	<input type="checkbox"/> Mechanical (i.e., augers, motors) (L M H)
<input checked="" type="checkbox"/> Electrical (i.e., utilities, lightning) (L M H)	<input checked="" type="checkbox"/> Pressure (i.e., <u>gas cylinders</u> , wells) (L M <u>H</u>)	<input checked="" type="checkbox"/> Environment (i.e., <u>heat</u> , cold, ice) (L M <u>H</u>)
<input checked="" type="checkbox"/> Chemical (i.e., fuel, acid, paint) (L M <u>H</u>)	<input checked="" type="checkbox"/> Biological (i.e., ticks, poison ivy) (L M <u>H</u>)	<input checked="" type="checkbox"/> Radiation (i.e., alpha, sun, laser) (L M <u>H</u>)
<input type="checkbox"/> Sound (i.e., machinery, generators) (L M H)	<input checked="" type="checkbox"/> Personal (i.e. alone, night, not fit) (L M <u>H</u>)	<input checked="" type="checkbox"/> Driving (i.e. car, ATV, boat, dozer) (L M <u>H</u>)

pump
vol
insect
body system

Continue TRACK Process on Page 2

TAILGATE HEALTH & SAFETY MEETING FORM - Pg. 2

Control the hazards (Check all and discuss those methods to control the hazards that will be implemented for the day): Review the HASP, applicable JSAs, and other control processes. Discuss and document any additional control processes.

STOP WORK AUTHORITY (Must be addressed in every Tailgate meeting - (See statements below))

<input type="checkbox"/> Elimination	<input type="checkbox"/> Substitution	<input type="checkbox"/> Isolation
<input type="checkbox"/> Engineering controls	<input type="checkbox"/> Administrative controls	<input checked="" type="checkbox"/> Monitoring
<input checked="" type="checkbox"/> General PPE Usage	<input type="checkbox"/> Hearing Conservation	<input checked="" type="checkbox"/> Respiratory Protection
<input checked="" type="checkbox"/> Personal Hygiene	<input type="checkbox"/> Exposure Guidelines	<input checked="" type="checkbox"/> Decon Procedures
<input type="checkbox"/> Emergency Action Plan (EAP)	<input type="checkbox"/> Fall Protection	<input type="checkbox"/> Work Zones/Site Control
<input checked="" type="checkbox"/> JSA to be developed/used (<u>specify</u>)	<input type="checkbox"/> TIP conducted (<u>specify job/JSA</u>)	<input type="checkbox"/> Traffic Control
		<input type="checkbox"/> Other (<u>specify</u>)

Signature and Certification Section - Site Staff and Visitors

Name/Company/Signature	Initial & Sign in Time	Initial & Sign out Time	I have read and understand the HASP
Marcial Flores Arcades <i>[Signature]</i>	0219		<input checked="" type="checkbox"/>

<p>Important Information and Numbers</p> <p>All site staff should arrive fit for work. If not, they should report to the supervisor any restrictions or concerns.</p> <p>In the event of an injury, employees will call WorkCare at 1.800.455.6155 and then notify the field supervisor who will, in turn, notify Corp H&S at 1.720.344.3844.</p> <p>In the event of a motor vehicle accident, employees will notify the field supervisor who will then notify Corp H&S at 1.720.344.3844 and then Corp Legal at 1.720.344.3756.</p> <p>In the event of a utility strike or other damage to property of a client or 3rd party, employees will immediately notify the field supervisor, who will then immediately notify Corp Legal at 1.678.373.9556 and Corp H&S at 1.720.344.3500</p>	<p>Visitor Name/Co - not involved in work</p> <table style="width: 100%; border-collapse: collapse;"> <tr><td style="border-bottom: 1px solid black;">In</td><td style="border-bottom: 1px solid black;">Out</td></tr> <tr><td style="border-bottom: 1px solid black;">In</td><td style="border-bottom: 1px solid black;">Out</td></tr> <tr><td style="border-bottom: 1px solid black;">In</td><td style="border-bottom: 1px solid black;">Out</td></tr> <tr><td style="border-bottom: 1px solid black;">In</td><td style="border-bottom: 1px solid black;">Out</td></tr> </table>	In	Out	In	Out	In	Out	In	Out	<p>I will STOP the job any time anyone is concerned or uncertain about health & safety or if anyone identifies a hazard or additional mitigation not recorded in the site, project, job or task hazard assessment.</p> <p>I will be alert to any changes in personnel, conditions at the work site or hazards not covered by the original hazard assessments.</p> <p>If it is necessary to STOP THE JOB, I will perform TRACK; and then amend the hazard assessments or the HASP as needed.</p> <p>I will not assist a subcontractor or other party with their work unless it is absolutely necessary and then only after I have done TRACK and I have thoroughly controlled the hazard.</p>
In	Out									
In	Out									
In	Out									
In	Out									

Post Daily Activities Review - Review at end of day or before next day's work (Check those applicable and explain:)

Lessons learned and best practices learned today: _____

Incidents that occurred today: _____

Any Stop Work interventions today? _____

Corrective/Preventive Actions needed for future work: _____

Any other H&S issues: _____

Keep H&S 1st in all things

WorkCare - 1.800.455.6155

TAILGATE HEALTH & SAFETY MEETING FORM

This form documents the tailgate meeting conducted in accordance with the Project HASP. Personnel who perform work operations on-site during the day are required to attend this meeting and to acknowledge their attendance, at least daily.

Project Name: <u>Puma Terminal</u>		Project Location: <u>Bayamon P.R.</u>	
Date: <u>12/29/16</u>	Time: <u>0840</u>	Conducted by: <u>A.C.</u>	Signature/Title: <u>M. Tex</u>
Client:		Client Contact:	Subcontractor companies: <u>N/A</u>

TRACKING the Tailgate Meeting

Think through the Tasks (list the tasks for the day):

- | | | |
|-------------------------|--------------------------------|---------|
| 1 <u>Mobilization</u> | 3 <u>groundwater sampling</u> | 5 _____ |
| 2 <u>Demobilization</u> | 4 <u>Equipment calibration</u> | 6 _____ |

Other Hazardous Activities - Check the box if there are any other ARCADIS, Client or other party activities that may pose hazards to ARCADIS operations

If there are none, write "None" here: _____

If yes, describe them here: _____

How will they be controlled? _____

Prework Authorization - check activities to be conducted that require permit issuance or completion of a checklist or similar before work begins:

	Doc #		Doc #
<input type="checkbox"/> Not applicable	Doc #	<input type="checkbox"/> Working at Height	Doc #
<input type="checkbox"/> Energy Isolation (LOTO)	_____	<input type="checkbox"/> Excavation/Trenching	_____
<input type="checkbox"/> Mechanical Lifting Ops	_____	<input type="checkbox"/> Overhead & Buried Utilities	_____
		<input type="checkbox"/> Confined Space	_____
		<input type="checkbox"/> Hot Work	_____
		<input type="checkbox"/> Other permit	_____

Discuss following questions (for some review previous day's post activities). **Check if yes :**

- | | | |
|---|---|---|
| <input type="checkbox"/> Incidents from day before to review? | <input type="checkbox"/> Lessons learned from the day before? | <input type="checkbox"/> Topics from Corp H&S to cover? |
| <input type="checkbox"/> Any corrective actions from yesterday? | <input type="checkbox"/> Will any work deviate from plan? | <input type="checkbox"/> Any Stop Work Interventions yesterday? |
| <input checked="" type="checkbox"/> JSAs or procedures are available? | <input type="checkbox"/> Field teams to "dirty" JSAs, as needed? | <input type="checkbox"/> If deviations, notify PM & client |
| <input checked="" type="checkbox"/> Staff has appropriate PPE? | <input checked="" type="checkbox"/> Staff knows Emergency Plan (EAP)? | <input type="checkbox"/> All equipment checked & OK? |
| | | <input type="checkbox"/> Staff knows gathering points? |

Comments: _____

Recognize the hazards (check all those that are discussed) (Examples are provided) and **Assess the Risks** (Low, Medium, High - circle risk level) - Provide an overall assessment of hazards to be encountered today and briefly list them under the hazard category.

<input type="checkbox"/> Gravity (i.e., ladder, scaffold, trips) (L M <u>H</u>)	<input checked="" type="checkbox"/> Motion (i.e., traffic, moving water) (L M <u>H</u>)	<input type="checkbox"/> Mechanical (i.e., augers, motors) (L M H)
<input checked="" type="checkbox"/> Electrical (i.e., utilities, lightning) (L M <u>H</u>)	<input checked="" type="checkbox"/> Pressure (i.e., gas cylinders, wells) (L M <u>H</u>)	<input checked="" type="checkbox"/> Environment (i.e., heat, cold, ice) (L M <u>H</u>)
<input checked="" type="checkbox"/> Chemical (i.e., fuel, acid, paint) (L M <u>H</u>)	<input checked="" type="checkbox"/> Biological (i.e., ticks, poison ivy) (L M <u>H</u>)	<input checked="" type="checkbox"/> Radiation (i.e., alpha, sun, laser) (L M <u>H</u>)
<input type="checkbox"/> Sound (i.e., machinery, generators) (L M H)	<input checked="" type="checkbox"/> Personal (i.e. alone, night, not fit) (L M H)	<input checked="" type="checkbox"/> Driving (i.e. car, ATV, boat, dozer) (L M <u>H</u>)

pump
roc
insect
Buddy System

Continue TRACK Process on Page 2

TAILGATE HEALTH & SAFETY MEETING FORM - Pg. 2

Control the hazards (Check all and discuss those methods to control the hazards that will be implemented for the day): Review the HASP, applicable JSAs, and other control processes. Discuss and document any additional control processes.

STOP WORK AUTHORITY (Must be addressed in every Tailgate meeting - (See statements below))

<input type="checkbox"/> Elimination	<input type="checkbox"/> Substitution	<input type="checkbox"/> Isolation
<input type="checkbox"/> Engineering controls	<input type="checkbox"/> Administrative controls	<input checked="" type="checkbox"/> Monitoring
<input checked="" type="checkbox"/> General PPE Usage	<input type="checkbox"/> Hearing Conservation	<input type="checkbox"/> Respiratory Protection
<input checked="" type="checkbox"/> Personal Hygiene	<input type="checkbox"/> Exposure Guidelines	<input checked="" type="checkbox"/> Decon Procedures
<input type="checkbox"/> Emergency Action Plan (EAP)	<input type="checkbox"/> Fall Protection	<input type="checkbox"/> Work Zones/Site Control
<input checked="" type="checkbox"/> JSA to be developed/used (<u>specify</u>)	<input type="checkbox"/> TIP conducted (<u>specify job/JSA</u>)	<input type="checkbox"/> Traffic Control
		<input type="checkbox"/> Other (<u>specify</u>)

Signature and Certification Section - Site Staff and Visitors

Name/Company/Signature	Initial & Sign in Time	Initial & Sign out Time	I have read and understand the HASP
<i>Manuel Flores Ananda M. J.S.</i>	09:07		<input checked="" type="checkbox"/>

Important Information and Numbers

All site staff should arrive fit for work. If not, they should report to the supervisor any restrictions or concerns.

In the event of an injury, employees will call WorkCare at 1.800.455.6155 and then notify the field supervisor who will, in turn, notify Corp H&S at 1.720.344.3844.

In the event of a motor vehicle accident, employees will notify the field supervisor who will then notify Corp H&S at 1.720.344.3844 and then Corp Legal at 1.720.344.3756.

In the event of a utility strike or other damage to property of a client or 3rd party, employees will immediately notify the field supervisor, who will then immediately notify Corp Legal at 1.678.373.9556 and Corp H&S at 1.720.344.3500

Visitor Name/Co - not involved in work

In	Out
In	Out
In	Out
In	Out

I will **STOP** the job any time anyone is concerned or uncertain about health & safety or if anyone identifies a hazard or additional mitigation not recorded in the site, project, job or task hazard assessment.

I will be alert to any changes in personnel, conditions at the work site or hazards not covered by the original hazard assessments.

If it is necessary to **STOP THE JOB**, I will perform **TRACK**; and then amend the hazard assessments or the HASP as needed.

I will **not** assist a subcontractor or other party with their work unless it is absolutely necessary and then only after I have done **TRACK** and I have thoroughly controlled the hazard.

Post Daily Activities Review - Review at end of day or before next day's work (Check those applicable and explain:)

Lessons learned and best practices learned today: _____

Incidents that occurred today: _____

Any Stop Work interventions today? _____

Corrective/Preventive Actions needed for future work: _____

Any other H&S issues: _____

Keep H&S 1st in all things

WorkCare - 1.800.455.6155

TAILGATE HEALTH & SAFETY MEETING FORM

This form documents the tailgate meeting conducted in accordance with the Project HASP. Personnel who perform work operations on-site during the day are required to attend this meeting and to acknowledge their attendance, at least daily.

Project Name: <u>Puma Terminal</u>		Project Location: <u>Bayamon P.B</u>	
Date: <u>01/03/11</u>	Time: <u>0715</u>	Conducted by: <u>A.C.</u>	Signature/Title: <u>M Tee</u>
Client:		Client Contact:	Subcontractor companies: <u>N/A</u>

TRACKING the Tailgate Meeting

Think through the Tasks (list the tasks for the day):

- | | | |
|-------------------------|--------------------------------|---------|
| 1 <u>mobilization</u> | 3 <u>ground water sampling</u> | 5 _____ |
| 2 <u>demobilization</u> | 4 <u>Equipment calibration</u> | 6 _____ |

Other Hazardous Activities - Check the box if there are any other ARCADIS, Client or other party activities that may pose hazards to ARCADIS operations If there are none, write "None" here: _____

If yes, describe them here: _____

How will they be controlled? _____

Pework Authorization - check activities to be conducted that require permit issuance or completion of a checklist or similar before work begins:

	Doc #	Doc #
<input type="checkbox"/> Not applicable	Doc # _____	<input type="checkbox"/> Working at Height
<input type="checkbox"/> Energy Isolation (LOTO)	Doc # _____	<input type="checkbox"/> Confined Space
<input type="checkbox"/> Mechanical Lifting Ops	Doc # _____	<input type="checkbox"/> Excavation/Trenching
		<input type="checkbox"/> Hot Work
		<input type="checkbox"/> Overhead & Buried Utilities
		<input type="checkbox"/> Other permit

Discuss following questions (for some review previous day's post activities). **Check if yes :**

<input type="checkbox"/> Incidents from day before to review?	<input type="checkbox"/> Lessons learned from the day before?	<input type="checkbox"/> Topics from Corp H&S to cover?
<input type="checkbox"/> Any corrective actions from yesterday?	<input type="checkbox"/> Will any work deviate from plan?	<input type="checkbox"/> Any Stop Work Interventions yesterday?
<input checked="" type="checkbox"/> JSAs or procedures are available?	<input type="checkbox"/> Field teams to "dirty" JSAs, as needed?	<input type="checkbox"/> If deviations, notify PM & client
<input checked="" type="checkbox"/> Staff has appropriate PPE?	<input checked="" type="checkbox"/> Staff knows Emergency Plan (EAP)?	<input type="checkbox"/> All equipment checked & OK?
		<input type="checkbox"/> Staff knows gathering points?

Comments: _____

Recognize the hazards (check all those that are discussed) (Examples are provided) and **Assess the Risks** (Low, Medium, High - circle risk level) - Provide an overall assessment of hazards to be encountered today and briefly list them under the hazard category.

<input checked="" type="checkbox"/> Gravity (i.e., ladder, scaffold, trips) (L M <u>H</u>)	<input checked="" type="checkbox"/> Motion (i.e., traffic, moving water) (L M <u>H</u>)	<input type="checkbox"/> Mechanical (i.e., augers, motors) (L M H)
<input type="checkbox"/> Electrical (i.e., utilities, lightning) (L M H)	<input checked="" type="checkbox"/> Pressure (i.e., gas cylinders, wells) (L M <u>H</u>)	<input checked="" type="checkbox"/> Environment (i.e., heat, cold, ice) (L M <u>H</u>)
<input checked="" type="checkbox"/> Chemical (i.e., fuel, acid, paint) (L M <u>H</u>)	<input checked="" type="checkbox"/> Biological (i.e., ticks, poison ivy) (L M <u>H</u>)	<input checked="" type="checkbox"/> Radiation (i.e., alpha, sun, laser) (L M <u>H</u>)
<input type="checkbox"/> Sound (i.e., machinery, generators) (L M H)	<input checked="" type="checkbox"/> Personal (i.e. alone, night, not fit) (L M <u>H</u>)	<input checked="" type="checkbox"/> Driving (i.e. car, ATV, boat, dozer) (L M <u>H</u>)

Handwritten notes: pump, voc, insect, end of system

Continue TRACK Process on Page 2

TAILGATE HEALTH & SAFETY MEETING FORM - Pg. 2

Control the hazards (Check all and discuss those methods to control the hazards that will be implemented for the day): Review the HASP, applicable JSAs, and other control processes. Discuss and document any additional control processes.

<input checked="" type="checkbox"/> STOP WORK AUTHORITY (Must be addressed in every Tailgate meeting - (See statements below))		
<input type="checkbox"/> Elimination	<input type="checkbox"/> Substitution	<input type="checkbox"/> Isolation
<input type="checkbox"/> Engineering controls	<input type="checkbox"/> Administrative controls	<input checked="" type="checkbox"/> Monitoring
<input checked="" type="checkbox"/> General PPE Usage	<input type="checkbox"/> Hearing Conservation	<input type="checkbox"/> Respiratory Protection
<input checked="" type="checkbox"/> Personal Hygiene	<input type="checkbox"/> Exposure Guidelines	<input checked="" type="checkbox"/> Decon Procedures
<input type="checkbox"/> Emergency Action Plan (EAP)	<input type="checkbox"/> Fall Protection	<input type="checkbox"/> Work Zones/Site Control
<input checked="" type="checkbox"/> JSA to be developed/used (<u>specify</u>)	<input type="checkbox"/> TIP conducted (<u>specify job/JSA</u>)	<input type="checkbox"/> Traffic Control
		<input type="checkbox"/> Other (<u>specify</u>)

Signature and Certification Section - Site Staff and Visitors

Name/Company/Signature	Initial & Sign in Time	Initial & Sign out Time	I have read and understand the HASP
<i>Marcial Flores Arcades U-Off</i>	0715		

<p>Important Information and Numbers</p> <p>All site staff should arrive fit for work. If not, they should report to the supervisor any restrictions or concerns.</p> <p>In the event of an injury, employees will call WorkCare at 1.800.455.6155 and then notify the field supervisor who will, in turn, notify Corp H&S at 1.720.344.3844.</p> <p>In the event of a motor vehicle accident, employees will notify the field supervisor who will then notify Corp H&S at 1.720.344.3844 and then Corp Legal at 1.720.344.3756.</p> <p>In the event of a utility strike or other damage to property of a client or 3rd party, employees will immediately notify the field supervisor, who will then immediately notify Corp Legal at 1.678.373.9556 and Corp H&S at 1.720.344.3500</p>	<p>Visitor Name/Co - not involved in work</p> <table style="width: 100%; border-collapse: collapse;"> <tr><td style="border-bottom: 1px solid black; width: 50%;"> </td><td style="border-bottom: 1px solid black; width: 50%;"> </td></tr> <tr><td style="border-bottom: 1px solid black;">In</td><td style="border-bottom: 1px solid black;">Out</td></tr> <tr><td style="border-bottom: 1px solid black;"> </td><td style="border-bottom: 1px solid black;"> </td></tr> <tr><td style="border-bottom: 1px solid black;">In</td><td style="border-bottom: 1px solid black;">Out</td></tr> <tr><td style="border-bottom: 1px solid black;"> </td><td style="border-bottom: 1px solid black;"> </td></tr> <tr><td style="border-bottom: 1px solid black;">In</td><td style="border-bottom: 1px solid black;">Out</td></tr> <tr><td style="border-bottom: 1px solid black;"> </td><td style="border-bottom: 1px solid black;"> </td></tr> <tr><td style="border-bottom: 1px solid black;">In</td><td style="border-bottom: 1px solid black;">Out</td></tr> </table>			In	Out			In	Out			In	Out			In	Out	<p>I will STOP the job any time anyone is concerned or uncertain about health & safety or if anyone identifies a hazard or additional mitigation not recorded in the site, project, job or task hazard assessment.</p> <p>I will be alert to any changes in personnel, conditions at the work site or hazards not covered by the original hazard assessments.</p> <p>If it is necessary to STOP THE JOB, I will perform TRACK; and then amend the hazard assessments or the HASP as needed.</p> <p>I will not assist a subcontractor or other party with their work unless it is absolutely necessary and then only after I have done TRACK and I have thoroughly controlled the hazard.</p>
In	Out																	
In	Out																	
In	Out																	
In	Out																	

Post Daily Activities Review - Review at end of day or before next day's work (Check those applicable and explain:)

<input type="checkbox"/> Lessons learned and best practices learned today:	
<input type="checkbox"/> Incidents that occurred today:	
<input type="checkbox"/> Any Stop Work interventions today?	
<input type="checkbox"/> Corrective/Preventive Actions needed for future work:	
<input type="checkbox"/> Any other H&S issues:	

Keep H&S 1st in all things

WorkCare - 1.800.455.6155

TAILGATE HEALTH & SAFETY MEETING FORM

This form documents the tailgate meeting conducted in accordance with the Project HASP. Personnel who perform work operations on-site during the day are required to attend this meeting and to acknowledge their attendance, at least daily.

Project Name: <u>Puma Terminal</u>		Project Location: <u>Bayama P.B</u>	
Date: <u>04/01/19</u>	Time: <u>0720</u>	Conducted by: <u>A. Colon</u>	Signature/Title: <u>Mr. Tej</u>
Client:		Client Contact:	Subcontractor companies: <u>N/A</u>

TRACKING the Tailgate Meeting

Think through the Tasks (list the tasks for the day):

- | | | |
|--------------------------|---------------------------------|---------|
| 1 <u>Mobilization</u> | 3 <u>equipment calibrations</u> | 5 _____ |
| 2 <u>Desmobilization</u> | 4 <u>ground water sampling</u> | 6 _____ |

Other Hazardous Activities - Check the box if there are any other ARCADIS, Client or other party activities that may pose hazards to ARCADIS operations

If there are none, write "None" here: _____

If yes, describe them here: _____

How will they be controlled? _____

Prework Authorization - check activities to be conducted that require permit issuance or completion of a checklist or similar before work begins:

	Doc #	Doc #
<input type="checkbox"/> Not applicable	Doc # _____	<input type="checkbox"/> Working at Height
<input type="checkbox"/> Energy Isolation (LOTO)	Doc # _____	<input type="checkbox"/> Confined Space
<input type="checkbox"/> Mechanical Lifting Ops	Doc # _____	<input type="checkbox"/> Excavation/Trenching
		<input type="checkbox"/> Hot Work
		<input type="checkbox"/> Overhead & Buried Utilities
		<input type="checkbox"/> Other permit

Discuss following questions (for some review previous day's post activities). Check if yes :

- | | | |
|---|--|---|
| <input type="checkbox"/> Incidents from day before to review? | <input type="checkbox"/> Lessons learned from the day before? | <input type="checkbox"/> Topics from Corp H&S to cover? |
| <input type="checkbox"/> Any corrective actions from yesterday? | <input type="checkbox"/> Will any work deviate from plan? | <input type="checkbox"/> Any Stop Work Interventions yesterday? |
| <input type="checkbox"/> JSAs or procedures are available? | <input type="checkbox"/> Field teams to "dirty" JSAs, as needed? | <input type="checkbox"/> If deviations, notify PM & client |
| <input type="checkbox"/> Staff has appropriate PPE? | <input type="checkbox"/> Staff knows Emergency Plan (EAP)? | <input type="checkbox"/> All equipment checked & OK? |
| | | <input type="checkbox"/> Staff knows gathering points? |

Comments: _____

Recognize the hazards (check all those that are discussed) (Examples are provided) and **Assess the Risks** (Low, Medium, High - circle risk level) - Provide an overall assessment of hazards to be encountered today and briefly list them under the hazard category.

<input checked="" type="checkbox"/> Gravity (i.e., ladder, scaffold, trips) (L M <u>H</u>)	<input checked="" type="checkbox"/> Motion (i.e., traffic, moving water) (L M <u>H</u>)	<input type="checkbox"/> Mechanical (i.e., augers, motors) (L M H)
<input checked="" type="checkbox"/> Electrical (i.e., utilities, lightning) (L M <u>H</u>)	<input checked="" type="checkbox"/> Pressure (i.e., gas cylinders, wells) (L M <u>H</u>)	<input type="checkbox"/> Environment (i.e., heat, cold, ice) (L M <u>H</u>)
<input checked="" type="checkbox"/> Chemical (i.e., fuel, acid, paint) (L M <u>H</u>)	<input checked="" type="checkbox"/> Biological (i.e., ticks, poison ivy) (L M <u>H</u>)	<input type="checkbox"/> Radiation (i.e., alpha, sun, laser) (L M <u>H</u>)
<input type="checkbox"/> Sound (i.e., machinery, generators) (L M H)	<input checked="" type="checkbox"/> Personal (i.e. alone, night, not fit) (L M <u>H</u>)	<input checked="" type="checkbox"/> Driving (i.e. car, ATV, boat, dozer) (L M <u>H</u>)

Handwritten notes: PPE, voc, nest, entry system

Continue TRACK Process on Page 2

TAILGATE HEALTH & SAFETY MEETING FORM - Pg. 2

Control the hazards (Check all and discuss those methods to control the hazards that will be implemented for the day): Review the HASP, applicable JSAs, and other control processes. Discuss and document any additional control processes.

STOP WORK AUTHORITY (Must be addressed in every Tailgate meeting - (See statements below))

<input type="checkbox"/> Elimination	<input type="checkbox"/> Substitution	<input type="checkbox"/> Isolation
<input type="checkbox"/> Engineering controls	<input type="checkbox"/> Administrative controls	<input checked="" type="checkbox"/> Monitoring
<input checked="" type="checkbox"/> General PPE Usage	<input type="checkbox"/> Hearing Conservation	<input type="checkbox"/> Respiratory Protection
<input checked="" type="checkbox"/> Personal Hygiene	<input type="checkbox"/> Exposure Guidelines	<input checked="" type="checkbox"/> Decon Procedures
<input checked="" type="checkbox"/> Emergency Action Plan (EAP)	<input type="checkbox"/> Fall Protection	<input type="checkbox"/> Work Zones/Site Control
<input type="checkbox"/> JSA to be developed/used (<u>specify</u>)	<input type="checkbox"/> TIP conducted (<u>specify job/JSA</u>)	<input type="checkbox"/> Traffic Control
		<input type="checkbox"/> Other (<u>specify</u>)

Signature and Certification Section - Site Staff and Visitors

Name/Company/Signature	Initial & Sign in Time	Initial & Sign out Time	I have read and understand the HASP
<i>Maanica Bioro Arcadis W-DSP</i>	<i>0920</i>		

<p>Important Information and Numbers</p> <p>All site staff should arrive fit for work. If not, they should report to the supervisor any restrictions or concerns.</p> <p>In the event of an injury, employees will call WorkCare at 1.800.455.6155 and then notify the field supervisor who will, in turn, notify Corp H&S at 1.720.344.3844.</p> <p>In the event of a motor vehicle accident, employees will notify the field supervisor who will then notify Corp H&S at 1.720.344.3844 and then Corp Legal at 1.720.344.3756.</p> <p>In the event of a utility strike or other damage to property of a client or 3rd party, employees will immediately notify the field supervisor, who will then immediately notify Corp Legal at 1.678.373.9556 and Corp H&S at 1.720.344.3500</p>	<p>Visitor Name/Co - not involved in work</p> <table style="width: 100%; border-collapse: collapse;"> <tr><td style="border-bottom: 1px solid black; width: 50%;"></td><td style="border-bottom: 1px solid black; width: 50%;"></td></tr> <tr><td style="border-bottom: 1px solid black; text-align: center;">In</td><td style="border-bottom: 1px solid black; text-align: center;">Out</td></tr> <tr><td style="border-bottom: 1px solid black;"></td><td style="border-bottom: 1px solid black;"></td></tr> <tr><td style="border-bottom: 1px solid black; text-align: center;">In</td><td style="border-bottom: 1px solid black; text-align: center;">Out</td></tr> <tr><td style="border-bottom: 1px solid black;"></td><td style="border-bottom: 1px solid black;"></td></tr> <tr><td style="border-bottom: 1px solid black; text-align: center;">In</td><td style="border-bottom: 1px solid black; text-align: center;">Out</td></tr> <tr><td style="border-bottom: 1px solid black;"></td><td style="border-bottom: 1px solid black;"></td></tr> <tr><td style="border-bottom: 1px solid black; text-align: center;">In</td><td style="border-bottom: 1px solid black; text-align: center;">Out</td></tr> </table>			In	Out			In	Out			In	Out			In	Out	<p>I will STOP the job any time anyone is concerned or uncertain about health & safety or if anyone identifies a hazard or additional mitigation not recorded in the site, project, job or task hazard assessment.</p> <p>I will be alert to any changes in personnel, conditions at the work site or hazards not covered by the original hazard assessments.</p> <p>If it is necessary to STOP THE JOB, I will perform TRACK; and then amend the hazard assessments or the HASP as needed.</p> <p>I will not assist a subcontractor or other party with their work unless it is absolutely necessary and then only after I have done TRACK and I have thoroughly controlled the hazard.</p>
In	Out																	
In	Out																	
In	Out																	
In	Out																	

Post Daily Activities Review - Review at end of day or before next day's work (Check those applicable and explain:)

Lessons learned and best practices learned today: _____

Incidents that occurred today: _____

Any Stop Work interventions today? _____

Corrective/Preventive Actions needed for future work: _____

Any other H&S issues: _____

Keep H&S 1st in all things

WorkCare - 1.800.455.6155

TAILGATE HEALTH & SAFETY MEETING FORM

This form documents the tailgate meeting conducted in accordance with the Project HASP. Personnel who perform work operations on-site during the day are required to attend this meeting and to acknowledge their attendance, at least daily.

Project Name: <u>Panama Terminal</u>		Project Location: <u>Bayama P.R</u>	
Date: <u>01/05/17</u>	Time: <u>0518</u>	Conducted by: <u>A. Colon</u>	Signature/Title: <u>PM Tec</u>
Client:		Client Contact:	Subcontractor companies: <u>N/A</u>

TRACKING the Tailgate Meeting

Think through the Tasks (list the tasks for the day):

- | | | |
|-------------------------|--------------------------------|---------|
| 1 <u>mobilization</u> | 3 <u>ground water sampling</u> | 5 _____ |
| 2 <u>demobilization</u> | 4 <u>Equipment calibration</u> | 6 _____ |

Other Hazardous Activities - Check the box if there are any other ARCADIS, Client or other party activities that may pose hazards to ARCADIS operations If there are none, write "None" here: _____

If yes, describe them here: _____

How will they be controlled? _____

Prework Authorization - check activities to be conducted that require permit issuance or completion of a checklist or similar before work begins:

	Doc #		Doc #
<input type="checkbox"/> Not applicable	Doc #	<input type="checkbox"/> Working at Height	Doc #
<input type="checkbox"/> Energy Isolation (LOTO)	_____	<input type="checkbox"/> Excavation/Trenching	_____
<input type="checkbox"/> Mechanical Lifting Ops	_____	<input type="checkbox"/> Overhead & Buried Utilities	_____
		<input type="checkbox"/> Confined Space	_____
		<input type="checkbox"/> Hot Work	_____
		<input type="checkbox"/> Other permit	_____

Discuss following questions (for some review previous day's post activities). **Check if yes :**

<input type="checkbox"/> Incidents from day before to review?	<input type="checkbox"/> Lessons learned from the day before?	<input type="checkbox"/> Topics from Corp H&S to cover?
<input type="checkbox"/> Any corrective actions from yesterday?	<input type="checkbox"/> Will any work deviate from plan?	<input type="checkbox"/> Any Stop Work Interventions yesterday?
<input checked="" type="checkbox"/> JSAs or procedures are available?	<input type="checkbox"/> Field teams to "dirty" JSAs, as needed?	<input type="checkbox"/> If deviations, notify PM & client
<input checked="" type="checkbox"/> Staff has appropriate PPE?	<input checked="" type="checkbox"/> Staff knows Emergency Plan (EAP)?	<input type="checkbox"/> All equipment checked & OK?
		<input type="checkbox"/> Staff knows gathering points?

Comments: _____

Recognize the hazards (check all those that are discussed) (Examples are provided) and **Assess the Risks** (Low, Medium, High - circle risk level) - Provide an overall assessment of hazards to be encountered today and briefly list them under the hazard category.

<input checked="" type="checkbox"/> Gravity (i.e., ladder, scaffold, trips) (L M <u>H</u>)	<input checked="" type="checkbox"/> Motion (i.e., traffic, moving water) (L M <u>H</u>)	<input type="checkbox"/> Mechanical (i.e., augers, motors) (L M H)
<input checked="" type="checkbox"/> Electrical (i.e., utilities, lightning) (L M <u>H</u>)	<input checked="" type="checkbox"/> Pressure (i.e., gas cylinders, wells) (L M <u>H</u>)	<input checked="" type="checkbox"/> Environment (i.e., heat, cold, ice) (L M <u>H</u>)
<input checked="" type="checkbox"/> Chemical (i.e., fuel, acid, paint) (L M <u>H</u>)	<input checked="" type="checkbox"/> Biological (i.e., ticks, poison ivy) (L M <u>H</u>)	<input checked="" type="checkbox"/> Radiation (i.e., alpha, sun, laser) (L M <u>H</u>)
<input type="checkbox"/> Sound (i.e., machinery, generators) (L M H)	<input checked="" type="checkbox"/> Personal (i.e. alone, night, not fit) (L M <u>H</u>)	<input checked="" type="checkbox"/> Driving (i.e. car, ATV, boat, dozer) (L M <u>H</u>)

Handwritten notes: Panama, VOC, insect, Body System

Continue TRACK Process on Page 2

TAILGATE HEALTH & SAFETY MEETING FORM - Pg. 2

Control the hazards (Check all and discuss those methods to control the hazards that will be implemented for the day): Review the HASP, applicable JSAs, and other control processes. Discuss and document any additional control processes.

STOP WORK AUTHORITY (Must be addressed in every Tailgate meeting - (See statements below))

<input type="checkbox"/> Elimination	<input type="checkbox"/> Substitution	<input type="checkbox"/> Isolation
<input type="checkbox"/> Engineering controls	<input type="checkbox"/> Administrative controls	<input checked="" type="checkbox"/> Monitoring
<input checked="" type="checkbox"/> General PPE Usage	<input type="checkbox"/> Hearing Conservation	<input type="checkbox"/> Respiratory Protection
<input checked="" type="checkbox"/> Personal Hygiene	<input type="checkbox"/> Exposure Guidelines	<input checked="" type="checkbox"/> Decon Procedures
<input type="checkbox"/> Emergency Action Plan (EAP)	<input type="checkbox"/> Fall Protection	<input type="checkbox"/> Work Zones/Site Control
<input checked="" type="checkbox"/> JSA to be developed/used (<u>specify</u>)	<input type="checkbox"/> TIP conducted (<u>specify job/JSA</u>)	<input type="checkbox"/> Traffic Control
		<input type="checkbox"/> Other (<u>specify</u>)

Signature and Certification Section - Site Staff and Visitors

Name/Company/Signature	Initial & Sign in Time	Initial & Sign out Time	I have read and understand the HASP
Marcial Flores Arcusas <i>[Signature]</i>	0718		<input type="checkbox"/>
			<input type="checkbox"/>
			<input type="checkbox"/>
			<input type="checkbox"/>
			<input type="checkbox"/>
			<input type="checkbox"/>
			<input type="checkbox"/>
			<input type="checkbox"/>
			<input type="checkbox"/>

Important Information and Numbers

All site staff should arrive fit for work. If not, they should report to the supervisor any restrictions or concerns.

In the event of an injury, employees will call WorkCare at 1.800.455.6155 and then notify the field supervisor who will, in turn, notify Corp H&S at 1.720.344.3844.

In the event of a motor vehicle accident, employees will notify the field supervisor who will then notify Corp H&S at 1.720.344.3844 and then Corp Legal at 1.720.344.3756.

In the event of a utility strike or other damage to property of a client or 3rd party, employees will immediately notify the field supervisor, who will then immediately notify Corp Legal at 1.678.373.9556 and Corp H&S at 1.720.344.3500

Visitor Name/Co - not involved in work

In	Out
In	Out
In	Out
In	Out

I will **STOP** the job any time anyone is concerned or uncertain about health & safety or if anyone identifies a hazard or additional mitigation not recorded in the site, project, job or task hazard assessment.

I will be alert to any changes in personnel, conditions at the work site or hazards not covered by the original hazard assessments.

If it is necessary to **STOP THE JOB**, I will perform **TRACK**; and then amend the hazard assessments or the HASP as needed.

I will **not assist** a subcontractor or other party with their work unless it is absolutely necessary and then only after I have done **TRACK** and I have thoroughly controlled the hazard.

Post Daily Activities Review - Review at end of day or before next day's work (Check those applicable and explain:)

Lessons learned and best practices learned today: _____

Incidents that occurred today: _____

Any Stop Work interventions today? _____

Corrective/Preventive Actions needed for future work: _____

Any other H&S issues: _____

Keep H&S 1st in all things

WorkCare - 1.800.455.6155

TAILGATE HEALTH & SAFETY MEETING FORM

This form documents the tailgate meeting conducted in accordance with the Project HASP. Personnel who perform work operations on-site during the day are required to attend this meeting and to acknowledge their attendance, at least daily.

Project Name: <u>Puma Terminal</u>		Project Location: <u>Bayamon PB</u>	
Date: <u>07/10/17</u>	Time: <u>0745</u>	Conducted by: <u>A-L</u>	Signature/Title: <u>AM Tee</u>
Client:		Client Contact:	Subcontractor companies: <u>N/A</u>

TRACKING the Tailgate Meeting

Think through the Tasks (list the tasks for the day):

- | | | |
|--------------------------|--|---------|
| 1 <u>mobilization</u> | 3 <u>limpieza de alrededores de zona</u> | 5 _____ |
| 2 <u>Desmobilization</u> | 4 _____ | 6 _____ |

Other Hazardous Activities - Check the box if there are any other ARCADIS, Client or other party activities that may pose hazards to ARCADIS operations If there are none, write "None" here: _____

If yes, describe them here: _____

How will they be controlled? _____

Pework Authorization - check activities to be conducted that require permit issuance or completion of a checklist or similar before work begins:

	Doc #		Doc #
<input type="checkbox"/> Not applicable	Doc #	<input type="checkbox"/> Working at Height	Doc #
<input type="checkbox"/> Energy Isolation (LOTO)	_____	<input type="checkbox"/> Excavation/Trenching	_____
<input type="checkbox"/> Mechanical Lifting Ops	_____	<input type="checkbox"/> Overhead & Buried Utilities	_____
		<input type="checkbox"/> Confined Space	_____
		<input type="checkbox"/> Hot Work	_____
		<input type="checkbox"/> Other permit	_____

- Discuss following questions** (for some review previous day's post activities). **Check if yes :**
- | | | |
|---|---|---|
| <input type="checkbox"/> Incidents from day before to review? | <input type="checkbox"/> Lessons learned from the day before? | <input type="checkbox"/> Topics from Corp H&S to cover? |
| <input type="checkbox"/> Any corrective actions from yesterday? | <input type="checkbox"/> Will any work deviate from plan? | <input type="checkbox"/> Any Stop Work Interventions yesterday? |
| <input checked="" type="checkbox"/> JSAs or procedures are available? | <input type="checkbox"/> Field teams to "dirty" JSAs, as needed? | <input type="checkbox"/> If deviations, notify PM & client |
| <input checked="" type="checkbox"/> Staff has appropriate PPE? | <input checked="" type="checkbox"/> Staff knows Emergency Plan (EAP)? | <input type="checkbox"/> All equipment checked & OK? |
| | | <input type="checkbox"/> Staff knows gathering points? |

Comments: _____

Recognize the hazards (check all those that are discussed) (Examples are provided) and **Assess the Risks** (Low, Medium, High - circle risk level) - Provide an overall assessment of hazards to be encountered today and briefly list them under the hazard category.

- | | | |
|---|---|--|
| <input checked="" type="checkbox"/> Gravity (i.e., ladder, scaffold, trips) (L M <u>H</u>) | <input checked="" type="checkbox"/> Motion (i.e., traffic, moving water) (L M <u>H</u>) | <input type="checkbox"/> Mechanical (i.e., augers, motors) (L M H) |
| <input type="checkbox"/> Electrical (i.e., utilities, lightning) (L M H) | <input type="checkbox"/> Pressure (i.e., gas cylinders, wells) (L M H) | <input checked="" type="checkbox"/> Environment (i.e., heat, cold, ice) (L M <u>H</u>) |
| <input type="checkbox"/> Chemical (i.e., fuel, acid, paint) (L M H) | <input checked="" type="checkbox"/> Biological (i.e., ticks, poison ivy) (L M <u>H</u>) | <input checked="" type="checkbox"/> Radiation (i.e., alpha, sun, laser) (L M <u>H</u>) |
| <input checked="" type="checkbox"/> Sound (i.e., machinery, generators) (L M <u>H</u>) | <input checked="" type="checkbox"/> Personal (i.e. alone, night, not fit) (L M <u>H</u>) | <input checked="" type="checkbox"/> Driving (i.e. car, ATV, boat, dozer) (L M <u>H</u>) |
- Handwritten notes: Rain, Insect, Animal, Buddy System, Trimmer*

Continue TRACK Process on Page 2

TAILGATE HEALTH & SAFETY MEETING FORM - Pg. 2

Control the hazards (Check all and discuss those methods to control the hazards that will be implemented for the day): Review the HASP, applicable JSAs, and other control processes. Discuss and document any additional control processes.

STOP WORK AUTHORITY (Must be addressed in every Tailgate meeting - (See statements below))

<input type="checkbox"/> Elimination	<input type="checkbox"/> Substitution	<input type="checkbox"/> Isolation
<input type="checkbox"/> Engineering controls	<input type="checkbox"/> Administrative controls	<input type="checkbox"/> Monitoring
<input checked="" type="checkbox"/> General PPE Usage	<input type="checkbox"/> Hearing Conservation	<input type="checkbox"/> Respiratory Protection
<input checked="" type="checkbox"/> Personal Hygiene	<input type="checkbox"/> Exposure Guidelines	<input type="checkbox"/> Decon Procedures
<input type="checkbox"/> Emergency Action Plan (EAP)	<input type="checkbox"/> Fall Protection	<input type="checkbox"/> Work Zones/Site Control
<input checked="" type="checkbox"/> JSA to be developed/used (<u>specify</u>)	<input type="checkbox"/> TIP conducted (<u>specify job/JSA</u>)	<input type="checkbox"/> Traffic Control
		<input type="checkbox"/> Other (<u>specify</u>)

Signature and Certification Section - Site Staff and Visitors

Name/Company/Signature	Initial & Sign in Time	Initial & Sign out Time	I have read and understand the HASP
Marcial Flores <i>[Signature]</i>	0740		<input type="checkbox"/>
			<input type="checkbox"/>
			<input type="checkbox"/>
			<input type="checkbox"/>
			<input type="checkbox"/>
			<input type="checkbox"/>
			<input type="checkbox"/>
			<input type="checkbox"/>

<p>Important Information and Numbers</p> <p>All site staff should arrive fit for work. If not, they should report to the supervisor any restrictions or concerns.</p> <p>In the event of an injury, employees will call WorkCare at 1.800.455.6155 and then notify the field supervisor who will, in turn, notify Corp H&S at 1.720.344.3844.</p> <p>In the event of a motor vehicle accident, employees will notify the field supervisor who will then notify Corp H&S at 1.720.344.3844 and then Corp Legal at 1.720.344.3756.</p> <p>In the event of a utility strike or other damage to property of a client or 3rd party, employees will immediately notify the field supervisor, who will then immediately notify Corp Legal at 1.678.373.9556 and Corp H&S at 1.720.344.3500</p>	<p>Visitor Name/Co - not involved in work</p> <table style="width: 100%; border-collapse: collapse;"> <tr><td style="border-bottom: 1px solid black;">In</td><td style="border-bottom: 1px solid black;">Out</td></tr> <tr><td style="border-bottom: 1px solid black;">In</td><td style="border-bottom: 1px solid black;">Out</td></tr> <tr><td style="border-bottom: 1px solid black;">In</td><td style="border-bottom: 1px solid black;">Out</td></tr> <tr><td style="border-bottom: 1px solid black;">In</td><td style="border-bottom: 1px solid black;">Out</td></tr> </table>	In	Out	In	Out	In	Out	In	Out	<p>I will STOP the job any time anyone is concerned or uncertain about health & safety or if anyone identifies a hazard or additional mitigation not recorded in the site, project, job or task hazard assessment.</p> <p>I will be alert to any changes in personnel, conditions at the work site or hazards not covered by the original hazard assessments.</p> <p>If it is necessary to STOP THE JOB, I will perform TRACK; and then amend the hazard assessments or the HASP as needed.</p> <p>I will not assist a subcontractor or other party with their work unless it is absolutely necessary and then only after I have done TRACK and I have thoroughly controlled the hazard.</p>
In	Out									
In	Out									
In	Out									
In	Out									

Post Daily Activities Review - Review at end of day or before next day's work (Check those applicable and explain:)

Lessons learned and best practices learned today: _____

Incidents that occurred today: _____

Any Stop Work interventions today? _____

Corrective/Preventive Actions needed for future work: _____

Any other H&S issues: _____

Keep H&S 1st in all things

WorkCare - 1.800.455.6155

TAILGATE HEALTH & SAFETY MEETING FORM

This form documents the tailgate meeting conducted in accordance with the Project HASP. Personnel who perform work operations on-site during the day are required to attend this meeting and to acknowledge their attendance, at least daily.

Project Name: <u>Puma Terminal</u>		Project Location: <u>Bayama P.B</u>	
Date: <u>01/11/11</u>	Time: <u>0920</u>	Conducted by: <u>A-C</u>	Signature/Title: <u>My Tec</u>
Client:		Client Contact:	Subcontractor companies: <u>N/A</u>

TRACKING the Tailgate Meeting

Think through the Tasks (list the tasks for the day):

- | | | |
|-------------------------|--------------------------------|---------|
| 1 <u>Mobilization</u> | 3 <u>ground water sampling</u> | 5 _____ |
| 2 <u>Demobilization</u> | 4 <u>equipment calibration</u> | 6 _____ |

Other Hazardous Activities - Check the box if there are any other ARCADIS, Client or other party activities that may pose hazards to ARCADIS operations

If there are none, write "None" here: _____

If yes, describe them here: _____

How will they be controlled? _____

Prework Authorization - check activities to be conducted that require permit issuance or completion of a checklist or similar before work begins:

	Doc #		Doc #
<input type="checkbox"/> Not applicable	Doc # _____	<input type="checkbox"/> Working at Height	Doc # _____
<input type="checkbox"/> Energy Isolation (LOTO)	Doc # _____	<input type="checkbox"/> Excavation/Trenching	Doc # _____
<input type="checkbox"/> Mechanical Lifting Ops	Doc # _____	<input type="checkbox"/> Overhead & Buried Utilities	Doc # _____
		<input type="checkbox"/> Confined Space	Doc # _____
		<input type="checkbox"/> Hot Work	Doc # _____
		<input type="checkbox"/> Other permit	Doc # _____

Discuss following questions (for some review previous day's post activities). Check if yes :

- | | | |
|---|---|---|
| <input type="checkbox"/> Incidents from day before to review? | <input type="checkbox"/> Lessons learned from the day before? | <input type="checkbox"/> Topics from Corp H&S to cover? |
| <input type="checkbox"/> Any corrective actions from yesterday? | <input type="checkbox"/> Will any work deviate from plan? | <input type="checkbox"/> Any Stop Work Interventions yesterday? |
| <input checked="" type="checkbox"/> JSAs or procedures are available? | <input type="checkbox"/> Field teams to "dirty" JSAs, as needed? | <input type="checkbox"/> If deviations, notify PM & client |
| <input checked="" type="checkbox"/> Staff has appropriate PPE? | <input checked="" type="checkbox"/> Staff knows Emergency Plan (EAP)? | <input type="checkbox"/> All equipment checked & OK? |
| | | <input type="checkbox"/> Staff knows gathering points? |

Comments: _____

Recognize the hazards (check all those that are discussed) (Examples are provided) and **Assess the Risks** (Low, Medium, High - circle risk level) - Provide an overall assessment of hazards to be encountered today and briefly list them under the hazard category.

<input checked="" type="checkbox"/> Gravity (i.e., ladder, scaffold, trips) (L M <u>H</u>)	<input checked="" type="checkbox"/> Motion (i.e., traffic, moving water) (L M <u>H</u>)	<input type="checkbox"/> Mechanical (i.e., augers, motors) (L M H)
<input checked="" type="checkbox"/> Electrical (i.e., utilities, lightning) (L M <u>H</u>)	<input checked="" type="checkbox"/> Pressure (i.e., gas cylinders, wells) (L M <u>H</u>)	<input type="checkbox"/> Environment (i.e., heat, cold, ice) (L M <u>H</u>)
<input checked="" type="checkbox"/> Chemical (i.e., fuel, acid, paint) (L M <u>H</u>)	<input type="checkbox"/> Biological (i.e., ticks, poison ivy) (L M <u>H</u>)	<input checked="" type="checkbox"/> Radiation (i.e., alpha, sun, laser) (L M <u>H</u>)
<input type="checkbox"/> Sound (i.e., machinery, generators) (L M H)	<input checked="" type="checkbox"/> Personal (i.e. alone, night, not fit) (L M <u>H</u>)	<input checked="" type="checkbox"/> Driving (i.e. car, ATV, boat, dozer) (L M <u>H</u>)

Handwritten notes: pump, vocs, insect, buddy system, Rain

Continue TRACK Process on Page 2

TAILGATE HEALTH & SAFETY MEETING FORM - Pg. 2

Control the hazards (Check all and discuss those methods to control the hazards that will be implemented for the day): Review the HASP, applicable JSAs, and other control processes. Discuss and document any additional control processes.

STOP WORK AUTHORITY (Must be addressed in every Tailgate meeting - (See statements below))

<input type="checkbox"/> Elimination	<input type="checkbox"/> Substitution	<input type="checkbox"/> Isolation
<input type="checkbox"/> Engineering controls	<input type="checkbox"/> Administrative controls	<input checked="" type="checkbox"/> Monitoring
<input checked="" type="checkbox"/> General PPE Usage	<input type="checkbox"/> Hearing Conservation	<input type="checkbox"/> Respiratory Protection
<input type="checkbox"/> Personal Hygiene	<input type="checkbox"/> Exposure Guidelines	<input checked="" type="checkbox"/> Decon Procedures
<input type="checkbox"/> Emergency Action Plan (EAP)	<input type="checkbox"/> Fall Protection	<input type="checkbox"/> Work Zones/Site Control
<input checked="" type="checkbox"/> JSA to be developed/used (<u>specify</u>)	<input type="checkbox"/> TIP conducted (<u>specify job/JSA</u>)	<input type="checkbox"/> Traffic Control
		<input type="checkbox"/> Other (<u>specify</u>)

Signature and Certification Section - Site Staff and Visitors

Name/Company/Signature	Initial & Sign in Time	Initial & Sign out Time	I have read and understand the HASP
<i>Maxwell Telecom Services [Signature]</i>	0120		<input type="checkbox"/>
			<input type="checkbox"/>
			<input type="checkbox"/>
			<input type="checkbox"/>
			<input type="checkbox"/>
			<input type="checkbox"/>
			<input type="checkbox"/>
			<input type="checkbox"/>
			<input type="checkbox"/>

<p>Important Information and Numbers</p> <p>All site staff should arrive fit for work. If not, they should report to the supervisor any restrictions or concerns.</p> <p>In the event of an injury, employees will call WorkCare at 1.800.455.6155 and then notify the field supervisor who will, in turn, notify Corp H&S at 1.720.344.3844.</p> <p>In the event of a motor vehicle accident, employees will notify the field supervisor who will then notify Corp H&S at 1.720.344.3844 and then Corp Legal at 1.720.344.3756.</p> <p>In the event of a utility strike or other damage to property of a client or 3rd party, employees will immediately notify the field supervisor, who will then immediately notify Corp Legal at 1.678.373.9556 and Corp H&S at 1.720.344.3500</p>	<p>Visitor Name/Co - not involved in work</p> <table style="width: 100%; border-collapse: collapse;"> <tr><td style="border-bottom: 1px solid black; width: 50%;">In</td><td style="border-bottom: 1px solid black; width: 50%;">Out</td></tr> <tr><td style="border-bottom: 1px solid black;">In</td><td style="border-bottom: 1px solid black;">Out</td></tr> <tr><td style="border-bottom: 1px solid black;">In</td><td style="border-bottom: 1px solid black;">Out</td></tr> <tr><td style="border-bottom: 1px solid black;">In</td><td style="border-bottom: 1px solid black;">Out</td></tr> </table>	In	Out	In	Out	In	Out	In	Out	<p>I will STOP the job any time anyone is concerned or uncertain about health & safety or if anyone identifies a hazard or additional mitigation not recorded in the site, project, job or task hazard assessment.</p> <p>I will be alert to any changes in personnel, conditions at the work site or hazards not covered by the original hazard assessments.</p> <p>If it is necessary to STOP THE JOB, I will perform TRACK; and then amend the hazard assessments or the HASP as needed.</p> <p>I will not assist a subcontractor or other party with their work unless it is absolutely necessary and then only after I have done TRACK and I have thoroughly controlled the hazard.</p>
In	Out									
In	Out									
In	Out									
In	Out									

Post Daily Activities Review - Review at end of day or before next day's work (Check those applicable and explain:)

Lessons learned and best practices learned today: _____

Incidents that occurred today: _____

Any Stop Work interventions today? _____

Corrective/Preventive Actions needed for future work: _____

Any other H&S issues: _____

Keep H&S 1st in all things

WorkCare - 1.800.455.6155

TAILGATE HEALTH & SAFETY MEETING FORM

This form documents the tailgate meeting conducted in accordance with the Project HASP. Personnel who perform work operations on-site during the day are required to attend this meeting and to acknowledge their attendance, at least daily.

Project Name: <u>Puma Terminal</u>		Project Location: <u>Onyama P.P</u>	
Date: <u>01/12/13</u>	Time: <u>0920</u>	Conducted by: <u>A.C.</u>	Signature/Title: <u>M Tee</u>
Client:		Client Contact:	Subcontractor companies: <u>N/A</u>

TRACKING the Tailgate Meeting

Think through the Tasks (list the tasks for the day):

- | | | |
|-------------------------|--------------------------------|---------|
| 1 <u>Mobilization</u> | 3 <u>around water sampling</u> | 5 _____ |
| 2 <u>Demobilization</u> | 4 <u>Equipment calibration</u> | 6 _____ |

Other Hazardous Activities - Check the box if there are any other ARCADIS, Client or other party activities that may pose hazards to ARCADIS operations If there are none, write "None" here: _____

If yes, describe them here: _____

How will they be controlled? _____

Pework Authorization - check activities to be conducted that require permit issuance or completion of a checklist or similar before work begins:

	Doc #		Doc #
<input type="checkbox"/> Not applicable	Doc #	<input type="checkbox"/> Working at Height	Doc #
<input type="checkbox"/> Energy Isolation (LOTO)	Doc #	<input type="checkbox"/> Excavation/Trenching	Doc #
<input type="checkbox"/> Mechanical Lifting Ops	Doc #	<input type="checkbox"/> Overhead & Buried Utilities	Doc #
		<input type="checkbox"/> Confined Space	Doc #
		<input type="checkbox"/> Hot Work	Doc #
		<input type="checkbox"/> Other permit	Doc #

Discuss following questions (for some review previous day's post activities). **Check if yes :**

- | | | |
|---|---|---|
| <input type="checkbox"/> Incidents from day before to review? | <input type="checkbox"/> Lessons learned from the day before? | <input type="checkbox"/> Topics from Corp H&S to cover? |
| <input type="checkbox"/> Any corrective actions from yesterday? | <input type="checkbox"/> Will any work deviate from plan? | <input type="checkbox"/> Any Stop Work Interventions yesterday? |
| <input checked="" type="checkbox"/> JSAs or procedures are available? | <input type="checkbox"/> Field teams to "dirty" JSAs, as needed? | <input type="checkbox"/> If deviations, notify PM & client |
| <input checked="" type="checkbox"/> Staff has appropriate PPE? | <input checked="" type="checkbox"/> Staff knows Emergency Plan (EAP)? | <input type="checkbox"/> All equipment checked & OK? |
| | | <input type="checkbox"/> Staff knows gathering points? |

Comments: _____

Recognize the hazards (check all those that are discussed) (Examples are provided) and **Assess the Risks** (Low, Medium, High - circle risk level) - Provide an overall assessment of hazards to be encountered today and briefly list them under the hazard category.

- | | | |
|---|---|--|
| <input checked="" type="checkbox"/> Gravity (i.e., ladder, scaffold, trips) (L M <u>H</u>) | <input checked="" type="checkbox"/> Motion (i.e., traffic, moving water) (L <u>M</u> H) | <input type="checkbox"/> Mechanical (i.e., augers, motors) (L M H) |
| <input checked="" type="checkbox"/> Electrical (i.e., utilities, lightning) (L M <u>H</u>) | <input checked="" type="checkbox"/> Pressure (i.e., gas cylinders, wells) (L M <u>H</u>) | <input checked="" type="checkbox"/> Environment (i.e., heat, cold, ice) (L M <u>H</u>) |
| <input checked="" type="checkbox"/> Chemical (i.e., fuel, acid, paint) (L M <u>H</u>) | <input checked="" type="checkbox"/> Biological (i.e., ticks, poison ivy) (L M <u>H</u>) | <input checked="" type="checkbox"/> Radiation (i.e., alpha, sun, laser) (L M <u>H</u>) |
| <input type="checkbox"/> Sound (i.e., machinery, generators) (L M H) | <input checked="" type="checkbox"/> Personal (i.e. alone, night, not fit) (L M <u>H</u>) | <input checked="" type="checkbox"/> Driving (i.e. car, ATV, boat, dozer) (L M <u>H</u>) |

Continue TRACK Process on Page 2

TAILGATE HEALTH & SAFETY MEETING FORM - Pg. 2

control the hazards (Check all and discuss those methods to control the hazards that will be implemented for the day): Review the HASP, applicable JSAs, and other control processes. Discuss and document any additional control processes.

STOP WORK AUTHORITY (Must be addressed in every Tailgate meeting - (See statements below)

<input type="checkbox"/> Elimination	<input type="checkbox"/> Substitution	<input type="checkbox"/> Isolation
<input type="checkbox"/> Engineering controls	<input type="checkbox"/> Administrative controls	<input checked="" type="checkbox"/> Monitoring
<input checked="" type="checkbox"/> General PPE Usage	<input type="checkbox"/> Hearing Conservation	<input type="checkbox"/> Respiratory Protection
<input type="checkbox"/> Personal Hygiene	<input type="checkbox"/> Exposure Guidelines	<input checked="" type="checkbox"/> Decon Procedures
<input type="checkbox"/> Emergency Action Plan (EAP)	<input type="checkbox"/> Fall Protection	<input type="checkbox"/> Work Zones/Site Control
<input checked="" type="checkbox"/> JSA to be developed/used (<u>specify</u>)	<input type="checkbox"/> TIP conducted (<u>specify job/JSA</u>)	<input type="checkbox"/> Traffic Control
		<input type="checkbox"/> Other (<u>specify</u>)

Signature and Certification Section - Site Staff and Visitors

Name/Company/Signature	Initial & Sign in Time	Initial & Sign out Time	I have read and understand the HASP
<i>Maxwell Ross Arcadis M. RF</i>	0720		

<p>Important Information and Numbers</p> <p>All site staff should arrive fit for work. If not, they should report to the supervisor any restrictions or concerns.</p> <p>In the event of an injury, employees will call WorkCare at 1.800.455.6155 and then notify the field supervisor who will, in turn, notify Corp H&S at 1.720.344.3844.</p> <p>In the event of a motor vehicle accident, employees will notify the field supervisor who will then notify Corp H&S at 1.720.344.3844 and then Corp Legal at 1.720.344.3756.</p> <p>In the event of a utility strike or other damage to property of a client or 3rd party, employees will immediately notify the field supervisor, who will then immediately notify Corp Legal at 1.678.373.9556 and Corp H&S at 1.720.344.3500</p>	<p>Visitor Name/Co - not involved in work</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <tr><td style="width: 50%;">In</td><td style="width: 50%;">Out</td></tr> <tr><td> </td><td> </td></tr> <tr><td>In</td><td>Out</td></tr> <tr><td> </td><td> </td></tr> <tr><td>In</td><td>Out</td></tr> <tr><td> </td><td> </td></tr> <tr><td>In</td><td>Out</td></tr> <tr><td> </td><td> </td></tr> </table>	In	Out			In	Out			In	Out			In	Out			<p>I will STOP the job any time anyone is concerned or uncertain about health & safety or if anyone identifies a hazard or additional mitigation not recorded in the site, project, job or task hazard assessment.</p> <p>I will be alert to any changes in personnel, conditions at the work site or hazards not covered by the original hazard assessments.</p> <p>If it is necessary to STOP THE JOB, I will perform TRACK; and then amend the hazard assessments or the HASP as needed.</p> <p>I will not assist a subcontractor or other party with their work unless it is absolutely necessary and then only after I have done TRACK and I have thoroughly controlled the hazard.</p>
In	Out																	
In	Out																	
In	Out																	
In	Out																	

Post Daily Activities Review - Review at end of day or before next day's work (Check those applicable and explain:)

Lessons learned and best practices learned today: _____

Incidents that occurred today: _____

Any Stop Work interventions today? _____

Corrective/Preventive Actions needed for future work: _____

Any other H&S issues: _____

Keep H&S 1st in all things

WorkCare - 1.800.455.6155

TAILGATE HEALTH & SAFETY MEETING FORM

This form documents the tailgate meeting conducted in accordance with the Project HASP. Personnel who perform work operations on-site during the day are required to attend this meeting and to acknowledge their attendance, at least daily.

Project Name: <u>Puma Terminal</u>		Project Location: <u>Bqaron P.S</u>	
Date: <u>13/01/13</u>	Time: <u>0800</u>	Conducted by: <u>A.L</u>	Signature/Title: <u>Tec/As</u>
Client:		Client Contact:	Subcontractor companies: <u>N/A</u>

TRACKING the Tailgate Meeting

Think through the Tasks (list the tasks for the day):

- | | | |
|--------------------------|--------------------------------|---------|
| 1 <u>Mobilization</u> | 3 <u>ground sampling</u> | 5 _____ |
| 2 <u>Desmobilization</u> | 4 <u>Equipment calibration</u> | 6 _____ |

Other Hazardous Activities - Check the box if there are any other ARCADIS, Client or other party activities that may pose hazards to ARCADIS operations

If there are none, write "None" here: _____

If yes, describe them here: _____

How will they be controlled? _____

Prework Authorization - check activities to be conducted that require permit issuance or completion of a checklist or similar before work begins:

	Doc #	Doc #
<input type="checkbox"/> Not applicable	Doc # _____	<input type="checkbox"/> Working at Height
<input type="checkbox"/> Energy Isolation (LOTO)	Doc # _____	<input type="checkbox"/> Confined Space
<input type="checkbox"/> Mechanical Lifting Ops	Doc # _____	<input type="checkbox"/> Excavation/Trenching
		<input type="checkbox"/> Hot Work
		<input type="checkbox"/> Overhead & Buried Utilities
		<input type="checkbox"/> Other permit

Discuss following questions (for some review previous day's post activities). **Check if yes :**

- | | | |
|---|--|---|
| <input type="checkbox"/> Incidents from day before to review? | <input type="checkbox"/> Lessons learned from the day before? | <input type="checkbox"/> Topics from Corp H&S to cover? |
| <input type="checkbox"/> Any corrective actions from yesterday? | <input type="checkbox"/> Will any work deviate from plan? | <input type="checkbox"/> Any Stop Work Interventions yesterday? |
| <input checked="" type="checkbox"/> JSAs or procedures are available? | <input type="checkbox"/> Field teams to "dirty" JSAs, as needed? | <input type="checkbox"/> If deviations, notify PM & client |
| <input type="checkbox"/> Staff has appropriate PPE? | <input type="checkbox"/> Staff knows Emergency Plan (EAP)? | <input type="checkbox"/> All equipment checked & OK? |
| | | <input type="checkbox"/> Staff knows gathering points? |

Comments: _____

Recognize the hazards (check all those that are discussed) (Examples are provided) and **Assess the Risks** (Low, Medium, High - circle risk level) - Provide an overall assessment of hazards to be encountered today and briefly list them under the hazard category.

- | | | |
|---|---|--|
| <input checked="" type="checkbox"/> Gravity (i.e., ladder, scaffold, trips) (L M <u>H</u>) | <input checked="" type="checkbox"/> Motion (i.e., traffic, moving water) (L M <u>H</u>) | <input type="checkbox"/> Mechanical (i.e., augers, motors) (L M H) |
| <input type="checkbox"/> Electrical (i.e., utilities, lightning) (L M H) | <input checked="" type="checkbox"/> Pressure (i.e., gas cylinders, wells) (L M <u>H</u>) | <input type="checkbox"/> Environment (i.e., heat, cold, ice) (L M <u>H</u>) |
| <input checked="" type="checkbox"/> Chemical (i.e., fuel, acid, paint) (L M <u>H</u>) | <input checked="" type="checkbox"/> Biological (i.e., ticks, poison ivy) (L M <u>H</u>) | <input checked="" type="checkbox"/> Radiation (i.e., alpha, sun, laser) (L M <u>H</u>) |
| <input type="checkbox"/> Sound (i.e., machinery, generators) (L M H) | <input checked="" type="checkbox"/> Personal (i.e. alone, night, not fit) (L M <u>H</u>) | <input checked="" type="checkbox"/> Driving (i.e. car, ATV, boat, dozer) (<u>L</u> M H) |
- Handwritten notes: pump, voc, insect, Buddy System, car*

Continue TRACK Process on Page 2

TAILGATE HEALTH & SAFETY MEETING FORM - Pg. 2

Control the hazards (Check all and discuss those methods to control the hazards that will be implemented for the day): Review the HASP, applicable JSAs, and other control processes. Discuss and document any additional control processes.

STOP WORK AUTHORITY (Must be addressed in every Tailgate meeting - (See statements below)

<input type="checkbox"/> Elimination	<input type="checkbox"/> Substitution	<input type="checkbox"/> Isolation
<input type="checkbox"/> Engineering controls	<input type="checkbox"/> Administrative controls	<input checked="" type="checkbox"/> Monitoring
<input checked="" type="checkbox"/> General PPE Usage	<input type="checkbox"/> Hearing Conservation	<input type="checkbox"/> Respiratory Protection
<input checked="" type="checkbox"/> Personal Hygiene	<input type="checkbox"/> Exposure Guidelines	<input type="checkbox"/> Decon Procedures
<input type="checkbox"/> Emergency Action Plan (EAP)	<input type="checkbox"/> Fall Protection	<input type="checkbox"/> Work Zones/Site Control
<input checked="" type="checkbox"/> JSA to be developed/used (<u>specify</u>)	<input type="checkbox"/> TIP conducted (<u>specify job/JSA</u>)	<input checked="" type="checkbox"/> Traffic Control
		<input type="checkbox"/> Other (<u>specify</u>)

Signature and Certification Section - Site Staff and Visitors

Name/Company/Signature	Initial & Sign in Time	Initial & Sign out Time	I have read and understand the HASP
Andrés Colon / Arcadis / <i>[Signature]</i>	4:05:10		
MARCIAL TORRES / Arcadis / <i>[Signature]</i>			

<p>Important Information and Numbers</p> <p>All site staff should arrive fit for work. If not, they should report to the supervisor any restrictions or concerns.</p> <p>In the event of an injury, employees will call WorkCare at 1.800.455.6155 and then notify the field supervisor who will, in turn, notify Corp H&S at 1.720.344.3844.</p> <p>In the event of a motor vehicle accident, employees will notify the field supervisor who will then notify Corp H&S at 1.720.344.3844 and then Corp Legal at 1.720.344.3756.</p> <p>In the event of a utility strike or other damage to property of a client or 3rd party, employees will immediately notify the field supervisor, who will then immediately notify Corp Legal at 1.678.373.9556 and Corp H&S at 1.720.344.3500</p>	<p>Visitor Name/Co - not involved in work</p> <table style="width: 100%;"> <tr><td style="border-bottom: 1px solid black;">In</td><td style="border-bottom: 1px solid black;">Out</td></tr> <tr><td style="border-bottom: 1px solid black;">In</td><td style="border-bottom: 1px solid black;">Out</td></tr> <tr><td style="border-bottom: 1px solid black;">In</td><td style="border-bottom: 1px solid black;">Out</td></tr> <tr><td style="border-bottom: 1px solid black;">In</td><td style="border-bottom: 1px solid black;">Out</td></tr> </table>	In	Out	In	Out	In	Out	In	Out	<p>I will STOP the job any time anyone is concerned or uncertain about health & safety or if anyone identifies a hazard or additional mitigation not recorded in the site, project, job or task hazard assessment.</p> <p>I will be alert to any changes in personnel, conditions at the work site or hazards not covered by the original hazard assessments.</p> <p>If it is necessary to STOP THE JOB, I will perform TRACK; and then amend the hazard assessments or the HASP as needed.</p> <p>I will not assist a subcontractor or other party with their work unless it is absolutely necessary and then only after I have done TRACK and I have thoroughly controlled the hazard.</p>
In	Out									
In	Out									
In	Out									
In	Out									

Post Daily Activities Review - Review at end of day or before next day's work (Check those applicable and explain:)

Lessons learned and best practices learned today: _____

Incidents that occurred today: _____

Any Stop Work interventions today? _____

Corrective/Preventive Actions needed for future work: _____

Any other H&S issues: _____

Keep H&S 1st in all things

WorkCare - 1.800.455.6155

TAILGATE HEALTH & SAFETY MEETING FORM

This form documents the tailgate meeting conducted in accordance with the Project HASP. Personnel who perform work operations on-site during the day are required to attend this meeting and to acknowledge their attendance, at least daily.

Project Name: <u>Puma Terminal</u>		Project Location: <u>Bayamon P.B</u>	
Date: <u>01/18/17</u>	Time: <u>0715</u>	Conducted by: <u>A.C.</u>	Signature/Title: <u>M. Tex</u>
Client:		Client Contact:	Subcontractor companies: <u>N/A</u>

TRACKING the Tailgate Meeting

Think through the Tasks (list the tasks for the day):

- | | | |
|---------------------------|--------------------------------|---------|
| 1 <u>Mobilization</u> | 3 <u>ground water sampling</u> | 5 _____ |
| 2 <u>Des mobilization</u> | 4 <u>Equipment calibration</u> | 6 _____ |

Other Hazardous Activities - Check the box if there are any other ARCADIS, Client or other party activities that may pose hazards to ARCADIS operations

If there are none, write "None" here: _____

If yes, describe them here: _____

How will they be controlled? _____

Prework Authorization - check activities to be conducted that require permit issuance or completion of a checklist or similar before work begins:

Doc #

Doc #

- | | | | | | |
|--|-------|--|-------|---|-------|
| <input type="checkbox"/> Not applicable | Doc # | <input type="checkbox"/> Working at Height | Doc # | <input type="checkbox"/> Confined Space | Doc # |
| <input type="checkbox"/> Energy Isolation (LOTO) | Doc # | <input type="checkbox"/> Excavation/Trenching | Doc # | <input type="checkbox"/> Hot Work | Doc # |
| <input type="checkbox"/> Mechanical Lifting Ops | Doc # | <input type="checkbox"/> Overhead & Buried Utilities | Doc # | <input type="checkbox"/> Other permit | Doc # |

Discuss following questions (for some review previous day's post activities). **Check if yes :**

- | | | |
|---|--|---|
| <input type="checkbox"/> Incidents from day before to review? | <input type="checkbox"/> Lessons learned from the day before? | <input type="checkbox"/> Topics from Corp H&S to cover? |
| <input type="checkbox"/> Any corrective actions from yesterday? | <input type="checkbox"/> Will any work deviate from plan? | <input type="checkbox"/> Any Stop Work Interventions yesterday? |
| <input checked="" type="checkbox"/> JSAs or procedures are available? | <input type="checkbox"/> Field teams to "dirty" JSAs, as needed? | <input type="checkbox"/> If deviations, notify PM & client |
| <input type="checkbox"/> Staff has appropriate PPE? | <input type="checkbox"/> Staff knows Emergency Plan (EAP)? | <input type="checkbox"/> All equipment checked & OK? |
| | | <input type="checkbox"/> Staff knows gathering points? |

Comments: _____

Recognize the hazards (check all those that are discussed) (Examples are provided) and **Assess the Risks** (Low, Medium, High - circle risk level) - Provide an overall assessment of hazards to be encountered today and briefly list them under the hazard category.

- | | | |
|---|---|--|
| <input checked="" type="checkbox"/> Gravity (i.e., ladder, scaffold, trips) (L M <u>H</u>) | <input checked="" type="checkbox"/> Motion (i.e., traffic, moving water) (L M <u>H</u>) | <input type="checkbox"/> Mechanical (i.e., augers, motors) (L M H) |
| <input checked="" type="checkbox"/> Electrical (i.e., utilities, lightning) (L M <u>H</u>) | <input checked="" type="checkbox"/> Pressure (i.e., gas cylinders, wells) (L M <u>H</u>) | <input checked="" type="checkbox"/> Environment (i.e., heat, cold, ice) (L M <u>H</u>) |
| <input checked="" type="checkbox"/> Chemical (i.e., fuel, acid, paint) (L M <u>H</u>) | <input checked="" type="checkbox"/> Biological (i.e., ticks, poison ivy) (L M <u>H</u>) | <input checked="" type="checkbox"/> Radiation (i.e., alpha, sun, laser) (L M <u>H</u>) |
| <input type="checkbox"/> Sound (i.e., machinery, generators) (L M H) | <input checked="" type="checkbox"/> Personal (i.e. alone, night, not fit) (L M <u>H</u>) | <input checked="" type="checkbox"/> Driving (i.e. car, ATV, boat, dozer) (L M <u>H</u>) |

Continue TRACK Process on Page 2

TAILGATE HEALTH & SAFETY MEETING FORM - Pg. 2

Control the hazards (Check all and discuss those methods to control the hazards that will be implemented for the day): Review the HASP, applicable JSAs, and other control processes. Discuss and document any additional control processes.

STOP WORK AUTHORITY (Must be addressed in every Tailgate meeting - (See statements below))

<input type="checkbox"/> Elimination	<input type="checkbox"/> Substitution	<input type="checkbox"/> Isolation
<input type="checkbox"/> Engineering controls	<input type="checkbox"/> Administrative controls	<input checked="" type="checkbox"/> Monitoring
<input checked="" type="checkbox"/> General PPE Usage	<input type="checkbox"/> Hearing Conservation	<input type="checkbox"/> Respiratory Protection
<input checked="" type="checkbox"/> Personal Hygiene	<input type="checkbox"/> Exposure Guidelines	<input type="checkbox"/> Decon Procedures
<input type="checkbox"/> Emergency Action Plan (EAP)	<input type="checkbox"/> Fall Protection	<input checked="" type="checkbox"/> Work Zones/Site Control
<input checked="" type="checkbox"/> JSA to be developed/used (<u>specify</u>)	<input type="checkbox"/> TIP conducted (<u>specify job/JSA</u>)	<input type="checkbox"/> Traffic Control
		<input type="checkbox"/> Other (<u>specify</u>)

Signature and Certification Section - Site Staff and Visitors

Name/Company/Signature	Initial & Sign in Time	Initial & Sign out Time	I have read and understand the HASP
<i>Marcel Ross / ANCIAS / M Ross</i>	<i>0815</i>		

<p>Important Information and Numbers</p> <p>All site staff should arrive fit for work. If not, they should report to the supervisor any restrictions or concerns.</p> <p>In the event of an injury, employees will call WorkCare at 1.800.455.6155 and then notify the field supervisor who will, in turn, notify Corp H&S at 1.720.344.3844.</p> <p>In the event of a motor vehicle accident, employees will notify the field supervisor who will then notify Corp H&S at 1.720.344.3844 and then Corp Legal at 1.720.344.3756.</p> <p>In the event of a utility strike or other damage to property of a client or 3rd party, employees will immediately notify the field supervisor, who will then immediately notify Corp Legal at 1.678.373.9556 and Corp H&S at 1.720.344.3500</p>	<p>Visitor Name/Co - not involved in work</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <tr><td style="width: 50%;">In</td><td style="width: 50%;">Out</td></tr> <tr><td> </td><td> </td></tr> <tr><td>In</td><td>Out</td></tr> <tr><td> </td><td> </td></tr> <tr><td>In</td><td>Out</td></tr> <tr><td> </td><td> </td></tr> <tr><td>In</td><td>Out</td></tr> <tr><td> </td><td> </td></tr> </table>	In	Out			In	Out			In	Out			In	Out			<p>I will STOP the job any time anyone is concerned or uncertain about health & safety or if anyone identifies a hazard or additional mitigation not recorded in the site, project, job or task hazard assessment.</p> <p>I will be alert to any changes in personnel, conditions at the work site or hazards not covered by the original hazard assessments.</p> <p>If it is necessary to STOP THE JOB, I will perform TRACK; and then amend the hazard assessments or the HASP as needed.</p> <p>I will not assist a subcontractor or other party with their work unless it is absolutely necessary and then only after I have done TRACK and I have thoroughly controlled the hazard.</p>
In	Out																	
In	Out																	
In	Out																	
In	Out																	

Post Daily Activities Review - Review at end of day or before next day's work (Check those applicable and explain:)

Lessons learned and best practices learned today: _____

Incidents that occurred today: _____

Any Stop Work interventions today? _____

Corrective/Preventive Actions needed for future work: _____

Any other H&S issues: _____

Keep H&S 1st in all things

WorkCare - 1.800.455.6155

TAILGATE HEALTH & SAFETY MEETING FORM

This form documents the tailgate meeting conducted in accordance with the Project HASP. Personnel who perform work operations on-site during the day are required to attend this meeting and to acknowledge their attendance, at least daily.

Project Name: <u>Puma Terminal</u>		Project Location: <u>Bayamon PL</u>	
Date: <u>01/19/17</u>	Time: <u>0730</u>	Conducted by: <u>A.C</u>	Signature/Title: <u>M Tee</u>
Client:		Client Contact:	Subcontractor companies: <u>N/A</u>

TRACKING the Tailgate Meeting

Think through the Tasks (list the tasks for the day):

- | | | |
|-------------------------|--------------------------------|---------|
| 1 <u>Mobilization</u> | 3 <u>Ground water sampling</u> | 5 _____ |
| 2 <u>Demobilization</u> | 4 <u>Equipment calibration</u> | 6 _____ |

Other Hazardous Activities - Check the box if there are any other ARCADIS, Client or other party activities that may pose hazards to ARCADIS operations

If there are none, write "None" here: _____

If yes, describe them here: _____

How will they be controlled? _____

Prework Authorization - check activities to be conducted that require permit issuance or completion of a checklist or similar before work begins:

Doc #

Doc #

- | | | | | | |
|--|-------|--|-------|---|-------|
| <input type="checkbox"/> Not applicable | Doc # | <input type="checkbox"/> Working at Height | Doc # | <input type="checkbox"/> Confined Space | Doc # |
| <input type="checkbox"/> Energy Isolation (LOTO) | Doc # | <input type="checkbox"/> Excavation/Trenching | Doc # | <input type="checkbox"/> Hot Work | Doc # |
| <input type="checkbox"/> Mechanical Lifting Ops | Doc # | <input type="checkbox"/> Overhead & Buried Utilities | Doc # | <input type="checkbox"/> Other permit | Doc # |

Discuss following questions (for some review previous day's post activities). **Check if yes :**

- | | | |
|---|---|---|
| <input type="checkbox"/> Incidents from day before to review? | <input type="checkbox"/> Lessons learned from the day before? | <input type="checkbox"/> Topics from Corp H&S to cover? |
| <input type="checkbox"/> Any corrective actions from yesterday? | <input type="checkbox"/> Will any work deviate from plan? | <input type="checkbox"/> Any Stop Work Interventions yesterday? |
| <input checked="" type="checkbox"/> JSAs or procedures are available? | <input type="checkbox"/> Field teams to "dirty" JSAs, as needed? | <input type="checkbox"/> If deviations, notify PM & client |
| <input type="checkbox"/> Staff has appropriate PPE? | <input checked="" type="checkbox"/> Staff knows Emergency Plan (EAP)? | <input type="checkbox"/> All equipment checked & OK? |
| | | <input type="checkbox"/> Staff knows gathering points? |

Comments: _____

Recognize the hazards (check all those that are discussed) (Examples are provided) and **A**ssess the Risks (Low, Medium, High - circle risk level) - Provide an overall assessment of hazards to be encountered today and briefly list them under the hazard category.

- | | | |
|---|---|--|
| <input checked="" type="checkbox"/> Gravity (i.e., ladder, scaffold, <u>trips</u>) (L M <u>H</u>) | <input checked="" type="checkbox"/> Motion (i.e., <u>traffic</u> , moving water) (L M <u>H</u>) | <input type="checkbox"/> Mechanical (i.e., augers, motors) (L M H) |
| <input checked="" type="checkbox"/> Electrical (i.e., utilities, lightning) (L M <u>H</u>) | <input checked="" type="checkbox"/> Pressure (i.e., <u>gas cylinders</u> , wells) (L M <u>H</u>) | <input checked="" type="checkbox"/> Environment (i.e., <u>heat</u> , cold, ice) (L M <u>H</u>) |
| <input checked="" type="checkbox"/> Chemical (i.e., fuel, acid, paint) (L M <u>H</u>) | <input checked="" type="checkbox"/> Biological (i.e., ticks, poison ivy) (L M <u>H</u>) | <input checked="" type="checkbox"/> Radiation (i.e., alpha, <u>sun</u> , laser) (L M <u>H</u>) |
| <input type="checkbox"/> Sound (i.e., machinery, generators) (L M H) | <input checked="" type="checkbox"/> Personal (i.e. alone, night, not fit) (L M <u>H</u>) | <input checked="" type="checkbox"/> Driving (i.e. <u>car</u> , ATV, boat, dozer) (L M <u>H</u>) |
- pump
vocs
incast
Buddy System

Continue TRACK Process on Page 2

TAILGATE HEALTH & SAFETY MEETING FORM - Pg. 2

Control the hazards (Check all and discuss those methods to control the hazards that will be implemented for the day): Review the HASP, applicable JSAs, and other control processes. Discuss and document any additional control processes.

STOP WORK AUTHORITY (Must be addressed in every Tailgate meeting - (See statements below))

<input type="checkbox"/> Elimination	<input type="checkbox"/> Substitution	<input type="checkbox"/> Isolation
<input type="checkbox"/> Engineering controls	<input type="checkbox"/> Administrative controls	<input type="checkbox"/> Monitoring
<input checked="" type="checkbox"/> General PPE Usage	<input type="checkbox"/> Hearing Conservation	<input type="checkbox"/> Respiratory Protection
<input checked="" type="checkbox"/> Personal Hygiene	<input type="checkbox"/> Exposure Guidelines	<input checked="" type="checkbox"/> Decon Procedures
<input type="checkbox"/> Emergency Action Plan (EAP)	<input type="checkbox"/> Fall Protection	<input type="checkbox"/> Work Zones/Site Control
<input checked="" type="checkbox"/> JSA to be developed/used (<i>specify</i>)	<input type="checkbox"/> TIP conducted (<i>specify job/JSA</i>)	<input type="checkbox"/> Traffic Control
		<input type="checkbox"/> Other (<i>specify</i>)

Signature and Certification Section - Site Staff and Visitors

Name/Company/Signature	Initial & Sign in Time	Initial & Sign out Time	I have read and understand the HASP
Marcel Ploeg Arcadis M. Ploeg	0930		

<p>Important Information and Numbers</p> <p>All site staff should arrive fit for work. If not, they should report to the supervisor any restrictions or concerns.</p> <p>In the event of an injury, employees will call WorkCare at 1.800.455.6155 and then notify the field supervisor who will, in turn, notify Corp H&S at 1.720.344.3844.</p> <p>In the event of a motor vehicle accident, employees will notify the field supervisor who will then notify Corp H&S at 1.720.344.3844 and then Corp Legal at 1.720.344.3756.</p> <p>In the event of a utility strike or other damage to property of a client or 3rd party, employees will immediately notify the field supervisor, who will then immediately notify Corp Legal at 1.678.373.9556 and Corp H&S at 1.720.344.3500</p>	<p>Visitor Name/Co - not involved in work</p> <table style="width: 100%; border-collapse: collapse;"> <tr><td style="border-bottom: 1px solid black; width: 50%;">In</td><td style="border-bottom: 1px solid black; width: 50%;">Out</td></tr> <tr><td style="border-bottom: 1px solid black;">In</td><td style="border-bottom: 1px solid black;">Out</td></tr> <tr><td style="border-bottom: 1px solid black;">In</td><td style="border-bottom: 1px solid black;">Out</td></tr> <tr><td style="border-bottom: 1px solid black;">In</td><td style="border-bottom: 1px solid black;">Out</td></tr> </table>	In	Out	In	Out	In	Out	In	Out	<p>I will STOP the job any time anyone is concerned or uncertain about health & safety or if anyone identifies a hazard or additional mitigation not recorded in the site, project, job or task hazard assessment.</p> <p>I will be alert to any changes in personnel, conditions at the work site or hazards not covered by the original hazard assessments.</p> <p>If it is necessary to STOP THE JOB, I will perform TRACK; and then amend the hazard assessments or the HASP as needed.</p> <p>I will not assist a subcontractor or other party with their work unless it is absolutely necessary and then only after I have done TRACK and I have thoroughly controlled the hazard.</p>
In	Out									
In	Out									
In	Out									
In	Out									

Post Daily Activities Review - Review at end of day or before next day's work (Check those applicable and explain:)

Lessons learned and best practices learned today: _____

Incidents that occurred today: _____

Any Stop Work interventions today? _____

Corrective/Preventive Actions needed for future work: _____

Any other H&S issues: _____

Keep H&S 1st in all things

WorkCare - 1.800.455.6155

	MONITORING WELL	NORTHING	EASTING	ELEVATION (TOP OF CASING)	GROUND ELEVATION	Sample date	Product level	water level	Groundwater elevation	Duplicate Date
	42B	867876.014	760741.654	29.507	28.46	01/19/07	23.67	23.40		
	40B	867805.31	760593.163	20.277	19.17	01/19/17	12.28	13.67		
	91A	867621.796	759923.514	22.81	20.12	12/29/16	/	9.58		
	18D	867041.366	759973.079	31.802	30.13	12/29/16	/	42.21 / 10.50		
	87A	867178.651	759812.194	27.726	25.54	12/29/16	/	6.36		
	88A	867585.447	759561.051	25.072	22.17	12/29/16	/	5.40		
	99A	867751.866	759515.901	24.355	21.12	12/29/16	/	10.43		
	98A	867714.022	759334.252	21.654	18.71	12/29/16	/	4.93		
	T9	868240.885	759340.897	16.517	15.65	12/28/16	4.38	4.60		
	30A	868213.871	759747.423	17.418	15.71	12/29/16	/	6.00		
	48B	868144.503	760085.505	20.413	17.04	01/05/15	/	5.76		
	P 119	868069.644	761317.213	24.356	21.57	12/20/16	/	11.15		
	P118	868267.634	761278.685	17.881	15.25	12/20/16	/	6.52		
	83B2	868649.947	761520.841	11.071	8.14	12/21/16	/	5.55		
	83A	868648.999	761516.105	11.933	8.36	12/20/16	/	3.86		
	75B2	870137.591	761331.969	6.631	4.02	01/17/17	/	2.95	2.00	Duplicate MS/MSD
	114A	869256.828	761431.111	7.252	5.22	01/18/17	/	2.95		
	AD2	868563.969	761143.806	15.314	12.84	12/20/16	4.34	4.35		
	ADT AD-01	868594.603	761051.808	17.328	14.82	12/20/16 12/20/16	/	3.62		
	57A	868552.701	760875.865	19.716	17.94	12/20/16	/	2.42		
	AD3	868550.322	760757.448	21.381	18.73	12/20/16	/	3.94		12/20/16 Duplicate
	AD4	868485.217	760442.758	21.146	18.47	12/21/16	/	6.28		
	33A	868463.778	760362.924	15.365	17.8	12/21/16	/	5.40		
	P116	869159.846	761449.376	8.468	5.89	12/21/16	/	3.58		
	P117	868953.949	761483.245	10.655	7.75	12/21/16	/	3.38		
	65A	868587.685	759925.656	15.9	14.31	12/21/16	/	3.14		
	15A	868914.863	759886.149	10.645	10.36	12-22-16	/	1.44		
	15B2	868919.67	759887.375	11.642	9.79	12/22/16	/	6.05		
	15B	868933.999	759879.497	12.036	9.94	12/22/16	/	6.38		12/22/16 Duplicate MS/MSD
	86A	868872.763	759665.856	11.58	8.9	12/29/16	/	4.30		
	MP8	868808.442	759382.564	12.462	9.97	01/04/17	/	6.37		
	MP9	868815.934	759381.856	9.996	6.74	01/04/17	/	3.87		
	MP4	868775.188	759228.186	12.461	9.94	01/04/17	/	6.25		
	MP3	868784.218	759225.929	10.168	6.84	01/04/17	/	3.66		
	MP2	868813.822	759216.627	9.869	8.19	01/04/17	/	3.73		
	DP1	868848.675	759205.384	9.698	8.03	01/04/17	/	2.11		
	MP5A	868890.661	759363.416	10.666	7.86	12/29/16	/	4.87		
	DP5	868891.602	759369.603	9.667	7.73	12/29/16	/	2.87		
	EB107	868678.518	759094.57	11.286	10.26	01/03/17	/	4.60		
	EB108	868618.966	759054.626	11.803	10.5	01/03/17	/	4.77		
	EB103	868577.214	759134.326	12.447	10.69	01/03/17	/	5.68		
	EB104	868628.077	759220.307	13.563	11.99	01/03/17	/	6.2		
	EB105	868648.128	759319.863	13.975	12.25	01/03/17	/	2.72		Duplicate MS/MSD
	EB106	868670.929	759423.171	13.512	11.41	01/03/17	/	2.80		

3.1 ppm
300 ppm

Duplicate MS/MSD

12/20/16 Duplicate

12/22/16 Duplicate MS/MSD

57 ppm

AD-1 4.34
4.35

EB102	868491.944	759157.061	14.775	12.64	12/28/16		7.75		
EB101	868465.916	759325.415	14.135	12.69	12/28/16		3.42		
B9	868447.181	759268.704	14.881	12.69	12/28/16 01/31/17		1.50/2.20		
B1	868431.822	759198.069	14.388	13.32	12/28/16		1.50		DUP003
P120	867124.565	760234.434	28.522	25.12	12/17/16	/	13.20		
P122	867280.619	760783.67	29.399	27.55	12/19/16		14.43		
P123	867398.282	761149.588	43.337	40.66	12/19/16		8.70		
P124	867502.776	761405.294	43.274	40.52	12/19/16		32.80		
P121	867742.142	761389.913	40.502	37.08	12/19/16		33.40		
16C	868479.486	759676.795	11.759	11.19	12/28/16		6.25		
109A	868394.381	759044.49	17.648	14.39	01/05/17		9.80		DUP005
76A	868638.661	758785.096	14.09	11.58	01/12/17		8.45		
76B2	868640.839	758790.635	14.035	11.13	01/12/17		5.93		
17B	869260.701	759320.973	10.118	7.06	01/14/17		4.22		
78B	870179.155	760240.47	11.952	3.73	01/17/17		7.10		
37A	868913.465	760217.188	16.803	13.84	01/12/17		6.65		
13B2	868933.809	760322.733	18.059	14.81	01/12/17		12.84		
13A	868934.62	760327.039	17.426	15.55	01/12/17		6.93		
110B2	869431.953	760308.97	11.385	8.95	01/17/17		6.62		
110AB	869426.639	760305.114	12.26	9.12	01/17/17		7.42		
111A	869515.288	760463.83	13.273	9.57	01/17/17		9.30		
63A	868988.372	760571.613	18.574	17.25	01/18/17		2.97		
38A	868990.929	760577.028	17.525	15.83	01/18/17		4.45		
84A	869131.225	761225.128	10.029	3.19	01/18/17		5.03		
84B2	869131.618	761229.887	10.137	7.47	01/18/17		2.52		
77B	870167.293	758970.04	12.932	10.15	01/19/17		6.80		
20B	870173.536	759773.63	9.229	7.82	01/19/17		4.25		
21B	870211.124	760963.737	16.53	14.09	01/19/17		11.80		DUP007
WWTP-1					12/24/16		5.42		
WWTP-2					12/28/16		6.53		

CADA 10 UN DUPLICADO

CADA 20 UN MS MSD

[Handwritten signature]

APPENDIX C

Photo Log





Photograph 1 – Low Flow pump and water meter.



Photograph 2 – ARCADIS personnel during groundwater sampling



Photograph 3 – Wetland area



Photograph 4– ARCADIS personnel during groundwater sampling in Wetland area.



Photograph 5- ARCADIS personnel sampling



Photograph 6- ARCADIS personnel during groundwater sampling in Wetland area.

APPENDIX D

Chain of Custody and Laboratory Results





1000 Riverbend Blvd. Suite F
 St. Rose, LA 70087
 (504) 469-0333

SAMPLE ACKNOWLEDGMENT

Samples Submitted By: BBL Caribe / Arcadis PR
Client Project ID: PUMA TERMINAL MW SAMPLING
Client PO#: None

Pace Project Manager: Juan Redondo
 Phone (787)720-0319
 juan.redondo@pacelabs.com
Pace Analytical Project ID: 2047806
Samples Received: December 22, 2016 01:15 PM
Estimated Completion: January 09, 2017

CC: Abner Hernandez, Marianela Mercado-Burgos, Sharon Colon
Client Specified QC Sample(s): MW-15B MS/MSD

Customer Sample ID	Pace Analytical Lab ID	Matrix	Date/Time Collected	Method
TB-122116	2047806001	Water	12/21/16 00:00	8021 GCV BTEX, MTBE, GRO 8260 MS Volatiles Deliverable Package Level 4
EB-122116	2047806002	Water	12/21/16 09:17	6020 ICPMS Metals Vanadium, Chromium, Arsenic, Lead 6020 ICPMS Metals, Lab Filtered Vanadium, Chromium, Arsenic, Lead 7470 Mercury 7470 Mercury, Lab Filtered 8015M DRO/ORO Organics 8021 GCV BTEX, MTBE, GRO 8260 MS Volatiles 8270 MSSV Semivolatile Organic
MW-83B2	2047806003	Water	12/21/16 09:59	6020 ICPMS Metals Vanadium, Chromium, Arsenic, Lead 6020 ICPMS Metals, Lab Filtered Vanadium, Chromium, Arsenic, Lead 7470 Mercury 7470 Mercury, Lab Filtered 8015M DRO/ORO Organics 8021 GCV BTEX, MTBE, GRO 8260 MS Volatiles 8270 MSSV Semivolatile Organic
MW-AD-4	2047806004	Water	12/21/16 10:56	6020 ICPMS Metals Vanadium, Chromium, Arsenic, Lead 6020 ICPMS Metals, Lab Filtered Vanadium, Chromium, Arsenic, Lead 7470 Mercury 7470 Mercury, Lab Filtered 8015M DRO/ORO Organics 8021 GCV BTEX, MTBE, GRO 8260 MS Volatiles 8270 MSSV Semivolatile Organic
MW-33A	2047806005	Water	12/21/16 11:44	6020 ICPMS Metals Vanadium, Chromium, Arsenic, Lead 6020 ICPMS Metals, Lab Filtered Vanadium, Chromium, Arsenic, Lead 7470 Mercury 7470 Mercury, Lab Filtered 8015M DRO/ORO Organics 8021 GCV BTEX, MTBE, GRO 8260 MS Volatiles 8270 MSSV Semivolatile Organic
MW-P116	2047806006	Water	12/21/16 14:05	6020 ICPMS Metals

Please contact your project manager if you recognize any discrepancy in this form or have any questions about your project.

Thank you for choosing Pace Analytical Services, Inc.

SAMPLE ACKNOWLEDGMENT

Customer Sample ID	Pace Analytical Lab ID	Matrix	Date/Time Collected	Method
				Vanadium, Chromium, Arsenic, Lead 6020 ICPMS Metals, Lab Filtered
				Vanadium, Chromium, Arsenic, Lead 7470 Mercury
				7470 Mercury, Lab Filtered
				8015M DRO/ORO Organics
				8021 GCV BTEX, MTBE, GRO
				8260 MS Volatiles
				8270 MSSV Semivolatile Organic
MW-P117	2047806007	Water	12/21/16 15:21	6020 ICPMS Metals
				Vanadium, Chromium, Arsenic, Lead 6020 ICPMS Metals, Lab Filtered
				Vanadium, Chromium, Arsenic, Lead 7470 Mercury
				7470 Mercury, Lab Filtered
				8015M DRO/ORO Organics
				8021 GCV BTEX, MTBE, GRO
				8260 MS Volatiles
				8270 MSSV Semivolatile Organic
MW-65A	2047806008	Water	12/21/16 16:07	6020 ICPMS Metals
				Vanadium, Chromium, Arsenic, Lead 6020 ICPMS Metals, Lab Filtered
				Vanadium, Chromium, Arsenic, Lead 7470 Mercury
				7470 Mercury, Lab Filtered
				8015M DRO/ORO Organics
				8021 GCV BTEX, MTBE, GRO
				8260 MS Volatiles
				8270 MSSV Semivolatile Organic
FB-122116	2047806009	Water	12/21/16 16:15	8021 GCV BTEX, MTBE, GRO
				8260 MS Volatiles
TB-122216	2047806010	Water	12/22/16 00:00	8021 GCV BTEX, MTBE, GRO
				8260 MS Volatiles
EB-122216	2047806011	Water	12/22/16 08:42	6020 ICPMS Metals
				Vanadium, Chromium, Arsenic, Lead 6020 ICPMS Metals, Lab Filtered
				Vanadium, Chromium, Arsenic, Lead 7470 Mercury
				7470 Mercury, Lab Filtered
				8015M DRO/ORO Organics
				8021 GCV BTEX, MTBE, GRO
				8260 MS Volatiles
				8270 MSSV Semivolatile Organic
MW-15A	2047806012	Water	12/22/16 09:38	6020 ICPMS Metals
				Vanadium, Chromium, Arsenic, Lead 6020 ICPMS Metals, Lab Filtered
				Vanadium, Chromium, Arsenic, Lead 7470 Mercury
				7470 Mercury, Lab Filtered
				8015M DRO/ORO Organics
				8021 GCV BTEX, MTBE, GRO
				8260 MS Volatiles
				8270 MSSV Semivolatile Organic
MW-15B2	2047806013	Water	12/22/16 10:23	6020 ICPMS Metals

Please contact your project manager if you recognize any discrepancy in this form or have any questions about your project.

Thank you for choosing Pace Analytical Services, Inc.



1000 Riverbend Blvd. Suite F
 St. Rose, LA 70087
 (504) 469-0333

SAMPLE ACKNOWLEDGMENT

Customer Sample ID	Pace Analytical Lab ID	Matrix	Date/Time Collected	Method
				Vanadium, Chromium, Arsenic, Lead 6020 ICPMS Metals, Lab Filtered
				Vanadium, Chromium, Arsenic, Lead 7470 Mercury
				7470 Mercury, Lab Filtered
				8015M DRO/ORO Organics
				8021 GCV BTEX, MTBE, GRO
				8260 MS Volatiles
				8270 MSSV Semivolatile Organic
CANCEL	2047806014	Water	12/22/16 11:42	No Charge
DUP002	2047806015	Water	12/22/16 00:00	6020 ICPMS Metals
				Vanadium, Chromium, Arsenic, Lead 6020 ICPMS Metals, Lab Filtered
				Vanadium, Chromium, Arsenic, Lead 7470 Mercury
				7470 Mercury, Lab Filtered
				8015M DRO/ORO Organics
				8021 GCV BTEX, MTBE, GRO
				8260 MS Volatiles
				8270 MSSV Semivolatile Organic
MW-15B MS/MSD	2047806016	Water	12/22/16 11:42	6020 ICPMS Metals
				Vanadium, Chromium, Arsenic, Lead 6020 ICPMS Metals, Lab Filtered
				Vanadium, Chromium, Arsenic, Lead 7470 Mercury
				7470 Mercury, Lab Filtered
				8015M DRO/ORO Organics
				8021 GCV BTEX, MTBE, GRO
				8260 MS Volatiles
				8270 MSSV Semivolatile Organic
FB-122216	2047806017	Water	12/22/16 11:50	8021 GCV BTEX, MTBE, GRO
				8260 MS Volatiles

Please contact your project manager if you recognize any discrepancy in this form or have any questions about your project.

Thank you for choosing Pace Analytical Services, Inc.

SAMPLE ACKNOWLEDGMENT

Analyte List

Customer Sample ID	Method	Compound	Reporting	
			Limit	Units
TB-122116	8021 GCV BTEX, MTBE, GRO 8260 MSV Low Level	Gasoline Range Organics	50	ug/L
		Acetone	4	ug/L
		Benzene	0.5	ug/L
		Bromodichloromethane	0.5	ug/L
		Bromoform	0.5	ug/L
		Bromomethane	0.5	ug/L
		2-Butanone (MEK)	2	ug/L
		Carbon disulfide	1	ug/L
		Carbon tetrachloride	0.5	ug/L
		Chlorobenzene	0.5	ug/L
		Chloroethane	0.5	ug/L
		Chloroform	0.5	ug/L
		Chloromethane	0.5	ug/L
		1,2-Dibromo-3-chloropropane	0.2	ug/L
		Dibromochloromethane	0.5	ug/L
		1,2-Dibromoethane (EDB)	1	ug/L
		Dichlorodifluoromethane	1	ug/L
		1,1-Dichloroethane	0.5	ug/L
		1,2-Dichloroethane	0.5	ug/L
		1,1-Dichloroethene	0.5	ug/L
		cis-1,2-Dichloroethene	1	ug/L
		trans-1,2-Dichloroethene	0.5	ug/L
		1,2-Dichloropropane	0.5	ug/L
		cis-1,3-Dichloropropene	0.5	ug/L
		trans-1,3-Dichloropropene	0.5	ug/L
		Ethylbenzene	0.5	ug/L
		2-Hexanone	1	ug/L
		Isopropylbenzene (Cumene)	1	ug/L
		Methylene Chloride	0.5	ug/L
		4-Methyl-2-pentanone (MIBK)	1	ug/L
		Methyl-tert-butyl ether	0.5	ug/L
		Styrene	1	ug/L
		1,1,2,2-Tetrachloroethane	0.5	ug/L
		Tetrachloroethene	0.5	ug/L
		Toluene	0.5	ug/L
		1,1,1-Trichloroethane	0.5	ug/L
		1,1,2-Trichloroethane	0.5	ug/L
		Trichloroethene	0.5	ug/L
		Trichlorofluoromethane	0.5	ug/L
		Vinyl chloride	0.5	ug/L
m&p-Xylene	2	ug/L		
o-Xylene	1	ug/L		
Methyl acetate	2	ug/L		
EB-122116	6020 MET ICPMS	Vanadium	0.005	mg/L
		Chromium	0.001	mg/L
		Arsenic	0.001	mg/L
	6020 MET ICPMS, Dissolved (LF)	Lead	0.001	mg/L
		Vanadium	5	ug/L
		Chromium	1	ug/L
		Arsenic	1	ug/L

Please contact your project manager if you recognize any discrepancy in this form or have any questions about your project.

Thank you for choosing Pace Analytical Services, Inc.

SAMPLE ACKNOWLEDGMENT

Analyte List

Customer Sample ID	Method	Compound	Reporting	
			Limit	Units
		Lead	1	ug/L
	7470 Mercury	Mercury	0.2	ug/L
	7470 Mercury, Dissolved (LF)	Mercury	0.2	ug/L
	8015M DRO/ORO Organics	Oil Range Organics (>C28-C40)	0.5	mg/L
		Diesel Range Organic (C10-C28)	0.25	mg/L
	8021 GCV BTEX, MTBE, GRO	Gasoline Range Organics	50	ug/L
	8260 MSV Low Level	Acetone	4	ug/L
		Benzene	0.5	ug/L
		Bromodichloromethane	0.5	ug/L
		Bromoform	0.5	ug/L
		Bromomethane	0.5	ug/L
		2-Butanone (MEK)	2	ug/L
		Carbon disulfide	1	ug/L
		Carbon tetrachloride	0.5	ug/L
		Chlorobenzene	0.5	ug/L
		Chloroethane	0.5	ug/L
		Chloroform	0.5	ug/L
		Chloromethane	0.5	ug/L
		1,2-Dibromo-3-chloropropane	0.2	ug/L
		Dibromochloromethane	0.5	ug/L
		1,2-Dibromoethane (EDB)	1	ug/L
		Dichlorodifluoromethane	1	ug/L
		1,1-Dichloroethane	0.5	ug/L
		1,2-Dichloroethane	0.5	ug/L
		1,1-Dichloroethene	0.5	ug/L
		cis-1,2-Dichloroethene	1	ug/L
		trans-1,2-Dichloroethene	0.5	ug/L
		1,2-Dichloropropane	0.5	ug/L
		cis-1,3-Dichloropropene	0.5	ug/L
		trans-1,3-Dichloropropene	0.5	ug/L
		Ethylbenzene	0.5	ug/L
		2-Hexanone	1	ug/L
		Isopropylbenzene (Cumene)	1	ug/L
		Methylene Chloride	0.5	ug/L
		4-Methyl-2-pentanone (MIBK)	1	ug/L
		Methyl-tert-butyl ether	0.5	ug/L
		Styrene	1	ug/L
		1,1,2,2-Tetrachloroethane	0.5	ug/L
		Tetrachloroethene	0.5	ug/L
		Toluene	0.5	ug/L
		1,1,1-Trichloroethane	0.5	ug/L
		1,1,2-Trichloroethane	0.5	ug/L
		Trichloroethene	0.5	ug/L
		Trichlorofluoromethane	0.5	ug/L
		Vinyl chloride	0.5	ug/L
		m&p-Xylene	2	ug/L
		o-Xylene	1	ug/L
		Methyl acetate	2	ug/L
	8270 MSSV PAH by SIM SEP	Naphthalene	0.1	ug/L
		Acenaphthylene	0.1	ug/L

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SAMPLE ACKNOWLEDGMENT

Analyte List

Customer Sample ID	Method	Compound	Reporting Limit	Units
MW-83B2	6020 MET ICPMS	Acenaphthene	0.1	ug/L
		Fluorene	0.1	ug/L
		Phenanthrene	0.1	ug/L
		Anthracene	0.1	ug/L
		Fluoranthene	0.1	ug/L
		Pyrene	0.1	ug/L
		Benzo(a)anthracene	0.1	ug/L
		Chrysene	0.1	ug/L
		Benzo(b)fluoranthene	0.1	ug/L
		Benzo(k)fluoranthene	0.1	ug/L
		Benzo(a)pyrene	0.1	ug/L
		Indeno(1,2,3-cd)pyrene	0.1	ug/L
		Dibenz(a,h)anthracene	0.1	ug/L
		Benzo(g,h,i)perylene	0.1	ug/L
		2-Methylnaphthalene	0.1	ug/L
		Vanadium	0.005	mg/L
		Chromium	0.001	mg/L
		Arsenic	0.001	mg/L
		Lead	0.001	mg/L
		6020 MET ICPMS, Dissolved (LF)	Vanadium	5
	Chromium		1	ug/L
	Arsenic		1	ug/L
	Lead		1	ug/L
	7470 Mercury	Mercury	0.2	ug/L
	7470 Mercury, Dissolved (LF)	Mercury	0.2	ug/L
	8015M DRO/ORO Organics	Oil Range Organics (>C28-C40)	0.5	mg/L
		Diesel Range Organic (C10-C28)	0.25	mg/L
	8021 GCV BTEX, MTBE, GRO	Gasoline Range Organics	50	ug/L
	8260 MSV Low Level	Acetone	4	ug/L
		Benzene	0.5	ug/L
		Bromodichloromethane	0.5	ug/L
		Bromoform	0.5	ug/L
		Bromomethane	0.5	ug/L
		2-Butanone (MEK)	2	ug/L
		Carbon disulfide	1	ug/L
		Carbon tetrachloride	0.5	ug/L
Chlorobenzene		0.5	ug/L	
Chloroethane		0.5	ug/L	
Chloroform		0.5	ug/L	
Chloromethane		0.5	ug/L	
1,2-Dibromo-3-chloropropane		0.2	ug/L	
Dibromochloromethane		0.5	ug/L	
1,2-Dibromoethane (EDB)		1	ug/L	
Dichlorodifluoromethane		1	ug/L	
1,1-Dichloroethane		0.5	ug/L	
1,2-Dichloroethane		0.5	ug/L	
1,1-Dichloroethene		0.5	ug/L	
cis-1,2-Dichloroethene		1	ug/L	
trans-1,2-Dichloroethene	0.5	ug/L		
1,2-Dichloropropane	0.5	ug/L		

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Analyte List

Customer Sample ID	Method	Compound	Reporting Limit	Units
		cis-1,3-Dichloropropene	0.5	ug/L
		trans-1,3-Dichloropropene	0.5	ug/L
		Ethylbenzene	0.5	ug/L
		2-Hexanone	1	ug/L
		Isopropylbenzene (Cumene)	1	ug/L
		Methylene Chloride	0.5	ug/L
		4-Methyl-2-pentanone (MIBK)	1	ug/L
		Methyl-tert-butyl ether	0.5	ug/L
		Styrene	1	ug/L
		1,1,2,2-Tetrachloroethane	0.5	ug/L
		Tetrachloroethene	0.5	ug/L
		Toluene	0.5	ug/L
		1,1,1-Trichloroethane	0.5	ug/L
		1,1,2-Trichloroethane	0.5	ug/L
		Trichloroethene	0.5	ug/L
		Trichlorofluoromethane	0.5	ug/L
		Vinyl chloride	0.5	ug/L
		m&p-Xylene	2	ug/L
		o-Xylene	1	ug/L
		Methyl acetate	2	ug/L
	8270 MSSV PAH by SIM SEP	Naphthalene	0.1	ug/L
		Acenaphthylene	0.1	ug/L
		Acenaphthene	0.1	ug/L
		Fluorene	0.1	ug/L
		Phenanthrene	0.1	ug/L
		Anthracene	0.1	ug/L
		Fluoranthene	0.1	ug/L
		Pyrene	0.1	ug/L
		Benzo(a)anthracene	0.1	ug/L
		Chrysene	0.1	ug/L
		Benzo(b)fluoranthene	0.1	ug/L
		Benzo(k)fluoranthene	0.1	ug/L
		Benzo(a)pyrene	0.1	ug/L
		Indeno(1,2,3-cd)pyrene	0.1	ug/L
		Dibenz(a,h)anthracene	0.1	ug/L
		Benzo(g,h,i)perylene	0.1	ug/L
		2-Methylnaphthalene	0.1	ug/L
MW-AD-4	6020 MET ICPMS	Vanadium	0.005	mg/L
		Chromium	0.001	mg/L
		Arsenic	0.001	mg/L
		Lead	0.001	mg/L
	6020 MET ICPMS, Dissolved (LF)	Vanadium	5	ug/L
		Chromium	1	ug/L
		Arsenic	1	ug/L
		Lead	1	ug/L
	7470 Mercury	Mercury	0.2	ug/L
	7470 Mercury, Dissolved (LF)	Mercury	0.2	ug/L
	8015M DRO/ORO Organics	Oil Range Organics (>C28-C40)	0.5	mg/L
		Diesel Range Organic (C10-C28)	0.25	mg/L
	8021 GCV BTEX, MTBE, GRO	Gasoline Range Organics	50	ug/L

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Analyte List

Customer Sample ID	Method	Compound	Reporting	
			Limit	Units
8260 MSV Low Level		Acetone	4	ug/L
		Benzene	0.5	ug/L
		Bromodichloromethane	0.5	ug/L
		Bromoform	0.5	ug/L
		Bromomethane	0.5	ug/L
		2-Butanone (MEK)	2	ug/L
		Carbon disulfide	1	ug/L
		Carbon tetrachloride	0.5	ug/L
		Chlorobenzene	0.5	ug/L
		Chloroethane	0.5	ug/L
		Chloroform	0.5	ug/L
		Chloromethane	0.5	ug/L
		1,2-Dibromo-3-chloropropane	0.2	ug/L
		Dibromochloromethane	0.5	ug/L
		1,2-Dibromoethane (EDB)	1	ug/L
		Dichlorodifluoromethane	1	ug/L
		1,1-Dichloroethane	0.5	ug/L
		1,2-Dichloroethane	0.5	ug/L
		1,1-Dichloroethene	0.5	ug/L
		cis-1,2-Dichloroethene	1	ug/L
		trans-1,2-Dichloroethene	0.5	ug/L
		1,2-Dichloropropane	0.5	ug/L
		cis-1,3-Dichloropropene	0.5	ug/L
		trans-1,3-Dichloropropene	0.5	ug/L
		Ethylbenzene	0.5	ug/L
		2-Hexanone	1	ug/L
		Isopropylbenzene (Cumene)	1	ug/L
		Methylene Chloride	0.5	ug/L
		4-Methyl-2-pentanone (MIBK)	1	ug/L
		Methyl-tert-butyl ether	0.5	ug/L
		Styrene	1	ug/L
		1,1,2,2-Tetrachloroethane	0.5	ug/L
		Tetrachloroethene	0.5	ug/L
		Toluene	0.5	ug/L
		1,1,1-Trichloroethane	0.5	ug/L
		1,1,2-Trichloroethane	0.5	ug/L
		Trichloroethene	0.5	ug/L
		Trichlorofluoromethane	0.5	ug/L
		Vinyl chloride	0.5	ug/L
		m&p-Xylene	2	ug/L
		o-Xylene	1	ug/L
		Methyl acetate	2	ug/L
		8270 MSSV PAH by SIM SEP		Naphthalene
Acenaphthylene	0.1			ug/L
Acenaphthene	0.1			ug/L
Fluorene	0.1			ug/L
Phenanthrene	0.1			ug/L
Anthracene	0.1			ug/L
Fluoranthene	0.1			ug/L
Pyrene	0.1			ug/L

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Analyte List

Customer Sample ID	Method	Compound	Reporting Limit	Units
MW-33A	6020 MET ICPMS	Benzo(a)anthracene	0.1	ug/L
		Chrysene	0.1	ug/L
		Benzo(b)fluoranthene	0.1	ug/L
		Benzo(k)fluoranthene	0.1	ug/L
		Benzo(a)pyrene	0.1	ug/L
		Indeno(1,2,3-cd)pyrene	0.1	ug/L
		Dibenz(a,h)anthracene	0.1	ug/L
		Benzo(g,h,i)perylene	0.1	ug/L
		2-Methylnaphthalene	0.1	ug/L
		Vanadium	0.005	mg/L
		Chromium	0.001	mg/L
		Arsenic	0.001	mg/L
		Lead	0.001	mg/L
		6020 MET ICPMS, Dissolved (LF)	Vanadium	5
	Chromium		1	ug/L
	Arsenic		1	ug/L
	Lead		1	ug/L
	7470 Mercury	Mercury	0.2	ug/L
	7470 Mercury, Dissolved (LF)	Mercury	0.2	ug/L
	8015M DRO/ORO Organics	Oil Range Organics (>C28-C40)	0.5	mg/L
		Diesel Range Organic (C10-C28)	0.25	mg/L
	8021 GCV BTEX, MTBE, GRO	Gasoline Range Organics	50	ug/L
	8260 MSV Low Level	Acetone	4	ug/L
		Benzene	0.5	ug/L
		Bromodichloromethane	0.5	ug/L
		Bromoform	0.5	ug/L
		Bromomethane	0.5	ug/L
		2-Butanone (MEK)	2	ug/L
		Carbon disulfide	1	ug/L
		Carbon tetrachloride	0.5	ug/L
		Chlorobenzene	0.5	ug/L
		Chloroethane	0.5	ug/L
		Chloroform	0.5	ug/L
		Chloromethane	0.5	ug/L
		1,2-Dibromo-3-chloropropane	0.2	ug/L
		Dibromochloromethane	0.5	ug/L
		1,2-Dibromoethane (EDB)	1	ug/L
		Dichlorodifluoromethane	1	ug/L
		1,1-Dichloroethane	0.5	ug/L
		1,2-Dichloroethane	0.5	ug/L
1,1-Dichloroethene		0.5	ug/L	
cis-1,2-Dichloroethene		1	ug/L	
trans-1,2-Dichloroethene		0.5	ug/L	
1,2-Dichloropropane		0.5	ug/L	
cis-1,3-Dichloropropene		0.5	ug/L	
trans-1,3-Dichloropropene		0.5	ug/L	
Ethylbenzene		0.5	ug/L	
2-Hexanone		1	ug/L	
Isopropylbenzene (Cumene)	1	ug/L		
Methylene Chloride	0.5	ug/L		

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Customer Sample ID	Method	Compound	Reporting Limit	Units
		4-Methyl-2-pentanone (MIBK)	1	ug/L
		Methyl-tert-butyl ether	0.5	ug/L
		Styrene	1	ug/L
		1,1,2,2-Tetrachloroethane	0.5	ug/L
		Tetrachloroethene	0.5	ug/L
		Toluene	0.5	ug/L
		1,1,1-Trichloroethane	0.5	ug/L
		1,1,2-Trichloroethane	0.5	ug/L
		Trichloroethene	0.5	ug/L
		Trichlorofluoromethane	0.5	ug/L
		Vinyl chloride	0.5	ug/L
		m&p-Xylene	2	ug/L
		o-Xylene	1	ug/L
		Methyl acetate	2	ug/L
	8270 MSSV PAH by SIM SEP	Naphthalene	0.1	ug/L
		Acenaphthylene	0.1	ug/L
		Acenaphthene	0.1	ug/L
		Fluorene	0.1	ug/L
		Phenanthrene	0.1	ug/L
		Anthracene	0.1	ug/L
		Fluoranthene	0.1	ug/L
		Pyrene	0.1	ug/L
		Benzo(a)anthracene	0.1	ug/L
		Chrysene	0.1	ug/L
		Benzo(b)fluoranthene	0.1	ug/L
		Benzo(k)fluoranthene	0.1	ug/L
		Benzo(a)pyrene	0.1	ug/L
		Indeno(1,2,3-cd)pyrene	0.1	ug/L
		Dibenz(a,h)anthracene	0.1	ug/L
		Benzo(g,h,i)perylene	0.1	ug/L
		2-Methylnaphthalene	0.1	ug/L
MW-P116	6020 MET ICPMS	Vanadium	0.005	mg/L
		Chromium	0.001	mg/L
		Arsenic	0.001	mg/L
		Lead	0.001	mg/L
	6020 MET ICPMS, Dissolved (LF)	Vanadium	5	ug/L
		Chromium	1	ug/L
		Arsenic	1	ug/L
		Lead	1	ug/L
	7470 Mercury	Mercury	0.2	ug/L
	7470 Mercury, Dissolved (LF)	Mercury	0.2	ug/L
	8015M DRO/ORO Organics	Oil Range Organics (>C28-C40)	0.5	mg/L
		Diesel Range Organic (C10-C28)	0.25	mg/L
	8021 GCV BTEX, MTBE, GRO	Gasoline Range Organics	50	ug/L
	8260 MSV Low Level	Acetone	4	ug/L
		Benzene	0.5	ug/L
		Bromodichloromethane	0.5	ug/L
		Bromoform	0.5	ug/L
		Bromomethane	0.5	ug/L
		2-Butanone (MEK)	2	ug/L

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Analyte List

Customer Sample ID	Method	Compound	Reporting Limit Units
		Carbon disulfide	1 ug/L
		Carbon tetrachloride	0.5 ug/L
		Chlorobenzene	0.5 ug/L
		Chloroethane	0.5 ug/L
		Chloroform	0.5 ug/L
		Chloromethane	0.5 ug/L
		1,2-Dibromo-3-chloropropane	0.2 ug/L
		Dibromochloromethane	0.5 ug/L
		1,2-Dibromoethane (EDB)	1 ug/L
		Dichlorodifluoromethane	1 ug/L
		1,1-Dichloroethane	0.5 ug/L
		1,2-Dichloroethane	0.5 ug/L
		1,1-Dichloroethene	0.5 ug/L
		cis-1,2-Dichloroethene	1 ug/L
		trans-1,2-Dichloroethene	0.5 ug/L
		1,2-Dichloropropane	0.5 ug/L
		cis-1,3-Dichloropropene	0.5 ug/L
		trans-1,3-Dichloropropene	0.5 ug/L
		Ethylbenzene	0.5 ug/L
		2-Hexanone	1 ug/L
		Isopropylbenzene (Cumene)	1 ug/L
		Methylene Chloride	0.5 ug/L
		4-Methyl-2-pentanone (MIBK)	1 ug/L
		Methyl-tert-butyl ether	0.5 ug/L
		Styrene	1 ug/L
		1,1,2,2-Tetrachloroethane	0.5 ug/L
		Tetrachloroethene	0.5 ug/L
		Toluene	0.5 ug/L
		1,1,1-Trichloroethane	0.5 ug/L
		1,1,2-Trichloroethane	0.5 ug/L
		Trichloroethene	0.5 ug/L
		Trichlorofluoromethane	0.5 ug/L
		Vinyl chloride	0.5 ug/L
		m&p-Xylene	2 ug/L
		o-Xylene	1 ug/L
		Methyl acetate	2 ug/L
	8270 MSSV PAH by SIM SEP	Naphthalene	0.1 ug/L
		Acenaphthylene	0.1 ug/L
		Acenaphthene	0.1 ug/L
		Fluorene	0.1 ug/L
		Phenanthrene	0.1 ug/L
		Anthracene	0.1 ug/L
		Fluoranthene	0.1 ug/L
		Pyrene	0.1 ug/L
		Benzo(a)anthracene	0.1 ug/L
		Chrysene	0.1 ug/L
		Benzo(b)fluoranthene	0.1 ug/L
		Benzo(k)fluoranthene	0.1 ug/L
		Benzo(a)pyrene	0.1 ug/L
		Indeno(1,2,3-cd)pyrene	0.1 ug/L

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Analyte List

Customer Sample ID	Method	Compound	Reporting		
			Limit	Units	
MW-P117	6020 MET ICPMS	Dibenz(a,h)anthracene	0.1	ug/L	
		Benzo(g,h,i)perylene	0.1	ug/L	
		2-Methylnaphthalene	0.1	ug/L	
		Vanadium	0.005	mg/L	
		Chromium	0.001	mg/L	
		Arsenic	0.001	mg/L	
		Lead	0.001	mg/L	
		6020 MET ICPMS, Dissolved (LF)	Vanadium	5	ug/L
			Chromium	1	ug/L
			Arsenic	1	ug/L
			Lead	1	ug/L
		7470 Mercury	Mercury	0.2	ug/L
		7470 Mercury, Dissolved (LF)	Mercury	0.2	ug/L
		8015M DRO/ORO Organics	Oil Range Organics (>C28-C40)	0.5	mg/L
			Diesel Range Organic (C10-C28)	0.25	mg/L
	8021 GCV BTEX, MTBE, GRO	Gasoline Range Organics	50	ug/L	
	8260 MSV Low Level	Acetone	4	ug/L	
		Benzene	0.5	ug/L	
		Bromodichloromethane	0.5	ug/L	
		Bromoform	0.5	ug/L	
		Bromomethane	0.5	ug/L	
		2-Butanone (MEK)	2	ug/L	
		Carbon disulfide	1	ug/L	
		Carbon tetrachloride	0.5	ug/L	
		Chlorobenzene	0.5	ug/L	
		Chloroethane	0.5	ug/L	
		Chloroform	0.5	ug/L	
		Chloromethane	0.5	ug/L	
		1,2-Dibromo-3-chloropropane	0.2	ug/L	
		Dibromochloromethane	0.5	ug/L	
		1,2-Dibromoethane (EDB)	1	ug/L	
		Dichlorodifluoromethane	1	ug/L	
		1,1-Dichloroethane	0.5	ug/L	
1,2-Dichloroethane		0.5	ug/L		
1,1-Dichloroethene		0.5	ug/L		
cis-1,2-Dichloroethene		1	ug/L		
trans-1,2-Dichloroethene		0.5	ug/L		
1,2-Dichloropropane		0.5	ug/L		
cis-1,3-Dichloropropene		0.5	ug/L		
trans-1,3-Dichloropropene		0.5	ug/L		
Ethylbenzene		0.5	ug/L		
2-Hexanone		1	ug/L		
Isopropylbenzene (Cumene)		1	ug/L		
Methylene Chloride	0.5	ug/L			
4-Methyl-2-pentanone (MIBK)	1	ug/L			
Methyl-tert-butyl ether	0.5	ug/L			
Styrene	1	ug/L			
1,1,2,2-Tetrachloroethane	0.5	ug/L			
Tetrachloroethene	0.5	ug/L			
Toluene	0.5	ug/L			

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Analyte List

Customer Sample ID	Method	Compound	Reporting Limit	Units
		1,1,1-Trichloroethane	0.5	ug/L
		1,1,2-Trichloroethane	0.5	ug/L
		Trichloroethene	0.5	ug/L
		Trichlorofluoromethane	0.5	ug/L
		Vinyl chloride	0.5	ug/L
		m&p-Xylene	2	ug/L
		o-Xylene	1	ug/L
		Methyl acetate	2	ug/L
	8270 MSSV PAH by SIM SEP	Naphthalene	0.1	ug/L
		Acenaphthylene	0.1	ug/L
		Acenaphthene	0.1	ug/L
		Fluorene	0.1	ug/L
		Phenanthrene	0.1	ug/L
		Anthracene	0.1	ug/L
		Fluoranthene	0.1	ug/L
		Pyrene	0.1	ug/L
		Benzo(a)anthracene	0.1	ug/L
		Chrysene	0.1	ug/L
		Benzo(b)fluoranthene	0.1	ug/L
		Benzo(k)fluoranthene	0.1	ug/L
		Benzo(a)pyrene	0.1	ug/L
		Indeno(1,2,3-cd)pyrene	0.1	ug/L
		Dibenz(a,h)anthracene	0.1	ug/L
		Benzo(g,h,i)perylene	0.1	ug/L
		2-Methylnaphthalene	0.1	ug/L
MW-65A	6020 MET ICPMS	Vanadium	0.005	mg/L
		Chromium	0.001	mg/L
		Arsenic	0.001	mg/L
		Lead	0.001	mg/L
	6020 MET ICPMS, Dissolved (LF)	Vanadium	5	ug/L
		Chromium	1	ug/L
		Arsenic	1	ug/L
		Lead	1	ug/L
	7470 Mercury	Mercury	0.2	ug/L
	7470 Mercury, Dissolved (LF)	Mercury	0.2	ug/L
	8015M DRO/ORO Organics	Oil Range Organics (>C28-C40)	0.5	mg/L
		Diesel Range Organic (C10-C28)	0.25	mg/L
	8021 GCV BTEX, MTBE, GRO	Gasoline Range Organics	50	ug/L
	8260 MSV Low Level	Acetone	4	ug/L
		Benzene	0.5	ug/L
		Bromodichloromethane	0.5	ug/L
		Bromoform	0.5	ug/L
		Bromomethane	0.5	ug/L
		2-Butanone (MEK)	2	ug/L
		Carbon disulfide	1	ug/L
		Carbon tetrachloride	0.5	ug/L
		Chlorobenzene	0.5	ug/L
		Chloroethane	0.5	ug/L
		Chloroform	0.5	ug/L
		Chloromethane	0.5	ug/L

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SAMPLE ACKNOWLEDGMENT

Analyte List

Customer Sample ID	Method	Compound	Reporting Limit	Units
		1,2-Dibromo-3-chloropropane	0.2	ug/L
		Dibromochloromethane	0.5	ug/L
		1,2-Dibromoethane (EDB)	1	ug/L
		Dichlorodifluoromethane	1	ug/L
		1,1-Dichloroethane	0.5	ug/L
		1,2-Dichloroethane	0.5	ug/L
		1,1-Dichloroethene	0.5	ug/L
		cis-1,2-Dichloroethene	1	ug/L
		trans-1,2-Dichloroethene	0.5	ug/L
		1,2-Dichloropropane	0.5	ug/L
		cis-1,3-Dichloropropene	0.5	ug/L
		trans-1,3-Dichloropropene	0.5	ug/L
		Ethylbenzene	0.5	ug/L
		2-Hexanone	1	ug/L
		Isopropylbenzene (Cumene)	1	ug/L
		Methylene Chloride	0.5	ug/L
		4-Methyl-2-pentanone (MIBK)	1	ug/L
		Methyl-tert-butyl ether	0.5	ug/L
		Styrene	1	ug/L
		1,1,2,2-Tetrachloroethane	0.5	ug/L
		Tetrachloroethene	0.5	ug/L
		Toluene	0.5	ug/L
		1,1,1-Trichloroethane	0.5	ug/L
		1,1,2-Trichloroethane	0.5	ug/L
		Trichloroethene	0.5	ug/L
		Trichlorofluoromethane	0.5	ug/L
		Vinyl chloride	0.5	ug/L
		m&p-Xylene	2	ug/L
		o-Xylene	1	ug/L
		Methyl acetate	2	ug/L
	8270 MSSV PAH by SIM SEP	Naphthalene	0.1	ug/L
		Acenaphthylene	0.1	ug/L
		Acenaphthene	0.1	ug/L
		Fluorene	0.1	ug/L
		Phenanthrene	0.1	ug/L
		Anthracene	0.1	ug/L
		Fluoranthene	0.1	ug/L
		Pyrene	0.1	ug/L
		Benzo(a)anthracene	0.1	ug/L
		Chrysene	0.1	ug/L
		Benzo(b)fluoranthene	0.1	ug/L
		Benzo(k)fluoranthene	0.1	ug/L
		Benzo(a)pyrene	0.1	ug/L
		Indeno(1,2,3-cd)pyrene	0.1	ug/L
		Dibenz(a,h)anthracene	0.1	ug/L
		Benzo(g,h,i)perylene	0.1	ug/L
		2-Methylnaphthalene	0.1	ug/L
FB-122116	8021 GCV BTEX, MTBE, GRO	Gasoline Range Organics	50	ug/L
	8260 MSV Low Level	Acetone	4	ug/L
		Benzene	0.5	ug/L

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SAMPLE ACKNOWLEDGMENT

Analyte List

Customer Sample ID	Method	Compound	Reporting Limit	Units
		Bromodichloromethane	0.5	ug/L
		Bromoform	0.5	ug/L
		Bromomethane	0.5	ug/L
		2-Butanone (MEK)	2	ug/L
		Carbon disulfide	1	ug/L
		Carbon tetrachloride	0.5	ug/L
		Chlorobenzene	0.5	ug/L
		Chloroethane	0.5	ug/L
		Chloroform	0.5	ug/L
		Chloromethane	0.5	ug/L
		1,2-Dibromo-3-chloropropane	0.2	ug/L
		Dibromochloromethane	0.5	ug/L
		1,2-Dibromoethane (EDB)	1	ug/L
		Dichlorodifluoromethane	1	ug/L
		1,1-Dichloroethane	0.5	ug/L
		1,2-Dichloroethane	0.5	ug/L
		1,1-Dichloroethene	0.5	ug/L
		cis-1,2-Dichloroethene	1	ug/L
		trans-1,2-Dichloroethene	0.5	ug/L
		1,2-Dichloropropane	0.5	ug/L
		cis-1,3-Dichloropropene	0.5	ug/L
		trans-1,3-Dichloropropene	0.5	ug/L
		Ethylbenzene	0.5	ug/L
		2-Hexanone	1	ug/L
		Isopropylbenzene (Cumene)	1	ug/L
		Methylene Chloride	0.5	ug/L
		4-Methyl-2-pentanone (MIBK)	1	ug/L
		Methyl-tert-butyl ether	0.5	ug/L
		Styrene	1	ug/L
		1,1,2,2-Tetrachloroethane	0.5	ug/L
		Tetrachloroethene	0.5	ug/L
		Toluene	0.5	ug/L
		1,1,1-Trichloroethane	0.5	ug/L
		1,1,2-Trichloroethane	0.5	ug/L
		Trichloroethene	0.5	ug/L
		Trichlorofluoromethane	0.5	ug/L
		Vinyl chloride	0.5	ug/L
		m&p-Xylene	2	ug/L
		o-Xylene	1	ug/L
		Methyl acetate	2	ug/L
TB-122216	8021 GCV BTEX, MTBE, GRO 8260 MSV Low Level	Gasoline Range Organics	50	ug/L
		Acetone	4	ug/L
		Benzene	0.5	ug/L
		Bromodichloromethane	0.5	ug/L
		Bromoform	0.5	ug/L
		Bromomethane	0.5	ug/L
		2-Butanone (MEK)	2	ug/L
		Carbon disulfide	1	ug/L
		Carbon tetrachloride	0.5	ug/L
		Chlorobenzene	0.5	ug/L

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SAMPLE ACKNOWLEDGMENT

Analyte List

Customer Sample ID	Method	Compound	Reporting Limit	Units
		Chloroethane	0.5	ug/L
		Chloroform	0.5	ug/L
		Chloromethane	0.5	ug/L
		1,2-Dibromo-3-chloropropane	0.2	ug/L
		Dibromochloromethane	0.5	ug/L
		1,2-Dibromoethane (EDB)	1	ug/L
		Dichlorodifluoromethane	1	ug/L
		1,1-Dichloroethane	0.5	ug/L
		1,2-Dichloroethane	0.5	ug/L
		1,1-Dichloroethene	0.5	ug/L
		cis-1,2-Dichloroethene	1	ug/L
		trans-1,2-Dichloroethene	0.5	ug/L
		1,2-Dichloropropane	0.5	ug/L
		cis-1,3-Dichloropropene	0.5	ug/L
		trans-1,3-Dichloropropene	0.5	ug/L
		Ethylbenzene	0.5	ug/L
		2-Hexanone	1	ug/L
		Isopropylbenzene (Cumene)	1	ug/L
		Methylene Chloride	0.5	ug/L
		4-Methyl-2-pentanone (MIBK)	1	ug/L
		Methyl-tert-butyl ether	0.5	ug/L
		Styrene	1	ug/L
		1,1,2,2-Tetrachloroethane	0.5	ug/L
		Tetrachloroethene	0.5	ug/L
		Toluene	0.5	ug/L
		1,1,1-Trichloroethane	0.5	ug/L
		1,1,2-Trichloroethane	0.5	ug/L
		Trichloroethene	0.5	ug/L
		Trichlorofluoromethane	0.5	ug/L
		Vinyl chloride	0.5	ug/L
		m&p-Xylene	2	ug/L
		o-Xylene	1	ug/L
		Methyl acetate	2	ug/L
EB-122216	6020 MET ICPMS	Vanadium	0.005	mg/L
		Chromium	0.001	mg/L
		Arsenic	0.001	mg/L
		Lead	0.001	mg/L
	6020 MET ICPMS, Dissolved (LF)	Vanadium	5	ug/L
		Chromium	1	ug/L
		Arsenic	1	ug/L
		Lead	1	ug/L
	7470 Mercury	Mercury	0.2	ug/L
	7470 Mercury, Dissolved (LF)	Mercury	0.2	ug/L
	8015M DRO/ORO Organics	Oil Range Organics (>C28-C40)	0.5	mg/L
		Diesel Range Organic (C10-C28)	0.25	mg/L
	8021 GCV BTEX, MTBE, GRO	Gasoline Range Organics	50	ug/L
	8260 MSV Low Level	Acetone	4	ug/L
		Benzene	0.5	ug/L
		Bromodichloromethane	0.5	ug/L
		Bromoform	0.5	ug/L

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Analyte List

Customer Sample ID	Method	Compound	Reporting Limit	Units
		Bromomethane	0.5	ug/L
		2-Butanone (MEK)	2	ug/L
		Carbon disulfide	1	ug/L
		Carbon tetrachloride	0.5	ug/L
		Chlorobenzene	0.5	ug/L
		Chloroethane	0.5	ug/L
		Chloroform	0.5	ug/L
		Chloromethane	0.5	ug/L
		1,2-Dibromo-3-chloropropane	0.2	ug/L
		Dibromochloromethane	0.5	ug/L
		1,2-Dibromoethane (EDB)	1	ug/L
		Dichlorodifluoromethane	1	ug/L
		1,1-Dichloroethane	0.5	ug/L
		1,2-Dichloroethane	0.5	ug/L
		1,1-Dichloroethene	0.5	ug/L
		cis-1,2-Dichloroethene	1	ug/L
		trans-1,2-Dichloroethene	0.5	ug/L
		1,2-Dichloropropane	0.5	ug/L
		cis-1,3-Dichloropropene	0.5	ug/L
		trans-1,3-Dichloropropene	0.5	ug/L
		Ethylbenzene	0.5	ug/L
		2-Hexanone	1	ug/L
		Isopropylbenzene (Cumene)	1	ug/L
		Methylene Chloride	0.5	ug/L
		4-Methyl-2-pentanone (MIBK)	1	ug/L
		Methyl-tert-butyl ether	0.5	ug/L
		Styrene	1	ug/L
		1,1,2,2-Tetrachloroethane	0.5	ug/L
		Tetrachloroethene	0.5	ug/L
		Toluene	0.5	ug/L
		1,1,1-Trichloroethane	0.5	ug/L
		1,1,2-Trichloroethane	0.5	ug/L
		Trichloroethene	0.5	ug/L
		Trichlorofluoromethane	0.5	ug/L
		Vinyl chloride	0.5	ug/L
		m&p-Xylene	2	ug/L
		o-Xylene	1	ug/L
		Methyl acetate	2	ug/L
	8270 MSSV PAH by SIM SEP	Naphthalene	0.1	ug/L
		Acenaphthylene	0.1	ug/L
		Acenaphthene	0.1	ug/L
		Fluorene	0.1	ug/L
		Phenanthrene	0.1	ug/L
		Anthracene	0.1	ug/L
		Fluoranthene	0.1	ug/L
		Pyrene	0.1	ug/L
		Benzo(a)anthracene	0.1	ug/L
		Chrysene	0.1	ug/L
		Benzo(b)fluoranthene	0.1	ug/L
		Benzo(k)fluoranthene	0.1	ug/L

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SAMPLE ACKNOWLEDGMENT

Analyte List

Customer Sample ID	Method	Compound	Reporting	
			Limit	Units
MW-15A	6020 MET ICPMS	Benzo(a)pyrene	0.1	ug/L
		Indeno(1,2,3-cd)pyrene	0.1	ug/L
		Dibenz(a,h)anthracene	0.1	ug/L
		Benzo(g,h,i)perylene	0.1	ug/L
		2-Methylnaphthalene	0.1	ug/L
		Vanadium	0.005	mg/L
		Chromium	0.001	mg/L
		Arsenic	0.001	mg/L
		Lead	0.001	mg/L
		6020 MET ICPMS, Dissolved (LF)	Vanadium	5
	Chromium		1	ug/L
	Arsenic		1	ug/L
	Lead		1	ug/L
	7470 Mercury	Mercury	0.2	ug/L
	7470 Mercury, Dissolved (LF)	Mercury	0.2	ug/L
	8015M DRO/ORO Organics	Oil Range Organics (>C28-C40)	0.5	mg/L
		Diesel Range Organic (C10-C28)	0.25	mg/L
	8021 GCV BTEX, MTBE, GRO	Gasoline Range Organics	50	ug/L
	8260 MSV Low Level	Acetone	4	ug/L
		Benzene	0.5	ug/L
		Bromodichloromethane	0.5	ug/L
		Bromoform	0.5	ug/L
		Bromomethane	0.5	ug/L
		2-Butanone (MEK)	2	ug/L
		Carbon disulfide	1	ug/L
		Carbon tetrachloride	0.5	ug/L
		Chlorobenzene	0.5	ug/L
		Chloroethane	0.5	ug/L
		Chloroform	0.5	ug/L
		Chloromethane	0.5	ug/L
		1,2-Dibromo-3-chloropropane	0.2	ug/L
		Dibromochloromethane	0.5	ug/L
		1,2-Dibromoethane (EDB)	1	ug/L
		Dichlorodifluoromethane	1	ug/L
		1,1-Dichloroethane	0.5	ug/L
		1,2-Dichloroethane	0.5	ug/L
		1,1-Dichloroethene	0.5	ug/L
		cis-1,2-Dichloroethene	1	ug/L
		trans-1,2-Dichloroethene	0.5	ug/L
		1,2-Dichloropropane	0.5	ug/L
cis-1,3-Dichloropropene		0.5	ug/L	
trans-1,3-Dichloropropene		0.5	ug/L	
Ethylbenzene		0.5	ug/L	
2-Hexanone		1	ug/L	
Isopropylbenzene (Cumene)		1	ug/L	
Methylene Chloride		0.5	ug/L	
4-Methyl-2-pentanone (MIBK)		1	ug/L	
Methyl-tert-butyl ether		0.5	ug/L	
Styrene	1	ug/L		
1,1,2,2-Tetrachloroethane	0.5	ug/L		

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SAMPLE ACKNOWLEDGMENT

Analyte List

Customer Sample ID	Method	Compound	Reporting		
			Limit	Units	
MW-15B2	8270 MSSV PAH by SIM SEP	Tetrachloroethene	0.5	ug/L	
		Toluene	0.5	ug/L	
		1,1,1-Trichloroethane	0.5	ug/L	
		1,1,2-Trichloroethane	0.5	ug/L	
		Trichloroethene	0.5	ug/L	
		Trichlorofluoromethane	0.5	ug/L	
		Vinyl chloride	0.5	ug/L	
		m&p-Xylene	2	ug/L	
		o-Xylene	1	ug/L	
		Methyl acetate	2	ug/L	
		Naphthalene	0.1	ug/L	
		Acenaphthylene	0.1	ug/L	
		Acenaphthene	0.1	ug/L	
		Fluorene	0.1	ug/L	
		Phenanthrene	0.1	ug/L	
		Anthracene	0.1	ug/L	
		Fluoranthene	0.1	ug/L	
		Pyrene	0.1	ug/L	
		Benzo(a)anthracene	0.1	ug/L	
		Chrysene	0.1	ug/L	
		Benzo(b)fluoranthene	0.1	ug/L	
		Benzo(k)fluoranthene	0.1	ug/L	
		Benzo(a)pyrene	0.1	ug/L	
		Indeno(1,2,3-cd)pyrene	0.1	ug/L	
		Dibenz(a,h)anthracene	0.1	ug/L	
		Benzo(g,h,i)perylene	0.1	ug/L	
		2-Methylnaphthalene	0.1	ug/L	
		Vanadium	6020 MET ICPMS	0.005	mg/L
		Chromium	6020 MET ICPMS	0.001	mg/L
		Arsenic	6020 MET ICPMS	0.001	mg/L
		Lead	6020 MET ICPMS	0.001	mg/L
		Vanadium	6020 MET ICPMS, Dissolved (LF)	5	ug/L
		Chromium	6020 MET ICPMS, Dissolved (LF)	1	ug/L
Arsenic	6020 MET ICPMS, Dissolved (LF)	1	ug/L		
Lead	6020 MET ICPMS, Dissolved (LF)	1	ug/L		
Mercury	7470 Mercury	0.2	ug/L		
Mercury	7470 Mercury, Dissolved (LF)	0.2	ug/L		
Oil Range Organics (>C28-C40)	8015M DRO/ORO Organics	0.5	mg/L		
Diesel Range Organic (C10-C28)	8015M DRO/ORO Organics	0.25	mg/L		
Gasoline Range Organics	8021 GCV BTEX, MTBE, GRO	50	ug/L		
Acetone	8260 MSV Low Level	4	ug/L		
Benzene	8260 MSV Low Level	0.5	ug/L		
Bromodichloromethane	8260 MSV Low Level	0.5	ug/L		
Bromoform	8260 MSV Low Level	0.5	ug/L		
Bromomethane	8260 MSV Low Level	0.5	ug/L		
2-Butanone (MEK)	8260 MSV Low Level	2	ug/L		
Carbon disulfide	8260 MSV Low Level	1	ug/L		
Carbon tetrachloride	8260 MSV Low Level	0.5	ug/L		
Chlorobenzene	8260 MSV Low Level	0.5	ug/L		
Chloroethane	8260 MSV Low Level	0.5	ug/L		

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Analyte List

Customer Sample ID	Method	Compound	Reporting Limit Units
		Chloroform	0.5 ug/L
		Chloromethane	0.5 ug/L
		1,2-Dibromo-3-chloropropane	0.2 ug/L
		Dibromochloromethane	0.5 ug/L
		1,2-Dibromoethane (EDB)	1 ug/L
		Dichlorodifluoromethane	1 ug/L
		1,1-Dichloroethane	0.5 ug/L
		1,2-Dichloroethane	0.5 ug/L
		1,1-Dichloroethene	0.5 ug/L
		cis-1,2-Dichloroethene	1 ug/L
		trans-1,2-Dichloroethene	0.5 ug/L
		1,2-Dichloropropane	0.5 ug/L
		cis-1,3-Dichloropropene	0.5 ug/L
		trans-1,3-Dichloropropene	0.5 ug/L
		Ethylbenzene	0.5 ug/L
		2-Hexanone	1 ug/L
		Isopropylbenzene (Cumene)	1 ug/L
		Methylene Chloride	0.5 ug/L
		4-Methyl-2-pentanone (MIBK)	1 ug/L
		Methyl-tert-butyl ether	0.5 ug/L
		Styrene	1 ug/L
		1,1,2,2-Tetrachloroethane	0.5 ug/L
		Tetrachloroethene	0.5 ug/L
		Toluene	0.5 ug/L
		1,1,1-Trichloroethane	0.5 ug/L
		1,1,2-Trichloroethane	0.5 ug/L
		Trichloroethene	0.5 ug/L
		Trichlorofluoromethane	0.5 ug/L
		Vinyl chloride	0.5 ug/L
		m&p-Xylene	2 ug/L
		o-Xylene	1 ug/L
		Methyl acetate	2 ug/L
	8270 MSSV PAH by SIM SEP	Naphthalene	0.1 ug/L
		Acenaphthylene	0.1 ug/L
		Acenaphthene	0.1 ug/L
		Fluorene	0.1 ug/L
		Phenanthrene	0.1 ug/L
		Anthracene	0.1 ug/L
		Fluoranthene	0.1 ug/L
		Pyrene	0.1 ug/L
		Benzo(a)anthracene	0.1 ug/L
		Chrysene	0.1 ug/L
		Benzo(b)fluoranthene	0.1 ug/L
		Benzo(k)fluoranthene	0.1 ug/L
		Benzo(a)pyrene	0.1 ug/L
		Indeno(1,2,3-cd)pyrene	0.1 ug/L
		Dibenz(a,h)anthracene	0.1 ug/L
		Benzo(g,h,i)perylene	0.1 ug/L
		2-Methylnaphthalene	0.1 ug/L
DUP002	6020 MET ICPMS	Vanadium	0.005 mg/L

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Analyte List

Customer Sample ID	Method	Compound	Reporting Limit	Units
		Chromium	0.001	mg/L
		Arsenic	0.001	mg/L
		Lead	0.001	mg/L
	6020 MET ICPMS, Dissolved (LF)	Vanadium	5	ug/L
		Chromium	1	ug/L
		Arsenic	1	ug/L
		Lead	1	ug/L
	7470 Mercury	Mercury	0.2	ug/L
	7470 Mercury, Dissolved (LF)	Mercury	0.2	ug/L
	8015M DRO/ORO Organics	Oil Range Organics (>C28-C40)	0.5	mg/L
		Diesel Range Organic (C10-C28)	0.25	mg/L
	8021 GCV BTEX, MTBE, GRO	Gasoline Range Organics	50	ug/L
	8260 MSV Low Level	Acetone	4	ug/L
		Benzene	0.5	ug/L
		Bromodichloromethane	0.5	ug/L
		Bromoform	0.5	ug/L
		Bromomethane	0.5	ug/L
		2-Butanone (MEK)	2	ug/L
		Carbon disulfide	1	ug/L
		Carbon tetrachloride	0.5	ug/L
		Chlorobenzene	0.5	ug/L
		Chloroethane	0.5	ug/L
		Chloroform	0.5	ug/L
		Chloromethane	0.5	ug/L
		1,2-Dibromo-3-chloropropane	0.2	ug/L
		Dibromochloromethane	0.5	ug/L
		1,2-Dibromoethane (EDB)	1	ug/L
		Dichlorodifluoromethane	1	ug/L
		1,1-Dichloroethane	0.5	ug/L
		1,2-Dichloroethane	0.5	ug/L
		1,1-Dichloroethene	0.5	ug/L
		cis-1,2-Dichloroethene	1	ug/L
		trans-1,2-Dichloroethene	0.5	ug/L
		1,2-Dichloropropane	0.5	ug/L
		cis-1,3-Dichloropropene	0.5	ug/L
		trans-1,3-Dichloropropene	0.5	ug/L
		Ethylbenzene	0.5	ug/L
		2-Hexanone	1	ug/L
		Isopropylbenzene (Cumene)	1	ug/L
		Methylene Chloride	0.5	ug/L
		4-Methyl-2-pentanone (MIBK)	1	ug/L
		Methyl-tert-butyl ether	0.5	ug/L
		Styrene	1	ug/L
		1,1,2,2-Tetrachloroethane	0.5	ug/L
		Tetrachloroethene	0.5	ug/L
		Toluene	0.5	ug/L
		1,1,1-Trichloroethane	0.5	ug/L
		1,1,2-Trichloroethane	0.5	ug/L
		Trichloroethene	0.5	ug/L
		Trichlorofluoromethane	0.5	ug/L

Please contact your project manager if you recognize any discrepancy in this form or have any questions about your project.

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SAMPLE ACKNOWLEDGMENT

Analyte List

Customer Sample ID	Method	Compound	Reporting Limit	Units
		Vinyl chloride	0.5	ug/L
		m&p-Xylene	2	ug/L
		o-Xylene	1	ug/L
		Methyl acetate	2	ug/L
	8270 MSSV PAH by SIM SEP	Naphthalene	0.1	ug/L
		Acenaphthylene	0.1	ug/L
		Acenaphthene	0.1	ug/L
		Fluorene	0.1	ug/L
		Phenanthrene	0.1	ug/L
		Anthracene	0.1	ug/L
		Fluoranthene	0.1	ug/L
		Pyrene	0.1	ug/L
		Benzo(a)anthracene	0.1	ug/L
		Chrysene	0.1	ug/L
		Benzo(b)fluoranthene	0.1	ug/L
		Benzo(k)fluoranthene	0.1	ug/L
		Benzo(a)pyrene	0.1	ug/L
		Indeno(1,2,3-cd)pyrene	0.1	ug/L
		Dibenz(a,h)anthracene	0.1	ug/L
		Benzo(g,h,i)perylene	0.1	ug/L
		2-Methylnaphthalene	0.1	ug/L
MW-15B MS/MSD	6020 MET ICPMS	Vanadium	0.005	mg/L
		Chromium	0.001	mg/L
		Arsenic	0.001	mg/L
		Lead	0.001	mg/L
	6020 MET ICPMS, Dissolved (LF)	Vanadium	5	ug/L
		Chromium	1	ug/L
		Arsenic	1	ug/L
		Lead	1	ug/L
	7470 Mercury	Mercury	0.2	ug/L
	7470 Mercury, Dissolved (LF)	Mercury	0.2	ug/L
	8015M DRO/ORO Organics	Oil Range Organics (>C28-C40)	0.5	mg/L
		Diesel Range Organic (C10-C28)	0.25	mg/L
	8021 GCV BTEX, MTBE, GRO	Gasoline Range Organics	50	ug/L
	8260 MSV Low Level	Acetone	4	ug/L
		Benzene	0.5	ug/L
		Bromodichloromethane	0.5	ug/L
		Bromoform	0.5	ug/L
		Bromomethane	0.5	ug/L
		2-Butanone (MEK)	2	ug/L
		Carbon disulfide	1	ug/L
		Carbon tetrachloride	0.5	ug/L
		Chlorobenzene	0.5	ug/L
		Chloroethane	0.5	ug/L
		Chloroform	0.5	ug/L
		Chloromethane	0.5	ug/L
		1,2-Dibromo-3-chloropropane	0.2	ug/L
		Dibromochloromethane	0.5	ug/L
		1,2-Dibromoethane (EDB)	1	ug/L
		Dichlorodifluoromethane	1	ug/L

Please contact your project manager if you recognize any discrepancy in this form or have any questions about your project.

Thank you for choosing Pace Analytical Services, Inc.

SAMPLE ACKNOWLEDGMENT

Analyte List

Customer Sample ID	Method	Compound	Reporting Limit	Units
		1,1-Dichloroethane	0.5	ug/L
		1,2-Dichloroethane	0.5	ug/L
		1,1-Dichloroethene	0.5	ug/L
		cis-1,2-Dichloroethene	1	ug/L
		trans-1,2-Dichloroethene	0.5	ug/L
		1,2-Dichloropropane	0.5	ug/L
		cis-1,3-Dichloropropene	0.5	ug/L
		trans-1,3-Dichloropropene	0.5	ug/L
		Ethylbenzene	0.5	ug/L
		2-Hexanone	1	ug/L
		Isopropylbenzene (Cumene)	1	ug/L
		Methylene Chloride	0.5	ug/L
		4-Methyl-2-pentanone (MIBK)	1	ug/L
		Methyl-tert-butyl ether	0.5	ug/L
		Styrene	1	ug/L
		1,1,1,2-Tetrachloroethane	0.5	ug/L
		Tetrachloroethene	0.5	ug/L
		Toluene	0.5	ug/L
		1,1,1-Trichloroethane	0.5	ug/L
		1,1,2-Trichloroethane	0.5	ug/L
		Trichloroethene	0.5	ug/L
		Trichlorofluoromethane	0.5	ug/L
		Vinyl chloride	0.5	ug/L
		m&p-Xylene	2	ug/L
		o-Xylene	1	ug/L
		Methyl acetate	2	ug/L
	8270 MSSV PAH by SIM SEP	Naphthalene	0.1	ug/L
		Acenaphthylene	0.1	ug/L
		Acenaphthene	0.1	ug/L
		Fluorene	0.1	ug/L
		Phenanthrene	0.1	ug/L
		Anthracene	0.1	ug/L
		Fluoranthene	0.1	ug/L
		Pyrene	0.1	ug/L
		Benzo(a)anthracene	0.1	ug/L
		Chrysene	0.1	ug/L
		Benzo(b)fluoranthene	0.1	ug/L
		Benzo(k)fluoranthene	0.1	ug/L
		Benzo(a)pyrene	0.1	ug/L
		Indeno(1,2,3-cd)pyrene	0.1	ug/L
		Dibenz(a,h)anthracene	0.1	ug/L
		Benzo(g,h,i)perylene	0.1	ug/L
		2-Methylnaphthalene	0.1	ug/L
FB-122216	8021 GCV BTEX, MTBE, GRO	Gasoline Range Organics	50	ug/L
	8260 MSV Low Level	Acetone	4	ug/L
		Benzene	0.5	ug/L
		Bromodichloromethane	0.5	ug/L
		Bromoform	0.5	ug/L
		Bromomethane	0.5	ug/L
		2-Butanone (MEK)	2	ug/L

Please contact your project manager if you recognize any discrepancy in this form or have any questions about your project.

Thank you for choosing Pace Analytical Services, Inc.

SAMPLE ACKNOWLEDGMENT

Analyte List

Customer Sample ID	Method	Compound	Reporting Limit Units
		Carbon disulfide	1 ug/L
		Carbon tetrachloride	0.5 ug/L
		Chlorobenzene	0.5 ug/L
		Chloroethane	0.5 ug/L
		Chloroform	0.5 ug/L
		Chloromethane	0.5 ug/L
		1,2-Dibromo-3-chloropropane	0.2 ug/L
		Dibromochloromethane	0.5 ug/L
		1,2-Dibromoethane (EDB)	1 ug/L
		Dichlorodifluoromethane	1 ug/L
		1,1-Dichloroethane	0.5 ug/L
		1,2-Dichloroethane	0.5 ug/L
		1,1-Dichloroethene	0.5 ug/L
		cis-1,2-Dichloroethene	1 ug/L
		trans-1,2-Dichloroethene	0.5 ug/L
		1,2-Dichloropropane	0.5 ug/L
		cis-1,3-Dichloropropene	0.5 ug/L
		trans-1,3-Dichloropropene	0.5 ug/L
		Ethylbenzene	0.5 ug/L
		2-Hexanone	1 ug/L
		Isopropylbenzene (Cumene)	1 ug/L
		Methylene Chloride	0.5 ug/L
		4-Methyl-2-pentanone (MIBK)	1 ug/L
		Methyl-tert-butyl ether	0.5 ug/L
		Styrene	1 ug/L
		1,1,2,2-Tetrachloroethane	0.5 ug/L
		Tetrachloroethene	0.5 ug/L
		Toluene	0.5 ug/L
		1,1,1-Trichloroethane	0.5 ug/L
		1,1,2-Trichloroethane	0.5 ug/L
		Trichloroethene	0.5 ug/L
		Trichlorofluoromethane	0.5 ug/L
		Vinyl chloride	0.5 ug/L
		m&p-Xylene	2 ug/L
		o-Xylene	1 ug/L
		Methyl acetate	2 ug/L

Please contact your project manager if you recognize any discrepancy in this form or have any questions about your project.

Thank you for choosing Pace Analytical Services, Inc.

January 16, 2017

Efrain Calderon
BBL Caribe Engineering P.S.C.
48 City View Plaza1, Suite 401
Road 16, Km. 1.2
Guaynabo, PR 00968

RE: Project: PUMA TERMINAL MW SAMPLING
Pace Project No.: 2047989

Dear Efrain Calderon:

Enclosed are the analytical results for sample(s) received by the laboratory on December 29, 2016. The results relate only to the samples included in this report. Results reported herein conform to the most current, applicable TNI/NELAC standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,



Juan Redondo
juan.redondo@pacelabs.com
Project Manager

Enclosures

cc: Sharon Colon
Abner Hernandez
Marianela Mercado-Burgos



REPORT OF LABORATORY ANALYSIS

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CERTIFICATIONS

Project: PUMA TERMINAL MW SAMPLING

Pace Project No.: 2047989

New Orleans Certification IDs

California Env. Lab Accreditation Program Branch:
11277CA

Florida Department of Health (NELAC): E87595

Illinois Environmental Protection Agency: 0025721

Kansas Department of Health and Environment (NELAC):
E-10266

Louisiana Dept. of Environmental Quality (NELAC/LELAP):
02006

Pennsylvania Dept. of Env Protection (NELAC): 68-04202

Texas Commission on Env. Quality (NELAC):
T104704405-09-TX

U.S. Dept. of Agriculture Foreign Soil Import: P330-10-
00119

Commonwealth of Virginia (TNI): 480246

REPORT OF LABORATORY ANALYSIS

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SAMPLE SUMMARY

Project: PUMA TERMINAL MW SAMPLING

Pace Project No.: 2047989

Lab ID	Sample ID	Matrix	Date Collected	Date Received
2047989001	TB-122916	Water	12/29/16 00:00	12/29/16 14:00
2047989002	EB-122916	Water	12/29/16 09:06	12/29/16 14:00
2047989003	MW-86A	Water	12/29/16 09:50	12/29/16 14:00
2047989004	MW-MP5A	Water	12/29/16 10:48	12/29/16 14:00
2047989005	MW-DP5	Water	12/29/16 11:37	12/29/16 14:00
2047989006	FB-122916	Water	12/29/16 11:42	12/29/16 14:00

REPORT OF LABORATORY ANALYSIS

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SAMPLE ANALYTE COUNT

Project: PUMA TERMINAL MW SAMPLING

Pace Project No.: 2047989

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
2047989001	TB-122916	EPA 8015/8021	MHM	2	PASI-N
		EPA 5030B/8260	RMP	45	PASI-N
2047989002	EB-122916	EPA 8015B Modified	SLF	4	PASI-N
		EPA 8015/8021	MHM	2	PASI-N
		EPA 6020	KJR	4	PASI-N
		EPA 6020	KJR	4	PASI-N
		EPA 7470	MHB1	1	PASI-N
		EPA 7470	MHB1	1	PASI-N
		EPA 8270 by SIM	GEJ	19	PASI-N
2047989003	MW-86A	EPA 5030B/8260	RMP	45	PASI-N
		EPA 8015B Modified	SLF	4	PASI-N
		EPA 8015/8021	MHM	2	PASI-N
		EPA 6020	KJR	4	PASI-N
		EPA 6020	KJR	4	PASI-N
		EPA 7470	MHB1	1	PASI-N
		EPA 7470	MHB1	1	PASI-N
2047989004	MW-MP5A	EPA 8270 by SIM	GEJ	19	PASI-N
		EPA 5030B/8260	RMP	45	PASI-N
		EPA 8015B Modified	SLF	4	PASI-N
		EPA 8015/8021	MHM	2	PASI-N
		EPA 6020	KJR	4	PASI-N
		EPA 6020	KJR	4	PASI-N
		EPA 7470	MHB1	1	PASI-N
2047989005	MW-DP5	EPA 7470	MHB1	1	PASI-N
		EPA 7470	MHB1	1	PASI-N
		EPA 8270 by SIM	GEJ	19	PASI-N
		EPA 5030B/8260	RMP	45	PASI-N
		EPA 8015B Modified	SLF	4	PASI-N
		EPA 8015/8021	MHM	2	PASI-N
		EPA 6020	KJR	4	PASI-N
2047989006	FB-122916	EPA 6020	KJR	4	PASI-N
		EPA 7470	MHB1	1	PASI-N
		EPA 7470	MHB1	1	PASI-N
		EPA 8270 by SIM	GEJ	19	PASI-N
		EPA 5030B/8260	RMP	45	PASI-N
2047989006	FB-122916	EPA 8015/8021	MHM	2	PASI-N
		EPA 5030B/8260	RMP	45	PASI-N

REPORT OF LABORATORY ANALYSIS

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PROJECT NARRATIVE

Project: PUMA TERMINAL MW SAMPLING
Pace Project No.: 2047989

Method: EPA 8015B Modified
Description: 8015M DRO/ORO Organics
Client: BBL Caribe / Arcadis PR
Date: January 16, 2017

General Information:

4 samples were analyzed for EPA 8015B Modified. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:

The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:

The samples were prepared in accordance with EPA 3535 with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):

All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:

All criteria were within method requirements with any exceptions noted below.

Surrogates:

All surrogates were within QC limits with any exceptions noted below.

Method Blank:

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

REPORT OF LABORATORY ANALYSIS

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PROJECT NARRATIVE

Project: PUMA TERMINAL MW SAMPLING

Pace Project No.: 2047989

Method: EPA 8015/8021

Description: 8021 GCV BTEX, MTBE, GRO

Client: BBL Caribe / Arcadis PR

Date: January 16, 2017

General Information:

6 samples were analyzed for EPA 8015/8021. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:

The samples were analyzed within the method required hold times with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):

All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:

All criteria were within method requirements with any exceptions noted below.

Surrogates:

All surrogates were within QC limits with any exceptions noted below.

Method Blank:

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

REPORT OF LABORATORY ANALYSIS

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PROJECT NARRATIVE

Project: PUMA TERMINAL MW SAMPLING

Pace Project No.: 2047989

Method: EPA 6020

Description: 6020 MET ICPMS

Client: BBL Caribe / Arcadis PR

Date: January 16, 2017

General Information:

4 samples were analyzed for EPA 6020. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:

The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:

The samples were prepared in accordance with EPA 3010 with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):

All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:

All criteria were within method requirements with any exceptions noted below.

Internal Standards:

All internal standards were within QC limits with any exceptions noted below.

Method Blank:

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

REPORT OF LABORATORY ANALYSIS

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PROJECT NARRATIVE

Project: PUMA TERMINAL MW SAMPLING

Pace Project No.: 2047989

Method: EPA 6020

Description: 6020 MET ICPMS, Dissolved (LF)

Client: BBL Caribe / Arcadis PR

Date: January 16, 2017

General Information:

4 samples were analyzed for EPA 6020. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:

The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:

The samples were prepared in accordance with EPA 3005A with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):

All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:

All criteria were within method requirements with any exceptions noted below.

Internal Standards:

All internal standards were within QC limits with any exceptions noted below.

Method Blank:

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

REPORT OF LABORATORY ANALYSIS

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PROJECT NARRATIVE

Project: PUMA TERMINAL MW SAMPLING
Pace Project No.: 2047989

Method: EPA 7470
Description: 7470 Mercury
Client: BBL Caribe / Arcadis PR
Date: January 16, 2017

General Information:

4 samples were analyzed for EPA 7470. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:

The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:

The samples were prepared in accordance with EPA 7470 with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):

All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:

All criteria were within method requirements with any exceptions noted below.

Method Blank:

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

REPORT OF LABORATORY ANALYSIS

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PROJECT NARRATIVE

Project: PUMA TERMINAL MW SAMPLING

Pace Project No.: 2047989

Method: EPA 7470

Description: 7470 Mercury, Dissolved (LF)

Client: BBL Caribe / Arcadis PR

Date: January 16, 2017

General Information:

4 samples were analyzed for EPA 7470. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:

The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:

The samples were prepared in accordance with EPA 7470 with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):

All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:

All criteria were within method requirements with any exceptions noted below.

Method Blank:

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

REPORT OF LABORATORY ANALYSIS

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PROJECT NARRATIVE

Project: PUMA TERMINAL MW SAMPLING
Pace Project No.: 2047989

Method: EPA 8270 by SIM
Description: 8270 MSSV PAH by SIM SEP
Client: BBL Caribe / Arcadis PR
Date: January 16, 2017

General Information:

4 samples were analyzed for EPA 8270 by SIM. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:

The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:

The samples were prepared in accordance with EPA 3510 with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):

All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:

All criteria were within method requirements with any exceptions noted below.

Internal Standards:

All internal standards were within QC limits with any exceptions noted below.

Surrogates:

All surrogates were within QC limits with any exceptions noted below.

Method Blank:

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

QC Batch: 71324

A matrix spike/matrix spike duplicate was not performed due to insufficient sample volume.

Additional Comments:

REPORT OF LABORATORY ANALYSIS

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PROJECT NARRATIVE

Project: PUMA TERMINAL MW SAMPLING
Pace Project No.: 2047989

Method: EPA 5030B/8260
Description: 8260 MSV Low Level
Client: BBL Caribe / Arcadis PR
Date: January 16, 2017

General Information:

6 samples were analyzed for EPA 5030B/8260. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:

The samples were analyzed within the method required hold times with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):

All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:

All criteria were within method requirements with any exceptions noted below.

Internal Standards:

All internal standards were within QC limits with any exceptions noted below.

Surrogates:

All surrogates were within QC limits with any exceptions noted below.

Method Blank:

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

QC Batch: 71267

L0: Analyte recovery in the laboratory control sample (LCS) was outside QC limits.

- LCS (Lab ID: 298069)
 - Carbon disulfide
- LCS (Lab ID: 298395)
 - Carbon disulfide

Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

QC Batch: 71267

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 2047993001

M0: Matrix spike recovery and/or matrix spike duplicate recovery was outside laboratory control limits.

- MS (Lab ID: 298070)
 - Carbon disulfide
- MSD (Lab ID: 298071)
 - Carbon disulfide

Additional Comments:

REPORT OF LABORATORY ANALYSIS

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PROJECT NARRATIVE

Project: PUMA TERMINAL MW SAMPLING

Pace Project No.: 2047989

Method: EPA 5030B/8260

Description: 8260 MSV Low Level

Client: BBL Caribe / Arcadis PR

Date: January 16, 2017

Analyte Comments:

QC Batch: 71267

C9: Common Laboratory Contaminant.

- EB-122916 (Lab ID: 2047989002)
 - Acetone
- FB-122916 (Lab ID: 2047989006)
 - Acetone
- MW-86A (Lab ID: 2047989003)
 - Acetone
- MW-DP5 (Lab ID: 2047989005)
 - Acetone
- MW-MP5A (Lab ID: 2047989004)
 - Acetone

This data package has been reviewed for quality and completeness and is approved for release.

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: PUMA TERMINAL MW SAMPLING

Pace Project No.: 2047989

Sample: TB-122916	Lab ID: 2047989001	Collected: 12/29/16 00:00	Received: 12/29/16 14:00	Matrix: Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8021 GCV BTEX, MTBE, GRO	Analytical Method: EPA 8015/8021							
Gasoline Range Organics	ND	ug/L	50.0	1		01/05/17 04:36		
Surrogates								
4-Bromofluorobenzene (S)	89	%.	44-148	1		01/05/17 04:36	460-00-4	
8260 MSV Low Level	Analytical Method: EPA 5030B/8260							
Acetone	142	ug/L	4.0	1		01/04/17 12:47	67-64-1	
Benzene	ND	ug/L	0.50	1		01/04/17 12:47	71-43-2	
Bromodichloromethane	ND	ug/L	0.50	1		01/04/17 12:47	75-27-4	
Bromoform	ND	ug/L	0.50	1		01/04/17 12:47	75-25-2	
Bromomethane	ND	ug/L	0.50	1		01/04/17 12:47	74-83-9	
2-Butanone (MEK)	ND	ug/L	2.0	1		01/04/17 12:47	78-93-3	
Carbon disulfide	ND	ug/L	1.0	1		01/04/17 12:47	75-15-0	L3
Carbon tetrachloride	ND	ug/L	0.50	1		01/04/17 12:47	56-23-5	
Chlorobenzene	ND	ug/L	0.50	1		01/04/17 12:47	108-90-7	
Chloroethane	ND	ug/L	0.50	1		01/04/17 12:47	75-00-3	
Chloroform	ND	ug/L	0.50	1		01/04/17 12:47	67-66-3	
Chloromethane	ND	ug/L	0.50	1		01/04/17 12:47	74-87-3	
1,2-Dibromo-3-chloropropane	ND	ug/L	0.20	1		01/04/17 12:47	96-12-8	
Dibromochloromethane	ND	ug/L	0.50	1		01/04/17 12:47	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	1		01/04/17 12:47	106-93-4	
Dichlorodifluoromethane	ND	ug/L	1.0	1		01/04/17 12:47	75-71-8	
1,1-Dichloroethane	ND	ug/L	0.50	1		01/04/17 12:47	75-34-3	
1,2-Dichloroethane	ND	ug/L	0.50	1		01/04/17 12:47	107-06-2	
1,1-Dichloroethene	ND	ug/L	0.50	1		01/04/17 12:47	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	1		01/04/17 12:47	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	0.50	1		01/04/17 12:47	156-60-5	
1,2-Dichloropropane	ND	ug/L	0.50	1		01/04/17 12:47	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	0.50	1		01/04/17 12:47	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	0.50	1		01/04/17 12:47	10061-02-6	
Ethylbenzene	ND	ug/L	0.50	1		01/04/17 12:47	100-41-4	
2-Hexanone	ND	ug/L	1.0	1		01/04/17 12:47	591-78-6	
Isopropylbenzene (Cumene)	ND	ug/L	1.0	1		01/04/17 12:47	98-82-8	
Methyl acetate	ND	ug/L	2.0	1		01/04/17 12:47	79-20-9	
Methylene Chloride	ND	ug/L	0.50	1		01/04/17 12:47	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	1.0	1		01/04/17 12:47	108-10-1	
Methyl-tert-butyl ether	ND	ug/L	0.50	1		01/04/17 12:47	1634-04-4	
Styrene	ND	ug/L	1.0	1		01/04/17 12:47	100-42-5	
1,1,2,2-Tetrachloroethane	ND	ug/L	0.50	1		01/04/17 12:47	79-34-5	
Tetrachloroethene	ND	ug/L	0.50	1		01/04/17 12:47	127-18-4	
Toluene	ND	ug/L	0.50	1		01/04/17 12:47	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	0.50	1		01/04/17 12:47	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	0.50	1		01/04/17 12:47	79-00-5	
Trichloroethene	ND	ug/L	0.50	1		01/04/17 12:47	79-01-6	
Trichlorofluoromethane	ND	ug/L	0.50	1		01/04/17 12:47	75-69-4	
Vinyl chloride	ND	ug/L	0.50	1		01/04/17 12:47	75-01-4	
m&p-Xylene	ND	ug/L	2.0	1		01/04/17 12:47	179601-23-1	
o-Xylene	ND	ug/L	1.0	1		01/04/17 12:47	95-47-6	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: PUMA TERMINAL MW SAMPLING

Sample Project No.: 2047989

Sample: TB-122916	Lab ID: 2047989001	Collected: 12/29/16 00:00	Received: 12/29/16 14:00	Matrix: Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV Low Level		Analytical Method: EPA 5030B/8260						
Surrogates								
Dibromofluoromethane (S)	102	%.	72-126	1		01/04/17 12:47	1868-53-7	
4-Bromofluorobenzene (S)	99	%.	68-124	1		01/04/17 12:47	460-00-4	
Toluene-d8 (S)	98	%.	79-119	1		01/04/17 12:47	2037-26-5	
Sample: EB-122916		Lab ID: 2047989002		Collected: 12/29/16 09:06	Received: 12/29/16 14:00	Matrix: Water		
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8015M DRO/ORO Organics		Analytical Method: EPA 8015B Modified Preparation Method: EPA 3535						
Diesel Range Organic (C10-C28)	ND	mg/L	0.50	1	01/04/17 08:39	01/10/17 18:21		
Oil Range Organics (>C28-C40)	ND	mg/L	1.0	1	01/04/17 08:39	01/10/17 18:21		
Surrogates								
n-Pentacosane (S)	36	%.	16-137	1	01/04/17 08:39	01/10/17 18:21	629-99-2	
o-Terphenyl (S)	41	%.	10-121	1	01/04/17 08:39	01/10/17 18:21	84-15-1	
8021 GCV BTEX, MTBE, GRO		Analytical Method: EPA 8015/8021						
Gasoline Range Organics	ND	ug/L	50.0	1		01/05/17 05:03		
Surrogates								
4-Bromofluorobenzene (S)	90	%.	44-148	1		01/05/17 05:03	460-00-4	
6020 MET ICPMS		Analytical Method: EPA 6020 Preparation Method: EPA 3010						
Arsenic	ND	mg/L	0.0010	1	12/30/16 16:10	01/06/17 13:47	7440-38-2	
Chromium	ND	mg/L	0.0010	1	12/30/16 16:10	01/06/17 13:47	7440-47-3	
Lead	ND	mg/L	0.0010	1	12/30/16 16:10	01/06/17 13:47	7439-92-1	
Vanadium	ND	mg/L	0.0050	1	12/30/16 16:10	01/06/17 13:47	7440-62-2	
6020 MET ICPMS, Dissolved (LF)		Analytical Method: EPA 6020 Preparation Method: EPA 3005A						
Arsenic, Dissolved	ND	ug/L	1.0	1	12/30/16 18:15	01/06/17 15:41	7440-38-2	
Chromium, Dissolved	ND	ug/L	1.0	1	12/30/16 18:15	01/06/17 15:41	7440-47-3	
Lead, Dissolved	ND	ug/L	1.0	1	12/30/16 18:15	01/06/17 15:41	7439-92-1	
Vanadium, Dissolved	ND	ug/L	5.0	1	12/30/16 18:15	01/06/17 15:41	7440-62-2	
7470 Mercury		Analytical Method: EPA 7470 Preparation Method: EPA 7470						
Mercury	ND	ug/L	0.20	1	12/30/16 17:49	01/03/17 13:33	7439-97-6	
7470 Mercury, Dissolved (LF)		Analytical Method: EPA 7470 Preparation Method: EPA 7470						
Mercury, Dissolved	ND	ug/L	0.20	1	12/30/16 17:49	01/03/17 12:50	7439-97-6	
8270 MSSV PAH by SIM SEP		Analytical Method: EPA 8270 by SIM Preparation Method: EPA 3510						
Acenaphthene	ND	ug/L	0.10	1	01/04/17 09:09	01/05/17 00:38	83-32-9	
Acenaphthylene	ND	ug/L	0.10	1	01/04/17 09:09	01/05/17 00:38	208-96-8	
Anthracene	ND	ug/L	0.10	1	01/04/17 09:09	01/05/17 00:38	120-12-7	
Benzo(a)anthracene	ND	ug/L	0.10	1	01/04/17 09:09	01/05/17 00:38	56-55-3	
Benzo(a)pyrene	ND	ug/L	0.10	1	01/04/17 09:09	01/05/17 00:38	50-32-8	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: PUMA TERMINAL MW SAMPLING

Sample Project No.: 2047989

Sample: EB-122916	Lab ID: 2047989002	Collected: 12/29/16 09:06	Received: 12/29/16 14:00	Matrix: Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual

8270 MSSV PAH by SIM SEP

Analytical Method: EPA 8270 by SIM Preparation Method: EPA 3510

Benzo(b)fluoranthene	ND	ug/L	0.10	1	01/04/17 09:09	01/05/17 00:38	205-99-2	
Benzo(g,h,i)perylene	ND	ug/L	0.10	1	01/04/17 09:09	01/05/17 00:38	191-24-2	
Benzo(k)fluoranthene	ND	ug/L	0.10	1	01/04/17 09:09	01/05/17 00:38	207-08-9	
Chrysene	ND	ug/L	0.10	1	01/04/17 09:09	01/05/17 00:38	218-01-9	
Dibenz(a,h)anthracene	ND	ug/L	0.10	1	01/04/17 09:09	01/05/17 00:38	53-70-3	
Fluoranthene	ND	ug/L	0.10	1	01/04/17 09:09	01/05/17 00:38	206-44-0	
Fluorene	ND	ug/L	0.10	1	01/04/17 09:09	01/05/17 00:38	86-73-7	
Indeno(1,2,3-cd)pyrene	ND	ug/L	0.10	1	01/04/17 09:09	01/05/17 00:38	193-39-5	
2-Methylnaphthalene	ND	ug/L	0.10	1	01/04/17 09:09	01/05/17 00:38	91-57-6	
Naphthalene	ND	ug/L	0.10	1	01/04/17 09:09	01/05/17 00:38	91-20-3	
Phenanthrene	ND	ug/L	0.10	1	01/04/17 09:09	01/05/17 00:38	85-01-8	
Pyrene	ND	ug/L	0.10	1	01/04/17 09:09	01/05/17 00:38	129-00-0	
Surrogates								
2-Fluorobiphenyl (S)	78	%	25-150	1	01/04/17 09:09	01/05/17 00:38	321-60-8	
Terphenyl-d14 (S)	76	%	25-150	1	01/04/17 09:09	01/05/17 00:38	1718-51-0	

8260 MSV Low Level

Analytical Method: EPA 5030B/8260

Acetone	30.6	ug/L	4.0	1		01/03/17 16:06	67-64-1	C9
Benzene	ND	ug/L	0.50	1		01/03/17 16:06	71-43-2	
Bromodichloromethane	ND	ug/L	0.50	1		01/03/17 16:06	75-27-4	
Bromoform	ND	ug/L	0.50	1		01/03/17 16:06	75-25-2	
Bromomethane	ND	ug/L	0.50	1		01/03/17 16:06	74-83-9	
2-Butanone (MEK)	ND	ug/L	2.0	1		01/03/17 16:06	78-93-3	
Carbon disulfide	ND	ug/L	1.0	1		01/03/17 16:06	75-15-0	L3
Carbon tetrachloride	ND	ug/L	0.50	1		01/03/17 16:06	56-23-5	
Chlorobenzene	ND	ug/L	0.50	1		01/03/17 16:06	108-90-7	
Chloroethane	ND	ug/L	0.50	1		01/03/17 16:06	75-00-3	
Chloroform	ND	ug/L	0.50	1		01/03/17 16:06	67-66-3	
Chloromethane	0.64	ug/L	0.50	1		01/03/17 16:06	74-87-3	
1,2-Dibromo-3-chloropropane	ND	ug/L	0.20	1		01/03/17 16:06	96-12-8	
Dibromochloromethane	ND	ug/L	0.50	1		01/03/17 16:06	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	1		01/03/17 16:06	106-93-4	
Dichlorodifluoromethane	ND	ug/L	1.0	1		01/03/17 16:06	75-71-8	
1,1-Dichloroethane	ND	ug/L	0.50	1		01/03/17 16:06	75-34-3	
1,2-Dichloroethane	ND	ug/L	0.50	1		01/03/17 16:06	107-06-2	
1,1-Dichloroethene	ND	ug/L	0.50	1		01/03/17 16:06	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	1		01/03/17 16:06	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	0.50	1		01/03/17 16:06	156-60-5	
1,2-Dichloropropane	ND	ug/L	0.50	1		01/03/17 16:06	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	0.50	1		01/03/17 16:06	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	0.50	1		01/03/17 16:06	10061-02-6	
Ethylbenzene	ND	ug/L	0.50	1		01/03/17 16:06	100-41-4	
2-Hexanone	ND	ug/L	1.0	1		01/03/17 16:06	591-78-6	
Isopropylbenzene (Cumene)	ND	ug/L	1.0	1		01/03/17 16:06	98-82-8	
Methyl acetate	ND	ug/L	2.0	1		01/03/17 16:06	79-20-9	
Methylene Chloride	ND	ug/L	0.50	1		01/03/17 16:06	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	1.0	1		01/03/17 16:06	108-10-1	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: PUMA TERMINAL MW SAMPLING

Pace Project No.: 2047989

Sample: EB-122916	Lab ID: 2047989002	Collected: 12/29/16 09:06	Received: 12/29/16 14:00	Matrix: Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV Low Level		Analytical Method: EPA 5030B/8260						
Methyl-tert-butyl ether	ND	ug/L	0.50	1		01/03/17 16:06	1634-04-4	
Styrene	ND	ug/L	1.0	1		01/03/17 16:06	100-42-5	
1,1,2,2-Tetrachloroethane	ND	ug/L	0.50	1		01/03/17 16:06	79-34-5	
Tetrachloroethene	ND	ug/L	0.50	1		01/03/17 16:06	127-18-4	
Toluene	ND	ug/L	0.50	1		01/03/17 16:06	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	0.50	1		01/03/17 16:06	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	0.50	1		01/03/17 16:06	79-00-5	
Trichloroethene	ND	ug/L	0.50	1		01/03/17 16:06	79-01-6	
Trichlorofluoromethane	ND	ug/L	0.50	1		01/03/17 16:06	75-69-4	
Vinyl chloride	ND	ug/L	0.50	1		01/03/17 16:06	75-01-4	
m&p-Xylene	ND	ug/L	2.0	1		01/03/17 16:06	179601-23-1	
o-Xylene	ND	ug/L	1.0	1		01/03/17 16:06	95-47-6	
Surrogates								
Dibromofluoromethane (S)	114	%	72-126	1		01/03/17 16:06	1868-53-7	
4-Bromofluorobenzene (S)	100	%	68-124	1		01/03/17 16:06	460-00-4	
Toluene-d8 (S)	100	%	79-119	1		01/03/17 16:06	2037-26-5	
<hr/>								
Sample: MW-86A	Lab ID: 2047989003	Collected: 12/29/16 09:50	Received: 12/29/16 14:00	Matrix: Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8015M DRO/ORO Organics		Analytical Method: EPA 8015B Modified Preparation Method: EPA 3535						
Diesel Range Organic (C10-C28)	ND	mg/L	0.50	1	01/04/17 08:39	01/10/17 18:49		
Oil Range Organics (>C28-C40)	ND	mg/L	1.0	1	01/04/17 08:39	01/10/17 18:49		
Surrogates								
n-Pentacosane (S)	49	%	16-137	1	01/04/17 08:39	01/10/17 18:49	629-99-2	
o-Terphenyl (S)	57	%	10-121	1	01/04/17 08:39	01/10/17 18:49	84-15-1	
8021 GCV BTEX, MTBE, GRO		Analytical Method: EPA 8015/8021						
Gasoline Range Organics	ND	ug/L	50.0	1		01/05/17 05:28		
Surrogates								
4-Bromofluorobenzene (S)	89	%	44-148	1		01/05/17 05:28	460-00-4	
6020 MET ICPMS		Analytical Method: EPA 6020 Preparation Method: EPA 3010						
Arsenic	ND	mg/L	0.0010	1	12/30/16 16:10	01/06/17 13:51	7440-38-2	
Chromium	ND	mg/L	0.0010	1	12/30/16 16:10	01/06/17 13:51	7440-47-3	
Lead	ND	mg/L	0.0010	1	12/30/16 16:10	01/06/17 13:51	7439-92-1	
Vanadium	ND	mg/L	0.0050	1	12/30/16 16:10	01/06/17 13:51	7440-62-2	
6020 MET ICPMS, Dissolved (LF)		Analytical Method: EPA 6020 Preparation Method: EPA 3005A						
Arsenic, Dissolved	ND	ug/L	1.0	1	12/30/16 18:15	01/06/17 15:45	7440-38-2	
Chromium, Dissolved	ND	ug/L	1.0	1	12/30/16 18:15	01/06/17 15:45	7440-47-3	
Lead, Dissolved	ND	ug/L	1.0	1	12/30/16 18:15	01/06/17 15:45	7439-92-1	
Vanadium, Dissolved	ND	ug/L	5.0	1	12/30/16 18:15	01/06/17 15:45	7440-62-2	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: PUMA TERMINAL MW SAMPLING

Pace Project No.: 2047989

Sample: MW-86A	Lab ID: 2047989003	Collected: 12/29/16 09:50	Received: 12/29/16 14:00	Matrix: Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
7470 Mercury Analytical Method: EPA 7470 Preparation Method: EPA 7470								
Mercury	ND	ug/L	0.20	1	12/30/16 17:49	01/03/17 13:35	7439-97-6	
7470 Mercury, Dissolved (LF) Analytical Method: EPA 7470 Preparation Method: EPA 7470								
Mercury, Dissolved	ND	ug/L	0.20	1	12/30/16 17:49	01/03/17 12:52	7439-97-6	
8270 MSSV PAH by SIM SEP Analytical Method: EPA 8270 by SIM Preparation Method: EPA 3510								
Acenaphthene	ND	ug/L	0.10	1	01/04/17 09:09	01/05/17 00:58	83-32-9	
Acenaphthylene	ND	ug/L	0.10	1	01/04/17 09:09	01/05/17 00:58	208-96-8	
Anthracene	ND	ug/L	0.10	1	01/04/17 09:09	01/05/17 00:58	120-12-7	
Benzo(a)anthracene	ND	ug/L	0.10	1	01/04/17 09:09	01/05/17 00:58	56-55-3	
Benzo(a)pyrene	ND	ug/L	0.10	1	01/04/17 09:09	01/05/17 00:58	50-32-8	
Benzo(b)fluoranthene	ND	ug/L	0.10	1	01/04/17 09:09	01/05/17 00:58	205-99-2	
Benzo(g,h,i)perylene	ND	ug/L	0.10	1	01/04/17 09:09	01/05/17 00:58	191-24-2	
Benzo(k)fluoranthene	ND	ug/L	0.10	1	01/04/17 09:09	01/05/17 00:58	207-08-9	
Chrysene	ND	ug/L	0.10	1	01/04/17 09:09	01/05/17 00:58	218-01-9	
Dibenz(a,h)anthracene	ND	ug/L	0.10	1	01/04/17 09:09	01/05/17 00:58	53-70-3	
Fluoranthene	ND	ug/L	0.10	1	01/04/17 09:09	01/05/17 00:58	206-44-0	
Fluorene	ND	ug/L	0.10	1	01/04/17 09:09	01/05/17 00:58	86-73-7	
Indeno(1,2,3-cd)pyrene	ND	ug/L	0.10	1	01/04/17 09:09	01/05/17 00:58	193-39-5	
2-Methylnaphthalene	ND	ug/L	0.10	1	01/04/17 09:09	01/05/17 00:58	91-57-6	
Naphthalene	ND	ug/L	0.10	1	01/04/17 09:09	01/05/17 00:58	91-20-3	
Phenanthrene	ND	ug/L	0.10	1	01/04/17 09:09	01/05/17 00:58	85-01-8	
Pyrene	0.13	ug/L	0.10	1	01/04/17 09:09	01/05/17 00:58	129-00-0	
Surrogates								
2-Fluorobiphenyl (S)	77	%	25-150	1	01/04/17 09:09	01/05/17 00:58	321-60-8	
Terphenyl-d14 (S)	74	%	25-150	1	01/04/17 09:09	01/05/17 00:58	1718-51-0	
8260 MSV Low Level Analytical Method: EPA 5030B/8260								
Acetone	16.8	ug/L	4.0	1		01/03/17 16:24	67-64-1	C9
Benzene	ND	ug/L	0.50	1		01/03/17 16:24	71-43-2	
Bromodichloromethane	ND	ug/L	0.50	1		01/03/17 16:24	75-27-4	
Bromoform	ND	ug/L	0.50	1		01/03/17 16:24	75-25-2	
Bromomethane	ND	ug/L	0.50	1		01/03/17 16:24	74-83-9	
2-Butanone (MEK)	ND	ug/L	2.0	1		01/03/17 16:24	78-93-3	
Carbon disulfide	ND	ug/L	1.0	1		01/03/17 16:24	75-15-0	L3
Carbon tetrachloride	ND	ug/L	0.50	1		01/03/17 16:24	56-23-5	
Chlorobenzene	ND	ug/L	0.50	1		01/03/17 16:24	108-90-7	
Chloroethane	ND	ug/L	0.50	1		01/03/17 16:24	75-00-3	
Chloroform	ND	ug/L	0.50	1		01/03/17 16:24	67-66-3	
Chloromethane	ND	ug/L	0.50	1		01/03/17 16:24	74-87-3	
1,2-Dibromo-3-chloropropane	ND	ug/L	0.20	1		01/03/17 16:24	96-12-8	
Dibromochloromethane	ND	ug/L	0.50	1		01/03/17 16:24	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	1		01/03/17 16:24	106-93-4	
Dichlorodifluoromethane	ND	ug/L	1.0	1		01/03/17 16:24	75-71-8	
1,1-Dichloroethane	ND	ug/L	0.50	1		01/03/17 16:24	75-34-3	
1,2-Dichloroethane	ND	ug/L	0.50	1		01/03/17 16:24	107-06-2	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: PUMA TERMINAL MW SAMPLING

Pace Project No.: 2047989

Sample: MW-86A		Lab ID: 2047989003	Collected: 12/29/16 09:50	Received: 12/29/16 14:00	Matrix: Water			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV Low Level		Analytical Method: EPA 5030B/8260						
1,1-Dichloroethene	ND	ug/L	0.50	1		01/03/17 16:24	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	1		01/03/17 16:24	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	0.50	1		01/03/17 16:24	156-60-5	
1,2-Dichloropropane	ND	ug/L	0.50	1		01/03/17 16:24	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	0.50	1		01/03/17 16:24	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	0.50	1		01/03/17 16:24	10061-02-6	
Ethylbenzene	ND	ug/L	0.50	1		01/03/17 16:24	100-41-4	
2-Hexanone	ND	ug/L	1.0	1		01/03/17 16:24	591-78-6	
Isopropylbenzene (Cumene)	ND	ug/L	1.0	1		01/03/17 16:24	98-82-8	
Methyl acetate	ND	ug/L	2.0	1		01/03/17 16:24	79-20-9	
Methylene Chloride	ND	ug/L	0.50	1		01/03/17 16:24	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	1.0	1		01/03/17 16:24	108-10-1	
Methyl-tert-butyl ether	1.1	ug/L	0.50	1		01/03/17 16:24	1634-04-4	
Styrene	ND	ug/L	1.0	1		01/03/17 16:24	100-42-5	
1,1,2,2-Tetrachloroethane	ND	ug/L	0.50	1		01/03/17 16:24	79-34-5	
Tetrachloroethene	ND	ug/L	0.50	1		01/03/17 16:24	127-18-4	
Toluene	ND	ug/L	0.50	1		01/03/17 16:24	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	0.50	1		01/03/17 16:24	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	0.50	1		01/03/17 16:24	79-00-5	
Trichloroethene	ND	ug/L	0.50	1		01/03/17 16:24	79-01-6	
Trichlorofluoromethane	ND	ug/L	0.50	1		01/03/17 16:24	75-69-4	
Vinyl chloride	ND	ug/L	0.50	1		01/03/17 16:24	75-01-4	
m&p-Xylene	ND	ug/L	2.0	1		01/03/17 16:24	179601-23-1	
o-Xylene	ND	ug/L	1.0	1		01/03/17 16:24	95-47-6	
Surrogates								
Dibromofluoromethane (S)	116	%	72-126	1		01/03/17 16:24	1868-53-7	
4-Bromofluorobenzene (S)	95	%	68-124	1		01/03/17 16:24	460-00-4	
Toluene-d8 (S)	103	%	79-119	1		01/03/17 16:24	2037-26-5	

Sample: MW-MP5A		Lab ID: 2047989004	Collected: 12/29/16 10:48	Received: 12/29/16 14:00	Matrix: Water			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8015M DRO/ORO Organics		Analytical Method: EPA 8015B Modified Preparation Method: EPA 3535						
Diesel Range Organic (C10-C28)	ND	mg/L	0.50	1	01/04/17 08:39	01/10/17 19:17		
Oil Range Organics (>C28-C40)	ND	mg/L	1.0	1	01/04/17 08:39	01/10/17 19:17		
Surrogates								
n-Pentacosane (S)	33	%	16-137	1	01/04/17 08:39	01/10/17 19:17	629-99-2	
o-Terphenyl (S)	42	%	10-121	1	01/04/17 08:39	01/10/17 19:17	84-15-1	
8021 GCV BTEX, MTBE, GRO		Analytical Method: EPA 8015/8021						
Gasoline Range Organics	ND	ug/L	50.0	1		01/05/17 05:55		
Surrogates								
4-Bromofluorobenzene (S)	86	%	44-148	1		01/05/17 05:55	460-00-4	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: PUMA TERMINAL MW SAMPLING

Project No.: 2047989

Sample: MW-MP5A	Lab ID: 2047989004	Collected: 12/29/16 10:48	Received: 12/29/16 14:00	Matrix: Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
6020 MET ICPMS Analytical Method: EPA 6020 Preparation Method: EPA 3010								
Arsenic	0.0070	mg/L	0.0010	1	12/30/16 16:10	01/06/17 13:55	7440-38-2	
Chromium	ND	mg/L	0.0010	1	12/30/16 16:10	01/06/17 13:55	7440-47-3	
Lead	ND	mg/L	0.0010	1	12/30/16 16:10	01/06/17 13:55	7439-92-1	
Vanadium	ND	mg/L	0.0050	1	12/30/16 16:10	01/06/17 13:55	7440-62-2	
6020 MET ICPMS, Dissolved (LF) Analytical Method: EPA 6020 Preparation Method: EPA 3005A								
Arsenic, Dissolved	5.2	ug/L	1.0	1	12/30/16 18:15	01/06/17 15:49	7440-38-2	
Chromium, Dissolved	ND	ug/L	1.0	1	12/30/16 18:15	01/06/17 15:49	7440-47-3	
Lead, Dissolved	ND	ug/L	1.0	1	12/30/16 18:15	01/06/17 15:49	7439-92-1	
Vanadium, Dissolved	ND	ug/L	5.0	1	12/30/16 18:15	01/06/17 15:49	7440-62-2	
7470 Mercury Analytical Method: EPA 7470 Preparation Method: EPA 7470								
Mercury	ND	ug/L	0.20	1	12/30/16 17:49	01/03/17 13:37	7439-97-6	
7470 Mercury, Dissolved (LF) Analytical Method: EPA 7470 Preparation Method: EPA 7470								
Mercury, Dissolved	ND	ug/L	0.20	1	12/30/16 17:49	01/03/17 12:58	7439-97-6	
8270 MSSV PAH by SIM SEP Analytical Method: EPA 8270 by SIM Preparation Method: EPA 3510								
Acenaphthene	ND	ug/L	0.10	1	01/04/17 09:09	01/05/17 01:17	83-32-9	
Acenaphthylene	ND	ug/L	0.10	1	01/04/17 09:09	01/05/17 01:17	208-96-8	
Anthracene	ND	ug/L	0.10	1	01/04/17 09:09	01/05/17 01:17	120-12-7	
Benzo(a)anthracene	ND	ug/L	0.10	1	01/04/17 09:09	01/05/17 01:17	56-55-3	
Benzo(a)pyrene	ND	ug/L	0.10	1	01/04/17 09:09	01/05/17 01:17	50-32-8	
Benzo(b)fluoranthene	ND	ug/L	0.10	1	01/04/17 09:09	01/05/17 01:17	205-99-2	
Benzo(g,h,i)perylene	ND	ug/L	0.10	1	01/04/17 09:09	01/05/17 01:17	191-24-2	
Benzo(k)fluoranthene	ND	ug/L	0.10	1	01/04/17 09:09	01/05/17 01:17	207-08-9	
Chrysene	ND	ug/L	0.10	1	01/04/17 09:09	01/05/17 01:17	218-01-9	
Dibenz(a,h)anthracene	ND	ug/L	0.10	1	01/04/17 09:09	01/05/17 01:17	53-70-3	
Fluoranthene	ND	ug/L	0.10	1	01/04/17 09:09	01/05/17 01:17	206-44-0	
Fluorene	ND	ug/L	0.10	1	01/04/17 09:09	01/05/17 01:17	86-73-7	
Indeno(1,2,3-cd)pyrene	ND	ug/L	0.10	1	01/04/17 09:09	01/05/17 01:17	193-39-5	
2-Methylnaphthalene	ND	ug/L	0.10	1	01/04/17 09:09	01/05/17 01:17	91-57-6	
Naphthalene	ND	ug/L	0.10	1	01/04/17 09:09	01/05/17 01:17	91-20-3	
Phenanthrene	ND	ug/L	0.10	1	01/04/17 09:09	01/05/17 01:17	85-01-8	
Pyrene	ND	ug/L	0.10	1	01/04/17 09:09	01/05/17 01:17	129-00-0	
Surrogates								
2-Fluorobiphenyl (S)	82	%	25-150	1	01/04/17 09:09	01/05/17 01:17	321-60-8	
Terphenyl-d14 (S)	79	%	25-150	1	01/04/17 09:09	01/05/17 01:17	1718-51-0	
8260 MSV Low Level Analytical Method: EPA 5030B/8260								
Acetone	7.9	ug/L	4.0	1		01/03/17 16:42	67-64-1	C9
Benzene	ND	ug/L	0.50	1		01/03/17 16:42	71-43-2	
Bromodichloromethane	ND	ug/L	0.50	1		01/03/17 16:42	75-27-4	
Bromoform	ND	ug/L	0.50	1		01/03/17 16:42	75-25-2	
Bromomethane	ND	ug/L	0.50	1		01/03/17 16:42	74-83-9	
2-Butanone (MEK)	ND	ug/L	2.0	1		01/03/17 16:42	78-93-3	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: PUMA TERMINAL MW SAMPLING

Pace Project No.: 2047989

Sample: MW-MP5A	Lab ID: 2047989004	Collected: 12/29/16 10:48	Received: 12/29/16 14:00	Matrix: Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV Low Level	Analytical Method: EPA 5030B/8260							
Carbon disulfide	ND	ug/L	1.0	1		01/03/17 16:42	75-15-0	L3
Carbon tetrachloride	ND	ug/L	0.50	1		01/03/17 16:42	56-23-5	
Chlorobenzene	ND	ug/L	0.50	1		01/03/17 16:42	108-90-7	
Chloroethane	ND	ug/L	0.50	1		01/03/17 16:42	75-00-3	
Chloroform	ND	ug/L	0.50	1		01/03/17 16:42	67-66-3	
Chloromethane	ND	ug/L	0.50	1		01/03/17 16:42	74-87-3	
1,2-Dibromo-3-chloropropane	ND	ug/L	0.20	1		01/03/17 16:42	96-12-8	
Dibromochloromethane	ND	ug/L	0.50	1		01/03/17 16:42	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	1		01/03/17 16:42	106-93-4	
Dichlorodifluoromethane	ND	ug/L	1.0	1		01/03/17 16:42	75-71-8	
1,1-Dichloroethane	ND	ug/L	0.50	1		01/03/17 16:42	75-34-3	
1,2-Dichloroethane	ND	ug/L	0.50	1		01/03/17 16:42	107-06-2	
1,1-Dichloroethene	ND	ug/L	0.50	1		01/03/17 16:42	75-35-4	
cis-1,2-Dichloroethene	1.0	ug/L	1.0	1		01/03/17 16:42	156-59-2	
trans-1,2-Dichloroethene	0.90	ug/L	0.50	1		01/03/17 16:42	156-60-5	
1,2-Dichloropropane	ND	ug/L	0.50	1		01/03/17 16:42	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	0.50	1		01/03/17 16:42	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	0.50	1		01/03/17 16:42	10061-02-6	
Ethylbenzene	ND	ug/L	0.50	1		01/03/17 16:42	100-41-4	
2-Hexanone	ND	ug/L	1.0	1		01/03/17 16:42	591-78-6	
Isopropylbenzene (Cumene)	ND	ug/L	1.0	1		01/03/17 16:42	98-82-8	
Methyl acetate	ND	ug/L	2.0	1		01/03/17 16:42	79-20-9	
Methylene Chloride	ND	ug/L	0.50	1		01/03/17 16:42	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	1.0	1		01/03/17 16:42	108-10-1	
Methyl-tert-butyl ether	2.5	ug/L	0.50	1		01/03/17 16:42	1634-04-4	
Styrene	ND	ug/L	1.0	1		01/03/17 16:42	100-42-5	
1,1,2,2-Tetrachloroethane	ND	ug/L	0.50	1		01/03/17 16:42	79-34-5	
Tetrachloroethene	ND	ug/L	0.50	1		01/03/17 16:42	127-18-4	
Toluene	ND	ug/L	0.50	1		01/03/17 16:42	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	0.50	1		01/03/17 16:42	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	0.50	1		01/03/17 16:42	79-00-5	
Trichloroethene	0.64	ug/L	0.50	1		01/03/17 16:42	79-01-6	
Trichlorofluoromethane	ND	ug/L	0.50	1		01/03/17 16:42	75-69-4	
Vinyl chloride	ND	ug/L	0.50	1		01/03/17 16:42	75-01-4	
m&p-Xylene	ND	ug/L	2.0	1		01/03/17 16:42	179601-23-1	
o-Xylene	ND	ug/L	1.0	1		01/03/17 16:42	95-47-6	
Surrogates								
Dibromofluoromethane (S)	116	%	72-126	1		01/03/17 16:42	1868-53-7	
4-Bromofluorobenzene (S)	100	%	68-124	1		01/03/17 16:42	460-00-4	
Toluene-d8 (S)	102	%	79-119	1		01/03/17 16:42	2037-26-5	

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ANALYTICAL RESULTS

Project: PUMA TERMINAL MW SAMPLING

Pace Project No.: 2047989

Sample: MW-DP5	Lab ID: 2047989005	Collected: 12/29/16 11:37	Received: 12/29/16 14:00	Matrix: Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8015M DRO/ORO Organics								
Analytical Method: EPA 8015B Modified Preparation Method: EPA 3535								
Diesel Range Organic (C10-C28)	ND	mg/L	0.50	1	01/04/17 08:39	01/10/17 19:44		
Oil Range Organics (>C28-C40)	ND	mg/L	1.0	1	01/04/17 08:39	01/10/17 19:44		
Surrogates								
n-Pentacosane (S)	33	%	16-137	1	01/04/17 08:39	01/10/17 19:44	629-99-2	
o-Terphenyl (S)	39	%	10-121	1	01/04/17 08:39	01/10/17 19:44	84-15-1	
8021 GCV BTEX, MTBE, GRO								
Analytical Method: EPA 8015/8021								
Gasoline Range Organics	ND	ug/L	50.0	1		01/05/17 06:22		
Surrogates								
4-Bromofluorobenzene (S)	87	%	44-148	1		01/05/17 06:22	460-00-4	
6020 MET ICPMS								
Analytical Method: EPA 6020 Preparation Method: EPA 3010								
Arsenic	ND	mg/L	0.0010	1	12/30/16 16:10	01/06/17 14:07	7440-38-2	
Chromium	ND	mg/L	0.0010	1	12/30/16 16:10	01/06/17 14:07	7440-47-3	
Lead	ND	mg/L	0.0010	1	12/30/16 16:10	01/06/17 14:07	7439-92-1	
Vanadium	ND	mg/L	0.0050	1	12/30/16 16:10	01/06/17 14:07	7440-62-2	
6020 MET ICPMS, Dissolved (LF)								
Analytical Method: EPA 6020 Preparation Method: EPA 3005A								
Arsenic, Dissolved	ND	ug/L	1.0	1	12/30/16 18:15	01/06/17 15:53	7440-38-2	
Chromium, Dissolved	ND	ug/L	1.0	1	12/30/16 18:15	01/06/17 15:53	7440-47-3	
Lead, Dissolved	ND	ug/L	1.0	1	12/30/16 18:15	01/06/17 15:53	7439-92-1	
Vanadium, Dissolved	ND	ug/L	5.0	1	12/30/16 18:15	01/06/17 15:53	7440-62-2	
7470 Mercury								
Analytical Method: EPA 7470 Preparation Method: EPA 7470								
Mercury	ND	ug/L	0.20	1	12/30/16 17:49	01/03/17 13:39	7439-97-6	
7470 Mercury, Dissolved (LF)								
Analytical Method: EPA 7470 Preparation Method: EPA 7470								
Mercury, Dissolved	ND	ug/L	0.20	1	12/30/16 17:49	01/03/17 13:00	7439-97-6	
8270 MSSV PAH by SIM SEP								
Analytical Method: EPA 8270 by SIM Preparation Method: EPA 3510								
Acenaphthene	ND	ug/L	0.10	1	01/04/17 09:09	01/05/17 01:37	83-32-9	
Acenaphthylene	ND	ug/L	0.10	1	01/04/17 09:09	01/05/17 01:37	208-96-8	
Anthracene	ND	ug/L	0.10	1	01/04/17 09:09	01/05/17 01:37	120-12-7	
Benzo(a)anthracene	ND	ug/L	0.10	1	01/04/17 09:09	01/05/17 01:37	56-55-3	
Benzo(a)pyrene	ND	ug/L	0.10	1	01/04/17 09:09	01/05/17 01:37	50-32-8	
Benzo(b)fluoranthene	ND	ug/L	0.10	1	01/04/17 09:09	01/05/17 01:37	205-99-2	
Benzo(g,h,i)perylene	ND	ug/L	0.10	1	01/04/17 09:09	01/05/17 01:37	191-24-2	
Benzo(k)fluoranthene	ND	ug/L	0.10	1	01/04/17 09:09	01/05/17 01:37	207-08-9	
Chrysene	ND	ug/L	0.10	1	01/04/17 09:09	01/05/17 01:37	218-01-9	
Dibenz(a,h)anthracene	ND	ug/L	0.10	1	01/04/17 09:09	01/05/17 01:37	53-70-3	
Fluoranthene	ND	ug/L	0.10	1	01/04/17 09:09	01/05/17 01:37	206-44-0	
Fluorene	ND	ug/L	0.10	1	01/04/17 09:09	01/05/17 01:37	86-73-7	
Indeno(1,2,3-cd)pyrene	ND	ug/L	0.10	1	01/04/17 09:09	01/05/17 01:37	193-39-5	
2-Methylnaphthalene	ND	ug/L	0.10	1	01/04/17 09:09	01/05/17 01:37	91-57-6	
Naphthalene	ND	ug/L	0.10	1	01/04/17 09:09	01/05/17 01:37	91-20-3	
Phenanthrene	ND	ug/L	0.10	1	01/04/17 09:09	01/05/17 01:37	85-01-8	

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ANALYTICAL RESULTS

Project: PUMA TERMINAL MW SAMPLING

Pace Project No.: 2047989

Sample: MW-DP5	Lab ID: 2047989005	Collected: 12/29/16 11:37	Received: 12/29/16 14:00	Matrix: Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8270 MSSV PAH by SIM SEP		Analytical Method: EPA 8270 by SIM Preparation Method: EPA 3510						
Pyrene	ND	ug/L	0.10	1	01/04/17 09:09	01/05/17 01:37	129-00-0	
Surrogates								
2-Fluorobiphenyl (S)	75	%.	25-150	1	01/04/17 09:09	01/05/17 01:37	321-60-8	
Terphenyl-d14 (S)	71	%.	25-150	1	01/04/17 09:09	01/05/17 01:37	1718-51-0	
8260 MSV Low Level		Analytical Method: EPA 5030B/8260						
Acetone	12.0	ug/L	4.0	1		01/03/17 16:59	67-64-1	C9
Benzene	ND	ug/L	0.50	1		01/03/17 16:59	71-43-2	
Bromodichloromethane	ND	ug/L	0.50	1		01/03/17 16:59	75-27-4	
Bromoform	ND	ug/L	0.50	1		01/03/17 16:59	75-25-2	
Bromomethane	ND	ug/L	0.50	1		01/03/17 16:59	74-83-9	
2-Butanone (MEK)	ND	ug/L	2.0	1		01/03/17 16:59	78-93-3	
Carbon disulfide	ND	ug/L	1.0	1		01/03/17 16:59	75-15-0	L3
Carbon tetrachloride	ND	ug/L	0.50	1		01/03/17 16:59	56-23-5	
Chlorobenzene	ND	ug/L	0.50	1		01/03/17 16:59	108-90-7	
Chloroethane	ND	ug/L	0.50	1		01/03/17 16:59	75-00-3	
Chloroform	ND	ug/L	0.50	1		01/03/17 16:59	67-66-3	
Chloromethane	ND	ug/L	0.50	1		01/03/17 16:59	74-87-3	
1,2-Dibromo-3-chloropropane	ND	ug/L	0.20	1		01/03/17 16:59	96-12-8	
Dibromochloromethane	ND	ug/L	0.50	1		01/03/17 16:59	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	1		01/03/17 16:59	106-93-4	
Dichlorodifluoromethane	ND	ug/L	1.0	1		01/03/17 16:59	75-71-8	
1,1-Dichloroethane	ND	ug/L	0.50	1		01/03/17 16:59	75-34-3	
1,2-Dichloroethane	ND	ug/L	0.50	1		01/03/17 16:59	107-06-2	
1,1-Dichloroethene	ND	ug/L	0.50	1		01/03/17 16:59	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	1		01/03/17 16:59	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	0.50	1		01/03/17 16:59	156-60-5	
1,2-Dichloropropane	ND	ug/L	0.50	1		01/03/17 16:59	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	0.50	1		01/03/17 16:59	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	0.50	1		01/03/17 16:59	10061-02-6	
Ethylbenzene	ND	ug/L	0.50	1		01/03/17 16:59	100-41-4	
2-Hexanone	ND	ug/L	1.0	1		01/03/17 16:59	591-78-6	
Isopropylbenzene (Cumene)	ND	ug/L	1.0	1		01/03/17 16:59	98-82-8	
Methyl acetate	ND	ug/L	2.0	1		01/03/17 16:59	79-20-9	
Methylene Chloride	ND	ug/L	0.50	1		01/03/17 16:59	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	1.0	1		01/03/17 16:59	108-10-1	
Methyl-tert-butyl ether	ND	ug/L	0.50	1		01/03/17 16:59	1634-04-4	
Styrene	ND	ug/L	1.0	1		01/03/17 16:59	100-42-5	
1,1,2,2-Tetrachloroethane	ND	ug/L	0.50	1		01/03/17 16:59	79-34-5	
Tetrachloroethene	ND	ug/L	0.50	1		01/03/17 16:59	127-18-4	
Toluene	ND	ug/L	0.50	1		01/03/17 16:59	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	0.50	1		01/03/17 16:59	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	0.50	1		01/03/17 16:59	79-00-5	
Trichloroethene	ND	ug/L	0.50	1		01/03/17 16:59	79-01-6	
Trichlorofluoromethane	ND	ug/L	0.50	1		01/03/17 16:59	75-69-4	
Vinyl chloride	ND	ug/L	0.50	1		01/03/17 16:59	75-01-4	
m&p-Xylene	ND	ug/L	2.0	1		01/03/17 16:59	179601-23-1	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: PUMA TERMINAL MW SAMPLING

Pace Project No.: 2047989

Sample: MW-DP5		Lab ID: 2047989005	Collected: 12/29/16 11:37	Received: 12/29/16 14:00	Matrix: Water			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV Low Level		Analytical Method: EPA 5030B/8260						
o-Xylene	ND	ug/L	1.0	1		01/03/17 16:59	95-47-6	
Surrogates								
Dibromofluoromethane (S)	113	%.	72-126	1		01/03/17 16:59	1868-53-7	
4-Bromofluorobenzene (S)	96	%.	68-124	1		01/03/17 16:59	460-00-4	
Toluene-d8 (S)	102	%.	79-119	1		01/03/17 16:59	2037-26-5	

Sample: FB-122916		Lab ID: 2047989006	Collected: 12/29/16 11:42	Received: 12/29/16 14:00	Matrix: Water			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8021 GCV BTEX, MTBE, GRO		Analytical Method: EPA 8015/8021						
Gasoline Range Organics	ND	ug/L	50.0	1		01/05/17 06:49		
Surrogates								
4-Bromofluorobenzene (S)	89	%.	44-148	1		01/05/17 06:49	460-00-4	

8260 MSV Low Level		Analytical Method: EPA 5030B/8260						
Acetone	27.3	ug/L	4.0	1		01/03/17 17:17	67-64-1	C9
Benzene	ND	ug/L	0.50	1		01/03/17 17:17	71-43-2	
Bromodichloromethane	ND	ug/L	0.50	1		01/03/17 17:17	75-27-4	
Bromoform	ND	ug/L	0.50	1		01/03/17 17:17	75-25-2	
Bromomethane	ND	ug/L	0.50	1		01/03/17 17:17	74-83-9	
2-Butanone (MEK)	ND	ug/L	2.0	1		01/03/17 17:17	78-93-3	
Carbon disulfide	ND	ug/L	1.0	1		01/03/17 17:17	75-15-0	L3
Carbon tetrachloride	ND	ug/L	0.50	1		01/03/17 17:17	56-23-5	
Chlorobenzene	ND	ug/L	0.50	1		01/03/17 17:17	108-90-7	
Chloroethane	ND	ug/L	0.50	1		01/03/17 17:17	75-00-3	
Chloroform	ND	ug/L	0.50	1		01/03/17 17:17	67-66-3	
Chloromethane	ND	ug/L	0.50	1		01/03/17 17:17	74-87-3	
1,2-Dibromo-3-chloropropane	ND	ug/L	0.20	1		01/03/17 17:17	96-12-8	
Dibromochloromethane	ND	ug/L	0.50	1		01/03/17 17:17	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	1		01/03/17 17:17	106-93-4	
Dichlorodifluoromethane	ND	ug/L	1.0	1		01/03/17 17:17	75-71-8	
1,1-Dichloroethane	ND	ug/L	0.50	1		01/03/17 17:17	75-34-3	
1,2-Dichloroethane	ND	ug/L	0.50	1		01/03/17 17:17	107-06-2	
1,1-Dichloroethene	ND	ug/L	0.50	1		01/03/17 17:17	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	1		01/03/17 17:17	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	0.50	1		01/03/17 17:17	156-60-5	
1,2-Dichloropropane	ND	ug/L	0.50	1		01/03/17 17:17	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	0.50	1		01/03/17 17:17	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	0.50	1		01/03/17 17:17	10061-02-6	
Ethylbenzene	ND	ug/L	0.50	1		01/03/17 17:17	100-41-4	
2-Hexanone	ND	ug/L	1.0	1		01/03/17 17:17	591-78-6	
Isopropylbenzene (Cumene)	ND	ug/L	1.0	1		01/03/17 17:17	98-82-8	
Methyl acetate	ND	ug/L	2.0	1		01/03/17 17:17	79-20-9	
Methylene Chloride	ND	ug/L	0.50	1		01/03/17 17:17	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	1.0	1		01/03/17 17:17	108-10-1	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: PUMA TERMINAL MW SAMPLING

Pace Project No.: 2047989

Sample: FB-122916		Lab ID: 2047989006		Collected: 12/29/16 11:42	Received: 12/29/16 14:00	Matrix: Water		
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV Low Level		Analytical Method: EPA 5030B/8260						
Methyl-tert-butyl ether	ND	ug/L	0.50	1		01/03/17 17:17	1634-04-4	
Styrene	ND	ug/L	1.0	1		01/03/17 17:17	100-42-5	
1,1,2,2-Tetrachloroethane	ND	ug/L	0.50	1		01/03/17 17:17	79-34-5	
Tetrachloroethene	ND	ug/L	0.50	1		01/03/17 17:17	127-18-4	
Toluene	ND	ug/L	0.50	1		01/03/17 17:17	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	0.50	1		01/03/17 17:17	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	0.50	1		01/03/17 17:17	79-00-5	
Trichloroethene	ND	ug/L	0.50	1		01/03/17 17:17	79-01-6	
Trichlorofluoromethane	ND	ug/L	0.50	1		01/03/17 17:17	75-69-4	
Vinyl chloride	ND	ug/L	0.50	1		01/03/17 17:17	75-01-4	
m&p-Xylene	ND	ug/L	2.0	1		01/03/17 17:17	179601-23-1	
o-Xylene	ND	ug/L	1.0	1		01/03/17 17:17	95-47-6	
Surrogates								
Dibromofluoromethane (S)	116	%.	72-126	1		01/03/17 17:17	1868-53-7	
4-Bromofluorobenzene (S)	98	%.	68-124	1		01/03/17 17:17	460-00-4	
Toluene-d8 (S)	103	%.	79-119	1		01/03/17 17:17	2037-26-5	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: PUMA TERMINAL MW SAMPLING

Pace Project No.: 2047989

QC Batch: 71377 Analysis Method: EPA 8015/8021
 QC Batch Method: EPA 8015/8021 Analysis Description: 8021 W GCV BTEX , MTBE, GRO
 Associated Lab Samples: 2047989001, 2047989002, 2047989003, 2047989004, 2047989005, 2047989006

METHOD BLANK: 298565 Matrix: Water
 Associated Lab Samples: 2047989001, 2047989002, 2047989003, 2047989004, 2047989005, 2047989006

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Gasoline Range Organics	ug/L	ND	50.0	01/05/17 03:16	
4-Bromofluorobenzene (S)	%.	89	44-148	01/05/17 03:16	

METHOD BLANK: 298931 Matrix: Water
 Associated Lab Samples: 2047989001, 2047989002, 2047989003, 2047989004, 2047989005, 2047989006

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Gasoline Range Organics	ug/L	ND	50.0	01/05/17 20:19	
4-Bromofluorobenzene (S)	%.	89	44-148	01/05/17 20:19	

METHOD BLANK: 299195 Matrix: Water
 Associated Lab Samples: 2047989001, 2047989002, 2047989003, 2047989004, 2047989005, 2047989006

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Gasoline Range Organics	ug/L	ND	50.0	01/06/17 12:25	
4-Bromofluorobenzene (S)	%.	90	44-148	01/06/17 12:25	

LABORATORY CONTROL SAMPLE: 298566

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Gasoline Range Organics	ug/L	500	454	91	61-136	
4-Bromofluorobenzene (S)	%.			89	44-148	
4-Bromofluorobenzene (S)	%.			90	44-148	

LABORATORY CONTROL SAMPLE: 298932

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Gasoline Range Organics	ug/L	500	467	93	61-136	
4-Bromofluorobenzene (S)	%.			91	44-148	
4-Bromofluorobenzene (S)	%.			92	44-148	

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QUALITY CONTROL DATA

Project: PUMA TERMINAL MW SAMPLING

Pace Project No.: 2047989

LABORATORY CONTROL SAMPLE: 299196

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Gasoline Range Organics	ug/L	500	472	94	61-136	
4-Bromofluorobenzene (S)	%.			90	44-148	
4-Bromofluorobenzene (S)	%.			90	44-148	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 298856 298857

Parameter	Units	298856		298857		MS % Rec	MSD % Rec	% Rec Limits	Max RPD	Qual
		2047989003 Result	MS Spike Conc.	MSD Spike Conc.	MS Result					
Gasoline Range Organics	ug/L	ND	500	500	560	104	103	15-147	1	20
4-Bromofluorobenzene (S)	%.					93	93	44-148		
4-Bromofluorobenzene (S)	%.					93	94	44-148		
4-Bromofluorobenzene (S)	%.					95	93	44-148		
4-Bromofluorobenzene (S)	%.					95	94	44-148		

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QUALITY CONTROL DATA

Project: PUMA TERMINAL MW SAMPLING

Pace Project No.: 2047989

QC Batch: 71210 Analysis Method: EPA 7470
 QC Batch Method: EPA 7470 Analysis Description: 7470 Mercury
 Associated Lab Samples: 2047989002, 2047989003, 2047989004, 2047989005

METHOD BLANK: 297858 Matrix: Water
 Associated Lab Samples: 2047989002, 2047989003, 2047989004, 2047989005

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Mercury	ug/L	ND	0.20	01/03/17 13:02	

LABORATORY CONTROL SAMPLE: 297859

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury	ug/L	1	1.0	101	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 297860 297861

Parameter	Units	2047949001		297860		297861		% Rec Limits	RPD	Max RPD	Qual
		2047949001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec				
Mercury	ug/L	ND	1	1	1.0	1.0	100	100	75-125	0	20

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QUALITY CONTROL DATA

Project: PUMA TERMINAL MW SAMPLING
Pace Project No.: 2047989

QC Batch: 71229 Analysis Method: EPA 7470
QC Batch Method: EPA 7470 Analysis Description: 7470 Mercury Dissolved
Associated Lab Samples: 2047989002, 2047989003, 2047989004, 2047989005

METHOD BLANK: 297980 Matrix: Water
Associated Lab Samples: 2047989002, 2047989003, 2047989004, 2047989005

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Mercury, Dissolved	ug/L	ND	0.20	01/03/17 12:08	

LABORATORY CONTROL SAMPLE: 297981

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury, Dissolved	ug/L	1	1.1	106	80-120	

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QUALITY CONTROL DATA

Project: PUMA TERMINAL MW SAMPLING

Pace Project No.: 2047989

QC Batch: 71212 Analysis Method: EPA 6020

QC Batch Method: EPA 3010 Analysis Description: 6020 MET

Associated Lab Samples: 2047989002, 2047989003, 2047989004, 2047989005

METHOD BLANK: 297866 Matrix: Water

Associated Lab Samples: 2047989002, 2047989003, 2047989004, 2047989005

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Arsenic	mg/L	ND	0.0010	01/06/17 10:19	
Chromium	mg/L	ND	0.0010	01/06/17 10:19	
Lead	mg/L	ND	0.0010	01/06/17 10:19	
Vanadium	mg/L	ND	0.0050	01/06/17 10:19	

LABORATORY CONTROL SAMPLE: 297867

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Arsenic	mg/L	.02	0.020	100	83-115	
Chromium	mg/L	.02	0.020	99	85-115	
Lead	mg/L	.02	0.019	96	84-115	
Vanadium	mg/L	.02	0.019	97	81-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 297868 297869

Parameter	Units	2047967004		297868		297869		% Rec	% Rec	% Rec Limits	RPD	Max RPD	Qual
		Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec						
Arsenic	mg/L	ND	.02	.02	0.018	0.019	88	91	80-120	3	20		
Chromium	mg/L	0.024	.02	.02	0.042	0.044	91	100	80-120	4	20		
Lead	mg/L	ND	.02	.02	0.020	0.021	100	103	80-120	3	20		
Vanadium	mg/L	ND	.02	.02	0.020	0.021	95	100	80-120	5	20		

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QUALITY CONTROL DATA

Project: PUMA TERMINAL MW SAMPLING

Pace Project No.: 2047989

QC Batch: 71231 Analysis Method: EPA 6020
 QC Batch Method: EPA 3005A Analysis Description: 6020 MET Dissolved
 Associated Lab Samples: 2047989002, 2047989003, 2047989004, 2047989005

METHOD BLANK: 297988 Matrix: Water
 Associated Lab Samples: 2047989002, 2047989003, 2047989004, 2047989005

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Arsenic, Dissolved	ug/L	ND	1.0	01/06/17 10:26	
Chromium, Dissolved	ug/L	ND	1.0	01/06/17 10:26	
Lead, Dissolved	ug/L	ND	1.0	01/06/17 10:26	
Vanadium, Dissolved	ug/L	ND	5.0	01/06/17 10:26	

LABORATORY CONTROL SAMPLE: 297989

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Arsenic, Dissolved	ug/L	20	19.8	99	80-120	
Chromium, Dissolved	ug/L	20	19.7	98	80-120	
Lead, Dissolved	ug/L	20	19.0	95	80-120	
Vanadium, Dissolved	ug/L	20	19.5	97	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 299026 299027

Parameter	Units	2047967002		299027		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result						
Arsenic, Dissolved	ug/L	ND	20	20	19.2	19.1	96	95	75-125	1	20
Chromium, Dissolved	ug/L	ND	20	20	19.2	19.2	95	96	75-125	0	20
Lead, Dissolved	ug/L	ND	20	20	18.8	18.9	94	95	75-125	1	20
Vanadium, Dissolved	ug/L	ND	20	20	20.6	20.8	92	93	75-125	1	20

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: PUMA TERMINAL MW SAMPLING

Pace Project No.: 2047989

QC Batch: 71267 Analysis Method: EPA 5030B/8260
 QC Batch Method: EPA 5030B/8260 Analysis Description: 8260 MSV Low Level
 Associated Lab Samples: 2047989001, 2047989002, 2047989003, 2047989004, 2047989005, 2047989006

METHOD BLANK: 298068 Matrix: Water
 Associated Lab Samples: 2047989001, 2047989002, 2047989003, 2047989004, 2047989005, 2047989006

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
1,1,1-Trichloroethane	ug/L	ND	0.50	01/03/17 10:46	
1,1,2,2-Tetrachloroethane	ug/L	ND	0.50	01/03/17 10:46	
1,1,2-Trichloroethane	ug/L	ND	0.50	01/03/17 10:46	
1,1-Dichloroethane	ug/L	ND	0.50	01/03/17 10:46	
1,1-Dichloroethene	ug/L	ND	0.50	01/03/17 10:46	
1,2-Dibromo-3-chloropropane	ug/L	ND	0.20	01/03/17 10:46	
1,2-Dibromoethane (EDB)	ug/L	ND	1.0	01/03/17 10:46	
1,2-Dichloroethane	ug/L	ND	0.50	01/03/17 10:46	
1,2-Dichloropropane	ug/L	ND	0.50	01/03/17 10:46	
2-Butanone (MEK)	ug/L	ND	2.0	01/03/17 10:46	
2-Hexanone	ug/L	ND	1.0	01/03/17 10:46	
4-Methyl-2-pentanone (MIBK)	ug/L	ND	1.0	01/03/17 10:46	
Acetone	ug/L	ND	4.0	01/03/17 10:46	
Benzene	ug/L	ND	0.50	01/03/17 10:46	
Bromodichloromethane	ug/L	ND	0.50	01/03/17 10:46	
Bromoform	ug/L	ND	0.50	01/03/17 10:46	
Bromomethane	ug/L	ND	0.50	01/03/17 10:46	
Carbon disulfide	ug/L	ND	1.0	01/03/17 10:46	
Carbon tetrachloride	ug/L	ND	0.50	01/03/17 10:46	
Chlorobenzene	ug/L	ND	0.50	01/03/17 10:46	
Chloroethane	ug/L	ND	0.50	01/03/17 10:46	
Chloroform	ug/L	ND	0.50	01/03/17 10:46	
Chloromethane	ug/L	ND	0.50	01/03/17 10:46	
cis-1,2-Dichloroethene	ug/L	ND	1.0	01/03/17 10:46	
cis-1,3-Dichloropropene	ug/L	ND	0.50	01/03/17 10:46	
Dibromochloromethane	ug/L	ND	0.50	01/03/17 10:46	
Dichlorodifluoromethane	ug/L	ND	1.0	01/03/17 10:46	
Ethylbenzene	ug/L	ND	0.50	01/03/17 10:46	
Isopropylbenzene (Cumene)	ug/L	ND	1.0	01/03/17 10:46	
m&p-Xylene	ug/L	ND	2.0	01/03/17 10:46	
Methyl acetate	ug/L	ND	2.0	01/03/17 10:46	
Methyl-tert-butyl ether	ug/L	ND	0.50	01/03/17 10:46	
Methylene Chloride	ug/L	ND	0.50	01/03/17 10:46	
o-Xylene	ug/L	ND	1.0	01/03/17 10:46	
Styrene	ug/L	ND	1.0	01/03/17 10:46	
Tetrachloroethene	ug/L	ND	0.50	01/03/17 10:46	
Toluene	ug/L	ND	0.50	01/03/17 10:46	
trans-1,2-Dichloroethene	ug/L	ND	0.50	01/03/17 10:46	
trans-1,3-Dichloropropene	ug/L	ND	0.50	01/03/17 10:46	
Trichloroethene	ug/L	ND	0.50	01/03/17 10:46	
Trichlorofluoromethane	ug/L	ND	0.50	01/03/17 10:46	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: PUMA TERMINAL MW SAMPLING

Pace Project No.: 2047989

METHOD BLANK: 298068

Matrix: Water

Associated Lab Samples: 2047989001, 2047989002, 2047989003, 2047989004, 2047989005, 2047989006

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Vinyl chloride	ug/L	ND	0.50	01/03/17 10:46	
4-Bromofluorobenzene (S)	%	98	68-124	01/03/17 10:46	
Dibromofluoromethane (S)	%	102	72-126	01/03/17 10:46	
Toluene-d8 (S)	%	100	79-119	01/03/17 10:46	

METHOD BLANK: 298394

Matrix: Water

Associated Lab Samples: 2047989001, 2047989002, 2047989003, 2047989004, 2047989005, 2047989006

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
1,1,1-Trichloroethane	ug/L	ND	0.50	01/04/17 10:25	
1,1,2,2-Tetrachloroethane	ug/L	ND	0.50	01/04/17 10:25	
1,1,2-Trichloroethane	ug/L	ND	0.50	01/04/17 10:25	
1,1-Dichloroethane	ug/L	ND	0.50	01/04/17 10:25	
1,1-Dichloroethene	ug/L	ND	0.50	01/04/17 10:25	
1,2-Dibromo-3-chloropropane	ug/L	ND	0.20	01/04/17 10:25	
1,2-Dibromoethane (EDB)	ug/L	ND	1.0	01/04/17 10:25	
1,2-Dichloroethane	ug/L	ND	0.50	01/04/17 10:25	
1,2-Dichloropropane	ug/L	ND	0.50	01/04/17 10:25	
2-Butanone (MEK)	ug/L	ND	2.0	01/04/17 10:25	
2-Hexanone	ug/L	ND	1.0	01/04/17 10:25	
4-Methyl-2-pentanone (MIBK)	ug/L	ND	1.0	01/04/17 10:25	
Acetone	ug/L	ND	4.0	01/04/17 10:25	
Benzene	ug/L	ND	0.50	01/04/17 10:25	
Bromodichloromethane	ug/L	ND	0.50	01/04/17 10:25	
Bromoform	ug/L	ND	0.50	01/04/17 10:25	
Bromomethane	ug/L	ND	0.50	01/04/17 10:25	
Carbon disulfide	ug/L	ND	1.0	01/04/17 10:25	
Carbon tetrachloride	ug/L	ND	0.50	01/04/17 10:25	
Chlorobenzene	ug/L	ND	0.50	01/04/17 10:25	
Chloroethane	ug/L	ND	0.50	01/04/17 10:25	
Chloroform	ug/L	ND	0.50	01/04/17 10:25	
Chloromethane	ug/L	ND	0.50	01/04/17 10:25	
cis-1,2-Dichloroethene	ug/L	ND	1.0	01/04/17 10:25	
cis-1,3-Dichloropropene	ug/L	ND	0.50	01/04/17 10:25	
Dibromochloromethane	ug/L	ND	0.50	01/04/17 10:25	
Dichlorodifluoromethane	ug/L	ND	1.0	01/04/17 10:25	
Ethylbenzene	ug/L	ND	0.50	01/04/17 10:25	
Isopropylbenzene (Cumene)	ug/L	ND	1.0	01/04/17 10:25	
m&p-Xylene	ug/L	ND	2.0	01/04/17 10:25	
Methyl acetate	ug/L	ND	2.0	01/04/17 10:25	
Methyl-tert-butyl ether	ug/L	ND	0.50	01/04/17 10:25	
Methylene Chloride	ug/L	ND	0.50	01/04/17 10:25	
o-Xylene	ug/L	ND	1.0	01/04/17 10:25	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: PUMA TERMINAL MW SAMPLING

Pace Project No.: 2047989

METHOD BLANK: 298394

Matrix: Water

Associated Lab Samples: 2047989001, 2047989002, 2047989003, 2047989004, 2047989005, 2047989006

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Styrene	ug/L	ND	1.0	01/04/17 10:25	
Tetrachloroethene	ug/L	ND	0.50	01/04/17 10:25	
Toluene	ug/L	ND	0.50	01/04/17 10:25	
trans-1,2-Dichloroethene	ug/L	ND	0.50	01/04/17 10:25	
trans-1,3-Dichloropropene	ug/L	ND	0.50	01/04/17 10:25	
Trichloroethene	ug/L	ND	0.50	01/04/17 10:25	
Trichlorofluoromethane	ug/L	ND	0.50	01/04/17 10:25	
Vinyl chloride	ug/L	ND	0.50	01/04/17 10:25	
4-Bromofluorobenzene (S)	%	98	68-124	01/04/17 10:25	
Dibromofluoromethane (S)	%	102	72-126	01/04/17 10:25	
Toluene-d8 (S)	%	100	79-119	01/04/17 10:25	

LABORATORY CONTROL SAMPLE: 298069

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,1,1-Trichloroethane	ug/L	50	56.2	112	62-131	
1,1,2,2-Tetrachloroethane	ug/L	50	45.9	92	15-179	
1,1,2-Trichloroethane	ug/L	50	47.0	94	58-144	
1,1-Dichloroethane	ug/L	50	55.0	110	63-129	
1,1-Dichloroethene	ug/L	50	54.7	109	51-139	
1,2-Dibromo-3-chloropropane	ug/L	50	46.0	92	21-160	
1,2-Dibromoethane (EDB)	ug/L	50	48.6	97	52-161	
1,2-Dichloroethane	ug/L	50	49.5	99	57-148	
1,2-Dichloropropane	ug/L	50	50.7	101	66-128	
2-Butanone (MEK)	ug/L	50	53.6	107	32-183	
2-Hexanone	ug/L	50	45.0	90	36-170	
4-Methyl-2-pentanone (MIBK)	ug/L	50	46.1	92	26-171	
Acetone	ug/L	50	51.2	102	22-165	
Benzene	ug/L	50	54.3	109	62-131	
Bromodichloromethane	ug/L	50	47.3	95	69-132	
Bromoform	ug/L	50	41.3	83	35-166	
Bromomethane	ug/L	50	45.5	91	34-158	
Carbon disulfide	ug/L	50	68.3	137	31-128 L0	
Carbon tetrachloride	ug/L	50	51.8	104	54-144	
Chlorobenzene	ug/L	50	48.5	97	70-127	
Chloroethane	ug/L	50	40.1	80	17-195	
Chloroform	ug/L	50	51.3	103	73-134	
Chloromethane	ug/L	50	58.8	118	17-153	
cis-1,2-Dichloroethene	ug/L	50	53.3	107	68-129	
cis-1,3-Dichloropropene	ug/L	50	50.8	102	72-138	
Dibromochloromethane	ug/L	50	43.8	88	49-146	
Dichlorodifluoromethane	ug/L	50	55.1	110	10-179	
Ethylbenzene	ug/L	50	47.2	94	66-126	
Isopropylbenzene (Cumene)	ug/L	50	47.9	96	51-138	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: PUMA TERMINAL MW SAMPLING

Pace Project No.: 2047989

LABORATORY CONTROL SAMPLE: 298069

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
m&p-Xylene	ug/L	100	94.3	94	65-129	
Methyl acetate	ug/L	50	52.1	104	20-142	
Methyl-tert-butyl ether	ug/L	50	50.4	101	37-166	
Methylene Chloride	ug/L	50	53.9	108	46-168	
o-Xylene	ug/L	50	46.7	93	65-124	
Styrene	ug/L	50	48.1	96	72-133	
Tetrachloroethene	ug/L	50	47.8	96	46-157	
Toluene	ug/L	50	51.4	103	69-126	
trans-1,2-Dichloroethene	ug/L	50	54.0	108	60-129	
trans-1,3-Dichloropropene	ug/L	50	50.2	100	59-149	
Trichloroethene	ug/L	50	52.7	105	67-132	
Trichlorofluoromethane	ug/L	50	57.3	115	39-171	
Vinyl chloride	ug/L	50	44.9	90	27-149	
4-Bromofluorobenzene (S)	%			99	68-124	
Dibromofluoromethane (S)	%			109	72-126	
Toluene-d8 (S)	%			102	79-119	

LABORATORY CONTROL SAMPLE: 298395

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,1,1-Trichloroethane	ug/L	50	53.9	108	62-131	
1,1,1,2-Tetrachloroethane	ug/L	50	51.8	104	15-179	
1,1,2-Trichloroethane	ug/L	50	46.9	94	58-144	
1,1-Dichloroethane	ug/L	50	54.0	108	63-129	
1,1-Dichloroethene	ug/L	50	53.6	107	51-139	
1,2-Dibromo-3-chloropropane	ug/L	50	49.0	98	21-160	
1,2-Dibromoethane (EDB)	ug/L	50	50.2	100	52-161	
1,2-Dichloroethane	ug/L	50	50.9	102	57-148	
1,2-Dichloropropane	ug/L	50	51.6	103	66-128	
2-Butanone (MEK)	ug/L	50	53.2	106	32-183	
2-Hexanone	ug/L	50	46.3	93	36-170	
4-Methyl-2-pentanone (MIBK)	ug/L	50	49.9	100	26-171	
Acetone	ug/L	50	51.6	103	22-165	
Benzene	ug/L	50	54.6	109	62-131	
Bromodichloromethane	ug/L	50	47.8	96	69-132	
Bromoform	ug/L	50	44.3	89	35-166	
Bromomethane	ug/L	50	45.3	91	34-158	
Carbon disulfide	ug/L	50	67.4	135	31-128	L0
Carbon tetrachloride	ug/L	50	51.7	103	54-144	
Chlorobenzene	ug/L	50	51.2	102	70-127	
Chloroethane	ug/L	50	38.2	76	17-195	
Chloroform	ug/L	50	50.0	100	73-134	
Chloromethane	ug/L	50	59.1	118	17-153	
cis-1,2-Dichloroethene	ug/L	50	52.1	104	68-129	
cis-1,3-Dichloropropene	ug/L	50	52.2	104	72-138	

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QUALITY CONTROL DATA

Project: PUMA TERMINAL MW SAMPLING

Pace Project No.: 2047989

LABORATORY CONTROL SAMPLE: 298395

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Dibromochloromethane	ug/L	50	47.1	94	49-146	
Dichlorodifluoromethane	ug/L	50	54.4	109	10-179	
Ethylbenzene	ug/L	50	50.1	100	66-126	
Isopropylbenzene (Cumene)	ug/L	50	51.6	103	51-138	
m&p-Xylene	ug/L	100	100	100	65-129	
Methyl acetate	ug/L	50	50.3	101	20-142	
Methyl-tert-butyl ether	ug/L	50	48.7	97	37-166	
Methylene Chloride	ug/L	50	52.8	106	46-168	
o-Xylene	ug/L	50	48.7	97	65-124	
Styrene	ug/L	50	50.6	101	72-133	
Tetrachloroethene	ug/L	50	50.6	101	46-157	
Toluene	ug/L	50	52.2	104	69-126	
trans-1,2-Dichloroethene	ug/L	50	53.0	106	60-129	
trans-1,3-Dichloropropene	ug/L	50	52.3	105	59-149	
Trichloroethene	ug/L	50	52.4	105	67-132	
Trichlorofluoromethane	ug/L	50	54.3	109	39-171	
Vinyl chloride	ug/L	50	43.9	88	27-149	
4-Bromofluorobenzene (S)	%			98	68-124	
Dibromofluoromethane (S)	%			104	72-126	
Toluene-d8 (S)	%			101	79-119	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 298070 298071

Parameter	Units	MS		MSD		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual	
		2047993001 Result	Spike Conc.	Spike Conc.	MS Result							MSD Result
1,1,1-Trichloroethane	ug/L	ND	50	50	66.6	61.9	133	124	54-137	7	20	
1,1,2,2-Tetrachloroethane	ug/L	ND	50	50	53.3	49.7	107	99	15-187	7	20	
1,1,2-Trichloroethane	ug/L	ND	50	50	53.2	50.5	106	101	59-148	5	20	
1,1-Dichloroethane	ug/L	ND	50	50	64.1	60.8	128	122	59-133	5	20	
1,1-Dichloroethene	ug/L	ND	50	50	64.9	63.5	130	127	44-146	2	20	
1,2-Dibromo-3-chloropropane	ug/L	ND	50	50	53.1	49.1	106	98	23-166	8	20	
1,2-Dibromoethane (EDB)	ug/L	ND	50	50	56.0	53.7	112	107	55-166	4	20	
1,2-Dichloroethane	ug/L	ND	50	50	57.3	55.0	115	110	56-154	4	20	
1,2-Dichloropropane	ug/L	ND	50	50	58.6	56.7	117	113	62-135	3	20	
2-Butanone (MEK)	ug/L	ND	50	50	63.4	59.2	127	118	20-205	7	20	
2-Hexanone	ug/L	ND	50	50	52.4	50.3	105	101	25-189	4	20	
4-Methyl-2-pentanone (MIBK)	ug/L	ND	50	50	52.6	49.9	105	100	23-184	5	20	
Acetone	ug/L	36.2	50	50	75.8	73.3	79	74	11-217	3	20	
Benzene	ug/L	ND	50	50	61.8	60.1	124	120	52-141	3	20	
Bromodichloromethane	ug/L	ND	50	50	54.7	52.4	109	105	70-134	4	20	
Bromoform	ug/L	ND	50	50	46.8	44.7	94	89	37-171	5	20	
Bromomethane	ug/L	ND	50	50	55.4	46.7	111	93	34-155	17	20	
Carbon disulfide	ug/L	ND	50	50	87.9	77.9	175	155	28-130	12	20	MO
Carbon tetrachloride	ug/L	ND	50	50	62.8	59.2	126	118	48-146	6	20	

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QUALITY CONTROL DATA

Project: PUMA TERMINAL MW SAMPLING

Pace Project No.: 2047989

Parameter	Units	2047993001		298070		298071		% Rec	% Rec	Limits	RPD	Max RPD	Qual
		Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec						
Chlorobenzene	ug/L	ND	50	50	55.4	53.8	111	108	67-129	3	20		
Chloroethane	ug/L	ND	50	50	50.5	44.1	101	88	12-192	14	20		
Chloroform	ug/L	ND	50	50	59.4	56.5	119	113	66-143	5	20		
Chloromethane	ug/L	0.54	50	50	67.1	62.4	133	124	14-155	7	20		
cis-1,2-Dichloroethene	ug/L	ND	50	50	61.7	58.6	123	117	56-141	5	20		
cis-1,3-Dichloropropene	ug/L	ND	50	50	57.9	54.9	116	110	70-139	5	20		
Dibromochloromethane	ug/L	ND	50	50	49.7	47.2	99	94	50-150	5	20		
Dichlorodifluoromethane	ug/L	ND	50	50	66.1	63.6	132	127	10-173	4	20		
Ethylbenzene	ug/L	ND	50	50	53.8	52.5	108	105	57-135	2	20		
Isopropylbenzene (Cumene)	ug/L	ND	50	50	55.9	55.7	111	110	40-146	0	20		
m&p-Xylene	ug/L	ND	100	100	109	105	109	105	56-136	4	20		
Methyl acetate	ug/L	ND	50	50	57.2	54.7	114	109	10-142	4	20		
Methyl-tert-butyl ether	ug/L	ND	50	50	58.5	55.0	117	110	35-176	6	20		
Methylene Chloride	ug/L	ND	50	50	61.9	57.7	124	115	45-166	7	20		
o-Xylene	ug/L	ND	50	50	53.2	51.4	106	103	57-133	4	20		
Styrene	ug/L	ND	50	50	54.3	52.0	109	104	58-144	4	20		
Tetrachloroethene	ug/L	ND	50	50	55.4	54.7	111	109	48-143	1	20		
Toluene	ug/L	ND	50	50	58.8	57.1	118	114	59-136	3	20		
trans-1,2-Dichloroethene	ug/L	ND	50	50	65.1	61.6	130	123	57-132	6	20		
trans-1,3-Dichloropropene	ug/L	ND	50	50	57.8	56.5	116	113	59-154	2	20		
Trichloroethene	ug/L	ND	50	50	62.0	59.2	124	118	58-140	5	20		
Trichlorofluoromethane	ug/L	ND	50	50	69.6	65.5	139	131	24-175	6	20		
Vinyl chloride	ug/L	ND	50	50	53.9	50.2	108	100	21-150	7	20		
4-Bromofluorobenzene (S)	%						100	99	68-124				
Dibromofluoromethane (S)	%						110	109	72-126				
Toluene-d8 (S)	%						102	102	79-119				

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QUALITY CONTROL DATA

Project: PUMA TERMINAL MW SAMPLING

Pace Project No.: 2047989

QC Batch: 71320 Analysis Method: EPA 8015B Modified
 QC Batch Method: EPA 3535 Analysis Description: EPA 8015 ORO
 Associated Lab Samples: 2047989002, 2047989003, 2047989004, 2047989005

METHOD BLANK: 298333 Matrix: Water
 Associated Lab Samples: 2047989002, 2047989003, 2047989004, 2047989005

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Diesel Range Organic (C10-C28)	mg/L	ND	0.25	01/10/17 15:33	
Oil Range Organics (>C28-C40)	mg/L	ND	0.50	01/10/17 15:33	
n-Pentacosane (S)	%	28	16-137	01/10/17 15:33	
o-Terphenyl (S)	%	35	10-121	01/10/17 15:33	

LABORATORY CONTROL SAMPLE: 298334

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Diesel Range Organic (C10-C28)	mg/L	.4	.15J	37	10-115	
n-Pentacosane (S)	%			38	16-137	
o-Terphenyl (S)	%			44	10-121	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 298335 298336

Parameter	Units	2047753015 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	Max RPD	RPD	Qual
Diesel Range Organic (C10-C28)	mg/L	ND	.4	.4	.24J	0.34	47	71	10-122		20	
n-Pentacosane (S)	%						55	82	16-137			
o-Terphenyl (S)	%						58	83	10-121			

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: PUMA TERMINAL MW SAMPLING

Pace Project No.: 2047989

QC Batch: 71324 Analysis Method: EPA 8270 by SIM
QC Batch Method: EPA 3510 Analysis Description: 8270 Water by SIM MSSV
Associated Lab Samples: 2047989002, 2047989003, 2047989004, 2047989005

METHOD BLANK: 298353 Matrix: Water
Associated Lab Samples: 2047989002, 2047989003, 2047989004, 2047989005

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
2-Methylnaphthalene	ug/L	ND	0.10	01/04/17 16:59	
Acenaphthene	ug/L	ND	0.10	01/04/17 16:59	
Acenaphthylene	ug/L	ND	0.10	01/04/17 16:59	
Anthracene	ug/L	ND	0.10	01/04/17 16:59	
Benzo(a)anthracene	ug/L	ND	0.10	01/04/17 16:59	
Benzo(a)pyrene	ug/L	ND	0.10	01/04/17 16:59	
Benzo(b)fluoranthene	ug/L	ND	0.10	01/04/17 16:59	
Benzo(g,h,i)perylene	ug/L	ND	0.10	01/04/17 16:59	
Benzo(k)fluoranthene	ug/L	ND	0.10	01/04/17 16:59	
Chrysene	ug/L	ND	0.10	01/04/17 16:59	
Dibenz(a,h)anthracene	ug/L	ND	0.10	01/04/17 16:59	
Fluoranthene	ug/L	ND	0.10	01/04/17 16:59	
Fluorene	ug/L	ND	0.10	01/04/17 16:59	
Indeno(1,2,3-cd)pyrene	ug/L	ND	0.10	01/04/17 16:59	
Naphthalene	ug/L	ND	0.10	01/04/17 16:59	
Phenanthrene	ug/L	ND	0.10	01/04/17 16:59	
Pyrene	ug/L	ND	0.10	01/04/17 16:59	
2-Fluorobiphenyl (S)	%	78	25-150	01/04/17 16:59	
Terphenyl-d14 (S)	%	84	25-150	01/04/17 16:59	

LABORATORY CONTROL SAMPLE: 298354

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
2-Methylnaphthalene	ug/L	4	3.3	84	35-150	
Acenaphthene	ug/L	4	3.5	89	35-150	
Acenaphthylene	ug/L	4	3.4	85	35-150	
Anthracene	ug/L	4	4.1	103	35-150	
Benzo(a)anthracene	ug/L	4	3.6	89	35-150	
Benzo(a)pyrene	ug/L	4	3.3	82	35-150	
Benzo(b)fluoranthene	ug/L	4	3.3	83	35-150	
Benzo(g,h,i)perylene	ug/L	4	3.9	97	35-150	
Benzo(k)fluoranthene	ug/L	4	3.4	84	35-150	
Chrysene	ug/L	4	3.3	83	35-150	
Dibenz(a,h)anthracene	ug/L	4	4.3	107	35-150	
Fluoranthene	ug/L	4	3.1	79	35-150	
Fluorene	ug/L	4	3.4	85	35-150	
Indeno(1,2,3-cd)pyrene	ug/L	4	4.1	102	35-150	
Naphthalene	ug/L	4	3.2	80	35-150	
Phenanthrene	ug/L	4	3.6	90	35-150	
Pyrene	ug/L	4	3.2	80	35-150	

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QUALITY CONTROL DATA

Project: PUMA TERMINAL MW SAMPLING

Pace Project No.: 2047989

LABORATORY CONTROL SAMPLE: 298354

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
2-Fluorobiphenyl (S)	%.			103	25-150	
Terphenyl-d14 (S)	%.			103	25-150	

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REPORT OF LABORATORY ANALYSIS

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QUALIFIERS

Project: PUMA TERMINAL MW SAMPLING

Pace Project No.: 2047989

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The Nelac Institute

LABORATORIES

PASI-N Pace Analytical Services - New Orleans

BATCH QUALIFIERS

Batch: 71393

[M5] A matrix spike/matrix spike duplicate was not performed for this batch due to insufficient sample volume.

ANALYTE QUALIFIERS

C9 Common Laboratory Contaminant.

L0 Analyte recovery in the laboratory control sample (LCS) was outside QC limits.

L3 Analyte recovery in the laboratory control sample (LCS) exceeded QC limits. Analyte presence below reporting limits in associated samples.

M0 Matrix spike recovery and/or matrix spike duplicate recovery was outside laboratory control limits.

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: PUMA TERMINAL MW SAMPLING

Pace Project No.: 2047989

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
2047989002	EB-122916	EPA 3535	71320	EPA 8015B Modified	71622
2047989003	MW-86A	EPA 3535	71320	EPA 8015B Modified	71622
2047989004	MW-MP5A	EPA 3535	71320	EPA 8015B Modified	71622
2047989005	MW-DP5	EPA 3535	71320	EPA 8015B Modified	71622
2047989001	TB-122916	EPA 8015/8021	71377		
2047989002	EB-122916	EPA 8015/8021	71377		
2047989003	MW-86A	EPA 8015/8021	71377		
2047989004	MW-MP5A	EPA 8015/8021	71377		
2047989005	MW-DP5	EPA 8015/8021	71377		
2047989006	FB-122916	EPA 8015/8021	71377		
2047989002	EB-122916	EPA 3010	71212	EPA 6020	71238
2047989003	MW-86A	EPA 3010	71212	EPA 6020	71238
2047989004	MW-MP5A	EPA 3010	71212	EPA 6020	71238
2047989005	MW-DP5	EPA 3010	71212	EPA 6020	71238
2047989002	EB-122916	EPA 3005A	71231	EPA 6020	71239
2047989003	MW-86A	EPA 3005A	71231	EPA 6020	71239
2047989004	MW-MP5A	EPA 3005A	71231	EPA 6020	71239
2047989005	MW-DP5	EPA 3005A	71231	EPA 6020	71239
2047989002	EB-122916	EPA 7470	71210	EPA 7470	71243
2047989003	MW-86A	EPA 7470	71210	EPA 7470	71243
2047989004	MW-MP5A	EPA 7470	71210	EPA 7470	71243
2047989005	MW-DP5	EPA 7470	71210	EPA 7470	71243
2047989002	EB-122916	EPA 7470	71229	EPA 7470	71242
2047989003	MW-86A	EPA 7470	71229	EPA 7470	71242
2047989004	MW-MP5A	EPA 7470	71229	EPA 7470	71242
2047989005	MW-DP5	EPA 7470	71229	EPA 7470	71242
2047989002	EB-122916	EPA 3510	71324	EPA 8270 by SIM	71393
2047989003	MW-86A	EPA 3510	71324	EPA 8270 by SIM	71393
2047989004	MW-MP5A	EPA 3510	71324	EPA 8270 by SIM	71393
2047989005	MW-DP5	EPA 3510	71324	EPA 8270 by SIM	71393
2047989001	TB-122916	EPA 5030B/8260	71267		
2047989002	EB-122916	EPA 5030B/8260	71267		
2047989003	MW-86A	EPA 5030B/8260	71267		
2047989004	MW-MP5A	EPA 5030B/8260	71267		
2047989005	MW-DP5	EPA 5030B/8260	71267		
2047989006	FB-122916	EPA 5030B/8260	71267		

REPORT OF LABORATORY ANALYSIS

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WO#: 2047989

CHAIN-OF-CUSTODY / Analytical Request Document

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.



2047989

Page: 1 of 1
2075256

Section A

Required Client Information:

Company: Arcadis
 Address: 48 City View Plaza
Suite 401 RD 165 km 1.3
 Email To: Francis Calderon@arcadis-us.com
 Phone: 952-777-4000 Fax: 952-777-4000
 Requested Due Date/TAT: Standard

Section C

Invoice Information:

Report To: Francis Calderon
 Copy To:
 Attention:
 Company Name:
 Address:
 Purchase Order No.:
 Project Name: Puma Terminal new sampling
 Project Number: B002.1605B
 Pace Quote Reference:
 Pace Project Manager: Juan Redondo
 Pace Profile #:

REGULATORY AGENCY
 NPDES GROUND WATER DRINKING WATER
 UST RCRA OTHER
 Site Location
 STATE: P.R.

ITEM #	Section D Required Client Information	Matrix Codes MATRIX / CODE	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED				SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives										Analysis Test ↓	Requested Analysis Filtered (Y/N)	Residual Chlorine (Y/N)	Face Project No./ Lab I.D.				
					COMPOSITE START		COMPOSITE END/GRAB				Unpreserved	H ₂ SO ₄	HNO ₃	HCl	NaOH	Na ₂ S ₂ O ₃	Methanol	Other	VOCS 426	BRO 4015					DRO/ORO 4015	SVOCs 4270	Metals / Mercury	Dissolved Metals
					DATE	TIME	DATE	TIME																				
1	TR-122916		WT G		12/29/16	1400			4																			
2	EB-122916		WT G		12/29/16	0900			10	S																		
3	MW-86A		WT G		12/29/16	0950			10	S																		
4	MW-MPSA		WT G		12/29/16	1048			10	S																		
5	MV-DPS		WT G		12/29/16	1137			10	S																		
6	FB-122916		WT G		12/29/16	1142			4																			

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS			
Level IV	Arcadis / Arcadis	12/29/16	1400	Pala... = Face Fed Exp	12/29/16	1400	4	Y	N	Y
	Fed Exp	12/30/16	0840	JA = Face	12/30/16	0840	1.2	Y	Y	Y
							2.7			

ORIGINAL

SAMPLER NAME AND SIGNATURE: _____
 PRINT Name of SAMPLER: Arcadis
 SIGNATURE of SAMPLER: [Signature]
 DATE Signed (MM/DD/YY): 12/29/16

Temp in °C: _____
 Received on ice (Y/N): _____
 Custody Sealed Cooler (Y/N): _____
 Samples intact (Y/N): _____

Page 43 of 45

*Important Note: By signing this form you are accepting Pace's NET 30 day payment terms and agreeing to late charges of 1.5% per month for any invoices not paid within 30 days.



Sample Condition Upon Receipt

WO#: 2047989

Urb. Jardines de Guaynabo
Calle Mrginal Bldg A-10
Guaynabo, PR 00969

PM: JAR1 Due Date: 01/13/17
CLIENT: 98-ARCADISPR

Project #

Courier: Pace Courier Hired Courier Fed X UPS DHL USPS Customer Other

Custody Seal on Cooler/Box Present: [see COC]

Custody Seals intact: Yes No

Thermometer Used: Therm Fisher IR 4 Therm Fisher IR 6 Therm Fisher IR 7

Type of Ice: Wet Blue None

Samples on ice: [see COC]

Cooler Temperature: [see COC]

Temp should be above freezing to 6°C

Date and Initials of person examining contents: [Signature]

Temp must be measured from Temperature blank when present Comments:

Table with 15 rows and 3 columns: Question, Yes/No/N/A checkboxes, and Number. Includes items like 'Temperature Blank Present?', 'Chain of Custody Present', 'Chain of Custody Complete', etc.

Client Notification/ Resolution:

Person Contacted: _____ Date/Time: _____

Comments/ Resolution: _____



Sample Condition Upon Receipt

1000 Riverbend Blvd., Suite F
St. Rose, LA 70087

Project #: **20**

Courier: Pace Courier Hired Courier Fed X UPS DHL USPS Customer Other

Custody Seal on Cooler/Box Present: [see COC]

Custody Seals intact: Yes No

Thermometer Used: Therm Fisher IR 5
 Therm Fisher IR 6
 Therm Fisher IR 7

Type of Ice: Wet Blue None

Samples on ice: [see COC]

Cooler Temperature: [see COC]

Temp should be above freezing to 6°C

Date and Initials of person examining contents: 12-30-16 TAB

Temp must be measured from Temperature blank when present

Comments:

Temperature Blank Present?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	1
Chain of Custody Present:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	2
Chain of Custody Complete:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	3
Chain of Custody Relinquished:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	4
Sampler Name & Signature on COC:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	5
Samples Arrived within Hold Time:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	6
Sufficient Volume:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	7
Correct Containers Used:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	8
Filtered vol. Rec. for Diss. tests	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	9
Sample Labels match COC:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	10
All containers received within manufacture's precautionary and/or expiration dates.	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	11
All containers needing chemical preservation have been checked (except VOA, coliform, & O&G).	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	12
All containers preservation checked found to be in compliance with EPA recommendation.	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	13
		If No, was preservative added? <input type="checkbox"/> Yes <input type="checkbox"/> No If added record lot no.: HNO ₃ _____ H ₂ SO ₄ _____
Headspace in VOA Vials (>6mm):	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	14
Trip Blank Present:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	15

Client Notification/ Resolution:

Person Contacted: _____ Date/Time: _____

Comments/ Resolution: _____

January 18, 2017

Efrain Calderon
BBL Caribe Engineering P.S.C.
48 City View Plaza1, Suite 401
Road 16, Km. 1.2
Guaynabo, PR 00968

RE: Project: PUMA TERMINAL MW-SAMPLING
Pace Project No.: 2048198

Dear Efrain Calderon:

Enclosed are the analytical results for sample(s) received by the laboratory on January 04, 2017. The results relate only to the samples included in this report. Results reported herein conform to the most current, applicable TNI/NELAC standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,



Juan Redondo
juan.redondo@pacelabs.com
Project Manager

Enclosures

cc: Sharon Colon
Abner Hernandez
Marianela Mercado-Burgos



REPORT OF LABORATORY ANALYSIS

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CERTIFICATIONS

Project: PUMA TERMINAL MW-SAMPLING

Pace Project No.: 2048198

New Orleans Certification IDs

California Env. Lab Accreditation Program Branch:
11277CA

Florida Department of Health (NELAC): E87595

Illinois Environmental Protection Agency: 0025721

Kansas Department of Health and Environment (NELAC):
E-10266

Louisiana Dept. of Environmental Quality (NELAC/LELAP):
02006

Pennsylvania Dept. of Env Protection (NELAC): 68-04202

Texas Commission on Env. Quality (NELAC):
T104704405-09-TX

U.S. Dept. of Agriculture Foreign Soil Import: P330-10-
00119

Commonwealth of Virginia (TNI): 480246

REPORT OF LABORATORY ANALYSIS

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SAMPLE SUMMARY

Project: PUMA TERMINAL MW-SAMPLING
Pace Project No.: 2048198

Lab ID	Sample ID	Matrix	Date Collected	Date Received
2048198001	TB-010317	Water	01/03/17 00:00	01/04/17 15:08
2048198002	EB-010317	Water	01/03/17 08:48	01/04/17 15:08
2048198003	MW-B9	Water	01/03/17 09:35	01/04/17 15:08
2048198004	MW-EB103	Water	01/03/17 10:27	01/04/17 15:08
2048198005	MW-EB104	Water	01/03/17 11:26	01/04/17 15:08
2048198006	MW-EB105	Water	01/03/17 13:45	01/04/17 15:08
2048198007	DUP004	Water	01/03/17 00:00	01/04/17 15:08
2048198008	MW-EB106	Water	01/03/17 14:28	01/04/17 15:08
2048198009	MW-EB107	Water	01/03/17 15:11	01/04/17 15:08
2048198010	MW-EB108	Water	01/03/17 16:01	01/04/17 15:08
2048198011	FB-010317	Water	01/03/17 16:10	01/04/17 15:08
2048198012	TB-010417	Water	01/04/17 00:00	01/04/17 15:08
2048198013	EB-010417	Water	01/04/17 08:58	01/04/17 15:08
2048198014	MW-DP1	Water	01/04/17 09:36	01/04/17 15:08
2048198015	MW-MP2	Water	01/04/17 10:25	01/04/17 15:08
2048198016	MW-MP3	Water	01/04/17 11:46	01/04/17 15:08
2048198017	MW-MP8	Water	01/04/17 13:33	01/04/17 15:08
2048198018	TB-010417-2	Water	01/04/17 00:00	01/04/17 15:08
2048198019	MW-NDP	Water	01/04/17 14:22	01/04/17 15:08
2048198020	FB-010417	Water	01/04/17 14:30	01/04/17 15:08

REPORT OF LABORATORY ANALYSIS

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SAMPLE ANALYTE COUNT

Project: PUMA TERMINAL MW-SAMPLING
Pace Project No.: 2048198

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
2048198001	TB-010317	EPA 8015/8021	MHM	2	PASI-N
		EPA 5030B/8260	RMP	45	PASI-N
2048198002	EB-010317	EPA 8015B Modified	SLF	4	PASI-N
		EPA 8015/8021	MHM	2	PASI-N
		EPA 6020	KJR	4	PASI-N
		EPA 6020	KJR	4	PASI-N
		EPA 7470	MHB1	1	PASI-N
		EPA 7470	MHB1	1	PASI-N
		EPA 8270 by SIM	GEJ	19	PASI-N
		EPA 5030B/8260	RMP	45	PASI-N
2048198003	MW-B9	EPA 8015B Modified	SLF	4	PASI-N
		EPA 8015/8021	MHM	2	PASI-N
		EPA 6020	KJR	4	PASI-N
		EPA 6020	KJR	4	PASI-N
		EPA 7470	MHB1	1	PASI-N
		EPA 7470	MHB1	1	PASI-N
		EPA 8270 by SIM	GEJ	19	PASI-N
		EPA 5030B/8260	RMP	45	PASI-N
2048198004	MW-EB103	EPA 8015B Modified	SLF	4	PASI-N
		EPA 8015/8021	MHM	2	PASI-N
		EPA 6020	KJR	4	PASI-N
		EPA 6020	KJR	4	PASI-N
		EPA 7470	MHB1	1	PASI-N
		EPA 7470	MHB1	1	PASI-N
		EPA 8270 by SIM	GEJ	19	PASI-N
		EPA 5030B/8260	RMP	45	PASI-N
2048198005	MW-EB104	EPA 8015B Modified	SLF	4	PASI-N
		EPA 8015/8021	MHM	2	PASI-N
		EPA 6020	KJR	4	PASI-N
		EPA 6020	KJR	4	PASI-N
		EPA 7470	MHB1	1	PASI-N
		EPA 7470	MHB1	1	PASI-N
		EPA 8270 by SIM	GEJ	19	PASI-N
		EPA 5030B/8260	RMP	45	PASI-N
2048198006	MW-EB105	EPA 8015B Modified	SLF	4	PASI-N
		EPA 8015/8021	MHM	2	PASI-N
		EPA 6020	KJR	4	PASI-N

REPORT OF LABORATORY ANALYSIS

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SAMPLE ANALYTE COUNT

Project: PUMA TERMINAL MW-SAMPLING

Pace Project No.: 2048198

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
2048198007	DUP004	EPA 6020	KJR	4	PASI-N
		EPA 7470	MHB1	1	PASI-N
		EPA 7470	MHB1	1	PASI-N
		EPA 8270 by SIM	GEJ	19	PASI-N
		EPA 5030B/8260	RMP	45	PASI-N
		EPA 8015B Modified	SLF	4	PASI-N
		EPA 8015/8021	MHM	2	PASI-N
		EPA 6020	KJR	4	PASI-N
		EPA 6020	KJR	4	PASI-N
		EPA 7470	MHB1	1	PASI-N
2048198008	MW-EB106	EPA 7470	MHB1	1	PASI-N
		EPA 7470	MHB1	1	PASI-N
		EPA 8270 by SIM	GEJ	19	PASI-N
		EPA 5030B/8260	RMP	45	PASI-N
		EPA 8015B Modified	SLF	4	PASI-N
		EPA 8015/8021	MHM	2	PASI-N
		EPA 6020	KJR	4	PASI-N
		EPA 6020	KJR	4	PASI-N
		EPA 7470	MHB1	1	PASI-N
		EPA 7470	MHB1	1	PASI-N
2048198009	MW-EB107	EPA 8270 by SIM	GEJ	19	PASI-N
		EPA 5030B/8260	RMP	45	PASI-N
		EPA 8015B Modified	SLF	4	PASI-N
		EPA 8015/8021	MHM	2	PASI-N
		EPA 6020	KJR	4	PASI-N
		EPA 6020	KJR	4	PASI-N
		EPA 7470	MHB1	1	PASI-N
		EPA 7470	MHB1	1	PASI-N
		EPA 8270 by SIM	GEJ	19	PASI-N
		EPA 5030B/8260	RMP	45	PASI-N
2048198010	MW-EB108	EPA 8015B Modified	SLF	4	PASI-N
		EPA 8015/8021	MHM	2	PASI-N
		EPA 6020	KJR	4	PASI-N
		EPA 6020	KJR	4	PASI-N
		EPA 7470	MHB1	1	PASI-N
		EPA 7470	MHB1	1	PASI-N
		EPA 8270 by SIM	GEJ	19	PASI-N
		EPA 5030B/8260	RMP	45	PASI-N

REPORT OF LABORATORY ANALYSIS

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SAMPLE ANALYTE COUNT

Project: PUMA TERMINAL MW-SAMPLING

Pace Project No.: 2048198

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
2048198011	FB-010317	EPA 8015/8021	MHM	2	PASI-N
		EPA 5030B/8260	RMP	45	PASI-N
2048198012	TB-010417	EPA 8015/8021	MHM	2	PASI-N
		EPA 5030B/8260	RMP	45	PASI-N
2048198013	EB-010417	EPA 8015B Modified	SLF	4	PASI-N
		EPA 8015/8021	MHM	2	PASI-N
		EPA 6020	KJR	4	PASI-N
		EPA 6020	KJR	4	PASI-N
		EPA 7470	MHB1	1	PASI-N
		EPA 7470	MHB1	1	PASI-N
		EPA 8270 by SIM	GEJ	19	PASI-N
		EPA 5030B/8260	RMP	45	PASI-N
		EPA 8015B Modified	SLF	4	PASI-N
2048198014	MW-DP1	EPA 8015/8021	MHM	2	PASI-N
		EPA 6020	KJR	4	PASI-N
		EPA 6020	KJR	4	PASI-N
		EPA 7470	MHB1	1	PASI-N
		EPA 7470	MHB1	1	PASI-N
		EPA 8270 by SIM	GEJ	19	PASI-N
		EPA 5030B/8260	RMP	45	PASI-N
		EPA 8015B Modified	SLF	4	PASI-N
		EPA 8015/8021	MHM	2	PASI-N
2048198015	MW-MP2	EPA 6020	KJR	4	PASI-N
		EPA 6020	KJR	4	PASI-N
		EPA 7470	MHB1	1	PASI-N
		EPA 7470	MHB1	1	PASI-N
		EPA 8270 by SIM	GEJ	19	PASI-N
		EPA 5030B/8260	RMP	45	PASI-N
		EPA 8015B Modified	SLF	4	PASI-N
		EPA 8015/8021	MHM	2	PASI-N
		EPA 6020	KJR	4	PASI-N
2048198016	MW-MP3	EPA 6020	KJR	4	PASI-N
		EPA 7470	MHB1	1	PASI-N
		EPA 7470	MHB1	1	PASI-N
		EPA 8270 by SIM	GEJ	19	PASI-N
		EPA 5030B/8260	RMP	45	PASI-N
		EPA 8015B Modified	SLF	4	PASI-N
		EPA 8015/8021	MHM	2	PASI-N
		EPA 6020	KJR	4	PASI-N
		EPA 6020	KJR	4	PASI-N
2048198017	MW-MP8	EPA 7470	MHB1	1	PASI-N
		EPA 7470	MHB1	1	PASI-N
		EPA 8270 by SIM	GEJ	19	PASI-N
		EPA 5030B/8260	RMP	45	PASI-N
		EPA 8015B Modified	SLF	4	PASI-N

REPORT OF LABORATORY ANALYSIS

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SAMPLE ANALYTE COUNT

Project: PUMA TERMINAL MW-SAMPLING

Pace Project No.: 2048198

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
		EPA 8015/8021	MHM	2	PASI-N
		EPA 6020	KJR	4	PASI-N
		EPA 6020	KJR	4	PASI-N
		EPA 7470	MHB1	1	PASI-N
		EPA 7470	MHB1	1	PASI-N
		EPA 8270 by SIM	GEJ	19	PASI-N
		EPA 5030B/8260	RMP	45	PASI-N
2048198018	TB-010417-2	EPA 8015/8021	MHM	2	PASI-N
		EPA 5030B/8260	RMP	45	PASI-N
2048198019	MW-NDP	EPA 8015B Modified	SLF	4	PASI-N
		EPA 8015/8021	MHM	2	PASI-N
		EPA 6020	KJR	4	PASI-N
		EPA 6020	KJR	4	PASI-N
		EPA 7470	MHB1	1	PASI-N
		EPA 7470	MHB1	1	PASI-N
		EPA 8270 by SIM	GEJ	19	PASI-N
		EPA 5030B/8260	RMP	45	PASI-N
2048198020	FB-010417	EPA 8015/8021	MHM	2	PASI-N
		EPA 5030B/8260	RMP	45	PASI-N

REPORT OF LABORATORY ANALYSIS

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PROJECT NARRATIVE

Project: PUMA TERMINAL MW-SAMPLING

Pace Project No.: 2048198

Method: EPA 8015B Modified

Description: 8015M DRO/ORO Organics

Client: BBL Caribe / Arcadis PR

Date: January 18, 2017

General Information:

15 samples were analyzed for EPA 8015B Modified. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:

The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:

The samples were prepared in accordance with EPA 3535 with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):

All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:

All criteria were within method requirements with any exceptions noted below.

Surrogates:

All surrogates were within QC limits with any exceptions noted below.

Method Blank:

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

REPORT OF LABORATORY ANALYSIS

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PROJECT NARRATIVE

Project: PUMA TERMINAL MW-SAMPLING

Pace Project No.: 2048198

Method: EPA 8015/8021

Description: 8021 GCV BTEX, MTBE, GRO

Client: BBL Caribe / Arcadis PR

Date: January 18, 2017

General Information:

20 samples were analyzed for EPA 8015/8021. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:

The samples were analyzed within the method required hold times with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):

All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:

All criteria were within method requirements with any exceptions noted below.

Surrogates:

All surrogates were within QC limits with any exceptions noted below.

Method Blank:

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

REPORT OF LABORATORY ANALYSIS

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PROJECT NARRATIVE

Project: PUMA TERMINAL MW-SAMPLING

Pace Project No.: 2048198

Method: EPA 6020

Description: 6020 MET ICPMS

Client: BBL Caribe / Arcadis PR

Date: January 18, 2017

General Information:

15 samples were analyzed for EPA 6020. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:

The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:

The samples were prepared in accordance with EPA 3010 with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):

All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:

All criteria were within method requirements with any exceptions noted below.

Internal Standards:

All internal standards were within QC limits with any exceptions noted below.

Method Blank:

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

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PROJECT NARRATIVE

Project: PUMA TERMINAL MW-SAMPLING

Pace Project No.: 2048198

Method: EPA 6020

Description: 6020 MET ICPMS, Dissolved (LF)

Client: BBL Caribe / Arcadis PR

Date: January 18, 2017

General Information:

15 samples were analyzed for EPA 6020. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:

The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:

The samples were prepared in accordance with EPA 3005A with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):

All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:

All criteria were within method requirements with any exceptions noted below.

Internal Standards:

All internal standards were within QC limits with any exceptions noted below.

Method Blank:

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

REPORT OF LABORATORY ANALYSIS

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PROJECT NARRATIVE

Project: PUMA TERMINAL MW-SAMPLING

Pace Project No.: 2048198

Method: EPA 7470

Description: 7470 Mercury

Client: BBL Caribe / Arcadis PR

Date: January 18, 2017

General Information:

15 samples were analyzed for EPA 7470. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:

The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:

The samples were prepared in accordance with EPA 7470 with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):

All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:

All criteria were within method requirements with any exceptions noted below.

Method Blank:

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

QC Batch: 71616

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 2048198006

M1: Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

- MS (Lab ID: 299682)
 - Mercury
- MSD (Lab ID: 299683)
 - Mercury

Additional Comments:

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PROJECT NARRATIVE

Project: PUMA TERMINAL MW-SAMPLING

Pace Project No.: 2048198

Method: EPA 7470

Description: 7470 Mercury, Dissolved (LF)

Client: BBL Caribe / Arcadis PR

Date: January 18, 2017

General Information:

15 samples were analyzed for EPA 7470. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:

The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:

The samples were prepared in accordance with EPA 7470 with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):

All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:

All criteria were within method requirements with any exceptions noted below.

Method Blank:

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

QC Batch: 71675

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 2048198006

M1: Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

- MS (Lab ID: 299990)
 - Mercury, Dissolved
- MSD (Lab ID: 299991)
 - Mercury, Dissolved

Additional Comments:

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PROJECT NARRATIVE

Project: PUMA TERMINAL MW-SAMPLING

Pace Project No.: 2048198

Method: EPA 8270 by SIM

Description: 8270 MSSV PAH by SIM SEP

Client: BBL Caribe / Arcadis PR

Date: January 18, 2017

General Information:

15 samples were analyzed for EPA 8270 by SIM. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:

The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:

The samples were prepared in accordance with EPA 3510 with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):

All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:

All criteria were within method requirements with any exceptions noted below.

Internal Standards:

All internal standards were within QC limits with any exceptions noted below.

Surrogates:

All surrogates were within QC limits with any exceptions noted below.

Method Blank:

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

QC Batch: 71484

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 2048198006

R1: RPD value was outside control limits.

- MSD (Lab ID: 299017)
 - 2-Methylnaphthalene
 - Acenaphthene
 - Acenaphthylene
 - Anthracene
 - Benzo(a)anthracene
 - Benzo(a)pyrene
 - Benzo(b)fluoranthene
 - Benzo(k)fluoranthene
 - Chrysene

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PROJECT NARRATIVE

Project: PUMA TERMINAL MW-SAMPLING

Pace Project No.: 2048198

Method: EPA 8270 by SIM

Description: 8270 MSSV PAH by SIM SEP

Client: BBL Caribe / Arcadis PR

Date: January 18, 2017

QC Batch: 71484

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 2048198006

R1: RPD value was outside control limits.

- Fluoranthene
- Fluorene
- Naphthalene
- Phenanthrene
- Pyrene

QC Batch: 71561

A matrix spike/matrix spike duplicate was not performed due to insufficient sample volume.

Additional Comments:

REPORT OF LABORATORY ANALYSIS

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PROJECT NARRATIVE

Project: PUMA TERMINAL MW-SAMPLING
Pace Project No.: 2048198

Method: EPA 5030B/8260
Description: 8260 MSV Low Level
Client: BBL Caribe / Arcadis PR
Date: January 18, 2017

General Information:

20 samples were analyzed for EPA 5030B/8260. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:

The samples were analyzed within the method required hold times with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):

All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:

All criteria were within method requirements with any exceptions noted below.

Internal Standards:

All internal standards were within QC limits with any exceptions noted below.

Surrogates:

All surrogates were within QC limits with any exceptions noted below.

Method Blank:

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

QC Batch: 71490

L0: Analyte recovery in the laboratory control sample (LCS) was outside QC limits.

- LCS (Lab ID: 299029)
- Carbon disulfide

Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

QC Batch: 71490

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 2048198006

M0: Matrix spike recovery and/or matrix spike duplicate recovery was outside laboratory control limits.

- MS (Lab ID: 299030)
 - Carbon disulfide
- MSD (Lab ID: 299031)
 - Carbon disulfide

Additional Comments:

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PROJECT NARRATIVE

Project: PUMA TERMINAL MW-SAMPLING
Pace Project No.: 2048198

Method: EPA 5030B/8260
Description: 8260 MSV Low Level
Client: BBL Caribe / Arcadis PR
Date: January 18, 2017

Analyte Comments:

QC Batch: 71490

C9: Common Laboratory Contaminant.

- DUP004 (Lab ID: 2048198007)
 - Acetone
- EB-010317 (Lab ID: 2048198002)
 - Acetone
- EB-010417 (Lab ID: 2048198013)
 - Acetone
- FB-010317 (Lab ID: 2048198011)
 - Acetone
- FB-010417 (Lab ID: 2048198020)
 - Acetone
- MW-B9 (Lab ID: 2048198003)
 - Acetone
- MW-DP1 (Lab ID: 2048198014)
 - Acetone
- MW-EB103 (Lab ID: 2048198004)
 - Acetone
- MW-EB104 (Lab ID: 2048198005)
 - Acetone
- MW-EB105 (Lab ID: 2048198006)
 - Acetone
- MW-EB106 (Lab ID: 2048198008)
 - Acetone
- MW-EB108 (Lab ID: 2048198010)
 - Acetone
- MW-MP2 (Lab ID: 2048198015)
 - Acetone
- MW-MP3 (Lab ID: 2048198016)
 - Acetone
- MW-MP8 (Lab ID: 2048198017)
 - Acetone
- MW-NDP (Lab ID: 2048198019)
 - Acetone

This data package has been reviewed for quality and completeness and is approved for release.

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: PUMA TERMINAL MW-SAMPLING

Pace Project No.: 2048198

Sample: TB-010317	Lab ID: 2048198001	Collected: 01/03/17 00:00	Received: 01/04/17 15:08	Matrix: Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8021 GCV BTEX, MTBE, GRO		Analytical Method: EPA 8015/8021						
Gasoline Range Organics	ND	ug/L	50.0	1		01/06/17 20:48		
Surrogates								
4-Bromofluorobenzene (S)	89	%	44-148	1		01/06/17 20:48	460-00-4	
8260 MSV Low Level		Analytical Method: EPA 5030B/8260						
Acetone	171	ug/L	4.0	1		01/06/17 11:42	67-64-1	
Benzene	ND	ug/L	0.50	1		01/06/17 11:42	71-43-2	
Bromodichloromethane	ND	ug/L	0.50	1		01/06/17 11:42	75-27-4	
Bromoform	ND	ug/L	0.50	1		01/06/17 11:42	75-25-2	
Bromomethane	ND	ug/L	0.50	1		01/06/17 11:42	74-83-9	
2-Butanone (MEK)	ND	ug/L	2.0	1		01/06/17 11:42	78-93-3	
Carbon disulfide	ND	ug/L	1.0	1		01/06/17 11:42	75-15-0	L3
Carbon tetrachloride	ND	ug/L	0.50	1		01/06/17 11:42	56-23-5	
Chlorobenzene	ND	ug/L	0.50	1		01/06/17 11:42	108-90-7	
Chloroethane	ND	ug/L	0.50	1		01/06/17 11:42	75-00-3	
Chloroform	ND	ug/L	0.50	1		01/06/17 11:42	67-66-3	
Chloromethane	ND	ug/L	0.50	1		01/06/17 11:42	74-87-3	
1,2-Dibromo-3-chloropropane	ND	ug/L	0.20	1		01/06/17 11:42	96-12-8	
Dibromochloromethane	ND	ug/L	0.50	1		01/06/17 11:42	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	1		01/06/17 11:42	106-93-4	
Dichlorodifluoromethane	ND	ug/L	1.0	1		01/06/17 11:42	75-71-8	
1,1-Dichloroethane	ND	ug/L	0.50	1		01/06/17 11:42	75-34-3	
1,2-Dichloroethane	ND	ug/L	0.50	1		01/06/17 11:42	107-06-2	
1,1-Dichloroethene	ND	ug/L	0.50	1		01/06/17 11:42	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	1		01/06/17 11:42	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	0.50	1		01/06/17 11:42	156-60-5	
1,2-Dichloropropane	ND	ug/L	0.50	1		01/06/17 11:42	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	0.50	1		01/06/17 11:42	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	0.50	1		01/06/17 11:42	10061-02-6	
Ethylbenzene	ND	ug/L	0.50	1		01/06/17 11:42	100-41-4	
2-Hexanone	ND	ug/L	1.0	1		01/06/17 11:42	591-78-6	
Isopropylbenzene (Cumene)	ND	ug/L	1.0	1		01/06/17 11:42	98-82-8	
Methyl acetate	ND	ug/L	2.0	1		01/06/17 11:42	79-20-9	
Methylene Chloride	ND	ug/L	0.50	1		01/06/17 11:42	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	1.0	1		01/06/17 11:42	108-10-1	
Methyl-tert-butyl ether	ND	ug/L	0.50	1		01/06/17 11:42	1634-04-4	
Styrene	ND	ug/L	1.0	1		01/06/17 11:42	100-42-5	
1,1,2,2-Tetrachloroethane	ND	ug/L	0.50	1		01/06/17 11:42	79-34-5	
Tetrachloroethene	ND	ug/L	0.50	1		01/06/17 11:42	127-18-4	
Toluene	ND	ug/L	0.50	1		01/06/17 11:42	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	0.50	1		01/06/17 11:42	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	0.50	1		01/06/17 11:42	79-00-5	
Trichloroethene	ND	ug/L	0.50	1		01/06/17 11:42	79-01-6	
Trichlorofluoromethane	ND	ug/L	0.50	1		01/06/17 11:42	75-69-4	
Vinyl chloride	ND	ug/L	0.50	1		01/06/17 11:42	75-01-4	
m&p-Xylene	ND	ug/L	2.0	1		01/06/17 11:42	179601-23-1	
o-Xylene	ND	ug/L	1.0	1		01/06/17 11:42	95-47-6	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: PUMA TERMINAL MW-SAMPLING

Sample Project No.: 2048198

Sample: TB-010317		Lab ID: 2048198001		Collected: 01/03/17 00:00	Received: 01/04/17 15:08	Matrix: Water		
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV Low Level		Analytical Method: EPA 5030B/8260						
Surrogates								
Dibromofluoromethane (S)	106	%.	72-126	1		01/06/17 11:42	1868-53-7	
4-Bromofluorobenzene (S)	96	%.	68-124	1		01/06/17 11:42	460-00-4	
Toluene-d8 (S)	99	%.	79-119	1		01/06/17 11:42	2037-26-5	
Sample: EB-010317		Lab ID: 2048198002		Collected: 01/03/17 08:48	Received: 01/04/17 15:08	Matrix: Water		
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8015M DRO/ORO Organics		Analytical Method: EPA 8015B Modified Preparation Method: EPA 3535						
Diesel Range Organic (C10-C28)	ND	mg/L	0.25	1	01/06/17 07:40	01/11/17 17:27		
Oil Range Organics (>C28-C40)	ND	mg/L	0.50	1	01/06/17 07:40	01/11/17 17:27		
Surrogates								
n-Pentacosane (S)	49	%.	16-137	1	01/06/17 07:40	01/11/17 17:27	629-99-2	
o-Terphenyl (S)	50	%.	10-121	1	01/06/17 07:40	01/11/17 17:27	84-15-1	
8021 GCV BTEX, MTBE, GRO		Analytical Method: EPA 8015/8021						
Gasoline Range Organics	ND	ug/L	50.0	1		01/06/17 18:08		
Surrogates								
4-Bromofluorobenzene (S)	90	%.	44-148	1		01/06/17 18:08	460-00-4	
6020 MET ICPMS		Analytical Method: EPA 6020 Preparation Method: EPA 3010						
Arsenic	ND	mg/L	0.0010	1	01/09/17 15:32	01/13/17 21:52	7440-38-2	
Chromium	ND	mg/L	0.0010	1	01/09/17 15:32	01/13/17 21:52	7440-47-3	
Lead	ND	mg/L	0.0010	1	01/09/17 15:32	01/13/17 21:52	7439-92-1	
Vanadium	ND	mg/L	0.0050	1	01/09/17 15:32	01/13/17 21:52	7440-62-2	
6020 MET ICPMS, Dissolved (LF)		Analytical Method: EPA 6020 Preparation Method: EPA 3005A						
Arsenic, Dissolved	ND	ug/L	1.0	1	01/10/17 11:44	01/13/17 23:22	7440-38-2	
Chromium, Dissolved	ND	ug/L	1.0	1	01/10/17 11:44	01/13/17 23:22	7440-47-3	
Lead, Dissolved	ND	ug/L	1.0	1	01/10/17 11:44	01/13/17 23:22	7439-92-1	
Vanadium, Dissolved	ND	ug/L	5.0	1	01/10/17 11:44	01/13/17 23:22	7440-62-2	
7470 Mercury		Analytical Method: EPA 7470 Preparation Method: EPA 7470						
Mercury	ND	ug/L	0.20	1	01/09/17 15:19	01/09/17 20:17	7439-97-6	
7470 Mercury, Dissolved (LF)		Analytical Method: EPA 7470 Preparation Method: EPA 7470						
Mercury, Dissolved	ND	ug/L	0.20	1	01/10/17 12:30	01/10/17 17:03	7439-97-6	
8270 MSSV PAH by SIM SEP		Analytical Method: EPA 8270 by SIM Preparation Method: EPA 3510						
Acenaphthene	ND	ug/L	0.10	1	01/06/17 09:20	01/09/17 20:40	83-32-9	
Acenaphthylene	ND	ug/L	0.10	1	01/06/17 09:20	01/09/17 20:40	208-96-8	
Anthracene	ND	ug/L	0.10	1	01/06/17 09:20	01/09/17 20:40	120-12-7	
Benzo(a)anthracene	ND	ug/L	0.10	1	01/06/17 09:20	01/09/17 20:40	56-55-3	
Benzo(a)pyrene	ND	ug/L	0.10	1	01/06/17 09:20	01/09/17 20:40	50-32-8	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: PUMA TERMINAL MW-SAMPLING

Pace Project No.: 2048198

Sample: EB-010317	Lab ID: 2048198002	Collected: 01/03/17 08:48	Received: 01/04/17 15:08	Matrix: Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual

8270 MSSV PAH by SIM SEP

Analytical Method: EPA 8270 by SIM Preparation Method: EPA 3510

Benzo(b)fluoranthene	ND	ug/L	0.10	1	01/06/17 09:20	01/09/17 20:40	205-99-2	
Benzo(g,h,i)perylene	ND	ug/L	0.10	1	01/06/17 09:20	01/09/17 20:40	191-24-2	
Benzo(k)fluoranthene	ND	ug/L	0.10	1	01/06/17 09:20	01/09/17 20:40	207-08-9	
Chrysene	ND	ug/L	0.10	1	01/06/17 09:20	01/09/17 20:40	218-01-9	
Dibenz(a,h)anthracene	ND	ug/L	0.10	1	01/06/17 09:20	01/09/17 20:40	53-70-3	
Fluoranthene	ND	ug/L	0.10	1	01/06/17 09:20	01/09/17 20:40	206-44-0	
Fluorene	ND	ug/L	0.10	1	01/06/17 09:20	01/09/17 20:40	86-73-7	
Indeno(1,2,3-cd)pyrene	ND	ug/L	0.10	1	01/06/17 09:20	01/09/17 20:40	193-39-5	
2-Methylnaphthalene	ND	ug/L	0.10	1	01/06/17 09:20	01/09/17 20:40	91-57-6	
Naphthalene	ND	ug/L	0.10	1	01/06/17 09:20	01/09/17 20:40	91-20-3	
Phenanthrene	ND	ug/L	0.10	1	01/06/17 09:20	01/09/17 20:40	85-01-8	
Pyrene	ND	ug/L	0.10	1	01/06/17 09:20	01/09/17 20:40	129-00-0	
Surrogates								
2-Fluorobiphenyl (S)	84	%	25-150	1	01/06/17 09:20	01/09/17 20:40	321-60-8	
Terphenyl-d14 (S)	84	%	25-150	1	01/06/17 09:20	01/09/17 20:40	1718-51-0	

8260 MSV Low Level

Analytical Method: EPA 5030B/8260

Acetone	12.1	ug/L	4.0	1		01/06/17 11:59	67-64-1	C9
Benzene	ND	ug/L	0.50	1		01/06/17 11:59	71-43-2	
Bromodichloromethane	ND	ug/L	0.50	1		01/06/17 11:59	75-27-4	
Bromoform	ND	ug/L	0.50	1		01/06/17 11:59	75-25-2	
Bromomethane	ND	ug/L	0.50	1		01/06/17 11:59	74-83-9	
2-Butanone (MEK)	ND	ug/L	2.0	1		01/06/17 11:59	78-93-3	
Carbon disulfide	ND	ug/L	1.0	1		01/06/17 11:59	75-15-0	L3
Carbon tetrachloride	ND	ug/L	0.50	1		01/06/17 11:59	56-23-5	
Chlorobenzene	ND	ug/L	0.50	1		01/06/17 11:59	108-90-7	
Chloroethane	ND	ug/L	0.50	1		01/06/17 11:59	75-00-3	
Chloroform	ND	ug/L	0.50	1		01/06/17 11:59	67-66-3	
Chloromethane	ND	ug/L	0.50	1		01/06/17 11:59	74-87-3	
1,2-Dibromo-3-chloropropane	ND	ug/L	0.20	1		01/06/17 11:59	96-12-8	
Dibromochloromethane	ND	ug/L	0.50	1		01/06/17 11:59	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	1		01/06/17 11:59	106-93-4	
Dichlorodifluoromethane	ND	ug/L	1.0	1		01/06/17 11:59	75-71-8	
1,1-Dichloroethane	ND	ug/L	0.50	1		01/06/17 11:59	75-34-3	
1,2-Dichloroethane	ND	ug/L	0.50	1		01/06/17 11:59	107-06-2	
1,1-Dichloroethene	ND	ug/L	0.50	1		01/06/17 11:59	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	1		01/06/17 11:59	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	0.50	1		01/06/17 11:59	156-60-5	
1,2-Dichloropropane	ND	ug/L	0.50	1		01/06/17 11:59	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	0.50	1		01/06/17 11:59	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	0.50	1		01/06/17 11:59	10061-02-6	
Ethylbenzene	ND	ug/L	0.50	1		01/06/17 11:59	100-41-4	
2-Hexanone	ND	ug/L	1.0	1		01/06/17 11:59	591-78-6	
Isopropylbenzene (Cumene)	ND	ug/L	1.0	1		01/06/17 11:59	98-82-8	
Methyl acetate	ND	ug/L	2.0	1		01/06/17 11:59	79-20-9	
Methylene Chloride	ND	ug/L	0.50	1		01/06/17 11:59	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	1.0	1		01/06/17 11:59	108-10-1	

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ANALYTICAL RESULTS

Project: PUMA TERMINAL MW-SAMPLING

Pace Project No.: 2048198

Sample: EB-010317		Lab ID: 2048198002	Collected: 01/03/17 08:48	Received: 01/04/17 15:08	Matrix: Water			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV Low Level		Analytical Method: EPA 5030B/8260						
Methyl-tert-butyl ether	ND	ug/L	0.50	1		01/06/17 11:59	1634-04-4	
Styrene	ND	ug/L	1.0	1		01/06/17 11:59	100-42-5	
1,1,2,2-Tetrachloroethane	ND	ug/L	0.50	1		01/06/17 11:59	79-34-5	
Tetrachloroethene	ND	ug/L	0.50	1		01/06/17 11:59	127-18-4	
Toluene	ND	ug/L	0.50	1		01/06/17 11:59	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	0.50	1		01/06/17 11:59	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	0.50	1		01/06/17 11:59	79-00-5	
Trichloroethene	ND	ug/L	0.50	1		01/06/17 11:59	79-01-6	
Trichlorofluoromethane	ND	ug/L	0.50	1		01/06/17 11:59	75-69-4	
Vinyl chloride	ND	ug/L	0.50	1		01/06/17 11:59	75-01-4	
m&p-Xylene	ND	ug/L	2.0	1		01/06/17 11:59	179601-23-1	
o-Xylene	ND	ug/L	1.0	1		01/06/17 11:59	95-47-6	
Surrogates								
Dibromofluoromethane (S)	107	%	72-126	1		01/06/17 11:59	1868-53-7	
4-Bromofluorobenzene (S)	98	%	68-124	1		01/06/17 11:59	460-00-4	
Toluene-d8 (S)	99	%	79-119	1		01/06/17 11:59	2037-26-5	

Sample: MW-B9		Lab ID: 2048198003	Collected: 01/03/17 09:35	Received: 01/04/17 15:08	Matrix: Water			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8015M DRO/ORO Organics		Analytical Method: EPA 8015B Modified Preparation Method: EPA 3535						
Diesel Range Organic (C10-C28)	ND	mg/L	0.25	1	01/06/17 07:40	01/11/17 17:55		
Oil Range Organics (>C28-C40)	ND	mg/L	0.50	1	01/06/17 07:40	01/11/17 17:55		
Surrogates								
n-Pentacosane (S)	49	%	16-137	1	01/06/17 07:40	01/11/17 17:55	629-99-2	
o-Terphenyl (S)	59	%	10-121	1	01/06/17 07:40	01/11/17 17:55	84-15-1	
8021 GCV BTEX, MTBE, GRO		Analytical Method: EPA 8015/8021						
Gasoline Range Organics	ND	ug/L	50.0	1		01/06/17 18:34		
Surrogates								
4-Bromofluorobenzene (S)	93	%	44-148	1		01/06/17 18:34	460-00-4	
6020 MET ICPMS		Analytical Method: EPA 6020 Preparation Method: EPA 3010						
Arsenic	0.0032	mg/L	0.0010	1	01/09/17 15:32	01/13/17 21:56	7440-38-2	
Chromium	ND	mg/L	0.0010	1	01/09/17 15:32	01/13/17 21:56	7440-47-3	
Lead	ND	mg/L	0.0010	1	01/09/17 15:32	01/13/17 21:56	7439-92-1	
Vanadium	ND	mg/L	0.0050	1	01/09/17 15:32	01/13/17 21:56	7440-62-2	
6020 MET ICPMS, Dissolved (LF)		Analytical Method: EPA 6020 Preparation Method: EPA 3005A						
Arsenic, Dissolved	ND	ug/L	1.0	1	01/10/17 11:44	01/13/17 23:26	7440-38-2	
Chromium, Dissolved	ND	ug/L	1.0	1	01/10/17 11:44	01/13/17 23:26	7440-47-3	
Lead, Dissolved	ND	ug/L	1.0	1	01/10/17 11:44	01/13/17 23:26	7439-92-1	
Vanadium, Dissolved	ND	ug/L	5.0	1	01/10/17 11:44	01/13/17 23:26	7440-62-2	

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ANALYTICAL RESULTS

Project: PUMA TERMINAL MW-SAMPLING
Pace Project No.: 2048198

Sample: MW-B9	Lab ID: 2048198003	Collected: 01/03/17 09:35	Received: 01/04/17 15:08	Matrix: Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
7470 Mercury		Analytical Method: EPA 7470 Preparation Method: EPA 7470						
Mercury	ND	ug/L	0.20	1	01/09/17 15:19	01/09/17 20:19	7439-97-6	
7470 Mercury, Dissolved (LF)		Analytical Method: EPA 7470 Preparation Method: EPA 7470						
Mercury, Dissolved	ND	ug/L	0.20	1	01/10/17 12:30	01/10/17 17:10	7439-97-6	
8270 MSSV PAH by SIM SEP		Analytical Method: EPA 8270 by SIM Preparation Method: EPA 3510						
Acenaphthene	ND	ug/L	0.10	1	01/06/17 09:20	01/09/17 21:00	83-32-9	
Acenaphthylene	ND	ug/L	0.10	1	01/06/17 09:20	01/09/17 21:00	208-96-8	
Anthracene	ND	ug/L	0.10	1	01/06/17 09:20	01/09/17 21:00	120-12-7	
Benzo(a)anthracene	ND	ug/L	0.10	1	01/06/17 09:20	01/09/17 21:00	56-55-3	
Benzo(a)pyrene	ND	ug/L	0.10	1	01/06/17 09:20	01/09/17 21:00	50-32-8	
Benzo(b)fluoranthene	ND	ug/L	0.10	1	01/06/17 09:20	01/09/17 21:00	205-99-2	
Benzo(g,h,i)perylene	ND	ug/L	0.10	1	01/06/17 09:20	01/09/17 21:00	191-24-2	
Benzo(k)fluoranthene	ND	ug/L	0.10	1	01/06/17 09:20	01/09/17 21:00	207-08-9	
Chrysene	ND	ug/L	0.10	1	01/06/17 09:20	01/09/17 21:00	218-01-9	
Dibenz(a,h)anthracene	ND	ug/L	0.10	1	01/06/17 09:20	01/09/17 21:00	53-70-3	
Fluoranthene	ND	ug/L	0.10	1	01/06/17 09:20	01/09/17 21:00	206-44-0	
Fluorene	ND	ug/L	0.10	1	01/06/17 09:20	01/09/17 21:00	86-73-7	
Indeno(1,2,3-cd)pyrene	ND	ug/L	0.10	1	01/06/17 09:20	01/09/17 21:00	193-39-5	
2-Methylnaphthalene	ND	ug/L	0.10	1	01/06/17 09:20	01/09/17 21:00	91-57-6	
Naphthalene	ND	ug/L	0.10	1	01/06/17 09:20	01/09/17 21:00	91-20-3	
Phenanthrene	ND	ug/L	0.10	1	01/06/17 09:20	01/09/17 21:00	85-01-8	
Pyrene	ND	ug/L	0.10	1	01/06/17 09:20	01/09/17 21:00	129-00-0	
Surrogates								
2-Fluorobiphenyl (S)	94	%	25-150	1	01/06/17 09:20	01/09/17 21:00	321-60-8	
Terphenyl-d14 (S)	88	%	25-150	1	01/06/17 09:20	01/09/17 21:00	1718-51-0	
8260 MSV Low Level		Analytical Method: EPA 5030B/8260						
Acetone	5.3	ug/L	4.0	1		01/06/17 12:17	67-64-1	C9
Benzene	ND	ug/L	0.50	1		01/06/17 12:17	71-43-2	
Bromodichloromethane	ND	ug/L	0.50	1		01/06/17 12:17	75-27-4	
Bromoform	ND	ug/L	0.50	1		01/06/17 12:17	75-25-2	
Bromomethane	ND	ug/L	0.50	1		01/06/17 12:17	74-83-9	
2-Butanone (MEK)	ND	ug/L	2.0	1		01/06/17 12:17	78-93-3	
Carbon disulfide	ND	ug/L	1.0	1		01/06/17 12:17	75-15-0	L3
Carbon tetrachloride	ND	ug/L	0.50	1		01/06/17 12:17	56-23-5	
Chlorobenzene	ND	ug/L	0.50	1		01/06/17 12:17	108-90-7	
Chloroethane	ND	ug/L	0.50	1		01/06/17 12:17	75-00-3	
Chloroform	ND	ug/L	0.50	1		01/06/17 12:17	67-66-3	
Chloromethane	ND	ug/L	0.50	1		01/06/17 12:17	74-87-3	
1,2-Dibromo-3-chloropropane	ND	ug/L	0.20	1		01/06/17 12:17	96-12-8	
Dibromochloromethane	ND	ug/L	0.50	1		01/06/17 12:17	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	1		01/06/17 12:17	106-93-4	
Dichlorodifluoromethane	ND	ug/L	1.0	1		01/06/17 12:17	75-71-8	
1,1-Dichloroethane	ND	ug/L	0.50	1		01/06/17 12:17	75-34-3	
1,2-Dichloroethane	ND	ug/L	0.50	1		01/06/17 12:17	107-06-2	

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ANALYTICAL RESULTS

Project: PUMA TERMINAL MW-SAMPLING

Sample Project No.: 2048198

Sample: MW-B9		Lab ID: 2048198003	Collected: 01/03/17 09:35	Received: 01/04/17 15:08	Matrix: Water			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV Low Level		Analytical Method: EPA 5030B/8260						
1,1-Dichloroethene	ND	ug/L	0.50	1		01/06/17 12:17	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	1		01/06/17 12:17	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	0.50	1		01/06/17 12:17	156-60-5	
1,2-Dichloropropane	ND	ug/L	0.50	1		01/06/17 12:17	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	0.50	1		01/06/17 12:17	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	0.50	1		01/06/17 12:17	10061-02-6	
Ethylbenzene	ND	ug/L	0.50	1		01/06/17 12:17	100-41-4	
2-Hexanone	ND	ug/L	1.0	1		01/06/17 12:17	591-78-6	
Isopropylbenzene (Cumene)	ND	ug/L	1.0	1		01/06/17 12:17	98-82-8	
Methyl acetate	ND	ug/L	2.0	1		01/06/17 12:17	79-20-9	
Methylene Chloride	ND	ug/L	0.50	1		01/06/17 12:17	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	1.0	1		01/06/17 12:17	108-10-1	
Methyl-tert-butyl ether	ND	ug/L	0.50	1		01/06/17 12:17	1634-04-4	
Styrene	ND	ug/L	1.0	1		01/06/17 12:17	100-42-5	
1,1,2,2-Tetrachloroethane	ND	ug/L	0.50	1		01/06/17 12:17	79-34-5	
Tetrachloroethene	ND	ug/L	0.50	1		01/06/17 12:17	127-18-4	
Toluene	ND	ug/L	0.50	1		01/06/17 12:17	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	0.50	1		01/06/17 12:17	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	0.50	1		01/06/17 12:17	79-00-5	
Trichloroethene	ND	ug/L	0.50	1		01/06/17 12:17	79-01-6	
Trichlorofluoromethane	ND	ug/L	0.50	1		01/06/17 12:17	75-69-4	
Vinyl chloride	ND	ug/L	0.50	1		01/06/17 12:17	75-01-4	
m&p-Xylene	ND	ug/L	2.0	1		01/06/17 12:17	179601-23-1	
o-Xylene	ND	ug/L	1.0	1		01/06/17 12:17	95-47-6	
Surrogates								
Dibromofluoromethane (S)	105	%.	72-126	1		01/06/17 12:17	1868-53-7	
4-Bromofluorobenzene (S)	96	%.	68-124	1		01/06/17 12:17	460-00-4	
Toluene-d8 (S)	100	%.	79-119	1		01/06/17 12:17	2037-26-5	

Sample: MW-EB103		Lab ID: 2048198004	Collected: 01/03/17 10:27	Received: 01/04/17 15:08	Matrix: Water			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8015M DRO/ORO Organics		Analytical Method: EPA 8015B Modified Preparation Method: EPA 3535						
Diesel Range Organic (C10-C28)	ND	mg/L	0.25	1	01/06/17 07:40	01/11/17 18:23		
Oil Range Organics (>C28-C40)	ND	mg/L	0.50	1	01/06/17 07:40	01/11/17 18:23		
Surrogates								
n-Pentacosane (S)	59	%.	16-137	1	01/06/17 07:40	01/11/17 18:23	629-99-2	
o-Terphenyl (S)	49	%.	10-121	1	01/06/17 07:40	01/11/17 18:23	84-15-1	
8021 GCV BTEX, MTBE, GRO		Analytical Method: EPA 8015/8021						
Gasoline Range Organics	71.2	ug/L	50.0	1		01/06/17 19:01		
Surrogates								
4-Bromofluorobenzene (S)	88	%.	44-148	1		01/06/17 19:01	460-00-4	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: PUMA TERMINAL MW-SAMPLING

Pace Project No.: 2048198

Sample: MW-EB103		Lab ID: 2048198004		Collected: 01/03/17 10:27		Received: 01/04/17 15:08		Matrix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual	
6020 MET ICPMS									
Analytical Method: EPA 6020 Preparation Method: EPA 3010									
Arsenic	ND	mg/L	0.0010	1	01/09/17 15:32	01/13/17 22:08	7440-38-2		
Chromium	ND	mg/L	0.0010	1	01/09/17 15:32	01/13/17 22:08	7440-47-3		
Lead	ND	mg/L	0.0010	1	01/09/17 15:32	01/13/17 22:08	7439-92-1		
Vanadium	ND	mg/L	0.0050	1	01/09/17 15:32	01/13/17 22:08	7440-62-2		
6020 MET ICPMS, Dissolved (LF)									
Analytical Method: EPA 6020 Preparation Method: EPA 3005A									
Arsenic, Dissolved	ND	ug/L	1.0	1	01/10/17 11:44	01/13/17 23:30	7440-38-2		
Chromium, Dissolved	ND	ug/L	1.0	1	01/10/17 11:44	01/13/17 23:30	7440-47-3		
Lead, Dissolved	ND	ug/L	1.0	1	01/10/17 11:44	01/13/17 23:30	7439-92-1		
Vanadium, Dissolved	ND	ug/L	5.0	1	01/10/17 11:44	01/13/17 23:30	7440-62-2		
7470 Mercury									
Analytical Method: EPA 7470 Preparation Method: EPA 7470									
Mercury	ND	ug/L	0.20	1	01/09/17 15:19	01/09/17 20:26	7439-97-6		
7470 Mercury, Dissolved (LF)									
Analytical Method: EPA 7470 Preparation Method: EPA 7470									
Mercury, Dissolved	ND	ug/L	0.20	1	01/10/17 12:30	01/10/17 17:19	7439-97-6		
8270 MSSV PAH by SIM SEP									
Analytical Method: EPA 8270 by SIM Preparation Method: EPA 3510									
Acenaphthene	ND	ug/L	0.10	1	01/06/17 09:20	01/09/17 21:20	83-32-9		
Acenaphthylene	ND	ug/L	0.10	1	01/06/17 09:20	01/09/17 21:20	208-96-8		
Anthracene	ND	ug/L	0.10	1	01/06/17 09:20	01/09/17 21:20	120-12-7		
Benzo(a)anthracene	ND	ug/L	0.10	1	01/06/17 09:20	01/09/17 21:20	56-55-3		
Benzo(a)pyrene	ND	ug/L	0.10	1	01/06/17 09:20	01/09/17 21:20	50-32-8		
Benzo(b)fluoranthene	ND	ug/L	0.10	1	01/06/17 09:20	01/09/17 21:20	205-99-2		
Benzo(g,h,i)perylene	ND	ug/L	0.10	1	01/06/17 09:20	01/09/17 21:20	191-24-2		
Benzo(k)fluoranthene	ND	ug/L	0.10	1	01/06/17 09:20	01/09/17 21:20	207-08-9		
Chrysene	ND	ug/L	0.10	1	01/06/17 09:20	01/09/17 21:20	218-01-9		
Dibenz(a,h)anthracene	ND	ug/L	0.10	1	01/06/17 09:20	01/09/17 21:20	53-70-3		
Fluoranthene	ND	ug/L	0.10	1	01/06/17 09:20	01/09/17 21:20	206-44-0		
Fluorene	ND	ug/L	0.10	1	01/06/17 09:20	01/09/17 21:20	86-73-7		
Indeno(1,2,3-cd)pyrene	ND	ug/L	0.10	1	01/06/17 09:20	01/09/17 21:20	193-39-5		
2-Methylnaphthalene	ND	ug/L	0.10	1	01/06/17 09:20	01/09/17 21:20	91-57-6		
Naphthalene	ND	ug/L	0.10	1	01/06/17 09:20	01/09/17 21:20	91-20-3		
Phenanthrene	ND	ug/L	0.10	1	01/06/17 09:20	01/09/17 21:20	85-01-8		
Pyrene	ND	ug/L	0.10	1	01/06/17 09:20	01/09/17 21:20	129-00-0		
Surrogates									
2-Fluorobiphenyl (S)	86	%	25-150	1	01/06/17 09:20	01/09/17 21:20	321-60-8		
Terphenyl-d14 (S)	80	%	25-150	1	01/06/17 09:20	01/09/17 21:20	1718-51-0		
8260 MSV Low Level									
Analytical Method: EPA 5030B/8260									
Acetone	15.6	ug/L	4.0	1		01/06/17 12:34	67-64-1	C9	
Benzene	ND	ug/L	0.50	1		01/06/17 12:34	71-43-2		
Bromodichloromethane	ND	ug/L	0.50	1		01/06/17 12:34	75-27-4		
Bromoform	ND	ug/L	0.50	1		01/06/17 12:34	75-25-2		
Bromomethane	ND	ug/L	0.50	1		01/06/17 12:34	74-83-9		
2-Butanone (MEK)	ND	ug/L	2.0	1		01/06/17 12:34	78-93-3		

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ANALYTICAL RESULTS

Project: PUMA TERMINAL MW-SAMPLING

Pace Project No.: 2048198

Sample: MW-EB103	Lab ID: 2048198004	Collected: 01/03/17 10:27	Received: 01/04/17 15:08	Matrix: Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV Low Level		Analytical Method: EPA 5030B/8260						
Carbon disulfide	ND	ug/L	1.0	1		01/06/17 12:34	75-15-0	L3
Carbon tetrachloride	ND	ug/L	0.50	1		01/06/17 12:34	56-23-5	
Chlorobenzene	ND	ug/L	0.50	1		01/06/17 12:34	108-90-7	
Chloroethane	ND	ug/L	0.50	1		01/06/17 12:34	75-00-3	
Chloroform	ND	ug/L	0.50	1		01/06/17 12:34	67-66-3	
Chloromethane	ND	ug/L	0.50	1		01/06/17 12:34	74-87-3	
1,2-Dibromo-3-chloropropane	ND	ug/L	0.20	1		01/06/17 12:34	96-12-8	
Dibromochloromethane	ND	ug/L	0.50	1		01/06/17 12:34	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	1		01/06/17 12:34	106-93-4	
Dichlorodifluoromethane	ND	ug/L	1.0	1		01/06/17 12:34	75-71-8	
1,1-Dichloroethane	ND	ug/L	0.50	1		01/06/17 12:34	75-34-3	
1,2-Dichloroethane	ND	ug/L	0.50	1		01/06/17 12:34	107-06-2	
1,1-Dichloroethene	ND	ug/L	0.50	1		01/06/17 12:34	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	1		01/06/17 12:34	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	0.50	1		01/06/17 12:34	156-60-5	
1,2-Dichloropropane	ND	ug/L	0.50	1		01/06/17 12:34	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	0.50	1		01/06/17 12:34	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	0.50	1		01/06/17 12:34	10061-02-6	
Ethylbenzene	ND	ug/L	0.50	1		01/06/17 12:34	100-41-4	
2-Hexanone	ND	ug/L	1.0	1		01/06/17 12:34	591-78-6	
Isopropylbenzene (Cumene)	ND	ug/L	1.0	1		01/06/17 12:34	98-82-8	
Methyl acetate	ND	ug/L	2.0	1		01/06/17 12:34	79-20-9	
Methylene Chloride	ND	ug/L	0.50	1		01/06/17 12:34	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	1.0	1		01/06/17 12:34	108-10-1	
Methyl-tert-butyl ether	45.3	ug/L	0.50	1		01/06/17 12:34	1634-04-4	
Styrene	ND	ug/L	1.0	1		01/06/17 12:34	100-42-5	
1,1,2,2-Tetrachloroethane	ND	ug/L	0.50	1		01/06/17 12:34	79-34-5	
Tetrachloroethene	ND	ug/L	0.50	1		01/06/17 12:34	127-18-4	
Toluene	ND	ug/L	0.50	1		01/06/17 12:34	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	0.50	1		01/06/17 12:34	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	0.50	1		01/06/17 12:34	79-00-5	
Trichloroethene	ND	ug/L	0.50	1		01/06/17 12:34	79-01-6	
Trichlorofluoromethane	ND	ug/L	0.50	1		01/06/17 12:34	75-69-4	
Vinyl chloride	ND	ug/L	0.50	1		01/06/17 12:34	75-01-4	
m&p-Xylene	ND	ug/L	2.0	1		01/06/17 12:34	179601-23-1	
o-Xylene	ND	ug/L	1.0	1		01/06/17 12:34	95-47-6	
Surrogates								
Dibromofluoromethane (S)	109	%	72-126	1		01/06/17 12:34	1868-53-7	
4-Bromofluorobenzene (S)	97	%	68-124	1		01/06/17 12:34	460-00-4	
Toluene-d8 (S)	101	%	79-119	1		01/06/17 12:34	2037-26-5	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: PUMA TERMINAL MW-SAMPLING

Pace Project No.: 2048198

Sample: MW-EB104	Lab ID: 2048198005	Collected: 01/03/17 11:26	Received: 01/04/17 15:08	Matrix: Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8015M DRO/ORO Organics								
Analytical Method: EPA 8015B Modified Preparation Method: EPA 3535								
Diesel Range Organic (C10-C28)	ND	mg/L	0.25	1	01/06/17 07:40	01/11/17 18:51		
Oil Range Organics (>C28-C40)	ND	mg/L	0.50	1	01/06/17 07:40	01/11/17 18:51		
Surrogates								
n-Pentacosane (S)	47	%	16-137	1	01/06/17 07:40	01/11/17 18:51	629-99-2	
o-Terphenyl (S)	55	%	10-121	1	01/06/17 07:40	01/11/17 18:51	84-15-1	
8021 GCV BTEX, MTBE, GRO								
Analytical Method: EPA 8015/8021								
Gasoline Range Organics	88.4	ug/L	50.0	1		01/06/17 19:28		
Surrogates								
4-Bromofluorobenzene (S)	92	%	44-148	1		01/06/17 19:28	460-00-4	
6020 MET ICPMS								
Analytical Method: EPA 6020 Preparation Method: EPA 3010								
Arsenic	ND	mg/L	0.0010	1	01/09/17 15:32	01/13/17 22:11	7440-38-2	
Chromium	0.0017	mg/L	0.0010	1	01/09/17 15:32	01/13/17 22:11	7440-47-3	
Lead	ND	mg/L	0.0010	1	01/09/17 15:32	01/13/17 22:11	7439-92-1	
Vanadium	ND	mg/L	0.0050	1	01/09/17 15:32	01/13/17 22:11	7440-62-2	
6020 MET ICPMS, Dissolved (LF)								
Analytical Method: EPA 6020 Preparation Method: EPA 3005A								
Arsenic, Dissolved	ND	ug/L	1.0	1	01/10/17 11:44	01/13/17 23:42	7440-38-2	
Chromium, Dissolved	ND	ug/L	1.0	1	01/10/17 11:44	01/13/17 23:42	7440-47-3	
Lead, Dissolved	ND	ug/L	1.0	1	01/10/17 11:44	01/13/17 23:42	7439-92-1	
Vanadium, Dissolved	ND	ug/L	5.0	1	01/10/17 11:44	01/13/17 23:42	7440-62-2	
7470 Mercury								
Analytical Method: EPA 7470 Preparation Method: EPA 7470								
Mercury	ND	ug/L	0.20	1	01/09/17 15:19	01/09/17 20:28	7439-97-6	
7470 Mercury, Dissolved (LF)								
Analytical Method: EPA 7470 Preparation Method: EPA 7470								
Mercury, Dissolved	ND	ug/L	0.20	1	01/10/17 12:30	01/10/17 17:24	7439-97-6	
8270 MSSV PAH by SIM SEP								
Analytical Method: EPA 8270 by SIM Preparation Method: EPA 3510								
Acenaphthene	ND	ug/L	0.10	1	01/06/17 09:20	01/09/17 21:39	83-32-9	
Acenaphthylene	ND	ug/L	0.10	1	01/06/17 09:20	01/09/17 21:39	208-96-8	
Anthracene	ND	ug/L	0.10	1	01/06/17 09:20	01/09/17 21:39	120-12-7	
Benzo(a)anthracene	ND	ug/L	0.10	1	01/06/17 09:20	01/09/17 21:39	56-55-3	
Benzo(a)pyrene	ND	ug/L	0.10	1	01/06/17 09:20	01/09/17 21:39	50-32-8	
Benzo(b)fluoranthene	ND	ug/L	0.10	1	01/06/17 09:20	01/09/17 21:39	205-99-2	
Benzo(g,h,i)perylene	ND	ug/L	0.10	1	01/06/17 09:20	01/09/17 21:39	191-24-2	
Benzo(k)fluoranthene	ND	ug/L	0.10	1	01/06/17 09:20	01/09/17 21:39	207-08-9	
Chrysene	ND	ug/L	0.10	1	01/06/17 09:20	01/09/17 21:39	218-01-9	
Dibenz(a,h)anthracene	ND	ug/L	0.10	1	01/06/17 09:20	01/09/17 21:39	53-70-3	
Fluoranthene	ND	ug/L	0.10	1	01/06/17 09:20	01/09/17 21:39	206-44-0	
Fluorene	ND	ug/L	0.10	1	01/06/17 09:20	01/09/17 21:39	86-73-7	
Indeno(1,2,3-cd)pyrene	ND	ug/L	0.10	1	01/06/17 09:20	01/09/17 21:39	193-39-5	
2-Methylnaphthalene	ND	ug/L	0.10	1	01/06/17 09:20	01/09/17 21:39	91-57-6	
Naphthalene	ND	ug/L	0.10	1	01/06/17 09:20	01/09/17 21:39	91-20-3	
Phenanthrene	ND	ug/L	0.10	1	01/06/17 09:20	01/09/17 21:39	85-01-8	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: PUMA TERMINAL MW-SAMPLING

Pace Project No.: 2048198

Sample: MW-EB104	Lab ID: 2048198005	Collected: 01/03/17 11:26	Received: 01/04/17 15:08	Matrix: Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8270 MSSV PAH by SIM SEP		Analytical Method: EPA 8270 by SIM Preparation Method: EPA 3510						
Pyrene	ND	ug/L	0.10	1	01/06/17 09:20	01/09/17 21:39	129-00-0	
Surrogates								
2-Fluorobiphenyl (S)	78	%.	25-150	1	01/06/17 09:20	01/09/17 21:39	321-60-8	
Terphenyl-d14 (S)	79	%.	25-150	1	01/06/17 09:20	01/09/17 21:39	1718-51-0	
8260 MSV Low Level		Analytical Method: EPA 5030B/8260						
Acetone	6.2	ug/L	4.0	1		01/06/17 12:52	67-64-1	C9
Benzene	ND	ug/L	0.50	1		01/06/17 12:52	71-43-2	
Bromodichloromethane	ND	ug/L	0.50	1		01/06/17 12:52	75-27-4	
Bromoform	ND	ug/L	0.50	1		01/06/17 12:52	75-25-2	
Bromomethane	ND	ug/L	0.50	1		01/06/17 12:52	74-83-9	
2-Butanone (MEK)	ND	ug/L	2.0	1		01/06/17 12:52	78-93-3	
Carbon disulfide	ND	ug/L	1.0	1		01/06/17 12:52	75-15-0	L3
Carbon tetrachloride	ND	ug/L	0.50	1		01/06/17 12:52	56-23-5	
Chlorobenzene	ND	ug/L	0.50	1		01/06/17 12:52	108-90-7	
Chloroethane	ND	ug/L	0.50	1		01/06/17 12:52	75-00-3	
Chloroform	ND	ug/L	0.50	1		01/06/17 12:52	67-66-3	
Chloromethane	ND	ug/L	0.50	1		01/06/17 12:52	74-87-3	
1,2-Dibromo-3-chloropropane	ND	ug/L	0.20	1		01/06/17 12:52	96-12-8	
Dibromochloromethane	ND	ug/L	0.50	1		01/06/17 12:52	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	1		01/06/17 12:52	106-93-4	
Dichlorodifluoromethane	ND	ug/L	1.0	1		01/06/17 12:52	75-71-8	
1,1-Dichloroethane	ND	ug/L	0.50	1		01/06/17 12:52	75-34-3	
1,2-Dichloroethane	ND	ug/L	0.50	1		01/06/17 12:52	107-06-2	
1,1-Dichloroethene	ND	ug/L	0.50	1		01/06/17 12:52	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	1		01/06/17 12:52	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	0.50	1		01/06/17 12:52	156-60-5	
1,2-Dichloropropane	ND	ug/L	0.50	1		01/06/17 12:52	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	0.50	1		01/06/17 12:52	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	0.50	1		01/06/17 12:52	10061-02-6	
Ethylbenzene	ND	ug/L	0.50	1		01/06/17 12:52	100-41-4	
2-Hexanone	ND	ug/L	1.0	1		01/06/17 12:52	591-78-6	
Isopropylbenzene (Cumene)	ND	ug/L	1.0	1		01/06/17 12:52	98-82-8	
Methyl acetate	ND	ug/L	2.0	1		01/06/17 12:52	79-20-9	
Methylene Chloride	ND	ug/L	0.50	1		01/06/17 12:52	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	1.0	1		01/06/17 12:52	108-10-1	
Methyl-tert-butyl ether	61.2	ug/L	0.50	1		01/06/17 12:52	1634-04-4	
Styrene	ND	ug/L	1.0	1		01/06/17 12:52	100-42-5	
1,1,2,2-Tetrachloroethane	ND	ug/L	0.50	1		01/06/17 12:52	79-34-5	
Tetrachloroethene	ND	ug/L	0.50	1		01/06/17 12:52	127-18-4	
Toluene	ND	ug/L	0.50	1		01/06/17 12:52	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	0.50	1		01/06/17 12:52	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	0.50	1		01/06/17 12:52	79-00-5	
Trichloroethene	ND	ug/L	0.50	1		01/06/17 12:52	79-01-6	
Trichlorofluoromethane	ND	ug/L	0.50	1		01/06/17 12:52	75-69-4	
Vinyl chloride	ND	ug/L	0.50	1		01/06/17 12:52	75-01-4	
m&p-Xylene	ND	ug/L	2.0	1		01/06/17 12:52	179601-23-1	

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ANALYTICAL RESULTS

Project: PUMA TERMINAL MW-SAMPLING

Pace Project No.: 2048198

Sample: MW-EB104	Lab ID: 2048198005	Collected: 01/03/17 11:26	Received: 01/04/17 15:08	Matrix: Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV Low Level	Analytical Method: EPA 5030B/8260							
o-Xylene	ND	ug/L	1.0	1		01/06/17 12:52	95-47-6	
Surrogates								
Dibromofluoromethane (S)	108	%.	72-126	1		01/06/17 12:52	1868-53-7	
4-Bromofluorobenzene (S)	99	%.	68-124	1		01/06/17 12:52	460-00-4	
Toluene-d8 (S)	99	%.	79-119	1		01/06/17 12:52	2037-26-5	
Sample: MW-EB105	Lab ID: 2048198006	Collected: 01/03/17 13:45	Received: 01/04/17 15:08	Matrix: Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8015M DRO/ORO Organics	Analytical Method: EPA 8015B Modified Preparation Method: EPA 3535							
Diesel Range Organic (C10-C28)	ND	mg/L	0.25	1	01/06/17 07:40	01/11/17 19:19		
Oil Range Organics (>C28-C40)	ND	mg/L	0.50	1	01/06/17 07:40	01/11/17 19:19		
Surrogates								
n-Pentacosane (S)	48	%.	16-137	1	01/06/17 07:40	01/11/17 19:19	629-99-2	
o-Terphenyl (S)	64	%.	10-121	1	01/06/17 07:40	01/11/17 19:19	84-15-1	
8021 GCV BTEX, MTBE, GRO	Analytical Method: EPA 8015/8021							
Gasoline Range Organics	ND	ug/L	50.0	1		01/06/17 19:54		
Surrogates								
4-Bromofluorobenzene (S)	91	%.	44-148	1		01/06/17 19:54	460-00-4	
6020 MET ICPMS	Analytical Method: EPA 6020 Preparation Method: EPA 3010							
Arsenic	0.0052	mg/L	0.0010	1	01/09/17 15:32	01/13/17 21:36	7440-38-2	
Chromium	ND	mg/L	0.0010	1	01/09/17 15:32	01/13/17 21:36	7440-47-3	
Lead	ND	mg/L	0.0010	1	01/09/17 15:32	01/13/17 21:36	7439-92-1	
Vanadium	ND	mg/L	0.0050	1	01/09/17 15:32	01/13/17 21:36	7440-62-2	
6020 MET ICPMS, Dissolved (LF)	Analytical Method: EPA 6020 Preparation Method: EPA 3005A							
Arsenic, Dissolved	1.6	ug/L	1.0	1	01/10/17 11:44	01/13/17 20:21	7440-38-2	
Chromium, Dissolved	ND	ug/L	1.0	1	01/10/17 11:44	01/13/17 20:21	7440-47-3	
Lead, Dissolved	ND	ug/L	1.0	1	01/10/17 11:44	01/13/17 20:21	7439-92-1	
Vanadium, Dissolved	ND	ug/L	5.0	1	01/10/17 11:44	01/13/17 20:21	7440-62-2	
7470 Mercury	Analytical Method: EPA 7470 Preparation Method: EPA 7470							
Mercury	ND	ug/L	0.20	1	01/09/17 15:19	01/09/17 20:11	7439-97-6	M1
7470 Mercury, Dissolved (LF)	Analytical Method: EPA 7470 Preparation Method: EPA 7470							
Mercury, Dissolved	ND	ug/L	0.20	1	01/10/17 12:30	01/10/17 16:55	7439-97-6	M1
8270 MSSV PAH by SIM SEP	Analytical Method: EPA 8270 by SIM Preparation Method: EPA 3510							
Acenaphthene	0.27	ug/L	0.10	1	01/06/17 09:20	01/09/17 21:59	83-32-9	R1
Acenaphthylene	ND	ug/L	0.10	1	01/06/17 09:20	01/09/17 21:59	208-96-8	R1
Anthracene	0.11	ug/L	0.10	1	01/06/17 09:20	01/09/17 21:59	120-12-7	R1
Benzo(a)anthracene	ND	ug/L	0.10	1	01/06/17 09:20	01/09/17 21:59	56-55-3	R1

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ANALYTICAL RESULTS

Project: PUMA TERMINAL MW-SAMPLING

Pace Project No.: 2048198

Sample: MW-EB105	Lab ID: 2048198006	Collected: 01/03/17 13:45	Received: 01/04/17 15:08	Matrix: Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8270 MSSV PAH by SIM SEP		Analytical Method: EPA 8270 by SIM Preparation Method: EPA 3510						
Benzo(a)pyrene	ND	ug/L	0.10	1	01/06/17 09:20	01/09/17 21:59	50-32-8	R1
Benzo(b)fluoranthene	ND	ug/L	0.10	1	01/06/17 09:20	01/09/17 21:59	205-99-2	R1
Benzo(g,h,i)perylene	ND	ug/L	0.10	1	01/06/17 09:20	01/09/17 21:59	191-24-2	
Benzo(k)fluoranthene	ND	ug/L	0.10	1	01/06/17 09:20	01/09/17 21:59	207-08-9	R1
Chrysene	ND	ug/L	0.10	1	01/06/17 09:20	01/09/17 21:59	218-01-9	R1
Dibenz(a,h)anthracene	ND	ug/L	0.10	1	01/06/17 09:20	01/09/17 21:59	53-70-3	
Fluoranthene	ND	ug/L	0.10	1	01/06/17 09:20	01/09/17 21:59	206-44-0	R1
Fluorene	ND	ug/L	0.10	1	01/06/17 09:20	01/09/17 21:59	86-73-7	R1
Indeno(1,2,3-cd)pyrene	ND	ug/L	0.10	1	01/06/17 09:20	01/09/17 21:59	193-39-5	
2-Methylnaphthalene	ND	ug/L	0.10	1	01/06/17 09:20	01/09/17 21:59	91-57-6	R1
Naphthalene	ND	ug/L	0.10	1	01/06/17 09:20	01/09/17 21:59	91-20-3	R1
Phenanthrene	0.26	ug/L	0.10	1	01/06/17 09:20	01/09/17 21:59	85-01-8	R1
Pyrene	ND	ug/L	0.10	1	01/06/17 09:20	01/09/17 21:59	129-00-0	R1
Surrogates								
2-Fluorobiphenyl (S)	97	%.	25-150	1	01/06/17 09:20	01/09/17 21:59	321-60-8	
Terphenyl-d14 (S)	99	%.	25-150	1	01/06/17 09:20	01/09/17 21:59	1718-51-0	
8260 MSV Low Level		Analytical Method: EPA 5030B/8260						
Acetone	39.4	ug/L	4.0	1		01/06/17 11:24	67-64-1	C9
Benzene	ND	ug/L	0.50	1		01/06/17 11:24	71-43-2	
Bromodichloromethane	ND	ug/L	0.50	1		01/06/17 11:24	75-27-4	
Bromoform	ND	ug/L	0.50	1		01/06/17 11:24	75-25-2	
Bromomethane	ND	ug/L	0.50	1		01/06/17 11:24	74-83-9	
2-Butanone (MEK)	ND	ug/L	2.0	1		01/06/17 11:24	78-93-3	
Carbon disulfide	ND	ug/L	1.0	1		01/06/17 11:24	75-15-0	L1,MO
Carbon tetrachloride	ND	ug/L	0.50	1		01/06/17 11:24	56-23-5	
Chlorobenzene	ND	ug/L	0.50	1		01/06/17 11:24	108-90-7	
Chloroethane	ND	ug/L	0.50	1		01/06/17 11:24	75-00-3	
Chloroform	ND	ug/L	0.50	1		01/06/17 11:24	67-66-3	
Chloromethane	ND	ug/L	0.50	1		01/06/17 11:24	74-87-3	
1,2-Dibromo-3-chloropropane	ND	ug/L	0.20	1		01/06/17 11:24	96-12-8	
Dibromochloromethane	ND	ug/L	0.50	1		01/06/17 11:24	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	1		01/06/17 11:24	106-93-4	
Dichlorodifluoromethane	ND	ug/L	1.0	1		01/06/17 11:24	75-71-8	
1,1-Dichloroethane	ND	ug/L	0.50	1		01/06/17 11:24	75-34-3	
1,2-Dichloroethane	ND	ug/L	0.50	1		01/06/17 11:24	107-06-2	
1,1-Dichloroethene	ND	ug/L	0.50	1		01/06/17 11:24	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	1		01/06/17 11:24	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	0.50	1		01/06/17 11:24	156-60-5	
1,2-Dichloropropane	ND	ug/L	0.50	1		01/06/17 11:24	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	0.50	1		01/06/17 11:24	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	0.50	1		01/06/17 11:24	10061-02-6	
Ethylbenzene	ND	ug/L	0.50	1		01/06/17 11:24	100-41-4	
2-Hexanone	ND	ug/L	1.0	1		01/06/17 11:24	591-78-6	
Isopropylbenzene (Cumene)	ND	ug/L	1.0	1		01/06/17 11:24	98-82-8	
Methyl acetate	ND	ug/L	2.0	1		01/06/17 11:24	79-20-9	
Methylene Chloride	ND	ug/L	0.50	1		01/06/17 11:24	75-09-2	

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ANALYTICAL RESULTS

Project: PUMA TERMINAL MW-SAMPLING

Sample Project No.: 2048198

Sample: MW-EB105		Lab ID: 2048198006		Collected: 01/03/17 13:45		Received: 01/04/17 15:08		Matrix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual	
8260 MSV Low Level		Analytical Method: EPA 5030B/8260							
4-Methyl-2-pentanone (MIBK)	ND	ug/L	1.0	1		01/06/17 11:24	108-10-1		
Methyl-tert-butyl ether	8.2	ug/L	0.50	1		01/06/17 11:24	1634-04-4		
Styrene	ND	ug/L	1.0	1		01/06/17 11:24	100-42-5		
1,1,2,2-Tetrachloroethane	ND	ug/L	0.50	1		01/06/17 11:24	79-34-5		
Tetrachloroethene	ND	ug/L	0.50	1		01/06/17 11:24	127-18-4		
Toluene	ND	ug/L	0.50	1		01/06/17 11:24	108-88-3		
1,1,1-Trichloroethane	ND	ug/L	0.50	1		01/06/17 11:24	71-55-6		
1,1,2-Trichloroethane	ND	ug/L	0.50	1		01/06/17 11:24	79-00-5		
Trichloroethene	ND	ug/L	0.50	1		01/06/17 11:24	79-01-6		
Trichlorofluoromethane	ND	ug/L	0.50	1		01/06/17 11:24	75-69-4		
Vinyl chloride	ND	ug/L	0.50	1		01/06/17 11:24	75-01-4		
m&p-Xylene	ND	ug/L	2.0	1		01/06/17 11:24	179601-23-1		
o-Xylene	ND	ug/L	1.0	1		01/06/17 11:24	95-47-6		
Surrogates									
Dibromofluoromethane (S)	106	%.	72-126	1		01/06/17 11:24	1868-53-7		
4-Bromofluorobenzene (S)	97	%.	68-124	1		01/06/17 11:24	460-00-4		
Toluene-d8 (S)	100	%.	79-119	1		01/06/17 11:24	2037-26-5		

Sample: DUP004		Lab ID: 2048198007		Collected: 01/03/17 00:00		Received: 01/04/17 15:08		Matrix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual	
8015M DRO/ORO Organics		Analytical Method: EPA 8015B Modified Preparation Method: EPA 3535							
Diesel Range Organic (C10-C28)	0.25	mg/L	0.25	1	01/06/17 07:40	01/11/17 20:42			
Oil Range Organics (>C28-C40)	ND	mg/L	0.50	1	01/06/17 07:40	01/11/17 20:42			
Surrogates									
n-Pentacosane (S)	71	%.	16-137	1	01/06/17 07:40	01/11/17 20:42	629-99-2		
o-Terphenyl (S)	82	%.	10-121	1	01/06/17 07:40	01/11/17 20:42	84-15-1		
8021 GCV BTEX, MTBE, GRO		Analytical Method: EPA 8015/8021							
Gasoline Range Organics	ND	ug/L	50.0	1		01/06/17 20:21			
Surrogates									
4-Bromofluorobenzene (S)	88	%.	44-148	1		01/06/17 20:21	460-00-4		
6020 MET ICPMS		Analytical Method: EPA 6020 Preparation Method: EPA 3010							
Arsenic	0.0052	mg/L	0.0010	1	01/09/17 15:32	01/13/17 22:15	7440-38-2		
Chromium	0.0010	mg/L	0.0010	1	01/09/17 15:32	01/13/17 22:15	7440-47-3		
Lead	ND	mg/L	0.0010	1	01/09/17 15:32	01/13/17 22:15	7439-92-1		
Vanadium	ND	mg/L	0.0050	1	01/09/17 15:32	01/13/17 22:15	7440-62-2		
6020 MET ICPMS, Dissolved (LF)		Analytical Method: EPA 6020 Preparation Method: EPA 3005A							
Arsenic, Dissolved	1.5	ug/L	1.0	1	01/10/17 11:44	01/13/17 23:46	7440-38-2		
Chromium, Dissolved	ND	ug/L	1.0	1	01/10/17 11:44	01/13/17 23:46	7440-47-3		
Lead, Dissolved	ND	ug/L	1.0	1	01/10/17 11:44	01/13/17 23:46	7439-92-1		
Vanadium, Dissolved	ND	ug/L	5.0	1	01/10/17 11:44	01/13/17 23:46	7440-62-2		

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ANALYTICAL RESULTS

Project: PUMA TERMINAL MW-SAMPLING

Pace Project No.: 2048198

Sample: DUP004	Lab ID: 2048198007	Collected: 01/03/17 00:00	Received: 01/04/17 15:08	Matrix: Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
7470 Mercury Analytical Method: EPA 7470 Preparation Method: EPA 7470								
Mercury	ND	ug/L	0.20	1	01/09/17 15:19	01/09/17 20:30	7439-97-6	
7470 Mercury, Dissolved (LF) Analytical Method: EPA 7470 Preparation Method: EPA 7470								
Mercury, Dissolved	ND	ug/L	0.20	1	01/10/17 12:30	01/10/17 17:26	7439-97-6	
8270 MSSV PAH by SIM SEP Analytical Method: EPA 8270 by SIM Preparation Method: EPA 3510								
Acenaphthene	0.13	ug/L	0.10	1	01/06/17 09:20	01/10/17 13:20	83-32-9	
Acenaphthylene	ND	ug/L	0.10	1	01/06/17 09:20	01/10/17 13:20	208-96-8	
Anthracene	ND	ug/L	0.10	1	01/06/17 09:20	01/10/17 13:20	120-12-7	
Benzo(a)anthracene	ND	ug/L	0.10	1	01/06/17 09:20	01/10/17 13:20	56-55-3	
Benzo(a)pyrene	ND	ug/L	0.10	1	01/06/17 09:20	01/10/17 13:20	50-32-8	
Benzo(b)fluoranthene	ND	ug/L	0.10	1	01/06/17 09:20	01/10/17 13:20	205-99-2	
Benzo(g,h,i)perylene	ND	ug/L	0.10	1	01/06/17 09:20	01/10/17 13:20	191-24-2	
Benzo(k)fluoranthene	ND	ug/L	0.10	1	01/06/17 09:20	01/10/17 13:20	207-08-9	
Chrysene	ND	ug/L	0.10	1	01/06/17 09:20	01/10/17 13:20	218-01-9	
Dibenz(a,h)anthracene	ND	ug/L	0.10	1	01/06/17 09:20	01/10/17 13:20	53-70-3	
Fluoranthene	ND	ug/L	0.10	1	01/06/17 09:20	01/10/17 13:20	206-44-0	
Fluorene	ND	ug/L	0.10	1	01/06/17 09:20	01/10/17 13:20	86-73-7	
Indeno(1,2,3-cd)pyrene	ND	ug/L	0.10	1	01/06/17 09:20	01/10/17 13:20	193-39-5	
2-Methylnaphthalene	ND	ug/L	0.10	1	01/06/17 09:20	01/10/17 13:20	91-57-6	
Naphthalene	ND	ug/L	0.10	1	01/06/17 09:20	01/10/17 13:20	91-20-3	
Phenanthrene	ND	ug/L	0.10	1	01/06/17 09:20	01/10/17 13:20	85-01-8	
Pyrene	ND	ug/L	0.10	1	01/06/17 09:20	01/10/17 13:20	129-00-0	
Surrogates								
2-Fluorobiphenyl (S)	80	%	25-150	1	01/06/17 09:20	01/10/17 13:20	321-60-8	
Terphenyl-d14 (S)	81	%	25-150	1	01/06/17 09:20	01/10/17 13:20	1718-51-0	
8260 MSV Low Level Analytical Method: EPA 5030B/8260								
Acetone	11.3	ug/L	4.0	1		01/06/17 13:10	67-64-1	C9
Benzene	ND	ug/L	0.50	1		01/06/17 13:10	71-43-2	
Bromodichloromethane	ND	ug/L	0.50	1		01/06/17 13:10	75-27-4	
Bromoform	ND	ug/L	0.50	1		01/06/17 13:10	75-25-2	
Bromomethane	ND	ug/L	0.50	1		01/06/17 13:10	74-83-9	
2-Butanone (MEK)	ND	ug/L	2.0	1		01/06/17 13:10	78-93-3	
Carbon disulfide	ND	ug/L	1.0	1		01/06/17 13:10	75-15-0	L3
Carbon tetrachloride	ND	ug/L	0.50	1		01/06/17 13:10	56-23-5	
Chlorobenzene	ND	ug/L	0.50	1		01/06/17 13:10	108-90-7	
Chloroethane	ND	ug/L	0.50	1		01/06/17 13:10	75-00-3	
Chloroform	ND	ug/L	0.50	1		01/06/17 13:10	67-66-3	
Chloromethane	ND	ug/L	0.50	1		01/06/17 13:10	74-87-3	
1,2-Dibromo-3-chloropropane	ND	ug/L	0.20	1		01/06/17 13:10	96-12-8	
Dibromochloromethane	ND	ug/L	0.50	1		01/06/17 13:10	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	1		01/06/17 13:10	106-93-4	
Dichlorodifluoromethane	ND	ug/L	1.0	1		01/06/17 13:10	75-71-8	
1,1-Dichloroethane	ND	ug/L	0.50	1		01/06/17 13:10	75-34-3	
1,2-Dichloroethane	ND	ug/L	0.50	1		01/06/17 13:10	107-06-2	

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ANALYTICAL RESULTS

Project: PUMA TERMINAL MW-SAMPLING

Pace Project No.: 2048198

Sample: DUP004		Lab ID: 2048198007		Collected: 01/03/17 00:00	Received: 01/04/17 15:08	Matrix: Water		
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV Low Level		Analytical Method: EPA 5030B/8260						
1,1-Dichloroethene	ND	ug/L	0.50	1		01/06/17 13:10	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	1		01/06/17 13:10	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	0.50	1		01/06/17 13:10	156-60-5	
1,2-Dichloropropane	ND	ug/L	0.50	1		01/06/17 13:10	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	0.50	1		01/06/17 13:10	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	0.50	1		01/06/17 13:10	10061-02-6	
Ethylbenzene	ND	ug/L	0.50	1		01/06/17 13:10	100-41-4	
2-Hexanone	ND	ug/L	1.0	1		01/06/17 13:10	591-78-6	
Isopropylbenzene (Cumene)	ND	ug/L	1.0	1		01/06/17 13:10	98-82-8	
Methyl acetate	ND	ug/L	2.0	1		01/06/17 13:10	79-20-9	
Methylene Chloride	ND	ug/L	0.50	1		01/06/17 13:10	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	1.0	1		01/06/17 13:10	108-10-1	
Methyl-tert-butyl ether	8.9	ug/L	0.50	1		01/06/17 13:10	1634-04-4	
Styrene	ND	ug/L	1.0	1		01/06/17 13:10	100-42-5	
1,1,2,2-Tetrachloroethane	ND	ug/L	0.50	1		01/06/17 13:10	79-34-5	
Tetrachloroethene	ND	ug/L	0.50	1		01/06/17 13:10	127-18-4	
Toluene	ND	ug/L	0.50	1		01/06/17 13:10	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	0.50	1		01/06/17 13:10	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	0.50	1		01/06/17 13:10	79-00-5	
Trichloroethene	ND	ug/L	0.50	1		01/06/17 13:10	79-01-6	
Trichlorofluoromethane	ND	ug/L	0.50	1		01/06/17 13:10	75-69-4	
Vinyl chloride	ND	ug/L	0.50	1		01/06/17 13:10	75-01-4	
m&p-Xylene	ND	ug/L	2.0	1		01/06/17 13:10	179601-23-1	
o-Xylene	ND	ug/L	1.0	1		01/06/17 13:10	95-47-6	
Surrogates								
Dibromofluoromethane (S)	108	%.	72-126	1		01/06/17 13:10	1868-53-7	
4-Bromofluorobenzene (S)	97	%.	68-124	1		01/06/17 13:10	460-00-4	
Toluene-d8 (S)	100	%.	79-119	1		01/06/17 13:10	2037-26-5	

Sample: MW-EB106		Lab ID: 2048198008		Collected: 01/03/17 14:28	Received: 01/04/17 15:08	Matrix: Water		
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8015M DRO/ORO Organics		Analytical Method: EPA 8015B Modified Preparation Method: EPA 3535						
Diesel Range Organic (C10-C28)	0.26	mg/L	0.25	1	01/06/17 07:40	01/11/17 22:06		
Oil Range Organics (>C28-C40)	ND	mg/L	0.50	1	01/06/17 07:40	01/11/17 22:06		
Surrogates								
n-Pentacosane (S)	50	%.	16-137	1	01/06/17 07:40	01/11/17 22:06	629-99-2	
o-Terphenyl (S)	66	%.	10-121	1	01/06/17 07:40	01/11/17 22:06	84-15-1	
8021 GCV BTEX, MTBE, GRO		Analytical Method: EPA 8015/8021						
Gasoline Range Organics	ND	ug/L	50.0	1		01/12/17 18:34		
Surrogates								
4-Bromofluorobenzene (S)	86	%.	44-148	1		01/12/17 18:34	460-00-4	

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ANALYTICAL RESULTS

Project: PUMA TERMINAL MW-SAMPLING

Pace Project No.: 2048198

Sample: MW-EB106	Lab ID: 2048198008	Collected: 01/03/17 14:28	Received: 01/04/17 15:08	Matrix: Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
6020 MET ICPMS Analytical Method: EPA 6020 Preparation Method: EPA 3010								
Arsenic	0.0014	mg/L	0.0010	1	01/09/17 15:32	01/13/17 22:19	7440-38-2	
Chromium	ND	mg/L	0.0010	1	01/09/17 15:32	01/13/17 22:19	7440-47-3	
Lead	ND	mg/L	0.0010	1	01/09/17 15:32	01/13/17 22:19	7439-92-1	
Vanadium	ND	mg/L	0.0050	1	01/09/17 15:32	01/13/17 22:19	7440-62-2	
6020 MET ICPMS, Dissolved (LF) Analytical Method: EPA 6020 Preparation Method: EPA 3005A								
Arsenic, Dissolved	ND	ug/L	1.0	1	01/10/17 11:44	01/13/17 23:50	7440-38-2	
Chromium, Dissolved	30.6	ug/L	1.0	1	01/10/17 11:44	01/13/17 23:50	7440-47-3	
Lead, Dissolved	ND	ug/L	1.0	1	01/10/17 11:44	01/13/17 23:50	7439-92-1	
Vanadium, Dissolved	ND	ug/L	5.0	1	01/10/17 11:44	01/13/17 23:50	7440-62-2	
7470 Mercury Analytical Method: EPA 7470 Preparation Method: EPA 7470								
Mercury	ND	ug/L	0.20	1	01/09/17 15:19	01/09/17 20:32	7439-97-6	
7470 Mercury, Dissolved (LF) Analytical Method: EPA 7470 Preparation Method: EPA 7470								
Mercury, Dissolved	ND	ug/L	0.20	1	01/10/17 12:30	01/10/17 17:28	7439-97-6	
8270 MSSV PAH by SIM SEP Analytical Method: EPA 8270 by SIM Preparation Method: EPA 3510								
Acenaphthene	ND	ug/L	0.10	1	01/06/17 09:20	01/10/17 13:40	83-32-9	
Acenaphthylene	ND	ug/L	0.10	1	01/06/17 09:20	01/10/17 13:40	208-96-8	
Anthracene	ND	ug/L	0.10	1	01/06/17 09:20	01/10/17 13:40	120-12-7	
Benzo(a)anthracene	ND	ug/L	0.10	1	01/06/17 09:20	01/10/17 13:40	56-55-3	
Benzo(a)pyrene	ND	ug/L	0.10	1	01/06/17 09:20	01/10/17 13:40	50-32-8	
Benzo(b)fluoranthene	ND	ug/L	0.10	1	01/06/17 09:20	01/10/17 13:40	205-99-2	
Benzo(g,h,i)perylene	ND	ug/L	0.10	1	01/06/17 09:20	01/10/17 13:40	191-24-2	
Benzo(k)fluoranthene	ND	ug/L	0.10	1	01/06/17 09:20	01/10/17 13:40	207-08-9	
Chrysene	ND	ug/L	0.10	1	01/06/17 09:20	01/10/17 13:40	218-01-9	
Dibenz(a,h)anthracene	ND	ug/L	0.10	1	01/06/17 09:20	01/10/17 13:40	53-70-3	
Fluoranthene	ND	ug/L	0.10	1	01/06/17 09:20	01/10/17 13:40	206-44-0	
Fluorene	ND	ug/L	0.10	1	01/06/17 09:20	01/10/17 13:40	86-73-7	
Indeno(1,2,3-cd)pyrene	ND	ug/L	0.10	1	01/06/17 09:20	01/10/17 13:40	193-39-5	
2-Methylnaphthalene	ND	ug/L	0.10	1	01/06/17 09:20	01/10/17 13:40	91-57-6	
Naphthalene	ND	ug/L	0.10	1	01/06/17 09:20	01/10/17 13:40	91-20-3	
Phenanthrene	ND	ug/L	0.10	1	01/06/17 09:20	01/10/17 13:40	85-01-8	
Pyrene	ND	ug/L	0.10	1	01/06/17 09:20	01/10/17 13:40	129-00-0	
Surrogates								
2-Fluorobiphenyl (S)	99	%	25-150	1	01/06/17 09:20	01/10/17 13:40	321-60-8	
Terphenyl-d14 (S)	100	%	25-150	1	01/06/17 09:20	01/10/17 13:40	1718-51-0	
8260 MSV Low Level Analytical Method: EPA 5030B/8260								
Acetone	16.4	ug/L	4.0	1		01/06/17 13:28	67-64-1	C9
Benzene	ND	ug/L	0.50	1		01/06/17 13:28	71-43-2	
Bromodichloromethane	ND	ug/L	0.50	1		01/06/17 13:28	75-27-4	
Bromoform	ND	ug/L	0.50	1		01/06/17 13:28	75-25-2	
Bromomethane	ND	ug/L	0.50	1		01/06/17 13:28	74-83-9	
2-Butanone (MEK)	ND	ug/L	2.0	1		01/06/17 13:28	78-93-3	

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ANALYTICAL RESULTS

Project: PUMA TERMINAL MW-SAMPLING

Pace Project No.: 2048198

Sample: MW-EB106	Lab ID: 2048198008	Collected: 01/03/17 14:28	Received: 01/04/17 15:08	Matrix: Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV Low Level		Analytical Method: EPA 5030B/8260						
Carbon disulfide	ND	ug/L	1.0	1		01/06/17 13:28	75-15-0	L3
Carbon tetrachloride	ND	ug/L	0.50	1		01/06/17 13:28	56-23-5	
Chlorobenzene	ND	ug/L	0.50	1		01/06/17 13:28	108-90-7	
Chloroethane	ND	ug/L	0.50	1		01/06/17 13:28	75-00-3	
Chloroform	ND	ug/L	0.50	1		01/06/17 13:28	67-66-3	
Chloromethane	ND	ug/L	0.50	1		01/06/17 13:28	74-87-3	
1,2-Dibromo-3-chloropropane	ND	ug/L	0.20	1		01/06/17 13:28	96-12-8	
Dibromochloromethane	ND	ug/L	0.50	1		01/06/17 13:28	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	1		01/06/17 13:28	106-93-4	
Dichlorodifluoromethane	ND	ug/L	1.0	1		01/06/17 13:28	75-71-8	
1,1-Dichloroethane	ND	ug/L	0.50	1		01/06/17 13:28	75-34-3	
1,2-Dichloroethane	ND	ug/L	0.50	1		01/06/17 13:28	107-06-2	
1,1-Dichloroethene	ND	ug/L	0.50	1		01/06/17 13:28	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	1		01/06/17 13:28	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	0.50	1		01/06/17 13:28	156-60-5	
1,2-Dichloropropane	ND	ug/L	0.50	1		01/06/17 13:28	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	0.50	1		01/06/17 13:28	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	0.50	1		01/06/17 13:28	10061-02-6	
Ethylbenzene	ND	ug/L	0.50	1		01/06/17 13:28	100-41-4	
2-Hexanone	ND	ug/L	1.0	1		01/06/17 13:28	591-78-6	
Isopropylbenzene (Cumene)	ND	ug/L	1.0	1		01/06/17 13:28	98-82-8	
Methyl acetate	ND	ug/L	2.0	1		01/06/17 13:28	79-20-9	
Methylene Chloride	ND	ug/L	0.50	1		01/06/17 13:28	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	1.0	1		01/06/17 13:28	108-10-1	
Methyl-tert-butyl ether	4.3	ug/L	0.50	1		01/06/17 13:28	1634-04-4	
Styrene	ND	ug/L	1.0	1		01/06/17 13:28	100-42-5	
1,1,2,2-Tetrachloroethane	ND	ug/L	0.50	1		01/06/17 13:28	79-34-5	
Tetrachloroethene	ND	ug/L	0.50	1		01/06/17 13:28	127-18-4	
Toluene	ND	ug/L	0.50	1		01/06/17 13:28	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	0.50	1		01/06/17 13:28	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	0.50	1		01/06/17 13:28	79-00-5	
Trichloroethene	ND	ug/L	0.50	1		01/06/17 13:28	79-01-6	
Trichlorofluoromethane	ND	ug/L	0.50	1		01/06/17 13:28	75-69-4	
Vinyl chloride	ND	ug/L	0.50	1		01/06/17 13:28	75-01-4	
m&p-Xylene	ND	ug/L	2.0	1		01/06/17 13:28	179601-23-1	
o-Xylene	ND	ug/L	1.0	1		01/06/17 13:28	95-47-6	
Surrogates								
Dibromofluoromethane (S)	107	%	72-126	1		01/06/17 13:28	1868-53-7	
4-Bromofluorobenzene (S)	97	%	68-124	1		01/06/17 13:28	460-00-4	
Toluene-d8 (S)	99	%	79-119	1		01/06/17 13:28	2037-26-5	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: PUMA TERMINAL MW-SAMPLING

Pace Project No.: 2048198

Sample: MW-EB107	Lab ID: 2048198009	Collected: 01/03/17 15:11	Received: 01/04/17 15:08	Matrix: Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8015M DRO/ORO Organics								
Analytical Method: EPA 8015B Modified Preparation Method: EPA 3535								
Diesel Range Organic (C10-C28)	ND	mg/L	0.25	1	01/06/17 07:40	01/11/17 22:34		
Oil Range Organics (>C28-C40)	ND	mg/L	0.50	1	01/06/17 07:40	01/11/17 22:34		
Surrogates								
n-Pentacosane (S)	48	%	16-137	1	01/06/17 07:40	01/11/17 22:34	629-99-2	
o-Terphenyl (S)	51	%	10-121	1	01/06/17 07:40	01/11/17 22:34	84-15-1	
8021 GCV BTEX, MTBE, GRO								
Analytical Method: EPA 8015/8021								
Gasoline Range Organics	ND	ug/L	50.0	1		01/12/17 21:11		
Surrogates								
4-Bromofluorobenzene (S)	85	%	44-148	1		01/12/17 21:11	460-00-4	
6020 MET ICPMS								
Analytical Method: EPA 6020 Preparation Method: EPA 3010								
Arsenic	ND	mg/L	0.0010	1	01/09/17 15:32	01/13/17 22:23	7440-38-2	
Chromium	0.0013	mg/L	0.0010	1	01/09/17 15:32	01/13/17 22:23	7440-47-3	
Lead	ND	mg/L	0.0010	1	01/09/17 15:32	01/13/17 22:23	7439-92-1	
Vanadium	ND	mg/L	0.0050	1	01/09/17 15:32	01/13/17 22:23	7440-62-2	
6020 MET ICPMS, Dissolved (LF)								
Analytical Method: EPA 6020 Preparation Method: EPA 3005A								
Arsenic, Dissolved	ND	ug/L	1.0	1	01/10/17 11:44	01/13/17 23:54	7440-38-2	
Chromium, Dissolved	ND	ug/L	1.0	1	01/10/17 11:44	01/13/17 23:54	7440-47-3	
Lead, Dissolved	ND	ug/L	1.0	1	01/10/17 11:44	01/13/17 23:54	7439-92-1	
Vanadium, Dissolved	ND	ug/L	5.0	1	01/10/17 11:44	01/13/17 23:54	7440-62-2	
7470 Mercury								
Analytical Method: EPA 7470 Preparation Method: EPA 7470								
Mercury	ND	ug/L	0.20	1	01/09/17 15:19	01/09/17 20:34	7439-97-6	
7470 Mercury, Dissolved (LF)								
Analytical Method: EPA 7470 Preparation Method: EPA 7470								
Mercury, Dissolved	ND	ug/L	0.20	1	01/10/17 12:30	01/10/17 17:30	7439-97-6	
8270 MSSV PAH by SIM SEP								
Analytical Method: EPA 8270 by SIM Preparation Method: EPA 3510								
Acenaphthene	ND	ug/L	0.10	1	01/06/17 09:20	01/10/17 14:00	83-32-9	
Acenaphthylene	ND	ug/L	0.10	1	01/06/17 09:20	01/10/17 14:00	208-96-8	
Anthracene	ND	ug/L	0.10	1	01/06/17 09:20	01/10/17 14:00	120-12-7	
Benzo(a)anthracene	ND	ug/L	0.10	1	01/06/17 09:20	01/10/17 14:00	56-55-3	
Benzo(a)pyrene	ND	ug/L	0.10	1	01/06/17 09:20	01/10/17 14:00	50-32-8	
Benzo(b)fluoranthene	ND	ug/L	0.10	1	01/06/17 09:20	01/10/17 14:00	205-99-2	
Benzo(g,h,i)perylene	ND	ug/L	0.10	1	01/06/17 09:20	01/10/17 14:00	191-24-2	
Benzo(k)fluoranthene	ND	ug/L	0.10	1	01/06/17 09:20	01/10/17 14:00	207-08-9	
Chrysene	ND	ug/L	0.10	1	01/06/17 09:20	01/10/17 14:00	218-01-9	
Dibenz(a,h)anthracene	ND	ug/L	0.10	1	01/06/17 09:20	01/10/17 14:00	53-70-3	
Fluoranthene	ND	ug/L	0.10	1	01/06/17 09:20	01/10/17 14:00	206-44-0	
Fluorene	ND	ug/L	0.10	1	01/06/17 09:20	01/10/17 14:00	86-73-7	
Indeno(1,2,3-cd)pyrene	ND	ug/L	0.10	1	01/06/17 09:20	01/10/17 14:00	193-39-5	
2-Methylnaphthalene	ND	ug/L	0.10	1	01/06/17 09:20	01/10/17 14:00	91-57-6	
Naphthalene	ND	ug/L	0.10	1	01/06/17 09:20	01/10/17 14:00	91-20-3	
Phenanthrene	ND	ug/L	0.10	1	01/06/17 09:20	01/10/17 14:00	85-01-8	

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ANALYTICAL RESULTS

Project: PUMA TERMINAL MW-SAMPLING

Pace Project No.: 2048198

Sample: MW-EB107	Lab ID: 2048198009	Collected: 01/03/17 15:11	Received: 01/04/17 15:08	Matrix: Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8270 MSSV PAH by SIM SEP		Analytical Method: EPA 8270 by SIM Preparation Method: EPA 3510						
Pyrene	ND	ug/L	0.10	1	01/06/17 09:20	01/10/17 14:00	129-00-0	
Surrogates								
2-Fluorobiphenyl (S)	99	%.	25-150	1	01/06/17 09:20	01/10/17 14:00	321-60-8	
Terphenyl-d14 (S)	100	%.	25-150	1	01/06/17 09:20	01/10/17 14:00	1718-51-0	
8260 MSV Low Level		Analytical Method: EPA 5030B/8260						
Acetone	ND	ug/L	4.0	1		01/06/17 13:46	67-64-1	
Benzene	ND	ug/L	0.50	1		01/06/17 13:46	71-43-2	
Bromodichloromethane	ND	ug/L	0.50	1		01/06/17 13:46	75-27-4	
Bromoform	ND	ug/L	0.50	1		01/06/17 13:46	75-25-2	
Bromomethane	ND	ug/L	0.50	1		01/06/17 13:46	74-83-9	
2-Butanone (MEK)	ND	ug/L	2.0	1		01/06/17 13:46	78-93-3	
Carbon disulfide	ND	ug/L	1.0	1		01/06/17 13:46	75-15-0	L3
Carbon tetrachloride	ND	ug/L	0.50	1		01/06/17 13:46	56-23-5	
Chlorobenzene	ND	ug/L	0.50	1		01/06/17 13:46	108-90-7	
Chloroethane	ND	ug/L	0.50	1		01/06/17 13:46	75-00-3	
Chloroform	ND	ug/L	0.50	1		01/06/17 13:46	67-66-3	
Chloromethane	ND	ug/L	0.50	1		01/06/17 13:46	74-87-3	
1,2-Dibromo-3-chloropropane	ND	ug/L	0.20	1		01/06/17 13:46	96-12-8	
Dibromochloromethane	ND	ug/L	0.50	1		01/06/17 13:46	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	1		01/06/17 13:46	106-93-4	
Dichlorodifluoromethane	ND	ug/L	1.0	1		01/06/17 13:46	75-71-8	
1,1-Dichloroethane	ND	ug/L	0.50	1		01/06/17 13:46	75-34-3	
1,2-Dichloroethane	0.61	ug/L	0.50	1		01/06/17 13:46	107-06-2	
1,1-Dichloroethene	ND	ug/L	0.50	1		01/06/17 13:46	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	1		01/06/17 13:46	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	0.50	1		01/06/17 13:46	156-60-5	
1,2-Dichloropropane	ND	ug/L	0.50	1		01/06/17 13:46	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	0.50	1		01/06/17 13:46	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	0.50	1		01/06/17 13:46	10061-02-6	
Ethylbenzene	ND	ug/L	0.50	1		01/06/17 13:46	100-41-4	
2-Hexanone	ND	ug/L	1.0	1		01/06/17 13:46	591-78-6	
Isopropylbenzene (Cumene)	ND	ug/L	1.0	1		01/06/17 13:46	98-82-8	
Methyl acetate	ND	ug/L	2.0	1		01/06/17 13:46	79-20-9	
Methylene Chloride	ND	ug/L	0.50	1		01/06/17 13:46	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	1.0	1		01/06/17 13:46	108-10-1	
Methyl-tert-butyl ether	1.6	ug/L	0.50	1		01/06/17 13:46	1634-04-4	
Styrene	ND	ug/L	1.0	1		01/06/17 13:46	100-42-5	
1,1,2,2-Tetrachloroethane	ND	ug/L	0.50	1		01/06/17 13:46	79-34-5	
Tetrachloroethene	ND	ug/L	0.50	1		01/06/17 13:46	127-18-4	
Toluene	ND	ug/L	0.50	1		01/06/17 13:46	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	0.50	1		01/06/17 13:46	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	0.50	1		01/06/17 13:46	79-00-5	
Trichloroethene	ND	ug/L	0.50	1		01/06/17 13:46	79-01-6	
Trichlorofluoromethane	ND	ug/L	0.50	1		01/06/17 13:46	75-69-4	
Vinyl chloride	ND	ug/L	0.50	1		01/06/17 13:46	75-01-4	
m&p-Xylene	ND	ug/L	2.0	1		01/06/17 13:46	179601-23-1	

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ANALYTICAL RESULTS

Project: PUMA TERMINAL MW-SAMPLING

Pace Project No.: 2048198

Sample: MW-EB107		Lab ID: 2048198009		Collected: 01/03/17 15:11		Received: 01/04/17 15:08		Matrix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual	
8260 MSV Low Level		Analytical Method: EPA 5030B/8260							
o-Xylene	ND	ug/L	1.0	1		01/06/17 13:46	95-47-6		
Surrogates									
Dibromofluoromethane (S)	109	%.	72-126	1		01/06/17 13:46	1868-53-7		
4-Bromofluorobenzene (S)	97	%.	68-124	1		01/06/17 13:46	460-00-4		
Toluene-d8 (S)	100	%.	79-119	1		01/06/17 13:46	2037-26-5		
Sample: MW-EB108		Lab ID: 2048198010		Collected: 01/03/17 16:01		Received: 01/04/17 15:08		Matrix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual	
8015M DRO/ORO Organics		Analytical Method: EPA 8015B Modified Preparation Method: EPA 3535							
Diesel Range Organic (C10-C28)	ND	mg/L	0.25	1	01/06/17 07:40	01/11/17 23:02			
Oil Range Organics (>C28-C40)	ND	mg/L	0.50	1	01/06/17 07:40	01/11/17 23:02			
Surrogates									
n-Pentacosane (S)	51	%.	16-137	1	01/06/17 07:40	01/11/17 23:02	629-99-2		
o-Terphenyl (S)	55	%.	10-121	1	01/06/17 07:40	01/11/17 23:02	84-15-1		
8021 GCV BTEX, MTBE, GRO		Analytical Method: EPA 8015/8021							
Gasoline Range Organics	ND	ug/L	50.0	1		01/12/17 21:37			
Surrogates									
4-Bromofluorobenzene (S)	86	%.	44-148	1		01/12/17 21:37	460-00-4		
6020 MET ICPMS		Analytical Method: EPA 6020 Preparation Method: EPA 3010							
Arsenic	ND	mg/L	0.0010	1	01/09/17 15:32	01/13/17 22:27	7440-38-2		
Chromium	ND	mg/L	0.0010	1	01/09/17 15:32	01/13/17 22:27	7440-47-3		
Lead	ND	mg/L	0.0010	1	01/09/17 15:32	01/13/17 22:27	7439-92-1		
Vanadium	ND	mg/L	0.0050	1	01/09/17 15:32	01/13/17 22:27	7440-62-2		
6020 MET ICPMS, Dissolved (LF)		Analytical Method: EPA 6020 Preparation Method: EPA 3005A							
Arsenic, Dissolved	ND	ug/L	1.0	1	01/10/17 11:44	01/13/17 23:58	7440-38-2		
Chromium, Dissolved	ND	ug/L	1.0	1	01/10/17 11:44	01/13/17 23:58	7440-47-3		
Lead, Dissolved	ND	ug/L	1.0	1	01/10/17 11:44	01/13/17 23:58	7439-92-1		
Vanadium, Dissolved	ND	ug/L	5.0	1	01/10/17 11:44	01/13/17 23:58	7440-62-2		
7470 Mercury		Analytical Method: EPA 7470 Preparation Method: EPA 7470							
Mercury	ND	ug/L	0.20	1	01/09/17 15:19	01/09/17 20:36	7439-97-6		
7470 Mercury, Dissolved (LF)		Analytical Method: EPA 7470 Preparation Method: EPA 7470							
Mercury, Dissolved	ND	ug/L	0.20	1	01/10/17 12:30	01/10/17 17:32	7439-97-6		
8270 MSSV PAH by SIM SEP		Analytical Method: EPA 8270 by SIM Preparation Method: EPA 3510							
Acenaphthene	ND	ug/L	0.10	1	01/06/17 09:20	01/10/17 14:20	83-32-9		
Acenaphthylene	ND	ug/L	0.10	1	01/06/17 09:20	01/10/17 14:20	208-96-8		
Anthracene	ND	ug/L	0.10	1	01/06/17 09:20	01/10/17 14:20	120-12-7		
Benzo(a)anthracene	ND	ug/L	0.10	1	01/06/17 09:20	01/10/17 14:20	56-55-3		

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ANALYTICAL RESULTS

Project: PUMA TERMINAL MW-SAMPLING

Pace Project No.: 2048198

Sample: MW-EB108 **Lab ID: 2048198010** Collected: 01/03/17 16:01 Received: 01/04/17 15:08 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
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8270 MSSV PAH by SIM SEP

Analytical Method: EPA 8270 by SIM Preparation Method: EPA 3510

Benzo(a)pyrene	ND	ug/L	0.10	1	01/06/17 09:20	01/10/17 14:20	50-32-8	
Benzo(b)fluoranthene	ND	ug/L	0.10	1	01/06/17 09:20	01/10/17 14:20	205-99-2	
Benzo(g,h,i)perylene	ND	ug/L	0.10	1	01/06/17 09:20	01/10/17 14:20	191-24-2	
Benzo(k)fluoranthene	ND	ug/L	0.10	1	01/06/17 09:20	01/10/17 14:20	207-08-9	
Chrysene	ND	ug/L	0.10	1	01/06/17 09:20	01/10/17 14:20	218-01-9	
Dibenz(a,h)anthracene	ND	ug/L	0.10	1	01/06/17 09:20	01/10/17 14:20	53-70-3	
Fluoranthene	ND	ug/L	0.10	1	01/06/17 09:20	01/10/17 14:20	206-44-0	
Fluorene	ND	ug/L	0.10	1	01/06/17 09:20	01/10/17 14:20	86-73-7	
Indeno(1,2,3-cd)pyrene	ND	ug/L	0.10	1	01/06/17 09:20	01/10/17 14:20	193-39-5	
2-Methylnaphthalene	ND	ug/L	0.10	1	01/06/17 09:20	01/10/17 14:20	91-57-6	
Naphthalene	ND	ug/L	0.10	1	01/06/17 09:20	01/10/17 14:20	91-20-3	
Phenanthrene	ND	ug/L	0.10	1	01/06/17 09:20	01/10/17 14:20	85-01-8	
Pyrene	ND	ug/L	0.10	1	01/06/17 09:20	01/10/17 14:20	129-00-0	
Surrogates								
2-Fluorobiphenyl (S)	100	%.	25-150	1	01/06/17 09:20	01/10/17 14:20	321-60-8	
Terphenyl-d14 (S)	102	%.	25-150	1	01/06/17 09:20	01/10/17 14:20	1718-51-0	

8260 MSV Low Level

Analytical Method: EPA 5030B/8260

Acetone	5.9	ug/L	4.0	1		01/06/17 14:03	67-64-1	C9
Benzene	ND	ug/L	0.50	1		01/06/17 14:03	71-43-2	
Bromodichloromethane	ND	ug/L	0.50	1		01/06/17 14:03	75-27-4	
Bromoform	ND	ug/L	0.50	1		01/06/17 14:03	75-25-2	
Bromomethane	ND	ug/L	0.50	1		01/06/17 14:03	74-83-9	
2-Butanone (MEK)	ND	ug/L	2.0	1		01/06/17 14:03	78-93-3	
Carbon disulfide	ND	ug/L	1.0	1		01/06/17 14:03	75-15-0	L3
Carbon tetrachloride	ND	ug/L	0.50	1		01/06/17 14:03	56-23-5	
Chlorobenzene	ND	ug/L	0.50	1		01/06/17 14:03	108-90-7	
Chloroethane	ND	ug/L	0.50	1		01/06/17 14:03	75-00-3	
Chloroform	ND	ug/L	0.50	1		01/06/17 14:03	67-66-3	
Chloromethane	ND	ug/L	0.50	1		01/06/17 14:03	74-87-3	
1,2-Dibromo-3-chloropropane	ND	ug/L	0.20	1		01/06/17 14:03	96-12-8	
Dibromochloromethane	ND	ug/L	0.50	1		01/06/17 14:03	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	1		01/06/17 14:03	106-93-4	
Dichlorodifluoromethane	ND	ug/L	1.0	1		01/06/17 14:03	75-71-8	
1,1-Dichloroethane	ND	ug/L	0.50	1		01/06/17 14:03	75-34-3	
1,2-Dichloroethane	ND	ug/L	0.50	1		01/06/17 14:03	107-06-2	
1,1-Dichloroethene	ND	ug/L	0.50	1		01/06/17 14:03	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	1		01/06/17 14:03	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	0.50	1		01/06/17 14:03	156-60-5	
1,2-Dichloropropane	ND	ug/L	0.50	1		01/06/17 14:03	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	0.50	1		01/06/17 14:03	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	0.50	1		01/06/17 14:03	10061-02-6	
Ethylbenzene	ND	ug/L	0.50	1		01/06/17 14:03	100-41-4	
2-Hexanone	ND	ug/L	1.0	1		01/06/17 14:03	591-78-6	
Isopropylbenzene (Cumene)	ND	ug/L	1.0	1		01/06/17 14:03	98-82-8	
Methyl acetate	ND	ug/L	2.0	1		01/06/17 14:03	79-20-9	
Methylene Chloride	ND	ug/L	0.50	1		01/06/17 14:03	75-09-2	

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ANALYTICAL RESULTS

Project: PUMA TERMINAL MW-SAMPLING

Pace Project No.: 2048198

Sample: MW-EB108		Lab ID: 2048198010		Collected: 01/03/17 16:01		Received: 01/04/17 15:08		Matrix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual	
8260 MSV Low Level		Analytical Method: EPA 5030B/8260							
4-Methyl-2-pentanone (MIBK)	ND	ug/L	1.0	1		01/06/17 14:03	108-10-1		
Methyl-tert-butyl ether	ND	ug/L	0.50	1		01/06/17 14:03	1634-04-4		
Styrene	ND	ug/L	1.0	1		01/06/17 14:03	100-42-5		
1,1,2,2-Tetrachloroethane	ND	ug/L	0.50	1		01/06/17 14:03	79-34-5		
Tetrachloroethene	ND	ug/L	0.50	1		01/06/17 14:03	127-18-4		
Toluene	ND	ug/L	0.50	1		01/06/17 14:03	108-88-3		
1,1,1-Trichloroethane	ND	ug/L	0.50	1		01/06/17 14:03	71-55-6		
1,1,2-Trichloroethane	ND	ug/L	0.50	1		01/06/17 14:03	79-00-5		
Trichloroethene	ND	ug/L	0.50	1		01/06/17 14:03	79-01-6		
Trichlorofluoromethane	ND	ug/L	0.50	1		01/06/17 14:03	75-69-4		
Vinyl chloride	ND	ug/L	0.50	1		01/06/17 14:03	75-01-4		
m&p-Xylene	ND	ug/L	2.0	1		01/06/17 14:03	179601-23-1		
o-Xylene	ND	ug/L	1.0	1		01/06/17 14:03	95-47-6		
Surrogates									
Dibromofluoromethane (S)	107	%.	72-126	1		01/06/17 14:03	1868-53-7		
4-Bromofluorobenzene (S)	97	%.	68-124	1		01/06/17 14:03	460-00-4		
Toluene-d8 (S)	101	%.	79-119	1		01/06/17 14:03	2037-26-5		

Sample: FB-010317		Lab ID: 2048198011		Collected: 01/03/17 16:10		Received: 01/04/17 15:08		Matrix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual	
8021 GCV BTEX, MTBE, GRO		Analytical Method: EPA 8015/8021							
Gasoline Range Organics	ND	ug/L	50.0	1		01/12/17 19:00			
Surrogates									
4-Bromofluorobenzene (S)	86	%.	44-148	1		01/12/17 19:00	460-00-4		
8260 MSV Low Level		Analytical Method: EPA 5030B/8260							
Acetone	12.8	ug/L	4.0	1		01/06/17 14:21	67-64-1	C9	
Benzene	ND	ug/L	0.50	1		01/06/17 14:21	71-43-2		
Bromodichloromethane	ND	ug/L	0.50	1		01/06/17 14:21	75-27-4		
Bromoform	ND	ug/L	0.50	1		01/06/17 14:21	75-25-2		
Bromomethane	ND	ug/L	0.50	1		01/06/17 14:21	74-83-9		
2-Butanone (MEK)	ND	ug/L	2.0	1		01/06/17 14:21	78-93-3		
Carbon disulfide	ND	ug/L	1.0	1		01/06/17 14:21	75-15-0	L3	
Carbon tetrachloride	ND	ug/L	0.50	1		01/06/17 14:21	56-23-5		
Chlorobenzene	ND	ug/L	0.50	1		01/06/17 14:21	108-90-7		
Chloroethane	ND	ug/L	0.50	1		01/06/17 14:21	75-00-3		
Chloroform	ND	ug/L	0.50	1		01/06/17 14:21	67-66-3		
Chloromethane	ND	ug/L	0.50	1		01/06/17 14:21	74-87-3		
1,2-Dibromo-3-chloropropane	ND	ug/L	0.20	1		01/06/17 14:21	96-12-8		
Dibromochloromethane	ND	ug/L	0.50	1		01/06/17 14:21	124-48-1		
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	1		01/06/17 14:21	106-93-4		
Dichlorodifluoromethane	ND	ug/L	1.0	1		01/06/17 14:21	75-71-8		
1,1-Dichloroethane	ND	ug/L	0.50	1		01/06/17 14:21	75-34-3		
1,2-Dichloroethane	ND	ug/L	0.50	1		01/06/17 14:21	107-06-2		

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ANALYTICAL RESULTS

Project: PUMA TERMINAL MW-SAMPLING

Pace Project No.: 2048198

Sample: FB-010317		Lab ID: 2048198011	Collected: 01/03/17 16:10	Received: 01/04/17 15:08	Matrix: Water			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV Low Level		Analytical Method: EPA 5030B/8260						
1,1-Dichloroethene	ND	ug/L	0.50	1		01/06/17 14:21	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	1		01/06/17 14:21	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	0.50	1		01/06/17 14:21	156-60-5	
1,2-Dichloropropane	ND	ug/L	0.50	1		01/06/17 14:21	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	0.50	1		01/06/17 14:21	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	0.50	1		01/06/17 14:21	10061-02-6	
Ethylbenzene	ND	ug/L	0.50	1		01/06/17 14:21	100-41-4	
2-Hexanone	ND	ug/L	1.0	1		01/06/17 14:21	591-78-6	
Isopropylbenzene (Cumene)	ND	ug/L	1.0	1		01/06/17 14:21	98-82-8	
Methyl acetate	ND	ug/L	2.0	1		01/06/17 14:21	79-20-9	
Methylene Chloride	ND	ug/L	0.50	1		01/06/17 14:21	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	1.0	1		01/06/17 14:21	108-10-1	
Methyl-tert-butyl ether	ND	ug/L	0.50	1		01/06/17 14:21	1634-04-4	
Styrene	ND	ug/L	1.0	1		01/06/17 14:21	100-42-5	
1,1,2,2-Tetrachloroethane	ND	ug/L	0.50	1		01/06/17 14:21	79-34-5	
Tetrachloroethene	ND	ug/L	0.50	1		01/06/17 14:21	127-18-4	
Toluene	ND	ug/L	0.50	1		01/06/17 14:21	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	0.50	1		01/06/17 14:21	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	0.50	1		01/06/17 14:21	79-00-5	
Trichloroethene	ND	ug/L	0.50	1		01/06/17 14:21	79-01-6	
Trichlorofluoromethane	ND	ug/L	0.50	1		01/06/17 14:21	75-69-4	
Vinyl chloride	ND	ug/L	0.50	1		01/06/17 14:21	75-01-4	
m&p-Xylene	ND	ug/L	2.0	1		01/06/17 14:21	179601-23-1	
o-Xylene	ND	ug/L	1.0	1		01/06/17 14:21	95-47-6	
Surrogates								
Dibromofluoromethane (S)	105	%	72-126	1		01/06/17 14:21	1868-53-7	
4-Bromofluorobenzene (S)	98	%	68-124	1		01/06/17 14:21	460-00-4	
Toluene-d8 (S)	100	%	79-119	1		01/06/17 14:21	2037-26-5	

Sample: TB-010417		Lab ID: 2048198012	Collected: 01/04/17 00:00	Received: 01/04/17 15:08	Matrix: Water			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8021 GCV BTEX, MTBE, GRO		Analytical Method: EPA 8015/8021						
Gasoline Range Organics	ND	ug/L	50.0	1		01/12/17 22:03		
Surrogates								
4-Bromofluorobenzene (S)	87	%	44-148	1		01/12/17 22:03	460-00-4	
8260 MSV Low Level		Analytical Method: EPA 5030B/8260						
Acetone	169	ug/L	4.0	1		01/06/17 14:39	67-64-1	
Benzene	ND	ug/L	0.50	1		01/06/17 14:39	71-43-2	
Bromodichloromethane	ND	ug/L	0.50	1		01/06/17 14:39	75-27-4	
Bromoform	ND	ug/L	0.50	1		01/06/17 14:39	75-25-2	
Bromomethane	ND	ug/L	0.50	1		01/06/17 14:39	74-83-9	
2-Butanone (MEK)	ND	ug/L	2.0	1		01/06/17 14:39	78-93-3	
Carbon disulfide	ND	ug/L	1.0	1		01/06/17 14:39	75-15-0	L3

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ANALYTICAL RESULTS

Project: PUMA TERMINAL MW-SAMPLING
Pace Project No.: 2048198

Sample: TB-010417		Lab ID: 2048198012	Collected: 01/04/17 00:00	Received: 01/04/17 15:08	Matrix: Water			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV Low Level		Analytical Method: EPA 5030B/8260						
Carbon tetrachloride	ND	ug/L	0.50	1		01/06/17 14:39	56-23-5	
Chlorobenzene	ND	ug/L	0.50	1		01/06/17 14:39	108-90-7	
Chloroethane	ND	ug/L	0.50	1		01/06/17 14:39	75-00-3	
Chloroform	ND	ug/L	0.50	1		01/06/17 14:39	67-66-3	
Chloromethane	ND	ug/L	0.50	1		01/06/17 14:39	74-87-3	
1,2-Dibromo-3-chloropropane	ND	ug/L	0.20	1		01/06/17 14:39	96-12-8	
Dibromochloromethane	ND	ug/L	0.50	1		01/06/17 14:39	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	1		01/06/17 14:39	106-93-4	
Dichlorodifluoromethane	ND	ug/L	1.0	1		01/06/17 14:39	75-71-8	
1,1-Dichloroethane	ND	ug/L	0.50	1		01/06/17 14:39	75-34-3	
1,2-Dichloroethane	ND	ug/L	0.50	1		01/06/17 14:39	107-06-2	
1,1-Dichloroethene	ND	ug/L	0.50	1		01/06/17 14:39	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	1		01/06/17 14:39	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	0.50	1		01/06/17 14:39	156-60-5	
1,2-Dichloropropane	ND	ug/L	0.50	1		01/06/17 14:39	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	0.50	1		01/06/17 14:39	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	0.50	1		01/06/17 14:39	10061-02-6	
Ethylbenzene	ND	ug/L	0.50	1		01/06/17 14:39	100-41-4	
2-Hexanone	ND	ug/L	1.0	1		01/06/17 14:39	591-78-6	
Isopropylbenzene (Cumene)	ND	ug/L	1.0	1		01/06/17 14:39	98-82-8	
Methyl acetate	ND	ug/L	2.0	1		01/06/17 14:39	79-20-9	
Methylene Chloride	ND	ug/L	0.50	1		01/06/17 14:39	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	1.0	1		01/06/17 14:39	108-10-1	
Methyl-tert-butyl ether	ND	ug/L	0.50	1		01/06/17 14:39	1634-04-4	
Styrene	ND	ug/L	1.0	1		01/06/17 14:39	100-42-5	
1,1,2,2-Tetrachloroethane	ND	ug/L	0.50	1		01/06/17 14:39	79-34-5	
Tetrachloroethene	ND	ug/L	0.50	1		01/06/17 14:39	127-18-4	
Toluene	ND	ug/L	0.50	1		01/06/17 14:39	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	0.50	1		01/06/17 14:39	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	0.50	1		01/06/17 14:39	79-00-5	
Trichloroethene	ND	ug/L	0.50	1		01/06/17 14:39	79-01-6	
Trichlorofluoromethane	ND	ug/L	0.50	1		01/06/17 14:39	75-69-4	
Vinyl chloride	ND	ug/L	0.50	1		01/06/17 14:39	75-01-4	
m&p-Xylene	ND	ug/L	2.0	1		01/06/17 14:39	179601-23-1	
o-Xylene	ND	ug/L	1.0	1		01/06/17 14:39	95-47-6	
Surrogates								
Dibromofluoromethane (S)	108	%	72-126	1		01/06/17 14:39	1868-53-7	
4-Bromofluorobenzene (S)	98	%	68-124	1		01/06/17 14:39	460-00-4	
Toluene-d8 (S)	101	%	79-119	1		01/06/17 14:39	2037-26-5	

Sample: EB-010417		Lab ID: 2048198013	Collected: 01/04/17 08:58	Received: 01/04/17 15:08	Matrix: Water			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8015M DRO/ORO Organics		Analytical Method: EPA 8015B Modified Preparation Method: EPA 3535						
Diesel Range Organic (C10-C28)	ND	mg/L	0.25	1	01/06/17 07:40	01/11/17 23:30		

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ANALYTICAL RESULTS

Project: PUMA TERMINAL MW-SAMPLING

Pace Project No.: 2048198

Sample: EB-010417	Lab ID: 2048198013	Collected: 01/04/17 08:58	Received: 01/04/17 15:08	Matrix: Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8015M DRO/ORO Organics								
Analytical Method: EPA 8015B Modified Preparation Method: EPA 3535								
Oil Range Organics (>C28-C40)	ND	mg/L	0.50	1	01/06/17 07:40	01/11/17 23:30		
Surrogates								
n-Pentacosane (S)	48	%.	16-137	1	01/06/17 07:40	01/11/17 23:30	629-99-2	
o-Terphenyl (S)	50	%.	10-121	1	01/06/17 07:40	01/11/17 23:30	84-15-1	
8021 GCV BTEX, MTBE, GRO								
Analytical Method: EPA 8015/8021								
Gasoline Range Organics	ND	ug/L	50.0	1		01/12/17 22:29		
Surrogates								
4-Bromofluorobenzene (S)	89	%.	44-148	1		01/12/17 22:29	460-00-4	
6020 MET ICPMS								
Analytical Method: EPA 6020 Preparation Method: EPA 3010								
Arsenic	ND	mg/L	0.0010	1	01/09/17 15:32	01/13/17 22:31	7440-38-2	
Chromium	ND	mg/L	0.0010	1	01/09/17 15:32	01/13/17 22:31	7440-47-3	
Lead	ND	mg/L	0.0010	1	01/09/17 15:32	01/13/17 22:31	7439-92-1	
Vanadium	ND	mg/L	0.0050	1	01/09/17 15:32	01/13/17 22:31	7440-62-2	
6020 MET ICPMS, Dissolved (LF)								
Analytical Method: EPA 6020 Preparation Method: EPA 3005A								
Arsenic, Dissolved	ND	ug/L	1.0	1	01/10/17 11:44	01/14/17 00:01	7440-38-2	
Chromium, Dissolved	ND	ug/L	1.0	1	01/10/17 11:44	01/14/17 00:01	7440-47-3	
Lead, Dissolved	ND	ug/L	1.0	1	01/10/17 11:44	01/14/17 00:01	7439-92-1	
Vanadium, Dissolved	ND	ug/L	5.0	1	01/10/17 11:44	01/14/17 00:01	7440-62-2	
7470 Mercury								
Analytical Method: EPA 7470 Preparation Method: EPA 7470								
Mercury	ND	ug/L	0.20	1	01/09/17 15:19	01/09/17 20:38	7439-97-6	
7470 Mercury, Dissolved (LF)								
Analytical Method: EPA 7470 Preparation Method: EPA 7470								
Mercury, Dissolved	ND	ug/L	0.20	1	01/10/17 12:30	01/10/17 17:34	7439-97-6	
8270 MSSV PAH by SIM SEP								
Analytical Method: EPA 8270 by SIM Preparation Method: EPA 3510								
Acenaphthene	ND	ug/L	0.10	1	01/07/17 13:27	01/10/17 17:59	83-32-9	
Acenaphthylene	ND	ug/L	0.10	1	01/07/17 13:27	01/10/17 17:59	208-96-8	
Anthracene	ND	ug/L	0.10	1	01/07/17 13:27	01/10/17 17:59	120-12-7	
Benzo(a)anthracene	ND	ug/L	0.10	1	01/07/17 13:27	01/10/17 17:59	56-55-3	
Benzo(a)pyrene	ND	ug/L	0.10	1	01/07/17 13:27	01/10/17 17:59	50-32-8	
Benzo(b)fluoranthene	ND	ug/L	0.10	1	01/07/17 13:27	01/10/17 17:59	205-99-2	
Benzo(g,h,i)perylene	ND	ug/L	0.10	1	01/07/17 13:27	01/10/17 17:59	191-24-2	
Benzo(k)fluoranthene	ND	ug/L	0.10	1	01/07/17 13:27	01/10/17 17:59	207-08-9	
Chrysene	ND	ug/L	0.10	1	01/07/17 13:27	01/10/17 17:59	218-01-9	
Dibenz(a,h)anthracene	ND	ug/L	0.10	1	01/07/17 13:27	01/10/17 17:59	53-70-3	
Fluoranthene	ND	ug/L	0.10	1	01/07/17 13:27	01/10/17 17:59	206-44-0	
Fluorene	ND	ug/L	0.10	1	01/07/17 13:27	01/10/17 17:59	86-73-7	
Indeno(1,2,3-cd)pyrene	ND	ug/L	0.10	1	01/07/17 13:27	01/10/17 17:59	193-39-5	
2-Methylnaphthalene	ND	ug/L	0.10	1	01/07/17 13:27	01/10/17 17:59	91-57-6	
Naphthalene	ND	ug/L	0.10	1	01/07/17 13:27	01/10/17 17:59	91-20-3	
Phenanthrene	ND	ug/L	0.10	1	01/07/17 13:27	01/10/17 17:59	85-01-8	
Pyrene	ND	ug/L	0.10	1	01/07/17 13:27	01/10/17 17:59	129-00-0	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: PUMA TERMINAL MW-SAMPLING

Pace Project No.: 2048198

Sample: EB-010417	Lab ID: 2048198013	Collected: 01/04/17 08:58	Received: 01/04/17 15:08	Matrix: Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8270 MSSV PAH by SIM SEP		Analytical Method: EPA 8270 by SIM Preparation Method: EPA 3510						
Surrogates								
2-Fluorobiphenyl (S)	104	%	25-150	1	01/07/17 13:27	01/10/17 17:59	321-60-8	
Terphenyl-d14 (S)	103	%	25-150	1	01/07/17 13:27	01/10/17 17:59	1718-51-0	
8260 MSV Low Level		Analytical Method: EPA 5030B/8260						
Acetone	18.0	ug/L	4.0	1		01/06/17 14:56	67-64-1	C9
Benzene	ND	ug/L	0.50	1		01/06/17 14:56	71-43-2	
Bromodichloromethane	ND	ug/L	0.50	1		01/06/17 14:56	75-27-4	
Bromoform	ND	ug/L	0.50	1		01/06/17 14:56	75-25-2	
Bromomethane	ND	ug/L	0.50	1		01/06/17 14:56	74-83-9	
2-Butanone (MEK)	ND	ug/L	2.0	1		01/06/17 14:56	78-93-3	
Carbon disulfide	ND	ug/L	1.0	1		01/06/17 14:56	75-15-0	L3
Carbon tetrachloride	ND	ug/L	0.50	1		01/06/17 14:56	56-23-5	
Chlorobenzene	ND	ug/L	0.50	1		01/06/17 14:56	108-90-7	
Chloroethane	ND	ug/L	0.50	1		01/06/17 14:56	75-00-3	
Chloroform	ND	ug/L	0.50	1		01/06/17 14:56	67-66-3	
Chloromethane	ND	ug/L	0.50	1		01/06/17 14:56	74-87-3	
1,2-Dibromo-3-chloropropane	ND	ug/L	0.20	1		01/06/17 14:56	96-12-8	
Dibromochloromethane	ND	ug/L	0.50	1		01/06/17 14:56	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	1		01/06/17 14:56	106-93-4	
Dichlorodifluoromethane	ND	ug/L	1.0	1		01/06/17 14:56	75-71-8	
1,1-Dichloroethane	ND	ug/L	0.50	1		01/06/17 14:56	75-34-3	
1,2-Dichloroethane	ND	ug/L	0.50	1		01/06/17 14:56	107-06-2	
1,1-Dichloroethene	ND	ug/L	0.50	1		01/06/17 14:56	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	1		01/06/17 14:56	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	0.50	1		01/06/17 14:56	156-60-5	
1,2-Dichloropropane	ND	ug/L	0.50	1		01/06/17 14:56	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	0.50	1		01/06/17 14:56	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	0.50	1		01/06/17 14:56	10061-02-6	
Ethylbenzene	ND	ug/L	0.50	1		01/06/17 14:56	100-41-4	
2-Hexanone	ND	ug/L	1.0	1		01/06/17 14:56	591-78-6	
Isopropylbenzene (Cumene)	ND	ug/L	1.0	1		01/06/17 14:56	98-82-8	
Methyl acetate	ND	ug/L	2.0	1		01/06/17 14:56	79-20-9	
Methylene Chloride	ND	ug/L	0.50	1		01/06/17 14:56	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	1.0	1		01/06/17 14:56	108-10-1	
Methyl-tert-butyl ether	ND	ug/L	0.50	1		01/06/17 14:56	1634-04-4	
Styrene	ND	ug/L	1.0	1		01/06/17 14:56	100-42-5	
1,1,2,2-Tetrachloroethane	ND	ug/L	0.50	1		01/06/17 14:56	79-34-5	
Tetrachloroethene	ND	ug/L	0.50	1		01/06/17 14:56	127-18-4	
Toluene	ND	ug/L	0.50	1		01/06/17 14:56	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	0.50	1		01/06/17 14:56	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	0.50	1		01/06/17 14:56	79-00-5	
Trichloroethene	ND	ug/L	0.50	1		01/06/17 14:56	79-01-6	
Trichlorofluoromethane	ND	ug/L	0.50	1		01/06/17 14:56	75-69-4	
Vinyl chloride	ND	ug/L	0.50	1		01/06/17 14:56	75-01-4	
m&p-Xylene	ND	ug/L	2.0	1		01/06/17 14:56	179601-23-1	
o-Xylene	ND	ug/L	1.0	1		01/06/17 14:56	95-47-6	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: PUMA TERMINAL MW-SAMPLING

Project No.: 2048198

Sample: EB-010417	Lab ID: 2048198013	Collected: 01/04/17 08:58	Received: 01/04/17 15:08	Matrix: Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV Low Level		Analytical Method: EPA 5030B/8260						
Surrogates								
Dibromofluoromethane (S)	108	%.	72-126	1		01/06/17 14:56	1868-53-7	
4-Bromofluorobenzene (S)	98	%.	68-124	1		01/06/17 14:56	460-00-4	
Toluene-d8 (S)	101	%.	79-119	1		01/06/17 14:56	2037-26-5	
Sample: MW-DP1		Lab ID: 2048198014 Collected: 01/04/17 09:36 Received: 01/04/17 15:08 Matrix: Water						
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8015M DRO/ORO Organics		Analytical Method: EPA 8015B Modified Preparation Method: EPA 3535						
Diesel Range Organic (C10-C28)	ND	mg/L	0.25	1	01/06/17 07:40	01/11/17 23:58		
Oil Range Organics (>C28-C40)	ND	mg/L	0.50	1	01/06/17 07:40	01/11/17 23:58		
Surrogates								
n-Pentacosane (S)	41	%.	16-137	1	01/06/17 07:40	01/11/17 23:58	629-99-2	
o-Terphenyl (S)	53	%.	10-121	1	01/06/17 07:40	01/11/17 23:58	84-15-1	
8021 GCV BTEX, MTBE, GRO		Analytical Method: EPA 8015/8021						
Gasoline Range Organics	ND	ug/L	50.0	1		01/12/17 22:56		
Surrogates								
4-Bromofluorobenzene (S)	87	%.	44-148	1		01/12/17 22:56	460-00-4	
6020 MET ICPMS		Analytical Method: EPA 6020 Preparation Method: EPA 3010						
Arsenic	ND	mg/L	0.0010	1	01/09/17 15:32	01/13/17 22:35	7440-38-2	
Chromium	0.0013	mg/L	0.0010	1	01/09/17 15:32	01/13/17 22:35	7440-47-3	
Lead	ND	mg/L	0.0010	1	01/09/17 15:32	01/13/17 22:35	7439-92-1	
Vanadium	ND	mg/L	0.0050	1	01/09/17 15:32	01/13/17 22:35	7440-62-2	
6020 MET ICPMS, Dissolved (LF)		Analytical Method: EPA 6020 Preparation Method: EPA 3005A						
Arsenic, Dissolved	ND	ug/L	1.0	1	01/10/17 11:44	01/14/17 00:05	7440-38-2	
Chromium, Dissolved	ND	ug/L	1.0	1	01/10/17 11:44	01/14/17 00:05	7440-47-3	
Lead, Dissolved	ND	ug/L	1.0	1	01/10/17 11:44	01/14/17 00:05	7439-92-1	
Vanadium, Dissolved	ND	ug/L	5.0	1	01/10/17 11:44	01/14/17 00:05	7440-62-2	
7470 Mercury		Analytical Method: EPA 7470 Preparation Method: EPA 7470						
Mercury	ND	ug/L	0.20	1	01/09/17 15:19	01/09/17 20:40	7439-97-6	
7470 Mercury, Dissolved (LF)		Analytical Method: EPA 7470 Preparation Method: EPA 7470						
Mercury, Dissolved	ND	ug/L	0.20	1	01/10/17 12:30	01/10/17 17:36	7439-97-6	
8270 MSSV PAH by SIM SEP		Analytical Method: EPA 8270 by SIM Preparation Method: EPA 3510						
Acenaphthene	ND	ug/L	0.10	1	01/07/17 13:27	01/10/17 18:19	83-32-9	
Acenaphthylene	ND	ug/L	0.10	1	01/07/17 13:27	01/10/17 18:19	208-96-8	
Anthracene	ND	ug/L	0.10	1	01/07/17 13:27	01/10/17 18:19	120-12-7	
Benzo(a)anthracene	ND	ug/L	0.10	1	01/07/17 13:27	01/10/17 18:19	56-55-3	
Benzo(a)pyrene	ND	ug/L	0.10	1	01/07/17 13:27	01/10/17 18:19	50-32-8	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: PUMA TERMINAL MW-SAMPLING

Sample Project No.: 2048198

Sample: MW-DP1	Lab ID: 2048198014	Collected: 01/04/17 09:36	Received: 01/04/17 15:08	Matrix: Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual

8270 MSSV PAH by SIM SEP

Analytical Method: EPA 8270 by SIM Preparation Method: EPA 3510

Benzo(b)fluoranthene	ND	ug/L	0.10	1	01/07/17 13:27	01/10/17 18:19	205-99-2	
Benzo(g,h,i)perylene	ND	ug/L	0.10	1	01/07/17 13:27	01/10/17 18:19	191-24-2	
Benzo(k)fluoranthene	ND	ug/L	0.10	1	01/07/17 13:27	01/10/17 18:19	207-08-9	
Chrysene	ND	ug/L	0.10	1	01/07/17 13:27	01/10/17 18:19	218-01-9	
Dibenz(a,h)anthracene	ND	ug/L	0.10	1	01/07/17 13:27	01/10/17 18:19	53-70-3	
Fluoranthene	ND	ug/L	0.10	1	01/07/17 13:27	01/10/17 18:19	206-44-0	
Fluorene	ND	ug/L	0.10	1	01/07/17 13:27	01/10/17 18:19	86-73-7	
Indeno(1,2,3-cd)pyrene	ND	ug/L	0.10	1	01/07/17 13:27	01/10/17 18:19	193-39-5	
2-Methylnaphthalene	ND	ug/L	0.10	1	01/07/17 13:27	01/10/17 18:19	91-57-6	
Naphthalene	ND	ug/L	0.10	1	01/07/17 13:27	01/10/17 18:19	91-20-3	
Phenanthrene	ND	ug/L	0.10	1	01/07/17 13:27	01/10/17 18:19	85-01-8	
Pyrene	ND	ug/L	0.10	1	01/07/17 13:27	01/10/17 18:19	129-00-0	
Surrogates								
2-Fluorobiphenyl (S)	95	%	25-150	1	01/07/17 13:27	01/10/17 18:19	321-60-8	
Terphenyl-d14 (S)	94	%	25-150	1	01/07/17 13:27	01/10/17 18:19	1718-51-0	

8260 MSV Low Level

Analytical Method: EPA 5030B/8260

Acetone	8.2	ug/L	4.0	1		01/06/17 15:14	67-64-1	C9
Benzene	ND	ug/L	0.50	1		01/06/17 15:14	71-43-2	
Bromodichloromethane	ND	ug/L	0.50	1		01/06/17 15:14	75-27-4	
Bromoform	ND	ug/L	0.50	1		01/06/17 15:14	75-25-2	
Bromomethane	ND	ug/L	0.50	1		01/06/17 15:14	74-83-9	
2-Butanone (MEK)	ND	ug/L	2.0	1		01/06/17 15:14	78-93-3	
Carbon disulfide	ND	ug/L	1.0	1		01/06/17 15:14	75-15-0	L3
Carbon tetrachloride	ND	ug/L	0.50	1		01/06/17 15:14	56-23-5	
Chlorobenzene	ND	ug/L	0.50	1		01/06/17 15:14	108-90-7	
Chloroethane	ND	ug/L	0.50	1		01/06/17 15:14	75-00-3	
Chloroform	ND	ug/L	0.50	1		01/06/17 15:14	67-66-3	
Chloromethane	ND	ug/L	0.50	1		01/06/17 15:14	74-87-3	
1,2-Dibromo-3-chloropropane	ND	ug/L	0.20	1		01/06/17 15:14	96-12-8	
Dibromochloromethane	ND	ug/L	0.50	1		01/06/17 15:14	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	1		01/06/17 15:14	106-93-4	
Dichlorodifluoromethane	ND	ug/L	1.0	1		01/06/17 15:14	75-71-8	
1,1-Dichloroethane	ND	ug/L	0.50	1		01/06/17 15:14	75-34-3	
1,2-Dichloroethane	ND	ug/L	0.50	1		01/06/17 15:14	107-06-2	
1,1-Dichloroethene	ND	ug/L	0.50	1		01/06/17 15:14	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	1		01/06/17 15:14	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	0.50	1		01/06/17 15:14	156-60-5	
1,2-Dichloropropane	ND	ug/L	0.50	1		01/06/17 15:14	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	0.50	1		01/06/17 15:14	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	0.50	1		01/06/17 15:14	10061-02-6	
Ethylbenzene	ND	ug/L	0.50	1		01/06/17 15:14	100-41-4	
2-Hexanone	ND	ug/L	1.0	1		01/06/17 15:14	591-78-6	
Isopropylbenzene (Cumene)	ND	ug/L	1.0	1		01/06/17 15:14	98-82-8	
Methyl acetate	ND	ug/L	2.0	1		01/06/17 15:14	79-20-9	
Methylene Chloride	ND	ug/L	0.50	1		01/06/17 15:14	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	1.0	1		01/06/17 15:14	108-10-1	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: PUMA TERMINAL MW-SAMPLING

Pace Project No.: 2048198

Sample: MW-DP1		Lab ID: 2048198014		Collected: 01/04/17 09:36		Received: 01/04/17 15:08		Matrix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual	
8260 MSV Low Level		Analytical Method: EPA 5030B/8260							
Methyl-tert-butyl ether	ND	ug/L	0.50	1		01/06/17 15:14	1634-04-4		
Styrene	ND	ug/L	1.0	1		01/06/17 15:14	100-42-5		
1,1,2,2-Tetrachloroethane	ND	ug/L	0.50	1		01/06/17 15:14	79-34-5		
Tetrachloroethene	ND	ug/L	0.50	1		01/06/17 15:14	127-18-4		
Toluene	ND	ug/L	0.50	1		01/06/17 15:14	108-88-3		
1,1,1-Trichloroethane	ND	ug/L	0.50	1		01/06/17 15:14	71-55-6		
1,1,2-Trichloroethane	ND	ug/L	0.50	1		01/06/17 15:14	79-00-5		
Trichloroethene	ND	ug/L	0.50	1		01/06/17 15:14	79-01-6		
Trichlorofluoromethane	ND	ug/L	0.50	1		01/06/17 15:14	75-69-4		
Vinyl chloride	ND	ug/L	0.50	1		01/06/17 15:14	75-01-4		
m&p-Xylene	ND	ug/L	2.0	1		01/06/17 15:14	179601-23-1		
o-Xylene	ND	ug/L	1.0	1		01/06/17 15:14	95-47-6		
Surrogates									
Dibromofluoromethane (S)	107	%	72-126	1		01/06/17 15:14	1868-53-7		
4-Bromofluorobenzene (S)	98	%	68-124	1		01/06/17 15:14	460-00-4		
Toluene-d8 (S)	99	%	79-119	1		01/06/17 15:14	2037-26-5		

Sample: MW-MP2		Lab ID: 2048198015		Collected: 01/04/17 10:25		Received: 01/04/17 15:08		Matrix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual	
8015M DRO/ORO Organics		Analytical Method: EPA 8015B Modified Preparation Method: EPA 3535							
Diesel Range Organic (C10-C28)	ND	mg/L	0.25	1	01/06/17 07:40	01/12/17 01:21			
Oil Range Organics (>C28-C40)	ND	mg/L	0.50	1	01/06/17 07:40	01/12/17 01:21			
Surrogates									
n-Pentacosane (S)	24	%	16-137	1	01/06/17 07:40	01/12/17 01:21	629-99-2		
o-Terphenyl (S)	43	%	10-121	1	01/06/17 07:40	01/12/17 01:21	84-15-1		
8021 GCV BTEX, MTBE, GRO		Analytical Method: EPA 8015/8021							
Gasoline Range Organics	ND	ug/L	50.0	1		01/12/17 23:22			
Surrogates									
4-Bromofluorobenzene (S)	89	%	44-148	1		01/12/17 23:22	460-00-4		
6020 MET ICPMS		Analytical Method: EPA 6020 Preparation Method: EPA 3010							
Arsenic	ND	mg/L	0.0010	1	01/09/17 15:32	01/13/17 22:39	7440-38-2		
Chromium	0.0013	mg/L	0.0010	1	01/09/17 15:32	01/13/17 22:39	7440-47-3		
Lead	ND	mg/L	0.0010	1	01/09/17 15:32	01/13/17 22:39	7439-92-1		
Vanadium	0.012	mg/L	0.0050	1	01/09/17 15:32	01/13/17 22:39	7440-62-2		
6020 MET ICPMS, Dissolved (LF)		Analytical Method: EPA 6020 Preparation Method: EPA 3005A							
Arsenic, Dissolved	ND	ug/L	1.0	1	01/10/17 11:44	01/14/17 00:09	7440-38-2		
Chromium, Dissolved	ND	ug/L	1.0	1	01/10/17 11:44	01/14/17 00:09	7440-47-3		
Lead, Dissolved	ND	ug/L	1.0	1	01/10/17 11:44	01/14/17 00:09	7439-92-1		
Vanadium, Dissolved	10.8	ug/L	5.0	1	01/10/17 11:44	01/14/17 00:09	7440-62-2		

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ANALYTICAL RESULTS

Project: PUMA TERMINAL MW-SAMPLING

Pace Project No.: 2048198

Sample: MW-MP2	Lab ID: 2048198015	Collected: 01/04/17 10:25	Received: 01/04/17 15:08	Matrix: Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
7470 Mercury Analytical Method: EPA 7470 Preparation Method: EPA 7470								
Mercury	ND	ug/L	0.20	1	01/09/17 15:19	01/09/17 20:42	7439-97-6	
7470 Mercury, Dissolved (LF) Analytical Method: EPA 7470 Preparation Method: EPA 7470								
Mercury, Dissolved	ND	ug/L	0.20	1	01/10/17 12:30	01/10/17 17:38	7439-97-6	
8270 MSSV PAH by SIM SEP Analytical Method: EPA 8270 by SIM Preparation Method: EPA 3510								
Acenaphthene	ND	ug/L	0.10	1	01/07/17 13:27	01/10/17 18:39	83-32-9	
Acenaphthylene	ND	ug/L	0.10	1	01/07/17 13:27	01/10/17 18:39	208-96-8	
Anthracene	ND	ug/L	0.10	1	01/07/17 13:27	01/10/17 18:39	120-12-7	
Benzo(a)anthracene	ND	ug/L	0.10	1	01/07/17 13:27	01/10/17 18:39	56-55-3	
Benzo(a)pyrene	ND	ug/L	0.10	1	01/07/17 13:27	01/10/17 18:39	50-32-8	
Benzo(b)fluoranthene	ND	ug/L	0.10	1	01/07/17 13:27	01/10/17 18:39	205-99-2	
Benzo(g,h,i)perylene	ND	ug/L	0.10	1	01/07/17 13:27	01/10/17 18:39	191-24-2	
Benzo(k)fluoranthene	ND	ug/L	0.10	1	01/07/17 13:27	01/10/17 18:39	207-08-9	
Chrysene	ND	ug/L	0.10	1	01/07/17 13:27	01/10/17 18:39	218-01-9	
Dibenz(a,h)anthracene	ND	ug/L	0.10	1	01/07/17 13:27	01/10/17 18:39	53-70-3	
Fluoranthene	ND	ug/L	0.10	1	01/07/17 13:27	01/10/17 18:39	206-44-0	
Fluorene	ND	ug/L	0.10	1	01/07/17 13:27	01/10/17 18:39	86-73-7	
Indeno(1,2,3-cd)pyrene	ND	ug/L	0.10	1	01/07/17 13:27	01/10/17 18:39	193-39-5	
2-Methylnaphthalene	ND	ug/L	0.10	1	01/07/17 13:27	01/10/17 18:39	91-57-6	
Naphthalene	ND	ug/L	0.10	1	01/07/17 13:27	01/10/17 18:39	91-20-3	
Phenanthrene	ND	ug/L	0.10	1	01/07/17 13:27	01/10/17 18:39	85-01-8	
Pyrene	ND	ug/L	0.10	1	01/07/17 13:27	01/10/17 18:39	129-00-0	
Surrogates								
2-Fluorobiphenyl (S)	88	%	25-150	1	01/07/17 13:27	01/10/17 18:39	321-60-8	
Terphenyl-d14 (S)	90	%	25-150	1	01/07/17 13:27	01/10/17 18:39	1718-51-0	
8260 MSV Low Level Analytical Method: EPA 5030B/8260								
Acetone	9.4	ug/L	4.0	1		01/06/17 15:32	67-64-1	C9
Benzene	ND	ug/L	0.50	1		01/06/17 15:32	71-43-2	
Bromodichloromethane	ND	ug/L	0.50	1		01/06/17 15:32	75-27-4	
Bromoform	ND	ug/L	0.50	1		01/06/17 15:32	75-25-2	
Bromomethane	ND	ug/L	0.50	1		01/06/17 15:32	74-83-9	
2-Butanone (MEK)	ND	ug/L	2.0	1		01/06/17 15:32	78-93-3	
Carbon disulfide	ND	ug/L	1.0	1		01/06/17 15:32	75-15-0	L3
Carbon tetrachloride	ND	ug/L	0.50	1		01/06/17 15:32	56-23-5	
Chlorobenzene	ND	ug/L	0.50	1		01/06/17 15:32	108-90-7	
Chloroethane	ND	ug/L	0.50	1		01/06/17 15:32	75-00-3	
Chloroform	ND	ug/L	0.50	1		01/06/17 15:32	67-66-3	
Chloromethane	ND	ug/L	0.50	1		01/06/17 15:32	74-87-3	
1,2-Dibromo-3-chloropropane	ND	ug/L	0.20	1		01/06/17 15:32	96-12-8	
Dibromochloromethane	ND	ug/L	0.50	1		01/06/17 15:32	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	1		01/06/17 15:32	106-93-4	
Dichlorodifluoromethane	ND	ug/L	1.0	1		01/06/17 15:32	75-71-8	
1,1-Dichloroethane	ND	ug/L	0.50	1		01/06/17 15:32	75-34-3	
1,2-Dichloroethane	ND	ug/L	0.50	1		01/06/17 15:32	107-06-2	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: PUMA TERMINAL MW-SAMPLING

Pace Project No.: 2048198

Sample: MW-MP2		Lab ID: 2048198015		Collected: 01/04/17 10:25		Received: 01/04/17 15:08		Matrix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual	
8260 MSV Low Level		Analytical Method: EPA 5030B/8260							
1,1-Dichloroethene	ND	ug/L	0.50	1		01/06/17 15:32	75-35-4		
cis-1,2-Dichloroethene	ND	ug/L	1.0	1		01/06/17 15:32	156-59-2		
trans-1,2-Dichloroethene	ND	ug/L	0.50	1		01/06/17 15:32	156-60-5		
1,2-Dichloropropane	ND	ug/L	0.50	1		01/06/17 15:32	78-87-5		
cis-1,3-Dichloropropene	ND	ug/L	0.50	1		01/06/17 15:32	10061-01-5		
trans-1,3-Dichloropropene	ND	ug/L	0.50	1		01/06/17 15:32	10061-02-6		
Ethylbenzene	ND	ug/L	0.50	1		01/06/17 15:32	100-41-4		
2-Hexanone	ND	ug/L	1.0	1		01/06/17 15:32	591-78-6		
Isopropylbenzene (Cumene)	ND	ug/L	1.0	1		01/06/17 15:32	98-82-8		
Methyl acetate	ND	ug/L	2.0	1		01/06/17 15:32	79-20-9		
Methylene Chloride	ND	ug/L	0.50	1		01/06/17 15:32	75-09-2		
4-Methyl-2-pentanone (MIBK)	ND	ug/L	1.0	1		01/06/17 15:32	108-10-1		
Methyl-tert-butyl ether	ND	ug/L	0.50	1		01/06/17 15:32	1634-04-4		
Styrene	ND	ug/L	1.0	1		01/06/17 15:32	100-42-5		
1,1,2,2-Tetrachloroethane	ND	ug/L	0.50	1		01/06/17 15:32	79-34-5		
Tetrachloroethene	ND	ug/L	0.50	1		01/06/17 15:32	127-18-4		
Toluene	ND	ug/L	0.50	1		01/06/17 15:32	108-88-3		
1,1,1-Trichloroethane	ND	ug/L	0.50	1		01/06/17 15:32	71-55-6		
1,1,2-Trichloroethane	ND	ug/L	0.50	1		01/06/17 15:32	79-00-5		
Trichloroethene	ND	ug/L	0.50	1		01/06/17 15:32	79-01-6		
Trichlorofluoromethane	ND	ug/L	0.50	1		01/06/17 15:32	75-69-4		
Vinyl chloride	ND	ug/L	0.50	1		01/06/17 15:32	75-01-4		
m&p-Xylene	ND	ug/L	2.0	1		01/06/17 15:32	179601-23-1		
o-Xylene	ND	ug/L	1.0	1		01/06/17 15:32	95-47-6		
Surrogates									
Dibromofluoromethane (S)	108	%.	72-126	1		01/06/17 15:32	1868-53-7		
4-Bromofluorobenzene (S)	97	%.	68-124	1		01/06/17 15:32	460-00-4		
Toluene-d8 (S)	100	%.	79-119	1		01/06/17 15:32	2037-26-5		

Sample: MW-MP3		Lab ID: 2048198016		Collected: 01/04/17 11:46		Received: 01/04/17 15:08		Matrix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual	
8015M DRO/ORO Organics		Analytical Method: EPA 8015B Modified Preparation Method: EPA 3535							
Diesel Range Organic (C10-C28)	ND	mg/L	0.25	1	01/06/17 07:40	01/12/17 01:49			
Oil Range Organics (>C28-C40)	ND	mg/L	0.50	1	01/06/17 07:40	01/12/17 01:49			
Surrogates									
n-Pentacosane (S)	21	%.	16-137	1	01/06/17 07:40	01/12/17 01:49	629-99-2		
o-Terphenyl (S)	36	%.	10-121	1	01/06/17 07:40	01/12/17 01:49	84-15-1		
8021 GCV BTEX, MTBE, GRO		Analytical Method: EPA 8015/8021							
Gasoline Range Organics	ND	ug/L	50.0	1		01/12/17 23:49			
Surrogates									
4-Bromofluorobenzene (S)	88	%.	44-148	1		01/12/17 23:49	460-00-4		

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: PUMA TERMINAL MW-SAMPLING

Pace Project No.: 2048198

Sample: MW-MP3	Lab ID: 2048198016	Collected: 01/04/17 11:46	Received: 01/04/17 15:08	Matrix: Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
6020 MET ICPMS								
Analytical Method: EPA 6020 Preparation Method: EPA 3010								
Arsenic	0.0096	mg/L	0.0010	1	01/09/17 15:32	01/13/17 22:43	7440-38-2	
Chromium	0.0036	mg/L	0.0010	1	01/09/17 15:32	01/13/17 22:43	7440-47-3	
Lead	0.022	mg/L	0.0010	1	01/09/17 15:32	01/13/17 22:43	7439-92-1	
Vanadium	0.010	mg/L	0.0050	1	01/09/17 15:32	01/13/17 22:43	7440-62-2	
6020 MET ICPMS, Dissolved (LF)								
Analytical Method: EPA 6020 Preparation Method: EPA 3005A								
Arsenic, Dissolved	ND	ug/L	1.0	1	01/10/17 11:44	01/14/17 00:13	7440-38-2	
Chromium, Dissolved	ND	ug/L	1.0	1	01/10/17 11:44	01/14/17 00:13	7440-47-3	
Lead, Dissolved	ND	ug/L	1.0	1	01/10/17 11:44	01/14/17 00:13	7439-92-1	
Vanadium, Dissolved	ND	ug/L	5.0	1	01/10/17 11:44	01/14/17 00:13	7440-62-2	
7470 Mercury								
Analytical Method: EPA 7470 Preparation Method: EPA 7470								
Mercury	ND	ug/L	0.20	1	01/09/17 15:19	01/09/17 20:44	7439-97-6	
7470 Mercury, Dissolved (LF)								
Analytical Method: EPA 7470 Preparation Method: EPA 7470								
Mercury, Dissolved	ND	ug/L	0.20	1	01/10/17 12:30	01/10/17 17:45	7439-97-6	
8270 MSSV PAH by SIM SEP								
Analytical Method: EPA 8270 by SIM Preparation Method: EPA 3510								
Acenaphthene	ND	ug/L	0.10	1	01/07/17 13:27	01/11/17 13:32	83-32-9	
Acenaphthylene	ND	ug/L	0.10	1	01/07/17 13:27	01/11/17 13:32	208-96-8	
Anthracene	ND	ug/L	0.10	1	01/07/17 13:27	01/11/17 13:32	120-12-7	
Benzo(a)anthracene	ND	ug/L	0.10	1	01/07/17 13:27	01/11/17 13:32	56-55-3	
Benzo(a)pyrene	ND	ug/L	0.10	1	01/07/17 13:27	01/11/17 13:32	50-32-8	
Benzo(b)fluoranthene	ND	ug/L	0.10	1	01/07/17 13:27	01/11/17 13:32	205-99-2	
Benzo(g,h,i)perylene	ND	ug/L	0.10	1	01/07/17 13:27	01/11/17 13:32	191-24-2	
Benzo(k)fluoranthene	ND	ug/L	0.10	1	01/07/17 13:27	01/11/17 13:32	207-08-9	
Chrysene	ND	ug/L	0.10	1	01/07/17 13:27	01/11/17 13:32	218-01-9	
Dibenz(a,h)anthracene	ND	ug/L	0.10	1	01/07/17 13:27	01/11/17 13:32	53-70-3	
Fluoranthene	ND	ug/L	0.10	1	01/07/17 13:27	01/11/17 13:32	206-44-0	
Fluorene	ND	ug/L	0.10	1	01/07/17 13:27	01/11/17 13:32	86-73-7	
Indeno(1,2,3-cd)pyrene	ND	ug/L	0.10	1	01/07/17 13:27	01/11/17 13:32	193-39-5	
2-Methylnaphthalene	ND	ug/L	0.10	1	01/07/17 13:27	01/11/17 13:32	91-57-6	
Naphthalene	ND	ug/L	0.10	1	01/07/17 13:27	01/11/17 13:32	91-20-3	
Phenanthrene	ND	ug/L	0.10	1	01/07/17 13:27	01/11/17 13:32	85-01-8	
Pyrene	ND	ug/L	0.10	1	01/07/17 13:27	01/11/17 13:32	129-00-0	
Surrogates								
2-Fluorobiphenyl (S)	90	%	25-150	1	01/07/17 13:27	01/11/17 13:32	321-60-8	
Terphenyl-d14 (S)	82	%	25-150	1	01/07/17 13:27	01/11/17 13:32	1718-51-0	
8260 MSV Low Level								
Analytical Method: EPA 5030B/8260								
Acetone	4.9	ug/L	4.0	1		01/06/17 15:50	67-64-1	C9
Benzene	ND	ug/L	0.50	1		01/06/17 15:50	71-43-2	
Bromodichloromethane	ND	ug/L	0.50	1		01/06/17 15:50	75-27-4	
Bromoform	ND	ug/L	0.50	1		01/06/17 15:50	75-25-2	
Bromomethane	ND	ug/L	0.50	1		01/06/17 15:50	74-83-9	
2-Butanone (MEK)	ND	ug/L	2.0	1		01/06/17 15:50	78-93-3	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: PUMA TERMINAL MW-SAMPLING

Pace Project No.: 2048198

Sample: MW-MP3	Lab ID: 2048198016	Collected: 01/04/17 11:46	Received: 01/04/17 15:08	Matrix: Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV Low Level	Analytical Method: EPA 5030B/8260							
Carbon disulfide	ND	ug/L	1.0	1		01/06/17 15:50	75-15-0	L3
Carbon tetrachloride	ND	ug/L	0.50	1		01/06/17 15:50	56-23-5	
Chlorobenzene	ND	ug/L	0.50	1		01/06/17 15:50	108-90-7	
Chloroethane	ND	ug/L	0.50	1		01/06/17 15:50	75-00-3	
Chloroform	ND	ug/L	0.50	1		01/06/17 15:50	67-66-3	
Chloromethane	ND	ug/L	0.50	1		01/06/17 15:50	74-87-3	
1,2-Dibromo-3-chloropropane	ND	ug/L	0.20	1		01/06/17 15:50	96-12-8	
Dibromochloromethane	ND	ug/L	0.50	1		01/06/17 15:50	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	1		01/06/17 15:50	106-93-4	
Dichlorodifluoromethane	ND	ug/L	1.0	1		01/06/17 15:50	75-71-8	
1,1-Dichloroethane	ND	ug/L	0.50	1		01/06/17 15:50	75-34-3	
1,2-Dichloroethane	ND	ug/L	0.50	1		01/06/17 15:50	107-06-2	
1,1-Dichloroethene	ND	ug/L	0.50	1		01/06/17 15:50	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	1		01/06/17 15:50	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	0.50	1		01/06/17 15:50	156-60-5	
1,2-Dichloropropane	ND	ug/L	0.50	1		01/06/17 15:50	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	0.50	1		01/06/17 15:50	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	0.50	1		01/06/17 15:50	10061-02-6	
Ethylbenzene	ND	ug/L	0.50	1		01/06/17 15:50	100-41-4	
2-Hexanone	ND	ug/L	1.0	1		01/06/17 15:50	591-78-6	
Isopropylbenzene (Cumene)	ND	ug/L	1.0	1		01/06/17 15:50	98-82-8	
Methyl acetate	ND	ug/L	2.0	1		01/06/17 15:50	79-20-9	
Methylene Chloride	ND	ug/L	0.50	1		01/06/17 15:50	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	1.0	1		01/06/17 15:50	108-10-1	
Methyl-tert-butyl ether	ND	ug/L	0.50	1		01/06/17 15:50	1634-04-4	
Styrene	ND	ug/L	1.0	1		01/06/17 15:50	100-42-5	
1,1,2,2-Tetrachloroethane	ND	ug/L	0.50	1		01/06/17 15:50	79-34-5	
Tetrachloroethene	ND	ug/L	0.50	1		01/06/17 15:50	127-18-4	
Toluene	ND	ug/L	0.50	1		01/06/17 15:50	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	0.50	1		01/06/17 15:50	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	0.50	1		01/06/17 15:50	79-00-5	
Trichloroethene	ND	ug/L	0.50	1		01/06/17 15:50	79-01-6	
Trichlorofluoromethane	ND	ug/L	0.50	1		01/06/17 15:50	75-69-4	
Vinyl chloride	ND	ug/L	0.50	1		01/06/17 15:50	75-01-4	
m&p-Xylene	ND	ug/L	2.0	1		01/06/17 15:50	179601-23-1	
o-Xylene	ND	ug/L	1.0	1		01/06/17 15:50	95-47-6	
Surrogates								
Dibromofluoromethane (S)	108	%.	72-126	1		01/06/17 15:50	1868-53-7	
4-Bromofluorobenzene (S)	98	%.	68-124	1		01/06/17 15:50	460-00-4	
Toluene-d8 (S)	100	%.	79-119	1		01/06/17 15:50	2037-26-5	

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ANALYTICAL RESULTS

Project: PUMA TERMINAL MW-SAMPLING

Project No.: 2048198

Sample: MW-MP8	Lab ID: 2048198017	Collected: 01/04/17 13:33	Received: 01/04/17 15:08	Matrix: Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8015M DRO/ORO Organics								
Analytical Method: EPA 8015B Modified Preparation Method: EPA 3535								
Diesel Range Organic (C10-C28)	ND	mg/L	0.25	1	01/06/17 07:40	01/12/17 00:26		
Oil Range Organics (>C28-C40)	ND	mg/L	0.50	1	01/06/17 07:40	01/12/17 00:26		
Surrogates								
n-Pentacosane (S)	60	%	16-137	1	01/06/17 07:40	01/12/17 00:26	629-99-2	
o-Terphenyl (S)	58	%	10-121	1	01/06/17 07:40	01/12/17 00:26	84-15-1	
8021 GCV BTEX, MTBE, GRO								
Analytical Method: EPA 8015/8021								
Gasoline Range Organics	ND	ug/L	50.0	1		01/13/17 00:16		
Surrogates								
4-Bromofluorobenzene (S)	88	%	44-148	1		01/13/17 00:16	460-00-4	
6020 MET ICPMS								
Analytical Method: EPA 6020 Preparation Method: EPA 3010								
Arsenic	0.0019	mg/L	0.0010	1	01/09/17 15:32	01/13/17 22:55	7440-38-2	
Chromium	ND	mg/L	0.0010	1	01/09/17 15:32	01/13/17 22:55	7440-47-3	
Lead	ND	mg/L	0.0010	1	01/09/17 15:32	01/13/17 22:55	7439-92-1	
Vanadium	ND	mg/L	0.0050	1	01/09/17 15:32	01/13/17 22:55	7440-62-2	
6020 MET ICPMS, Dissolved (LF)								
Analytical Method: EPA 6020 Preparation Method: EPA 3005A								
Arsenic, Dissolved	1.3	ug/L	1.0	1	01/10/17 11:44	01/14/17 00:17	7440-38-2	
Chromium, Dissolved	ND	ug/L	1.0	1	01/10/17 11:44	01/14/17 00:17	7440-47-3	
Lead, Dissolved	ND	ug/L	1.0	1	01/10/17 11:44	01/14/17 00:17	7439-92-1	
Vanadium, Dissolved	ND	ug/L	5.0	1	01/10/17 11:44	01/14/17 00:17	7440-62-2	
7470 Mercury								
Analytical Method: EPA 7470 Preparation Method: EPA 7470								
Mercury	ND	ug/L	0.20	1	01/09/17 15:19	01/09/17 20:50	7439-97-6	
7470 Mercury, Dissolved (LF)								
Analytical Method: EPA 7470 Preparation Method: EPA 7470								
Mercury, Dissolved	ND	ug/L	0.20	1	01/10/17 12:30	01/10/17 17:47	7439-97-6	
8270 MSSV PAH by SIM SEP								
Analytical Method: EPA 8270 by SIM Preparation Method: EPA 3510								
Acenaphthene	ND	ug/L	0.10	1	01/07/17 13:27	01/10/17 18:59	83-32-9	
Acenaphthylene	ND	ug/L	0.10	1	01/07/17 13:27	01/10/17 18:59	208-96-8	
Anthracene	ND	ug/L	0.10	1	01/07/17 13:27	01/10/17 18:59	120-12-7	
Benzo(a)anthracene	ND	ug/L	0.10	1	01/07/17 13:27	01/10/17 18:59	56-55-3	
Benzo(a)pyrene	ND	ug/L	0.10	1	01/07/17 13:27	01/10/17 18:59	50-32-8	
Benzo(b)fluoranthene	ND	ug/L	0.10	1	01/07/17 13:27	01/10/17 18:59	205-99-2	
Benzo(g,h,i)perylene	ND	ug/L	0.10	1	01/07/17 13:27	01/10/17 18:59	191-24-2	
Benzo(k)fluoranthene	ND	ug/L	0.10	1	01/07/17 13:27	01/10/17 18:59	207-08-9	
Chrysene	ND	ug/L	0.10	1	01/07/17 13:27	01/10/17 18:59	218-01-9	
Dibenz(a,h)anthracene	ND	ug/L	0.10	1	01/07/17 13:27	01/10/17 18:59	53-70-3	
Fluoranthene	ND	ug/L	0.10	1	01/07/17 13:27	01/10/17 18:59	206-44-0	
Fluorene	ND	ug/L	0.10	1	01/07/17 13:27	01/10/17 18:59	86-73-7	
Indeno(1,2,3-cd)pyrene	ND	ug/L	0.10	1	01/07/17 13:27	01/10/17 18:59	193-39-5	
2-Methylnaphthalene	ND	ug/L	0.10	1	01/07/17 13:27	01/10/17 18:59	91-57-6	
Naphthalene	ND	ug/L	0.10	1	01/07/17 13:27	01/10/17 18:59	91-20-3	
Phenanthrene	ND	ug/L	0.10	1	01/07/17 13:27	01/10/17 18:59	85-01-8	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: PUMA TERMINAL MW-SAMPLING

Pace Project No.: 2048198

Sample: MW-MP8	Lab ID: 2048198017	Collected: 01/04/17 13:33	Received: 01/04/17 15:08	Matrix: Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8270 MSSV PAH by SIM SEP		Analytical Method: EPA 8270 by SIM Preparation Method: EPA 3510						
Pyrene	ND	ug/L	0.10	1	01/07/17 13:27	01/10/17 18:59	129-00-0	
Surrogates								
2-Fluorobiphenyl (S)	79	%.	25-150	1	01/07/17 13:27	01/10/17 18:59	321-60-8	
Terphenyl-d14 (S)	85	%.	25-150	1	01/07/17 13:27	01/10/17 18:59	1718-51-0	
8260 MSV Low Level		Analytical Method: EPA 5030B/8260						
Acetone	8.3	ug/L	4.0	1		01/06/17 16:07	67-64-1	C9
Benzene	ND	ug/L	0.50	1		01/06/17 16:07	71-43-2	
Bromodichloromethane	ND	ug/L	0.50	1		01/06/17 16:07	75-27-4	
Bromoform	ND	ug/L	0.50	1		01/06/17 16:07	75-25-2	
Bromomethane	ND	ug/L	0.50	1		01/06/17 16:07	74-83-9	
2-Butanone (MEK)	ND	ug/L	2.0	1		01/06/17 16:07	78-93-3	
Carbon disulfide	ND	ug/L	1.0	1		01/06/17 16:07	75-15-0	L3
Carbon tetrachloride	ND	ug/L	0.50	1		01/06/17 16:07	56-23-5	
Chlorobenzene	ND	ug/L	0.50	1		01/06/17 16:07	108-90-7	
Chloroethane	ND	ug/L	0.50	1		01/06/17 16:07	75-00-3	
Chloroform	ND	ug/L	0.50	1		01/06/17 16:07	67-66-3	
Chloromethane	ND	ug/L	0.50	1		01/06/17 16:07	74-87-3	
1,2-Dibromo-3-chloropropane	ND	ug/L	0.20	1		01/06/17 16:07	96-12-8	
Dibromochloromethane	ND	ug/L	0.50	1		01/06/17 16:07	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	1		01/06/17 16:07	106-93-4	
Dichlorodifluoromethane	ND	ug/L	1.0	1		01/06/17 16:07	75-71-8	
1,1-Dichloroethane	ND	ug/L	0.50	1		01/06/17 16:07	75-34-3	
1,2-Dichloroethane	ND	ug/L	0.50	1		01/06/17 16:07	107-06-2	
1,1-Dichloroethene	ND	ug/L	0.50	1		01/06/17 16:07	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	1		01/06/17 16:07	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	0.50	1		01/06/17 16:07	156-60-5	
1,2-Dichloropropane	ND	ug/L	0.50	1		01/06/17 16:07	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	0.50	1		01/06/17 16:07	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	0.50	1		01/06/17 16:07	10061-02-6	
Ethylbenzene	ND	ug/L	0.50	1		01/06/17 16:07	100-41-4	
2-Hexanone	ND	ug/L	1.0	1		01/06/17 16:07	591-78-6	
Isopropylbenzene (Cumene)	ND	ug/L	1.0	1		01/06/17 16:07	98-82-8	
Methyl acetate	ND	ug/L	2.0	1		01/06/17 16:07	79-20-9	
Methylene Chloride	ND	ug/L	0.50	1		01/06/17 16:07	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	1.0	1		01/06/17 16:07	108-10-1	
Methyl-tert-butyl ether	ND	ug/L	0.50	1		01/06/17 16:07	1634-04-4	
Styrene	ND	ug/L	1.0	1		01/06/17 16:07	100-42-5	
1,1,2,2-Tetrachloroethane	ND	ug/L	0.50	1		01/06/17 16:07	79-34-5	
Tetrachloroethene	ND	ug/L	0.50	1		01/06/17 16:07	127-18-4	
Toluene	ND	ug/L	0.50	1		01/06/17 16:07	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	0.50	1		01/06/17 16:07	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	0.50	1		01/06/17 16:07	79-00-5	
Trichloroethene	ND	ug/L	0.50	1		01/06/17 16:07	79-01-6	
Trichlorofluoromethane	ND	ug/L	0.50	1		01/06/17 16:07	75-69-4	
Vinyl chloride	ND	ug/L	0.50	1		01/06/17 16:07	75-01-4	
m&p-Xylene	ND	ug/L	2.0	1		01/06/17 16:07	179601-23-1	

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ANALYTICAL RESULTS

Project: PUMA TERMINAL MW-SAMPLING

Pace Project No.: 2048198

Sample: MW-MP8		Lab ID: 2048198017	Collected: 01/04/17 13:33	Received: 01/04/17 15:08	Matrix: Water			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV Low Level		Analytical Method: EPA 5030B/8260						
o-Xylene	ND	ug/L	1.0	1		01/06/17 16:07	95-47-6	
Surrogates								
Dibromofluoromethane (S)	107	%.	72-126	1		01/06/17 16:07	1868-53-7	
4-Bromofluorobenzene (S)	98	%.	68-124	1		01/06/17 16:07	460-00-4	
Toluene-d8 (S)	101	%.	79-119	1		01/06/17 16:07	2037-26-5	

Sample: TB-010417-2		Lab ID: 2048198018	Collected: 01/04/17 00:00	Received: 01/04/17 15:08	Matrix: Water			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8021 GCV BTEX, MTBE, GRO		Analytical Method: EPA 8015/8021						
Gasoline Range Organics	ND	ug/L	50.0	1		01/13/17 00:44		
Surrogates								
4-Bromofluorobenzene (S)	87	%.	44-148	1		01/13/17 00:44	460-00-4	

8260 MSV Low Level		Analytical Method: EPA 5030B/8260						
Acetone	180	ug/L	4.0	1		01/06/17 16:25	67-64-1	
Benzene	ND	ug/L	0.50	1		01/06/17 16:25	71-43-2	
Bromodichloromethane	ND	ug/L	0.50	1		01/06/17 16:25	75-27-4	
Bromoform	ND	ug/L	0.50	1		01/06/17 16:25	75-25-2	
Bromomethane	ND	ug/L	0.50	1		01/06/17 16:25	74-83-9	
2-Butanone (MEK)	ND	ug/L	2.0	1		01/06/17 16:25	78-93-3	
Carbon disulfide	ND	ug/L	1.0	1		01/06/17 16:25	75-15-0	L3
Carbon tetrachloride	ND	ug/L	0.50	1		01/06/17 16:25	56-23-5	
Chlorobenzene	ND	ug/L	0.50	1		01/06/17 16:25	108-90-7	
Chloroethane	ND	ug/L	0.50	1		01/06/17 16:25	75-00-3	
Chloroform	ND	ug/L	0.50	1		01/06/17 16:25	67-66-3	
Chloromethane	ND	ug/L	0.50	1		01/06/17 16:25	74-87-3	
1,2-Dibromo-3-chloropropane	ND	ug/L	0.20	1		01/06/17 16:25	96-12-8	
Dibromochloromethane	ND	ug/L	0.50	1		01/06/17 16:25	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	1		01/06/17 16:25	106-93-4	
Dichlorodifluoromethane	ND	ug/L	1.0	1		01/06/17 16:25	75-71-8	
1,1-Dichloroethane	ND	ug/L	0.50	1		01/06/17 16:25	75-34-3	
1,2-Dichloroethane	ND	ug/L	0.50	1		01/06/17 16:25	107-06-2	
1,1-Dichloroethene	ND	ug/L	0.50	1		01/06/17 16:25	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	1		01/06/17 16:25	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	0.50	1		01/06/17 16:25	156-60-5	
1,2-Dichloropropane	ND	ug/L	0.50	1		01/06/17 16:25	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	0.50	1		01/06/17 16:25	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	0.50	1		01/06/17 16:25	10061-02-6	
Ethylbenzene	ND	ug/L	0.50	1		01/06/17 16:25	100-41-4	
2-Hexanone	ND	ug/L	1.0	1		01/06/17 16:25	591-78-6	
Isopropylbenzene (Cumene)	ND	ug/L	1.0	1		01/06/17 16:25	98-82-8	
Methyl acetate	ND	ug/L	2.0	1		01/06/17 16:25	79-20-9	
Methylene Chloride	ND	ug/L	0.50	1		01/06/17 16:25	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	1.0	1		01/06/17 16:25	108-10-1	

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ANALYTICAL RESULTS

Project: PUMA TERMINAL MW-SAMPLING

Pace Project No.: 2048198

Sample: TB-010417-2		Lab ID: 2048198018		Collected: 01/04/17 00:00		Received: 01/04/17 15:08		Matrix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual	
8260 MSV Low Level		Analytical Method: EPA 5030B/8260							
Methyl-tert-butyl ether	ND	ug/L	0.50	1		01/06/17 16:25	1634-04-4		
Styrene	ND	ug/L	1.0	1		01/06/17 16:25	100-42-5		
1,1,2,2-Tetrachloroethane	ND	ug/L	0.50	1		01/06/17 16:25	79-34-5		
Tetrachloroethene	ND	ug/L	0.50	1		01/06/17 16:25	127-18-4		
Toluene	ND	ug/L	0.50	1		01/06/17 16:25	108-88-3		
1,1,1-Trichloroethane	ND	ug/L	0.50	1		01/06/17 16:25	71-55-6		
1,1,2-Trichloroethane	ND	ug/L	0.50	1		01/06/17 16:25	79-00-5		
Trichloroethene	ND	ug/L	0.50	1		01/06/17 16:25	79-01-6		
Trichlorofluoromethane	ND	ug/L	0.50	1		01/06/17 16:25	75-69-4		
Vinyl chloride	ND	ug/L	0.50	1		01/06/17 16:25	75-01-4		
m&p-Xylene	ND	ug/L	2.0	1		01/06/17 16:25	179601-23-1		
o-Xylene	ND	ug/L	1.0	1		01/06/17 16:25	95-47-6		
Surrogates									
Dibromofluoromethane (S)	106	%	72-126	1		01/06/17 16:25	1868-53-7		
4-Bromofluorobenzene (S)	97	%	68-124	1		01/06/17 16:25	460-00-4		
Toluene-d8 (S)	100	%	79-119	1		01/06/17 16:25	2037-26-5		

Sample: MW-NDP		Lab ID: 2048198019		Collected: 01/04/17 14:22		Received: 01/04/17 15:08		Matrix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual	
8015M DRO/ORO Organics		Analytical Method: EPA 8015B Modified Preparation Method: EPA 3535							
Diesel Range Organic (C10-C28)	ND	mg/L	0.25	1	01/06/17 07:40	01/12/17 00:53			
Oil Range Organics (>C28-C40)	ND	mg/L	0.50	1	01/06/17 07:40	01/12/17 00:53			
Surrogates									
n-Pentacosane (S)	38	%	16-137	1	01/06/17 07:40	01/12/17 00:53	629-99-2		
o-Terphenyl (S)	55	%	10-121	1	01/06/17 07:40	01/12/17 00:53	84-15-1		
8021 GCV BTEX, MTBE, GRO		Analytical Method: EPA 8015/8021							
Gasoline Range Organics	ND	ug/L	50.0	1		01/13/17 01:11			
Surrogates									
4-Bromofluorobenzene (S)	89	%	44-148	1		01/13/17 01:11	460-00-4		
6020 MET ICPMS		Analytical Method: EPA 6020 Preparation Method: EPA 3010							
Arsenic	ND	mg/L	0.0010	1	01/09/17 15:32	01/13/17 22:59	7440-38-2		
Chromium	ND	mg/L	0.0010	1	01/09/17 15:32	01/13/17 22:59	7440-47-3		
Lead	ND	mg/L	0.0010	1	01/09/17 15:32	01/13/17 22:59	7439-92-1		
Vanadium	ND	mg/L	0.0050	1	01/09/17 15:32	01/13/17 22:59	7440-62-2		
6020 MET ICPMS, Dissolved (LF)		Analytical Method: EPA 6020 Preparation Method: EPA 3005A							
Arsenic, Dissolved	ND	ug/L	1.0	1	01/10/17 11:44	01/14/17 00:29	7440-38-2		
Chromium, Dissolved	ND	ug/L	1.0	1	01/10/17 11:44	01/14/17 00:29	7440-47-3		
Lead, Dissolved	ND	ug/L	1.0	1	01/10/17 11:44	01/14/17 00:29	7439-92-1		
Vanadium, Dissolved	ND	ug/L	5.0	1	01/10/17 11:44	01/14/17 00:29	7440-62-2		

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ANALYTICAL RESULTS

Project: PUMA TERMINAL MW-SAMPLING

Pace Project No.: 2048198

Sample: MW-NDP	Lab ID: 2048198019	Collected: 01/04/17 14:22	Received: 01/04/17 15:08	Matrix: Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
7470 Mercury		Analytical Method: EPA 7470 Preparation Method: EPA 7470						
Mercury	ND	ug/L	0.20	1	01/09/17 15:19	01/09/17 20:52	7439-97-6	
7470 Mercury, Dissolved (LF)		Analytical Method: EPA 7470 Preparation Method: EPA 7470						
Mercury, Dissolved	ND	ug/L	0.20	1	01/10/17 12:30	01/10/17 17:49	7439-97-6	
8270 MSSV PAH by SIM SEP		Analytical Method: EPA 8270 by SIM Preparation Method: EPA 3510						
Acenaphthene	ND	ug/L	0.10	1	01/07/17 13:27	01/10/17 19:19	83-32-9	
Acenaphthylene	ND	ug/L	0.10	1	01/07/17 13:27	01/10/17 19:19	208-96-8	
Anthracene	ND	ug/L	0.10	1	01/07/17 13:27	01/10/17 19:19	120-12-7	
Benzo(a)anthracene	ND	ug/L	0.10	1	01/07/17 13:27	01/10/17 19:19	56-55-3	
Benzo(a)pyrene	ND	ug/L	0.10	1	01/07/17 13:27	01/10/17 19:19	50-32-8	
Benzo(b)fluoranthene	ND	ug/L	0.10	1	01/07/17 13:27	01/10/17 19:19	205-99-2	
Benzo(g,h,i)perylene	ND	ug/L	0.10	1	01/07/17 13:27	01/10/17 19:19	191-24-2	
Benzo(k)fluoranthene	ND	ug/L	0.10	1	01/07/17 13:27	01/10/17 19:19	207-08-9	
Chrysene	ND	ug/L	0.10	1	01/07/17 13:27	01/10/17 19:19	218-01-9	
Dibenz(a,h)anthracene	ND	ug/L	0.10	1	01/07/17 13:27	01/10/17 19:19	53-70-3	
Fluoranthene	ND	ug/L	0.10	1	01/07/17 13:27	01/10/17 19:19	206-44-0	
Fluorene	ND	ug/L	0.10	1	01/07/17 13:27	01/10/17 19:19	86-73-7	
Indeno(1,2,3-cd)pyrene	ND	ug/L	0.10	1	01/07/17 13:27	01/10/17 19:19	193-39-5	
2-Methylnaphthalene	ND	ug/L	0.10	1	01/07/17 13:27	01/10/17 19:19	91-57-6	
Naphthalene	ND	ug/L	0.10	1	01/07/17 13:27	01/10/17 19:19	91-20-3	
Phenanthrene	ND	ug/L	0.10	1	01/07/17 13:27	01/10/17 19:19	85-01-8	
Pyrene	ND	ug/L	0.10	1	01/07/17 13:27	01/10/17 19:19	129-00-0	
Surrogates								
2-Fluorobiphenyl (S)	77	%	25-150	1	01/07/17 13:27	01/10/17 19:19	321-60-8	
Terphenyl-d14 (S)	78	%	25-150	1	01/07/17 13:27	01/10/17 19:19	1718-51-0	
8260 MSV Low Level		Analytical Method: EPA 5030B/8260						
Acetone	15.5	ug/L	4.0	1		01/06/17 16:43	67-64-1	C9
Benzene	ND	ug/L	0.50	1		01/06/17 16:43	71-43-2	
Bromodichloromethane	ND	ug/L	0.50	1		01/06/17 16:43	75-27-4	
Bromoform	ND	ug/L	0.50	1		01/06/17 16:43	75-25-2	
Bromomethane	ND	ug/L	0.50	1		01/06/17 16:43	74-83-9	
2-Butanone (MEK)	ND	ug/L	2.0	1		01/06/17 16:43	78-93-3	
Carbon disulfide	ND	ug/L	1.0	1		01/06/17 16:43	75-15-0	L3
Carbon tetrachloride	ND	ug/L	0.50	1		01/06/17 16:43	56-23-5	
Chlorobenzene	ND	ug/L	0.50	1		01/06/17 16:43	108-90-7	
Chloroethane	ND	ug/L	0.50	1		01/06/17 16:43	75-00-3	
Chloroform	ND	ug/L	0.50	1		01/06/17 16:43	67-66-3	
Chloromethane	ND	ug/L	0.50	1		01/06/17 16:43	74-87-3	
1,2-Dibromo-3-chloropropane	ND	ug/L	0.20	1		01/06/17 16:43	96-12-8	
Dibromochloromethane	ND	ug/L	0.50	1		01/06/17 16:43	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	1		01/06/17 16:43	106-93-4	
Dichlorodifluoromethane	ND	ug/L	1.0	1		01/06/17 16:43	75-71-8	
1,1-Dichloroethane	ND	ug/L	0.50	1		01/06/17 16:43	75-34-3	
1,2-Dichloroethane	ND	ug/L	0.50	1		01/06/17 16:43	107-06-2	

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ANALYTICAL RESULTS

Project: PUMA TERMINAL MW-SAMPLING

Pace Project No.: 2048198

Sample: MW-NDP		Lab ID: 2048198019	Collected: 01/04/17 14:22	Received: 01/04/17 15:08	Matrix: Water			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV Low Level		Analytical Method: EPA 5030B/8260						
1,1-Dichloroethene	ND	ug/L	0.50	1		01/06/17 16:43	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	1		01/06/17 16:43	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	0.50	1		01/06/17 16:43	156-60-5	
1,2-Dichloropropane	ND	ug/L	0.50	1		01/06/17 16:43	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	0.50	1		01/06/17 16:43	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	0.50	1		01/06/17 16:43	10061-02-6	
Ethylbenzene	ND	ug/L	0.50	1		01/06/17 16:43	100-41-4	
2-Hexanone	ND	ug/L	1.0	1		01/06/17 16:43	591-78-6	
Isopropylbenzene (Cumene)	ND	ug/L	1.0	1		01/06/17 16:43	98-82-8	
Methyl acetate	ND	ug/L	2.0	1		01/06/17 16:43	79-20-9	
Methylene Chloride	ND	ug/L	0.50	1		01/06/17 16:43	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	1.0	1		01/06/17 16:43	108-10-1	
Methyl-tert-butyl ether	2.5	ug/L	0.50	1		01/06/17 16:43	1634-04-4	
Styrene	ND	ug/L	1.0	1		01/06/17 16:43	100-42-5	
1,1,2,2-Tetrachloroethane	ND	ug/L	0.50	1		01/06/17 16:43	79-34-5	
Tetrachloroethene	ND	ug/L	0.50	1		01/06/17 16:43	127-18-4	
Toluene	ND	ug/L	0.50	1		01/06/17 16:43	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	0.50	1		01/06/17 16:43	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	0.50	1		01/06/17 16:43	79-00-5	
Trichloroethene	ND	ug/L	0.50	1		01/06/17 16:43	79-01-6	
Trichlorofluoromethane	ND	ug/L	0.50	1		01/06/17 16:43	75-69-4	
Vinyl chloride	ND	ug/L	0.50	1		01/06/17 16:43	75-01-4	
m&p-Xylene	ND	ug/L	2.0	1		01/06/17 16:43	179601-23-1	
o-Xylene	ND	ug/L	1.0	1		01/06/17 16:43	95-47-6	
Surrogates								
Dibromofluoromethane (S)	106	%	72-126	1		01/06/17 16:43	1868-53-7	
4-Bromofluorobenzene (S)	97	%	68-124	1		01/06/17 16:43	460-00-4	
Toluene-d8 (S)	102	%	79-119	1		01/06/17 16:43	2037-26-5	

Sample: FB-010417		Lab ID: 2048198020	Collected: 01/04/17 14:30	Received: 01/04/17 15:08	Matrix: Water			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8021 GCV BTEX, MTBE, GRO		Analytical Method: EPA 8015/8021						
Gasoline Range Organics	ND	ug/L	50.0	1		01/13/17 01:38		
Surrogates								
4-Bromofluorobenzene (S)	88	%	44-148	1		01/13/17 01:38	460-00-4	
8260 MSV Low Level		Analytical Method: EPA 5030B/8260						
Acetone	17.3	ug/L	4.0	1		01/06/17 17:01	67-64-1	C9
Benzene	ND	ug/L	0.50	1		01/06/17 17:01	71-43-2	
Bromodichloromethane	ND	ug/L	0.50	1		01/06/17 17:01	75-27-4	
Bromoform	ND	ug/L	0.50	1		01/06/17 17:01	75-25-2	
Bromomethane	ND	ug/L	0.50	1		01/06/17 17:01	74-83-9	
2-Butanone (MEK)	ND	ug/L	2.0	1		01/06/17 17:01	78-93-3	
Carbon disulfide	ND	ug/L	1.0	1		01/06/17 17:01	75-15-0	L3

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: PUMA TERMINAL MW-SAMPLING

Pace Project No.: 2048198

Sample: FB-010417	Lab ID: 2048198020	Collected: 01/04/17 14:30	Received: 01/04/17 15:08	Matrix: Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV Low Level		Analytical Method: EPA 5030B/8260						
Carbon tetrachloride	ND	ug/L	0.50	1		01/06/17 17:01	56-23-5	
Chlorobenzene	ND	ug/L	0.50	1		01/06/17 17:01	108-90-7	
Chloroethane	ND	ug/L	0.50	1		01/06/17 17:01	75-00-3	
Chloroform	ND	ug/L	0.50	1		01/06/17 17:01	67-66-3	
Chloromethane	ND	ug/L	0.50	1		01/06/17 17:01	74-87-3	
1,2-Dibromo-3-chloropropane	ND	ug/L	0.20	1		01/06/17 17:01	96-12-8	
Dibromochloromethane	ND	ug/L	0.50	1		01/06/17 17:01	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	1		01/06/17 17:01	106-93-4	
Dichlorodifluoromethane	ND	ug/L	1.0	1		01/06/17 17:01	75-71-8	
1,1-Dichloroethane	ND	ug/L	0.50	1		01/06/17 17:01	75-34-3	
1,2-Dichloroethane	ND	ug/L	0.50	1		01/06/17 17:01	107-06-2	
1,1-Dichloroethene	ND	ug/L	0.50	1		01/06/17 17:01	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	1		01/06/17 17:01	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	0.50	1		01/06/17 17:01	156-60-5	
1,2-Dichloropropane	ND	ug/L	0.50	1		01/06/17 17:01	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	0.50	1		01/06/17 17:01	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	0.50	1		01/06/17 17:01	10061-02-6	
Ethylbenzene	ND	ug/L	0.50	1		01/06/17 17:01	100-41-4	
2-Hexanone	ND	ug/L	1.0	1		01/06/17 17:01	591-78-6	
Isopropylbenzene (Cumene)	ND	ug/L	1.0	1		01/06/17 17:01	98-82-8	
Methyl acetate	ND	ug/L	2.0	1		01/06/17 17:01	79-20-9	
Methylene Chloride	ND	ug/L	0.50	1		01/06/17 17:01	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	1.0	1		01/06/17 17:01	108-10-1	
Methyl-tert-butyl ether	ND	ug/L	0.50	1		01/06/17 17:01	1634-04-4	
Styrene	ND	ug/L	1.0	1		01/06/17 17:01	100-42-5	
1,1,2,2-Tetrachloroethane	ND	ug/L	0.50	1		01/06/17 17:01	79-34-5	
Tetrachloroethene	ND	ug/L	0.50	1		01/06/17 17:01	127-18-4	
Toluene	ND	ug/L	0.50	1		01/06/17 17:01	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	0.50	1		01/06/17 17:01	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	0.50	1		01/06/17 17:01	79-00-5	
Trichloroethene	ND	ug/L	0.50	1		01/06/17 17:01	79-01-6	
Trichlorofluoromethane	ND	ug/L	0.50	1		01/06/17 17:01	75-69-4	
Vinyl chloride	ND	ug/L	0.50	1		01/06/17 17:01	75-01-4	
m&p-Xylene	ND	ug/L	2.0	1		01/06/17 17:01	179601-23-1	
o-Xylene	ND	ug/L	1.0	1		01/06/17 17:01	95-47-6	
Surrogates								
Dibromofluoromethane (S)	104	%.	72-126	1		01/06/17 17:01	1868-53-7	
4-Bromofluorobenzene (S)	97	%.	68-124	1		01/06/17 17:01	460-00-4	
Toluene-d8 (S)	100	%.	79-119	1		01/06/17 17:01	2037-26-5	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: PUMA TERMINAL MW-SAMPLING

Pace Project No.: 2048198

QC Batch: 71479 Analysis Method: EPA 8015/8021
 QC Batch Method: EPA 8015/8021 Analysis Description: 8021 W GCV BTEX, MTBE, GRO
 Associated Lab Samples: 2048198001, 2048198002, 2048198003, 2048198004, 2048198005, 2048198006, 2048198007, 2048198008,
 2048198009, 2048198010, 2048198011, 2048198012, 2048198013, 2048198014, 2048198015, 2048198016,
 2048198017, 2048198018, 2048198019, 2048198020

METHOD BLANK: 298998 Matrix: Water
 Associated Lab Samples: 2048198001, 2048198002, 2048198003, 2048198004, 2048198005, 2048198006, 2048198007, 2048198008,
 2048198009, 2048198010, 2048198011, 2048198012, 2048198013, 2048198014, 2048198015, 2048198016,
 2048198017, 2048198018, 2048198019, 2048198020

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Gasoline Range Organics	ug/L	ND	50.0	01/06/17 17:15	
4-Bromofluorobenzene (S)	%.	86	44-148	01/06/17 17:15	

METHOD BLANK: 301228 Matrix: Water
 Associated Lab Samples: 2048198001, 2048198002, 2048198003, 2048198004, 2048198005, 2048198006, 2048198007, 2048198008,
 2048198009, 2048198010, 2048198011, 2048198012, 2048198013, 2048198014, 2048198015, 2048198016,
 2048198017, 2048198018, 2048198019, 2048198020

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Gasoline Range Organics	ug/L	ND	50.0	01/12/17 16:49	
4-Bromofluorobenzene (S)	%.	87	44-148	01/12/17 16:49	

LABORATORY CONTROL SAMPLE: 298999

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Gasoline Range Organics	ug/L	500	440	88	61-136	
4-Bromofluorobenzene (S)	%.			91	44-148	

LABORATORY CONTROL SAMPLE: 301229

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Gasoline Range Organics	ug/L	500	436	87	61-136	
4-Bromofluorobenzene (S)	%.			93	44-148	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 299000 299001

Parameter	Units	299000		299001		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result						
Gasoline Range Organics	ug/L	ND	500	432	430	79	79	15-147	1	20	
4-Bromofluorobenzene (S)	%.					90	91	44-148			

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QUALITY CONTROL DATA

Project: PUMA TERMINAL MW-SAMPLING

Pace Project No.: 2048198

QC Batch: 71616 Analysis Method: EPA 7470
 QC Batch Method: EPA 7470 Analysis Description: 7470 Mercury
 Associated Lab Samples: 2048198002, 2048198003, 2048198004, 2048198005, 2048198006, 2048198007, 2048198008, 2048198009,
 2048198010, 2048198013, 2048198014, 2048198015, 2048198016, 2048198017, 2048198019

METHOD BLANK: 299680 Matrix: Water
 Associated Lab Samples: 2048198002, 2048198003, 2048198004, 2048198005, 2048198006, 2048198007, 2048198008, 2048198009,
 2048198010, 2048198013, 2048198014, 2048198015, 2048198016, 2048198017, 2048198019

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Mercury	ug/L	ND	0.20	01/09/17 20:07	

LABORATORY CONTROL SAMPLE: 299681

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury	ug/L	1	1.0	105	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 299682 299683

Parameter	Units	2048198006 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Mercury	ug/L	ND	1	1	0.63	0.63	63	63	75-125	0	20	M1

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QUALITY CONTROL DATA

Project: PUMA TERMINAL MW-SAMPLING
Pace Project No.: 2048198

QC Batch: 71675 Analysis Method: EPA 7470
QC Batch Method: EPA 7470 Analysis Description: 7470 Mercury Dissolved
Associated Lab Samples: 2048198002, 2048198003, 2048198004, 2048198005, 2048198006, 2048198007, 2048198008, 2048198009, 2048198010, 2048198013, 2048198014, 2048198015, 2048198016, 2048198017, 2048198019

METHOD BLANK: 299988 Matrix: Water
Associated Lab Samples: 2048198002, 2048198003, 2048198004, 2048198005, 2048198006, 2048198007, 2048198008, 2048198009, 2048198010, 2048198013, 2048198014, 2048198015, 2048198016, 2048198017, 2048198019

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Mercury, Dissolved	ug/L	ND	0.20	01/10/17 16:51	

LABORATORY CONTROL SAMPLE: 299989

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury, Dissolved	ug/L	1	1.1	108	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 299990 299991

Parameter	Units	2048198006 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Mercury, Dissolved	ug/L	ND	1	1	0.73	0.70	70	67	75-125	4	20	M1

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QUALITY CONTROL DATA

Project: PUMA TERMINAL MW-SAMPLING

Pace Project No.: 2048198

QC Batch: 71620 Analysis Method: EPA 6020
 QC Batch Method: EPA 3010 Analysis Description: 6020 MET
 Associated Lab Samples: 2048198002, 2048198003, 2048198004, 2048198005, 2048198006, 2048198007, 2048198008, 2048198009,
 2048198010, 2048198013, 2048198014, 2048198015, 2048198016, 2048198017, 2048198019

METHOD BLANK: 299696 Matrix: Water
 Associated Lab Samples: 2048198002, 2048198003, 2048198004, 2048198005, 2048198006, 2048198007, 2048198008, 2048198009,
 2048198010, 2048198013, 2048198014, 2048198015, 2048198016, 2048198017, 2048198019

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Arsenic	mg/L	ND	0.0010	01/13/17 19:07	
Chromium	mg/L	ND	0.0010	01/13/17 19:07	
Lead	mg/L	ND	0.0010	01/13/17 19:07	
Vanadium	mg/L	ND	0.0050	01/13/17 19:07	

LABORATORY CONTROL SAMPLE: 299697

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Arsenic	mg/L	.02	0.020	102	83-115	
Chromium	mg/L	.02	0.020	100	85-115	
Lead	mg/L	.02	0.019	97	84-115	
Vanadium	mg/L	.02	0.020	100	81-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 299698 299699

Parameter	Units	2048198006		299699		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		Result	MS Spike Conc.	MSD Spike Conc.	MS Result						
Arsenic	mg/L	0.0052	.02	.02	0.024	0.024	94	93	80-120	1	20
Chromium	mg/L	ND	.02	.02	0.020	0.020	95	93	80-120	1	20
Lead	mg/L	ND	.02	.02	0.021	0.021	105	104	80-120	1	20
Vanadium	mg/L	ND	.02	.02	0.018	0.017	88	85	80-120	3	20

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QUALITY CONTROL DATA

Project: PUMA TERMINAL MW-SAMPLING
Pace Project No.: 2048198

QC Batch: 71681 Analysis Method: EPA 6020
QC Batch Method: EPA 3005A Analysis Description: 6020 MET Dissolved
Associated Lab Samples: 2048198002, 2048198003, 2048198004, 2048198005, 2048198006, 2048198007, 2048198008, 2048198009, 2048198010, 2048198013, 2048198014, 2048198015, 2048198016, 2048198017, 2048198019

METHOD BLANK: 300004 Matrix: Water
Associated Lab Samples: 2048198002, 2048198003, 2048198004, 2048198005, 2048198006, 2048198007, 2048198008, 2048198009, 2048198010, 2048198013, 2048198014, 2048198015, 2048198016, 2048198017, 2048198019

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Arsenic, Dissolved	ug/L	ND	1.0	01/13/17 19:22	
Chromium, Dissolved	ug/L	ND	1.0	01/13/17 19:22	
Lead, Dissolved	ug/L	ND	1.0	01/13/17 19:22	
Vanadium, Dissolved	ug/L	ND	5.0	01/13/17 19:22	

LABORATORY CONTROL SAMPLE: 300005

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Arsenic, Dissolved	ug/L	20	20.3	102	80-120	
Chromium, Dissolved	ug/L	20	19.9	100	80-120	
Lead, Dissolved	ug/L	20	19.3	96	80-120	
Vanadium, Dissolved	ug/L	20	20.2	101	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 300006 300007

Parameter	Units	300006		300007		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		2048198006 Result	MS Spike Conc.	MSD Spike Conc.	MS Result						
Arsenic, Dissolved	ug/L	1.6	20	20	20.7	20.5	96	95	75-125	1	20
Chromium, Dissolved	ug/L	ND	20	20	18.7	18.6	93	93	75-125	0	20
Lead, Dissolved	ug/L	ND	20	20	20.7	20.8	104	104	75-125	0	20
Vanadium, Dissolved	ug/L	ND	20	20	17.3	17.3	87	87	75-125	0	20

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QUALITY CONTROL DATA

Project: PUMA TERMINAL MW-SAMPLING

Pace Project No.: 2048198

QC Batch: 71490 Analysis Method: EPA 5030B/8260
 QC Batch Method: EPA 5030B/8260 Analysis Description: 8260 MSV Low Level
 Associated Lab Samples: 2048198001, 2048198002, 2048198003, 2048198004, 2048198005, 2048198006, 2048198007, 2048198008,
 2048198009, 2048198010, 2048198011, 2048198012, 2048198013, 2048198014, 2048198015, 2048198016,
 2048198017, 2048198018, 2048198019, 2048198020

METHOD BLANK: 299028 Matrix: Water

Associated Lab Samples: 2048198001, 2048198002, 2048198003, 2048198004, 2048198005, 2048198006, 2048198007, 2048198008,
 2048198009, 2048198010, 2048198011, 2048198012, 2048198013, 2048198014, 2048198015, 2048198016,
 2048198017, 2048198018, 2048198019, 2048198020

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
1,1,1-Trichloroethane	ug/L	ND	0.50	01/06/17 09:55	
1,1,2,2-Tetrachloroethane	ug/L	ND	0.50	01/06/17 09:55	
1,1,2-Trichloroethane	ug/L	ND	0.50	01/06/17 09:55	
1,1-Dichloroethane	ug/L	ND	0.50	01/06/17 09:55	
1,1-Dichloroethene	ug/L	ND	0.50	01/06/17 09:55	
1,2-Dibromo-3-chloropropane	ug/L	ND	0.20	01/06/17 09:55	
1,2-Dibromoethane (EDB)	ug/L	ND	1.0	01/06/17 09:55	
1,2-Dichloroethane	ug/L	ND	0.50	01/06/17 09:55	
1,2-Dichloropropane	ug/L	ND	0.50	01/06/17 09:55	
2-Butanone (MEK)	ug/L	ND	2.0	01/06/17 09:55	
2-Hexanone	ug/L	ND	1.0	01/06/17 09:55	
4-Methyl-2-pentanone (MIBK)	ug/L	ND	1.0	01/06/17 09:55	
Acetone	ug/L	ND	4.0	01/06/17 09:55	
Benzene	ug/L	ND	0.50	01/06/17 09:55	
Bromodichloromethane	ug/L	ND	0.50	01/06/17 09:55	
Bromoform	ug/L	ND	0.50	01/06/17 09:55	
Bromomethane	ug/L	ND	0.50	01/06/17 09:55	
Carbon disulfide	ug/L	ND	1.0	01/06/17 09:55	
Carbon tetrachloride	ug/L	ND	0.50	01/06/17 09:55	
Chlorobenzene	ug/L	ND	0.50	01/06/17 09:55	
Chloroethane	ug/L	ND	0.50	01/06/17 09:55	
Chloroform	ug/L	ND	0.50	01/06/17 09:55	
Chloromethane	ug/L	ND	0.50	01/06/17 09:55	
cis-1,2-Dichloroethene	ug/L	ND	1.0	01/06/17 09:55	
cis-1,3-Dichloropropene	ug/L	ND	0.50	01/06/17 09:55	
Dibromochloromethane	ug/L	ND	0.50	01/06/17 09:55	
Dichlorodifluoromethane	ug/L	ND	1.0	01/06/17 09:55	
Ethylbenzene	ug/L	ND	0.50	01/06/17 09:55	
Isopropylbenzene (Cumene)	ug/L	ND	1.0	01/06/17 09:55	
m&p-Xylene	ug/L	ND	2.0	01/06/17 09:55	
Methyl acetate	ug/L	ND	2.0	01/06/17 09:55	
Methyl-tert-butyl ether	ug/L	ND	0.50	01/06/17 09:55	
Methylene Chloride	ug/L	ND	0.50	01/06/17 09:55	
o-Xylene	ug/L	ND	1.0	01/06/17 09:55	
Styrene	ug/L	ND	1.0	01/06/17 09:55	
Tetrachloroethene	ug/L	ND	0.50	01/06/17 09:55	
Toluene	ug/L	ND	0.50	01/06/17 09:55	
trans-1,2-Dichloroethene	ug/L	ND	0.50	01/06/17 09:55	

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QUALITY CONTROL DATA

Project: PUMA TERMINAL MW-SAMPLING

Pace Project No.: 2048198

METHOD BLANK: 299028

Matrix: Water

Associated Lab Samples: 2048198001, 2048198002, 2048198003, 2048198004, 2048198005, 2048198006, 2048198007, 2048198008, 2048198009, 2048198010, 2048198011, 2048198012, 2048198013, 2048198014, 2048198015, 2048198016, 2048198017, 2048198018, 2048198019, 2048198020

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
trans-1,3-Dichloropropene	ug/L	ND	0.50	01/06/17 09:55	
Trichloroethene	ug/L	ND	0.50	01/06/17 09:55	
Trichlorofluoromethane	ug/L	ND	0.50	01/06/17 09:55	
Vinyl chloride	ug/L	ND	0.50	01/06/17 09:55	
4-Bromofluorobenzene (S)	%	99	68-124	01/06/17 09:55	
Dibromofluoromethane (S)	%	102	72-126	01/06/17 09:55	
Toluene-d8 (S)	%	100	79-119	01/06/17 09:55	

LABORATORY CONTROL SAMPLE: 299029

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,1,1-Trichloroethane	ug/L	50	53.5	107	62-131	
1,1,2,2-Tetrachloroethane	ug/L	50	47.7	95	15-179	
1,1,2-Trichloroethane	ug/L	50	45.1	90	58-144	
1,1-Dichloroethane	ug/L	50	54.4	109	63-129	
1,1-Dichloroethene	ug/L	50	53.0	106	51-139	
1,2-Dibromo-3-chloropropane	ug/L	50	43.8	88	21-160	
1,2-Dibromoethane (EDB)	ug/L	50	46.7	93	52-161	
1,2-Dichloroethane	ug/L	50	46.5	93	57-148	
1,2-Dichloropropane	ug/L	50	49.8	100	66-128	
2-Butanone (MEK)	ug/L	50	50.1	100	32-183	
2-Hexanone	ug/L	50	44.5	89	36-170	
4-Methyl-2-pentanone (MIBK)	ug/L	50	45.0	90	26-171	
Acetone	ug/L	50	51.5	103	22-165	
Benzene	ug/L	50	52.1	104	62-131	
Bromodichloromethane	ug/L	50	44.3	89	69-132	
Bromoform	ug/L	50	40.1	80	35-166	
Bromomethane	ug/L	50	44.9	90	34-158	
Carbon disulfide	ug/L	50	65.9	132	31-128 L0	
Carbon tetrachloride	ug/L	50	48.9	98	54-144	
Chlorobenzene	ug/L	50	48.0	96	70-127	
Chloroethane	ug/L	50	40.5	81	17-195	
Chloroform	ug/L	50	48.4	97	73-134	
Chloromethane	ug/L	50	53.3	107	17-153	
cis-1,2-Dichloroethene	ug/L	50	53.3	107	68-129	
cis-1,3-Dichloropropene	ug/L	50	49.0	98	72-138	
Dibromochloromethane	ug/L	50	43.6	87	49-146	
Dichlorodifluoromethane	ug/L	50	50.0	100	10-179	
Ethylbenzene	ug/L	50	47.2	94	66-126	
Isopropylbenzene (Cumene)	ug/L	50	49.1	98	51-138	
m&p-Xylene	ug/L	100	95.7	96	65-129	
Methyl acetate	ug/L	50	50.4	101	20-142	

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QUALITY CONTROL DATA

Project: PUMA TERMINAL MW-SAMPLING

Pace Project No.: 2048198

LABORATORY CONTROL SAMPLE: 299029

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Methyl-tert-butyl ether	ug/L	50	48.2	96	37-166	
Methylene Chloride	ug/L	50	53.5	107	46-168	
o-Xylene	ug/L	50	47.3	95	65-124	
Styrene	ug/L	50	47.7	95	72-133	
Tetrachloroethene	ug/L	50	48.5	97	46-157	
Toluene	ug/L	50	49.8	100	69-126	
trans-1,2-Dichloroethene	ug/L	50	54.0	108	60-129	
trans-1,3-Dichloropropene	ug/L	50	46.9	94	59-149	
Trichloroethene	ug/L	50	50.8	102	67-132	
Trichlorofluoromethane	ug/L	50	52.2	104	39-171	
Vinyl chloride	ug/L	50	42.2	84	27-149	
4-Bromofluorobenzene (S)	%			99	68-124	
Dibromofluoromethane (S)	%			108	72-126	
Toluene-d8 (S)	%			100	79-119	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 299030 299031

Parameter	Units	MS		MSD		MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		2048198006 Result	Spike Conc.	Spike Conc.	MS Result								
1,1,1-Trichloroethane	ug/L	ND	50	50	61.6	54.6	123	109	54-137	12	20		
1,1,2,2-Tetrachloroethane	ug/L	ND	50	50	53.8	47.9	108	96	15-187	12	20		
1,1,2-Trichloroethane	ug/L	ND	50	50	48.7	44.3	97	89	59-148	10	20		
1,1-Dichloroethane	ug/L	ND	50	50	59.8	53.7	120	107	59-133	11	20		
1,1-Dichloroethene	ug/L	ND	50	50	62.2	53.2	124	106	44-146	15	20		
1,2-Dibromo-3-chloropropane	ug/L	ND	50	50	50.0	46.0	100	92	23-166	8	20		
1,2-Dibromoethane (EDB)	ug/L	ND	50	50	51.4	46.4	103	93	55-166	10	20		
1,2-Dichloroethane	ug/L	ND	50	50	50.9	45.9	102	92	56-154	10	20		
1,2-Dichloropropane	ug/L	ND	50	50	56.3	49.8	113	100	62-135	12	20		
2-Butanone (MEK)	ug/L	ND	50	50	54.6	51.2	109	102	20-205	6	20		
2-Hexanone	ug/L	ND	50	50	47.0	45.0	94	90	25-189	4	20		
4-Methyl-2-pentanone (MIBK)	ug/L	ND	50	50	49.5	47.0	99	94	23-184	5	20		
Acetone	ug/L	39.4	50	50	65.5	59.7	52	41	11-217	9	20		
Benzene	ug/L	ND	50	50	60.1	53.0	120	106	52-141	12	20		
Bromodichloromethane	ug/L	ND	50	50	49.9	44.7	100	89	70-134	11	20		
Bromoform	ug/L	ND	50	50	44.1	40.9	88	82	37-171	8	20		
Bromomethane	ug/L	ND	50	50	50.0	46.8	100	94	34-155	7	20		
Carbon disulfide	ug/L	ND	50	50	81.5	68.4	163	136	28-130	18	20	M0	
Carbon tetrachloride	ug/L	ND	50	50	56.5	49.9	113	100	48-146	12	20		
Chlorobenzene	ug/L	ND	50	50	55.2	49.6	110	99	67-129	11	20		
Chloroethane	ug/L	ND	50	50	47.0	41.6	94	83	12-192	12	20		
Chloroform	ug/L	ND	50	50	54.2	47.7	108	95	66-143	13	20		
Chloromethane	ug/L	ND	50	50	60.3	54.3	121	109	14-155	11	20		
cis-1,2-Dichloroethene	ug/L	ND	50	50	58.8	51.7	118	103	56-141	13	20		
cis-1,3-Dichloropropene	ug/L	ND	50	50	53.8	48.4	108	97	70-139	11	20		

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QUALITY CONTROL DATA

Project: PUMA TERMINAL MW-SAMPLING

Pace Project No.: 2048198

Parameter	Units	2048198006		299030		299031		% Rec	% Rec	Limits	RPD	Max RPD	Qual
		Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec						
Dibromochloromethane	ug/L	ND	50	50	47.7	43.4	95	87	50-150	9	20		
Dichlorodifluoromethane	ug/L	ND	50	50	58.1	51.6	116	103	10-173	12	20		
Ethylbenzene	ug/L	ND	50	50	53.4	48.8	107	98	57-135	9	20		
Isopropylbenzene (Cumene)	ug/L	ND	50	50	56.5	52.1	113	104	40-146	8	20		
m&p-Xylene	ug/L	ND	100	100	109	98.4	109	98	56-136	10	20		
Methyl acetate	ug/L	ND	50	50	51.9	47.9	104	96	10-142	8	20		
Methyl-tert-butyl ether	ug/L	8.2	50	50	62.0	56.3	108	96	35-176	10	20		
Methylene Chloride	ug/L	ND	50	50	57.9	53.1	116	106	45-166	9	20		
o-Xylene	ug/L	ND	50	50	52.8	47.7	106	95	57-133	10	20		
Styrene	ug/L	ND	50	50	54.1	48.6	108	97	58-144	11	20		
Tetrachloroethene	ug/L	ND	50	50	56.5	51.3	113	103	48-143	10	20		
Toluene	ug/L	ND	50	50	56.8	50.2	114	100	59-136	12	20		
trans-1,2-Dichloroethene	ug/L	ND	50	50	62.1	53.8	124	108	57-132	14	20		
trans-1,3-Dichloropropene	ug/L	ND	50	50	53.5	48.0	107	96	59-154	11	20		
Trichloroethene	ug/L	ND	50	50	58.3	51.9	117	104	58-140	12	20		
Trichlorofluoromethane	ug/L	ND	50	50	62.3	55.7	125	111	24-175	11	20		
Vinyl chloride	ug/L	ND	50	50	49.5	43.0	99	86	21-150	14	20		
4-Bromofluorobenzene (S)	%						101	98	68-124				
Dibromofluoromethane (S)	%						107	106	72-126				
Toluene-d8 (S)	%						102	101	79-119				

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QUALITY CONTROL DATA

Project: PUMA TERMINAL MW-SAMPLING

Pace Project No.: 2048198

QC Batch: 71486 Analysis Method: EPA 8015B Modified
 QC Batch Method: EPA 3535 Analysis Description: EPA 8015 ORO
 Associated Lab Samples: 2048198002, 2048198003, 2048198004, 2048198005, 2048198006, 2048198007, 2048198008, 2048198009,
 2048198010, 2048198013, 2048198014, 2048198015, 2048198016, 2048198017, 2048198019

METHOD BLANK: 299020 Matrix: Water
 Associated Lab Samples: 2048198002, 2048198003, 2048198004, 2048198005, 2048198006, 2048198007, 2048198008, 2048198009,
 2048198010, 2048198013, 2048198014, 2048198015, 2048198016, 2048198017, 2048198019

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Diesel Range Organic (C10-C28)	mg/L	ND	0.25	01/11/17 16:31	
Oil Range Organics (>C28-C40)	mg/L	ND	0.50	01/11/17 16:31	
n-Pentacosane (S)	%	38	16-137	01/11/17 16:31	
o-Terphenyl (S)	%	56	10-121	01/11/17 16:31	

LABORATORY CONTROL SAMPLE: 299021

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Diesel Range Organic (C10-C28)	mg/L	.4	.21J	54	10-115	
n-Pentacosane (S)	%			47	16-137	
o-Terphenyl (S)	%			66	10-121	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 299024 299025

Parameter	Units	2048198006 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Diesel Range Organic (C10-C28)	mg/L	ND	.4	.4	0.47	0.57	70	93	10-122	18	20	
n-Pentacosane (S)	%						64	71	16-137			
o-Terphenyl (S)	%						73	81	10-121			

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QUALITY CONTROL DATA

Project: PUMA TERMINAL MW-SAMPLING

Pace Project No.: 2048198

QC Batch: 71484 Analysis Method: EPA 8270 by SIM
QC Batch Method: EPA 3510 Analysis Description: 8270 Water by SIM MSSV
Associated Lab Samples: 2048198002, 2048198003, 2048198004, 2048198005, 2048198006, 2048198007, 2048198008, 2048198009, 2048198010

METHOD BLANK: 299014 Matrix: Water
Associated Lab Samples: 2048198002, 2048198003, 2048198004, 2048198005, 2048198006, 2048198007, 2048198008, 2048198009, 2048198010

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
2-Methylnaphthalene	ug/L	ND	0.10	01/09/17 12:22	
Acenaphthene	ug/L	ND	0.10	01/09/17 12:22	
Acenaphthylene	ug/L	ND	0.10	01/09/17 12:22	
Anthracene	ug/L	ND	0.10	01/09/17 12:22	
Benzo(a)anthracene	ug/L	ND	0.10	01/09/17 12:22	
Benzo(a)pyrene	ug/L	ND	0.10	01/09/17 12:22	
Benzo(b)fluoranthene	ug/L	ND	0.10	01/09/17 12:22	
Benzo(g,h,i)perylene	ug/L	ND	0.10	01/09/17 12:22	
Benzo(k)fluoranthene	ug/L	ND	0.10	01/09/17 12:22	
Chrysene	ug/L	ND	0.10	01/09/17 12:22	
Dibenz(a,h)anthracene	ug/L	ND	0.10	01/09/17 12:22	
Fluoranthene	ug/L	ND	0.10	01/09/17 12:22	
Fluorene	ug/L	ND	0.10	01/09/17 12:22	
Indeno(1,2,3-cd)pyrene	ug/L	ND	0.10	01/09/17 12:22	
Naphthalene	ug/L	ND	0.10	01/09/17 12:22	
Phenanthrene	ug/L	ND	0.10	01/09/17 12:22	
Pyrene	ug/L	ND	0.10	01/09/17 12:22	
2-Fluorobiphenyl (S)	%	70	25-150	01/09/17 12:22	
Terphenyl-d14 (S)	%	73	25-150	01/09/17 12:22	

LABORATORY CONTROL SAMPLE: 299015

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
2-Methylnaphthalene	ug/L	4	2.7	68	35-150	
Acenaphthene	ug/L	4	2.9	72	35-150	
Acenaphthylene	ug/L	4	2.8	71	35-150	
Anthracene	ug/L	4	3.6	89	35-150	
Benzo(a)anthracene	ug/L	4	3.1	79	35-150	
Benzo(a)pyrene	ug/L	4	2.9	72	35-150	
Benzo(b)fluoranthene	ug/L	4	2.9	74	35-150	
Benzo(g,h,i)perylene	ug/L	4	3.2	81	35-150	
Benzo(k)fluoranthene	ug/L	4	2.9	72	35-150	
Chrysene	ug/L	4	2.9	72	35-150	
Dibenz(a,h)anthracene	ug/L	4	3.6	90	35-150	
Fluoranthene	ug/L	4	2.9	72	35-150	
Fluorene	ug/L	4	2.8	71	35-150	
Indeno(1,2,3-cd)pyrene	ug/L	4	3.4	86	35-150	
Naphthalene	ug/L	4	2.5	62	35-150	

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QUALITY CONTROL DATA

Project: PUMA TERMINAL MW-SAMPLING

Pace Project No.: 2048198

LABORATORY CONTROL SAMPLE: 299015

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Phenanthrene	ug/L	4	3.1	78	35-150	
Pyrene	ug/L	4	2.8	69	35-150	
2-Fluorobiphenyl (S)	%.			73	25-150	
Terphenyl-d14 (S)	%.			77	25-150	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 299016 299017

Parameter	Units	2048198006		299017		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result						
2-Methylnaphthalene	ug/L	ND	4	4	3.4	2.7	84	66	35-150	24	20 R1
Acenaphthene	ug/L	0.27	4	4	3.5	2.9	82	65	35-150	21	20 R1
Acenaphthylene	ug/L	ND	4	4	3.4	2.7	84	66	35-150	23	20 R1
Anthracene	ug/L	0.11	4	4	4.0	3.1	97	75	35-150	24	20 R1
Benzo(a)anthracene	ug/L	ND	4	4	3.6	2.8	89	71	35-150	22	20 R1
Benzo(a)pyrene	ug/L	ND	4	4	3.2	2.5	79	62	35-150	24	20 R1
Benzo(b)fluoranthene	ug/L	ND	4	4	3.1	2.5	78	64	35-150	21	20 R1
Benzo(g,h,i)perylene	ug/L	ND	4	4	3.6	3.0	90	74	35-150	20	20
Benzo(k)fluoranthene	ug/L	ND	4	4	3.1	2.5	79	61	35-150	25	20 R1
Chrysene	ug/L	ND	4	4	3.2	2.5	80	63	35-150	24	20 R1
Dibenz(a,h)anthracene	ug/L	ND	4	4	3.8	3.1	95	79	35-150	18	20
Fluoranthene	ug/L	ND	4	4	3.2	2.6	80	64	35-150	22	20 R1
Fluorene	ug/L	ND	4	4	3.4	2.7	84	67	35-150	23	20 R1
Indeno(1,2,3-cd)pyrene	ug/L	ND	4	4	3.7	3.1	92	76	35-150	19	20
Naphthalene	ug/L	ND	4	4	3.0	2.4	74	58	35-150	24	20 R1
Phenanthrene	ug/L	0.26	4	4	3.6	2.8	83	65	35-150	22	20 R1
Pyrene	ug/L	ND	4	4	3.2	2.4	79	61	35-150	26	20 R1
2-Fluorobiphenyl (S)	%.						83	70	25-150		20
Terphenyl-d14 (S)	%.						84	68	25-150		20

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QUALITY CONTROL DATA

Project: PUMA TERMINAL MW-SAMPLING

Pace Project No.: 2048198

QC Batch: 71561 Analysis Method: EPA 8270 by SIM
QC Batch Method: EPA 3510 Analysis Description: 8270 Water by SIM MSSV
Associated Lab Samples: 2048198013, 2048198014, 2048198015, 2048198016, 2048198017, 2048198019

METHOD BLANK: 299504 Matrix: Water
Associated Lab Samples: 2048198013, 2048198014, 2048198015, 2048198016, 2048198017, 2048198019

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
2-Methylnaphthalene	ug/L	ND	0.10	01/10/17 15:00	
Acenaphthene	ug/L	ND	0.10	01/10/17 15:00	
Acenaphthylene	ug/L	ND	0.10	01/10/17 15:00	
Anthracene	ug/L	ND	0.10	01/10/17 15:00	
Benzo(a)anthracene	ug/L	ND	0.10	01/10/17 15:00	
Benzo(a)pyrene	ug/L	ND	0.10	01/10/17 15:00	
Benzo(b)fluoranthene	ug/L	ND	0.10	01/10/17 15:00	
Benzo(g,h,i)perylene	ug/L	ND	0.10	01/10/17 15:00	
Benzo(k)fluoranthene	ug/L	ND	0.10	01/10/17 15:00	
Chrysene	ug/L	ND	0.10	01/10/17 15:00	
Dibenz(a,h)anthracene	ug/L	ND	0.10	01/10/17 15:00	
Fluoranthene	ug/L	ND	0.10	01/10/17 15:00	
Fluorene	ug/L	ND	0.10	01/10/17 15:00	
Indeno(1,2,3-cd)pyrene	ug/L	ND	0.10	01/10/17 15:00	
Naphthalene	ug/L	ND	0.10	01/10/17 15:00	
Phenanthrene	ug/L	ND	0.10	01/10/17 15:00	
Pyrene	ug/L	ND	0.10	01/10/17 15:00	
2-Fluorobiphenyl (S)	%	83	25-150	01/10/17 15:00	
Terphenyl-d14 (S)	%	88	25-150	01/10/17 15:00	

LABORATORY CONTROL SAMPLE: 299505

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
2-Methylnaphthalene	ug/L	4	3.2	79	35-150	
Acenaphthene	ug/L	4	3.3	82	35-150	
Acenaphthylene	ug/L	4	3.2	80	35-150	
Anthracene	ug/L	4	4.0	100	35-150	
Benzo(a)anthracene	ug/L	4	3.7	92	35-150	
Benzo(a)pyrene	ug/L	4	3.4	85	35-150	
Benzo(b)fluoranthene	ug/L	4	3.4	84	35-150	
Benzo(g,h,i)perylene	ug/L	4	4.0	101	35-150	
Benzo(k)fluoranthene	ug/L	4	3.4	84	35-150	
Chrysene	ug/L	4	3.5	87	35-150	
Dibenz(a,h)anthracene	ug/L	4	4.4	110	35-150	
Fluoranthene	ug/L	4	3.3	83	35-150	
Fluorene	ug/L	4	3.3	83	35-150	
Indeno(1,2,3-cd)pyrene	ug/L	4	4.2	106	35-150	
Naphthalene	ug/L	4	2.9	72	35-150	
Phenanthrene	ug/L	4	3.5	88	35-150	
Pyrene	ug/L	4	3.2	79	35-150	

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QUALITY CONTROL DATA

Project: PUMA TERMINAL MW-SAMPLING
Pace Project No.: 2048198

LABORATORY CONTROL SAMPLE: 299505

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
2-Fluorobiphenyl (S)	%.			106	25-150	
Terphenyl-d14 (S)	%.			111	25-150	

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QUALIFIERS

Project: PUMA TERMINAL MW-SAMPLING

Pace Project No.: 2048198

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The Nelac Institute

LABORATORIES

PASI-N Pace Analytical Services - New Orleans

BATCH QUALIFIERS

Batch: 71719

[M5] A matrix spike/matrix spike duplicate was not performed for this batch due to insufficient sample volume.

ANALYTE QUALIFIERS

C9 Common Laboratory Contaminant.

L0 Analyte recovery in the laboratory control sample (LCS) was outside QC limits.

L1 Analyte recovery in the laboratory control sample (LCS) was above QC limits. Results for this analyte in associated samples may be biased high.

L3 Analyte recovery in the laboratory control sample (LCS) exceeded QC limits. Analyte presence below reporting limits in associated samples.

M0 Matrix spike recovery and/or matrix spike duplicate recovery was outside laboratory control limits.

M1 Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

R1 RPD value was outside control limits.

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: PUMA TERMINAL MW-SAMPLING

Pace Project No.: 2048198

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
2048198002	EB-010317	EPA 3535	71486	EPA 8015B Modified	71841
2048198003	MW-B9	EPA 3535	71486	EPA 8015B Modified	71841
2048198004	MW-EB103	EPA 3535	71486	EPA 8015B Modified	71841
2048198005	MW-EB104	EPA 3535	71486	EPA 8015B Modified	71841
2048198006	MW-EB105	EPA 3535	71486	EPA 8015B Modified	71841
2048198007	DUP004	EPA 3535	71486	EPA 8015B Modified	71841
2048198008	MW-EB106	EPA 3535	71486	EPA 8015B Modified	71841
2048198009	MW-EB107	EPA 3535	71486	EPA 8015B Modified	71841
2048198010	MW-EB108	EPA 3535	71486	EPA 8015B Modified	71841
2048198013	EB-010417	EPA 3535	71486	EPA 8015B Modified	71841
2048198014	MW-DP1	EPA 3535	71486	EPA 8015B Modified	71841
2048198015	MW-MP2	EPA 3535	71486	EPA 8015B Modified	71841
2048198016	MW-MP3	EPA 3535	71486	EPA 8015B Modified	71841
2048198017	MW-MP8	EPA 3535	71486	EPA 8015B Modified	71841
2048198019	MW-NDP	EPA 3535	71486	EPA 8015B Modified	71841
2048198001	TB-010317	EPA 8015/8021	71479		
2048198002	EB-010317	EPA 8015/8021	71479		
2048198003	MW-B9	EPA 8015/8021	71479		
2048198004	MW-EB103	EPA 8015/8021	71479		
2048198005	MW-EB104	EPA 8015/8021	71479		
2048198006	MW-EB105	EPA 8015/8021	71479		
2048198007	DUP004	EPA 8015/8021	71479		
2048198008	MW-EB106	EPA 8015/8021	71479		
2048198009	MW-EB107	EPA 8015/8021	71479		
2048198010	MW-EB108	EPA 8015/8021	71479		
2048198011	FB-010317	EPA 8015/8021	71479		
2048198012	TB-010417	EPA 8015/8021	71479		
2048198013	EB-010417	EPA 8015/8021	71479		
2048198014	MW-DP1	EPA 8015/8021	71479		
2048198015	MW-MP2	EPA 8015/8021	71479		
2048198016	MW-MP3	EPA 8015/8021	71479		
2048198017	MW-MP8	EPA 8015/8021	71479		
2048198018	TB-010417-2	EPA 8015/8021	71479		
2048198019	MW-NDP	EPA 8015/8021	71479		
2048198020	FB-010417	EPA 8015/8021	71479		
2048198002	EB-010317	EPA 3010	71620	EPA 6020	71657
2048198003	MW-B9	EPA 3010	71620	EPA 6020	71657
2048198004	MW-EB103	EPA 3010	71620	EPA 6020	71657
2048198005	MW-EB104	EPA 3010	71620	EPA 6020	71657
2048198006	MW-EB105	EPA 3010	71620	EPA 6020	71657
2048198007	DUP004	EPA 3010	71620	EPA 6020	71657
2048198008	MW-EB106	EPA 3010	71620	EPA 6020	71657
2048198009	MW-EB107	EPA 3010	71620	EPA 6020	71657
2048198010	MW-EB108	EPA 3010	71620	EPA 6020	71657
2048198013	EB-010417	EPA 3010	71620	EPA 6020	71657
2048198014	MW-DP1	EPA 3010	71620	EPA 6020	71657
2048198015	MW-MP2	EPA 3010	71620	EPA 6020	71657
2048198016	MW-MP3	EPA 3010	71620	EPA 6020	71657

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: PUMA TERMINAL MW-SAMPLING
Pace Project No.: 2048198

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
2048198017	MW-MP8	EPA 3010	71620	EPA 6020	71657
2048198019	MW-NDP	EPA 3010	71620	EPA 6020	71657
2048198002	EB-010317	EPA 3005A	71681	EPA 6020	71750
2048198003	MW-B9	EPA 3005A	71681	EPA 6020	71750
2048198004	MW-EB103	EPA 3005A	71681	EPA 6020	71750
2048198005	MW-EB104	EPA 3005A	71681	EPA 6020	71750
2048198006	MW-EB105	EPA 3005A	71681	EPA 6020	71750
2048198007	DUP004	EPA 3005A	71681	EPA 6020	71750
2048198008	MW-EB106	EPA 3005A	71681	EPA 6020	71750
2048198009	MW-EB107	EPA 3005A	71681	EPA 6020	71750
2048198010	MW-EB108	EPA 3005A	71681	EPA 6020	71750
2048198013	EB-010417	EPA 3005A	71681	EPA 6020	71750
2048198014	MW-DP1	EPA 3005A	71681	EPA 6020	71750
2048198015	MW-MP2	EPA 3005A	71681	EPA 6020	71750
2048198016	MW-MP3	EPA 3005A	71681	EPA 6020	71750
2048198017	MW-MP8	EPA 3005A	71681	EPA 6020	71750
2048198019	MW-NDP	EPA 3005A	71681	EPA 6020	71750
2048198002	EB-010317	EPA 7470	71616	EPA 7470	71655
2048198003	MW-B9	EPA 7470	71616	EPA 7470	71655
2048198004	MW-EB103	EPA 7470	71616	EPA 7470	71655
2048198005	MW-EB104	EPA 7470	71616	EPA 7470	71655
2048198006	MW-EB105	EPA 7470	71616	EPA 7470	71655
2048198007	DUP004	EPA 7470	71616	EPA 7470	71655
2048198008	MW-EB106	EPA 7470	71616	EPA 7470	71655
2048198009	MW-EB107	EPA 7470	71616	EPA 7470	71655
2048198010	MW-EB108	EPA 7470	71616	EPA 7470	71655
2048198013	EB-010417	EPA 7470	71616	EPA 7470	71655
2048198014	MW-DP1	EPA 7470	71616	EPA 7470	71655
2048198015	MW-MP2	EPA 7470	71616	EPA 7470	71655
2048198016	MW-MP3	EPA 7470	71616	EPA 7470	71655
2048198017	MW-MP8	EPA 7470	71616	EPA 7470	71655
2048198019	MW-NDP	EPA 7470	71616	EPA 7470	71655
2048198002	EB-010317	EPA 7470	71675	EPA 7470	71752
2048198003	MW-B9	EPA 7470	71675	EPA 7470	71752
2048198004	MW-EB103	EPA 7470	71675	EPA 7470	71752
2048198005	MW-EB104	EPA 7470	71675	EPA 7470	71752
2048198006	MW-EB105	EPA 7470	71675	EPA 7470	71752
2048198007	DUP004	EPA 7470	71675	EPA 7470	71752
2048198008	MW-EB106	EPA 7470	71675	EPA 7470	71752
2048198009	MW-EB107	EPA 7470	71675	EPA 7470	71752
2048198010	MW-EB108	EPA 7470	71675	EPA 7470	71752
2048198013	EB-010417	EPA 7470	71675	EPA 7470	71752
2048198014	MW-DP1	EPA 7470	71675	EPA 7470	71752
2048198015	MW-MP2	EPA 7470	71675	EPA 7470	71752
2048198016	MW-MP3	EPA 7470	71675	EPA 7470	71752
2048198017	MW-MP8	EPA 7470	71675	EPA 7470	71752
2048198019	MW-NDP	EPA 7470	71675	EPA 7470	71752

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: PUMA TERMINAL MW-SAMPLING
Pace Project No.: 2048198

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
2048198002	EB-010317	EPA 3510	71484	EPA 8270 by SIM	71596
2048198003	MW-B9	EPA 3510	71484	EPA 8270 by SIM	71596
2048198004	MW-EB103	EPA 3510	71484	EPA 8270 by SIM	71596
2048198005	MW-EB104	EPA 3510	71484	EPA 8270 by SIM	71596
2048198006	MW-EB105	EPA 3510	71484	EPA 8270 by SIM	71596
2048198007	DUP004	EPA 3510	71484	EPA 8270 by SIM	71596
2048198008	MW-EB106	EPA 3510	71484	EPA 8270 by SIM	71596
2048198009	MW-EB107	EPA 3510	71484	EPA 8270 by SIM	71596
2048198010	MW-EB108	EPA 3510	71484	EPA 8270 by SIM	71596
2048198013	EB-010417	EPA 3510	71561	EPA 8270 by SIM	71719
2048198014	MW-DP1	EPA 3510	71561	EPA 8270 by SIM	71719
2048198015	MW-MP2	EPA 3510	71561	EPA 8270 by SIM	71719
2048198016	MW-MP3	EPA 3510	71561	EPA 8270 by SIM	71719
2048198017	MW-MP8	EPA 3510	71561	EPA 8270 by SIM	71719
2048198019	MW-NDP	EPA 3510	71561	EPA 8270 by SIM	71719
2048198001	TB-010317	EPA 5030B/8260	71490		
2048198002	EB-010317	EPA 5030B/8260	71490		
2048198003	MW-B9	EPA 5030B/8260	71490		
2048198004	MW-EB103	EPA 5030B/8260	71490		
2048198005	MW-EB104	EPA 5030B/8260	71490		
2048198006	MW-EB105	EPA 5030B/8260	71490		
2048198007	DUP004	EPA 5030B/8260	71490		
2048198008	MW-EB106	EPA 5030B/8260	71490		
2048198009	MW-EB107	EPA 5030B/8260	71490		
2048198010	MW-EB108	EPA 5030B/8260	71490		
2048198011	FB-010317	EPA 5030B/8260	71490		
2048198012	TB-010417	EPA 5030B/8260	71490		
2048198013	EB-010417	EPA 5030B/8260	71490		
2048198014	MW-DP1	EPA 5030B/8260	71490		
2048198015	MW-MP2	EPA 5030B/8260	71490		
2048198016	MW-MP3	EPA 5030B/8260	71490		
2048198017	MW-MP8	EPA 5030B/8260	71490		
2048198018	TB-010417-2	EPA 5030B/8260	71490		
2048198019	MW-NDP	EPA 5030B/8260	71490		
2048198020	FB-010417	EPA 5030B/8260	71490		

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CHAIN-OF-CUSTODY / Analytical Request Document
The Chain-of-Custody is a LEGAL DOCUMENT

WO#: 2048198



1 of 2
2075139

Section A Required Client Information:		Section B Required Project Information:		Section C Invoice Information: 2048198	
Company: Arcadis		Report To: Efraim Caldera		Attention:	
Address: 48201 view Plaza suite 401		Copy To:		Company Name:	
82165km 1.2 campo		Purchase Order No.:		REGULATORY AGENCY	
Email To: Efraim.Caldera@arcadis-us.com		Project Name: Puma Tumbal mv-sampling		Address:	
Phone: 979-911-4000 Fax: 979-911-3000		Project Number: EDC2-1605B		Pace Quote Reference:	
Requested Due Date/TAT: Standard		Pace Project Manager: Juan Redondo		Site Location	
				STATE: P.R.	

ITEM #	Section D Required Client Information	Matrix Codes MATRIX / CODE	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G-GRAB C-COMP)	COLLECTED				SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives										Analysis Test ↓	Residual Chlorine (Y/N)	Pace Project No./ Lab I.D.					
					COMPOSITE START		COMPOSITE END/GRAB				Unpreserved	H ₂ SO ₄	HNO ₃	HCl	NaOH	Na ₂ S ₂ O ₃	Methanol	Other	Vols 60cc	6-80 6015				DR0/80 6015	3 vols 4120	Metals / Heavy	Dissolved Metals	
					DATE	TIME	DATE	TIME																				
1	TB-010311		M	G			01/03/11	LAB	4																			
2	EB-010311		M	G			01/03/11	0843	10																			
3	MV-B9		M	G			01/03/11	0935	10																			
4	MV-EB103		M	G			01/03/11	1027	10																			
5	MV-EB104		M	G			01/02/11	1126	10																			
6	MV-EB105		M	G			01/03/11	1345	10																			
7	MV-EB105 (MS)		M	G			01/03/11	1345	10																			
8	MV-EB105 (MSD)		M	G			01/02/11	1345	10																			
9	DUPO04		M	G			01/03/11		10																			
10	MV-EB106		M	G			01/03/11	1438	10																			
11	MV-EB107		M	G			01/03/11	1511	10																			
12	MV-EB108		M	G			01/03/11	1601	10																			

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS
Level 12	Antoni Colon Arcadis	01/04/11	1508	Juan Redondo / Pace	04-17	15:08	0.7
	Juan Redondo / Pace	1-4-11	1700	Fred Esp			0.5
	Fred Esp	1-5-11	0910	Juan Redondo / Pace	1-5-11	0910	1.1 1.0

ORIGINAL	SAMPLER NAME AND SIGNATURE				Temp in °C	Received on ice (Y/N)	Custody Sealed Cooler (Y/N)	Samples Intact (Y/N)
	PRINT Name of SAMPLER: Antoni Colon							
	SIGNATURE of SAMPLER: [Signature]							
				DATE Signed (MM/DD/YY): 02/04/11				

WO#: 2048198



Sample Condition

PM: JAR1

Due Date: 01/18/17

CLIENT: 98-ARCADISPR

1000 Riverbend Blvd., Suite F
St. Rose, LA 70087

Courier: Pace Courier Hired Courier Fed X UPS DHL USPS Customer Other

Custody Seal on Cooler/Box Present: [see COC]

Custody Seals intact: Yes No

Thermometer Used: Therm Fisher IR 5
 Therm Fisher IR 6
 Therm Fisher IR 7

Type of Ice: Wet Blue None

Samples on ice: [see COC]

Cooler Temperature: [see COC]

Temp should be above freezing to 6°C

Date and Initials of person examining contents: 1-5-17 JMB

Temp must be measured from Temperature blank when present

Comments:

Temperature Blank Present?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	1
Chain of Custody Present:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	2
Chain of Custody Complete:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	3
Chain of Custody Relinquished:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	4
Sampler Name & Signature on COC:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	5
Samples Arrived within Hold Time:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	6
Sufficient Volume:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	7
Correct Containers Used:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	8
Filtered vol. Rec. for Diss. tests	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	9
Sample Labels match COC:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	10
All containers received within manufacture's precautionary and/or expiration dates.	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	11
All containers needing chemical preservation have been checked (except VOA, coliform, & O&G).	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	12
All containers preservation checked found to be in compliance with EPA recommendation.	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	13
Headspace in VOA Vials (>6mm):	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	14
Trip Blank Present:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	15

Client Notification/ Resolution:

Person Contacted: _____

Date/Time: _____

Comments/ Resolution: _____

January 18, 2017

Efrain Calderon
BBL Caribe Engineering P.S.C.
48 City View Plaza1, Suite 401
Road 16, Km. 1.2
Guaynabo, PR 00968

RE: Project: PUMA TERMINAL MW SAMPLING
Pace Project No.: 2048222

Dear Efrain Calderon:

Enclosed are the analytical results for sample(s) received by the laboratory on January 05, 2017. The results relate only to the samples included in this report. Results reported herein conform to the most current, applicable TNI/NELAC standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,



Juan Redondo
juan.redondo@pacelabs.com
Project Manager

Enclosures

cc: Sharon Colon
Abner Hernandez
Marianela Mercado-Burgos



REPORT OF LABORATORY ANALYSIS

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CERTIFICATIONS

Project: PUMA TERMINAL MW SAMPLING

Pace Project No.: 2048222

New Orleans Certification IDs

California Env. Lab Accreditation Program Branch:
11277CA

Florida Department of Health (NELAC): E87595

Illinois Environmental Protection Agency: 0025721

Kansas Department of Health and Environment (NELAC):
E-10266

Louisiana Dept. of Environmental Quality (NELAC/LELAP):
02006

Pennsylvania Dept. of Env Protection (NELAC): 68-04202

Texas Commission on Env. Quality (NELAC):
T104704405-09-TX

U.S. Dept. of Agriculture Foreign Soil Import: P330-10-
00119

Commonwealth of Virginia (TNI): 480246

REPORT OF LABORATORY ANALYSIS

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SAMPLE SUMMARY

Project: PUMA TERMINAL MW SAMPLING

Pace Project No.: 2048222

Lab ID	Sample ID	Matrix	Date Collected	Date Received
2048222001	TB-010517	Water	01/05/17 00:00	01/05/17 12:50
2048222002	EB-010517	Water	01/05/17 08:46	01/05/17 12:50
2048222003	MW-48A	Water	01/05/17 09:42	01/05/17 12:50
2048222004	MW-109A	Water	01/05/17 11:05	01/05/17 12:50
2048222005	DUP005	Water	01/05/17 00:00	01/05/17 12:50
2048222006	MW-M14	Water	01/05/17 11:34	01/05/17 12:50
2048222007	FB-010517	Water	01/05/17 11:38	01/05/17 12:50

REPORT OF LABORATORY ANALYSIS

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SAMPLE ANALYTE COUNT

Project: PUMA TERMINAL MW SAMPLING

Pace Project No.: 2048222

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
2048222001	TB-010517	EPA 8015/8021	MHM	2	PASI-N
		EPA 5030B/8260	RMP	45	PASI-N
2048222002	EB-010517	EPA 8015B Modified	SLF	4	PASI-N
		EPA 8015/8021	MHM	2	PASI-N
		EPA 6020	KJR	4	PASI-N
		EPA 6020	KJR	4	PASI-N
		EPA 7470	MHB1	1	PASI-N
		EPA 7470	MHB1	1	PASI-N
		EPA 8270 by SIM	GEJ	19	PASI-N
		EPA 5030B/8260	RMP	45	PASI-N
2048222003	MW-48A	EPA 8015B Modified	SLF	4	PASI-N
		EPA 8015/8021	MHM	2	PASI-N
		EPA 6020	KJR	4	PASI-N
		EPA 6020	KJR	4	PASI-N
		EPA 7470	MHB1	1	PASI-N
		EPA 7470	MHB1	1	PASI-N
		EPA 8270 by SIM	GEJ	19	PASI-N
		EPA 5030B/8260	RMP	45	PASI-N
2048222004	MW-109A	EPA 8015B Modified	SLF	4	PASI-N
		EPA 8015/8021	MHM	2	PASI-N
		EPA 6020	KJR	4	PASI-N
		EPA 6020	KJR	4	PASI-N
		EPA 7470	MHB1	1	PASI-N
		EPA 7470	MHB1	1	PASI-N
		EPA 8270 by SIM	GEJ	19	PASI-N
		EPA 5030B/8260	RMP	45	PASI-N
2048222005	DUP005	EPA 8015B Modified	SLF	4	PASI-N
		EPA 8015/8021	MHM	2	PASI-N
		EPA 6020	KJR	4	PASI-N
		EPA 6020	KJR	4	PASI-N
		EPA 7470	MHB1	1	PASI-N
		EPA 7470	MHB1	1	PASI-N
		EPA 8270 by SIM	GEJ	19	PASI-N
		EPA 5030B/8260	RMP	45	PASI-N
2048222006	MW-M14	EPA 8015B Modified	SLF	4	PASI-N
		EPA 8015/8021	MHM	2	PASI-N
		EPA 6020	KJR	4	PASI-N

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SAMPLE ANALYTE COUNT

Project: PUMA TERMINAL MW SAMPLING

Pace Project No.: 2048222

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
		EPA 6020	KJR	4	PASI-N
		EPA 7470	MHB1	1	PASI-N
		EPA 7470	MHB1	1	PASI-N
		EPA 8270 by SIM	GEJ	19	PASI-N
		EPA 5030B/8260	RMP	45	PASI-N
2048222007	FB-010517	EPA 8015/8021	MHM	2	PASI-N
		EPA 5030B/8260	RMP	45	PASI-N

REPORT OF LABORATORY ANALYSIS

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PROJECT NARRATIVE

Project: PUMA TERMINAL MW SAMPLING

Pace Project No.: 2048222

Method: EPA 8015B Modified

Description: 8015M DRO/ORO Organics

Client: BBL Caribe / Arcadis PR

Date: January 18, 2017

General Information:

5 samples were analyzed for EPA 8015B Modified. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:

The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:

The samples were prepared in accordance with EPA 3535 with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):

All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:

All criteria were within method requirements with any exceptions noted below.

Surrogates:

All surrogates were within QC limits with any exceptions noted below.

Method Blank:

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

QC Batch: 71577

A matrix spike/matrix spike duplicate was not performed due to insufficient sample volume.

Additional Comments:

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PROJECT NARRATIVE

Project: PUMA TERMINAL MW SAMPLING

Pace Project No.: 2048222

Method: EPA 8015/8021

Description: 8021 GCV BTEX, MTBE, GRO

Client: BBL Caribe / Arcadis PR

Date: January 18, 2017

General Information:

7 samples were analyzed for EPA 8015/8021. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:

The samples were analyzed within the method required hold times with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):

All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:

All criteria were within method requirements with any exceptions noted below.

Surrogates:

All surrogates were within QC limits with any exceptions noted below.

Method Blank:

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

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PROJECT NARRATIVE

Project: PUMA TERMINAL MW SAMPLING
Pace Project No.: 2048222

Method: EPA 6020
Description: 6020 MET ICPMS
Client: BBL Caribe / Arcadis PR
Date: January 18, 2017

General Information:

5 samples were analyzed for EPA 6020. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:

The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:

The samples were prepared in accordance with EPA 3010 with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):

All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:

All criteria were within method requirements with any exceptions noted below.

Internal Standards:

All internal standards were within QC limits with any exceptions noted below.

Method Blank:

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

QC Batch: 71617

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 2047753015

M1: Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

- MS (Lab ID: 299686)
 - Arsenic
- MSD (Lab ID: 299687)
 - Arsenic

Additional Comments:

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PROJECT NARRATIVE

Project: PUMA TERMINAL MW SAMPLING
Pace Project No.: 2048222

Method: EPA 6020
Description: 6020 MET ICPMS, Dissolved (LF)
Client: BBL Caribe / Arcadis PR
Date: January 18, 2017

General Information:

5 samples were analyzed for EPA 6020. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:

The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:

The samples were prepared in accordance with EPA 3005A with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):

All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:

All criteria were within method requirements with any exceptions noted below.

Internal Standards:

All internal standards were within QC limits with any exceptions noted below.

Method Blank:

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

QC Batch: 71683

L0: Analyte recovery in the laboratory control sample (LCS) was outside QC limits.

- LCS (Lab ID: 300011)
- Vanadium, Dissolved

Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

Batch Comments:

Insufficient sample volume to perform MS/MSD analysis.

- QC Batch: 71749

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PROJECT NARRATIVE

Project: PUMA TERMINAL MW SAMPLING

Pace Project No.: 2048222

Method: EPA 7470

Description: 7470 Mercury

Client: BBL Caribe / Arcadis PR

Date: January 18, 2017

General Information:

5 samples were analyzed for EPA 7470. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:

The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:

The samples were prepared in accordance with EPA 7470 with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):

All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:

All criteria were within method requirements with any exceptions noted below.

Method Blank:

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

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PROJECT NARRATIVE

Project: PUMA TERMINAL MW SAMPLING
Pace Project No.: 2048222

Method: EPA 7470
Description: 7470 Mercury, Dissolved (LF)
Client: BBL Caribe / Arcadis PR
Date: January 18, 2017

General Information:

5 samples were analyzed for EPA 7470. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:

The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:

The samples were prepared in accordance with EPA 7470 with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):

All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:

All criteria were within method requirements with any exceptions noted below.

Method Blank:

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

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PROJECT NARRATIVE

Project: PUMA TERMINAL MW SAMPLING

Pace Project No.: 2048222

Method: EPA 8270 by SIM

Description: 8270 MSSV PAH by SIM SEP

Client: BBL Caribe / Arcadis PR

Date: January 18, 2017

General Information:

5 samples were analyzed for EPA 8270 by SIM. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:

The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:

The samples were prepared in accordance with EPA 3510 with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):

All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:

All criteria were within method requirements with any exceptions noted below.

Internal Standards:

All internal standards were within QC limits with any exceptions noted below.

Surrogates:

All surrogates were within QC limits with any exceptions noted below.

Method Blank:

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

QC Batch: 71665

A matrix spike/matrix spike duplicate was not performed due to insufficient sample volume.

Additional Comments:

REPORT OF LABORATORY ANALYSIS

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PROJECT NARRATIVE

Project: PUMA TERMINAL MW SAMPLING
Pace Project No.: 2048222

Method: EPA 5030B/8260
Description: 8260 MSV Low Level
Client: BBL Caribe / Arcadis PR
Date: January 18, 2017

General Information:

7 samples were analyzed for EPA 5030B/8260. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:

The samples were analyzed within the method required hold times with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):

All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:

All criteria were within method requirements with any exceptions noted below.

Internal Standards:

All internal standards were within QC limits with any exceptions noted below.

Surrogates:

All surrogates were within QC limits with any exceptions noted below.

Method Blank:

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

QC Batch: 71630

L0: Analyte recovery in the laboratory control sample (LCS) was outside QC limits.

- LCS (Lab ID: 299870)
- Carbon disulfide

Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

QC Batch: 71630

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 2048288001

M0: Matrix spike recovery and/or matrix spike duplicate recovery was outside laboratory control limits.

- MS (Lab ID: 299871)
 - Carbon disulfide
- MSD (Lab ID: 299872)
 - Carbon disulfide

R1: RPD value was outside control limits.

- MSD (Lab ID: 299872)
 - Carbon disulfide

REPORT OF LABORATORY ANALYSIS

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PROJECT NARRATIVE

Project: PUMA TERMINAL MW SAMPLING

Pace Project No.: 2048222

Method: EPA 5030B/8260

Description: 8260 MSV Low Level

Client: BBL Caribe / Arcadis PR

Date: January 18, 2017

Additional Comments:

Analyte Comments:

QC Batch: 71630

C9: Common Laboratory Contaminant.

- DUP005 (Lab ID: 2048222005)
 - Acetone
- EB-010517 (Lab ID: 2048222002)
 - Acetone
- FB-010517 (Lab ID: 2048222007)
 - Acetone
- MW-109A (Lab ID: 2048222004)
 - Acetone
- MW-48A (Lab ID: 2048222003)
 - Acetone
- MW-M14 (Lab ID: 2048222006)
 - Acetone

This data package has been reviewed for quality and completeness and is approved for release.

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: PUMA TERMINAL MW SAMPLING

Pace Project No.: 2048222

Sample: TB-010517	Lab ID: 2048222001	Collected: 01/05/17 00:00	Received: 01/05/17 12:50	Matrix: Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8021 GCV BTEX, MTBE, GRO	Analytical Method: EPA 8015/8021							
Gasoline Range Organics	ND	ug/L	50.0	1		01/12/17 15:30		
Surrogates								
4-Bromofluorobenzene (S)	87	%	44-148	1		01/12/17 15:30	460-00-4	
8260 MSV Low Level	Analytical Method: EPA 5030B/8260							
Acetone	182	ug/L	4.0	1		01/10/17 12:16	67-64-1	
Benzene	ND	ug/L	0.50	1		01/10/17 12:16	71-43-2	
Bromodichloromethane	ND	ug/L	0.50	1		01/10/17 12:16	75-27-4	
Bromoform	ND	ug/L	0.50	1		01/10/17 12:16	75-25-2	
Bromomethane	ND	ug/L	0.50	1		01/10/17 12:16	74-83-9	
2-Butanone (MEK)	ND	ug/L	2.0	1		01/10/17 12:16	78-93-3	
Carbon disulfide	ND	ug/L	1.0	1		01/10/17 12:16	75-15-0	L3
Carbon tetrachloride	ND	ug/L	0.50	1		01/10/17 12:16	56-23-5	
Chlorobenzene	ND	ug/L	0.50	1		01/10/17 12:16	108-90-7	
Chloroethane	ND	ug/L	0.50	1		01/10/17 12:16	75-00-3	
Chloroform	ND	ug/L	0.50	1		01/10/17 12:16	67-66-3	
Chloromethane	ND	ug/L	0.50	1		01/10/17 12:16	74-87-3	
1,2-Dibromo-3-chloropropane	ND	ug/L	0.20	1		01/10/17 12:16	96-12-8	
Dibromochloromethane	ND	ug/L	0.50	1		01/10/17 12:16	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	1		01/10/17 12:16	106-93-4	
Dichlorodifluoromethane	ND	ug/L	1.0	1		01/10/17 12:16	75-71-8	
1,1-Dichloroethane	ND	ug/L	0.50	1		01/10/17 12:16	75-34-3	
1,2-Dichloroethane	ND	ug/L	0.50	1		01/10/17 12:16	107-06-2	
1,1-Dichloroethene	ND	ug/L	0.50	1		01/10/17 12:16	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	1		01/10/17 12:16	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	0.50	1		01/10/17 12:16	156-60-5	
1,2-Dichloropropane	ND	ug/L	0.50	1		01/10/17 12:16	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	0.50	1		01/10/17 12:16	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	0.50	1		01/10/17 12:16	10061-02-6	
Ethylbenzene	ND	ug/L	0.50	1		01/10/17 12:16	100-41-4	
2-Hexanone	ND	ug/L	1.0	1		01/10/17 12:16	591-78-6	
Isopropylbenzene (Cumene)	ND	ug/L	1.0	1		01/10/17 12:16	98-82-8	
Methyl acetate	ND	ug/L	2.0	1		01/10/17 12:16	79-20-9	
Methylene Chloride	ND	ug/L	0.50	1		01/10/17 12:16	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	1.0	1		01/10/17 12:16	108-10-1	
Methyl-tert-butyl ether	ND	ug/L	0.50	1		01/10/17 12:16	1634-04-4	
Styrene	ND	ug/L	1.0	1		01/10/17 12:16	100-42-5	
1,1,2,2-Tetrachloroethane	ND	ug/L	0.50	1		01/10/17 12:16	79-34-5	
Tetrachloroethene	ND	ug/L	0.50	1		01/10/17 12:16	127-18-4	
Toluene	ND	ug/L	0.50	1		01/10/17 12:16	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	0.50	1		01/10/17 12:16	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	0.50	1		01/10/17 12:16	79-00-5	
Trichloroethene	ND	ug/L	0.50	1		01/10/17 12:16	79-01-6	
Trichlorofluoromethane	ND	ug/L	0.50	1		01/10/17 12:16	75-69-4	
Vinyl chloride	ND	ug/L	0.50	1		01/10/17 12:16	75-01-4	
m&p-Xylene	ND	ug/L	2.0	1		01/10/17 12:16	179601-23-1	
o-Xylene	ND	ug/L	1.0	1		01/10/17 12:16	95-47-6	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: PUMA TERMINAL MW SAMPLING

Sample Project No.: 2048222

Sample: TB-010517	Lab ID: 2048222001	Collected: 01/05/17 00:00	Received: 01/05/17 12:50	Matrix: Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV Low Level		Analytical Method: EPA 5030B/8260						
Surrogates								
Dibromofluoromethane (S)	113	%.	72-126	1		01/10/17 12:16	1868-53-7	
4-Bromofluorobenzene (S)	99	%.	68-124	1		01/10/17 12:16	460-00-4	
Toluene-d8 (S)	99	%.	79-119	1		01/10/17 12:16	2037-26-5	
Sample: EB-010517		Lab ID: 2048222002		Collected: 01/05/17 08:46	Received: 01/05/17 12:50	Matrix: Water		
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8015M DRO/ORO Organics		Analytical Method: EPA 8015B Modified Preparation Method: EPA 3535						
Diesel Range Organic (C10-C28)	ND	mg/L	0.50	1	01/09/17 07:20	01/09/17 19:03		
Oil Range Organics (>C28-C40)	ND	mg/L	1.0	1	01/09/17 07:20	01/09/17 19:03		
Surrogates								
n-Pentacosane (S)	60	%.	16-137	1	01/09/17 07:20	01/09/17 19:03	629-99-2	
o-Terphenyl (S)	64	%.	10-121	1	01/09/17 07:20	01/09/17 19:03	84-15-1	
8021 GCV BTEX, MTBE, GRO		Analytical Method: EPA 8015/8021						
Gasoline Range Organics	ND	ug/L	50.0	1		01/12/17 15:57		
Surrogates								
4-Bromofluorobenzene (S)	92	%.	44-148	1		01/12/17 15:57	460-00-4	
6020 MET ICPMS		Analytical Method: EPA 6020 Preparation Method: EPA 3010						
Arsenic	ND	mg/L	0.0010	1	01/09/17 15:32	01/13/17 20:57	7440-38-2	
Chromium	ND	mg/L	0.0010	1	01/09/17 15:32	01/13/17 20:57	7440-47-3	
Lead	ND	mg/L	0.0010	1	01/09/17 15:32	01/13/17 20:57	7439-92-1	
Vanadium	ND	mg/L	0.0050	1	01/09/17 15:32	01/13/17 20:57	7440-62-2	
6020 MET ICPMS, Dissolved (LF)		Analytical Method: EPA 6020 Preparation Method: EPA 3005A						
Arsenic, Dissolved	ND	ug/L	1.0	1	01/10/17 11:44	01/13/17 23:03	7440-38-2	
Chromium, Dissolved	ND	ug/L	1.0	1	01/10/17 11:44	01/13/17 23:03	7440-47-3	
Lead, Dissolved	ND	ug/L	1.0	1	01/10/17 11:44	01/13/17 23:03	7439-92-1	
Vanadium, Dissolved	ND	ug/L	5.0	1	01/10/17 11:44	01/13/17 23:03	7440-62-2	L3
7470 Mercury		Analytical Method: EPA 7470 Preparation Method: EPA 7470						
Mercury	ND	ug/L	0.20	1	01/09/17 15:19	01/09/17 19:51	7439-97-6	
7470 Mercury, Dissolved (LF)		Analytical Method: EPA 7470 Preparation Method: EPA 7470						
Mercury, Dissolved	ND	ug/L	0.20	1	01/10/17 12:30	01/10/17 18:01	7439-97-6	
8270 MSSV PAH by SIM SEP		Analytical Method: EPA 8270 by SIM Preparation Method: EPA 3510						
Acenaphthene	ND	ug/L	0.10	1	01/10/17 09:46	01/10/17 20:58	83-32-9	
Acenaphthylene	ND	ug/L	0.10	1	01/10/17 09:46	01/10/17 20:58	208-96-8	
Anthracene	ND	ug/L	0.10	1	01/10/17 09:46	01/10/17 20:58	120-12-7	
Benzo(a)anthracene	ND	ug/L	0.10	1	01/10/17 09:46	01/10/17 20:58	56-55-3	
Benzo(a)pyrene	ND	ug/L	0.10	1	01/10/17 09:46	01/10/17 20:58	50-32-8	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: PUMA TERMINAL MW SAMPLING

Sample Project No.: 2048222

Sample: EB-010517	Lab ID: 2048222002	Collected: 01/05/17 08:46	Received: 01/05/17 12:50	Matrix: Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8270 MSSV PAH by SIM SEP		Analytical Method: EPA 8270 by SIM Preparation Method: EPA 3510						
Benzo(b)fluoranthene	ND	ug/L	0.10	1	01/10/17 09:46	01/10/17 20:58	205-99-2	
Benzo(g,h,i)perylene	ND	ug/L	0.10	1	01/10/17 09:46	01/10/17 20:58	191-24-2	
Benzo(k)fluoranthene	ND	ug/L	0.10	1	01/10/17 09:46	01/10/17 20:58	207-08-9	
Chrysene	ND	ug/L	0.10	1	01/10/17 09:46	01/10/17 20:58	218-01-9	
Dibenz(a,h)anthracene	ND	ug/L	0.10	1	01/10/17 09:46	01/10/17 20:58	53-70-3	
Fluoranthene	ND	ug/L	0.10	1	01/10/17 09:46	01/10/17 20:58	206-44-0	
Fluorene	ND	ug/L	0.10	1	01/10/17 09:46	01/10/17 20:58	86-73-7	
Indeno(1,2,3-cd)pyrene	ND	ug/L	0.10	1	01/10/17 09:46	01/10/17 20:58	193-39-5	
2-Methylnaphthalene	ND	ug/L	0.10	1	01/10/17 09:46	01/10/17 20:58	91-57-6	
Naphthalene	ND	ug/L	0.10	1	01/10/17 09:46	01/10/17 20:58	91-20-3	
Phenanthrene	ND	ug/L	0.10	1	01/10/17 09:46	01/10/17 20:58	85-01-8	
Pyrene	ND	ug/L	0.10	1	01/10/17 09:46	01/10/17 20:58	129-00-0	
Surrogates								
2-Fluorobiphenyl (S)	86	%	25-150	1	01/10/17 09:46	01/10/17 20:58	321-60-8	
Terphenyl-d14 (S)	79	%	25-150	1	01/10/17 09:46	01/10/17 20:58	1718-51-0	
8260 MSV Low Level		Analytical Method: EPA 5030B/8260						
Acetone	14.6	ug/L	4.0	1		01/10/17 12:34	67-64-1	C9
Benzene	ND	ug/L	0.50	1		01/10/17 12:34	71-43-2	
Bromodichloromethane	0.61	ug/L	0.50	1		01/10/17 12:34	75-27-4	
Bromoform	ND	ug/L	0.50	1		01/10/17 12:34	75-25-2	
Bromomethane	ND	ug/L	0.50	1		01/10/17 12:34	74-83-9	
2-Butanone (MEK)	ND	ug/L	2.0	1		01/10/17 12:34	78-93-3	
Carbon disulfide	ND	ug/L	1.0	1		01/10/17 12:34	75-15-0	L3
Carbon tetrachloride	ND	ug/L	0.50	1		01/10/17 12:34	56-23-5	
Chlorobenzene	ND	ug/L	0.50	1		01/10/17 12:34	108-90-7	
Chloroethane	ND	ug/L	0.50	1		01/10/17 12:34	75-00-3	
Chloroform	3.1	ug/L	0.50	1		01/10/17 12:34	67-66-3	
Chloromethane	ND	ug/L	0.50	1		01/10/17 12:34	74-87-3	
1,2-Dibromo-3-chloropropane	ND	ug/L	0.20	1		01/10/17 12:34	96-12-8	
Dibromochloromethane	ND	ug/L	0.50	1		01/10/17 12:34	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	1		01/10/17 12:34	106-93-4	
Dichlorodifluoromethane	ND	ug/L	1.0	1		01/10/17 12:34	75-71-8	
1,1-Dichloroethane	ND	ug/L	0.50	1		01/10/17 12:34	75-34-3	
1,2-Dichloroethane	ND	ug/L	0.50	1		01/10/17 12:34	107-06-2	
1,1-Dichloroethene	ND	ug/L	0.50	1		01/10/17 12:34	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	1		01/10/17 12:34	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	0.50	1		01/10/17 12:34	156-60-5	
1,2-Dichloropropane	ND	ug/L	0.50	1		01/10/17 12:34	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	0.50	1		01/10/17 12:34	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	0.50	1		01/10/17 12:34	10061-02-6	
Ethylbenzene	ND	ug/L	0.50	1		01/10/17 12:34	100-41-4	
2-Hexanone	ND	ug/L	1.0	1		01/10/17 12:34	591-78-6	
Isopropylbenzene (Cumene)	ND	ug/L	1.0	1		01/10/17 12:34	98-82-8	
Methyl acetate	ND	ug/L	2.0	1		01/10/17 12:34	79-20-9	
Methylene Chloride	ND	ug/L	0.50	1		01/10/17 12:34	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	1.0	1		01/10/17 12:34	108-10-1	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: PUMA TERMINAL MW SAMPLING

Pace Project No.: 2048222

Sample: EB-010517	Lab ID: 2048222002	Collected: 01/05/17 08:46	Received: 01/05/17 12:50	Matrix: Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV Low Level		Analytical Method: EPA 5030B/8260						
Methyl-tert-butyl ether	ND	ug/L	0.50	1		01/10/17 12:34	1634-04-4	
Styrene	ND	ug/L	1.0	1		01/10/17 12:34	100-42-5	
1,1,2,2-Tetrachloroethane	ND	ug/L	0.50	1		01/10/17 12:34	79-34-5	
Tetrachloroethene	ND	ug/L	0.50	1		01/10/17 12:34	127-18-4	
Toluene	ND	ug/L	0.50	1		01/10/17 12:34	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	0.50	1		01/10/17 12:34	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	0.50	1		01/10/17 12:34	79-00-5	
Trichloroethene	ND	ug/L	0.50	1		01/10/17 12:34	79-01-6	
Trichlorofluoromethane	ND	ug/L	0.50	1		01/10/17 12:34	75-69-4	
Vinyl chloride	ND	ug/L	0.50	1		01/10/17 12:34	75-01-4	
m&p-Xylene	ND	ug/L	2.0	1		01/10/17 12:34	179601-23-1	
o-Xylene	ND	ug/L	1.0	1		01/10/17 12:34	95-47-6	
Surrogates								
Dibromofluoromethane (S)	110	%	72-126	1		01/10/17 12:34	1868-53-7	
4-Bromofluorobenzene (S)	95	%	68-124	1		01/10/17 12:34	460-00-4	
Toluene-d8 (S)	101	%	79-119	1		01/10/17 12:34	2037-26-5	
<hr/>								
Sample: MW-48A	Lab ID: 2048222003	Collected: 01/05/17 09:42	Received: 01/05/17 12:50	Matrix: Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8015M DRO/ORO Organics		Analytical Method: EPA 8015B Modified Preparation Method: EPA 3535						
Diesel Range Organic (C10-C28)	ND	mg/L	0.50	1	01/09/17 07:20	01/09/17 19:31		
Oil Range Organics (>C28-C40)	ND	mg/L	1.0	1	01/09/17 07:20	01/09/17 19:31		
Surrogates								
n-Pentacosane (S)	73	%	16-137	1	01/09/17 07:20	01/09/17 19:31	629-99-2	
o-Terphenyl (S)	69	%	10-121	1	01/09/17 07:20	01/09/17 19:31	84-15-1	
8021 GCV BTEX, MTBE, GRO		Analytical Method: EPA 8015/8021						
Gasoline Range Organics	ND	ug/L	50.0	1		01/12/17 12:01		
Surrogates								
4-Bromofluorobenzene (S)	90	%	44-148	1		01/12/17 12:01	460-00-4	
6020 MET ICPMS		Analytical Method: EPA 6020 Preparation Method: EPA 3010						
Arsenic	ND	mg/L	0.0010	1	01/09/17 15:32	01/13/17 21:01	7440-38-2	
Chromium	ND	mg/L	0.0010	1	01/09/17 15:32	01/13/17 21:01	7440-47-3	
Lead	0.0031	mg/L	0.0010	1	01/09/17 15:32	01/13/17 21:01	7439-92-1	
Vanadium	ND	mg/L	0.0050	1	01/09/17 15:32	01/13/17 21:01	7440-62-2	
6020 MET ICPMS, Dissolved (LF)		Analytical Method: EPA 6020 Preparation Method: EPA 3005A						
Arsenic, Dissolved	ND	ug/L	1.0	1	01/10/17 11:44	01/13/17 23:06	7440-38-2	
Chromium, Dissolved	ND	ug/L	1.0	1	01/10/17 11:44	01/13/17 23:06	7440-47-3	
Lead, Dissolved	ND	ug/L	1.0	1	01/10/17 11:44	01/13/17 23:06	7439-92-1	
Vanadium, Dissolved	ND	ug/L	5.0	1	01/10/17 11:44	01/13/17 23:06	7440-62-2	L3

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ANALYTICAL RESULTS

Project: PUMA TERMINAL MW SAMPLING

Pace Project No.: 2048222

Sample: MW-48A	Lab ID: 2048222003	Collected: 01/05/17 09:42	Received: 01/05/17 12:50	Matrix: Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
7470 Mercury		Analytical Method: EPA 7470 Preparation Method: EPA 7470						
Mercury	ND	ug/L	0.20	1	01/09/17 15:19	01/09/17 19:14	7439-97-6	
7470 Mercury, Dissolved (LF)		Analytical Method: EPA 7470 Preparation Method: EPA 7470						
Mercury, Dissolved	ND	ug/L	0.20	1	01/10/17 12:30	01/10/17 18:03	7439-97-6	
8270 MSSV PAH by SIM SEP		Analytical Method: EPA 8270 by SIM Preparation Method: EPA 3510						
Acenaphthene	ND	ug/L	0.10	1	01/10/17 09:46	01/10/17 21:18	83-32-9	
Acenaphthylene	ND	ug/L	0.10	1	01/10/17 09:46	01/10/17 21:18	208-96-8	
Anthracene	ND	ug/L	0.10	1	01/10/17 09:46	01/10/17 21:18	120-12-7	
Benzo(a)anthracene	ND	ug/L	0.10	1	01/10/17 09:46	01/10/17 21:18	56-55-3	
Benzo(a)pyrene	ND	ug/L	0.10	1	01/10/17 09:46	01/10/17 21:18	50-32-8	
Benzo(b)fluoranthene	ND	ug/L	0.10	1	01/10/17 09:46	01/10/17 21:18	205-99-2	
Benzo(g,h,i)perylene	ND	ug/L	0.10	1	01/10/17 09:46	01/10/17 21:18	191-24-2	
Benzo(k)fluoranthene	ND	ug/L	0.10	1	01/10/17 09:46	01/10/17 21:18	207-08-9	
Chrysene	ND	ug/L	0.10	1	01/10/17 09:46	01/10/17 21:18	218-01-9	
Dibenz(a,h)anthracene	ND	ug/L	0.10	1	01/10/17 09:46	01/10/17 21:18	53-70-3	
Fluoranthene	ND	ug/L	0.10	1	01/10/17 09:46	01/10/17 21:18	206-44-0	
Fluorene	ND	ug/L	0.10	1	01/10/17 09:46	01/10/17 21:18	86-73-7	
Indeno(1,2,3-cd)pyrene	ND	ug/L	0.10	1	01/10/17 09:46	01/10/17 21:18	193-39-5	
2-Methylnaphthalene	ND	ug/L	0.10	1	01/10/17 09:46	01/10/17 21:18	91-57-6	
Naphthalene	ND	ug/L	0.10	1	01/10/17 09:46	01/10/17 21:18	91-20-3	
Phenanthrene	ND	ug/L	0.10	1	01/10/17 09:46	01/10/17 21:18	85-01-8	
Pyrene	ND	ug/L	0.10	1	01/10/17 09:46	01/10/17 21:18	129-00-0	
Surrogates								
2-Fluorobiphenyl (S)	80	%.	25-150	1	01/10/17 09:46	01/10/17 21:18	321-60-8	
Terphenyl-d14 (S)	78	%.	25-150	1	01/10/17 09:46	01/10/17 21:18	1718-51-0	
8260 MSV Low Level		Analytical Method: EPA 5030B/8260						
Acetone	33.0	ug/L	4.0	1		01/10/17 12:52	67-64-1	C9
Benzene	ND	ug/L	0.50	1		01/10/17 12:52	71-43-2	
Bromodichloromethane	ND	ug/L	0.50	1		01/10/17 12:52	75-27-4	
Bromoform	ND	ug/L	0.50	1		01/10/17 12:52	75-25-2	
Bromomethane	ND	ug/L	0.50	1		01/10/17 12:52	74-83-9	
2-Butanone (MEK)	ND	ug/L	2.0	1		01/10/17 12:52	78-93-3	
Carbon disulfide	ND	ug/L	1.0	1		01/10/17 12:52	75-15-0	L3
Carbon tetrachloride	ND	ug/L	0.50	1		01/10/17 12:52	56-23-5	
Chlorobenzene	ND	ug/L	0.50	1		01/10/17 12:52	108-90-7	
Chloroethane	ND	ug/L	0.50	1		01/10/17 12:52	75-00-3	
Chloroform	ND	ug/L	0.50	1		01/10/17 12:52	67-66-3	
Chloromethane	ND	ug/L	0.50	1		01/10/17 12:52	74-87-3	
1,2-Dibromo-3-chloropropane	ND	ug/L	0.20	1		01/10/17 12:52	96-12-8	
Dibromochloromethane	ND	ug/L	0.50	1		01/10/17 12:52	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	1		01/10/17 12:52	106-93-4	
Dichlorodifluoromethane	ND	ug/L	1.0	1		01/10/17 12:52	75-71-8	
1,1-Dichloroethane	ND	ug/L	0.50	1		01/10/17 12:52	75-34-3	
1,2-Dichloroethane	ND	ug/L	0.50	1		01/10/17 12:52	107-06-2	

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ANALYTICAL RESULTS

Project: PUMA TERMINAL MW SAMPLING

Pace Project No.: 2048222

Sample: MW-48A		Lab ID: 2048222003	Collected: 01/05/17 09:42	Received: 01/05/17 12:50	Matrix: Water			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV Low Level		Analytical Method: EPA 5030B/8260						
1,1-Dichloroethene	ND	ug/L	0.50	1		01/10/17 12:52	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	1		01/10/17 12:52	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	0.50	1		01/10/17 12:52	156-60-5	
1,2-Dichloropropane	ND	ug/L	0.50	1		01/10/17 12:52	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	0.50	1		01/10/17 12:52	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	0.50	1		01/10/17 12:52	10061-02-6	
Ethylbenzene	ND	ug/L	0.50	1		01/10/17 12:52	100-41-4	
2-Hexanone	ND	ug/L	1.0	1		01/10/17 12:52	591-78-6	
Isopropylbenzene (Cumene)	ND	ug/L	1.0	1		01/10/17 12:52	98-82-8	
Methyl acetate	ND	ug/L	2.0	1		01/10/17 12:52	79-20-9	
Methylene Chloride	ND	ug/L	0.50	1		01/10/17 12:52	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	1.0	1		01/10/17 12:52	108-10-1	
Methyl-tert-butyl ether	ND	ug/L	0.50	1		01/10/17 12:52	1634-04-4	
Styrene	ND	ug/L	1.0	1		01/10/17 12:52	100-42-5	
1,1,2,2-Tetrachloroethane	ND	ug/L	0.50	1		01/10/17 12:52	79-34-5	
Tetrachloroethene	ND	ug/L	0.50	1		01/10/17 12:52	127-18-4	
Toluene	ND	ug/L	0.50	1		01/10/17 12:52	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	0.50	1		01/10/17 12:52	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	0.50	1		01/10/17 12:52	79-00-5	
Trichloroethene	ND	ug/L	0.50	1		01/10/17 12:52	79-01-6	
Trichlorofluoromethane	ND	ug/L	0.50	1		01/10/17 12:52	75-69-4	
Vinyl chloride	ND	ug/L	0.50	1		01/10/17 12:52	75-01-4	
m&p-Xylene	ND	ug/L	2.0	1		01/10/17 12:52	179601-23-1	
o-Xylene	ND	ug/L	1.0	1		01/10/17 12:52	95-47-6	
Surrogates								
Dibromofluoromethane (S)	115	%	72-126	1		01/10/17 12:52	1868-53-7	
4-Bromofluorobenzene (S)	97	%	68-124	1		01/10/17 12:52	460-00-4	
Toluene-d8 (S)	102	%	79-119	1		01/10/17 12:52	2037-26-5	

Sample: MW-109A		Lab ID: 2048222004	Collected: 01/05/17 11:05	Received: 01/05/17 12:50	Matrix: Water			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8015M DRO/ORO Organics		Analytical Method: EPA 8015B Modified Preparation Method: EPA 3535						
Diesel Range Organic (C10-C28)	ND	mg/L	0.50	1	01/09/17 07:20	01/09/17 19:59		
Oil Range Organics (>C28-C40)	ND	mg/L	1.0	1	01/09/17 07:20	01/09/17 19:59		
Surrogates								
n-Pentacosane (S)	59	%	16-137	1	01/09/17 07:20	01/09/17 19:59	629-99-2	
o-Terphenyl (S)	63	%	10-121	1	01/09/17 07:20	01/09/17 19:59	84-15-1	
8021 GCV BTEX, MTBE, GRO		Analytical Method: EPA 8015/8021						
Gasoline Range Organics	ND	ug/L	50.0	1		01/12/17 12:27		
Surrogates								
4-Bromofluorobenzene (S)	91	%	44-148	1		01/12/17 12:27	460-00-4	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: PUMA TERMINAL MW SAMPLING

Project No.: 2048222

Sample: MW-109A	Lab ID: 2048222004	Collected: 01/05/17 11:05	Received: 01/05/17 12:50	Matrix: Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
6020 MET ICPMS								
Analytical Method: EPA 6020 Preparation Method: EPA 3010								
Arsenic	ND	mg/L	0.0010	1	01/09/17 15:32	01/13/17 21:05	7440-38-2	
Chromium	ND	mg/L	0.0010	1	01/09/17 15:32	01/13/17 21:05	7440-47-3	
Lead	ND	mg/L	0.0010	1	01/09/17 15:32	01/13/17 21:05	7439-92-1	
Vanadium	ND	mg/L	0.0050	1	01/09/17 15:32	01/13/17 21:05	7440-62-2	
6020 MET ICPMS, Dissolved (LF)								
Analytical Method: EPA 6020 Preparation Method: EPA 3005A								
Arsenic, Dissolved	ND	ug/L	1.0	1	01/10/17 11:44	01/13/17 23:10	7440-38-2	
Chromium, Dissolved	ND	ug/L	1.0	1	01/10/17 11:44	01/13/17 23:10	7440-47-3	
Lead, Dissolved	ND	ug/L	1.0	1	01/10/17 11:44	01/13/17 23:10	7439-92-1	
Vanadium, Dissolved	ND	ug/L	5.0	1	01/10/17 11:44	01/13/17 23:10	7440-62-2	L3
7470 Mercury								
Analytical Method: EPA 7470 Preparation Method: EPA 7470								
Mercury	ND	ug/L	0.20	1	01/09/17 15:19	01/09/17 19:53	7439-97-6	
7470 Mercury, Dissolved (LF)								
Analytical Method: EPA 7470 Preparation Method: EPA 7470								
Mercury, Dissolved	ND	ug/L	0.20	1	01/10/17 12:30	01/10/17 18:09	7439-97-6	
8270 MSSV PAH by SIM SEP								
Analytical Method: EPA 8270 by SIM Preparation Method: EPA 3510								
Acenaphthene	ND	ug/L	0.10	1	01/10/17 09:46	01/10/17 21:38	83-32-9	
Acenaphthylene	ND	ug/L	0.10	1	01/10/17 09:46	01/10/17 21:38	208-96-8	
Anthracene	ND	ug/L	0.10	1	01/10/17 09:46	01/10/17 21:38	120-12-7	
Benzo(a)anthracene	ND	ug/L	0.10	1	01/10/17 09:46	01/10/17 21:38	56-55-3	
Benzo(a)pyrene	ND	ug/L	0.10	1	01/10/17 09:46	01/10/17 21:38	50-32-8	
Benzo(b)fluoranthene	ND	ug/L	0.10	1	01/10/17 09:46	01/10/17 21:38	205-99-2	
Benzo(g,h,i)perylene	ND	ug/L	0.10	1	01/10/17 09:46	01/10/17 21:38	191-24-2	
Benzo(k)fluoranthene	ND	ug/L	0.10	1	01/10/17 09:46	01/10/17 21:38	207-08-9	
Chrysene	ND	ug/L	0.10	1	01/10/17 09:46	01/10/17 21:38	218-01-9	
Dibenz(a,h)anthracene	ND	ug/L	0.10	1	01/10/17 09:46	01/10/17 21:38	53-70-3	
Fluoranthene	ND	ug/L	0.10	1	01/10/17 09:46	01/10/17 21:38	206-44-0	
Fluorene	ND	ug/L	0.10	1	01/10/17 09:46	01/10/17 21:38	86-73-7	
Indeno(1,2,3-cd)pyrene	ND	ug/L	0.10	1	01/10/17 09:46	01/10/17 21:38	193-39-5	
2-Methylnaphthalene	ND	ug/L	0.10	1	01/10/17 09:46	01/10/17 21:38	91-57-6	
Naphthalene	ND	ug/L	0.10	1	01/10/17 09:46	01/10/17 21:38	91-20-3	
Phenanthrene	ND	ug/L	0.10	1	01/10/17 09:46	01/10/17 21:38	85-01-8	
Pyrene	ND	ug/L	0.10	1	01/10/17 09:46	01/10/17 21:38	129-00-0	
Surrogates								
2-Fluorobiphenyl (S)	97	%	25-150	1	01/10/17 09:46	01/10/17 21:38	321-60-8	
Terphenyl-d14 (S)	85	%	25-150	1	01/10/17 09:46	01/10/17 21:38	1718-51-0	
8260 MSV Low Level								
Analytical Method: EPA 5030B/8260								
Acetone	6.3	ug/L	4.0	1		01/10/17 13:10	67-64-1	C9
Benzene	ND	ug/L	0.50	1		01/10/17 13:10	71-43-2	
Bromodichloromethane	ND	ug/L	0.50	1		01/10/17 13:10	75-27-4	
Bromoform	ND	ug/L	0.50	1		01/10/17 13:10	75-25-2	
Bromomethane	ND	ug/L	0.50	1		01/10/17 13:10	74-83-9	
2-Butanone (MEK)	ND	ug/L	2.0	1		01/10/17 13:10	78-93-3	

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ANALYTICAL RESULTS

Project: PUMA TERMINAL MW SAMPLING

Pace Project No.: 2048222

Sample: MW-109A	Lab ID: 2048222004	Collected: 01/05/17 11:05	Received: 01/05/17 12:50	Matrix: Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV Low Level	Analytical Method: EPA 5030B/8260							
Carbon disulfide	ND	ug/L	1.0	1		01/10/17 13:10	75-15-0	L3
Carbon tetrachloride	ND	ug/L	0.50	1		01/10/17 13:10	56-23-5	
Chlorobenzene	ND	ug/L	0.50	1		01/10/17 13:10	108-90-7	
Chloroethane	ND	ug/L	0.50	1		01/10/17 13:10	75-00-3	
Chloroform	ND	ug/L	0.50	1		01/10/17 13:10	67-66-3	
Chloromethane	ND	ug/L	0.50	1		01/10/17 13:10	74-87-3	
1,2-Dibromo-3-chloropropane	ND	ug/L	0.20	1		01/10/17 13:10	96-12-8	
Dibromochloromethane	ND	ug/L	0.50	1		01/10/17 13:10	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	1		01/10/17 13:10	106-93-4	
Dichlorodifluoromethane	ND	ug/L	1.0	1		01/10/17 13:10	75-71-8	
1,1-Dichloroethane	ND	ug/L	0.50	1		01/10/17 13:10	75-34-3	
1,2-Dichloroethane	ND	ug/L	0.50	1		01/10/17 13:10	107-06-2	
1,1-Dichloroethene	ND	ug/L	0.50	1		01/10/17 13:10	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	1		01/10/17 13:10	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	0.50	1		01/10/17 13:10	156-60-5	
1,2-Dichloropropane	ND	ug/L	0.50	1		01/10/17 13:10	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	0.50	1		01/10/17 13:10	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	0.50	1		01/10/17 13:10	10061-02-6	
Ethylbenzene	ND	ug/L	0.50	1		01/10/17 13:10	100-41-4	
2-Hexanone	ND	ug/L	1.0	1		01/10/17 13:10	591-78-6	
Isopropylbenzene (Cumene)	ND	ug/L	1.0	1		01/10/17 13:10	98-82-8	
Methyl acetate	ND	ug/L	2.0	1		01/10/17 13:10	79-20-9	
Methylene Chloride	ND	ug/L	0.50	1		01/10/17 13:10	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	1.0	1		01/10/17 13:10	108-10-1	
Methyl-tert-butyl ether	ND	ug/L	0.50	1		01/10/17 13:10	1634-04-4	
Styrene	ND	ug/L	1.0	1		01/10/17 13:10	100-42-5	
1,1,2,2-Tetrachloroethane	ND	ug/L	0.50	1		01/10/17 13:10	79-34-5	
Tetrachloroethene	ND	ug/L	0.50	1		01/10/17 13:10	127-18-4	
Toluene	ND	ug/L	0.50	1		01/10/17 13:10	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	0.50	1		01/10/17 13:10	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	0.50	1		01/10/17 13:10	79-00-5	
Trichloroethene	ND	ug/L	0.50	1		01/10/17 13:10	79-01-6	
Trichlorofluoromethane	ND	ug/L	0.50	1		01/10/17 13:10	75-69-4	
Vinyl chloride	ND	ug/L	0.50	1		01/10/17 13:10	75-01-4	
m&p-Xylene	ND	ug/L	2.0	1		01/10/17 13:10	179601-23-1	
o-Xylene	ND	ug/L	1.0	1		01/10/17 13:10	95-47-6	
Surrogates								
Dibromofluoromethane (S)	114	%.	72-126	1		01/10/17 13:10	1868-53-7	
4-Bromofluorobenzene (S)	96	%.	68-124	1		01/10/17 13:10	460-00-4	
Toluene-d8 (S)	99	%.	79-119	1		01/10/17 13:10	2037-26-5	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: PUMA TERMINAL MW SAMPLING

Pace Project No.: 2048222

Sample: DUP005	Lab ID: 2048222005	Collected: 01/05/17 00:00	Received: 01/05/17 12:50	Matrix: Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8015M DRO/ORO Organics								
Analytical Method: EPA 8015B Modified Preparation Method: EPA 3535								
Diesel Range Organic (C10-C28)	ND	mg/L	0.50	1	01/09/17 07:20	01/09/17 20:26		
Oil Range Organics (>C28-C40)	ND	mg/L	1.0	1	01/09/17 07:20	01/09/17 20:26		
Surrogates								
n-Pentacosane (S)	60	%	16-137	1	01/09/17 07:20	01/09/17 20:26	629-99-2	
o-Terphenyl (S)	64	%	10-121	1	01/09/17 07:20	01/09/17 20:26	84-15-1	
8021 GCV BTEX, MTBE, GRO								
Analytical Method: EPA 8015/8021								
Gasoline Range Organics	ND	ug/L	50.0	1		01/12/17 12:53		
Surrogates								
4-Bromofluorobenzene (S)	86	%	44-148	1		01/12/17 12:53	460-00-4	
6020 MET ICPMS								
Analytical Method: EPA 6020 Preparation Method: EPA 3010								
Arsenic	ND	mg/L	0.0010	1	01/09/17 15:32	01/13/17 21:08	7440-38-2	
Chromium	ND	mg/L	0.0010	1	01/09/17 15:32	01/13/17 21:08	7440-47-3	
Lead	ND	mg/L	0.0010	1	01/09/17 15:32	01/13/17 21:08	7439-92-1	
Vanadium	ND	mg/L	0.0050	1	01/09/17 15:32	01/13/17 21:08	7440-62-2	
6020 MET ICPMS, Dissolved (LF)								
Analytical Method: EPA 6020 Preparation Method: EPA 3005A								
Arsenic, Dissolved	ND	ug/L	1.0	1	01/10/17 11:44	01/13/17 23:14	7440-38-2	
Chromium, Dissolved	ND	ug/L	1.0	1	01/10/17 11:44	01/13/17 23:14	7440-47-3	
Lead, Dissolved	ND	ug/L	1.0	1	01/10/17 11:44	01/13/17 23:14	7439-92-1	
Vanadium, Dissolved	ND	ug/L	5.0	1	01/10/17 11:44	01/13/17 23:14	7440-62-2	L3
7470 Mercury								
Analytical Method: EPA 7470 Preparation Method: EPA 7470								
Mercury	ND	ug/L	0.20	1	01/09/17 15:19	01/09/17 19:55	7439-97-6	
7470 Mercury, Dissolved (LF)								
Analytical Method: EPA 7470 Preparation Method: EPA 7470								
Mercury, Dissolved	ND	ug/L	0.20	1	01/10/17 12:30	01/10/17 18:11	7439-97-6	
8270 MSSV PAH by SIM SEP								
Analytical Method: EPA 8270 by SIM Preparation Method: EPA 3510								
Acenaphthene	ND	ug/L	0.10	1	01/10/17 09:46	01/10/17 21:58	83-32-9	
Acenaphthylene	ND	ug/L	0.10	1	01/10/17 09:46	01/10/17 21:58	208-96-8	
Anthracene	ND	ug/L	0.10	1	01/10/17 09:46	01/10/17 21:58	120-12-7	
Benzo(a)anthracene	ND	ug/L	0.10	1	01/10/17 09:46	01/10/17 21:58	56-55-3	
Benzo(a)pyrene	ND	ug/L	0.10	1	01/10/17 09:46	01/10/17 21:58	50-32-8	
Benzo(b)fluoranthene	ND	ug/L	0.10	1	01/10/17 09:46	01/10/17 21:58	205-99-2	
Benzo(g,h,i)perylene	ND	ug/L	0.10	1	01/10/17 09:46	01/10/17 21:58	191-24-2	
Benzo(k)fluoranthene	ND	ug/L	0.10	1	01/10/17 09:46	01/10/17 21:58	207-08-9	
Chrysene	ND	ug/L	0.10	1	01/10/17 09:46	01/10/17 21:58	218-01-9	
Dibenz(a,h)anthracene	ND	ug/L	0.10	1	01/10/17 09:46	01/10/17 21:58	53-70-3	
Fluoranthene	ND	ug/L	0.10	1	01/10/17 09:46	01/10/17 21:58	206-44-0	
Fluorene	ND	ug/L	0.10	1	01/10/17 09:46	01/10/17 21:58	86-73-7	
Indeno(1,2,3-cd)pyrene	ND	ug/L	0.10	1	01/10/17 09:46	01/10/17 21:58	193-39-5	
2-Methylnaphthalene	ND	ug/L	0.10	1	01/10/17 09:46	01/10/17 21:58	91-57-6	
Naphthalene	ND	ug/L	0.10	1	01/10/17 09:46	01/10/17 21:58	91-20-3	
Phenanthrene	ND	ug/L	0.10	1	01/10/17 09:46	01/10/17 21:58	85-01-8	

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ANALYTICAL RESULTS

Project: PUMA TERMINAL MW SAMPLING

Pace Project No.: 2048222

Sample: DUP005	Lab ID: 2048222005	Collected: 01/05/17 00:00	Received: 01/05/17 12:50	Matrix: Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8270 MSSV PAH by SIM SEP		Analytical Method: EPA 8270 by SIM Preparation Method: EPA 3510						
Pyrene	ND	ug/L	0.10	1	01/10/17 09:46	01/10/17 21:58	129-00-0	
Surrogates								
2-Fluorobiphenyl (S)	92	%.	25-150	1	01/10/17 09:46	01/10/17 21:58	321-60-8	
Terphenyl-d14 (S)	89	%.	25-150	1	01/10/17 09:46	01/10/17 21:58	1718-51-0	
8260 MSV Low Level		Analytical Method: EPA 5030B/8260						
Acetone	20.0	ug/L	4.0	1		01/10/17 13:28	67-64-1	C9
Benzene	ND	ug/L	0.50	1		01/10/17 13:28	71-43-2	
Bromodichloromethane	ND	ug/L	0.50	1		01/10/17 13:28	75-27-4	
Bromoform	ND	ug/L	0.50	1		01/10/17 13:28	75-25-2	
Bromomethane	ND	ug/L	0.50	1		01/10/17 13:28	74-83-9	
2-Butanone (MEK)	ND	ug/L	2.0	1		01/10/17 13:28	78-93-3	
Carbon disulfide	ND	ug/L	1.0	1		01/10/17 13:28	75-15-0	L3
Carbon tetrachloride	ND	ug/L	0.50	1		01/10/17 13:28	56-23-5	
Chlorobenzene	ND	ug/L	0.50	1		01/10/17 13:28	108-90-7	
Chloroethane	ND	ug/L	0.50	1		01/10/17 13:28	75-00-3	
Chloroform	ND	ug/L	0.50	1		01/10/17 13:28	67-66-3	
Chloromethane	ND	ug/L	0.50	1		01/10/17 13:28	74-87-3	
1,2-Dibromo-3-chloropropane	ND	ug/L	0.20	1		01/10/17 13:28	96-12-8	
Dibromochloromethane	ND	ug/L	0.50	1		01/10/17 13:28	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	1		01/10/17 13:28	106-93-4	
Dichlorodifluoromethane	ND	ug/L	1.0	1		01/10/17 13:28	75-71-8	
1,1-Dichloroethane	ND	ug/L	0.50	1		01/10/17 13:28	75-34-3	
1,2-Dichloroethane	ND	ug/L	0.50	1		01/10/17 13:28	107-06-2	
1,1-Dichloroethene	ND	ug/L	0.50	1		01/10/17 13:28	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	1		01/10/17 13:28	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	0.50	1		01/10/17 13:28	156-60-5	
1,2-Dichloropropane	ND	ug/L	0.50	1		01/10/17 13:28	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	0.50	1		01/10/17 13:28	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	0.50	1		01/10/17 13:28	10061-02-6	
Ethylbenzene	ND	ug/L	0.50	1		01/10/17 13:28	100-41-4	
2-Hexanone	ND	ug/L	1.0	1		01/10/17 13:28	591-78-6	
Isopropylbenzene (Cumene)	ND	ug/L	1.0	1		01/10/17 13:28	98-82-8	
Methyl acetate	ND	ug/L	2.0	1		01/10/17 13:28	79-20-9	
Methylene Chloride	ND	ug/L	0.50	1		01/10/17 13:28	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	1.0	1		01/10/17 13:28	108-10-1	
Methyl-tert-butyl ether	ND	ug/L	0.50	1		01/10/17 13:28	1634-04-4	
Styrene	ND	ug/L	1.0	1		01/10/17 13:28	100-42-5	
1,1,2,2-Tetrachloroethane	ND	ug/L	0.50	1		01/10/17 13:28	79-34-5	
Tetrachloroethene	ND	ug/L	0.50	1		01/10/17 13:28	127-18-4	
Toluene	ND	ug/L	0.50	1		01/10/17 13:28	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	0.50	1		01/10/17 13:28	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	0.50	1		01/10/17 13:28	79-00-5	
Trichloroethene	ND	ug/L	0.50	1		01/10/17 13:28	79-01-6	
Trichlorofluoromethane	ND	ug/L	0.50	1		01/10/17 13:28	75-69-4	
Vinyl chloride	ND	ug/L	0.50	1		01/10/17 13:28	75-01-4	
m&p-Xylene	ND	ug/L	2.0	1		01/10/17 13:28	179601-23-1	

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ANALYTICAL RESULTS

Project: PUMA TERMINAL MW SAMPLING
Pace Project No.: 2048222

Sample: DUP005	Lab ID: 2048222005	Collected: 01/05/17 00:00	Received: 01/05/17 12:50	Matrix: Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV Low Level		Analytical Method: EPA 5030B/8260						
o-Xylene	ND	ug/L	1.0	1		01/10/17 13:28	95-47-6	
Surrogates								
Dibromofluoromethane (S)	112	%.	72-126	1		01/10/17 13:28	1868-53-7	
4-Bromofluorobenzene (S)	95	%.	68-124	1		01/10/17 13:28	460-00-4	
Toluene-d8 (S)	101	%.	79-119	1		01/10/17 13:28	2037-26-5	
Sample: MW-M14		Lab ID: 2048222006		Collected: 01/05/17 11:34	Received: 01/05/17 12:50	Matrix: Water		
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8015M DRO/ORO Organics		Analytical Method: EPA 8015B Modified Preparation Method: EPA 3535						
Diesel Range Organic (C10-C28)	ND	mg/L	0.50	1	01/09/17 07:20	01/09/17 20:54		
Oil Range Organics (>C28-C40)	ND	mg/L	1.0	1	01/09/17 07:20	01/09/17 20:54		
Surrogates								
n-Pentacosane (S)	63	%.	16-137	1	01/09/17 07:20	01/09/17 20:54	629-99-2	
o-Terphenyl (S)	65	%.	10-121	1	01/09/17 07:20	01/09/17 20:54	84-15-1	
8021 GCV BTEX, MTBE, GRO		Analytical Method: EPA 8015/8021						
Gasoline Range Organics	ND	ug/L	50.0	1		01/12/17 13:20		
Surrogates								
4-Bromofluorobenzene (S)	90	%.	44-148	1		01/12/17 13:20	460-00-4	
6020 MET ICPMS		Analytical Method: EPA 6020 Preparation Method: EPA 3010						
Arsenic	ND	mg/L	0.0010	1	01/09/17 15:32	01/13/17 21:20	7440-38-2	
Chromium	ND	mg/L	0.0010	1	01/09/17 15:32	01/13/17 21:20	7440-47-3	
Lead	ND	mg/L	0.0010	1	01/09/17 15:32	01/13/17 21:20	7439-92-1	
Vanadium	ND	mg/L	0.0050	1	01/09/17 15:32	01/13/17 21:20	7440-62-2	
6020 MET ICPMS, Dissolved (LF)		Analytical Method: EPA 6020 Preparation Method: EPA 3005A						
Arsenic, Dissolved	ND	ug/L	1.0	1	01/10/17 11:44	01/13/17 23:18	7440-38-2	
Chromium, Dissolved	ND	ug/L	1.0	1	01/10/17 11:44	01/13/17 23:18	7440-47-3	
Lead, Dissolved	ND	ug/L	1.0	1	01/10/17 11:44	01/13/17 23:18	7439-92-1	
Vanadium, Dissolved	ND	ug/L	5.0	1	01/10/17 11:44	01/13/17 23:18	7440-62-2	L3
7470 Mercury		Analytical Method: EPA 7470 Preparation Method: EPA 7470						
Mercury	ND	ug/L	0.20	1	01/09/17 15:19	01/09/17 20:01	7439-97-6	
7470 Mercury, Dissolved (LF)		Analytical Method: EPA 7470 Preparation Method: EPA 7470						
Mercury, Dissolved	ND	ug/L	0.20	1	01/10/17 12:30	01/10/17 18:13	7439-97-6	
8270 MSSV PAH by SIM SEP		Analytical Method: EPA 8270 by SIM Preparation Method: EPA 3510						
Acenaphthene	ND	ug/L	0.10	1	01/10/17 09:46	01/10/17 22:18	83-32-9	
Acenaphthylene	ND	ug/L	0.10	1	01/10/17 09:46	01/10/17 22:18	208-96-8	
Anthracene	ND	ug/L	0.10	1	01/10/17 09:46	01/10/17 22:18	120-12-7	
Benzo(a)anthracene	ND	ug/L	0.10	1	01/10/17 09:46	01/10/17 22:18	56-55-3	

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ANALYTICAL RESULTS

Project: PUMA TERMINAL MW SAMPLING

Pace Project No.: 2048222

Sample: MW-M14	Lab ID: 2048222006	Collected: 01/05/17 11:34	Received: 01/05/17 12:50	Matrix: Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8270 MSSV PAH by SIM SEP		Analytical Method: EPA 8270 by SIM Preparation Method: EPA 3510						
Benzo(a)pyrene	ND	ug/L	0.10	1	01/10/17 09:46	01/10/17 22:18	50-32-8	
Benzo(b)fluoranthene	ND	ug/L	0.10	1	01/10/17 09:46	01/10/17 22:18	205-99-2	
Benzo(g,h,i)perylene	ND	ug/L	0.10	1	01/10/17 09:46	01/10/17 22:18	191-24-2	
Benzo(k)fluoranthene	ND	ug/L	0.10	1	01/10/17 09:46	01/10/17 22:18	207-08-9	
Chrysene	ND	ug/L	0.10	1	01/10/17 09:46	01/10/17 22:18	218-01-9	
Dibenz(a,h)anthracene	ND	ug/L	0.10	1	01/10/17 09:46	01/10/17 22:18	53-70-3	
Fluoranthene	ND	ug/L	0.10	1	01/10/17 09:46	01/10/17 22:18	206-44-0	
Fluorene	ND	ug/L	0.10	1	01/10/17 09:46	01/10/17 22:18	86-73-7	
Indeno(1,2,3-cd)pyrene	ND	ug/L	0.10	1	01/10/17 09:46	01/10/17 22:18	193-39-5	
2-Methylnaphthalene	ND	ug/L	0.10	1	01/10/17 09:46	01/10/17 22:18	91-57-6	
Naphthalene	ND	ug/L	0.10	1	01/10/17 09:46	01/10/17 22:18	91-20-3	
Phenanthrene	ND	ug/L	0.10	1	01/10/17 09:46	01/10/17 22:18	85-01-8	
Pyrene	ND	ug/L	0.10	1	01/10/17 09:46	01/10/17 22:18	129-00-0	
Surrogates								
2-Fluorobiphenyl (S)	86	%.	25-150	1	01/10/17 09:46	01/10/17 22:18	321-60-8	
Terphenyl-d14 (S)	79	%.	25-150	1	01/10/17 09:46	01/10/17 22:18	1718-51-0	
8260 MSV Low Level		Analytical Method: EPA 5030B/8260						
Acetone	5.0	ug/L	4.0	1		01/10/17 13:46	67-64-1	C9
Benzene	ND	ug/L	0.50	1		01/10/17 13:46	71-43-2	
Bromodichloromethane	ND	ug/L	0.50	1		01/10/17 13:46	75-27-4	
Bromoform	ND	ug/L	0.50	1		01/10/17 13:46	75-25-2	
Bromomethane	ND	ug/L	0.50	1		01/10/17 13:46	74-83-9	
2-Butanone (MEK)	ND	ug/L	2.0	1		01/10/17 13:46	78-93-3	
Carbon disulfide	ND	ug/L	1.0	1		01/10/17 13:46	75-15-0	L3
Carbon tetrachloride	ND	ug/L	0.50	1		01/10/17 13:46	56-23-5	
Chlorobenzene	ND	ug/L	0.50	1		01/10/17 13:46	108-90-7	
Chloroethane	ND	ug/L	0.50	1		01/10/17 13:46	75-00-3	
Chloroform	ND	ug/L	0.50	1		01/10/17 13:46	67-66-3	
Chloromethane	ND	ug/L	0.50	1		01/10/17 13:46	74-87-3	
1,2-Dibromo-3-chloropropane	ND	ug/L	0.20	1		01/10/17 13:46	96-12-8	
Dibromochloromethane	ND	ug/L	0.50	1		01/10/17 13:46	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	1		01/10/17 13:46	106-93-4	
Dichlorodifluoromethane	ND	ug/L	1.0	1		01/10/17 13:46	75-71-8	
1,1-Dichloroethane	ND	ug/L	0.50	1		01/10/17 13:46	75-34-3	
1,2-Dichloroethane	ND	ug/L	0.50	1		01/10/17 13:46	107-06-2	
1,1-Dichloroethene	ND	ug/L	0.50	1		01/10/17 13:46	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	1		01/10/17 13:46	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	0.50	1		01/10/17 13:46	156-60-5	
1,2-Dichloropropane	ND	ug/L	0.50	1		01/10/17 13:46	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	0.50	1		01/10/17 13:46	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	0.50	1		01/10/17 13:46	10061-02-6	
Ethylbenzene	ND	ug/L	0.50	1		01/10/17 13:46	100-41-4	
2-Hexanone	ND	ug/L	1.0	1		01/10/17 13:46	591-78-6	
Isopropylbenzene (Cumene)	ND	ug/L	1.0	1		01/10/17 13:46	98-82-8	
Methyl acetate	ND	ug/L	2.0	1		01/10/17 13:46	79-20-9	
Methylene Chloride	ND	ug/L	0.50	1		01/10/17 13:46	75-09-2	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: PUMA TERMINAL MW SAMPLING

Pace Project No.: 2048222

Sample: MW-M14		Lab ID: 2048222006	Collected: 01/05/17 11:34	Received: 01/05/17 12:50	Matrix: Water			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV Low Level		Analytical Method: EPA 5030B/8260						
4-Methyl-2-pentanone (MIBK)	ND	ug/L	1.0	1		01/10/17 13:46	108-10-1	
Methyl-tert-butyl ether	1.9	ug/L	0.50	1		01/10/17 13:46	1634-04-4	
Styrene	ND	ug/L	1.0	1		01/10/17 13:46	100-42-5	
1,1,2,2-Tetrachloroethane	ND	ug/L	0.50	1		01/10/17 13:46	79-34-5	
Tetrachloroethene	ND	ug/L	0.50	1		01/10/17 13:46	127-18-4	
Toluene	ND	ug/L	0.50	1		01/10/17 13:46	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	0.50	1		01/10/17 13:46	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	0.50	1		01/10/17 13:46	79-00-5	
Trichloroethene	ND	ug/L	0.50	1		01/10/17 13:46	79-01-6	
Trichlorofluoromethane	ND	ug/L	0.50	1		01/10/17 13:46	75-69-4	
Vinyl chloride	ND	ug/L	0.50	1		01/10/17 13:46	75-01-4	
m&p-Xylene	ND	ug/L	2.0	1		01/10/17 13:46	179601-23-1	
o-Xylene	ND	ug/L	1.0	1		01/10/17 13:46	95-47-6	
Surrogates								
Dibromofluoromethane (S)	114	%.	72-126	1		01/10/17 13:46	1868-53-7	
4-Bromofluorobenzene (S)	97	%.	68-124	1		01/10/17 13:46	460-00-4	
Toluene-d8 (S)	101	%.	79-119	1		01/10/17 13:46	2037-26-5	

Sample: FB-010517		Lab ID: 2048222007	Collected: 01/05/17 11:38	Received: 01/05/17 12:50	Matrix: Water			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8021 GCV BTEX, MTBE, GRO		Analytical Method: EPA 8015/8021						
Gasoline Range Organics	ND	ug/L	50.0	1		01/12/17 13:46		
Surrogates								
4-Bromofluorobenzene (S)	89	%.	44-148	1		01/12/17 13:46	460-00-4	
8260 MSV Low Level		Analytical Method: EPA 5030B/8260						
Acetone	18.5	ug/L	4.0	1		01/10/17 14:03	67-64-1	C9
Benzene	ND	ug/L	0.50	1		01/10/17 14:03	71-43-2	
Bromodichloromethane	ND	ug/L	0.50	1		01/10/17 14:03	75-27-4	
Bromoform	ND	ug/L	0.50	1		01/10/17 14:03	75-25-2	
Bromomethane	ND	ug/L	0.50	1		01/10/17 14:03	74-83-9	
2-Butanone (MEK)	ND	ug/L	2.0	1		01/10/17 14:03	78-93-3	
Carbon disulfide	ND	ug/L	1.0	1		01/10/17 14:03	75-15-0	L3
Carbon tetrachloride	ND	ug/L	0.50	1		01/10/17 14:03	56-23-5	
Chlorobenzene	ND	ug/L	0.50	1		01/10/17 14:03	108-90-7	
Chloroethane	ND	ug/L	0.50	1		01/10/17 14:03	75-00-3	
Chloroform	ND	ug/L	0.50	1		01/10/17 14:03	67-66-3	
Chloromethane	ND	ug/L	0.50	1		01/10/17 14:03	74-87-3	
1,2-Dibromo-3-chloropropane	ND	ug/L	0.20	1		01/10/17 14:03	96-12-8	
Dibromochloromethane	ND	ug/L	0.50	1		01/10/17 14:03	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	1		01/10/17 14:03	106-93-4	
Dichlorodifluoromethane	ND	ug/L	1.0	1		01/10/17 14:03	75-71-8	
1,1-Dichloroethane	ND	ug/L	0.50	1		01/10/17 14:03	75-34-3	
1,2-Dichloroethane	ND	ug/L	0.50	1		01/10/17 14:03	107-06-2	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: PUMA TERMINAL MW SAMPLING

Pace Project No.: 2048222

Sample: FB-010517	Lab ID: 2048222007	Collected: 01/05/17 11:38	Received: 01/05/17 12:50	Matrix: Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV Low Level		Analytical Method: EPA 5030B/8260						
1,1-Dichloroethene	ND	ug/L	0.50	1		01/10/17 14:03	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	1		01/10/17 14:03	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	0.50	1		01/10/17 14:03	156-60-5	
1,2-Dichloropropane	ND	ug/L	0.50	1		01/10/17 14:03	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	0.50	1		01/10/17 14:03	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	0.50	1		01/10/17 14:03	10061-02-6	
Ethylbenzene	ND	ug/L	0.50	1		01/10/17 14:03	100-41-4	
2-Hexanone	ND	ug/L	1.0	1		01/10/17 14:03	591-78-6	
Isopropylbenzene (Cumene)	ND	ug/L	1.0	1		01/10/17 14:03	98-82-8	
Methyl acetate	ND	ug/L	2.0	1		01/10/17 14:03	79-20-9	
Methylene Chloride	ND	ug/L	0.50	1		01/10/17 14:03	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	1.0	1		01/10/17 14:03	108-10-1	
Methyl-tert-butyl ether	ND	ug/L	0.50	1		01/10/17 14:03	1634-04-4	
Styrene	ND	ug/L	1.0	1		01/10/17 14:03	100-42-5	
1,1,2,2-Tetrachloroethane	ND	ug/L	0.50	1		01/10/17 14:03	79-34-5	
Tetrachloroethene	ND	ug/L	0.50	1		01/10/17 14:03	127-18-4	
Toluene	ND	ug/L	0.50	1		01/10/17 14:03	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	0.50	1		01/10/17 14:03	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	0.50	1		01/10/17 14:03	79-00-5	
Trichloroethene	ND	ug/L	0.50	1		01/10/17 14:03	79-01-6	
Trichlorofluoromethane	ND	ug/L	0.50	1		01/10/17 14:03	75-69-4	
Vinyl chloride	ND	ug/L	0.50	1		01/10/17 14:03	75-01-4	
m&p-Xylene	ND	ug/L	2.0	1		01/10/17 14:03	179601-23-1	
o-Xylene	ND	ug/L	1.0	1		01/10/17 14:03	95-47-6	
Surrogates								
Dibromofluoromethane (S)	114	%.	72-126	1		01/10/17 14:03	1868-53-7	
4-Bromofluorobenzene (S)	96	%.	68-124	1		01/10/17 14:03	460-00-4	
Toluene-d8 (S)	101	%.	79-119	1		01/10/17 14:03	2037-26-5	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: PUMA TERMINAL MW SAMPLING

Pace Project No.: 2048222

QC Batch: 71889 Analysis Method: EPA 8015/8021
 QC Batch Method: EPA 8015/8021 Analysis Description: 8021 W GCV BTEX , MTBE, GRO
 Associated Lab Samples: 2048222001, 2048222002, 2048222003, 2048222004, 2048222005, 2048222006, 2048222007

METHOD BLANK: 301021 Matrix: Water
 Associated Lab Samples: 2048222001, 2048222002, 2048222003, 2048222004, 2048222005, 2048222006, 2048222007

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Gasoline Range Organics	ug/L	ND	50.0	01/12/17 10:39	
4-Bromofluorobenzene (S)	%.	85	44-148	01/12/17 10:39	

LABORATORY CONTROL SAMPLE: 301022

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Gasoline Range Organics	ug/L	500	430	86	61-136	
4-Bromofluorobenzene (S)	%.			90	44-148	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 301348 301349

Parameter	Units	2048222003 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Gasoline Range Organics	ug/L	ND	500	500	492	476	93	90	15-147	3	20	
4-Bromofluorobenzene (S)	%.						92	92	44-148			

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QUALITY CONTROL DATA

Project: PUMA TERMINAL MW SAMPLING

Pace Project No.: 2048222

QC Batch: 71614 Analysis Method: EPA 7470
 QC Batch Method: EPA 7470 Analysis Description: 7470 Mercury
 Associated Lab Samples: 2048222002, 2048222003, 2048222004, 2048222005, 2048222006

METHOD BLANK: 299676 Matrix: Water
 Associated Lab Samples: 2048222002, 2048222003, 2048222004, 2048222005, 2048222006

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Mercury	ug/L	ND	0.20	01/09/17 19:05	

LABORATORY CONTROL SAMPLE: 299677

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury	ug/L	1	1.0	103	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 299678 299679

Parameter	Units	2048222003 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Mercury	ug/L	ND	1	1	1.0	1.0	102	101	75-125	1	20	

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QUALITY CONTROL DATA

Project: PUMA TERMINAL MW SAMPLING

Pace Project No.: 2048222

QC Batch: 71676

Analysis Method: EPA 7470

QC Batch Method: EPA 7470

Analysis Description: 7470 Mercury Dissolved

Associated Lab Samples: 2048222002, 2048222003, 2048222004, 2048222005, 2048222006

METHOD BLANK: 299994

Matrix: Water

Associated Lab Samples: 2048222002, 2048222003, 2048222004, 2048222005, 2048222006

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Mercury, Dissolved	ug/L	ND	0.20	01/10/17 17:57	

LABORATORY CONTROL SAMPLE: 299995

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury, Dissolved	ug/L	1	1.0	102	80-120	

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QUALITY CONTROL DATA

Project: PUMA TERMINAL MW SAMPLING

Pace Project No.: 2048222

QC Batch: 71617 Analysis Method: EPA 6020

QC Batch Method: EPA 3010 Analysis Description: 6020 MET

Associated Lab Samples: 2048222002, 2048222003, 2048222004, 2048222005, 2048222006

METHOD BLANK: 299684

Matrix: Water

Associated Lab Samples: 2048222002, 2048222003, 2048222004, 2048222005, 2048222006

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Arsenic	mg/L	ND	0.0010	01/13/17 18:59	
Chromium	mg/L	ND	0.0010	01/13/17 18:59	
Lead	mg/L	ND	0.0010	01/13/17 18:59	
Vanadium	mg/L	ND	0.0050	01/13/17 18:59	

LABORATORY CONTROL SAMPLE: 299685

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Arsenic	mg/L	.02	0.020	102	83-115	
Chromium	mg/L	.02	0.020	99	85-115	
Lead	mg/L	.02	0.019	96	84-115	
Vanadium	mg/L	.02	0.020	98	81-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 299686 299687

Parameter	Units	2047753015		299686		299687		% Rec	% Rec	% Rec Limits	RPD	RPD	Qual
		Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec						
Arsenic	mg/L	11.2 ug/L	.02	.02	0.023	0.022	61	55	80-120	5	20	M1	
Chromium	mg/L	ND	.02	.02	0.017	0.017	82	83	80-120	1	20		
Lead	mg/L	ND	.02	.02	0.023	0.023	112	112	80-120	1	20		
Vanadium	mg/L	ND	.02	.02	0.018	0.017	84	83	80-120	1	20		

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QUALITY CONTROL DATA

Project: PUMA TERMINAL MW SAMPLING

Pace Project No.: 2048222

QC Batch: 71683 Analysis Method: EPA 6020
 QC Batch Method: EPA 3005A Analysis Description: 6020 MET Dissolved
 Associated Lab Samples: 2048222002, 2048222003, 2048222004, 2048222005, 2048222006

METHOD BLANK: 300010 Matrix: Water
 Associated Lab Samples: 2048222002, 2048222003, 2048222004, 2048222005, 2048222006

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Arsenic, Dissolved	ug/L	ND	1.0	01/13/17 19:15	
Chromium, Dissolved	ug/L	ND	1.0	01/13/17 19:15	
Lead, Dissolved	ug/L	ND	1.0	01/13/17 19:15	
Vanadium, Dissolved	ug/L	ND	5.0	01/13/17 19:15	

LABORATORY CONTROL SAMPLE: 300011

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Arsenic, Dissolved	ug/L	20	18.7	94	80-120	
Chromium, Dissolved	ug/L	20	20.4	102	80-120	
Lead, Dissolved	ug/L	20	20.2	101	80-120	
Vanadium, Dissolved	ug/L	20	24.5	123	80-120 L0	

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QUALITY CONTROL DATA

Project: PUMA TERMINAL MW SAMPLING

Pace Project No.: 2048222

QC Batch: 71630 Analysis Method: EPA 5030B/8260
 QC Batch Method: EPA 5030B/8260 Analysis Description: 8260 MSV Low Level
 Associated Lab Samples: 2048222001, 2048222002, 2048222003, 2048222004, 2048222005, 2048222006, 2048222007

METHOD BLANK: 299869 Matrix: Water
 Associated Lab Samples: 2048222001, 2048222002, 2048222003, 2048222004, 2048222005, 2048222006, 2048222007

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
1,1,1-Trichloroethane	ug/L	ND	0.50	01/10/17 09:55	
1,1,2,2-Tetrachloroethane	ug/L	ND	0.50	01/10/17 09:55	
1,1,2-Trichloroethane	ug/L	ND	0.50	01/10/17 09:55	
1,1-Dichloroethane	ug/L	ND	0.50	01/10/17 09:55	
1,1-Dichloroethene	ug/L	ND	0.50	01/10/17 09:55	
1,2-Dibromo-3-chloropropane	ug/L	ND	0.20	01/10/17 09:55	
1,2-Dibromoethane (EDB)	ug/L	ND	1.0	01/10/17 09:55	
1,2-Dichloroethane	ug/L	ND	0.50	01/10/17 09:55	
1,2-Dichloropropane	ug/L	ND	0.50	01/10/17 09:55	
2-Butanone (MEK)	ug/L	ND	2.0	01/10/17 09:55	
2-Hexanone	ug/L	ND	1.0	01/10/17 09:55	
4-Methyl-2-pentanone (MIBK)	ug/L	ND	1.0	01/10/17 09:55	
Acetone	ug/L	ND	4.0	01/10/17 09:55	
Benzene	ug/L	ND	0.50	01/10/17 09:55	
Bromodichloromethane	ug/L	ND	0.50	01/10/17 09:55	
Bromoform	ug/L	ND	0.50	01/10/17 09:55	
Bromomethane	ug/L	ND	0.50	01/10/17 09:55	
Carbon disulfide	ug/L	ND	1.0	01/10/17 09:55	
Carbon tetrachloride	ug/L	ND	0.50	01/10/17 09:55	
Chlorobenzene	ug/L	ND	0.50	01/10/17 09:55	
Chloroethane	ug/L	ND	0.50	01/10/17 09:55	
Chloroform	ug/L	ND	0.50	01/10/17 09:55	
Chloromethane	ug/L	ND	0.50	01/10/17 09:55	
cis-1,2-Dichloroethene	ug/L	ND	1.0	01/10/17 09:55	
cis-1,3-Dichloropropene	ug/L	ND	0.50	01/10/17 09:55	
Dibromochloromethane	ug/L	ND	0.50	01/10/17 09:55	
Dichlorodifluoromethane	ug/L	ND	1.0	01/10/17 09:55	
Ethylbenzene	ug/L	ND	0.50	01/10/17 09:55	
Isopropylbenzene (Cumene)	ug/L	ND	1.0	01/10/17 09:55	
m&p-Xylene	ug/L	ND	2.0	01/10/17 09:55	
Methyl acetate	ug/L	ND	2.0	01/10/17 09:55	
Methyl-tert-butyl ether	ug/L	ND	0.50	01/10/17 09:55	
Methylene Chloride	ug/L	ND	0.50	01/10/17 09:55	
o-Xylene	ug/L	ND	1.0	01/10/17 09:55	
Styrene	ug/L	ND	1.0	01/10/17 09:55	
Tetrachloroethene	ug/L	ND	0.50	01/10/17 09:55	
Toluene	ug/L	ND	0.50	01/10/17 09:55	
trans-1,2-Dichloroethene	ug/L	ND	0.50	01/10/17 09:55	
trans-1,3-Dichloropropene	ug/L	ND	0.50	01/10/17 09:55	
Trichloroethene	ug/L	ND	0.50	01/10/17 09:55	
Trichlorofluoromethane	ug/L	ND	0.50	01/10/17 09:55	

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QUALITY CONTROL DATA

Project: PUMA TERMINAL MW SAMPLING

Pace Project No.: 2048222

METHOD BLANK: 299869

Matrix: Water

Associated Lab Samples: 2048222001, 2048222002, 2048222003, 2048222004, 2048222005, 2048222006, 2048222007

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Vinyl chloride	ug/L	ND	0.50	01/10/17 09:55	
4-Bromofluorobenzene (S)	%	96	68-124	01/10/17 09:55	
Dibromofluoromethane (S)	%	107	72-126	01/10/17 09:55	
Toluene-d8 (S)	%	102	79-119	01/10/17 09:55	

LABORATORY CONTROL SAMPLE: 299870

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,1,1-Trichloroethane	ug/L	50	54.9	110	62-131	
1,1,2,2-Tetrachloroethane	ug/L	50	49.4	99	15-179	
1,1,2-Trichloroethane	ug/L	50	46.8	94	58-144	
1,1-Dichloroethane	ug/L	50	56.2	112	63-129	
1,1-Dichloroethene	ug/L	50	56.0	112	51-139	
1,2-Dibromo-3-chloropropane	ug/L	50	48.0	96	21-160	
1,2-Dibromoethane (EDB)	ug/L	50	48.9	98	52-161	
1,2-Dichloroethane	ug/L	50	50.4	101	57-148	
1,2-Dichloropropane	ug/L	50	53.0	106	66-128	
2-Butanone (MEK)	ug/L	50	54.6	109	32-183	
2-Hexanone	ug/L	50	46.6	93	36-170	
4-Methyl-2-pentanone (MIBK)	ug/L	50	48.8	98	26-171	
Acetone	ug/L	50	54.0	108	22-165	
Benzene	ug/L	50	55.9	112	62-131	
Bromodichloromethane	ug/L	50	47.6	95	69-132	
Bromoform	ug/L	50	42.9	86	35-166	
Bromomethane	ug/L	50	47.6	95	34-158	
Carbon disulfide	ug/L	50	74.4	149	31-128	LO
Carbon tetrachloride	ug/L	50	51.2	102	54-144	
Chlorobenzene	ug/L	50	50.2	100	70-127	
Chloroethane	ug/L	50	39.3	79	17-195	
Chloroform	ug/L	50	51.3	103	73-134	
Chloromethane	ug/L	50	60.3	121	17-153	
cis-1,2-Dichloroethene	ug/L	50	53.7	107	68-129	
cis-1,3-Dichloropropene	ug/L	50	51.6	103	72-138	
Dibromochloromethane	ug/L	50	45.6	91	49-146	
Dichlorodifluoromethane	ug/L	50	51.3	103	10-179	
Ethylbenzene	ug/L	50	49.1	98	66-126	
Isopropylbenzene (Cumene)	ug/L	50	49.5	99	51-138	
m&p-Xylene	ug/L	100	101	101	65-129	
Methyl acetate	ug/L	50	51.3	103	20-142	
Methyl-tert-butyl ether	ug/L	50	50.2	100	37-166	
Methylene Chloride	ug/L	50	55.2	110	46-168	
o-Xylene	ug/L	50	48.1	96	65-124	
Styrene	ug/L	50	49.3	99	72-133	
Tetrachloroethene	ug/L	50	49.0	98	46-157	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: PUMA TERMINAL MW SAMPLING

Pace Project No.: 2048222

LABORATORY CONTROL SAMPLE: 299870

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Toluene	ug/L	50	52.3	105	69-126	
trans-1,2-Dichloroethene	ug/L	50	53.7	107	60-129	
trans-1,3-Dichloropropene	ug/L	50	51.0	102	59-149	
Trichloroethene	ug/L	50	52.2	104	67-132	
Trichlorofluoromethane	ug/L	50	55.1	110	39-171	
Vinyl chloride	ug/L	50	44.5	89	27-149	
4-Bromofluorobenzene (S)	%			97	68-124	
Dibromofluoromethane (S)	%			109	72-126	
Toluene-d8 (S)	%			102	79-119	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 299871 299872

Parameter	Units	MS		MSD		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		2048288001 Result	Spike Conc.	Spike Conc.	MS Result						
1,1,1-Trichloroethane	ug/L	ND	50	50	64.9	56.6	130	113	54-137	14	20
1,1,2,2-Tetrachloroethane	ug/L	ND	50	50	57.0	53.7	114	107	15-187	6	20
1,1,2-Trichloroethane	ug/L	ND	50	50	53.0	48.4	106	97	59-148	9	20
1,1-Dichloroethane	ug/L	ND	50	50	64.1	55.4	128	111	59-133	15	20
1,1-Dichloroethene	ug/L	ND	50	50	64.8	55.6	130	111	44-146	15	20
1,2-Dibromo-3-chloropropane	ug/L	ND	50	50	54.6	51.8	109	104	23-166	5	20
1,2-Dibromoethane (EDB)	ug/L	ND	50	50	54.8	49.6	110	99	55-166	10	20
1,2-Dichloroethane	ug/L	ND	50	50	56.3	50.6	113	101	56-154	11	20
1,2-Dichloropropane	ug/L	ND	50	50	58.4	51.6	117	103	62-135	12	20
2-Butanone (MEK)	ug/L	ND	50	50	67.3	59.2	135	118	20-205	13	20
2-Hexanone	ug/L	ND	50	50	56.8	52.6	114	105	25-189	8	20
4-Methyl-2-pentanone (MIBK)	ug/L	ND	50	50	58.4	53.7	117	107	23-184	8	20
Acetone	ug/L	0.0078 mg/L	50	50	66.7	63.4	118	111	11-217	5	20
Benzene	ug/L	ND	50	50	62.0	54.0	124	108	52-141	14	20
Bromodichloromethane	ug/L	ND	50	50	53.5	47.2	107	94	70-134	12	20
Bromoform	ug/L	ND	50	50	48.0	43.0	96	86	37-171	11	20
Bromomethane	ug/L	ND	50	50	50.7	45.9	101	92	34-155	10	20
Carbon disulfide	ug/L	ND	50	50	91.4	73.6	183	147	28-130	22	20 M0,R1
Carbon tetrachloride	ug/L	ND	50	50	56.6	48.4	113	97	48-146	16	20
Chlorobenzene	ug/L	ND	50	50	56.2	49.1	112	98	67-129	13	20
Chloroethane	ug/L	ND	50	50	54.8	48.0	110	96	12-192	13	20
Chloroform	ug/L	ND	50	50	58.1	50.9	116	102	66-143	13	20
Chloromethane	ug/L	ND	50	50	53.4	45.2	107	90	14-155	17	20
cis-1,2-Dichloroethene	ug/L	ND	50	50	61.2	53.2	122	106	56-141	14	20
cis-1,3-Dichloropropene	ug/L	ND	50	50	56.9	49.5	114	99	70-139	14	20
Dibromochloromethane	ug/L	ND	50	50	50.4	44.9	101	90	50-150	12	20
Dichlorodifluoromethane	ug/L	ND	50	50	60.8	52.0	122	104	10-173	16	20
Ethylbenzene	ug/L	ND	50	50	55.3	48.7	111	97	57-135	13	20
Isopropylbenzene (Cumene)	ug/L	ND	50	50	55.6	52.7	111	105	40-146	5	20

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: PUMA TERMINAL MW SAMPLING

Pace Project No.: 2048222

Parameter	Units	2048288001		299871		299872		% Rec	% Rec	Limits	RPD	Max RPD	Qual
		MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec						
m&p-Xylene	ug/L	ND	100	100	112	99.9	112	100	56-136	11	20		
Methyl acetate	ug/L	ND	50	50	59.9	50.5	120	101	10-142	17	20		
Methyl-tert-butyl ether	ug/L	ND	50	50	58.2	51.9	116	104	35-176	12	20		
Methylene Chloride	ug/L	ND	50	50	63.0	54.4	126	109	45-166	15	20		
o-Xylene	ug/L	ND	50	50	54.6	47.8	109	96	57-133	13	20		
Styrene	ug/L	ND	50	50	55.1	49.4	110	99	58-144	11	20		
Tetrachloroethene	ug/L	ND	50	50	55.4	50.2	111	100	48-143	10	20		
Toluene	ug/L	ND	50	50	58.3	50.7	117	101	59-136	14	20		
trans-1,2-Dichloroethene	ug/L	ND	50	50	65.3	54.6	131	109	57-132	18	20		
trans-1,3-Dichloropropene	ug/L	ND	50	50	56.9	49.9	114	100	59-154	13	20		
Trichloroethene	ug/L	ND	50	50	59.5	52.4	119	105	58-140	13	20		
Trichlorofluoromethane	ug/L	ND	50	50	68.4	58.4	137	117	24-175	16	20		
Vinyl chloride	ug/L	ND	50	50	54.0	45.2	108	90	21-150	18	20		
4-Bromofluorobenzene (S)	%						97	100	68-124				
Dibromofluoromethane (S)	%						112	108	72-126				
Toluene-d8 (S)	%						102	101	79-119				

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QUALITY CONTROL DATA

Project: PUMA TERMINAL MW SAMPLING

Pace Project No.: 2048222

QC Batch: 71577 Analysis Method: EPA 8015B Modified

QC Batch Method: EPA 3535 Analysis Description: EPA 8015 ORO

Associated Lab Samples: 2048222002, 2048222003, 2048222004, 2048222005, 2048222006

METHOD BLANK: 299594

Matrix: Water

Associated Lab Samples: 2048222002, 2048222003, 2048222004, 2048222005, 2048222006

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Diesel Range Organic (C10-C28)	mg/L	ND	0.25	01/09/17 15:11	
Oil Range Organics (>C28-C40)	mg/L	ND	0.50	01/09/17 15:11	
n-Pentacosane (S)	%	49	16-137	01/09/17 15:11	
o-Terphenyl (S)	%	58	10-121	01/09/17 15:11	

LABORATORY CONTROL SAMPLE: 299595

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Diesel Range Organic (C10-C28)	mg/L	.4	0.29	73	10-115	
n-Pentacosane (S)	%			55	16-137	
o-Terphenyl (S)	%			68	10-121	

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QUALITY CONTROL DATA

Project: PUMA TERMINAL MW SAMPLING

Pace Project No.: 2048222

QC Batch: 71665 Analysis Method: EPA 8270 by SIM
 QC Batch Method: EPA 3510 Analysis Description: 8270 Water by SIM MSSV
 Associated Lab Samples: 2048222002, 2048222003, 2048222004, 2048222005, 2048222006

METHOD BLANK: 299959 Matrix: Water
 Associated Lab Samples: 2048222002, 2048222003, 2048222004, 2048222005, 2048222006

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
2-Methylnaphthalene	ug/L	ND	0.10	01/10/17 15:39	
Acenaphthene	ug/L	ND	0.10	01/10/17 15:39	
Acenaphthylene	ug/L	ND	0.10	01/10/17 15:39	
Anthracene	ug/L	ND	0.10	01/10/17 15:39	
Benzo(a)anthracene	ug/L	ND	0.10	01/10/17 15:39	
Benzo(a)pyrene	ug/L	ND	0.10	01/10/17 15:39	
Benzo(b)fluoranthene	ug/L	ND	0.10	01/10/17 15:39	
Benzo(g,h,i)perylene	ug/L	ND	0.10	01/10/17 15:39	
Benzo(k)fluoranthene	ug/L	ND	0.10	01/10/17 15:39	
Chrysene	ug/L	ND	0.10	01/10/17 15:39	
Dibenz(a,h)anthracene	ug/L	ND	0.10	01/10/17 15:39	
Fluoranthene	ug/L	ND	0.10	01/10/17 15:39	
Fluorene	ug/L	ND	0.10	01/10/17 15:39	
Indeno(1,2,3-cd)pyrene	ug/L	ND	0.10	01/10/17 15:39	
Naphthalene	ug/L	ND	0.10	01/10/17 15:39	
Phenanthrene	ug/L	ND	0.10	01/10/17 15:39	
Pyrene	ug/L	ND	0.10	01/10/17 15:39	
2-Fluorobiphenyl (S)	%	82	25-150	01/10/17 15:39	
Terphenyl-d14 (S)	%	86	25-150	01/10/17 15:39	

LABORATORY CONTROL SAMPLE: 299960

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
2-Methylnaphthalene	ug/L	4	3.7	92	35-150	
Acenaphthene	ug/L	4	3.7	91	35-150	
Acenaphthylene	ug/L	4	3.6	91	35-150	
Anthracene	ug/L	4	4.4	111	35-150	
Benzo(a)anthracene	ug/L	4	3.8	95	35-150	
Benzo(a)pyrene	ug/L	4	3.5	88	35-150	
Benzo(b)fluoranthene	ug/L	4	3.5	88	35-150	
Benzo(g,h,i)perylene	ug/L	4	4.3	107	35-150	
Benzo(k)fluoranthene	ug/L	4	3.5	88	35-150	
Chrysene	ug/L	4	3.5	89	35-150	
Dibenz(a,h)anthracene	ug/L	4	4.7	117	35-150	
Fluoranthene	ug/L	4	3.5	86	35-150	
Fluorene	ug/L	4	3.5	89	35-150	
Indeno(1,2,3-cd)pyrene	ug/L	4	4.5	112	35-150	
Naphthalene	ug/L	4	3.4	84	35-150	
Phenanthrene	ug/L	4	3.9	97	35-150	
Pyrene	ug/L	4	3.4	85	35-150	

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QUALITY CONTROL DATA

Project: PUMA TERMINAL MW SAMPLING

Pace Project No.: 2048222

LABORATORY CONTROL SAMPLE: 299960

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
2-Fluorobiphenyl (S)	%.			117	25-150	
Terphenyl-d14 (S)	%.			114	25-150	

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REPORT OF LABORATORY ANALYSIS

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QUALIFIERS

Project: PUMA TERMINAL MW SAMPLING
Pace Project No.: 2048222

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.
ND - Not Detected at or above adjusted reporting limit.
J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.
MDL - Adjusted Method Detection Limit.
PQL - Practical Quantitation Limit.
RL - Reporting Limit.
S - Surrogate
1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.
Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.
LCS(D) - Laboratory Control Sample (Duplicate)
MS(D) - Matrix Spike (Duplicate)
DUP - Sample Duplicate
RPD - Relative Percent Difference
NC - Not Calculable.
SG - Silica Gel - Clean-Up
U - Indicates the compound was analyzed for, but not detected.
N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.
Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.
TNI - The Nelac Institute

LABORATORIES

PASI-N Pace Analytical Services - New Orleans

BATCH QUALIFIERS

Batch: 71629
[M5] A matrix spike/matrix spike duplicate was not performed for this batch due to insufficient sample volume.
Batch: 71745
[M5] A matrix spike/matrix spike duplicate was not performed for this batch due to insufficient sample volume.
Batch: 71749
[1] Insufficient sample volume to perform MS/MSD analysis.

ANALYTE QUALIFIERS

C9 Common Laboratory Contaminant.
L0 Analyte recovery in the laboratory control sample (LCS) was outside QC limits.
L3 Analyte recovery in the laboratory control sample (LCS) exceeded QC limits. Analyte presence below reporting limits in associated samples.
M0 Matrix spike recovery and/or matrix spike duplicate recovery was outside laboratory control limits.
M1 Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.
R1 RPD value was outside control limits.

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: PUMA TERMINAL MW SAMPLING

Pace Project No.: 2048222

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
2048222002	EB-010517	EPA 3535	71577	EPA 8015B Modified	71629
2048222003	MW-48A	EPA 3535	71577	EPA 8015B Modified	71629
2048222004	MW-109A	EPA 3535	71577	EPA 8015B Modified	71629
2048222005	DUP005	EPA 3535	71577	EPA 8015B Modified	71629
2048222006	MW-M14	EPA 3535	71577	EPA 8015B Modified	71629
2048222001	TB-010517	EPA 8015/8021	71889		
2048222002	EB-010517	EPA 8015/8021	71889		
2048222003	MW-48A	EPA 8015/8021	71889		
2048222004	MW-109A	EPA 8015/8021	71889		
2048222005	DUP005	EPA 8015/8021	71889		
2048222006	MW-M14	EPA 8015/8021	71889		
2048222007	FB-010517	EPA 8015/8021	71889		
2048222002	EB-010517	EPA 3010	71617	EPA 6020	71656
2048222003	MW-48A	EPA 3010	71617	EPA 6020	71656
2048222004	MW-109A	EPA 3010	71617	EPA 6020	71656
2048222005	DUP005	EPA 3010	71617	EPA 6020	71656
2048222006	MW-M14	EPA 3010	71617	EPA 6020	71656
2048222002	EB-010517	EPA 3005A	71683	EPA 6020	71749
2048222003	MW-48A	EPA 3005A	71683	EPA 6020	71749
2048222004	MW-109A	EPA 3005A	71683	EPA 6020	71749
2048222005	DUP005	EPA 3005A	71683	EPA 6020	71749
2048222006	MW-M14	EPA 3005A	71683	EPA 6020	71749
2048222002	EB-010517	EPA 7470	71614	EPA 7470	71654
2048222003	MW-48A	EPA 7470	71614	EPA 7470	71654
2048222004	MW-109A	EPA 7470	71614	EPA 7470	71654
2048222005	DUP005	EPA 7470	71614	EPA 7470	71654
2048222006	MW-M14	EPA 7470	71614	EPA 7470	71654
2048222002	EB-010517	EPA 7470	71676	EPA 7470	71753
2048222003	MW-48A	EPA 7470	71676	EPA 7470	71753
2048222004	MW-109A	EPA 7470	71676	EPA 7470	71753
2048222005	DUP005	EPA 7470	71676	EPA 7470	71753
2048222006	MW-M14	EPA 7470	71676	EPA 7470	71753
2048222002	EB-010517	EPA 3510	71665	EPA 8270 by SIM	71745
2048222003	MW-48A	EPA 3510	71665	EPA 8270 by SIM	71745
2048222004	MW-109A	EPA 3510	71665	EPA 8270 by SIM	71745
2048222005	DUP005	EPA 3510	71665	EPA 8270 by SIM	71745
2048222006	MW-M14	EPA 3510	71665	EPA 8270 by SIM	71745
2048222001	TB-010517	EPA 5030B/8260	71630		
2048222002	EB-010517	EPA 5030B/8260	71630		
2048222003	MW-48A	EPA 5030B/8260	71630		
2048222004	MW-109A	EPA 5030B/8260	71630		
2048222005	DUP005	EPA 5030B/8260	71630		
2048222006	MW-M14	EPA 5030B/8260	71630		
2048222007	FB-010517	EPA 5030B/8260	71630		

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Urb. Jardines de Guaynabo
Calle Marginal Bldg A-10
Guaynabo, PR 00969

Sample Condition Upon Receipt

WO#: 2048222

PM: JAR1

Due Date: 01/19/17

Project #:

CLIENT: 98-ARCADISPR

Courier: Pace Courier Hired Courier Fed X UPS DHL USPS Customer Other

Custody Seal on Cooler/Box Present: [see COC]

Custody Seals intact: Yes No

Thermometer Used:	<input checked="" type="checkbox"/> Therm Fisher IR 4
	<input type="checkbox"/> Therm Fisher IR 6
	<input type="checkbox"/> Therm Fisher IR 7

Type of Ice: Wet Blue None

Samples on ice: [see COC]

Cooler Temperature: [see COC]

Temp should be above freezing to 6°C

Date and Initials of person examining contents: 1-5-17 [Signature]

Temp must be measured from Temperature blank when present

Comments:

Temperature Blank Present?"	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	1
Chain of Custody Present:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	2
Chain of Custody Complete:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	3
Chain of Custody Relinquished:	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	4
Sampler Name & Signature on COC:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	5
Samples Arrived within Hold Time:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	6
Sufficient Volume:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	7
Correct Containers Used:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	8
Filtered vol. Rec. for Diss. tests	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	9
Sample Labels match COC:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	10
All containers received within manufacture's precautionary and/or expiration dates.	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	11
All containers needing chemical preservation have been checked (except VOA, coliform, & O&G).	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	12
All containers preservation checked found to be in compliance with EPA recommendation.	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	13
Headspace in VOA Vials (>6mm):	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	14
Trip Blank Present:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	15

Client Notification/ Resolution:

Person Contacted: _____

Date/Time: _____

Comments/ Resolution: _____



1000 Riverbend Blvd., Suite F
St. Rose, LA 70087

Sample Condition Upon Receipt

Project #: **20**

Courier: Pace Courier Hired Courier Fed X UPS DHL USPS Customer Other

Custody Seal on Cooler/Box Present: [see COC]

Custody Seals intact: Yes No

Thermometer Used: Therm Fisher IR 5
 Therm Fisher IR 6
 Therm Fisher IR 7

Type of Ice: Wet Blue None

Samples on ice: [see COC]

Cooler Temperature: [see COC]

Temp should be above freezing to 6°C

Date and Initials of person examining contents: 1-6-17 JMB

Temp must be measured from Temperature blank when present

Comments:

Temperature Blank Present?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	1	
Chain of Custody Present:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	2	
Chain of Custody Complete:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	3	
Chain of Custody Relinquished:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	4	
Sampler Name & Signature on COC:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	5	
Samples Arrived within Hold Time:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	6	
Sufficient Volume:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	7	
Correct Containers Used:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	8	
Filtered vol. Rec. for Diss. tests	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	9	
Sample Labels match COC:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	10	
All containers received within manufacture's precautionary and/or expiration dates.	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	11	
All containers needing chemical preservation have been checked (except VOA, coliform, & O&G).	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	12	
All containers preservation checked found to be in compliance with EPA recommendation.	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	13	If No, was preservative added? <input type="checkbox"/> Yes <input type="checkbox"/> No If added record lot no.: HNO3 _____ H2SO4 _____
Headspace in VOA Vials (>6mm):	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	14	
Trip Blank Present:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	15	

Client Notification/ Resolution:

Person Contacted: _____ Date/Time: _____

Comments/ Resolution: _____



CHAIN-OF-CUSTODY / Analytical Request Document

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Section A

Required Client Information:

Company: **Arcadis**
 Address: **45 city view plaza**
Suite 401 RD 165 Km 1.2 Caracas
 Email To: **Erin@arcadis-us.com**
 Phone: **800-777-4000** Fax: **800-777-4006**
 Requested Due Date/TAT: **Standard**

Section B

Required Project Information:

Report To: **Fraiz Calderon**
 Copy To: _____
 Purchase Order No.: _____
 Project Name: **Pura Terminal MW Sampling**
 Project Number: **2002-1605B**

Section C

Invoice Information:

Attention: _____
 Company Name: _____
 Address: _____
 Pace Quote Reference: _____
 Pace Project Manager: **Juan Redondo**
 Pace Profile #: _____

REGULATORY AGENCY

NPDES GROUND WATER DRINKING WATER
 UST RCRA OTHER _____

Site Location: _____
 STATE: **P.R.**

Requested Analysis Filtered (Y/N)

ITEM #	Section D Required Client Information	Matrix Codes MATRIX / CODE	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED				SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives								Analysis Test Y/N	Residual Chlorine (Y/N)	Pace Project No./ Lab I.D.						
					COMPOSITE START		COMPOSITE END/GRAB				Unpreserved	H ₂ SO ₄	HNO ₃	HCl	NaOH	Na ₂ S ₂ O ₃	Methanol	Other									
					DATE	TIME	DATE	TIME																			
1	TB-122916		WT G		12/29/16	1400	4										X	X									
2	EB-122916		WT G		12/29/16	0906	10 S										X	X	X	X	X	X					
3	MW-86A		WT G		12/29/16	0950	10 S										X	X	X	X	X	X					
4	MW-MPSA		WT G		12/29/16	1048	10 S										X	X	X	X	X	X					
5	MW-DPS		WT G		12/29/16	1137	10 S										X	X	X	X	X	X					
6	FB-122916		WT G		12/29/16	1142	4										X	X									

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS		
Level IV	Andri Colon / Arcadis	12/29/16	1400	Andri Colon / Arcadis	12/29/16	1400	Y	N	Y

2

SAMPLER NAME AND SIGNATURE
 PRINT Name of SAMPLER: **Andri Colon**
 SIGNATURE of SAMPLER: **[Signature]** DATE Signed (MM/DD/YY): **12/29/16**

Temp in °C
 Received on ice (Y/N)
 Custody Sealed Cooler (Y/N)
 Samples Intact (Y/N)

*Important Note: By signing this form you are accepting Pace's NET 30 day payment terms and agreeing to late charges of 1.5% per month for any invoices not paid within 30 days.

CHAIN-OF-CUSTODY / Analytical Request Document

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Section A Required Client Information:		Section B Required Project Information:		Section C Invoice Information:		REGULATORY AGENCY	
Company: Arcadis		Report To: EFrain Caldero		Attention:		<input type="checkbox"/> NPDES <input type="checkbox"/> GROUND WATER <input type="checkbox"/> DRINKING WATER <input type="checkbox"/> UST <input type="checkbox"/> RCRA <input type="checkbox"/> OTHER	
Address: 48 Cityview Plaza Suite 401 P.O. Box 112 Cary, NC 27513		Copy To:		Company Name:		Site Location	
Email To: E.Frain@arcadis-us.com		Purchase Order No.:		Pace Quote Reference:		STATE: P.B.	
Phone: 919-977-4000 Fax: 919-977-8046		Project Name: Puma Terminal mw sampling		Pace Project Manager: Juan Redondo		Pace Profile #:	
Requested Due Date/TAT: Standard		Project Number: E002.1605B					

ITEM #	Section D Required Client Information	Matrix Codes MATRIX / CODE	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED				SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives										Analysis Test Y/N	Residual Chlorine (Y/N)	Pace Project No./ Lab I.D.							
					COMPOSITE START		COMPOSITE END/GRAB				Unpreserved	H ₂ SO ₄	HNO ₃	HCl	NaOH	Na ₂ S ₂ O ₃	Methanol	Other	↓ Analysis Test ↓											
					DATE	TIME	DATE	TIME																						
1	TB-010311		MT	G			01/03/17	LAB	4																					
2	EB-010311		MT	G			01/03/17	0648	10	S																				
3	MW-B9		MT	G			01/03/17	0935	10	S																				
4	MW-EB103		MT	G			01/03/17	1027	10	S																				
5	MW-EB104		MT	G			01/02/17	1126	10	S																				
6	MW-EB105		MT	G			01/03/17	1345	10	S																				
7	MW-EB105 (MS)		MT	G			01/03/17	1345	10	S																				
8	MW-EB105 (MSD)		MT	G			01/03/17	1345	10	S																				
9	DUPO04		MT	G			01/03/17		10	S																				
10	MW-EB106		MT	G			01/03/17	1428	10	S																				
11	MW-EB107		MT	G			01/03/17	1511	10	S																				
12	MW-EB108		MT	G			01/03/17	1601	10	S																				

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS									
Level III	Andri Colon Arcadis	01/04/17	1508	[Signature]	01-17	1508										

SAMPLER NAME AND SIGNATURE				Temp in °C	Received on Ice (Y/N)	Custody Sealed Cooler (Y/N)	Samples Intact (Y/N)
PRINT Name of SAMPLER: Andri Colon							
SIGNATURE OF SAMPLER: [Signature]			DATE Signed (MM/DD/YY): 01/04/17				

*Important Note: By signing this form you are accepting Pace's NET 30 day payment terms and agreeing to late charges of 1.5% per month for any invoices not paid within 30 days.

CHAIN-OF-CUSTODY / Analytical Request Document

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Section A Required Client Information: Company: <u>Arcaadis</u> Address: <u>440 Citivision Plaza Suite 401</u> <u>PO Box 1651100 112 University Pk.</u> Email To: <u>EErain@arcadid.com</u> Phone: <u>703-971-4000</u> Fax: <u>703-971-8086</u> Requested Due Date/TAT: <u>Standard</u>	Section B Required Project Information: Report To: <u>EErain Calderon</u> Copy To: Purchase Order No.: Project Name: <u>Puma Terminal CW sampling</u> Project Number: <u>E002.1605B</u>	Section C Invoice Information: Attention: Company Name: Address: Pace Quote Reference: Pace Project Manager: <u>Juan Redondo</u> Pace Profile #:	REGULATORY AGENCY <input type="checkbox"/> NPDES <input type="checkbox"/> GROUND WATER <input type="checkbox"/> DRINKING WATER <input type="checkbox"/> UST <input type="checkbox"/> RCRA <input type="checkbox"/> OTHER _____ Site Location STATE: <u>PA</u>
---	--	--	---

ITEM #	Section D Required Client Information SAMPLE ID (A-Z, 0-9 / -) Sample IDs MUST BE UNIQUE	Matrix Codes MATRIX / CODE		MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED				SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives								Analysis Test Y/N	Requested Analysis Filtered (Y/N)	Residual Chlorine (Y/N)	Pace Project No./ Lab I.D.								
		Drinking Water	DW			Water	WT	COMPOSITE START	COMPOSITE END/GRAB			DATE	TIME	DATE	TIME	Unpreserved	H ₂ SO ₄	HNO ₃	HCl					NaOH	Na ₂ S ₂ O ₃	Methanol	Other				
		Waste Water	WW			Product	P																					Soil/Solid	SL	Oil	OL
1	TB-011819			WT G							4																				
2	EB-011819			WT G							10	S																			
3	MW-38A			WT G							10	S																			
4	MW-84B2			WT G							10	S																			
5	MW-84A			WT G							10	S																			
6	MW-10B			WT G							10	S																			
7	FB-011819			WT G							4																				
8	TB-011919			WT G							4																				
9	EB-011919			WT G							10	S																			
10	MW-10B			WT G							10	S																			
11	MW-20B			WT G							10	S																			
12	MW-10B			WT G							10	S																			

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS
	<u>Andres Colon / Arcaadis</u>	<u>01/19/19</u>	<u>15:39</u>	<u>[Signature]</u>	<u>01/19/19</u>	<u>15:39</u>	

3

SAMPLER NAME AND SIGNATURE		Temp in °C	Received on ice (Y/N)	Custody Sealed Cooler (Y/N)	Samples Intact (Y/N)
PRINT Name of SAMPLER: <u>Andres Colon</u>					
SIGNATURE of SAMPLER: <u>[Signature]</u>	DATE Signed (MM/DD/YY): <u>01/19/19</u>				

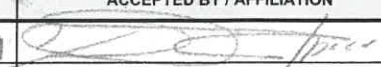
CHAIN-OF-CUSTODY / Analytical Request Document

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Page: **2** of **2**
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Section A Required Client Information:	Section B Required Project Information:	Section C Invoice Information:	
Company: <u>Arcadis</u>	Report To: <u>E Frain Calberon</u>	Attention:	REGULATORY AGENCY <input type="checkbox"/> NPDES <input type="checkbox"/> GROUND WATER <input type="checkbox"/> DRINKING WATER <input type="checkbox"/> UST <input type="checkbox"/> RCRA <input type="checkbox"/> OTHER _____
Address: <u>18 Citivier Plaza suite 401</u> <u>Rd 165 km 1.2 Amynabo P.R.</u>	Copy To:	Company Name:	
Email To: <u>Efrain Calberon @ Arcadis-usa</u>	Purchase Order No.:	Address:	Site Location STATE: <u>PR</u>
Phone: <u>787-999-4500</u> Fax: <u>787-999-4046</u>	Project Name: <u>Puma Terminal WW</u>	Pace Quote Reference:	
Requested Due Date/TAT: <u>Stand</u>	Project Number: <u>E002 1695B</u>	Pace Project Manager: <u>Juan Redondo</u>	
		Pace Profile #:	

ITEM #	Section D Required Client Information	Matrix Codes MATRIX / CODE	COLLECTED				SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives							Analysis Test ↓ Y/N	Requested Analysis Filtered (Y/N)	Residual Chlorine (Y/N)	Pace Project No./ Lab I.D.						
			COMPOSITE START		COMPOSITE END/GRAB				Unpreserved	H ₂ SO ₄	HNO ₃	HCl	NaOH	Na ₂ S ₂ O ₃	Methanol					Other					
			DATE	TIME	DATE	TIME																			
1	MW-21B	WT G			01/19/17	1356	10	S								X	X	X	X	X	X				
2	DUP003	WT G			01/19/17		10	S								X	X	X	X	X	X				
3	FB-011917	WT G			01/19/17	1402	4									X	X								
4																									
5																									
6																									
7																									
8																									
9																									
10																									
11																									
12																									

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS
	Ander Colon / Arcadis	01/19/17	1539		01/19/17	1539	

SAMPLER NAME AND SIGNATURE		Temp in °C	Received on ice (Y/N)	Custody Sealed Cooler (Y/N)	Samples Intact (Y/N)
PRINT Name of SAMPLER: <u>Ander Colon</u>					
SIGNATURE OF SAMPLER: <u>AM</u>	DATE Signed (MM/DD/YY): <u>01/19/17</u>				

February 14, 2017

Efrain Calderon
BBL Caribe Engineering P.S.C.
48 City View Plaza1, Suite 401
Road 16, Km. 1.2
Guaynabo, PR 00968

RE: Project: PUMA TERMINAL GW SAMPLING
Pace Project No.: 2048968

Dear Efrain Calderon:

Enclosed are the analytical results for sample(s) received by the laboratory on January 19, 2017. The results relate only to the samples included in this report. Results reported herein conform to the most current, applicable TNI/NELAC standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,



Juan Redondo
juan.redondo@pacelabs.com
Project Manager

Enclosures

cc: Sharon Colon
Abner Hernandez
Marianela Mercado-Burgos



REPORT OF LABORATORY ANALYSIS

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CERTIFICATIONS

Project: PUMA TERMINAL GW SAMPLING

Pace Project No.: 2048968

New Orleans Certification IDs

California Env. Lab Accreditation Program Branch:
11277CA

Florida Department of Health (NELAC): E87595

Illinois Environmental Protection Agency: 0025721

Kansas Department of Health and Environment (NELAC):
E-10266

Louisiana Dept. of Environmental Quality (NELAC/LELAP):
02006

Pennsylvania Dept. of Env Protection (NELAC): 68-04202

Texas Commission on Env. Quality (NELAC):
T104704405-09-TX

U.S. Dept. of Agriculture Foreign Soil Import: P330-10-
00119

Commonwealth of Virginia (TNI): 480246

REPORT OF LABORATORY ANALYSIS

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SAMPLE SUMMARY

Project: PUMA TERMINAL GW SAMPLING
Pace Project No.: 2048968

Lab ID	Sample ID	Matrix	Date Collected	Date Received
2048968001	TB-011817	Water	01/18/17 00:00	01/19/17 15:39
2048968002	EB-011817	Water	01/18/17 09:22	01/19/17 15:39
2048968003	MW-38A	Water	01/18/17 11:16	01/19/17 15:39
2048968004	MW-84B2	Water	01/18/17 12:31	01/19/17 15:39
2048968005	MW-84A	Water	01/18/17 13:23	01/19/17 15:39
2048968006	MW-17B	Water	01/18/17 15:23	01/19/17 15:39
2048968007	FB-011817	Water	01/18/17 15:24	01/19/17 15:39
2048968008	TB-011917	Water	01/19/17 00:00	01/19/17 15:39
2048968009	EB-011917	Water	01/19/17 10:00	01/19/17 15:39
2048968010	MW-77B	Water	01/19/17 11:17	01/19/17 15:39
2048968011	MW-20B	Water	01/19/17 12:25	01/19/17 15:39
2048968012	MW-78B	Water	01/19/17 13:15	01/19/17 15:39
2048968013	MW-21B	Water	01/19/17 13:56	01/19/17 15:39
2048968014	DUP007	Water	01/19/17 00:00	01/19/17 15:39
2048968015	FB-011917	Water	01/19/17 14:02	01/19/17 15:39

REPORT OF LABORATORY ANALYSIS

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SAMPLE ANALYTE COUNT

Project: PUMA TERMINAL GW SAMPLING

Pace Project No.: 2048968

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
2048968001	TB-011817	EPA 8015/8021	MHM	2	PASI-N
		EPA 5030B/8260	JRP	45	PASI-N
2048968002	EB-011817	EPA 8015B Modified	SLF	4	PASI-N
		EPA 8015/8021	MHM	2	PASI-N
		EPA 6020	KJR	4	PASI-N
		EPA 6020	KJR	4	PASI-N
		EPA 7470	MHB1	1	PASI-N
		EPA 7470	MHB1	1	PASI-N
		EPA 8270 by SIM	GEJ	19	PASI-N
		EPA 5030B/8260	JRP	45	PASI-N
2048968003	MW-38A	EPA 8015B Modified	SLF	4	PASI-N
		EPA 8015/8021	MHM	2	PASI-N
		EPA 6020	KJR	4	PASI-N
		EPA 6020	KJR	4	PASI-N
		EPA 7470	MHB1	1	PASI-N
		EPA 7470	MHB1	1	PASI-N
		EPA 8270 by SIM	GEJ	19	PASI-N
		EPA 5030B/8260	JRP	45	PASI-N
2048968004	MW-84B2	EPA 8015B Modified	SLF	4	PASI-N
		EPA 8015/8021	MHM	2	PASI-N
		EPA 6020	KJR	4	PASI-N
		EPA 6020	KJR	4	PASI-N
		EPA 7470	MHB1	1	PASI-N
		EPA 7470	MHB1	1	PASI-N
		EPA 8270 by SIM	GEJ	19	PASI-N
		EPA 5030B/8260	JRP	45	PASI-N
2048968005	MW-84A	EPA 8015B Modified	SLF	4	PASI-N
		EPA 8015/8021	MHM	2	PASI-N
		EPA 6020	KJR	4	PASI-N
		EPA 6020	KJR	4	PASI-N
		EPA 7470	MHB1	1	PASI-N
		EPA 7470	MHB1	1	PASI-N
		EPA 8270 by SIM	GEJ	19	PASI-N
		EPA 5030B/8260	JRP	45	PASI-N
2048968006	MW-17B	EPA 8015B Modified	SLF	4	PASI-N
		EPA 8015/8021	MHM	2	PASI-N
		EPA 6020	KJR	4	PASI-N

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SAMPLE ANALYTE COUNT

Project: PUMA TERMINAL GW SAMPLING

Pace Project No.: 2048968

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
		EPA 6020	KJR	4	PASI-N
		EPA 7470	MHB1	1	PASI-N
		EPA 7470	MHB1	1	PASI-N
		EPA 8270 by SIM	GEJ	19	PASI-N
2048968007	FB-011817	EPA 5030B/8260	JRP	45	PASI-N
		EPA 8015/8021	MHM	2	PASI-N
2048968008	TB-011917	EPA 5030B/8260	JRP	45	PASI-N
		EPA 8015/8021	MHM	2	PASI-N
2048968009	EB-011917	EPA 5030B/8260	JRP	45	PASI-N
		EPA 8015B Modified	SLF	4	PASI-N
		EPA 8015/8021	MHM	2	PASI-N
		EPA 6020	KJR	4	PASI-N
		EPA 6020	KJR	4	PASI-N
		EPA 7470	MHB1	1	PASI-N
		EPA 7470	MHB1	1	PASI-N
		EPA 8270 by SIM	GEJ	19	PASI-N
2048968010	MW-77B	EPA 5030B/8260	JRP	45	PASI-N
		EPA 8015B Modified	SLF	4	PASI-N
		EPA 8015/8021	MHM	2	PASI-N
		EPA 6020	KJR	4	PASI-N
		EPA 6020	KJR	4	PASI-N
		EPA 7470	MHB1	1	PASI-N
		EPA 7470	MHB1	1	PASI-N
		EPA 8270 by SIM	GEJ	19	PASI-N
2048968011	MW-20B	EPA 5030B/8260	JRP	45	PASI-N
		EPA 8015B Modified	SLF	4	PASI-N
		EPA 8015/8021	MHM	2	PASI-N
		EPA 6020	KJR	4	PASI-N
		EPA 6020	KJR	4	PASI-N
		EPA 7470	MHB1	1	PASI-N
		EPA 7470	MHB1	1	PASI-N
		EPA 8270 by SIM	GEJ	19	PASI-N
2048968012	MW-78B	EPA 5030B/8260	JRP	45	PASI-N
		EPA 8015B Modified	SLF	4	PASI-N
		EPA 8015/8021	MHM	2	PASI-N
		EPA 6020	KJR	4	PASI-N
		EPA 6020	KJR	4	PASI-N

REPORT OF LABORATORY ANALYSIS

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SAMPLE ANALYTE COUNT

Project: PUMA TERMINAL GW SAMPLING

Pace Project No.: 2048968

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
2048968013	MW-21B	EPA 7470	MHB1	1	PASI-N
		EPA 7470	MHB1	1	PASI-N
		EPA 8270 by SIM	GEJ	19	PASI-N
		EPA 5030B/8260	JRP	45	PASI-N
		EPA 8015B Modified	SLF	4	PASI-N
		EPA 8015/8021	MHM	2	PASI-N
		EPA 6020	KJR	4	PASI-N
		EPA 6020	KJR	4	PASI-N
		EPA 7470	MHB1	1	PASI-N
		EPA 7470	MHB1	1	PASI-N
2048968014	DUP007	EPA 8270 by SIM	GEJ	19	PASI-N
		EPA 5030B/8260	JRP	45	PASI-N
		EPA 8015B Modified	SLF	4	PASI-N
		EPA 8015/8021	MHM	2	PASI-N
		EPA 6020	KJR	4	PASI-N
		EPA 6020	KJR	4	PASI-N
		EPA 7470	MHB1	1	PASI-N
		EPA 7470	MHB1	1	PASI-N
		EPA 8270 by SIM	GEJ	19	PASI-N
		EPA 5030B/8260	JRP	45	PASI-N
2048968015	FB-011917	EPA 8015/8021	MHM	2	PASI-N
		EPA 5030B/8260	JRP	45	PASI-N

REPORT OF LABORATORY ANALYSIS

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PROJECT NARRATIVE

Project: PUMA TERMINAL GW SAMPLING

Pace Project No.: 2048968

Method: EPA 8015B Modified

Description: 8015M DRO/ORO Organics

Client: BBL Caribe / Arcadis PR

Date: February 14, 2017

General Information:

11 samples were analyzed for EPA 8015B Modified. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:

The samples were analyzed within the method required hold times with any exceptions noted below.

H2: Extraction or preparation conducted outside EPA method holding time.

- MW-17B (Lab ID: 2048968006)

Sample Preparation:

The samples were prepared in accordance with EPA 3535 with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):

All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:

All criteria were within method requirements with any exceptions noted below.

Surrogates:

All surrogates were within QC limits with any exceptions noted below.

QC Batch: 72656

S2: Surrogate recovery outside laboratory control limits due to matrix interferences (confirmed by similar results from sample re-analysis).

- MW-17B (Lab ID: 2048968006)
- n-Pentacosane (S)

Method Blank:

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

QC Batch: 72656

A matrix spike/matrix spike duplicate was not performed due to insufficient sample volume.

QC Batch: 73658

A matrix spike/matrix spike duplicate was not performed due to insufficient sample volume.

Additional Comments:

REPORT OF LABORATORY ANALYSIS

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PROJECT NARRATIVE

Project: PUMA TERMINAL GW SAMPLING

Pace Project No.: 2048968

Method: EPA 8015B Modified

Description: 8015M DRO/ORO Organics

Client: BBL Caribe / Arcadis PR

Date: February 14, 2017

Batch Comments:

- QC Batch: 72656

Analyte Comments:

QC Batch: 72656

1b: Sample 2048968006 yielded low surrogate recoveries and was therefore re-extracted (outside the holding time limit). Re-analysis surrogate recoveries were within QC limits. Both sets of results were included in the report.

- MW-17B (Lab ID: 2048968006)
 - n-Pentacosane (S)

QC Batch: 73658

1b: Sample 2048968006 yielded low surrogate recoveries and was therefore re-extracted (outside the holding time limit). Re-analysis surrogate recoveries were within QC limits. Both sets of results were included in the report.

- MW-17B (Lab ID: 2048968006)
 - n-Pentacosane (S)

REPORT OF LABORATORY ANALYSIS

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PROJECT NARRATIVE

Project: PUMA TERMINAL GW SAMPLING
Pace Project No.: 2048968

Method: EPA 8015/8021
Description: 8021 GCV BTEX, MTBE, GRO
Client: BBL Caribe / Arcadis PR
Date: February 14, 2017

General Information:

15 samples were analyzed for EPA 8015/8021. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:

The samples were analyzed within the method required hold times with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):

All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:

All criteria were within method requirements with any exceptions noted below.

Surrogates:

All surrogates were within QC limits with any exceptions noted below.

Method Blank:

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

REPORT OF LABORATORY ANALYSIS

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PROJECT NARRATIVE

Project: PUMA TERMINAL GW SAMPLING
Pace Project No.: 2048968

Method: EPA 6020
Description: 6020 MET ICPMS
Client: BBL Caribe / Arcadis PR
Date: February 14, 2017

General Information:

11 samples were analyzed for EPA 6020. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:

The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:

The samples were prepared in accordance with EPA 3010 with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):

All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:

All criteria were within method requirements with any exceptions noted below.

Internal Standards:

All internal standards were within QC limits with any exceptions noted below.

Method Blank:

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

QC Batch: 72609

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 2048890008

M1: Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

- MS (Lab ID: 304155)
 - Chromium
 - Vanadium
- MSD (Lab ID: 304156)
 - Chromium
 - Vanadium

R1: RPD value was outside control limits.

- MSD (Lab ID: 304156)
 - Arsenic
 - Chromium
 - Lead
 - Vanadium

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PROJECT NARRATIVE

Project: PUMA TERMINAL GW SAMPLING

Pace Project No.: 2048968

Method: EPA 6020

Description: 6020 MET ICPMS

Client: BBL Caribe / Arcadis PR

Date: February 14, 2017

Additional Comments:

REPORT OF LABORATORY ANALYSIS

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PROJECT NARRATIVE

Project: PUMA TERMINAL GW SAMPLING

Pace Project No.: 2048968

Method: EPA 6020

Description: 6020 MET ICPMS, Dissolved (LF)

Client: BBL Caribe / Arcadis PR

Date: February 14, 2017

General Information:

11 samples were analyzed for EPA 6020. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:

The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:

The samples were prepared in accordance with EPA 3005A with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):

All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:

All criteria were within method requirements with any exceptions noted below.

Internal Standards:

All internal standards were within QC limits with any exceptions noted below.

Method Blank:

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

QC Batch: 72614

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 2048890008

M1: Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

- MS (Lab ID: 304167)
 - Vanadium, Dissolved
- MSD (Lab ID: 304168)
 - Vanadium, Dissolved

Additional Comments:

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PROJECT NARRATIVE

Project: PUMA TERMINAL GW SAMPLING

Pace Project No.: 2048968

Method: EPA 7470

Description: 7470 Mercury

Client: BBL Caribe / Arcadis PR

Date: February 14, 2017

General Information:

11 samples were analyzed for EPA 7470. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:

The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:

The samples were prepared in accordance with EPA 7470 with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):

All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:

All criteria were within method requirements with any exceptions noted below.

Method Blank:

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

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PROJECT NARRATIVE

Project: PUMA TERMINAL GW SAMPLING

Pace Project No.: 2048968

Method: EPA 7470

Description: 7470 Mercury, Dissolved (LF)

Client: BBL Caribe / Arcadis PR

Date: February 14, 2017

General Information:

11 samples were analyzed for EPA 7470. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:

The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:

The samples were prepared in accordance with EPA 7470 with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):

All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:

All criteria were within method requirements with any exceptions noted below.

Method Blank:

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

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PROJECT NARRATIVE

Project: PUMA TERMINAL GW SAMPLING

Pace Project No.: 2048968

Method: EPA 8270 by SIM

Description: 8270 MSSV PAH by SIM SEP

Client: BBL Caribe / Arcadis PR

Date: February 14, 2017

General Information:

11 samples were analyzed for EPA 8270 by SIM. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:

The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:

The samples were prepared in accordance with EPA 3510 with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):

All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:

All criteria were within method requirements with any exceptions noted below.

Internal Standards:

All internal standards were within QC limits with any exceptions noted below.

Surrogates:

All surrogates were within QC limits with any exceptions noted below.

Method Blank:

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

QC Batch: 72748

A matrix spike/matrix spike duplicate was not performed due to insufficient sample volume.

Additional Comments:

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PROJECT NARRATIVE

Project: PUMA TERMINAL GW SAMPLING

Pace Project No.: 2048968

Method: EPA 5030B/8260

Description: 8260 MSV Low Level

Client: BBL Caribe / Arcadis PR

Date: February 14, 2017

General Information:

15 samples were analyzed for EPA 5030B/8260. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:

The samples were analyzed within the method required hold times with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):

All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:

All criteria were within method requirements with any exceptions noted below.

Internal Standards:

All internal standards were within QC limits with any exceptions noted below.

Surrogates:

All surrogates were within QC limits with any exceptions noted below.

Method Blank:

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

Analyte Comments:

QC Batch: 72642

C9: Common Laboratory Contaminant.

- MW-17B (Lab ID: 2048968006)
 - Acetone
- MW-84A (Lab ID: 2048968005)
 - Acetone
- TB-011817 (Lab ID: 2048968001)
 - Acetone
- TB-011917 (Lab ID: 2048968008)
 - Acetone

This data package has been reviewed for quality and completeness and is approved for release.

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: PUMA TERMINAL GW SAMPLING
Pace Project No.: 2048968

Sample: TB-011817	Lab ID: 2048968001	Collected: 01/18/17 00:00	Received: 01/19/17 15:39	Matrix: Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8021 GCV BTEX, MTBE, GRO		Analytical Method: EPA 8015/8021						
Gasoline Range Organics	ND	ug/L	50.0	1		01/25/17 20:46		
Surrogates								
4-Bromofluorobenzene (S)	103	%	44-148	1		01/25/17 20:46	460-00-4	
8260 MSV Low Level		Analytical Method: EPA 5030B/8260						
Acetone	18.5	ug/L	4.0	1		01/20/17 14:46	67-64-1	C9
Benzene	ND	ug/L	0.50	1		01/20/17 14:46	71-43-2	
Bromodichloromethane	0.50	ug/L	0.50	1		01/20/17 14:46	75-27-4	
Bromoform	ND	ug/L	0.50	1		01/20/17 14:46	75-25-2	
Bromomethane	ND	ug/L	0.50	1		01/20/17 14:46	74-83-9	
2-Butanone (MEK)	ND	ug/L	2.0	1		01/20/17 14:46	78-93-3	
Carbon disulfide	ND	ug/L	1.0	1		01/20/17 14:46	75-15-0	
Carbon tetrachloride	ND	ug/L	0.50	1		01/20/17 14:46	56-23-5	
Chlorobenzene	ND	ug/L	0.50	1		01/20/17 14:46	108-90-7	
Chloroethane	ND	ug/L	0.50	1		01/20/17 14:46	75-00-3	
Chloroform	2.4	ug/L	0.50	1		01/20/17 14:46	67-66-3	
Chloromethane	ND	ug/L	0.50	1		01/20/17 14:46	74-87-3	
1,2-Dibromo-3-chloropropane	ND	ug/L	0.20	1		01/20/17 14:46	96-12-8	
Dibromochloromethane	ND	ug/L	0.50	1		01/20/17 14:46	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	1		01/20/17 14:46	106-93-4	
Dichlorodifluoromethane	ND	ug/L	1.0	1		01/20/17 14:46	75-71-8	
1,1-Dichloroethane	ND	ug/L	0.50	1		01/20/17 14:46	75-34-3	
1,2-Dichloroethane	ND	ug/L	0.50	1		01/20/17 14:46	107-06-2	
1,1-Dichloroethene	ND	ug/L	0.50	1		01/20/17 14:46	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	1		01/20/17 14:46	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	0.50	1		01/20/17 14:46	156-60-5	
1,2-Dichloropropane	ND	ug/L	0.50	1		01/20/17 14:46	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	0.50	1		01/20/17 14:46	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	0.50	1		01/20/17 14:46	10061-02-6	
Ethylbenzene	ND	ug/L	0.50	1		01/20/17 14:46	100-41-4	
2-Hexanone	ND	ug/L	1.0	1		01/20/17 14:46	591-78-6	
Isopropylbenzene (Cumene)	ND	ug/L	1.0	1		01/20/17 14:46	98-82-8	
Methyl acetate	ND	ug/L	2.0	1		01/20/17 14:46	79-20-9	
Methylene Chloride	ND	ug/L	0.50	1		01/20/17 14:46	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	1.0	1		01/20/17 14:46	108-10-1	
Methyl-tert-butyl ether	ND	ug/L	0.50	1		01/20/17 14:46	1634-04-4	
Styrene	ND	ug/L	1.0	1		01/20/17 14:46	100-42-5	
1,1,2,2-Tetrachloroethane	ND	ug/L	0.50	1		01/20/17 14:46	79-34-5	
Tetrachloroethene	ND	ug/L	0.50	1		01/20/17 14:46	127-18-4	
Toluene	ND	ug/L	0.50	1		01/20/17 14:46	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	0.50	1		01/20/17 14:46	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	0.50	1		01/20/17 14:46	79-00-5	
Trichloroethene	ND	ug/L	0.50	1		01/20/17 14:46	79-01-6	
Trichlorofluoromethane	ND	ug/L	0.50	1		01/20/17 14:46	75-69-4	
Vinyl chloride	ND	ug/L	0.50	1		01/20/17 14:46	75-01-4	
m&p-Xylene	ND	ug/L	2.0	1		01/20/17 14:46	179601-23-1	
o-Xylene	ND	ug/L	1.0	1		01/20/17 14:46	95-47-6	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: PUMA TERMINAL GW SAMPLING
Project No.: 2048968

Sample:	Lab ID:	Collected:	Received:	Matrix:				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
Sample: TB-011817	Lab ID: 2048968001	Collected: 01/18/17 00:00	Received: 01/19/17 15:39	Matrix: Water				
8260 MSV Low Level Analytical Method: EPA 5030B/8260								
Surrogates								
Dibromofluoromethane (S)	93	%.	72-126	1		01/20/17 14:46	1868-53-7	
4-Bromofluorobenzene (S)	99	%.	68-124	1		01/20/17 14:46	460-00-4	
Toluene-d8 (S)	106	%.	79-119	1		01/20/17 14:46	2037-26-5	
Sample: EB-011817	Lab ID: 2048968002	Collected: 01/18/17 09:22	Received: 01/19/17 15:39	Matrix: Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8015M DRO/ORO Organics Analytical Method: EPA 8015B Modified Preparation Method: EPA 3535								
Diesel Range Organic (C10-C28)	ND	mg/L	0.50	1	01/24/17 12:12	02/02/17 11:58		
Oil Range Organics (>C28-C40)	ND	mg/L	1.0	1	01/24/17 12:12	02/02/17 11:58		
Surrogates								
n-Pentacosane (S)	51	%.	16-137	1	01/24/17 12:12	02/02/17 11:58	629-99-2	
o-Terphenyl (S)	57	%.	10-121	1	01/24/17 12:12	02/02/17 11:58	84-15-1	
8021 GCV BTEX, MTBE, GRO Analytical Method: EPA 8015/8021								
Gasoline Range Organics	ND	ug/L	50.0	1		01/25/17 21:13		
Surrogates								
4-Bromofluorobenzene (S)	100	%.	44-148	1		01/25/17 21:13	460-00-4	
6020 MET ICPMS Analytical Method: EPA 6020 Preparation Method: EPA 3010								
Arsenic	ND	mg/L	0.0010	1	01/24/17 08:30	02/12/17 16:32	7440-38-2	
Chromium	ND	mg/L	0.0010	1	01/24/17 08:30	02/12/17 16:32	7440-47-3	
Lead	ND	mg/L	0.0010	1	01/24/17 08:30	02/12/17 16:32	7439-92-1	
Vanadium	ND	mg/L	0.0050	1	01/24/17 08:30	02/12/17 16:32	7440-62-2	
6020 MET ICPMS, Dissolved (LF) Analytical Method: EPA 6020 Preparation Method: EPA 3005A								
Arsenic, Dissolved	ND	ug/L	1.0	1	01/24/17 09:53	02/12/17 19:37	7440-38-2	
Chromium, Dissolved	ND	ug/L	1.0	1	01/24/17 09:53	02/12/17 19:37	7440-47-3	
Lead, Dissolved	ND	ug/L	1.0	1	01/24/17 09:53	02/12/17 19:37	7439-92-1	
Vanadium, Dissolved	ND	ug/L	5.0	1	01/24/17 09:53	02/12/17 19:37	7440-62-2	
7470 Mercury Analytical Method: EPA 7470 Preparation Method: EPA 7470								
Mercury	ND	ug/L	0.20	1	01/24/17 08:59	01/24/17 17:01	7439-97-6	
7470 Mercury, Dissolved (LF) Analytical Method: EPA 7470 Preparation Method: EPA 7470								
Mercury, Dissolved	ND	ug/L	0.20	1	01/24/17 09:49	01/24/17 19:12	7439-97-6	
8270 MSSV PAH by SIM SEP Analytical Method: EPA 8270 by SIM Preparation Method: EPA 3510								
Acenaphthene	ND	ug/L	0.10	1	01/25/17 09:39	01/31/17 13:54	83-32-9	
Acenaphthylene	ND	ug/L	0.10	1	01/25/17 09:39	01/31/17 13:54	208-96-8	
Anthracene	ND	ug/L	0.10	1	01/25/17 09:39	01/31/17 13:54	120-12-7	
Benzo(a)anthracene	ND	ug/L	0.10	1	01/25/17 09:39	01/31/17 13:54	56-55-3	
Benzo(a)pyrene	ND	ug/L	0.10	1	01/25/17 09:39	01/31/17 13:54	50-32-8	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: PUMA TERMINAL GW SAMPLING

Sample Project No.: 2048968

Sample: EB-011817	Lab ID: 2048968002	Collected: 01/18/17 09:22	Received: 01/19/17 15:39	Matrix: Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8270 MSSV PAH by SIM SEP		Analytical Method: EPA 8270 by SIM Preparation Method: EPA 3510						
Benzo(b)fluoranthene	ND	ug/L	0.10	1	01/25/17 09:39	01/31/17 13:54	205-99-2	
Benzo(g,h,i)perylene	ND	ug/L	0.10	1	01/25/17 09:39	01/31/17 13:54	191-24-2	
Benzo(k)fluoranthene	ND	ug/L	0.10	1	01/25/17 09:39	01/31/17 13:54	207-08-9	
Chrysene	ND	ug/L	0.10	1	01/25/17 09:39	01/31/17 13:54	218-01-9	
Dibenz(a,h)anthracene	ND	ug/L	0.10	1	01/25/17 09:39	01/31/17 13:54	53-70-3	
Fluoranthene	ND	ug/L	0.10	1	01/25/17 09:39	01/31/17 13:54	206-44-0	
Fluorene	ND	ug/L	0.10	1	01/25/17 09:39	01/31/17 13:54	86-73-7	
Indeno(1,2,3-cd)pyrene	ND	ug/L	0.10	1	01/25/17 09:39	01/31/17 13:54	193-39-5	
2-Methylnaphthalene	ND	ug/L	0.10	1	01/25/17 09:39	01/31/17 13:54	91-57-6	
Naphthalene	ND	ug/L	0.10	1	01/25/17 09:39	01/31/17 13:54	91-20-3	
Phenanthrene	ND	ug/L	0.10	1	01/25/17 09:39	01/31/17 13:54	85-01-8	
Pyrene	ND	ug/L	0.10	1	01/25/17 09:39	01/31/17 13:54	129-00-0	
Surrogates								
2-Fluorobiphenyl (S)	78	%	25-150	1	01/25/17 09:39	01/31/17 13:54	321-60-8	
Terphenyl-d14 (S)	78	%	25-150	1	01/25/17 09:39	01/31/17 13:54	1718-51-0	
8260 MSV Low Level		Analytical Method: EPA 5030B/8260						
Acetone	ND	ug/L	4.0	1		01/20/17 15:04	67-64-1	
Benzene	ND	ug/L	0.50	1		01/20/17 15:04	71-43-2	
Bromodichloromethane	ND	ug/L	0.50	1		01/20/17 15:04	75-27-4	
Bromoform	ND	ug/L	0.50	1		01/20/17 15:04	75-25-2	
Bromomethane	ND	ug/L	0.50	1		01/20/17 15:04	74-83-9	
2-Butanone (MEK)	ND	ug/L	2.0	1		01/20/17 15:04	78-93-3	
Carbon disulfide	ND	ug/L	1.0	1		01/20/17 15:04	75-15-0	
Carbon tetrachloride	ND	ug/L	0.50	1		01/20/17 15:04	56-23-5	
Chlorobenzene	ND	ug/L	0.50	1		01/20/17 15:04	108-90-7	
Chloroethane	ND	ug/L	0.50	1		01/20/17 15:04	75-00-3	
Chloroform	ND	ug/L	0.50	1		01/20/17 15:04	67-66-3	
Chloromethane	ND	ug/L	0.50	1		01/20/17 15:04	74-87-3	
1,2-Dibromo-3-chloropropane	ND	ug/L	0.20	1		01/20/17 15:04	96-12-8	
Dibromochloromethane	ND	ug/L	0.50	1		01/20/17 15:04	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	1		01/20/17 15:04	106-93-4	
Dichlorodifluoromethane	ND	ug/L	1.0	1		01/20/17 15:04	75-71-8	
1,1-Dichloroethane	ND	ug/L	0.50	1		01/20/17 15:04	75-34-3	
1,2-Dichloroethane	ND	ug/L	0.50	1		01/20/17 15:04	107-06-2	
1,1-Dichloroethene	ND	ug/L	0.50	1		01/20/17 15:04	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	1		01/20/17 15:04	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	0.50	1		01/20/17 15:04	156-60-5	
1,2-Dichloropropane	ND	ug/L	0.50	1		01/20/17 15:04	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	0.50	1		01/20/17 15:04	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	0.50	1		01/20/17 15:04	10061-02-6	
Ethylbenzene	ND	ug/L	0.50	1		01/20/17 15:04	100-41-4	
2-Hexanone	ND	ug/L	1.0	1		01/20/17 15:04	591-78-6	
Isopropylbenzene (Cumene)	ND	ug/L	1.0	1		01/20/17 15:04	98-82-8	
Methyl acetate	ND	ug/L	2.0	1		01/20/17 15:04	79-20-9	
Methylene Chloride	ND	ug/L	0.50	1		01/20/17 15:04	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	1.0	1		01/20/17 15:04	108-10-1	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: PUMA TERMINAL GW SAMPLING

Pace Project No.: 2048968

Sample: EB-011817	Lab ID: 2048968002	Collected: 01/18/17 09:22	Received: 01/19/17 15:39	Matrix: Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV Low Level		Analytical Method: EPA 5030B/8260						
Methyl-tert-butyl ether	ND	ug/L	0.50	1		01/20/17 15:04	1634-04-4	
Styrene	ND	ug/L	1.0	1		01/20/17 15:04	100-42-5	
1,1,2,2-Tetrachloroethane	ND	ug/L	0.50	1		01/20/17 15:04	79-34-5	
Tetrachloroethene	ND	ug/L	0.50	1		01/20/17 15:04	127-18-4	
Toluene	ND	ug/L	0.50	1		01/20/17 15:04	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	0.50	1		01/20/17 15:04	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	0.50	1		01/20/17 15:04	79-00-5	
Trichloroethene	ND	ug/L	0.50	1		01/20/17 15:04	79-01-6	
Trichlorofluoromethane	ND	ug/L	0.50	1		01/20/17 15:04	75-69-4	
Vinyl chloride	ND	ug/L	0.50	1		01/20/17 15:04	75-01-4	
m&p-Xylene	ND	ug/L	2.0	1		01/20/17 15:04	179601-23-1	
o-Xylene	ND	ug/L	1.0	1		01/20/17 15:04	95-47-6	
Surrogates								
Dibromofluoromethane (S)	94	%	72-126	1		01/20/17 15:04	1868-53-7	
4-Bromofluorobenzene (S)	99	%	68-124	1		01/20/17 15:04	460-00-4	
Toluene-d8 (S)	106	%	79-119	1		01/20/17 15:04	2037-26-5	
<hr/>								
Sample: MW-38A	Lab ID: 2048968003	Collected: 01/18/17 11:16	Received: 01/19/17 15:39	Matrix: Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8015M DRO/ORO Organics		Analytical Method: EPA 8015B Modified Preparation Method: EPA 3535						
Diesel Range Organic (C10-C28)	ND	mg/L	0.50	1	01/24/17 12:12	02/02/17 12:26		
Oil Range Organics (>C28-C40)	ND	mg/L	1.0	1	01/24/17 12:12	02/02/17 12:26		
Surrogates								
n-Pentacosane (S)	39	%	16-137	1	01/24/17 12:12	02/02/17 12:26	629-99-2	
o-Terphenyl (S)	44	%	10-121	1	01/24/17 12:12	02/02/17 12:26	84-15-1	
8021 GCV BTEX, MTBE, GRO		Analytical Method: EPA 8015/8021						
Gasoline Range Organics	ND	ug/L	50.0	1		01/25/17 21:40		
Surrogates								
4-Bromofluorobenzene (S)	101	%	44-148	1		01/25/17 21:40	460-00-4	
6020 MET ICPMS		Analytical Method: EPA 6020 Preparation Method: EPA 3010						
Arsenic	ND	mg/L	0.0010	1	01/24/17 08:30	02/12/17 16:44	7440-38-2	
Chromium	ND	mg/L	0.0010	1	01/24/17 08:30	02/12/17 16:44	7440-47-3	
Lead	0.0014	mg/L	0.0010	1	01/24/17 08:30	02/12/17 16:44	7439-92-1	
Vanadium	0.0070	mg/L	0.0050	1	01/24/17 08:30	02/12/17 16:44	7440-62-2	
6020 MET ICPMS, Dissolved (LF)		Analytical Method: EPA 6020 Preparation Method: EPA 3005A						
Arsenic, Dissolved	ND	ug/L	1.0	1	01/24/17 09:53	02/12/17 19:41	7440-38-2	
Chromium, Dissolved	ND	ug/L	1.0	1	01/24/17 09:53	02/12/17 19:41	7440-47-3	
Lead, Dissolved	ND	ug/L	1.0	1	01/24/17 09:53	02/12/17 19:41	7439-92-1	
Vanadium, Dissolved	ND	ug/L	5.0	1	01/24/17 09:53	02/12/17 19:41	7440-62-2	

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ANALYTICAL RESULTS

Project: PUMA TERMINAL GW SAMPLING

Pace Project No.: 2048968

Sample: MW-38A	Lab ID: 2048968003	Collected: 01/18/17 11:16	Received: 01/19/17 15:39	Matrix: Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
7470 Mercury Analytical Method: EPA 7470 Preparation Method: EPA 7470								
Mercury	ND	ug/L	0.20	1	01/24/17 08:59	01/24/17 17:03	7439-97-6	
7470 Mercury, Dissolved (LF) Analytical Method: EPA 7470 Preparation Method: EPA 7470								
Mercury, Dissolved	ND	ug/L	0.20	1	01/24/17 09:49	01/24/17 19:15	7439-97-6	
8270 MSSV PAH by SIM SEP Analytical Method: EPA 8270 by SIM Preparation Method: EPA 3510								
Acenaphthene	ND	ug/L	0.10	1	01/25/17 09:39	01/31/17 14:14	83-32-9	
Acenaphthylene	ND	ug/L	0.10	1	01/25/17 09:39	01/31/17 14:14	208-96-8	
Anthracene	ND	ug/L	0.10	1	01/25/17 09:39	01/31/17 14:14	120-12-7	
Benzo(a)anthracene	ND	ug/L	0.10	1	01/25/17 09:39	01/31/17 14:14	56-55-3	
Benzo(a)pyrene	ND	ug/L	0.10	1	01/25/17 09:39	01/31/17 14:14	50-32-8	
Benzo(b)fluoranthene	ND	ug/L	0.10	1	01/25/17 09:39	01/31/17 14:14	205-99-2	
Benzo(g,h,i)perylene	ND	ug/L	0.10	1	01/25/17 09:39	01/31/17 14:14	191-24-2	
Benzo(k)fluoranthene	ND	ug/L	0.10	1	01/25/17 09:39	01/31/17 14:14	207-08-9	
Chrysene	ND	ug/L	0.10	1	01/25/17 09:39	01/31/17 14:14	218-01-9	
Dibenz(a,h)anthracene	ND	ug/L	0.10	1	01/25/17 09:39	01/31/17 14:14	53-70-3	
Fluoranthene	ND	ug/L	0.10	1	01/25/17 09:39	01/31/17 14:14	206-44-0	
Fluorene	ND	ug/L	0.10	1	01/25/17 09:39	01/31/17 14:14	86-73-7	
Indeno(1,2,3-cd)pyrene	ND	ug/L	0.10	1	01/25/17 09:39	01/31/17 14:14	193-39-5	
2-Methylnaphthalene	ND	ug/L	0.10	1	01/25/17 09:39	01/31/17 14:14	91-57-6	
Naphthalene	ND	ug/L	0.10	1	01/25/17 09:39	01/31/17 14:14	91-20-3	
Phenanthrene	ND	ug/L	0.10	1	01/25/17 09:39	01/31/17 14:14	85-01-8	
Pyrene	ND	ug/L	0.10	1	01/25/17 09:39	01/31/17 14:14	129-00-0	
Surrogates								
2-Fluorobiphenyl (S)	78	%	25-150	1	01/25/17 09:39	01/31/17 14:14	321-60-8	
Terphenyl-d14 (S)	78	%	25-150	1	01/25/17 09:39	01/31/17 14:14	1718-51-0	
8260 MSV Low Level Analytical Method: EPA 5030B/8260								
Acetone	ND	ug/L	4.0	1		01/20/17 15:23	67-64-1	
Benzene	ND	ug/L	0.50	1		01/20/17 15:23	71-43-2	
Bromodichloromethane	ND	ug/L	0.50	1		01/20/17 15:23	75-27-4	
Bromoform	ND	ug/L	0.50	1		01/20/17 15:23	75-25-2	
Bromomethane	ND	ug/L	0.50	1		01/20/17 15:23	74-83-9	
2-Butanone (MEK)	ND	ug/L	2.0	1		01/20/17 15:23	78-93-3	
Carbon disulfide	ND	ug/L	1.0	1		01/20/17 15:23	75-15-0	
Carbon tetrachloride	ND	ug/L	0.50	1		01/20/17 15:23	56-23-5	
Chlorobenzene	ND	ug/L	0.50	1		01/20/17 15:23	108-90-7	
Chloroethane	ND	ug/L	0.50	1		01/20/17 15:23	75-00-3	
Chloroform	0.62	ug/L	0.50	1		01/20/17 15:23	67-66-3	
Chloromethane	ND	ug/L	0.50	1		01/20/17 15:23	74-87-3	
1,2-Dibromo-3-chloropropane	ND	ug/L	0.20	1		01/20/17 15:23	96-12-8	
Dibromochloromethane	ND	ug/L	0.50	1		01/20/17 15:23	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	1		01/20/17 15:23	106-93-4	
Dichlorodifluoromethane	ND	ug/L	1.0	1		01/20/17 15:23	75-71-8	
1,1-Dichloroethane	ND	ug/L	0.50	1		01/20/17 15:23	75-34-3	
1,2-Dichloroethane	ND	ug/L	0.50	1		01/20/17 15:23	107-06-2	

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ANALYTICAL RESULTS

Project: PUMA TERMINAL GW SAMPLING

Sample Project No.: 2048968

Sample: MW-38A	Lab ID: 2048968003	Collected: 01/18/17 11:16	Received: 01/19/17 15:39	Matrix: Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV Low Level		Analytical Method: EPA 5030B/8260						
1,1-Dichloroethene	ND	ug/L	0.50	1		01/20/17 15:23	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	1		01/20/17 15:23	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	0.50	1		01/20/17 15:23	156-60-5	
1,2-Dichloropropane	ND	ug/L	0.50	1		01/20/17 15:23	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	0.50	1		01/20/17 15:23	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	0.50	1		01/20/17 15:23	10061-02-6	
Ethylbenzene	ND	ug/L	0.50	1		01/20/17 15:23	100-41-4	
2-Hexanone	ND	ug/L	1.0	1		01/20/17 15:23	591-78-6	
Isopropylbenzene (Cumene)	ND	ug/L	1.0	1		01/20/17 15:23	98-82-8	
Methyl acetate	ND	ug/L	2.0	1		01/20/17 15:23	79-20-9	
Methylene Chloride	ND	ug/L	0.50	1		01/20/17 15:23	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	1.0	1		01/20/17 15:23	108-10-1	
Methyl-tert-butyl ether	ND	ug/L	0.50	1		01/20/17 15:23	1634-04-4	
Styrene	ND	ug/L	1.0	1		01/20/17 15:23	100-42-5	
1,1,2,2-Tetrachloroethane	ND	ug/L	0.50	1		01/20/17 15:23	79-34-5	
Tetrachloroethene	ND	ug/L	0.50	1		01/20/17 15:23	127-18-4	
Toluene	ND	ug/L	0.50	1		01/20/17 15:23	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	0.50	1		01/20/17 15:23	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	0.50	1		01/20/17 15:23	79-00-5	
Trichloroethene	ND	ug/L	0.50	1		01/20/17 15:23	79-01-6	
Trichlorofluoromethane	ND	ug/L	0.50	1		01/20/17 15:23	75-69-4	
Vinyl chloride	ND	ug/L	0.50	1		01/20/17 15:23	75-01-4	
m&p-Xylene	ND	ug/L	2.0	1		01/20/17 15:23	179601-23-1	
o-Xylene	ND	ug/L	1.0	1		01/20/17 15:23	95-47-6	
Surrogates								
Dibromofluoromethane (S)	95	%	72-126	1		01/20/17 15:23	1868-53-7	
4-Bromofluorobenzene (S)	100	%	68-124	1		01/20/17 15:23	460-00-4	
Toluene-d8 (S)	106	%	79-119	1		01/20/17 15:23	2037-26-5	

Sample: MW-84B2	Lab ID: 2048968004	Collected: 01/18/17 12:31	Received: 01/19/17 15:39	Matrix: Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8015M DRO/ORO Organics		Analytical Method: EPA 8015B Modified Preparation Method: EPA 3535						
Diesel Range Organic (C10-C28)	ND	mg/L	0.50	1	01/24/17 12:12	02/02/17 12:55		
Oil Range Organics (>C28-C40)	ND	mg/L	1.0	1	01/24/17 12:12	02/02/17 12:55		
Surrogates								
n-Pentacosane (S)	68	%	16-137	1	01/24/17 12:12	02/02/17 12:55	629-99-2	
o-Terphenyl (S)	62	%	10-121	1	01/24/17 12:12	02/02/17 12:55	84-15-1	
8021 GCV BTEX, MTBE, GRO		Analytical Method: EPA 8015/8021						
Gasoline Range Organics	ND	ug/L	50.0	1		01/25/17 22:07		
Surrogates								
4-Bromofluorobenzene (S)	101	%	44-148	1		01/25/17 22:07	460-00-4	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: PUMA TERMINAL GW SAMPLING

Pace Project No.: 2048968

Sample: MW-84B2	Lab ID: 2048968004	Collected: 01/18/17 12:31	Received: 01/19/17 15:39	Matrix: Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
6020 MET ICPMS								
Analytical Method: EPA 6020 Preparation Method: EPA 3010								
Arsenic	0.0026	mg/L	0.0010	1	01/24/17 08:30	02/12/17 16:48	7440-38-2	
Chromium	ND	mg/L	0.0010	1	01/24/17 08:30	02/12/17 16:48	7440-47-3	
Lead	ND	mg/L	0.0010	1	01/24/17 08:30	02/12/17 16:48	7439-92-1	
Vanadium	ND	mg/L	0.0050	1	01/24/17 08:30	02/12/17 16:48	7440-62-2	
6020 MET ICPMS, Dissolved (LF)								
Analytical Method: EPA 6020 Preparation Method: EPA 3005A								
Arsenic, Dissolved	1.3	ug/L	1.0	1	01/24/17 09:53	02/12/17 19:53	7440-38-2	
Chromium, Dissolved	ND	ug/L	1.0	1	01/24/17 09:53	02/12/17 19:53	7440-47-3	
Lead, Dissolved	ND	ug/L	1.0	1	01/24/17 09:53	02/12/17 19:53	7439-92-1	
Vanadium, Dissolved	ND	ug/L	5.0	1	01/24/17 09:53	02/12/17 19:53	7440-62-2	
7470 Mercury								
Analytical Method: EPA 7470 Preparation Method: EPA 7470								
Mercury	ND	ug/L	0.20	1	01/24/17 08:59	01/24/17 17:10	7439-97-6	
7470 Mercury, Dissolved (LF)								
Analytical Method: EPA 7470 Preparation Method: EPA 7470								
Mercury, Dissolved	ND	ug/L	0.20	1	01/24/17 09:49	01/24/17 19:17	7439-97-6	
8270 MSSV PAH by SIM SEP								
Analytical Method: EPA 8270 by SIM Preparation Method: EPA 3510								
Acenaphthene	ND	ug/L	0.10	1	01/25/17 09:39	01/31/17 14:34	83-32-9	
Acenaphthylene	ND	ug/L	0.10	1	01/25/17 09:39	01/31/17 14:34	208-96-8	
Anthracene	ND	ug/L	0.10	1	01/25/17 09:39	01/31/17 14:34	120-12-7	
Benzo(a)anthracene	ND	ug/L	0.10	1	01/25/17 09:39	01/31/17 14:34	56-55-3	
Benzo(a)pyrene	ND	ug/L	0.10	1	01/25/17 09:39	01/31/17 14:34	50-32-8	
Benzo(b)fluoranthene	ND	ug/L	0.10	1	01/25/17 09:39	01/31/17 14:34	205-99-2	
Benzo(g,h,i)perylene	ND	ug/L	0.10	1	01/25/17 09:39	01/31/17 14:34	191-24-2	
Benzo(k)fluoranthene	ND	ug/L	0.10	1	01/25/17 09:39	01/31/17 14:34	207-08-9	
Chrysene	ND	ug/L	0.10	1	01/25/17 09:39	01/31/17 14:34	218-01-9	
Dibenz(a,h)anthracene	ND	ug/L	0.10	1	01/25/17 09:39	01/31/17 14:34	53-70-3	
Fluoranthene	ND	ug/L	0.10	1	01/25/17 09:39	01/31/17 14:34	206-44-0	
Fluorene	ND	ug/L	0.10	1	01/25/17 09:39	01/31/17 14:34	86-73-7	
Indeno(1,2,3-cd)pyrene	ND	ug/L	0.10	1	01/25/17 09:39	01/31/17 14:34	193-39-5	
2-Methylnaphthalene	ND	ug/L	0.10	1	01/25/17 09:39	01/31/17 14:34	91-57-6	
Naphthalene	ND	ug/L	0.10	1	01/25/17 09:39	01/31/17 14:34	91-20-3	
Phenanthrene	ND	ug/L	0.10	1	01/25/17 09:39	01/31/17 14:34	85-01-8	
Pyrene	ND	ug/L	0.10	1	01/25/17 09:39	01/31/17 14:34	129-00-0	
Surrogates								
2-Fluorobiphenyl (S)	70	%	25-150	1	01/25/17 09:39	01/31/17 14:34	321-60-8	
Terphenyl-d14 (S)	71	%	25-150	1	01/25/17 09:39	01/31/17 14:34	1718-51-0	
8260 MSV Low Level								
Analytical Method: EPA 5030B/8260								
Acetone	ND	ug/L	4.0	1		01/20/17 15:41	67-64-1	
Benzene	ND	ug/L	0.50	1		01/20/17 15:41	71-43-2	
Bromodichloromethane	ND	ug/L	0.50	1		01/20/17 15:41	75-27-4	
Bromoform	ND	ug/L	0.50	1		01/20/17 15:41	75-25-2	
Bromomethane	ND	ug/L	0.50	1		01/20/17 15:41	74-83-9	
2-Butanone (MEK)	ND	ug/L	2.0	1		01/20/17 15:41	78-93-3	

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ANALYTICAL RESULTS

Project: PUMA TERMINAL GW SAMPLING

Pace Project No.: 2048968

Sample: MW-84B2	Lab ID: 2048968004	Collected: 01/18/17 12:31	Received: 01/19/17 15:39	Matrix: Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV Low Level		Analytical Method: EPA 5030B/8260						
Carbon disulfide	ND	ug/L	1.0	1		01/20/17 15:41	75-15-0	
Carbon tetrachloride	ND	ug/L	0.50	1		01/20/17 15:41	56-23-5	
Chlorobenzene	ND	ug/L	0.50	1		01/20/17 15:41	108-90-7	
Chloroethane	ND	ug/L	0.50	1		01/20/17 15:41	75-00-3	
Chloroform	ND	ug/L	0.50	1		01/20/17 15:41	67-66-3	
Chloromethane	ND	ug/L	0.50	1		01/20/17 15:41	74-87-3	
1,2-Dibromo-3-chloropropane	ND	ug/L	0.20	1		01/20/17 15:41	96-12-8	
Dibromochloromethane	ND	ug/L	0.50	1		01/20/17 15:41	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	1		01/20/17 15:41	106-93-4	
Dichlorodifluoromethane	ND	ug/L	1.0	1		01/20/17 15:41	75-71-8	
1,1-Dichloroethane	ND	ug/L	0.50	1		01/20/17 15:41	75-34-3	
1,2-Dichloroethane	ND	ug/L	0.50	1		01/20/17 15:41	107-06-2	
1,1-Dichloroethene	ND	ug/L	0.50	1		01/20/17 15:41	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	1		01/20/17 15:41	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	0.50	1		01/20/17 15:41	156-60-5	
1,2-Dichloropropane	ND	ug/L	0.50	1		01/20/17 15:41	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	0.50	1		01/20/17 15:41	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	0.50	1		01/20/17 15:41	10061-02-6	
Ethylbenzene	ND	ug/L	0.50	1		01/20/17 15:41	100-41-4	
2-Hexanone	ND	ug/L	1.0	1		01/20/17 15:41	591-78-6	
Isopropylbenzene (Cumene)	ND	ug/L	1.0	1		01/20/17 15:41	98-82-8	
Methyl acetate	ND	ug/L	2.0	1		01/20/17 15:41	79-20-9	
Methylene Chloride	ND	ug/L	0.50	1		01/20/17 15:41	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	1.0	1		01/20/17 15:41	108-10-1	
Methyl-tert-butyl ether	ND	ug/L	0.50	1		01/20/17 15:41	1634-04-4	
Styrene	ND	ug/L	1.0	1		01/20/17 15:41	100-42-5	
1,1,1,2-Tetrachloroethane	ND	ug/L	0.50	1		01/20/17 15:41	79-34-5	
Tetrachloroethene	ND	ug/L	0.50	1		01/20/17 15:41	127-18-4	
Toluene	ND	ug/L	0.50	1		01/20/17 15:41	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	0.50	1		01/20/17 15:41	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	0.50	1		01/20/17 15:41	79-00-5	
Trichloroethene	ND	ug/L	0.50	1		01/20/17 15:41	79-01-6	
Trichlorofluoromethane	ND	ug/L	0.50	1		01/20/17 15:41	75-69-4	
Vinyl chloride	ND	ug/L	0.50	1		01/20/17 15:41	75-01-4	
m&p-Xylene	ND	ug/L	2.0	1		01/20/17 15:41	179601-23-1	
o-Xylene	ND	ug/L	1.0	1		01/20/17 15:41	95-47-6	
Surrogates								
Dibromofluoromethane (S)	96	%	72-126	1		01/20/17 15:41	1868-53-7	
4-Bromofluorobenzene (S)	98	%	68-124	1		01/20/17 15:41	460-00-4	
Toluene-d8 (S)	105	%	79-119	1		01/20/17 15:41	2037-26-5	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: PUMA TERMINAL GW SAMPLING

Pace Project No.: 2048968

Sample: MW-84A	Lab ID: 2048968005	Collected: 01/18/17 13:23	Received: 01/19/17 15:39	Matrix: Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8015M DRO/ORO Organics								
Analytical Method: EPA 8015B Modified Preparation Method: EPA 3535								
Diesel Range Organic (C10-C28)	ND	mg/L	0.50	1	01/24/17 12:12	02/02/17 13:23		
Oil Range Organics (>C28-C40)	ND	mg/L	1.0	1	01/24/17 12:12	02/02/17 13:23		
Surrogates								
n-Pentacosane (S)	37	%	16-137	1	01/24/17 12:12	02/02/17 13:23	629-99-2	
o-Terphenyl (S)	38	%	10-121	1	01/24/17 12:12	02/02/17 13:23	84-15-1	
8021 GCV BTEX, MTBE, GRO								
Analytical Method: EPA 8015/8021								
Gasoline Range Organics	ND	ug/L	50.0	1		01/25/17 23:30		
Surrogates								
4-Bromofluorobenzene (S)	102	%	44-148	1		01/25/17 23:30	460-00-4	
6020 MET ICPMS								
Analytical Method: EPA 6020 Preparation Method: EPA 3010								
Arsenic	0.012	mg/L	0.0010	1	01/24/17 08:30	02/12/17 16:52	7440-38-2	
Chromium	ND	mg/L	0.0010	1	01/24/17 08:30	02/12/17 16:52	7440-47-3	
Lead	ND	mg/L	0.0010	1	01/24/17 08:30	02/12/17 16:52	7439-92-1	
Vanadium	ND	mg/L	0.0050	1	01/24/17 08:30	02/12/17 16:52	7440-62-2	
6020 MET ICPMS, Dissolved (LF)								
Analytical Method: EPA 6020 Preparation Method: EPA 3005A								
Arsenic, Dissolved	10.7	ug/L	1.0	1	01/24/17 09:53	02/12/17 19:57	7440-38-2	
Chromium, Dissolved	ND	ug/L	1.0	1	01/24/17 09:53	02/12/17 19:57	7440-47-3	
Lead, Dissolved	ND	ug/L	1.0	1	01/24/17 09:53	02/12/17 19:57	7439-92-1	
Vanadium, Dissolved	ND	ug/L	5.0	1	01/24/17 09:53	02/12/17 19:57	7440-62-2	
7470 Mercury								
Analytical Method: EPA 7470 Preparation Method: EPA 7470								
Mercury	ND	ug/L	0.20	1	01/24/17 08:59	01/24/17 17:12	7439-97-6	
7470 Mercury, Dissolved (LF)								
Analytical Method: EPA 7470 Preparation Method: EPA 7470								
Mercury, Dissolved	ND	ug/L	0.20	1	01/24/17 09:49	01/24/17 19:24	7439-97-6	
8270 MSSV PAH by SIM SEP								
Analytical Method: EPA 8270 by SIM Preparation Method: EPA 3510								
Acenaphthene	ND	ug/L	0.10	1	01/25/17 09:39	01/31/17 15:13	83-32-9	
Acenaphthylene	ND	ug/L	0.10	1	01/25/17 09:39	01/31/17 15:13	208-96-8	
Anthracene	ND	ug/L	0.10	1	01/25/17 09:39	01/31/17 15:13	120-12-7	
Benzo(a)anthracene	ND	ug/L	0.10	1	01/25/17 09:39	01/31/17 15:13	56-55-3	
Benzo(a)pyrene	ND	ug/L	0.10	1	01/25/17 09:39	01/31/17 15:13	50-32-8	
Benzo(b)fluoranthene	ND	ug/L	0.10	1	01/25/17 09:39	01/31/17 15:13	205-99-2	
Benzo(g,h,i)perylene	ND	ug/L	0.10	1	01/25/17 09:39	01/31/17 15:13	191-24-2	
Benzo(k)fluoranthene	ND	ug/L	0.10	1	01/25/17 09:39	01/31/17 15:13	207-08-9	
Chrysene	ND	ug/L	0.10	1	01/25/17 09:39	01/31/17 15:13	218-01-9	
Dibenz(a,h)anthracene	ND	ug/L	0.10	1	01/25/17 09:39	01/31/17 15:13	53-70-3	
Fluoranthene	ND	ug/L	0.10	1	01/25/17 09:39	01/31/17 15:13	206-44-0	
Fluorene	ND	ug/L	0.10	1	01/25/17 09:39	01/31/17 15:13	86-73-7	
Indeno(1,2,3-cd)pyrene	ND	ug/L	0.10	1	01/25/17 09:39	01/31/17 15:13	193-39-5	
2-Methylnaphthalene	ND	ug/L	0.10	1	01/25/17 09:39	01/31/17 15:13	91-57-6	
Naphthalene	ND	ug/L	0.10	1	01/25/17 09:39	01/31/17 15:13	91-20-3	
Phenanthrene	ND	ug/L	0.10	1	01/25/17 09:39	01/31/17 15:13	85-01-8	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: PUMA TERMINAL GW SAMPLING

Pace Project No.: 2048968

Sample: MW-84A	Lab ID: 2048968005	Collected: 01/18/17 13:23	Received: 01/19/17 15:39	Matrix: Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8270 MSSV PAH by SIM SEP		Analytical Method: EPA 8270 by SIM Preparation Method: EPA 3510						
Pyrene	ND	ug/L	0.10	1	01/25/17 09:39	01/31/17 15:13	129-00-0	
Surrogates								
2-Fluorobiphenyl (S)	82	%.	25-150	1	01/25/17 09:39	01/31/17 15:13	321-60-8	
Terphenyl-d14 (S)	87	%.	25-150	1	01/25/17 09:39	01/31/17 15:13	1718-51-0	
8260 MSV Low Level		Analytical Method: EPA 5030B/8260						
Acetone	50.9	ug/L	4.0	1		01/20/17 15:59	67-64-1	C9
Benzene	ND	ug/L	0.50	1		01/20/17 15:59	71-43-2	
Bromodichloromethane	ND	ug/L	0.50	1		01/20/17 15:59	75-27-4	
Bromoform	ND	ug/L	0.50	1		01/20/17 15:59	75-25-2	
Bromomethane	ND	ug/L	0.50	1		01/20/17 15:59	74-83-9	
2-Butanone (MEK)	ND	ug/L	2.0	1		01/20/17 15:59	78-93-3	
Carbon disulfide	ND	ug/L	1.0	1		01/20/17 15:59	75-15-0	
Carbon tetrachloride	ND	ug/L	0.50	1		01/20/17 15:59	56-23-5	
Chlorobenzene	ND	ug/L	0.50	1		01/20/17 15:59	108-90-7	
Chloroethane	ND	ug/L	0.50	1		01/20/17 15:59	75-00-3	
Chloroform	ND	ug/L	0.50	1		01/20/17 15:59	67-66-3	
Chloromethane	ND	ug/L	0.50	1		01/20/17 15:59	74-87-3	
1,2-Dibromo-3-chloropropane	ND	ug/L	0.20	1		01/20/17 15:59	96-12-8	
Dibromochloromethane	ND	ug/L	0.50	1		01/20/17 15:59	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	1		01/20/17 15:59	106-93-4	
Dichlorodifluoromethane	ND	ug/L	1.0	1		01/20/17 15:59	75-71-8	
1,1-Dichloroethane	ND	ug/L	0.50	1		01/20/17 15:59	75-34-3	
1,2-Dichloroethane	ND	ug/L	0.50	1		01/20/17 15:59	107-06-2	
1,1-Dichloroethene	ND	ug/L	0.50	1		01/20/17 15:59	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	1		01/20/17 15:59	156-59-2	
trans-1,2-Dichloroethene	0.62	ug/L	0.50	1		01/20/17 15:59	156-60-5	
1,2-Dichloropropane	ND	ug/L	0.50	1		01/20/17 15:59	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	0.50	1		01/20/17 15:59	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	0.50	1		01/20/17 15:59	10061-02-6	
Ethylbenzene	ND	ug/L	0.50	1		01/20/17 15:59	100-41-4	
2-Hexanone	ND	ug/L	1.0	1		01/20/17 15:59	591-78-6	
Isopropylbenzene (Cumene)	ND	ug/L	1.0	1		01/20/17 15:59	98-82-8	
Methyl acetate	ND	ug/L	2.0	1		01/20/17 15:59	79-20-9	
Methylene Chloride	ND	ug/L	0.50	1		01/20/17 15:59	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	1.0	1		01/20/17 15:59	108-10-1	
Methyl-tert-butyl ether	3.3	ug/L	0.50	1		01/20/17 15:59	1634-04-4	
Styrene	ND	ug/L	1.0	1		01/20/17 15:59	100-42-5	
1,1,2,2-Tetrachloroethane	ND	ug/L	0.50	1		01/20/17 15:59	79-34-5	
Tetrachloroethene	ND	ug/L	0.50	1		01/20/17 15:59	127-18-4	
Toluene	ND	ug/L	0.50	1		01/20/17 15:59	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	0.50	1		01/20/17 15:59	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	0.50	1		01/20/17 15:59	79-00-5	
Trichloroethene	ND	ug/L	0.50	1		01/20/17 15:59	79-01-6	
Trichlorofluoromethane	ND	ug/L	0.50	1		01/20/17 15:59	75-69-4	
Vinyl chloride	ND	ug/L	0.50	1		01/20/17 15:59	75-01-4	
m&p-Xylene	ND	ug/L	2.0	1		01/20/17 15:59	179601-23-1	

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ANALYTICAL RESULTS

Project: PUMA TERMINAL GW SAMPLING

Pace Project No.: 2048968

Sample: MW-84A	Lab ID: 2048968005	Collected: 01/18/17 13:23	Received: 01/19/17 15:39	Matrix: Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV Low Level	Analytical Method: EPA 5030B/8260							
o-Xylene	ND	ug/L	1.0	1		01/20/17 15:59	95-47-6	
Surrogates								
Dibromofluoromethane (S)	95	%	72-126	1		01/20/17 15:59	1868-53-7	
4-Bromofluorobenzene (S)	99	%	68-124	1		01/20/17 15:59	460-00-4	
Toluene-d8 (S)	105	%	79-119	1		01/20/17 15:59	2037-26-5	
Sample: MW-17B	Lab ID: 2048968006	Collected: 01/18/17 15:23	Received: 01/19/17 15:39	Matrix: Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8015M DRO/ORO Organics	Analytical Method: EPA 8015B Modified Preparation Method: EPA 3535							
Diesel Range Organic (C10-C28)	ND	mg/L	0.50	1	01/24/17 12:12	02/02/17 13:51		
Diesel Range Organic (C10-C28)	ND	mg/L	0.50	1	02/06/17 08:47	02/06/17 13:13		H2
Oil Range Organics (>C28-C40)	ND	mg/L	1.0	1	01/24/17 12:12	02/02/17 13:51		
Oil Range Organics (>C28-C40)	ND	mg/L	1.0	1	02/06/17 08:47	02/06/17 13:13		H2
Surrogates								
n-Pentacosane (S)	21	%	16-137	1	02/06/17 08:47	02/06/17 13:13	629-99-2	1b
n-Pentacosane (S)	11	%	16-137	1	01/24/17 12:12	02/02/17 13:51	629-99-2	1b,S2
o-Terphenyl (S)	32	%	10-121	1	01/24/17 12:12	02/02/17 13:51	84-15-1	
o-Terphenyl (S)	36	%	10-121	1	02/06/17 08:47	02/06/17 13:13	84-15-1	
8021 GCV BTEX, MTBE, GRO	Analytical Method: EPA 8015/8021							
Gasoline Range Organics	ND	ug/L	50.0	1		01/25/17 23:57		
Surrogates								
4-Bromofluorobenzene (S)	102	%	44-148	1		01/25/17 23:57	460-00-4	
6020 MET ICPMS	Analytical Method: EPA 6020 Preparation Method: EPA 3010							
Arsenic	ND	mg/L	0.0010	1	01/24/17 08:30	02/12/17 16:56	7440-38-2	
Chromium	0.093	mg/L	0.0010	1	01/24/17 08:30	02/12/17 16:56	7440-47-3	
Lead	0.010	mg/L	0.0010	1	01/24/17 08:30	02/12/17 16:56	7439-92-1	
Vanadium	0.24	mg/L	0.0050	1	01/24/17 08:30	02/12/17 16:56	7440-62-2	
6020 MET ICPMS, Dissolved (LF)	Analytical Method: EPA 6020 Preparation Method: EPA 3005A							
Arsenic, Dissolved	ND	ug/L	1.0	1	01/24/17 09:53	02/12/17 20:01	7440-38-2	
Chromium, Dissolved	1.3	ug/L	1.0	1	01/24/17 09:53	02/12/17 20:01	7440-47-3	
Lead, Dissolved	ND	ug/L	1.0	1	01/24/17 09:53	02/12/17 20:01	7439-92-1	
Vanadium, Dissolved	44.0	ug/L	5.0	1	01/24/17 09:53	02/12/17 20:01	7440-62-2	
7470 Mercury	Analytical Method: EPA 7470 Preparation Method: EPA 7470							
Mercury	0.45	ug/L	0.20	1	01/24/17 08:59	01/24/17 17:14	7439-97-6	
7470 Mercury, Dissolved (LF)	Analytical Method: EPA 7470 Preparation Method: EPA 7470							
Mercury, Dissolved	ND	ug/L	0.20	1	01/24/17 09:49	01/24/17 19:26	7439-97-6	

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ANALYTICAL RESULTS

Project: PUMA TERMINAL GW SAMPLING

Pace Project No.: 2048968

Sample: MW-17B	Lab ID: 2048968006	Collected: 01/18/17 15:23	Received: 01/19/17 15:39	Matrix: Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8270 MSSV PAH by SIM SEP		Analytical Method: EPA 8270 by SIM Preparation Method: EPA 3510						
Acenaphthene	ND	ug/L	0.10	1	01/25/17 09:39	01/31/17 15:33	83-32-9	
Acenaphthylene	ND	ug/L	0.10	1	01/25/17 09:39	01/31/17 15:33	208-96-8	
Anthracene	ND	ug/L	0.10	1	01/25/17 09:39	01/31/17 15:33	120-12-7	
Benzo(a)anthracene	ND	ug/L	0.10	1	01/25/17 09:39	01/31/17 15:33	56-55-3	
Benzo(a)pyrene	ND	ug/L	0.10	1	01/25/17 09:39	01/31/17 15:33	50-32-8	
Benzo(b)fluoranthene	ND	ug/L	0.10	1	01/25/17 09:39	01/31/17 15:33	205-99-2	
Benzo(g,h,i)perylene	ND	ug/L	0.10	1	01/25/17 09:39	01/31/17 15:33	191-24-2	
Benzo(k)fluoranthene	ND	ug/L	0.10	1	01/25/17 09:39	01/31/17 15:33	207-08-9	
Chrysene	ND	ug/L	0.10	1	01/25/17 09:39	01/31/17 15:33	218-01-9	
Dibenz(a,h)anthracene	ND	ug/L	0.10	1	01/25/17 09:39	01/31/17 15:33	53-70-3	
Fluoranthene	ND	ug/L	0.10	1	01/25/17 09:39	01/31/17 15:33	206-44-0	
Fluorene	ND	ug/L	0.10	1	01/25/17 09:39	01/31/17 15:33	86-73-7	
Indeno(1,2,3-cd)pyrene	ND	ug/L	0.10	1	01/25/17 09:39	01/31/17 15:33	193-39-5	
2-Methylnaphthalene	ND	ug/L	0.10	1	01/25/17 09:39	01/31/17 15:33	91-57-6	
Naphthalene	ND	ug/L	0.10	1	01/25/17 09:39	01/31/17 15:33	91-20-3	
Phenanthrene	ND	ug/L	0.10	1	01/25/17 09:39	01/31/17 15:33	85-01-8	
Pyrene	ND	ug/L	0.10	1	01/25/17 09:39	01/31/17 15:33	129-00-0	
Surrogates								
2-Fluorobiphenyl (S)	59	%	25-150	1	01/25/17 09:39	01/31/17 15:33	321-60-8	
Terphenyl-d14 (S)	62	%	25-150	1	01/25/17 09:39	01/31/17 15:33	1718-51-0	
8260 MSV Low Level		Analytical Method: EPA 5030B/8260						
Acetone	6.3	ug/L	4.0	1		01/20/17 16:17	67-64-1	C9
Benzene	ND	ug/L	0.50	1		01/20/17 16:17	71-43-2	
Bromodichloromethane	ND	ug/L	0.50	1		01/20/17 16:17	75-27-4	
Bromoform	ND	ug/L	0.50	1		01/20/17 16:17	75-25-2	
Bromomethane	ND	ug/L	0.50	1		01/20/17 16:17	74-83-9	
2-Butanone (MEK)	ND	ug/L	2.0	1		01/20/17 16:17	78-93-3	
Carbon disulfide	ND	ug/L	1.0	1		01/20/17 16:17	75-15-0	
Carbon tetrachloride	ND	ug/L	0.50	1		01/20/17 16:17	56-23-5	
Chlorobenzene	ND	ug/L	0.50	1		01/20/17 16:17	108-90-7	
Chloroethane	ND	ug/L	0.50	1		01/20/17 16:17	75-00-3	
Chloroform	ND	ug/L	0.50	1		01/20/17 16:17	67-66-3	
Chloromethane	ND	ug/L	0.50	1		01/20/17 16:17	74-87-3	
1,2-Dibromo-3-chloropropane	ND	ug/L	0.20	1		01/20/17 16:17	96-12-8	
Dibromochloromethane	ND	ug/L	0.50	1		01/20/17 16:17	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	1		01/20/17 16:17	106-93-4	
Dichlorodifluoromethane	ND	ug/L	1.0	1		01/20/17 16:17	75-71-8	
1,1-Dichloroethane	ND	ug/L	0.50	1		01/20/17 16:17	75-34-3	
1,2-Dichloroethane	ND	ug/L	0.50	1		01/20/17 16:17	107-06-2	
1,1-Dichloroethene	ND	ug/L	0.50	1		01/20/17 16:17	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	1		01/20/17 16:17	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	0.50	1		01/20/17 16:17	156-60-5	
1,2-Dichloropropane	ND	ug/L	0.50	1		01/20/17 16:17	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	0.50	1		01/20/17 16:17	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	0.50	1		01/20/17 16:17	10061-02-6	
Ethylbenzene	ND	ug/L	0.50	1		01/20/17 16:17	100-41-4	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: PUMA TERMINAL GW SAMPLING

Pace Project No.: 2048968

Sample: MW-17B		Lab ID: 2048968006		Collected: 01/18/17 15:23		Received: 01/19/17 15:39		Matrix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual	
8260 MSV Low Level		Analytical Method: EPA 5030B/8260							
2-Hexanone	ND	ug/L	1.0	1		01/20/17 16:17	591-78-6		
Isopropylbenzene (Cumene)	ND	ug/L	1.0	1		01/20/17 16:17	98-82-8		
Methyl acetate	ND	ug/L	2.0	1		01/20/17 16:17	79-20-9		
Methylene Chloride	ND	ug/L	0.50	1		01/20/17 16:17	75-09-2		
4-Methyl-2-pentanone (MIBK)	ND	ug/L	1.0	1		01/20/17 16:17	108-10-1		
Methyl-tert-butyl ether	ND	ug/L	0.50	1		01/20/17 16:17	1634-04-4		
Styrene	ND	ug/L	1.0	1		01/20/17 16:17	100-42-5		
1,1,2,2-Tetrachloroethane	ND	ug/L	0.50	1		01/20/17 16:17	79-34-5		
Tetrachloroethene	ND	ug/L	0.50	1		01/20/17 16:17	127-18-4		
Toluene	ND	ug/L	0.50	1		01/20/17 16:17	108-88-3		
1,1,1-Trichloroethane	ND	ug/L	0.50	1		01/20/17 16:17	71-55-6		
1,1,2-Trichloroethane	ND	ug/L	0.50	1		01/20/17 16:17	79-00-5		
Trichloroethene	ND	ug/L	0.50	1		01/20/17 16:17	79-01-6		
Trichlorofluoromethane	ND	ug/L	0.50	1		01/20/17 16:17	75-69-4		
Vinyl chloride	ND	ug/L	0.50	1		01/20/17 16:17	75-01-4		
m&p-Xylene	ND	ug/L	2.0	1		01/20/17 16:17	179601-23-1		
o-Xylene	ND	ug/L	1.0	1		01/20/17 16:17	95-47-6		
Surrogates									
Dibromofluoromethane (S)	94	%	72-126	1		01/20/17 16:17	1868-53-7		
4-Bromofluorobenzene (S)	98	%	68-124	1		01/20/17 16:17	460-00-4		
Toluene-d8 (S)	104	%	79-119	1		01/20/17 16:17	2037-26-5		

Sample: FB-011817		Lab ID: 2048968007		Collected: 01/18/17 15:24		Received: 01/19/17 15:39		Matrix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual	
8021 GCV BTEX, MTBE, GRO		Analytical Method: EPA 8015/8021							
Gasoline Range Organics	ND	ug/L	50.0	1		01/26/17 00:24			
Surrogates									
4-Bromofluorobenzene (S)	100	%	44-148	1		01/26/17 00:24	460-00-4		
8260 MSV Low Level		Analytical Method: EPA 5030B/8260							
Acetone	ND	ug/L	4.0	1		01/20/17 16:35	67-64-1		
Benzene	ND	ug/L	0.50	1		01/20/17 16:35	71-43-2		
Bromodichloromethane	ND	ug/L	0.50	1		01/20/17 16:35	75-27-4		
Bromoform	ND	ug/L	0.50	1		01/20/17 16:35	75-25-2		
Bromomethane	ND	ug/L	0.50	1		01/20/17 16:35	74-83-9		
2-Butanone (MEK)	ND	ug/L	2.0	1		01/20/17 16:35	78-93-3		
Carbon disulfide	ND	ug/L	1.0	1		01/20/17 16:35	75-15-0		
Carbon tetrachloride	ND	ug/L	0.50	1		01/20/17 16:35	56-23-5		
Chlorobenzene	ND	ug/L	0.50	1		01/20/17 16:35	108-90-7		
Chloroethane	ND	ug/L	0.50	1		01/20/17 16:35	75-00-3		
Chloroform	ND	ug/L	0.50	1		01/20/17 16:35	67-66-3		
Chloromethane	ND	ug/L	0.50	1		01/20/17 16:35	74-87-3		
1,2-Dibromo-3-chloropropane	ND	ug/L	0.20	1		01/20/17 16:35	96-12-8		
Dibromochloromethane	ND	ug/L	0.50	1		01/20/17 16:35	124-48-1		

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ANALYTICAL RESULTS

Project: PUMA TERMINAL GW SAMPLING
Pace Project No.: 2048968

Sample: FB-011817		Lab ID: 2048968007	Collected: 01/18/17 15:24	Received: 01/19/17 15:39	Matrix: Water			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV Low Level		Analytical Method: EPA 5030B/8260						
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	1		01/20/17 16:35	106-93-4	
Dichlorodifluoromethane	ND	ug/L	1.0	1		01/20/17 16:35	75-71-8	
1,1-Dichloroethane	ND	ug/L	0.50	1		01/20/17 16:35	75-34-3	
1,2-Dichloroethane	ND	ug/L	0.50	1		01/20/17 16:35	107-06-2	
1,1-Dichloroethene	ND	ug/L	0.50	1		01/20/17 16:35	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	1		01/20/17 16:35	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	0.50	1		01/20/17 16:35	156-60-5	
1,2-Dichloropropane	ND	ug/L	0.50	1		01/20/17 16:35	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	0.50	1		01/20/17 16:35	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	0.50	1		01/20/17 16:35	10061-02-6	
Ethylbenzene	ND	ug/L	0.50	1		01/20/17 16:35	100-41-4	
2-Hexanone	ND	ug/L	1.0	1		01/20/17 16:35	591-78-6	
Isopropylbenzene (Cumene)	ND	ug/L	1.0	1		01/20/17 16:35	98-82-8	
Methyl acetate	ND	ug/L	2.0	1		01/20/17 16:35	79-20-9	
Methylene Chloride	ND	ug/L	0.50	1		01/20/17 16:35	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	1.0	1		01/20/17 16:35	108-10-1	
Methyl-tert-butyl ether	ND	ug/L	0.50	1		01/20/17 16:35	1634-04-4	
Styrene	ND	ug/L	1.0	1		01/20/17 16:35	100-42-5	
1,1,2,2-Tetrachloroethane	ND	ug/L	0.50	1		01/20/17 16:35	79-34-5	
Tetrachloroethene	ND	ug/L	0.50	1		01/20/17 16:35	127-18-4	
Toluene	ND	ug/L	0.50	1		01/20/17 16:35	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	0.50	1		01/20/17 16:35	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	0.50	1		01/20/17 16:35	79-00-5	
Trichloroethene	ND	ug/L	0.50	1		01/20/17 16:35	79-01-6	
Trichlorofluoromethane	ND	ug/L	0.50	1		01/20/17 16:35	75-69-4	
Vinyl chloride	ND	ug/L	0.50	1		01/20/17 16:35	75-01-4	
m&p-Xylene	ND	ug/L	2.0	1		01/20/17 16:35	179601-23-1	
o-Xylene	ND	ug/L	1.0	1		01/20/17 16:35	95-47-6	
Surrogates								
Dibromofluoromethane (S)	97	%	72-126	1		01/20/17 16:35	1868-53-7	
4-Bromofluorobenzene (S)	98	%	68-124	1		01/20/17 16:35	460-00-4	
Toluene-d8 (S)	104	%	79-119	1		01/20/17 16:35	2037-26-5	

Sample: TB-011917		Lab ID: 2048968008	Collected: 01/19/17 00:00	Received: 01/19/17 15:39	Matrix: Water			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8021 GCV BTEX, MTBE, GRO		Analytical Method: EPA 8015/8021						
Gasoline Range Organics	ND	ug/L	50.0	1		01/26/17 00:51		
Surrogates								
4-Bromofluorobenzene (S)	103	%	44-148	1		01/26/17 00:51	460-00-4	
8260 MSV Low Level		Analytical Method: EPA 5030B/8260						
Acetone	15.8	ug/L	4.0	1		01/20/17 16:53	67-64-1	C9
Benzene	ND	ug/L	0.50	1		01/20/17 16:53	71-43-2	
Bromodichloromethane	0.57	ug/L	0.50	1		01/20/17 16:53	75-27-4	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: PUMA TERMINAL GW SAMPLING

Pace Project No.: 2048968

Sample: TB-011917	Lab ID: 2048968008	Collected: 01/19/17 00:00	Received: 01/19/17 15:39	Matrix: Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV Low Level		Analytical Method: EPA 5030B/8260						
Bromoform	ND	ug/L	0.50	1		01/20/17 16:53	75-25-2	
Bromomethane	ND	ug/L	0.50	1		01/20/17 16:53	74-83-9	
2-Butanone (MEK)	ND	ug/L	2.0	1		01/20/17 16:53	78-93-3	
Carbon disulfide	ND	ug/L	1.0	1		01/20/17 16:53	75-15-0	
Carbon tetrachloride	ND	ug/L	0.50	1		01/20/17 16:53	56-23-5	
Chlorobenzene	ND	ug/L	0.50	1		01/20/17 16:53	108-90-7	
Chloroethane	ND	ug/L	0.50	1		01/20/17 16:53	75-00-3	
Chloroform	2.5	ug/L	0.50	1		01/20/17 16:53	67-66-3	
Chloromethane	ND	ug/L	0.50	1		01/20/17 16:53	74-87-3	
1,2-Dibromo-3-chloropropane	ND	ug/L	0.20	1		01/20/17 16:53	96-12-8	
Dibromochloromethane	ND	ug/L	0.50	1		01/20/17 16:53	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	1		01/20/17 16:53	106-93-4	
Dichlorodifluoromethane	ND	ug/L	1.0	1		01/20/17 16:53	75-71-8	
1,1-Dichloroethane	ND	ug/L	0.50	1		01/20/17 16:53	75-34-3	
1,2-Dichloroethane	ND	ug/L	0.50	1		01/20/17 16:53	107-06-2	
1,1-Dichloroethene	ND	ug/L	0.50	1		01/20/17 16:53	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	1		01/20/17 16:53	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	0.50	1		01/20/17 16:53	156-60-5	
1,2-Dichloropropane	ND	ug/L	0.50	1		01/20/17 16:53	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	0.50	1		01/20/17 16:53	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	0.50	1		01/20/17 16:53	10061-02-6	
Ethylbenzene	ND	ug/L	0.50	1		01/20/17 16:53	100-41-4	
2-Hexanone	ND	ug/L	1.0	1		01/20/17 16:53	591-78-6	
Isopropylbenzene (Cumene)	ND	ug/L	1.0	1		01/20/17 16:53	98-82-8	
Methyl acetate	ND	ug/L	2.0	1		01/20/17 16:53	79-20-9	
Methylene Chloride	ND	ug/L	0.50	1		01/20/17 16:53	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	1.0	1		01/20/17 16:53	108-10-1	
Methyl-tert-butyl ether	ND	ug/L	0.50	1		01/20/17 16:53	1634-04-4	
Styrene	ND	ug/L	1.0	1		01/20/17 16:53	100-42-5	
1,1,1,2-Tetrachloroethane	ND	ug/L	0.50	1		01/20/17 16:53	79-34-5	
Tetrachloroethene	ND	ug/L	0.50	1		01/20/17 16:53	127-18-4	
Toluene	ND	ug/L	0.50	1		01/20/17 16:53	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	0.50	1		01/20/17 16:53	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	0.50	1		01/20/17 16:53	79-00-5	
Trichloroethene	ND	ug/L	0.50	1		01/20/17 16:53	79-01-6	
Trichlorofluoromethane	ND	ug/L	0.50	1		01/20/17 16:53	75-69-4	
Vinyl chloride	ND	ug/L	0.50	1		01/20/17 16:53	75-01-4	
m&p-Xylene	ND	ug/L	2.0	1		01/20/17 16:53	179601-23-1	
o-Xylene	ND	ug/L	1.0	1		01/20/17 16:53	95-47-6	
Surrogates								
Dibromofluoromethane (S)	95	%.	72-126	1		01/20/17 16:53	1868-53-7	
4-Bromofluorobenzene (S)	99	%.	68-124	1		01/20/17 16:53	460-00-4	
Toluene-d8 (S)	105	%.	79-119	1		01/20/17 16:53	2037-26-5	

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ANALYTICAL RESULTS

Project: PUMA TERMINAL GW SAMPLING

Pace Project No.: 2048968

Sample: EB-011917	Lab ID: 2048968009	Collected: 01/19/17 10:00	Received: 01/19/17 15:39	Matrix: Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8015M DRO/ORO Organics								
Analytical Method: EPA 8015B Modified Preparation Method: EPA 3535								
Diesel Range Organic (C10-C28)	ND	mg/L	0.50	1	01/24/17 12:12	02/02/17 14:19		
Oil Range Organics (>C28-C40)	ND	mg/L	1.0	1	01/24/17 12:12	02/02/17 14:19		
Surrogates								
n-Pentacosane (S)	27	%	16-137	1	01/24/17 12:12	02/02/17 14:19	629-99-2	
o-Terphenyl (S)	38	%	10-121	1	01/24/17 12:12	02/02/17 14:19	84-15-1	
8021 GCV BTEX, MTBE, GRO								
Analytical Method: EPA 8015/8021								
Gasoline Range Organics	ND	ug/L	50.0	1		01/26/17 01:18		
Surrogates								
4-Bromofluorobenzene (S)	102	%	44-148	1		01/26/17 01:18	460-00-4	
6020 MET ICPMS								
Analytical Method: EPA 6020 Preparation Method: EPA 3010								
Arsenic	ND	mg/L	0.0010	1	01/24/17 08:30	02/12/17 17:00	7440-38-2	
Chromium	ND	mg/L	0.0010	1	01/24/17 08:30	02/12/17 17:00	7440-47-3	
Lead	ND	mg/L	0.0010	1	01/24/17 08:30	02/12/17 17:00	7439-92-1	
Vanadium	ND	mg/L	0.0050	1	01/24/17 08:30	02/12/17 17:00	7440-62-2	
6020 MET ICPMS, Dissolved (LF)								
Analytical Method: EPA 6020 Preparation Method: EPA 3005A								
Arsenic, Dissolved	ND	ug/L	1.0	1	01/24/17 09:53	02/12/17 20:05	7440-38-2	
Chromium, Dissolved	ND	ug/L	1.0	1	01/24/17 09:53	02/12/17 20:05	7440-47-3	
Lead, Dissolved	ND	ug/L	1.0	1	01/24/17 09:53	02/12/17 20:05	7439-92-1	
Vanadium, Dissolved	ND	ug/L	5.0	1	01/24/17 09:53	02/12/17 20:05	7440-62-2	
7470 Mercury								
Analytical Method: EPA 7470 Preparation Method: EPA 7470								
Mercury	ND	ug/L	0.20	1	01/24/17 08:59	01/24/17 17:16	7439-97-6	
7470 Mercury, Dissolved (LF)								
Analytical Method: EPA 7470 Preparation Method: EPA 7470								
Mercury, Dissolved	ND	ug/L	0.20	1	01/24/17 09:49	01/24/17 19:28	7439-97-6	
8270 MSSV PAH by SIM SEP								
Analytical Method: EPA 8270 by SIM Preparation Method: EPA 3510								
Acenaphthene	ND	ug/L	0.10	1	01/25/17 09:39	01/31/17 15:53	83-32-9	
Acenaphthylene	ND	ug/L	0.10	1	01/25/17 09:39	01/31/17 15:53	208-96-8	
Anthracene	ND	ug/L	0.10	1	01/25/17 09:39	01/31/17 15:53	120-12-7	
Benzo(a)anthracene	ND	ug/L	0.10	1	01/25/17 09:39	01/31/17 15:53	56-55-3	
Benzo(a)pyrene	ND	ug/L	0.10	1	01/25/17 09:39	01/31/17 15:53	50-32-8	
Benzo(b)fluoranthene	ND	ug/L	0.10	1	01/25/17 09:39	01/31/17 15:53	205-99-2	
Benzo(g,h,i)perylene	ND	ug/L	0.10	1	01/25/17 09:39	01/31/17 15:53	191-24-2	
Benzo(k)fluoranthene	ND	ug/L	0.10	1	01/25/17 09:39	01/31/17 15:53	207-08-9	
Chrysene	ND	ug/L	0.10	1	01/25/17 09:39	01/31/17 15:53	218-01-9	
Dibenz(a,h)anthracene	ND	ug/L	0.10	1	01/25/17 09:39	01/31/17 15:53	53-70-3	
Fluoranthene	ND	ug/L	0.10	1	01/25/17 09:39	01/31/17 15:53	206-44-0	
Fluorene	ND	ug/L	0.10	1	01/25/17 09:39	01/31/17 15:53	86-73-7	
Indeno(1,2,3-cd)pyrene	ND	ug/L	0.10	1	01/25/17 09:39	01/31/17 15:53	193-39-5	
2-Methylnaphthalene	ND	ug/L	0.10	1	01/25/17 09:39	01/31/17 15:53	91-57-6	
Naphthalene	ND	ug/L	0.10	1	01/25/17 09:39	01/31/17 15:53	91-20-3	
Phenanthrene	ND	ug/L	0.10	1	01/25/17 09:39	01/31/17 15:53	85-01-8	

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ANALYTICAL RESULTS

Project: PUMA TERMINAL GW SAMPLING

Pace Project No.: 2048968

Sample: EB-011917	Lab ID: 2048968009	Collected: 01/19/17 10:00	Received: 01/19/17 15:39	Matrix: Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8270 MSSV PAH by SIM SEP		Analytical Method: EPA 8270 by SIM Preparation Method: EPA 3510						
Pyrene	ND	ug/L	0.10	1	01/25/17 09:39	01/31/17 15:53	129-00-0	
Surrogates								
2-Fluorobiphenyl (S)	81	%.	25-150	1	01/25/17 09:39	01/31/17 15:53	321-60-8	
Terphenyl-d14 (S)	81	%.	25-150	1	01/25/17 09:39	01/31/17 15:53	1718-51-0	
8260 MSV Low Level		Analytical Method: EPA 5030B/8260						
Acetone	ND	ug/L	4.0	1		01/20/17 17:11	67-64-1	
Benzene	ND	ug/L	0.50	1		01/20/17 17:11	71-43-2	
Bromodichloromethane	ND	ug/L	0.50	1		01/20/17 17:11	75-27-4	
Bromoform	ND	ug/L	0.50	1		01/20/17 17:11	75-25-2	
Bromomethane	ND	ug/L	0.50	1		01/20/17 17:11	74-83-9	
2-Butanone (MEK)	ND	ug/L	2.0	1		01/20/17 17:11	78-93-3	
Carbon disulfide	ND	ug/L	1.0	1		01/20/17 17:11	75-15-0	
Carbon tetrachloride	ND	ug/L	0.50	1		01/20/17 17:11	56-23-5	
Chlorobenzene	ND	ug/L	0.50	1		01/20/17 17:11	108-90-7	
Chloroethane	ND	ug/L	0.50	1		01/20/17 17:11	75-00-3	
Chloroform	ND	ug/L	0.50	1		01/20/17 17:11	67-66-3	
Chloromethane	ND	ug/L	0.50	1		01/20/17 17:11	74-87-3	
1,2-Dibromo-3-chloropropane	ND	ug/L	0.20	1		01/20/17 17:11	96-12-8	
Dibromochloromethane	ND	ug/L	0.50	1		01/20/17 17:11	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	1		01/20/17 17:11	106-93-4	
Dichlorodifluoromethane	ND	ug/L	1.0	1		01/20/17 17:11	75-71-8	
1,1-Dichloroethane	ND	ug/L	0.50	1		01/20/17 17:11	75-34-3	
1,2-Dichloroethane	ND	ug/L	0.50	1		01/20/17 17:11	107-06-2	
1,1-Dichloroethene	ND	ug/L	0.50	1		01/20/17 17:11	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	1		01/20/17 17:11	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	0.50	1		01/20/17 17:11	156-60-5	
1,2-Dichloropropane	ND	ug/L	0.50	1		01/20/17 17:11	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	0.50	1		01/20/17 17:11	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	0.50	1		01/20/17 17:11	10061-02-6	
Ethylbenzene	ND	ug/L	0.50	1		01/20/17 17:11	100-41-4	
2-Hexanone	ND	ug/L	1.0	1		01/20/17 17:11	591-78-6	
Isopropylbenzene (Cumene)	ND	ug/L	1.0	1		01/20/17 17:11	98-82-8	
Methyl acetate	ND	ug/L	2.0	1		01/20/17 17:11	79-20-9	
Methylene Chloride	ND	ug/L	0.50	1		01/20/17 17:11	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	1.0	1		01/20/17 17:11	108-10-1	
Methyl-tert-butyl ether	ND	ug/L	0.50	1		01/20/17 17:11	1634-04-4	
Styrene	ND	ug/L	1.0	1		01/20/17 17:11	100-42-5	
1,1,2,2-Tetrachloroethane	ND	ug/L	0.50	1		01/20/17 17:11	79-34-5	
Tetrachloroethene	ND	ug/L	0.50	1		01/20/17 17:11	127-18-4	
Toluene	ND	ug/L	0.50	1		01/20/17 17:11	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	0.50	1		01/20/17 17:11	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	0.50	1		01/20/17 17:11	79-00-5	
Trichloroethene	ND	ug/L	0.50	1		01/20/17 17:11	79-01-6	
Trichlorofluoromethane	ND	ug/L	0.50	1		01/20/17 17:11	75-69-4	
Vinyl chloride	ND	ug/L	0.50	1		01/20/17 17:11	75-01-4	
m&p-Xylene	ND	ug/L	2.0	1		01/20/17 17:11	179601-23-1	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: PUMA TERMINAL GW SAMPLING

Pace Project No.: 2048968

Sample: EB-011917		Lab ID: 2048968009		Collected: 01/19/17 10:00		Received: 01/19/17 15:39		Matrix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual	
8260 MSV Low Level		Analytical Method: EPA 5030B/8260							
o-Xylene	ND	ug/L	1.0	1		01/20/17 17:11	95-47-6		
Surrogates									
Dibromofluoromethane (S)	96	%	72-126	1		01/20/17 17:11	1868-53-7		
4-Bromofluorobenzene (S)	98	%	68-124	1		01/20/17 17:11	460-00-4		
Toluene-d8 (S)	104	%	79-119	1		01/20/17 17:11	2037-26-5		
Sample: MW-77B		Lab ID: 2048968010		Collected: 01/19/17 11:17		Received: 01/19/17 15:39		Matrix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual	
8015M DRO/ORO Organics		Analytical Method: EPA 8015B Modified Preparation Method: EPA 3535							
Diesel Range Organic (C10-C28)	ND	mg/L	0.50	1	01/24/17 12:12	02/02/17 14:47			
Oil Range Organics (>C28-C40)	ND	mg/L	1.0	1	01/24/17 12:12	02/02/17 14:47			
Surrogates									
n-Pentacosane (S)	17	%	16-137	1	01/24/17 12:12	02/02/17 14:47	629-99-2		
o-Terphenyl (S)	44	%	10-121	1	01/24/17 12:12	02/02/17 14:47	84-15-1		
8021 GCV BTEX, MTBE, GRO		Analytical Method: EPA 8015/8021							
Gasoline Range Organics	ND	ug/L	50.0	1		01/26/17 01:46			
Surrogates									
4-Bromofluorobenzene (S)	102	%	44-148	1		01/26/17 01:46	460-00-4		
6020 MET ICPMS		Analytical Method: EPA 6020 Preparation Method: EPA 3010							
Arsenic	0.0015	mg/L	0.0010	1	01/24/17 08:30	02/12/17 17:04	7440-38-2		
Chromium	0.0072	mg/L	0.0010	1	01/24/17 08:30	02/12/17 17:04	7440-47-3		
Lead	ND	mg/L	0.0010	1	01/24/17 08:30	02/12/17 17:04	7439-92-1		
Vanadium	0.026	mg/L	0.0050	1	01/24/17 08:30	02/12/17 17:04	7440-62-2		
6020 MET ICPMS, Dissolved (LF)		Analytical Method: EPA 6020 Preparation Method: EPA 3005A							
Arsenic, Dissolved	1.0	ug/L	1.0	1	01/24/17 09:53	02/12/17 20:09	7440-38-2		
Chromium, Dissolved	ND	ug/L	1.0	1	01/24/17 09:53	02/12/17 20:09	7440-47-3		
Lead, Dissolved	ND	ug/L	1.0	1	01/24/17 09:53	02/12/17 20:09	7439-92-1		
Vanadium, Dissolved	6.4	ug/L	5.0	1	01/24/17 09:53	02/12/17 20:09	7440-62-2		
7470 Mercury		Analytical Method: EPA 7470 Preparation Method: EPA 7470							
Mercury	ND	ug/L	0.20	1	01/24/17 08:59	01/24/17 17:18	7439-97-6		
7470 Mercury, Dissolved (LF)		Analytical Method: EPA 7470 Preparation Method: EPA 7470							
Mercury, Dissolved	ND	ug/L	0.20	1	01/24/17 09:49	01/24/17 19:30	7439-97-6		
8270 MSSV PAH by SIM SEP		Analytical Method: EPA 8270 by SIM Preparation Method: EPA 3510							
Acenaphthene	ND	ug/L	0.10	1	01/25/17 09:39	01/31/17 16:13	83-32-9		
Acenaphthylene	ND	ug/L	0.10	1	01/25/17 09:39	01/31/17 16:13	208-96-8		
Anthracene	ND	ug/L	0.10	1	01/25/17 09:39	01/31/17 16:13	120-12-7		
Benzo(a)anthracene	ND	ug/L	0.10	1	01/25/17 09:39	01/31/17 16:13	56-55-3		

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ANALYTICAL RESULTS

Project: PUMA TERMINAL GW SAMPLING

Pace Project No.: 2048968

Sample: MW-77B	Lab ID: 2048968010	Collected: 01/19/17 11:17	Received: 01/19/17 15:39	Matrix: Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8270 MSSV PAH by SIM SEP		Analytical Method: EPA 8270 by SIM Preparation Method: EPA 3510						
Benzo(a)pyrene	ND	ug/L	0.10	1	01/25/17 09:39	01/31/17 16:13	50-32-8	
Benzo(b)fluoranthene	ND	ug/L	0.10	1	01/25/17 09:39	01/31/17 16:13	205-99-2	
Benzo(g,h,i)perylene	ND	ug/L	0.10	1	01/25/17 09:39	01/31/17 16:13	191-24-2	
Benzo(k)fluoranthene	ND	ug/L	0.10	1	01/25/17 09:39	01/31/17 16:13	207-08-9	
Chrysene	ND	ug/L	0.10	1	01/25/17 09:39	01/31/17 16:13	218-01-9	
Dibenz(a,h)anthracene	ND	ug/L	0.10	1	01/25/17 09:39	01/31/17 16:13	53-70-3	
Fluoranthene	ND	ug/L	0.10	1	01/25/17 09:39	01/31/17 16:13	206-44-0	
Fluorene	ND	ug/L	0.10	1	01/25/17 09:39	01/31/17 16:13	86-73-7	
Indeno(1,2,3-cd)pyrene	ND	ug/L	0.10	1	01/25/17 09:39	01/31/17 16:13	193-39-5	
2-Methylnaphthalene	ND	ug/L	0.10	1	01/25/17 09:39	01/31/17 16:13	91-57-6	
Naphthalene	ND	ug/L	0.10	1	01/25/17 09:39	01/31/17 16:13	91-20-3	
Phenanthrene	ND	ug/L	0.10	1	01/25/17 09:39	01/31/17 16:13	85-01-8	
Pyrene	ND	ug/L	0.10	1	01/25/17 09:39	01/31/17 16:13	129-00-0	
Surrogates								
2-Fluorobiphenyl (S)	66	%.	25-150	1	01/25/17 09:39	01/31/17 16:13	321-60-8	
Terphenyl-d14 (S)	76	%.	25-150	1	01/25/17 09:39	01/31/17 16:13	1718-51-0	
8260 MSV Low Level		Analytical Method: EPA 5030B/8260						
Acetone	ND	ug/L	4.0	1		01/20/17 17:30	67-64-1	
Benzene	ND	ug/L	0.50	1		01/20/17 17:30	71-43-2	
Bromodichloromethane	ND	ug/L	0.50	1		01/20/17 17:30	75-27-4	
Bromoform	ND	ug/L	0.50	1		01/20/17 17:30	75-25-2	
Bromomethane	ND	ug/L	0.50	1		01/20/17 17:30	74-83-9	
2-Butanone (MEK)	ND	ug/L	2.0	1		01/20/17 17:30	78-93-3	
Carbon disulfide	ND	ug/L	1.0	1		01/20/17 17:30	75-15-0	
Carbon tetrachloride	ND	ug/L	0.50	1		01/20/17 17:30	56-23-5	
Chlorobenzene	ND	ug/L	0.50	1		01/20/17 17:30	108-90-7	
Chloroethane	ND	ug/L	0.50	1		01/20/17 17:30	75-00-3	
Chloroform	ND	ug/L	0.50	1		01/20/17 17:30	67-66-3	
Chloromethane	ND	ug/L	0.50	1		01/20/17 17:30	74-87-3	
1,2-Dibromo-3-chloropropane	ND	ug/L	0.20	1		01/20/17 17:30	96-12-8	
Dibromochloromethane	ND	ug/L	0.50	1		01/20/17 17:30	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	1		01/20/17 17:30	106-93-4	
Dichlorodifluoromethane	ND	ug/L	1.0	1		01/20/17 17:30	75-71-8	
1,1-Dichloroethane	ND	ug/L	0.50	1		01/20/17 17:30	75-34-3	
1,2-Dichloroethane	ND	ug/L	0.50	1		01/20/17 17:30	107-06-2	
1,1-Dichloroethene	ND	ug/L	0.50	1		01/20/17 17:30	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	1		01/20/17 17:30	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	0.50	1		01/20/17 17:30	156-60-5	
1,2-Dichloropropane	ND	ug/L	0.50	1		01/20/17 17:30	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	0.50	1		01/20/17 17:30	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	0.50	1		01/20/17 17:30	10061-02-6	
Ethylbenzene	ND	ug/L	0.50	1		01/20/17 17:30	100-41-4	
2-Hexanone	ND	ug/L	1.0	1		01/20/17 17:30	591-78-6	
Isopropylbenzene (Cumene)	ND	ug/L	1.0	1		01/20/17 17:30	98-82-8	
Methyl acetate	ND	ug/L	2.0	1		01/20/17 17:30	79-20-9	
Methylene Chloride	ND	ug/L	0.50	1		01/20/17 17:30	75-09-2	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: PUMA TERMINAL GW SAMPLING

Sample Project No.: 2048968

Sample: MW-77B		Lab ID: 2048968010		Collected: 01/19/17 11:17		Received: 01/19/17 15:39		Matrix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual	
8260 MSV Low Level		Analytical Method: EPA 5030B/8260							
4-Methyl-2-pentanone (MIBK)	ND	ug/L	1.0	1		01/20/17 17:30	108-10-1		
Methyl-tert-butyl ether	ND	ug/L	0.50	1		01/20/17 17:30	1634-04-4		
Styrene	ND	ug/L	1.0	1		01/20/17 17:30	100-42-5		
1,1,2,2-Tetrachloroethane	ND	ug/L	0.50	1		01/20/17 17:30	79-34-5		
Tetrachloroethene	ND	ug/L	0.50	1		01/20/17 17:30	127-18-4		
Toluene	ND	ug/L	0.50	1		01/20/17 17:30	108-88-3		
1,1,1-Trichloroethane	ND	ug/L	0.50	1		01/20/17 17:30	71-55-6		
1,1,2-Trichloroethane	ND	ug/L	0.50	1		01/20/17 17:30	79-00-5		
Trichloroethene	ND	ug/L	0.50	1		01/20/17 17:30	79-01-6		
Trichlorofluoromethane	ND	ug/L	0.50	1		01/20/17 17:30	75-69-4		
Vinyl chloride	ND	ug/L	0.50	1		01/20/17 17:30	75-01-4		
m&p-Xylene	ND	ug/L	2.0	1		01/20/17 17:30	179601-23-1		
o-Xylene	ND	ug/L	1.0	1		01/20/17 17:30	95-47-6		
Surrogates									
Dibromofluoromethane (S)	95	%.	72-126	1		01/20/17 17:30	1868-53-7		
4-Bromofluorobenzene (S)	98	%.	68-124	1		01/20/17 17:30	460-00-4		
Toluene-d8 (S)	105	%.	79-119	1		01/20/17 17:30	2037-26-5		

Sample: MW-20B		Lab ID: 2048968011		Collected: 01/19/17 12:25		Received: 01/19/17 15:39		Matrix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual	
8015M DRO/ORO Organics		Analytical Method: EPA 8015B Modified Preparation Method: EPA 3535							
Diesel Range Organic (C10-C28)	ND	mg/L	0.50	1	01/24/17 12:12	02/02/17 15:16			
Oil Range Organics (>C28-C40)	ND	mg/L	1.0	1	01/24/17 12:12	02/02/17 15:16			
Surrogates									
n-Pentacosane (S)	47	%.	16-137	1	01/24/17 12:12	02/02/17 15:16	629-99-2		
o-Terphenyl (S)	54	%.	10-121	1	01/24/17 12:12	02/02/17 15:16	84-15-1		
8021 GCV BTEX, MTBE, GRO		Analytical Method: EPA 8015/8021							
Gasoline Range Organics	ND	ug/L	50.0	1		01/26/17 02:12			
Surrogates									
4-Bromofluorobenzene (S)	98	%.	44-148	1		01/26/17 02:12	460-00-4		
6020 MET ICPMS		Analytical Method: EPA 6020 Preparation Method: EPA 3010							
Arsenic	ND	mg/L	0.0010	1	01/24/17 08:30	02/12/17 17:08	7440-38-2		
Chromium	0.0040	mg/L	0.0010	1	01/24/17 08:30	02/12/17 17:08	7440-47-3		
Lead	ND	mg/L	0.0010	1	01/24/17 08:30	02/12/17 17:08	7439-92-1		
Vanadium	ND	mg/L	0.0050	1	01/24/17 08:30	02/12/17 17:08	7440-62-2		
6020 MET ICPMS, Dissolved (LF)		Analytical Method: EPA 6020 Preparation Method: EPA 3005A							
Arsenic, Dissolved	ND	ug/L	1.0	1	01/24/17 09:53	02/12/17 20:13	7440-38-2		
Chromium, Dissolved	2.9	ug/L	1.0	1	01/24/17 09:53	02/12/17 20:13	7440-47-3		
Lead, Dissolved	ND	ug/L	1.0	1	01/24/17 09:53	02/12/17 20:13	7439-92-1		
Vanadium, Dissolved	ND	ug/L	5.0	1	01/24/17 09:53	02/12/17 20:13	7440-62-2		

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ANALYTICAL RESULTS

Project: PUMA TERMINAL GW SAMPLING

Pace Project No.: 2048968

Sample: MW-20B	Lab ID: 2048968011	Collected: 01/19/17 12:25	Received: 01/19/17 15:39	Matrix: Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
7470 Mercury Analytical Method: EPA 7470 Preparation Method: EPA 7470								
Mercury	ND	ug/L	0.20	1	01/24/17 08:59	01/24/17 17:21	7439-97-6	
7470 Mercury, Dissolved (LF) Analytical Method: EPA 7470 Preparation Method: EPA 7470								
Mercury, Dissolved	ND	ug/L	0.20	1	01/24/17 09:49	01/24/17 19:32	7439-97-6	
8270 MSSV PAH by SIM SEP Analytical Method: EPA 8270 by SIM Preparation Method: EPA 3510								
Acenaphthene	ND	ug/L	0.10	1	01/25/17 09:39	01/31/17 16:33	83-32-9	
Acenaphthylene	ND	ug/L	0.10	1	01/25/17 09:39	01/31/17 16:33	208-96-8	
Anthracene	ND	ug/L	0.10	1	01/25/17 09:39	01/31/17 16:33	120-12-7	
Benzo(a)anthracene	ND	ug/L	0.10	1	01/25/17 09:39	01/31/17 16:33	56-55-3	
Benzo(a)pyrene	ND	ug/L	0.10	1	01/25/17 09:39	01/31/17 16:33	50-32-8	
Benzo(b)fluoranthene	ND	ug/L	0.10	1	01/25/17 09:39	01/31/17 16:33	205-99-2	
Benzo(g,h,i)perylene	ND	ug/L	0.10	1	01/25/17 09:39	01/31/17 16:33	191-24-2	
Benzo(k)fluoranthene	ND	ug/L	0.10	1	01/25/17 09:39	01/31/17 16:33	207-08-9	
Chrysene	ND	ug/L	0.10	1	01/25/17 09:39	01/31/17 16:33	218-01-9	
Dibenz(a,h)anthracene	ND	ug/L	0.10	1	01/25/17 09:39	01/31/17 16:33	53-70-3	
Fluoranthene	ND	ug/L	0.10	1	01/25/17 09:39	01/31/17 16:33	206-44-0	
Fluorene	ND	ug/L	0.10	1	01/25/17 09:39	01/31/17 16:33	86-73-7	
Indeno(1,2,3-cd)pyrene	ND	ug/L	0.10	1	01/25/17 09:39	01/31/17 16:33	193-39-5	
2-Methylnaphthalene	ND	ug/L	0.10	1	01/25/17 09:39	01/31/17 16:33	91-57-6	
Naphthalene	ND	ug/L	0.10	1	01/25/17 09:39	01/31/17 16:33	91-20-3	
Phenanthrene	ND	ug/L	0.10	1	01/25/17 09:39	01/31/17 16:33	85-01-8	
Pyrene	ND	ug/L	0.10	1	01/25/17 09:39	01/31/17 16:33	129-00-0	
Surrogates								
2-Fluorobiphenyl (S)	61	%	25-150	1	01/25/17 09:39	01/31/17 16:33	321-60-8	
Terphenyl-d14 (S)	69	%	25-150	1	01/25/17 09:39	01/31/17 16:33	1718-51-0	
8260 MSV Low Level Analytical Method: EPA 5030B/8260								
Acetone	ND	ug/L	4.0	1		01/20/17 17:48	67-64-1	
Benzene	ND	ug/L	0.50	1		01/20/17 17:48	71-43-2	
Bromodichloromethane	ND	ug/L	0.50	1		01/20/17 17:48	75-27-4	
Bromoform	ND	ug/L	0.50	1		01/20/17 17:48	75-25-2	
Bromomethane	ND	ug/L	0.50	1		01/20/17 17:48	74-83-9	
2-Butanone (MEK)	ND	ug/L	2.0	1		01/20/17 17:48	78-93-3	
Carbon disulfide	ND	ug/L	1.0	1		01/20/17 17:48	75-15-0	
Carbon tetrachloride	ND	ug/L	0.50	1		01/20/17 17:48	56-23-5	
Chlorobenzene	ND	ug/L	0.50	1		01/20/17 17:48	108-90-7	
Chloroethane	ND	ug/L	0.50	1		01/20/17 17:48	75-00-3	
Chloroform	ND	ug/L	0.50	1		01/20/17 17:48	67-66-3	
Chloromethane	ND	ug/L	0.50	1		01/20/17 17:48	74-87-3	
1,2-Dibromo-3-chloropropane	ND	ug/L	0.20	1		01/20/17 17:48	96-12-8	
Dibromochloromethane	ND	ug/L	0.50	1		01/20/17 17:48	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	1		01/20/17 17:48	106-93-4	
Dichlorodifluoromethane	ND	ug/L	1.0	1		01/20/17 17:48	75-71-8	
1,1-Dichloroethane	ND	ug/L	0.50	1		01/20/17 17:48	75-34-3	
1,2-Dichloroethane	ND	ug/L	0.50	1		01/20/17 17:48	107-06-2	

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ANALYTICAL RESULTS

Project: PUMA TERMINAL GW SAMPLING

Sample Project No.: 2048968

Sample: MW-20B		Lab ID: 2048968011	Collected: 01/19/17 12:25	Received: 01/19/17 15:39	Matrix: Water			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV Low Level		Analytical Method: EPA 5030B/8260						
1,1-Dichloroethene	ND	ug/L	0.50	1		01/20/17 17:48	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	1		01/20/17 17:48	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	0.50	1		01/20/17 17:48	156-60-5	
1,2-Dichloropropane	ND	ug/L	0.50	1		01/20/17 17:48	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	0.50	1		01/20/17 17:48	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	0.50	1		01/20/17 17:48	10061-02-6	
Ethylbenzene	ND	ug/L	0.50	1		01/20/17 17:48	100-41-4	
2-Hexanone	ND	ug/L	1.0	1		01/20/17 17:48	591-78-6	
Isopropylbenzene (Cumene)	ND	ug/L	1.0	1		01/20/17 17:48	98-82-8	
Methyl acetate	ND	ug/L	2.0	1		01/20/17 17:48	79-20-9	
Methylene Chloride	ND	ug/L	0.50	1		01/20/17 17:48	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	1.0	1		01/20/17 17:48	108-10-1	
Methyl-tert-butyl ether	ND	ug/L	0.50	1		01/20/17 17:48	1634-04-4	
Styrene	ND	ug/L	1.0	1		01/20/17 17:48	100-42-5	
1,1,2,2-Tetrachloroethane	ND	ug/L	0.50	1		01/20/17 17:48	79-34-5	
Tetrachloroethene	ND	ug/L	0.50	1		01/20/17 17:48	127-18-4	
Toluene	ND	ug/L	0.50	1		01/20/17 17:48	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	0.50	1		01/20/17 17:48	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	0.50	1		01/20/17 17:48	79-00-5	
Trichloroethene	ND	ug/L	0.50	1		01/20/17 17:48	79-01-6	
Trichlorofluoromethane	ND	ug/L	0.50	1		01/20/17 17:48	75-69-4	
Vinyl chloride	ND	ug/L	0.50	1		01/20/17 17:48	75-01-4	
m&p-Xylene	ND	ug/L	2.0	1		01/20/17 17:48	179601-23-1	
o-Xylene	ND	ug/L	1.0	1		01/20/17 17:48	95-47-6	
Surrogates								
Dibromofluoromethane (S)	96	%	72-126	1		01/20/17 17:48	1868-53-7	
4-Bromofluorobenzene (S)	99	%	68-124	1		01/20/17 17:48	460-00-4	
Toluene-d8 (S)	105	%	79-119	1		01/20/17 17:48	2037-26-5	

Sample: MW-78B		Lab ID: 2048968012	Collected: 01/19/17 13:15	Received: 01/19/17 15:39	Matrix: Water			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8015M DRO/ORO Organics		Analytical Method: EPA 8015B Modified Preparation Method: EPA 3535						
Diesel Range Organic (C10-C28)	ND	mg/L	0.50	1	01/24/17 12:12	02/02/17 15:44		
Oil Range Organics (>C28-C40)	ND	mg/L	1.0	1	01/24/17 12:12	02/02/17 15:44		
Surrogates								
n-Pentacosane (S)	43	%	16-137	1	01/24/17 12:12	02/02/17 15:44	629-99-2	
o-Terphenyl (S)	45	%	10-121	1	01/24/17 12:12	02/02/17 15:44	84-15-1	
8021 GCV BTEX, MTBE, GRO		Analytical Method: EPA 8015/8021						
Gasoline Range Organics	ND	ug/L	50.0	1		01/26/17 02:40		
Surrogates								
4-Bromofluorobenzene (S)	100	%	44-148	1		01/26/17 02:40	460-00-4	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: PUMA TERMINAL GW SAMPLING

Project No.: 2048968

Sample: MW-78B	Lab ID: 2048968012	Collected: 01/19/17 13:15	Received: 01/19/17 15:39	Matrix: Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
6020 MET ICPMS								
Analytical Method: EPA 6020 Preparation Method: EPA 3010								
Arsenic	ND	mg/L	0.0010	1	01/24/17 08:30	02/12/17 17:12	7440-38-2	
Chromium	0.0074	mg/L	0.0010	1	01/24/17 08:30	02/12/17 17:12	7440-47-3	
Lead	ND	mg/L	0.0010	1	01/24/17 08:30	02/12/17 17:12	7439-92-1	
Vanadium	ND	mg/L	0.0050	1	01/24/17 08:30	02/12/17 17:12	7440-62-2	
6020 MET ICPMS, Dissolved (LF)								
Analytical Method: EPA 6020 Preparation Method: EPA 3005A								
Arsenic, Dissolved	ND	ug/L	1.0	1	01/24/17 09:53	02/12/17 20:17	7440-38-2	
Chromium, Dissolved	7.2	ug/L	1.0	1	01/24/17 09:53	02/12/17 20:17	7440-47-3	
Lead, Dissolved	ND	ug/L	1.0	1	01/24/17 09:53	02/12/17 20:17	7439-92-1	
Vanadium, Dissolved	ND	ug/L	5.0	1	01/24/17 09:53	02/12/17 20:17	7440-62-2	
7470 Mercury								
Analytical Method: EPA 7470 Preparation Method: EPA 7470								
Mercury	0.93	ug/L	0.20	1	01/24/17 08:59	01/24/17 17:23	7439-97-6	
7470 Mercury, Dissolved (LF)								
Analytical Method: EPA 7470 Preparation Method: EPA 7470								
Mercury, Dissolved	ND	ug/L	0.20	1	01/24/17 09:49	01/24/17 19:35	7439-97-6	
8270 MSSV PAH by SIM SEP								
Analytical Method: EPA 8270 by SIM Preparation Method: EPA 3510								
Acenaphthene	ND	ug/L	0.10	1	01/25/17 09:39	01/31/17 16:53	83-32-9	
Acenaphthylene	ND	ug/L	0.10	1	01/25/17 09:39	01/31/17 16:53	208-96-8	
Anthracene	ND	ug/L	0.10	1	01/25/17 09:39	01/31/17 16:53	120-12-7	
Benzo(a)anthracene	ND	ug/L	0.10	1	01/25/17 09:39	01/31/17 16:53	56-55-3	
Benzo(a)pyrene	ND	ug/L	0.10	1	01/25/17 09:39	01/31/17 16:53	50-32-8	
Benzo(b)fluoranthene	ND	ug/L	0.10	1	01/25/17 09:39	01/31/17 16:53	205-99-2	
Benzo(g,h,i)perylene	ND	ug/L	0.10	1	01/25/17 09:39	01/31/17 16:53	191-24-2	
Benzo(k)fluoranthene	ND	ug/L	0.10	1	01/25/17 09:39	01/31/17 16:53	207-08-9	
Chrysene	ND	ug/L	0.10	1	01/25/17 09:39	01/31/17 16:53	218-01-9	
Dibenz(a,h)anthracene	ND	ug/L	0.10	1	01/25/17 09:39	01/31/17 16:53	53-70-3	
Fluoranthene	ND	ug/L	0.10	1	01/25/17 09:39	01/31/17 16:53	206-44-0	
Fluorene	ND	ug/L	0.10	1	01/25/17 09:39	01/31/17 16:53	86-73-7	
Indeno(1,2,3-cd)pyrene	ND	ug/L	0.10	1	01/25/17 09:39	01/31/17 16:53	193-39-5	
2-Methylnaphthalene	ND	ug/L	0.10	1	01/25/17 09:39	01/31/17 16:53	91-57-6	
Naphthalene	ND	ug/L	0.10	1	01/25/17 09:39	01/31/17 16:53	91-20-3	
Phenanthrene	ND	ug/L	0.10	1	01/25/17 09:39	01/31/17 16:53	85-01-8	
Pyrene	ND	ug/L	0.10	1	01/25/17 09:39	01/31/17 16:53	129-00-0	
Surrogates								
2-Fluorobiphenyl (S)	78	%	25-150	1	01/25/17 09:39	01/31/17 16:53	321-60-8	
Terphenyl-d14 (S)	84	%	25-150	1	01/25/17 09:39	01/31/17 16:53	1718-51-0	
8260 MSV Low Level								
Analytical Method: EPA 5030B/8260								
Acetone	ND	ug/L	4.0	1		01/20/17 18:06	67-64-1	
Benzene	ND	ug/L	0.50	1		01/20/17 18:06	71-43-2	
Bromodichloromethane	ND	ug/L	0.50	1		01/20/17 18:06	75-27-4	
Bromoform	ND	ug/L	0.50	1		01/20/17 18:06	75-25-2	
Bromomethane	ND	ug/L	0.50	1		01/20/17 18:06	74-83-9	
2-Butanone (MEK)	ND	ug/L	2.0	1		01/20/17 18:06	78-93-3	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: PUMA TERMINAL GW SAMPLING

Pace Project No.: 2048968

Sample: MW-78B	Lab ID: 2048968012	Collected: 01/19/17 13:15	Received: 01/19/17 15:39	Matrix: Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV Low Level		Analytical Method: EPA 5030B/8260						
Carbon disulfide	ND	ug/L	1.0	1		01/20/17 18:06	75-15-0	
Carbon tetrachloride	ND	ug/L	0.50	1		01/20/17 18:06	56-23-5	
Chlorobenzene	ND	ug/L	0.50	1		01/20/17 18:06	108-90-7	
Chloroethane	ND	ug/L	0.50	1		01/20/17 18:06	75-00-3	
Chloroform	ND	ug/L	0.50	1		01/20/17 18:06	67-66-3	
Chloromethane	ND	ug/L	0.50	1		01/20/17 18:06	74-87-3	
1,2-Dibromo-3-chloropropane	ND	ug/L	0.20	1		01/20/17 18:06	96-12-8	
Dibromochloromethane	ND	ug/L	0.50	1		01/20/17 18:06	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	1		01/20/17 18:06	106-93-4	
Dichlorodifluoromethane	ND	ug/L	1.0	1		01/20/17 18:06	75-71-8	
1,1-Dichloroethane	ND	ug/L	0.50	1		01/20/17 18:06	75-34-3	
1,2-Dichloroethane	ND	ug/L	0.50	1		01/20/17 18:06	107-06-2	
1,1-Dichloroethene	ND	ug/L	0.50	1		01/20/17 18:06	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	1		01/20/17 18:06	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	0.50	1		01/20/17 18:06	156-60-5	
1,2-Dichloropropane	ND	ug/L	0.50	1		01/20/17 18:06	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	0.50	1		01/20/17 18:06	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	0.50	1		01/20/17 18:06	10061-02-6	
Ethylbenzene	ND	ug/L	0.50	1		01/20/17 18:06	100-41-4	
2-Hexanone	ND	ug/L	1.0	1		01/20/17 18:06	591-78-6	
Isopropylbenzene (Cumene)	ND	ug/L	1.0	1		01/20/17 18:06	98-82-8	
Methyl acetate	ND	ug/L	2.0	1		01/20/17 18:06	79-20-9	
Methylene Chloride	ND	ug/L	0.50	1		01/20/17 18:06	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	1.0	1		01/20/17 18:06	108-10-1	
Methyl-tert-butyl ether	ND	ug/L	0.50	1		01/20/17 18:06	1634-04-4	
Styrene	ND	ug/L	1.0	1		01/20/17 18:06	100-42-5	
1,1,2,2-Tetrachloroethane	ND	ug/L	0.50	1		01/20/17 18:06	79-34-5	
Tetrachloroethene	ND	ug/L	0.50	1		01/20/17 18:06	127-18-4	
Toluene	ND	ug/L	0.50	1		01/20/17 18:06	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	0.50	1		01/20/17 18:06	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	0.50	1		01/20/17 18:06	79-00-5	
Trichloroethene	ND	ug/L	0.50	1		01/20/17 18:06	79-01-6	
Trichlorofluoromethane	ND	ug/L	0.50	1		01/20/17 18:06	75-69-4	
Vinyl chloride	ND	ug/L	0.50	1		01/20/17 18:06	75-01-4	
m&p-Xylene	ND	ug/L	2.0	1		01/20/17 18:06	179601-23-1	
o-Xylene	ND	ug/L	1.0	1		01/20/17 18:06	95-47-6	
Surrogates								
Dibromofluoromethane (S)	96	%	72-126	1		01/20/17 18:06	1868-53-7	
4-Bromofluorobenzene (S)	97	%	68-124	1		01/20/17 18:06	460-00-4	
Toluene-d8 (S)	105	%	79-119	1		01/20/17 18:06	2037-26-5	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: PUMA TERMINAL GW SAMPLING

Pace Project No.: 2048968

Sample: MW-21B	Lab ID: 2048968013	Collected: 01/19/17 13:56	Received: 01/19/17 15:39	Matrix: Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8015M DRO/ORO Organics								
Analytical Method: EPA 8015B Modified Preparation Method: EPA 3535								
Diesel Range Organic (C10-C28)	ND	mg/L	0.50	1	01/24/17 12:12	02/02/17 16:12		
Oil Range Organics (>C28-C40)	ND	mg/L	1.0	1	01/24/17 12:12	02/02/17 16:12		
Surrogates								
n-Pentacosane (S)	39	%	16-137	1	01/24/17 12:12	02/02/17 16:12	629-99-2	
o-Terphenyl (S)	39	%	10-121	1	01/24/17 12:12	02/02/17 16:12	84-15-1	
8021 GCV BTEX, MTBE, GRO								
Analytical Method: EPA 8015/8021								
Gasoline Range Organics	ND	ug/L	50.0	1		01/26/17 03:07		
Surrogates								
4-Bromofluorobenzene (S)	102	%	44-148	1		01/26/17 03:07	460-00-4	
6020 MET ICPMS								
Analytical Method: EPA 6020 Preparation Method: EPA 3010								
Arsenic	ND	mg/L	0.0010	1	01/24/17 08:30	02/12/17 17:16	7440-38-2	
Chromium	0.0040	mg/L	0.0010	1	01/24/17 08:30	02/12/17 17:16	7440-47-3	
Lead	ND	mg/L	0.0010	1	01/24/17 08:30	02/12/17 17:16	7439-92-1	
Vanadium	ND	mg/L	0.0050	1	01/24/17 08:30	02/12/17 17:16	7440-62-2	
6020 MET ICPMS, Dissolved (LF)								
Analytical Method: EPA 6020 Preparation Method: EPA 3005A								
Arsenic, Dissolved	ND	ug/L	1.0	1	01/24/17 09:53	02/12/17 20:21	7440-38-2	
Chromium, Dissolved	2.7	ug/L	1.0	1	01/24/17 09:53	02/12/17 20:21	7440-47-3	
Lead, Dissolved	ND	ug/L	1.0	1	01/24/17 09:53	02/12/17 20:21	7439-92-1	
Vanadium, Dissolved	ND	ug/L	5.0	1	01/24/17 09:53	02/12/17 20:21	7440-62-2	
7470 Mercury								
Analytical Method: EPA 7470 Preparation Method: EPA 7470								
Mercury	0.27	ug/L	0.20	1	01/24/17 08:59	01/24/17 17:25	7439-97-6	
7470 Mercury, Dissolved (LF)								
Analytical Method: EPA 7470 Preparation Method: EPA 7470								
Mercury, Dissolved	ND	ug/L	0.20	1	01/24/17 09:49	01/24/17 19:37	7439-97-6	
8270 MSSV PAH by SIM SEP								
Analytical Method: EPA 8270 by SIM Preparation Method: EPA 3510								
Acenaphthene	ND	ug/L	0.10	1	01/25/17 09:39	01/31/17 17:13	83-32-9	
Acenaphthylene	ND	ug/L	0.10	1	01/25/17 09:39	01/31/17 17:13	208-96-8	
Anthracene	ND	ug/L	0.10	1	01/25/17 09:39	01/31/17 17:13	120-12-7	
Benzo(a)anthracene	ND	ug/L	0.10	1	01/25/17 09:39	01/31/17 17:13	56-55-3	
Benzo(a)pyrene	ND	ug/L	0.10	1	01/25/17 09:39	01/31/17 17:13	50-32-8	
Benzo(b)fluoranthene	ND	ug/L	0.10	1	01/25/17 09:39	01/31/17 17:13	205-99-2	
Benzo(g,h,i)perylene	ND	ug/L	0.10	1	01/25/17 09:39	01/31/17 17:13	191-24-2	
Benzo(k)fluoranthene	ND	ug/L	0.10	1	01/25/17 09:39	01/31/17 17:13	207-08-9	
Chrysene	ND	ug/L	0.10	1	01/25/17 09:39	01/31/17 17:13	218-01-9	
Dibenz(a,h)anthracene	ND	ug/L	0.10	1	01/25/17 09:39	01/31/17 17:13	53-70-3	
Fluoranthene	ND	ug/L	0.10	1	01/25/17 09:39	01/31/17 17:13	206-44-0	
Fluorene	ND	ug/L	0.10	1	01/25/17 09:39	01/31/17 17:13	86-73-7	
Indeno(1,2,3-cd)pyrene	ND	ug/L	0.10	1	01/25/17 09:39	01/31/17 17:13	193-39-5	
2-Methylnaphthalene	ND	ug/L	0.10	1	01/25/17 09:39	01/31/17 17:13	91-57-6	
Naphthalene	ND	ug/L	0.10	1	01/25/17 09:39	01/31/17 17:13	91-20-3	
Phenanthrene	ND	ug/L	0.10	1	01/25/17 09:39	01/31/17 17:13	85-01-8	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: PUMA TERMINAL GW SAMPLING

Pace Project No.: 2048968

Sample: MW-21B	Lab ID: 2048968013	Collected: 01/19/17 13:56	Received: 01/19/17 15:39	Matrix: Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8270 MSSV PAH by SIM SEP		Analytical Method: EPA 8270 by SIM Preparation Method: EPA 3510						
Pyrene	ND	ug/L	0.10	1	01/25/17 09:39	01/31/17 17:13	129-00-0	
Surrogates								
2-Fluorobiphenyl (S)	79	%.	25-150	1	01/25/17 09:39	01/31/17 17:13	321-60-8	
Terphenyl-d14 (S)	83	%.	25-150	1	01/25/17 09:39	01/31/17 17:13	1718-51-0	
8260 MSV Low Level		Analytical Method: EPA 5030B/8260						
Acetone	ND	ug/L	4.0	1		01/20/17 18:24	67-64-1	
Benzene	ND	ug/L	0.50	1		01/20/17 18:24	71-43-2	
Bromodichloromethane	ND	ug/L	0.50	1		01/20/17 18:24	75-27-4	
Bromoform	ND	ug/L	0.50	1		01/20/17 18:24	75-25-2	
Bromomethane	ND	ug/L	0.50	1		01/20/17 18:24	74-83-9	
2-Butanone (MEK)	ND	ug/L	2.0	1		01/20/17 18:24	78-93-3	
Carbon disulfide	ND	ug/L	1.0	1		01/20/17 18:24	75-15-0	
Carbon tetrachloride	ND	ug/L	0.50	1		01/20/17 18:24	56-23-5	
Chlorobenzene	ND	ug/L	0.50	1		01/20/17 18:24	108-90-7	
Chloroethane	ND	ug/L	0.50	1		01/20/17 18:24	75-00-3	
Chloroform	ND	ug/L	0.50	1		01/20/17 18:24	67-66-3	
Chloromethane	ND	ug/L	0.50	1		01/20/17 18:24	74-87-3	
1,2-Dibromo-3-chloropropane	ND	ug/L	0.20	1		01/20/17 18:24	96-12-8	
Dibromochloromethane	ND	ug/L	0.50	1		01/20/17 18:24	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	1		01/20/17 18:24	106-93-4	
Dichlorodifluoromethane	ND	ug/L	1.0	1		01/20/17 18:24	75-71-8	
1,1-Dichloroethane	ND	ug/L	0.50	1		01/20/17 18:24	75-34-3	
1,2-Dichloroethane	ND	ug/L	0.50	1		01/20/17 18:24	107-06-2	
1,1-Dichloroethene	ND	ug/L	0.50	1		01/20/17 18:24	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	1		01/20/17 18:24	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	0.50	1		01/20/17 18:24	156-60-5	
1,2-Dichloropropane	ND	ug/L	0.50	1		01/20/17 18:24	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	0.50	1		01/20/17 18:24	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	0.50	1		01/20/17 18:24	10061-02-6	
Ethylbenzene	ND	ug/L	0.50	1		01/20/17 18:24	100-41-4	
2-Hexanone	ND	ug/L	1.0	1		01/20/17 18:24	591-78-6	
Isopropylbenzene (Cumene)	ND	ug/L	1.0	1		01/20/17 18:24	98-82-8	
Methyl acetate	ND	ug/L	2.0	1		01/20/17 18:24	79-20-9	
Methylene Chloride	ND	ug/L	0.50	1		01/20/17 18:24	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	1.0	1		01/20/17 18:24	108-10-1	
Methyl-tert-butyl ether	2.8	ug/L	0.50	1		01/20/17 18:24	1634-04-4	
Styrene	ND	ug/L	1.0	1		01/20/17 18:24	100-42-5	
1,1,2,2-Tetrachloroethane	ND	ug/L	0.50	1		01/20/17 18:24	79-34-5	
Tetrachloroethene	ND	ug/L	0.50	1		01/20/17 18:24	127-18-4	
Toluene	ND	ug/L	0.50	1		01/20/17 18:24	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	0.50	1		01/20/17 18:24	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	0.50	1		01/20/17 18:24	79-00-5	
Trichloroethene	ND	ug/L	0.50	1		01/20/17 18:24	79-01-6	
Trichlorofluoromethane	ND	ug/L	0.50	1		01/20/17 18:24	75-69-4	
Vinyl chloride	ND	ug/L	0.50	1		01/20/17 18:24	75-01-4	
m&p-Xylene	ND	ug/L	2.0	1		01/20/17 18:24	179601-23-1	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: PUMA TERMINAL GW SAMPLING

Pace Project No.: 2048968

Sample: MW-21B	Lab ID: 2048968013	Collected: 01/19/17 13:56	Received: 01/19/17 15:39	Matrix: Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV Low Level								
Analytical Method: EPA 5030B/8260								
o-Xylene	ND	ug/L	1.0	1		01/20/17 18:24	95-47-6	
Surrogates								
Dibromofluoromethane (S)	96	%.	72-126	1		01/20/17 18:24	1868-53-7	
4-Bromofluorobenzene (S)	100	%.	68-124	1		01/20/17 18:24	460-00-4	
Toluene-d8 (S)	105	%.	79-119	1		01/20/17 18:24	2037-26-5	
Sample: DUP007								
Lab ID: 2048968014 Collected: 01/19/17 00:00 Received: 01/19/17 15:39 Matrix: Water								
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8015M DRO/ORO Organics								
Analytical Method: EPA 8015B Modified Preparation Method: EPA 3535								
Diesel Range Organic (C10-C28)	ND	mg/L	0.50	1	01/24/17 12:12	02/02/17 16:40		
Oil Range Organics (>C28-C40)	ND	mg/L	1.0	1	01/24/17 12:12	02/02/17 16:40		
Surrogates								
n-Pentacosane (S)	41	%.	16-137	1	01/24/17 12:12	02/02/17 16:40	629-99-2	
o-Terphenyl (S)	44	%.	10-121	1	01/24/17 12:12	02/02/17 16:40	84-15-1	
8021 GCV BTEX, MTBE, GRO								
Analytical Method: EPA 8015/8021								
Gasoline Range Organics	ND	ug/L	50.0	1		01/26/17 03:35		
Surrogates								
4-Bromofluorobenzene (S)	101	%.	44-148	1		01/26/17 03:35	460-00-4	
6020 MET ICPMS								
Analytical Method: EPA 6020 Preparation Method: EPA 3010								
Arsenic	ND	mg/L	0.0010	1	01/24/17 08:30	02/12/17 17:20	7440-38-2	
Chromium	0.0040	mg/L	0.0010	1	01/24/17 08:30	02/12/17 17:20	7440-47-3	
Lead	ND	mg/L	0.0010	1	01/24/17 08:30	02/12/17 17:20	7439-92-1	
Vanadium	ND	mg/L	0.0050	1	01/24/17 08:30	02/12/17 17:20	7440-62-2	
6020 MET ICPMS, Dissolved (LF)								
Analytical Method: EPA 6020 Preparation Method: EPA 3005A								
Arsenic, Dissolved	ND	ug/L	1.0	1	01/24/17 09:53	02/12/17 20:25	7440-38-2	
Chromium, Dissolved	2.8	ug/L	1.0	1	01/24/17 09:53	02/12/17 20:25	7440-47-3	
Lead, Dissolved	ND	ug/L	1.0	1	01/24/17 09:53	02/12/17 20:25	7439-92-1	
Vanadium, Dissolved	ND	ug/L	5.0	1	01/24/17 09:53	02/12/17 20:25	7440-62-2	
7470 Mercury								
Analytical Method: EPA 7470 Preparation Method: EPA 7470								
Mercury	0.27	ug/L	0.20	1	01/24/17 08:59	01/24/17 17:27	7439-97-6	
7470 Mercury, Dissolved (LF)								
Analytical Method: EPA 7470 Preparation Method: EPA 7470								
Mercury, Dissolved	ND	ug/L	0.20	1	01/24/17 09:49	01/24/17 19:39	7439-97-6	
8270 MSSV PAH by SIM SEP								
Analytical Method: EPA 8270 by SIM Preparation Method: EPA 3510								
Acenaphthene	ND	ug/L	0.10	1	01/25/17 09:39	01/31/17 17:33	83-32-9	
Acenaphthylene	ND	ug/L	0.10	1	01/25/17 09:39	01/31/17 17:33	208-96-8	
Anthracene	ND	ug/L	0.10	1	01/25/17 09:39	01/31/17 17:33	120-12-7	
Benzo(a)anthracene	ND	ug/L	0.10	1	01/25/17 09:39	01/31/17 17:33	56-55-3	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: PUMA TERMINAL GW SAMPLING

Pace Project No.: 2048968

Sample: DUP007	Lab ID: 2048968014	Collected: 01/19/17 00:00	Received: 01/19/17 15:39	Matrix: Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8270 MSSV PAH by SIM SEP		Analytical Method: EPA 8270 by SIM Preparation Method: EPA 3510						
Benzo(a)pyrene	ND	ug/L	0.10	1	01/25/17 09:39	01/31/17 17:33	50-32-8	
Benzo(b)fluoranthene	ND	ug/L	0.10	1	01/25/17 09:39	01/31/17 17:33	205-99-2	
Benzo(g,h,i)perylene	ND	ug/L	0.10	1	01/25/17 09:39	01/31/17 17:33	191-24-2	
Benzo(k)fluoranthene	ND	ug/L	0.10	1	01/25/17 09:39	01/31/17 17:33	207-08-9	
Chrysene	ND	ug/L	0.10	1	01/25/17 09:39	01/31/17 17:33	218-01-9	
Dibenz(a,h)anthracene	ND	ug/L	0.10	1	01/25/17 09:39	01/31/17 17:33	53-70-3	
Fluoranthene	ND	ug/L	0.10	1	01/25/17 09:39	01/31/17 17:33	206-44-0	
Fluorene	ND	ug/L	0.10	1	01/25/17 09:39	01/31/17 17:33	86-73-7	
Indeno(1,2,3-cd)pyrene	ND	ug/L	0.10	1	01/25/17 09:39	01/31/17 17:33	193-39-5	
2-Methylnaphthalene	ND	ug/L	0.10	1	01/25/17 09:39	01/31/17 17:33	91-57-6	
Naphthalene	ND	ug/L	0.10	1	01/25/17 09:39	01/31/17 17:33	91-20-3	
Phenanthrene	ND	ug/L	0.10	1	01/25/17 09:39	01/31/17 17:33	85-01-8	
Pyrene	ND	ug/L	0.10	1	01/25/17 09:39	01/31/17 17:33	129-00-0	
Surrogates								
2-Fluorobiphenyl (S)	72	%.	25-150	1	01/25/17 09:39	01/31/17 17:33	321-60-8	
Terphenyl-d14 (S)	74	%.	25-150	1	01/25/17 09:39	01/31/17 17:33	1718-51-0	
8260 MSV Low Level		Analytical Method: EPA 5030B/8260						
Acetone	ND	ug/L	4.0	1		01/20/17 18:42	67-64-1	
Benzene	ND	ug/L	0.50	1		01/20/17 18:42	71-43-2	
Bromodichloromethane	ND	ug/L	0.50	1		01/20/17 18:42	75-27-4	
Bromoform	ND	ug/L	0.50	1		01/20/17 18:42	75-25-2	
Bromomethane	ND	ug/L	0.50	1		01/20/17 18:42	74-83-9	
2-Butanone (MEK)	ND	ug/L	2.0	1		01/20/17 18:42	78-93-3	
Carbon disulfide	ND	ug/L	1.0	1		01/20/17 18:42	75-15-0	
Carbon tetrachloride	ND	ug/L	0.50	1		01/20/17 18:42	56-23-5	
Chlorobenzene	ND	ug/L	0.50	1		01/20/17 18:42	108-90-7	
Chloroethane	ND	ug/L	0.50	1		01/20/17 18:42	75-00-3	
Chloroform	ND	ug/L	0.50	1		01/20/17 18:42	67-66-3	
Chloromethane	ND	ug/L	0.50	1		01/20/17 18:42	74-87-3	
1,2-Dibromo-3-chloropropane	ND	ug/L	0.20	1		01/20/17 18:42	96-12-8	
Dibromochloromethane	ND	ug/L	0.50	1		01/20/17 18:42	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	1		01/20/17 18:42	106-93-4	
Dichlorodifluoromethane	ND	ug/L	1.0	1		01/20/17 18:42	75-71-8	
1,1-Dichloroethane	ND	ug/L	0.50	1		01/20/17 18:42	75-34-3	
1,2-Dichloroethane	ND	ug/L	0.50	1		01/20/17 18:42	107-06-2	
1,1-Dichloroethene	ND	ug/L	0.50	1		01/20/17 18:42	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	1		01/20/17 18:42	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	0.50	1		01/20/17 18:42	156-60-5	
1,2-Dichloropropane	ND	ug/L	0.50	1		01/20/17 18:42	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	0.50	1		01/20/17 18:42	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	0.50	1		01/20/17 18:42	10061-02-6	
Ethylbenzene	ND	ug/L	0.50	1		01/20/17 18:42	100-41-4	
2-Hexanone	ND	ug/L	1.0	1		01/20/17 18:42	591-78-6	
Isopropylbenzene (Cumene)	ND	ug/L	1.0	1		01/20/17 18:42	98-82-8	
Methyl acetate	ND	ug/L	2.0	1		01/20/17 18:42	79-20-9	
Methylene Chloride	ND	ug/L	0.50	1		01/20/17 18:42	75-09-2	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: PUMA TERMINAL GW SAMPLING

Pace Project No.: 2048968

Sample: DUP007		Lab ID: 2048968014		Collected: 01/19/17 00:00	Received: 01/19/17 15:39	Matrix: Water		
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV Low Level		Analytical Method: EPA 5030B/8260						
4-Methyl-2-pentanone (MIBK)	ND	ug/L	1.0	1		01/20/17 18:42	108-10-1	
Methyl-tert-butyl ether	2.8	ug/L	0.50	1		01/20/17 18:42	1634-04-4	
Styrene	ND	ug/L	1.0	1		01/20/17 18:42	100-42-5	
1,1,2,2-Tetrachloroethane	ND	ug/L	0.50	1		01/20/17 18:42	79-34-5	
Tetrachloroethene	ND	ug/L	0.50	1		01/20/17 18:42	127-18-4	
Toluene	ND	ug/L	0.50	1		01/20/17 18:42	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	0.50	1		01/20/17 18:42	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	0.50	1		01/20/17 18:42	79-00-5	
Trichloroethene	ND	ug/L	0.50	1		01/20/17 18:42	79-01-6	
Trichlorofluoromethane	ND	ug/L	0.50	1		01/20/17 18:42	75-69-4	
Vinyl chloride	ND	ug/L	0.50	1		01/20/17 18:42	75-01-4	
m&p-Xylene	ND	ug/L	2.0	1		01/20/17 18:42	179601-23-1	
o-Xylene	ND	ug/L	1.0	1		01/20/17 18:42	95-47-6	
Surrogates								
Dibromofluoromethane (S)	95	%.	72-126	1		01/20/17 18:42	1868-53-7	
4-Bromofluorobenzene (S)	99	%.	68-124	1		01/20/17 18:42	460-00-4	
Toluene-d8 (S)	106	%.	79-119	1		01/20/17 18:42	2037-26-5	

Sample: FB-011917		Lab ID: 2048968015		Collected: 01/19/17 14:02	Received: 01/19/17 15:39	Matrix: Water		
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8021 GCV BTEX, MTBE, GRO		Analytical Method: EPA 8015/8021						
Gasoline Range Organics	ND	ug/L	50.0	1		01/26/17 04:01		
Surrogates								
4-Bromofluorobenzene (S)	102	%.	44-148	1		01/26/17 04:01	460-00-4	
8260 MSV Low Level		Analytical Method: EPA 5030B/8260						
Acetone	ND	ug/L	4.0	1		01/20/17 19:01	67-64-1	
Benzene	ND	ug/L	0.50	1		01/20/17 19:01	71-43-2	
Bromodichloromethane	ND	ug/L	0.50	1		01/20/17 19:01	75-27-4	
Bromoform	ND	ug/L	0.50	1		01/20/17 19:01	75-25-2	
Bromomethane	ND	ug/L	0.50	1		01/20/17 19:01	74-83-9	
2-Butanone (MEK)	ND	ug/L	2.0	1		01/20/17 19:01	78-93-3	
Carbon disulfide	ND	ug/L	1.0	1		01/20/17 19:01	75-15-0	
Carbon tetrachloride	ND	ug/L	0.50	1		01/20/17 19:01	56-23-5	
Chlorobenzene	ND	ug/L	0.50	1		01/20/17 19:01	108-90-7	
Chloroethane	ND	ug/L	0.50	1		01/20/17 19:01	75-00-3	
Chloroform	ND	ug/L	0.50	1		01/20/17 19:01	67-66-3	
Chloromethane	ND	ug/L	0.50	1		01/20/17 19:01	74-87-3	
1,2-Dibromo-3-chloropropane	ND	ug/L	0.20	1		01/20/17 19:01	96-12-8	
Dibromochloromethane	ND	ug/L	0.50	1		01/20/17 19:01	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	1		01/20/17 19:01	106-93-4	
Dichlorodifluoromethane	ND	ug/L	1.0	1		01/20/17 19:01	75-71-8	
1,1-Dichloroethane	ND	ug/L	0.50	1		01/20/17 19:01	75-34-3	
1,2-Dichloroethane	ND	ug/L	0.50	1		01/20/17 19:01	107-06-2	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: PUMA TERMINAL GW SAMPLING

Pace Project No.: 2048968

Sample: FB-011917	Lab ID: 2048968015	Collected: 01/19/17 14:02	Received: 01/19/17 15:39	Matrix: Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV Low Level	Analytical Method: EPA 5030B/8260							
1,1-Dichloroethene	ND	ug/L	0.50	1		01/20/17 19:01	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	1		01/20/17 19:01	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	0.50	1		01/20/17 19:01	156-60-5	
1,2-Dichloropropane	ND	ug/L	0.50	1		01/20/17 19:01	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	0.50	1		01/20/17 19:01	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	0.50	1		01/20/17 19:01	10061-02-6	
Ethylbenzene	ND	ug/L	0.50	1		01/20/17 19:01	100-41-4	
2-Hexanone	ND	ug/L	1.0	1		01/20/17 19:01	591-78-6	
Isopropylbenzene (Cumene)	ND	ug/L	1.0	1		01/20/17 19:01	98-82-8	
Methyl acetate	ND	ug/L	2.0	1		01/20/17 19:01	79-20-9	
Methylene Chloride	ND	ug/L	0.50	1		01/20/17 19:01	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	1.0	1		01/20/17 19:01	108-10-1	
Methyl-tert-butyl ether	ND	ug/L	0.50	1		01/20/17 19:01	1634-04-4	
Styrene	ND	ug/L	1.0	1		01/20/17 19:01	100-42-5	
1,1,2,2-Tetrachloroethane	ND	ug/L	0.50	1		01/20/17 19:01	79-34-5	
Tetrachloroethene	ND	ug/L	0.50	1		01/20/17 19:01	127-18-4	
Toluene	ND	ug/L	0.50	1		01/20/17 19:01	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	0.50	1		01/20/17 19:01	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	0.50	1		01/20/17 19:01	79-00-5	
Trichloroethene	ND	ug/L	0.50	1		01/20/17 19:01	79-01-6	
Trichlorofluoromethane	ND	ug/L	0.50	1		01/20/17 19:01	75-69-4	
Vinyl chloride	ND	ug/L	0.50	1		01/20/17 19:01	75-01-4	
m&p-Xylene	ND	ug/L	2.0	1		01/20/17 19:01	179601-23-1	
o-Xylene	ND	ug/L	1.0	1		01/20/17 19:01	95-47-6	
Surrogates								
Dibromofluoromethane (S)	94	%.	72-126	1		01/20/17 19:01	1868-53-7	
4-Bromofluorobenzene (S)	99	%.	68-124	1		01/20/17 19:01	460-00-4	
Toluene-d8 (S)	107	%.	79-119	1		01/20/17 19:01	2037-26-5	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: PUMA TERMINAL GW SAMPLING

Pace Project No.: 2048968

QC Batch: 72788

Analysis Method: EPA 8015/8021

QC Batch Method: EPA 8015/8021

Analysis Description: 8021 W GCV BTEX, MTBE, GRO

Associated Lab Samples: 2048968001, 2048968002, 2048968003, 2048968004, 2048968005, 2048968006, 2048968007, 2048968008, 2048968009, 2048968010, 2048968011, 2048968012, 2048968013, 2048968014, 2048968015

METHOD BLANK: 304892

Matrix: Water

Associated Lab Samples: 2048968001, 2048968002, 2048968003, 2048968004, 2048968005, 2048968006, 2048968007, 2048968008, 2048968009, 2048968010, 2048968011, 2048968012, 2048968013, 2048968014, 2048968015

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Gasoline Range Organics	ug/L	ND	50.0	01/25/17 19:25	
4-Bromofluorobenzene (S)	%.	103	44-148	01/25/17 19:25	

LABORATORY CONTROL SAMPLE: 304893

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Gasoline Range Organics	ug/L	500	516	103	61-136	
4-Bromofluorobenzene (S)	%.			103	44-148	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 304894 304895

Parameter	Units	2048968004 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Gasoline Range Organics	ug/L	ND	500	500	537	506	103	96	15-147	6	20	
4-Bromofluorobenzene (S)	%.						103	106	44-148			

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QUALITY CONTROL DATA

Project: PUMA TERMINAL GW SAMPLING
Pace Project No.: 2048968

QC Batch: 72646 Analysis Method: EPA 7470
QC Batch Method: EPA 7470 Analysis Description: 7470 Mercury
Associated Lab Samples: 2048968002, 2048968003, 2048968004, 2048968005, 2048968006, 2048968009, 2048968010, 2048968011, 2048968012, 2048968013, 2048968014

METHOD BLANK: 304310 Matrix: Water
Associated Lab Samples: 2048968002, 2048968003, 2048968004, 2048968005, 2048968006, 2048968009, 2048968010, 2048968011, 2048968012, 2048968013, 2048968014

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Mercury	ug/L	ND	0.20	01/24/17 16:43	

LABORATORY CONTROL SAMPLE: 304311

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury	ug/L	1	1.0	102	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 304312 304313

Parameter	Units	2048986001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Mercury	ug/L	ND	1	1	0.99	1.0	99	104	75-125	5	20	

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QUALITY CONTROL DATA

Project: PUMA TERMINAL GW SAMPLING

Pace Project No.: 2048968

QC Batch: 72612 Analysis Method: EPA 7470
 QC Batch Method: EPA 7470 Analysis Description: 7470 Mercury Dissolved
 Associated Lab Samples: 2048968002, 2048968003, 2048968004, 2048968005, 2048968006, 2048968009, 2048968010, 2048968011,
 2048968012, 2048968013, 2048968014

METHOD BLANK: 304161 Matrix: Water
 Associated Lab Samples: 2048968002, 2048968003, 2048968004, 2048968005, 2048968006, 2048968009, 2048968010, 2048968011,
 2048968012, 2048968013, 2048968014

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Mercury, Dissolved	ug/L	ND	0.20	01/24/17 18:41	

LABORATORY CONTROL SAMPLE: 304162

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury, Dissolved	ug/L	1	1.0	103	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 304163 304164

Parameter	Units	2048890008 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Mercury, Dissolved	ug/L	ND	1	1	1.1	1.1	91	90	75-125	1	20	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: PUMA TERMINAL GW SAMPLING

Pace Project No.: 2048968

QC Batch: 72609 Analysis Method: EPA 6020
 QC Batch Method: EPA 3010 Analysis Description: 6020 MET
 Associated Lab Samples: 2048968002, 2048968003, 2048968004, 2048968005, 2048968006, 2048968009, 2048968010, 2048968011, 2048968012, 2048968013, 2048968014

METHOD BLANK: 304153 Matrix: Water
 Associated Lab Samples: 2048968002, 2048968003, 2048968004, 2048968005, 2048968006, 2048968009, 2048968010, 2048968011, 2048968012, 2048968013, 2048968014

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Arsenic	mg/L	ND	0.0010	02/12/17 12:56	
Chromium	mg/L	ND	0.0010	02/12/17 12:56	
Lead	mg/L	ND	0.0010	02/12/17 12:56	
Vanadium	mg/L	ND	0.0050	02/12/17 12:56	

LABORATORY CONTROL SAMPLE: 304154

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Arsenic	mg/L	.02	0.020	102	83-115	
Chromium	mg/L	.02	0.020	102	85-115	
Lead	mg/L	.02	0.020	100	84-115	
Vanadium	mg/L	.02	0.016	82	81-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 304155 304156

Parameter	Units	304155		304156		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		2048890008 Result	MS Spike Conc.	MSD Spike Conc.	MS Result						
Arsenic	mg/L	ND	.02	.02	0.016	0.020	80	101	80-120	23	20 R1
Chromium	mg/L	0.046	.02	.02	0.058	0.074	57	136	80-120	24	20 M1,R1
Lead	mg/L	ND	.02	.02	0.017	0.021	83	107	80-120	25	20 R1
Vanadium	mg/L	ND	.02	.02	0.0097	0.014	49	70	80-120	35	20 M1,R1

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QUALITY CONTROL DATA

Project: PUMA TERMINAL GW SAMPLING

Pace Project No.: 2048968

QC Batch: 72614 Analysis Method: EPA 6020
 QC Batch Method: EPA 3005A Analysis Description: 6020 MET Dissolved
 Associated Lab Samples: 2048968002, 2048968003, 2048968004, 2048968005, 2048968006, 2048968009, 2048968010, 2048968011, 2048968012, 2048968013, 2048968014

METHOD BLANK: 304165 Matrix: Water
 Associated Lab Samples: 2048968002, 2048968003, 2048968004, 2048968005, 2048968006, 2048968009, 2048968010, 2048968011, 2048968012, 2048968013, 2048968014

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Arsenic, Dissolved	ug/L	ND	1.0	02/12/17 13:20	
Chromium, Dissolved	ug/L	ND	1.0	02/12/17 13:20	
Lead, Dissolved	ug/L	ND	1.0	02/12/17 13:20	
Vanadium, Dissolved	ug/L	ND	5.0	02/12/17 13:20	

LABORATORY CONTROL SAMPLE: 304166

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Arsenic, Dissolved	ug/L	20	20.6	103	80-120	
Chromium, Dissolved	ug/L	20	20.6	103	80-120	
Lead, Dissolved	ug/L	20	20.2	101	80-120	
Vanadium, Dissolved	ug/L	20	18.4	92	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 304167 304168

Parameter	Units	304167		304168		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		2048890008 Result	MS Spike Conc.	MSD Spike Conc.	MS Result						
Arsenic, Dissolved	ug/L	ND	20	20	19.5	19.5	96	97	75-125	0	20
Chromium, Dissolved	ug/L	47.9	20	20	67.5	68.0	98	100	75-125	1	20
Lead, Dissolved	ug/L	ND	20	20	20.3	20.6	102	103	75-125	2	20
Vanadium, Dissolved	ug/L	ND	20	20	12.4	12.2	62	61	75-125	2	20 M1

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QUALITY CONTROL DATA

Project: PUMA TERMINAL GW SAMPLING

Pace Project No.: 2048968

QC Batch: 72642 Analysis Method: EPA 5030B/8260
 QC Batch Method: EPA 5030B/8260 Analysis Description: 8260 MSV Low Level
 Associated Lab Samples: 2048968001, 2048968002, 2048968003, 2048968004, 2048968005, 2048968006, 2048968007, 2048968008,
 2048968009, 2048968010, 2048968011, 2048968012, 2048968013, 2048968014, 2048968015

METHOD BLANK: 304302 Matrix: Water
 Associated Lab Samples: 2048968001, 2048968002, 2048968003, 2048968004, 2048968005, 2048968006, 2048968007, 2048968008,
 2048968009, 2048968010, 2048968011, 2048968012, 2048968013, 2048968014, 2048968015

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
1,1,1-Trichloroethane	ug/L	ND	0.50	01/20/17 13:16	
1,1,2,2-Tetrachloroethane	ug/L	ND	0.50	01/20/17 13:16	
1,1,2-Trichloroethane	ug/L	ND	0.50	01/20/17 13:16	
1,1-Dichloroethane	ug/L	ND	0.50	01/20/17 13:16	
1,1-Dichloroethene	ug/L	ND	0.50	01/20/17 13:16	
1,2-Dibromo-3-chloropropane	ug/L	ND	0.20	01/20/17 13:16	
1,2-Dibromoethane (EDB)	ug/L	ND	1.0	01/20/17 13:16	
1,2-Dichloroethane	ug/L	ND	0.50	01/20/17 13:16	
1,2-Dichloropropane	ug/L	ND	0.50	01/20/17 13:16	
2-Butanone (MEK)	ug/L	ND	2.0	01/20/17 13:16	
2-Hexanone	ug/L	ND	1.0	01/20/17 13:16	
4-Methyl-2-pentanone (MIBK)	ug/L	ND	1.0	01/20/17 13:16	
Acetone	ug/L	ND	4.0	01/20/17 13:16	
Benzene	ug/L	ND	0.50	01/20/17 13:16	
Bromodichloromethane	ug/L	ND	0.50	01/20/17 13:16	
Bromoform	ug/L	ND	0.50	01/20/17 13:16	
Bromomethane	ug/L	ND	0.50	01/20/17 13:16	
Carbon disulfide	ug/L	ND	1.0	01/20/17 13:16	
Carbon tetrachloride	ug/L	ND	0.50	01/20/17 13:16	
Chlorobenzene	ug/L	ND	0.50	01/20/17 13:16	
Chloroethane	ug/L	ND	0.50	01/20/17 13:16	
Chloroform	ug/L	ND	0.50	01/20/17 13:16	
Chloromethane	ug/L	ND	0.50	01/20/17 13:16	
cis-1,2-Dichloroethene	ug/L	ND	1.0	01/20/17 13:16	
cis-1,3-Dichloropropene	ug/L	ND	0.50	01/20/17 13:16	
Dibromochloromethane	ug/L	ND	0.50	01/20/17 13:16	
Dichlorodifluoromethane	ug/L	ND	1.0	01/20/17 13:16	
Ethylbenzene	ug/L	ND	0.50	01/20/17 13:16	
Isopropylbenzene (Cumene)	ug/L	ND	1.0	01/20/17 13:16	
m&p-Xylene	ug/L	ND	2.0	01/20/17 13:16	
Methyl acetate	ug/L	ND	2.0	01/20/17 13:16	
Methyl-tert-butyl ether	ug/L	ND	0.50	01/20/17 13:16	
Methylene Chloride	ug/L	ND	0.50	01/20/17 13:16	
o-Xylene	ug/L	ND	1.0	01/20/17 13:16	
Styrene	ug/L	ND	1.0	01/20/17 13:16	
Tetrachloroethene	ug/L	ND	0.50	01/20/17 13:16	
Toluene	ug/L	ND	0.50	01/20/17 13:16	
trans-1,2-Dichloroethene	ug/L	ND	0.50	01/20/17 13:16	
trans-1,3-Dichloropropene	ug/L	ND	0.50	01/20/17 13:16	
Trichloroethene	ug/L	ND	0.50	01/20/17 13:16	

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QUALITY CONTROL DATA

Project: PUMA TERMINAL GW SAMPLING

Pace Project No.: 2048968

METHOD BLANK: 304302

Matrix: Water

Associated Lab Samples: 2048968001, 2048968002, 2048968003, 2048968004, 2048968005, 2048968006, 2048968007, 2048968008, 2048968009, 2048968010, 2048968011, 2048968012, 2048968013, 2048968014, 2048968015

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Trichlorofluoromethane	ug/L	ND	0.50	01/20/17 13:16	
Vinyl chloride	ug/L	ND	0.50	01/20/17 13:16	
4-Bromofluorobenzene (S)	%	99	68-124	01/20/17 13:16	
Dibromofluoromethane (S)	%	97	72-126	01/20/17 13:16	
Toluene-d8 (S)	%	105	79-119	01/20/17 13:16	

LABORATORY CONTROL SAMPLE: 304303

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,1,1-Trichloroethane	ug/L	50	43.1	86	62-131	
1,1,2,2-Tetrachloroethane	ug/L	50	39.5	79	15-179	
1,1,2-Trichloroethane	ug/L	50	44.5	89	58-144	
1,1-Dichloroethane	ug/L	50	42.3	85	63-129	
1,1-Dichloroethene	ug/L	50	40.0	80	51-139	
1,2-Dibromo-3-chloropropane	ug/L	50	45.5	91	21-160	
1,2-Dibromoethane (EDB)	ug/L	50	46.1	92	52-161	
1,2-Dichloroethane	ug/L	50	44.4	89	57-148	
1,2-Dichloropropane	ug/L	50	43.6	87	66-128	
2-Butanone (MEK)	ug/L	50	46.3	93	32-183	
2-Hexanone	ug/L	50	40.6	81	36-170	
4-Methyl-2-pentanone (MIBK)	ug/L	50	43.3	87	26-171	
Acetone	ug/L	50	45.0	90	22-165	
Benzene	ug/L	50	40.0	80	62-131	
Bromodichloromethane	ug/L	50	45.9	92	69-132	
Bromoform	ug/L	50	44.1	88	35-166	
Bromomethane	ug/L	50	65.4	131	34-158	
Carbon disulfide	ug/L	50	47.8	96	31-128	
Carbon tetrachloride	ug/L	50	44.9	90	54-144	
Chlorobenzene	ug/L	50	50.0	100	70-127	
Chloroethane	ug/L	50	73.6	147	17-195	
Chloroform	ug/L	50	43.1	86	73-134	
Chloromethane	ug/L	50	33.2	66	17-153	
cis-1,2-Dichloroethene	ug/L	50	41.7	83	68-129	
cis-1,3-Dichloropropene	ug/L	50	45.9	92	72-138	
Dibromochloromethane	ug/L	50	45.5	91	49-146	
Dichlorodifluoromethane	ug/L	50	36.0	72	10-179	
Ethylbenzene	ug/L	50	45.1	90	66-126	
Isopropylbenzene (Cumene)	ug/L	50	41.1	82	51-138	
m&p-Xylene	ug/L	100	91.2	91	65-129	
Methyl acetate	ug/L	50	43.6	87	20-142	
Methyl-tert-butyl ether	ug/L	50	44.8	90	37-166	
Methylene Chloride	ug/L	50	46.9	94	46-168	
o-Xylene	ug/L	50	42.7	85	65-124	

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QUALITY CONTROL DATA

Project: PUMA TERMINAL GW SAMPLING

Pace Project No.: 2048968

LABORATORY CONTROL SAMPLE: 304303

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Styrene	ug/L	50	47.7	95	72-133	
Tetrachloroethene	ug/L	50	46.5	93	46-157	
Toluene	ug/L	50	45.0	90	69-126	
trans-1,2-Dichloroethene	ug/L	50	40.7	81	60-129	
trans-1,3-Dichloropropene	ug/L	50	47.5	95	59-149	
Trichloroethene	ug/L	50	45.6	91	67-132	
Trichlorofluoromethane	ug/L	50	58.3	117	39-171	
Vinyl chloride	ug/L	50	51.3	103	27-149	
4-Bromofluorobenzene (S)	%			96	68-124	
Dibromofluoromethane (S)	%			98	72-126	
Toluene-d8 (S)	%			103	79-119	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 304304 304305

Parameter	Units	MS		MSD		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		2048968003 Result	Spike Conc.	Spike Conc.	MS Result						
1,1,1-Trichloroethane	ug/L	ND	50	50	49.5	47.3	99	95	54-137	5	20
1,1,2,2-Tetrachloroethane	ug/L	ND	50	50	42.5	42.3	85	85	15-187	1	20
1,1,2-Trichloroethane	ug/L	ND	50	50	47.1	47.7	94	95	59-148	1	20
1,1-Dichloroethane	ug/L	ND	50	50	46.7	44.4	93	89	59-133	5	20
1,1-Dichloroethene	ug/L	ND	50	50	46.5	43.6	93	87	44-146	6	20
1,2-Dibromo-3-chloropropane	ug/L	ND	50	50	47.1	47.1	94	94	23-166	0	20
1,2-Dibromoethane (EDB)	ug/L	ND	50	50	48.1	48.0	96	96	55-166	0	20
1,2-Dichloroethane	ug/L	ND	50	50	46.8	45.8	94	92	56-154	2	20
1,2-Dichloropropane	ug/L	ND	50	50	47.4	46.6	95	93	62-135	2	20
2-Butanone (MEK)	ug/L	ND	50	50	46.4	45.3	93	91	20-205	2	20
2-Hexanone	ug/L	ND	50	50	41.4	41.5	83	83	25-189	0	20
4-Methyl-2-pentanone (MIBK)	ug/L	ND	50	50	43.7	44.0	87	88	23-184	1	20
Acetone	ug/L	ND	50	50	45.9	48.0	92	96	11-217	4	20
Benzene	ug/L	ND	50	50	44.4	42.8	89	86	52-141	4	20
Bromodichloromethane	ug/L	ND	50	50	49.3	48.3	99	97	70-134	2	20
Bromoform	ug/L	ND	50	50	46.4	46.7	93	93	37-171	1	20
Bromomethane	ug/L	ND	50	50	73.8	70.8	148	142	34-155	4	20
Carbon disulfide	ug/L	ND	50	50	57.9	51.8	116	104	28-130	11	20
Carbon tetrachloride	ug/L	ND	50	50	52.2	49.5	104	99	48-146	5	20
Chlorobenzene	ug/L	ND	50	50	54.8	54.0	110	108	67-129	1	20
Chloroethane	ug/L	ND	50	50	89.1	80.3	178	161	12-192	10	20
Chloroform	ug/L	0.62	50	50	47.7	46.1	94	91	66-143	3	20
Chloromethane	ug/L	ND	50	50	38.1	35.8	76	72	14-155	6	20
cis-1,2-Dichloroethene	ug/L	ND	50	50	45.6	44.0	91	88	56-141	4	20
cis-1,3-Dichloropropene	ug/L	ND	50	50	48.9	48.1	98	96	70-139	2	20
Dibromochloromethane	ug/L	ND	50	50	48.5	48.2	97	96	50-150	1	20
Dichlorodifluoromethane	ug/L	ND	50	50	43.1	42.4	86	85	10-173	2	20
Ethylbenzene	ug/L	ND	50	50	50.6	49.0	101	98	57-135	3	20

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QUALITY CONTROL DATA

Project: PUMA TERMINAL GW SAMPLING

Pace Project No.: 2048968

Parameter	Units	2048968003		304304		304305		% Rec	% Rec	% Rec	Limits	RPD	Max RPD	Qual
		Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec							
Isopropylbenzene (Cumene)	ug/L	ND	50	50	47.3	45.7	95	91	40-146	3	20			
m&p-Xylene	ug/L	ND	100	100	103	97.9	103	98	56-136	5	20			
Methyl acetate	ug/L	ND	50	50	41.7	42.6	83	85	10-142	2	20			
Methyl-tert-butyl ether	ug/L	ND	50	50	46.4	46.1	93	92	35-176	1	20			
Methylene Chloride	ug/L	ND	50	50	50.2	48.7	100	97	45-166	3	20			
o-Xylene	ug/L	ND	50	50	47.8	46.9	96	94	57-133	2	20			
Styrene	ug/L	ND	50	50	51.5	50.5	103	101	58-144	2	20			
Tetrachloroethene	ug/L	ND	50	50	54.4	51.8	109	104	48-143	5	20			
Toluene	ug/L	ND	50	50	50.2	48.3	100	97	59-136	4	20			
trans-1,2-Dichloroethene	ug/L	ND	50	50	47.1	44.0	94	88	57-132	7	20			
trans-1,3-Dichloropropene	ug/L	ND	50	50	50.6	50.2	101	100	59-154	1	20			
Trichloroethene	ug/L	ND	50	50	51.8	49.7	104	99	58-140	4	20			
Trichlorofluoromethane	ug/L	ND	50	50	72.9	68.4	146	137	24-175	6	20			
Vinyl chloride	ug/L	ND	50	50	58.5	56.3	117	113	21-150	4	20			
4-Bromofluorobenzene (S)	%.							98	99	68-124				
Dibromofluoromethane (S)	%.							97	97	72-126				
Toluene-d8 (S)	%.							102	103	79-119				

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QUALITY CONTROL DATA

Project: PUMA TERMINAL GW SAMPLING

Pace Project No.: 2048968

QC Batch: 72656 Analysis Method: EPA 8015B Modified
 QC Batch Method: EPA 3535 Analysis Description: EPA 8015 ORO
 Associated Lab Samples: 2048968002, 2048968003, 2048968004, 2048968005, 2048968006, 2048968009, 2048968010, 2048968011,
 2048968012, 2048968013, 2048968014

METHOD BLANK: 304345 Matrix: Water
 Associated Lab Samples: 2048968002, 2048968003, 2048968004, 2048968005, 2048968006, 2048968009, 2048968010, 2048968011,
 2048968012, 2048968013, 2048968014

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Diesel Range Organic (C10-C28)	mg/L	ND	0.25	02/02/17 11:02	
Oil Range Organics (>C28-C40)	mg/L	ND	0.50	02/02/17 11:02	
n-Pentacosane (S)	%	37	16-137	02/02/17 11:02	
o-Terphenyl (S)	%	49	10-121	02/02/17 11:02	

LABORATORY CONTROL SAMPLE: 304346

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Diesel Range Organic (C10-C28)	mg/L	.4	ND	20	10-115	
n-Pentacosane (S)	%			18	16-137	
o-Terphenyl (S)	%			25	10-121	

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QUALITY CONTROL DATA

Project: PUMA TERMINAL GW SAMPLING

Pace Project No.: 2048968

QC Batch: 73658	Analysis Method: EPA 8015B Modified
QC Batch Method: EPA 3535	Analysis Description: EPA 8015 ORO
Associated Lab Samples: 2048968006	

METHOD BLANK: 308983 Matrix: Water

Associated Lab Samples: 2048968006

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Diesel Range Organic (C10-C28)	mg/L	ND	0.25	02/06/17 12:16	
Oil Range Organics (>C28-C40)	mg/L	ND	0.50	02/06/17 12:16	
n-Pentacosane (S)	%	55	16-137	02/06/17 12:16	
o-Terphenyl (S)	%	56	10-121	02/06/17 12:16	

LABORATORY CONTROL SAMPLE: 308984

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Diesel Range Organic (C10-C28)	mg/L	.4	.23J	58	10-115	
n-Pentacosane (S)	%			54	16-137	
o-Terphenyl (S)	%			68	10-121	

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QUALITY CONTROL DATA

Project: PUMA TERMINAL GW SAMPLING

Pace Project No.: 2048968

QC Batch: 72748 Analysis Method: EPA 8270 by SIM
 QC Batch Method: EPA 3510 Analysis Description: 8270 Water by SIM MSSV
 Associated Lab Samples: 2048968002, 2048968003, 2048968004, 2048968005, 2048968006, 2048968009, 2048968010, 2048968011, 2048968012, 2048968013, 2048968014

METHOD BLANK: 304752 Matrix: Water
 Associated Lab Samples: 2048968002, 2048968003, 2048968004, 2048968005, 2048968006, 2048968009, 2048968010, 2048968011, 2048968012, 2048968013, 2048968014

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
2-Methylnaphthalene	ug/L	ND	0.10	01/31/17 13:14	
Acenaphthene	ug/L	ND	0.10	01/31/17 13:14	
Acenaphthylene	ug/L	ND	0.10	01/31/17 13:14	
Anthracene	ug/L	ND	0.10	01/31/17 13:14	
Benzo(a)anthracene	ug/L	ND	0.10	01/31/17 13:14	
Benzo(a)pyrene	ug/L	ND	0.10	01/31/17 13:14	
Benzo(b)fluoranthene	ug/L	ND	0.10	01/31/17 13:14	
Benzo(g,h,i)perylene	ug/L	ND	0.10	01/31/17 13:14	
Benzo(k)fluoranthene	ug/L	ND	0.10	01/31/17 13:14	
Chrysene	ug/L	ND	0.10	01/31/17 13:14	
Dibenz(a,h)anthracene	ug/L	ND	0.10	01/31/17 13:14	
Fluoranthene	ug/L	ND	0.10	01/31/17 13:14	
Fluorene	ug/L	ND	0.10	01/31/17 13:14	
Indeno(1,2,3-cd)pyrene	ug/L	ND	0.10	01/31/17 13:14	
Naphthalene	ug/L	ND	0.10	01/31/17 13:14	
Phenanthrene	ug/L	ND	0.10	01/31/17 13:14	
Pyrene	ug/L	ND	0.10	01/31/17 13:14	
2-Fluorobiphenyl (S)	%	78	25-150	01/31/17 13:14	
Terphenyl-d14 (S)	%	82	25-150	01/31/17 13:14	

LABORATORY CONTROL SAMPLE: 304753

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
2-Methylnaphthalene	ug/L	4	3.1	76	35-150	
Acenaphthene	ug/L	4	2.8	69	35-150	
Acenaphthylene	ug/L	4	2.8	69	35-150	
Anthracene	ug/L	4	3.9	96	35-150	
Benzo(a)anthracene	ug/L	4	3.2	80	35-150	
Benzo(a)pyrene	ug/L	4	3.0	75	35-150	
Benzo(b)fluoranthene	ug/L	4	3.0	75	35-150	
Benzo(g,h,i)perylene	ug/L	4	3.3	84	35-150	
Benzo(k)fluoranthene	ug/L	4	2.9	71	35-150	
Chrysene	ug/L	4	3.1	77	35-150	
Dibenz(a,h)anthracene	ug/L	4	3.3	83	35-150	
Fluoranthene	ug/L	4	3.1	77	35-150	
Fluorene	ug/L	4	2.8	70	35-150	
Indeno(1,2,3-cd)pyrene	ug/L	4	3.3	84	35-150	
Naphthalene	ug/L	4	2.6	64	35-150	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: PUMA TERMINAL GW SAMPLING

Pace Project No.: 2048968

LABORATORY CONTROL SAMPLE: 304753

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Phenanthrene	ug/L	4	3.1	76	35-150	
Pyrene	ug/L	4	3.1	77	35-150	
2-Fluorobiphenyl (S)	%.			81	25-150	
Terphenyl-d14 (S)	%.			88	25-150	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

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QUALIFIERS

Project: PUMA TERMINAL GW SAMPLING

Pace Project No.: 2048968

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The Nelac Institute

LABORATORIES

PASI-N Pace Analytical Services - New Orleans

BATCH QUALIFIERS

Batch: 72656

[1]

Batch: 73229

[M5] A matrix spike/matrix spike duplicate was not performed for this batch due to insufficient sample volume.

Batch: 73444

[M5] A matrix spike/matrix spike duplicate was not performed for this batch due to insufficient sample volume.

Batch: 73710

[M5] A matrix spike/matrix spike duplicate was not performed for this batch due to insufficient sample volume.

ANALYTE QUALIFIERS

1b Sample 2048968006 yielded low surrogate recoveries and was therefore re-extracted (outside the holding time limit). Re-analysis surrogate recoveries were within QC limits. Both sets of results were included in the report.

C9 Common Laboratory Contaminant.

H2 Extraction or preparation conducted outside EPA method holding time.

M1 Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

R1 RPD value was outside control limits.

S2 Surrogate recovery outside laboratory control limits due to matrix interferences (confirmed by similar results from sample re-analysis).

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: PUMA TERMINAL GW SAMPLING
Pace Project No.: 2048968

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
2048968002	EB-011817	EPA 3535	72656	EPA 8015B Modified	73444
2048968003	MW-38A	EPA 3535	72656	EPA 8015B Modified	73444
2048968004	MW-84B2	EPA 3535	72656	EPA 8015B Modified	73444
2048968005	MW-84A	EPA 3535	72656	EPA 8015B Modified	73444
2048968006	MW-17B	EPA 3535	72656	EPA 8015B Modified	73444
2048968006	MW-17B	EPA 3535	73658	EPA 8015B Modified	73710
2048968009	EB-011917	EPA 3535	72656	EPA 8015B Modified	73444
2048968010	MW-77B	EPA 3535	72656	EPA 8015B Modified	73444
2048968011	MW-20B	EPA 3535	72656	EPA 8015B Modified	73444
2048968012	MW-78B	EPA 3535	72656	EPA 8015B Modified	73444
2048968013	MW-21B	EPA 3535	72656	EPA 8015B Modified	73444
2048968014	DUP007	EPA 3535	72656	EPA 8015B Modified	73444
2048968001	TB-011817	EPA 8015/8021	72788		
2048968002	EB-011817	EPA 8015/8021	72788		
2048968003	MW-38A	EPA 8015/8021	72788		
2048968004	MW-84B2	EPA 8015/8021	72788		
2048968005	MW-84A	EPA 8015/8021	72788		
2048968006	MW-17B	EPA 8015/8021	72788		
2048968007	FB-011817	EPA 8015/8021	72788		
2048968008	TB-011917	EPA 8015/8021	72788		
2048968009	EB-011917	EPA 8015/8021	72788		
2048968010	MW-77B	EPA 8015/8021	72788		
2048968011	MW-20B	EPA 8015/8021	72788		
2048968012	MW-78B	EPA 8015/8021	72788		
2048968013	MW-21B	EPA 8015/8021	72788		
2048968014	DUP007	EPA 8015/8021	72788		
2048968015	FB-011917	EPA 8015/8021	72788		
2048968002	EB-011817	EPA 3010	72609	EPA 6020	72692
2048968003	MW-38A	EPA 3010	72609	EPA 6020	72692
2048968004	MW-84B2	EPA 3010	72609	EPA 6020	72692
2048968005	MW-84A	EPA 3010	72609	EPA 6020	72692
2048968006	MW-17B	EPA 3010	72609	EPA 6020	72692
2048968009	EB-011917	EPA 3010	72609	EPA 6020	72692
2048968010	MW-77B	EPA 3010	72609	EPA 6020	72692
2048968011	MW-20B	EPA 3010	72609	EPA 6020	72692
2048968012	MW-78B	EPA 3010	72609	EPA 6020	72692
2048968013	MW-21B	EPA 3010	72609	EPA 6020	72692
2048968014	DUP007	EPA 3010	72609	EPA 6020	72692
2048968002	EB-011817	EPA 3005A	72614	EPA 6020	72700
2048968003	MW-38A	EPA 3005A	72614	EPA 6020	72700
2048968004	MW-84B2	EPA 3005A	72614	EPA 6020	72700
2048968005	MW-84A	EPA 3005A	72614	EPA 6020	72700
2048968006	MW-17B	EPA 3005A	72614	EPA 6020	72700
2048968009	EB-011917	EPA 3005A	72614	EPA 6020	72700
2048968010	MW-77B	EPA 3005A	72614	EPA 6020	72700
2048968011	MW-20B	EPA 3005A	72614	EPA 6020	72700

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: PUMA TERMINAL GW SAMPLING

Pace Project No.: 2048968

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
2048968012	MW-78B	EPA 3005A	72614	EPA 6020	72700
2048968013	MW-21B	EPA 3005A	72614	EPA 6020	72700
2048968014	DUP007	EPA 3005A	72614	EPA 6020	72700
2048968002	EB-011817	EPA 7470	72646	EPA 7470	72694
2048968003	MW-38A	EPA 7470	72646	EPA 7470	72694
2048968004	MW-84B2	EPA 7470	72646	EPA 7470	72694
2048968005	MW-84A	EPA 7470	72646	EPA 7470	72694
2048968006	MW-17B	EPA 7470	72646	EPA 7470	72694
2048968009	EB-011917	EPA 7470	72646	EPA 7470	72694
2048968010	MW-77B	EPA 7470	72646	EPA 7470	72694
2048968011	MW-20B	EPA 7470	72646	EPA 7470	72694
2048968012	MW-78B	EPA 7470	72646	EPA 7470	72694
2048968013	MW-21B	EPA 7470	72646	EPA 7470	72694
2048968014	DUP007	EPA 7470	72646	EPA 7470	72694
2048968002	EB-011817	EPA 7470	72612	EPA 7470	72699
2048968003	MW-38A	EPA 7470	72612	EPA 7470	72699
2048968004	MW-84B2	EPA 7470	72612	EPA 7470	72699
2048968005	MW-84A	EPA 7470	72612	EPA 7470	72699
2048968006	MW-17B	EPA 7470	72612	EPA 7470	72699
2048968009	EB-011917	EPA 7470	72612	EPA 7470	72699
2048968010	MW-77B	EPA 7470	72612	EPA 7470	72699
2048968011	MW-20B	EPA 7470	72612	EPA 7470	72699
2048968012	MW-78B	EPA 7470	72612	EPA 7470	72699
2048968013	MW-21B	EPA 7470	72612	EPA 7470	72699
2048968014	DUP007	EPA 7470	72612	EPA 7470	72699
2048968002	EB-011817	EPA 3510	72748	EPA 8270 by SIM	73229
2048968003	MW-38A	EPA 3510	72748	EPA 8270 by SIM	73229
2048968004	MW-84B2	EPA 3510	72748	EPA 8270 by SIM	73229
2048968005	MW-84A	EPA 3510	72748	EPA 8270 by SIM	73229
2048968006	MW-17B	EPA 3510	72748	EPA 8270 by SIM	73229
2048968009	EB-011917	EPA 3510	72748	EPA 8270 by SIM	73229
2048968010	MW-77B	EPA 3510	72748	EPA 8270 by SIM	73229
2048968011	MW-20B	EPA 3510	72748	EPA 8270 by SIM	73229
2048968012	MW-78B	EPA 3510	72748	EPA 8270 by SIM	73229
2048968013	MW-21B	EPA 3510	72748	EPA 8270 by SIM	73229
2048968014	DUP007	EPA 3510	72748	EPA 8270 by SIM	73229
2048968001	TB-011817	EPA 5030B/8260	72642		
2048968002	EB-011817	EPA 5030B/8260	72642		
2048968003	MW-38A	EPA 5030B/8260	72642		
2048968004	MW-84B2	EPA 5030B/8260	72642		
2048968005	MW-84A	EPA 5030B/8260	72642		
2048968006	MW-17B	EPA 5030B/8260	72642		
2048968007	FB-011817	EPA 5030B/8260	72642		
2048968008	TB-011917	EPA 5030B/8260	72642		
2048968009	EB-011917	EPA 5030B/8260	72642		
2048968010	MW-77B	EPA 5030B/8260	72642		
2048968011	MW-20B	EPA 5030B/8260	72642		

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: PUMA TERMINAL GW SAMPLING

Pace Project No.: 2048968

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
2048968012	MW-78B	EPA 5030B/8260	72642		
2048968013	MW-21B	EPA 5030B/8260	72642		
2048968014	DUP007	EPA 5030B/8260	72642		
2048968015	FB-011917	EPA 5030B/8260	72642		

REPORT OF LABORATORY ANALYSIS

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CHAIN-OF-CUSTODY / Analytical Request Document

The Chain-of-Custody is a LEGAL DOCUMENT

WO#: 2048968

Section A

Required Client Information:

Company: Arcadis
 Address: 440 Citiview Plaza Suite 401
23 16510m 1.2 cupado P.B.
 Email To: Efrain Calderon @ arcadis us.com
 Phone: 714-944-4000
 Requested Due Date/TAT: Standard

Section B

Required Project Information:

Report To: Efrain Calderon
 Copy To:
 Purchase Order No.:
 Project Name: Puma Terminal W/W sampling
 Project Number: E002.1605B

Section C

Invoice Information:

Attention: 2048968
 Company Name: REGULATORY AGENCY
 Address:
 Pace Quote Reference:
 Pace Project Manager: Juan Redondo
 Pace Profile #:

1 of 2
2075272



REGULATORY AGENCY

NPDES GROUND WATER DRINKING WATER
 UST RCRA OTHER _____
 Site Location: _____
 STATE: PR

ITEM #	Section D Required Client Information	Matrix Codes MATRIX / CODE	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMIP)	COLLECTED				SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives							Requested Analysis Filtered (Y/N)							Residual Chlorine (Y/N)	Pace Project No./ Lab I.D.	
					COMPOSITE START		COMPOSITE END/GRAB				Unpreserved	H ₂ SO ₄	HNO ₃	HCl	NaOH	Na ₂ S ₂ O ₃	Methanol	Other	Analysis Test	VOCS Grab	SVOCs Grab	PbO / DBO SOIS	Svocs Grab	Metals mercury			Disturb meth
					DATE	TIME	DATE	TIME																			
1	TB-011817		WTG	G			01/18/17	LAB	4																		
2	EB-011817		WTG	G			01/18/17	0922	10	S																	
3	MW-354		WTG	G			01/18/17	1116	10	S																	
4	MW-84B2		WTG	G			01/18/17	1231	10	S																	
5	MW-84A		WTG	G			01/18/17	1323	10	S																	
6	MW-11B		WTG	G			01/18/17	1534	10	S																	
7	EB-011817		WTG	G			01/18/17	1542	4																		
8	TB-011917		WTG	G			01/19/17	LAB	4																		
9	EB-011917		WTG	G			01/19/17	1000	10	S																	
10	MW-11B		WTG	G			01/19/17	1117	10	S																	
11	MW-20B		WTG	G			01/19/17	1225	10	S																	
12	MW-11B		WTG	G			01/19/17	1315	10	S																	

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS					
	<u>Arcadis Colon / Arcadis</u>	<u>01/19/17</u>	<u>1539</u>	<u>[Signature]</u>	<u>01-19-17</u>	<u>15:39</u>						
	<u>[Signature] / Pace</u>	<u>1-19-17</u>	<u>17:10</u>	<u>[Signature]</u>								
	<u>Fed Exp</u>	<u>1-20-17</u>	<u>0830</u>	<u>[Signature]</u>	<u>1-20-17</u>	<u>0830</u>						

ORIGINAL

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: Arcadis Colon

SIGNATURE of SAMPLER: [Signature]

DATE Signed (MM/DD/YY): 01/19/17

Temp in °C

Received on ice (Y/N)

Custody Sealed Cooler (Y/N)

Samples Intact (Y/N)

*Important Note: By signing this form you are accepting Pace's NET 30 day payment terms and agreeing to late charges of 1.5% per month for any invoices not paid within 30 days.

CHAIN-OF-CUSTODY / Analytical Request Document

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

Page: 2 of 2
2075276

Section A Required Client Information:	Section B Required Project Information:	Section C Invoice Information:
Company: Aranda	Report To: E Fraiz Calderon	Attention:
Address: RS Citiriv Plaza suite 401	Copy To:	Company Name:
Rd 165 km 1.2 camacho P.R.	Purchase Order No.:	Address:
Email To: E.Fraiz Calderon @ aranda-usa.com	Project Name: Puma Terminal LW	Pace Quote Reference:
Phone: 82-977-4000	Project Number: E002 1605A	Pace Project Manager: Juan Redondo
Fax: 82-977-4086	Requested Due Date/TAT: 5 days	Pace Profile #:
REGULATORY AGENCY		Site Location: PA
<input type="checkbox"/> NPDES <input type="checkbox"/> GROUND WATER <input type="checkbox"/> DRINKING WATER <input type="checkbox"/> UST <input type="checkbox"/> RCRA <input type="checkbox"/> OTHER _____ STATE: _____		

ITEM #	Section D Required Client Information SAMPLE ID (A-Z, 0-9 / -) Sample IDs MUST BE UNIQUE	Matrix Codes MATRIX / CODE Drinking Water DW Water WT Waste Water WW Product P Soil/Solid SL Oil OL Wipe WP Air AR Tissue TS Other OT	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED				SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives										Analysis Test ↓ (Y/N)	Residual Chlorine (Y/N)	Pace Project No./ Lab I.D.												
					COMPOSITE START		COMPOSITE END/GRAB				Unpreserved	H ₂ SO ₄	HNO ₃	HCl	NaOH	Na ₂ S ₂ O ₃	Methanol	Other																	
1	MV-21A		WT G					01/19/17	1356	10	S											X													
2	DUP001		WT G					01/19/17	/	10	S											X													
3	FB-011911		WT G					01/19/17	402	4	S											X													
4																																			
5																																			
6																																			
7																																			
8																																			
9																																			
10																																			
11																																			
12																																			

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS
	<i>Aranda Colon / Aranda</i>	01/19/17	1539	<i>Juan Redondo</i>	01-19-17	15:39	
	<i>Fed Ex</i>	1-19-17	17:00	<i>Fed Ex</i>	1-19-17	17:00	
	<i>Fed Ex</i>	1-19-17	17:00	<i>Fed Ex</i>	1-19-17	17:00	Y Y Y

ORIGINAL

SAMPLER NAME AND SIGNATURE		Temp in °C	Received on Ice (Y/N)	Custody Sealed Cooler (Y/N)	Samples Intact (Y/N)
PRINT Name of SAMPLER: <i>Aranda Colon</i>					
SIGNATURE of SAMPLER: <i>[Signature]</i>	DATE Signed (MM/DD/YY): <i>01/19/17</i>				



Sample Condition Upon Receipt

1000 Riverbend Blvd., Suite F
St. Rose, LA 70087

Project #: **20**

Courier: Pace Courier Hired Courier Fed X UPS DHL USPS Customer Other

Custody Seal on Cooler/Box Present: [see COC]

Custody Seals intact: Yes No

Thermometer Used: Therm Fisher IR 5
 Therm Fisher IR 6
 Therm Fisher IR 7

Type of Ice: Wet Blue None

Samples on ice: [see COC]

Cooler Temperature: [see COC]

Temp should be above freezing to 6°C

Date and Initials of person examining contents: 1-20-17 JMB

Temp must be measured from Temperature blank when present

Comments:

Temperature Blank Present?"	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	1	
Chain of Custody Present:	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	2	
Chain of Custody Complete:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	3	
Chain of Custody Relinquished:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	4	
Sampler Name & Signature on COC:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	5	
Samples Arrived within Hold Time:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	6	
Sufficient Volume:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	7	
Correct Containers Used:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	8	
Filtered vol. Rec. for Diss. tests	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	9	
Sample Labels match COC:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	10	
All containers received within manufacture's precautionary and/or expiration dates.	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	11	
All containers needing chemical preservation have been checked (except VOA, coliform, & O&G).	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	12	
All containers preservation checked found to be in compliance with EPA recommendation.	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	13	If No, was preservative added? <input type="checkbox"/> Yes <input type="checkbox"/> No If added record lot no.: HNO3 _____ H2SO4 _____
Headspace in VOA Vials (>6mm):	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	14	
Trip Blank Present:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	15	

Client Notification/ Resolution:

Person Contacted: _____ Date/Time: _____

Comments/ Resolution: _____

February 14, 2017

Efrain Calderon
BBL Caribe Engineering P.S.C.
48 City View Plaza1, Suite 401
Road 16, Km. 1.2
Guaynabo, PR 00968

RE: Project: PUMA TERMINAL CW SAMPLING
Pace Project No.: 2048890

Dear Efrain Calderon:

Enclosed are the analytical results for sample(s) received by the laboratory on January 18, 2017. The results relate only to the samples included in this report. Results reported herein conform to the most current, applicable TNI/NELAC standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,



Juan Redondo
juan.redondo@pacelabs.com
Project Manager

Enclosures

cc: Sharon Colon
Abner Hernandez
Marianela Mercado-Burgos



REPORT OF LABORATORY ANALYSIS

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CERTIFICATIONS

Project: PUMA TERMINAL CW SAMPLING

Pace Project No.: 2048890

New Orleans Certification IDs

California Env. Lab Accreditation Program Branch:
11277CA

Florida Department of Health (NELAC): E87595

Illinois Environmental Protection Agency: 0025721

Kansas Department of Health and Environment (NELAC):
E-10266

Louisiana Dept. of Environmental Quality (NELAC/LELAP):
02006

Pennsylvania Dept. of Env Protection (NELAC): 68-04202

Texas Commission on Env. Quality (NELAC):
T104704405-09-TX

U.S. Dept. of Agriculture Foreign Soil Import: P330-10-
00119

Commonwealth of Virginia (TNI): 480246

REPORT OF LABORATORY ANALYSIS

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SAMPLE SUMMARY

Project: PUMA TERMINAL CW SAMPLING

Pace Project No.: 2048890

Lab ID	Sample ID	Matrix	Date Collected	Date Received
2048890001	TB-011717	Water	01/17/17 00:00	01/18/17 14:45
2048890002	EB-011717	Water	01/17/17 09:46	01/18/17 14:45
2048890003	MW-110AB	Water	01/17/17 10:49	01/18/17 14:45
2048890004	MW-110B2	Water	01/17/17 11:38	01/18/17 14:45
2048890005	MW-111A	Water	01/17/17 12:36	01/18/17 14:45
2048890006	MW-114A	Water	01/17/17 16:21	01/18/17 14:45
2048890007	DUP006	Water	01/17/17 00:00	01/18/17 14:45
2048890008	MW-75B2	Water	01/17/17 14:50	01/18/17 14:45
2048890009	FB-011717	Water	01/17/17 16:30	01/18/17 14:45
2048890010	MW-63A	Water	01/18/17 10:33	01/18/17 14:45

REPORT OF LABORATORY ANALYSIS

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SAMPLE ANALYTE COUNT

Project: PUMA TERMINAL CW SAMPLING

Pace Project No.: 2048890

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
2048890001	TB-011717	EPA 8015/8021	MHM	2	PASI-N
		EPA 5030B/8260	JRP	45	PASI-N
2048890002	EB-011717	EPA 8015B Modified	JN	4	PASI-N
		EPA 8015/8021	MHM	2	PASI-N
		EPA 6020	KJR	4	PASI-N
		EPA 6020	KJR	4	PASI-N
		EPA 7470	MHB1	1	PASI-N
		EPA 7470	MHB1	1	PASI-N
		EPA 8270 by SIM	GEJ	19	PASI-N
		EPA 5030B/8260	JRP	45	PASI-N
2048890003	MW-110AB	EPA 8015B Modified	JN	4	PASI-N
		EPA 8015/8021	MHM	2	PASI-N
		EPA 6020	KJR	4	PASI-N
		EPA 6020	KJR	4	PASI-N
		EPA 7470	MHB1	1	PASI-N
		EPA 7470	MHB1	1	PASI-N
		EPA 8270 by SIM	GEJ	19	PASI-N
		EPA 5030B/8260	JRP	45	PASI-N
2048890004	MW-110B2	EPA 8015B Modified	JN	4	PASI-N
		EPA 8015/8021	MHM	2	PASI-N
		EPA 6020	KJR	4	PASI-N
		EPA 6020	KJR	4	PASI-N
		EPA 7470	MHB1	1	PASI-N
		EPA 7470	MHB1	1	PASI-N
		EPA 8270 by SIM	GEJ	19	PASI-N
		EPA 5030B/8260	JRP	45	PASI-N
2048890005	MW-111A	EPA 8015B Modified	JN	4	PASI-N
		EPA 8015/8021	MHM	2	PASI-N
		EPA 6020	KJR	4	PASI-N
		EPA 6020	KJR	4	PASI-N
		EPA 7470	MHB1	1	PASI-N
		EPA 7470	MHB1	1	PASI-N
		EPA 8270 by SIM	GEJ	19	PASI-N
		EPA 5030B/8260	JRP	45	PASI-N
2048890006	MW-114A	EPA 8015B Modified	JN	4	PASI-N
		EPA 8015/8021	MHM	2	PASI-N
		EPA 6020	KJR	4	PASI-N

REPORT OF LABORATORY ANALYSIS

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SAMPLE ANALYTE COUNT

Project: PUMA TERMINAL CW SAMPLING

Pace Project No.: 2048890

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory		
2048890007	DUP006	EPA 6020	KJR	4	PASI-N		
		EPA 7470	MHB1	1	PASI-N		
		EPA 7470	MHB1	1	PASI-N		
		EPA 8270 by SIM	GEJ	19	PASI-N		
		EPA 5030B/8260	JRP	45	PASI-N		
		EPA 8015B Modified	JN	4	PASI-N		
		EPA 8015/8021	MHM	2	PASI-N		
		EPA 6020	KJR	4	PASI-N		
		EPA 6020	KJR	4	PASI-N		
		EPA 7470	MHB1	1	PASI-N		
		EPA 7470	MHB1	1	PASI-N		
		EPA 8270 by SIM	GEJ	19	PASI-N		
2048890008	MW-75B2	EPA 5030B/8260	JRP	45	PASI-N		
		EPA 8015B Modified	JN	4	PASI-N		
		EPA 8015/8021	MHM	2	PASI-N		
		EPA 6020	KJR	4	PASI-N		
		EPA 6020	KJR	4	PASI-N		
		EPA 7470	MHB1	1	PASI-N		
		EPA 7470	MHB1	1	PASI-N		
		EPA 8270 by SIM	GEJ	19	PASI-N		
		EPA 5030B/8260	JRP	45	PASI-N		
		2048890009	FB-011717	EPA 8015/8021	MHM	2	PASI-N
				EPA 5030B/8260	JRP	45	PASI-N
				2048890010	MW-63A	EPA 8015B Modified	JN
EPA 8015/8021	MHM	2	PASI-N				
EPA 6020	KJR	4	PASI-N				
EPA 6020	KJR	4	PASI-N				
EPA 7470	MHB1	1	PASI-N				
EPA 7470	MHB1	1	PASI-N				
EPA 8270 by SIM	GEJ	19	PASI-N				
EPA 5030B/8260	JRP	45	PASI-N				

REPORT OF LABORATORY ANALYSIS

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PROJECT NARRATIVE

Project: PUMA TERMINAL CW SAMPLING

Pace Project No.: 2048890

Method: EPA 8015B Modified

Description: 8015M DRO/ORO Organics

Client: BBL Caribe / Arcadis PR

Date: February 14, 2017

General Information:

8 samples were analyzed for EPA 8015B Modified. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:

The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:

The samples were prepared in accordance with EPA 3535 with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):

All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:

All criteria were within method requirements with any exceptions noted below.

Surrogates:

All surrogates were within QC limits with any exceptions noted below.

Method Blank:

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

REPORT OF LABORATORY ANALYSIS

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PROJECT NARRATIVE

Project: PUMA TERMINAL CW SAMPLING

Pace Project No.: 2048890

Method: EPA 8015/8021

Description: 8021 GCV BTEX, MTBE, GRO

Client: BBL Caribe / Arcadis PR

Date: February 14, 2017

General Information:

10 samples were analyzed for EPA 8015/8021. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:

The samples were analyzed within the method required hold times with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):

All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:

All criteria were within method requirements with any exceptions noted below.

Surrogates:

All surrogates were within QC limits with any exceptions noted below.

Method Blank:

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

REPORT OF LABORATORY ANALYSIS

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PROJECT NARRATIVE

Project: PUMA TERMINAL CW SAMPLING

Pace Project No.: 2048890

Method: EPA 6020

Description: 6020 MET ICPMS

Client: BBL Caribe / Arcadis PR

Date: February 14, 2017

General Information:

8 samples were analyzed for EPA 6020. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:

The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:

The samples were prepared in accordance with EPA 3010 with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):

All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:

All criteria were within method requirements with any exceptions noted below.

Internal Standards:

All internal standards were within QC limits with any exceptions noted below.

Method Blank:

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

QC Batch: 72609

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 2048890008

M1: Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

- MS (Lab ID: 304155)
 - Chromium
 - Vanadium
- MSD (Lab ID: 304156)
 - Chromium
 - Vanadium

R1: RPD value was outside control limits.

- MSD (Lab ID: 304156)
 - Arsenic
 - Chromium
 - Lead
 - Vanadium

REPORT OF LABORATORY ANALYSIS

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PROJECT NARRATIVE

Project: PUMA TERMINAL CW SAMPLING

Pace Project No.: 2048890

Method: EPA 6020

Description: 6020 MET ICPMS

Client: BBL Caribe / Arcadis PR

Date: February 14, 2017

Additional Comments:

REPORT OF LABORATORY ANALYSIS

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PROJECT NARRATIVE

Project: PUMA TERMINAL CW SAMPLING

Pace Project No.: 2048890

Method: EPA 6020

Description: 6020 MET ICPMS, Dissolved (LF)

Client: BBL Caribe / Arcadis PR

Date: February 14, 2017

General Information:

8 samples were analyzed for EPA 6020. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:

The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:

The samples were prepared in accordance with EPA 3005A with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):

All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:

All criteria were within method requirements with any exceptions noted below.

Internal Standards:

All internal standards were within QC limits with any exceptions noted below.

Method Blank:

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

QC Batch: 72614

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 2048890008

M1: Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

- MS (Lab ID: 304167)
 - Vanadium, Dissolved
- MSD (Lab ID: 304168)
 - Vanadium, Dissolved

Additional Comments:

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PROJECT NARRATIVE

Project: PUMA TERMINAL CW SAMPLING

Pace Project No.: 2048890

Method: EPA 7470

Description: 7470 Mercury

Client: BBL Caribe / Arcadis PR

Date: February 14, 2017

General Information:

8 samples were analyzed for EPA 7470. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:

The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:

The samples were prepared in accordance with EPA 7470 with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):

All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:

All criteria were within method requirements with any exceptions noted below.

Method Blank:

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

REPORT OF LABORATORY ANALYSIS

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PROJECT NARRATIVE

Project: PUMA TERMINAL CW SAMPLING

Pace Project No.: 2048890

Method: EPA 7470

Description: 7470 Mercury, Dissolved (LF)

Client: BBL Caribe / Arcadis PR

Date: February 14, 2017

General Information:

8 samples were analyzed for EPA 7470. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:

The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:

The samples were prepared in accordance with EPA 7470 with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):

All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:

All criteria were within method requirements with any exceptions noted below.

Method Blank:

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

REPORT OF LABORATORY ANALYSIS

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PROJECT NARRATIVE

Project: PUMA TERMINAL CW SAMPLING

Pace Project No.: 2048890

Method: EPA 8270 by SIM

Description: 8270 MSSV PAH by SIM SEP

Client: BBL Caribe / Arcadis PR

Date: February 14, 2017

General Information:

8 samples were analyzed for EPA 8270 by SIM. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:

The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:

The samples were prepared in accordance with EPA 3510 with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):

All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:

All criteria were within method requirements with any exceptions noted below.

Internal Standards:

All internal standards were within QC limits with any exceptions noted below.

Surrogates:

All surrogates were within QC limits with any exceptions noted below.

Method Blank:

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

QC Batch: 72547

A matrix spike/matrix spike duplicate was not performed due to insufficient sample volume.

QC Batch: 72592

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 2048890008

M1: Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

- MS (Lab ID: 304108)
 - Anthracene
- MSD (Lab ID: 304109)
 - Anthracene

Additional Comments:

REPORT OF LABORATORY ANALYSIS

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PROJECT NARRATIVE

Project: PUMA TERMINAL CW SAMPLING
Pace Project No.: 2048890

Method: EPA 5030B/8260
Description: 8260 MSV Low Level
Client: BBL Caribe / Arcadis PR
Date: February 14, 2017

General Information:

10 samples were analyzed for EPA 5030B/8260. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:

The samples were analyzed within the method required hold times with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):

All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:

All criteria were within method requirements with any exceptions noted below.

Internal Standards:

All internal standards were within QC limits with any exceptions noted below.

Surrogates:

All surrogates were within QC limits with any exceptions noted below.

Method Blank:

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

QC Batch: 72436

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 2048890008

M1: Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

- MS (Lab ID: 303415)
 - Styrene
- MSD (Lab ID: 303416)
 - Styrene

Additional Comments:

Analyte Comments:

QC Batch: 72436

C9: Common Laboratory Contaminant.

- DUP006 (Lab ID: 2048890007)
 - Acetone

REPORT OF LABORATORY ANALYSIS

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PROJECT NARRATIVE

Project: PUMA TERMINAL CW SAMPLING

Pace Project No.: 2048890

Method: EPA 5030B/8260

Description: 8260 MSV Low Level

Client: BBL Caribe / Arcadis PR

Date: February 14, 2017

Analyte Comments:

QC Batch: 72436

C9: Common Laboratory Contaminant.

- EB-011717 (Lab ID: 2048890002)
 - Acetone
- FB-011717 (Lab ID: 2048890009)
 - Acetone
- MW-110AB (Lab ID: 2048890003)
 - Acetone
- MW-110B2 (Lab ID: 2048890004)
 - Acetone
- MW-114A (Lab ID: 2048890006)
 - Acetone
- MW-63A (Lab ID: 2048890010)
 - Acetone
- MW-75B2 (Lab ID: 2048890008)
 - Acetone
- TB-011717 (Lab ID: 2048890001)
 - Acetone

This data package has been reviewed for quality and completeness and is approved for release.

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: PUMA TERMINAL CW SAMPLING

Pace Project No.: 2048890

Sample: TB-011717	Lab ID: 2048890001	Collected: 01/17/17 00:00	Received: 01/18/17 14:45	Matrix: Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8021 GCV BTEX, MTBE, GRO		Analytical Method: EPA 8015/8021						
Gasoline Range Organics	ND	ug/L	50.0	1		01/20/17 06:05		
Surrogates								
4-Bromofluorobenzene (S)	94	%	44-148	1		01/20/17 06:05	460-00-4	
8260 MSV Low Level		Analytical Method: EPA 5030B/8260						
Acetone	19.6	ug/L	4.0	1		01/19/17 14:18	67-64-1	C9
Benzene	ND	ug/L	0.50	1		01/19/17 14:18	71-43-2	
Bromodichloromethane	0.56	ug/L	0.50	1		01/19/17 14:18	75-27-4	
Bromoform	ND	ug/L	0.50	1		01/19/17 14:18	75-25-2	
Bromomethane	ND	ug/L	0.50	1		01/19/17 14:18	74-83-9	
2-Butanone (MEK)	ND	ug/L	2.0	1		01/19/17 14:18	78-93-3	
Carbon disulfide	ND	ug/L	1.0	1		01/19/17 14:18	75-15-0	
Carbon tetrachloride	ND	ug/L	0.50	1		01/19/17 14:18	56-23-5	
Chlorobenzene	ND	ug/L	0.50	1		01/19/17 14:18	108-90-7	
Chloroethane	ND	ug/L	0.50	1		01/19/17 14:18	75-00-3	
Chloroform	2.5	ug/L	0.50	1		01/19/17 14:18	67-66-3	
Chloromethane	ND	ug/L	0.50	1		01/19/17 14:18	74-87-3	
1,2-Dibromo-3-chloropropane	ND	ug/L	0.20	1		01/19/17 14:18	96-12-8	
Dibromochloromethane	ND	ug/L	0.50	1		01/19/17 14:18	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	1		01/19/17 14:18	106-93-4	
Dichlorodifluoromethane	ND	ug/L	1.0	1		01/19/17 14:18	75-71-8	
1,1-Dichloroethane	ND	ug/L	0.50	1		01/19/17 14:18	75-34-3	
1,2-Dichloroethane	ND	ug/L	0.50	1		01/19/17 14:18	107-06-2	
1,1-Dichloroethene	ND	ug/L	0.50	1		01/19/17 14:18	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	1		01/19/17 14:18	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	0.50	1		01/19/17 14:18	156-60-5	
1,2-Dichloropropane	ND	ug/L	0.50	1		01/19/17 14:18	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	0.50	1		01/19/17 14:18	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	0.50	1		01/19/17 14:18	10061-02-6	
Ethylbenzene	ND	ug/L	0.50	1		01/19/17 14:18	100-41-4	
2-Hexanone	ND	ug/L	1.0	1		01/19/17 14:18	591-78-6	
Isopropylbenzene (Cumene)	ND	ug/L	1.0	1		01/19/17 14:18	98-82-8	
Methyl acetate	ND	ug/L	2.0	1		01/19/17 14:18	79-20-9	
Methylene Chloride	ND	ug/L	0.50	1		01/19/17 14:18	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	1.0	1		01/19/17 14:18	108-10-1	
Methyl-tert-butyl ether	ND	ug/L	0.50	1		01/19/17 14:18	1634-04-4	
Styrene	ND	ug/L	1.0	1		01/19/17 14:18	100-42-5	
1,1,2,2-Tetrachloroethane	ND	ug/L	0.50	1		01/19/17 14:18	79-34-5	
Tetrachloroethene	ND	ug/L	0.50	1		01/19/17 14:18	127-18-4	
Toluene	ND	ug/L	0.50	1		01/19/17 14:18	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	0.50	1		01/19/17 14:18	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	0.50	1		01/19/17 14:18	79-00-5	
Trichloroethene	ND	ug/L	0.50	1		01/19/17 14:18	79-01-6	
Trichlorofluoromethane	ND	ug/L	0.50	1		01/19/17 14:18	75-69-4	
Vinyl chloride	ND	ug/L	0.50	1		01/19/17 14:18	75-01-4	
m&p-Xylene	ND	ug/L	2.0	1		01/19/17 14:18	179601-23-1	
o-Xylene	ND	ug/L	1.0	1		01/19/17 14:18	95-47-6	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: PUMA TERMINAL CW SAMPLING

Pace Project No.: 2048890

Sample: TB-011717	Lab ID: 2048890001	Collected: 01/17/17 00:00	Received: 01/18/17 14:45	Matrix: Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV Low Level		Analytical Method: EPA 5030B/8260						
Surrogates								
Dibromofluoromethane (S)	95	%.	72-126	1		01/19/17 14:18	1868-53-7	
4-Bromofluorobenzene (S)	100	%.	68-124	1		01/19/17 14:18	460-00-4	
Toluene-d8 (S)	108	%.	79-119	1		01/19/17 14:18	2037-26-5	
Sample: EB-011717		Lab ID: 2048890002		Collected: 01/17/17 09:46	Received: 01/18/17 14:45	Matrix: Water		
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8015M DRO/ORO Organics		Analytical Method: EPA 8015B Modified Preparation Method: EPA 3535						
Diesel Range Organic (C10-C28)	ND	mg/L	0.50	1	01/19/17 13:07	01/29/17 18:57		
Oil Range Organics (>C28-C40)	ND	mg/L	1.0	1	01/19/17 13:07	01/29/17 18:57		
Surrogates								
n-Pentacosane (S)	53	%.	16-137	1	01/19/17 13:07	01/29/17 18:57	629-99-2	
o-Terphenyl (S)	51	%.	10-121	1	01/19/17 13:07	01/29/17 18:57	84-15-1	
8021 GCV BTEX, MTBE, GRO		Analytical Method: EPA 8015/8021						
Gasoline Range Organics	ND	ug/L	50.0	1		01/20/17 08:17		
Surrogates								
4-Bromofluorobenzene (S)	93	%.	44-148	1		01/20/17 08:17	460-00-4	
6020 MET ICPMS		Analytical Method: EPA 6020 Preparation Method: EPA 3010						
Arsenic	ND	mg/L	0.0010	1	01/24/17 08:30	02/12/17 16:05	7440-38-2	
Chromium	ND	mg/L	0.0010	1	01/24/17 08:30	02/12/17 16:05	7440-47-3	
Lead	ND	mg/L	0.0010	1	01/24/17 08:30	02/12/17 16:05	7439-92-1	
Vanadium	ND	mg/L	0.0050	1	01/24/17 08:30	02/12/17 16:05	7440-62-2	
6020 MET ICPMS, Dissolved (LF)		Analytical Method: EPA 6020 Preparation Method: EPA 3005A						
Arsenic, Dissolved	ND	ug/L	1.0	1	01/24/17 09:53	02/12/17 19:10	7440-38-2	
Chromium, Dissolved	ND	ug/L	1.0	1	01/24/17 09:53	02/12/17 19:10	7440-47-3	
Lead, Dissolved	ND	ug/L	1.0	1	01/24/17 09:53	02/12/17 19:10	7439-92-1	
Vanadium, Dissolved	ND	ug/L	5.0	1	01/24/17 09:53	02/12/17 19:10	7440-62-2	
7470 Mercury		Analytical Method: EPA 7470 Preparation Method: EPA 7470						
Mercury	ND	ug/L	0.20	1	01/24/17 08:59	01/24/17 18:21	7439-97-6	
7470 Mercury, Dissolved (LF)		Analytical Method: EPA 7470 Preparation Method: EPA 7470						
Mercury, Dissolved	ND	ug/L	0.20	1	01/24/17 09:49	01/24/17 18:46	7439-97-6	
8270 MSSV PAH by SIM SEP		Analytical Method: EPA 8270 by SIM Preparation Method: EPA 3510						
Acenaphthene	ND	ug/L	0.10	1	01/21/17 12:15	01/30/17 22:05	83-32-9	
Acenaphthylene	ND	ug/L	0.10	1	01/21/17 12:15	01/30/17 22:05	208-96-8	
Anthracene	ND	ug/L	0.10	1	01/21/17 12:15	01/30/17 22:05	120-12-7	
Benzo(a)anthracene	ND	ug/L	0.10	1	01/21/17 12:15	01/30/17 22:05	56-55-3	
Benzo(a)pyrene	ND	ug/L	0.10	1	01/21/17 12:15	01/30/17 22:05	50-32-8	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: PUMA TERMINAL CW SAMPLING

Pace Project No.: 2048890

Sample: EB-011717	Lab ID: 2048890002	Collected: 01/17/17 09:46	Received: 01/18/17 14:45	Matrix: Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8270 MSSV PAH by SIM SEP		Analytical Method: EPA 8270 by SIM Preparation Method: EPA 3510						
Benzo(b)fluoranthene	ND	ug/L	0.10	1	01/21/17 12:15	01/30/17 22:05	205-99-2	
Benzo(g,h,i)perylene	ND	ug/L	0.10	1	01/21/17 12:15	01/30/17 22:05	191-24-2	
Benzo(k)fluoranthene	ND	ug/L	0.10	1	01/21/17 12:15	01/30/17 22:05	207-08-9	
Chrysene	ND	ug/L	0.10	1	01/21/17 12:15	01/30/17 22:05	218-01-9	
Dibenz(a,h)anthracene	ND	ug/L	0.10	1	01/21/17 12:15	01/30/17 22:05	53-70-3	
Fluoranthene	ND	ug/L	0.10	1	01/21/17 12:15	01/30/17 22:05	206-44-0	
Fluorene	ND	ug/L	0.10	1	01/21/17 12:15	01/30/17 22:05	86-73-7	
Indeno(1,2,3-cd)pyrene	ND	ug/L	0.10	1	01/21/17 12:15	01/30/17 22:05	193-39-5	
2-Methylnaphthalene	ND	ug/L	0.10	1	01/21/17 12:15	01/30/17 22:05	91-57-6	
Naphthalene	ND	ug/L	0.10	1	01/21/17 12:15	01/30/17 22:05	91-20-3	
Phenanthrene	ND	ug/L	0.10	1	01/21/17 12:15	01/30/17 22:05	85-01-8	
Pyrene	ND	ug/L	0.10	1	01/21/17 12:15	01/30/17 22:05	129-00-0	
Surrogates								
2-Fluorobiphenyl (S)	123	%	25-150	1	01/21/17 12:15	01/30/17 22:05	321-60-8	
Terphenyl-d14 (S)	123	%	25-150	1	01/21/17 12:15	01/30/17 22:05	1718-51-0	
8260 MSV Low Level		Analytical Method: EPA 5030B/8260						
Acetone	22.3	ug/L	4.0	1		01/19/17 14:37	67-64-1	C9
Benzene	ND	ug/L	0.50	1		01/19/17 14:37	71-43-2	
Bromodichloromethane	ND	ug/L	0.50	1		01/19/17 14:37	75-27-4	
Bromoform	ND	ug/L	0.50	1		01/19/17 14:37	75-25-2	
Bromomethane	ND	ug/L	0.50	1		01/19/17 14:37	74-83-9	
2-Butanone (MEK)	ND	ug/L	2.0	1		01/19/17 14:37	78-93-3	
Carbon disulfide	ND	ug/L	1.0	1		01/19/17 14:37	75-15-0	
Carbon tetrachloride	ND	ug/L	0.50	1		01/19/17 14:37	56-23-5	
Chlorobenzene	ND	ug/L	0.50	1		01/19/17 14:37	108-90-7	
Chloroethane	ND	ug/L	0.50	1		01/19/17 14:37	75-00-3	
Chloroform	2.1	ug/L	0.50	1		01/19/17 14:37	67-66-3	
Chloromethane	ND	ug/L	0.50	1		01/19/17 14:37	74-87-3	
1,2-Dibromo-3-chloropropane	ND	ug/L	0.20	1		01/19/17 14:37	96-12-8	
Dibromochloromethane	ND	ug/L	0.50	1		01/19/17 14:37	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	1		01/19/17 14:37	106-93-4	
Dichlorodifluoromethane	ND	ug/L	1.0	1		01/19/17 14:37	75-71-8	
1,1-Dichloroethane	ND	ug/L	0.50	1		01/19/17 14:37	75-34-3	
1,2-Dichloroethane	ND	ug/L	0.50	1		01/19/17 14:37	107-06-2	
1,1-Dichloroethene	ND	ug/L	0.50	1		01/19/17 14:37	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	1		01/19/17 14:37	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	0.50	1		01/19/17 14:37	156-60-5	
1,2-Dichloropropane	ND	ug/L	0.50	1		01/19/17 14:37	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	0.50	1		01/19/17 14:37	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	0.50	1		01/19/17 14:37	10061-02-6	
Ethylbenzene	ND	ug/L	0.50	1		01/19/17 14:37	100-41-4	
2-Hexanone	ND	ug/L	1.0	1		01/19/17 14:37	591-78-6	
Isopropylbenzene (Cumene)	ND	ug/L	1.0	1		01/19/17 14:37	98-82-8	
Methyl acetate	ND	ug/L	2.0	1		01/19/17 14:37	79-20-9	
Methylene Chloride	ND	ug/L	0.50	1		01/19/17 14:37	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	1.0	1		01/19/17 14:37	108-10-1	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: PUMA TERMINAL CW SAMPLING

Pace Project No.: 2048890

Sample: EB-011717		Lab ID: 2048890002		Collected: 01/17/17 09:46		Received: 01/18/17 14:45		Matrix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual	
8260 MSV Low Level		Analytical Method: EPA 5030B/8260							
Methyl-tert-butyl ether	ND	ug/L	0.50	1		01/19/17 14:37	1634-04-4		
Styrene	ND	ug/L	1.0	1		01/19/17 14:37	100-42-5		
1,1,2,2-Tetrachloroethane	ND	ug/L	0.50	1		01/19/17 14:37	79-34-5		
Tetrachloroethene	ND	ug/L	0.50	1		01/19/17 14:37	127-18-4		
Toluene	ND	ug/L	0.50	1		01/19/17 14:37	108-88-3		
1,1,1-Trichloroethane	ND	ug/L	0.50	1		01/19/17 14:37	71-55-6		
1,1,2-Trichloroethane	ND	ug/L	0.50	1		01/19/17 14:37	79-00-5		
Trichloroethene	ND	ug/L	0.50	1		01/19/17 14:37	79-01-6		
Trichlorofluoromethane	ND	ug/L	0.50	1		01/19/17 14:37	75-69-4		
Vinyl chloride	ND	ug/L	0.50	1		01/19/17 14:37	75-01-4		
m&p-Xylene	ND	ug/L	2.0	1		01/19/17 14:37	179601-23-1		
o-Xylene	ND	ug/L	1.0	1		01/19/17 14:37	95-47-6		
Surrogates									
Dibromofluoromethane (S)	96	%	72-126	1		01/19/17 14:37	1868-53-7		
4-Bromofluorobenzene (S)	100	%	68-124	1		01/19/17 14:37	460-00-4		
Toluene-d8 (S)	106	%	79-119	1		01/19/17 14:37	2037-26-5		

Sample: MW-110AB		Lab ID: 2048890003		Collected: 01/17/17 10:49		Received: 01/18/17 14:45		Matrix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual	
8015M DRO/ORO Organics		Analytical Method: EPA 8015B Modified Preparation Method: EPA 3535							
Diesel Range Organic (C10-C28)	ND	mg/L	0.50	1	01/19/17 13:07	01/29/17 19:28			
Oil Range Organics (>C28-C40)	ND	mg/L	1.0	1	01/19/17 13:07	01/29/17 19:28			
Surrogates									
n-Pentacosane (S)	52	%	16-137	1	01/19/17 13:07	01/29/17 19:28	629-99-2		
o-Terphenyl (S)	55	%	10-121	1	01/19/17 13:07	01/29/17 19:28	84-15-1		
8021 GCV BTEX, MTBE, GRO		Analytical Method: EPA 8015/8021							
Gasoline Range Organics	ND	ug/L	50.0	1		01/20/17 06:32			
Surrogates									
4-Bromofluorobenzene (S)	92	%	44-148	1		01/20/17 06:32	460-00-4		
6020 MET ICPMS		Analytical Method: EPA 6020 Preparation Method: EPA 3010							
Arsenic	0.0012	mg/L	0.0010	1	01/24/17 08:30	02/12/17 16:09	7440-38-2		
Chromium	0.0015	mg/L	0.0010	1	01/24/17 08:30	02/12/17 16:09	7440-47-3		
Lead	ND	mg/L	0.0010	1	01/24/17 08:30	02/12/17 16:09	7439-92-1		
Vanadium	0.20	mg/L	0.0050	1	01/24/17 08:30	02/12/17 16:09	7440-62-2		
6020 MET ICPMS, Dissolved (LF)		Analytical Method: EPA 6020 Preparation Method: EPA 3005A							
Arsenic, Dissolved	ND	ug/L	1.0	1	01/24/17 09:53	02/12/17 19:14	7440-38-2		
Chromium, Dissolved	ND	ug/L	1.0	1	01/24/17 09:53	02/12/17 19:14	7440-47-3		
Lead, Dissolved	ND	ug/L	1.0	1	01/24/17 09:53	02/12/17 19:14	7439-92-1		
Vanadium, Dissolved	134	ug/L	5.0	1	01/24/17 09:53	02/12/17 19:14	7440-62-2		

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ANALYTICAL RESULTS

Project: PUMA TERMINAL CW SAMPLING

Pace Project No.: 2048890

Sample: MW-110AB	Lab ID: 2048890003	Collected: 01/17/17 10:49	Received: 01/18/17 14:45	Matrix: Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
7470 Mercury Analytical Method: EPA 7470 Preparation Method: EPA 7470								
Mercury	ND	ug/L	0.20	1	01/24/17 08:59	01/24/17 18:23	7439-97-6	
7470 Mercury, Dissolved (LF) Analytical Method: EPA 7470 Preparation Method: EPA 7470								
Mercury, Dissolved	ND	ug/L	0.20	1	01/24/17 09:49	01/24/17 18:48	7439-97-6	
8270 MSSV PAH by SIM SEP Analytical Method: EPA 8270 by SIM Preparation Method: EPA 3510								
Acenaphthene	0.45	ug/L	0.10	1	01/21/17 12:15	01/30/17 22:25	83-32-9	
Acenaphthylene	ND	ug/L	0.10	1	01/21/17 12:15	01/30/17 22:25	208-96-8	
Anthracene	0.23	ug/L	0.10	1	01/21/17 12:15	01/30/17 22:25	120-12-7	
Benzo(a)anthracene	ND	ug/L	0.10	1	01/21/17 12:15	01/30/17 22:25	56-55-3	
Benzo(a)pyrene	ND	ug/L	0.10	1	01/21/17 12:15	01/30/17 22:25	50-32-8	
Benzo(b)fluoranthene	ND	ug/L	0.10	1	01/21/17 12:15	01/30/17 22:25	205-99-2	
Benzo(g,h,i)perylene	ND	ug/L	0.10	1	01/21/17 12:15	01/30/17 22:25	191-24-2	
Benzo(k)fluoranthene	ND	ug/L	0.10	1	01/21/17 12:15	01/30/17 22:25	207-08-9	
Chrysene	ND	ug/L	0.10	1	01/21/17 12:15	01/30/17 22:25	218-01-9	
Dibenz(a,h)anthracene	ND	ug/L	0.10	1	01/21/17 12:15	01/30/17 22:25	53-70-3	
Fluoranthene	ND	ug/L	0.10	1	01/21/17 12:15	01/30/17 22:25	206-44-0	
Fluorene	ND	ug/L	0.10	1	01/21/17 12:15	01/30/17 22:25	86-73-7	
Indeno(1,2,3-cd)pyrene	ND	ug/L	0.10	1	01/21/17 12:15	01/30/17 22:25	193-39-5	
2-Methylnaphthalene	ND	ug/L	0.10	1	01/21/17 12:15	01/30/17 22:25	91-57-6	
Naphthalene	ND	ug/L	0.10	1	01/21/17 12:15	01/30/17 22:25	91-20-3	
Phenanthrene	ND	ug/L	0.10	1	01/21/17 12:15	01/30/17 22:25	85-01-8	
Pyrene	ND	ug/L	0.10	1	01/21/17 12:15	01/30/17 22:25	129-00-0	
Surrogates								
2-Fluorobiphenyl (S)	121	%.	25-150	1	01/21/17 12:15	01/30/17 22:25	321-60-8	
Terphenyl-d14 (S)	114	%.	25-150	1	01/21/17 12:15	01/30/17 22:25	1718-51-0	
8260 MSV Low Level Analytical Method: EPA 5030B/8260								
Acetone	12.0	ug/L	4.0	1		01/19/17 14:55	67-64-1	C9
Benzene	ND	ug/L	0.50	1		01/19/17 14:55	71-43-2	
Bromodichloromethane	ND	ug/L	0.50	1		01/19/17 14:55	75-27-4	
Bromoform	ND	ug/L	0.50	1		01/19/17 14:55	75-25-2	
Bromomethane	ND	ug/L	0.50	1		01/19/17 14:55	74-83-9	
2-Butanone (MEK)	ND	ug/L	2.0	1		01/19/17 14:55	78-93-3	
Carbon disulfide	ND	ug/L	1.0	1		01/19/17 14:55	75-15-0	
Carbon tetrachloride	ND	ug/L	0.50	1		01/19/17 14:55	56-23-5	
Chlorobenzene	ND	ug/L	0.50	1		01/19/17 14:55	108-90-7	
Chloroethane	ND	ug/L	0.50	1		01/19/17 14:55	75-00-3	
Chloroform	ND	ug/L	0.50	1		01/19/17 14:55	67-66-3	
Chloromethane	ND	ug/L	0.50	1		01/19/17 14:55	74-87-3	
1,2-Dibromo-3-chloropropane	ND	ug/L	0.20	1		01/19/17 14:55	96-12-8	
Dibromochloromethane	ND	ug/L	0.50	1		01/19/17 14:55	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	1		01/19/17 14:55	106-93-4	
Dichlorodifluoromethane	ND	ug/L	1.0	1		01/19/17 14:55	75-71-8	
1,1-Dichloroethane	ND	ug/L	0.50	1		01/19/17 14:55	75-34-3	
1,2-Dichloroethane	ND	ug/L	0.50	1		01/19/17 14:55	107-06-2	

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ANALYTICAL RESULTS

Project: PUMA TERMINAL CW SAMPLING

Pace Project No.: 2048890

Sample: MW-110AB		Lab ID: 2048890003		Collected: 01/17/17 10:49	Received: 01/18/17 14:45	Matrix: Water		
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV Low Level		Analytical Method: EPA 5030B/8260						
1,1-Dichloroethene	ND	ug/L	0.50	1		01/19/17 14:55	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	1		01/19/17 14:55	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	0.50	1		01/19/17 14:55	156-60-5	
1,2-Dichloropropane	ND	ug/L	0.50	1		01/19/17 14:55	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	0.50	1		01/19/17 14:55	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	0.50	1		01/19/17 14:55	10061-02-6	
Ethylbenzene	ND	ug/L	0.50	1		01/19/17 14:55	100-41-4	
2-Hexanone	ND	ug/L	1.0	1		01/19/17 14:55	591-78-6	
Isopropylbenzene (Cumene)	ND	ug/L	1.0	1		01/19/17 14:55	98-82-8	
Methyl acetate	ND	ug/L	2.0	1		01/19/17 14:55	79-20-9	
Methylene Chloride	ND	ug/L	0.50	1		01/19/17 14:55	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	1.0	1		01/19/17 14:55	108-10-1	
Methyl-tert-butyl ether	ND	ug/L	0.50	1		01/19/17 14:55	1634-04-4	
Styrene	ND	ug/L	1.0	1		01/19/17 14:55	100-42-5	
1,1,2,2-Tetrachloroethane	ND	ug/L	0.50	1		01/19/17 14:55	79-34-5	
Tetrachloroethene	ND	ug/L	0.50	1		01/19/17 14:55	127-18-4	
Toluene	ND	ug/L	0.50	1		01/19/17 14:55	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	0.50	1		01/19/17 14:55	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	0.50	1		01/19/17 14:55	79-00-5	
Trichloroethene	ND	ug/L	0.50	1		01/19/17 14:55	79-01-6	
Trichlorofluoromethane	ND	ug/L	0.50	1		01/19/17 14:55	75-69-4	
Vinyl chloride	ND	ug/L	0.50	1		01/19/17 14:55	75-01-4	
m&p-Xylene	ND	ug/L	2.0	1		01/19/17 14:55	179601-23-1	
o-Xylene	ND	ug/L	1.0	1		01/19/17 14:55	95-47-6	
Surrogates								
Dibromofluoromethane (S)	95	%	72-126	1		01/19/17 14:55	1868-53-7	
4-Bromofluorobenzene (S)	100	%	68-124	1		01/19/17 14:55	460-00-4	
Toluene-d8 (S)	107	%	79-119	1		01/19/17 14:55	2037-26-5	

Sample: MW-110B2		Lab ID: 2048890004		Collected: 01/17/17 11:38	Received: 01/18/17 14:45	Matrix: Water		
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8015M DRO/ORO Organics		Analytical Method: EPA 8015B Modified Preparation Method: EPA 3535						
Diesel Range Organic (C10-C28)	ND	mg/L	0.50	1	01/19/17 13:07	01/29/17 19:59		
Oil Range Organics (>C28-C40)	ND	mg/L	1.0	1	01/19/17 13:07	01/29/17 19:59		
Surrogates								
n-Pentacosane (S)	44	%	16-137	1	01/19/17 13:07	01/29/17 19:59	629-99-2	
o-Terphenyl (S)	50	%	10-121	1	01/19/17 13:07	01/29/17 19:59	84-15-1	
8021 GCV BTEX, MTBE, GRO		Analytical Method: EPA 8015/8021						
Gasoline Range Organics	ND	ug/L	50.0	1		01/20/17 06:58		
Surrogates								
4-Bromofluorobenzene (S)	92	%	44-148	1		01/20/17 06:58	460-00-4	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: PUMA TERMINAL CW SAMPLING

Project No.: 2048890

Sample: MW-110B2	Lab ID: 2048890004	Collected: 01/17/17 11:38	Received: 01/18/17 14:45	Matrix: Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
6020 MET ICPMS Analytical Method: EPA 6020 Preparation Method: EPA 3010								
Arsenic	ND	mg/L	0.0010	1	01/24/17 08:30	02/12/17 16:13	7440-38-2	
Chromium	ND	mg/L	0.0010	1	01/24/17 08:30	02/12/17 16:13	7440-47-3	
Lead	ND	mg/L	0.0010	1	01/24/17 08:30	02/12/17 16:13	7439-92-1	
Vanadium	ND	mg/L	0.0050	1	01/24/17 08:30	02/12/17 16:13	7440-62-2	
6020 MET ICPMS, Dissolved (LF) Analytical Method: EPA 6020 Preparation Method: EPA 3005A								
Arsenic, Dissolved	ND	ug/L	1.0	1	01/24/17 09:53	02/12/17 19:18	7440-38-2	
Chromium, Dissolved	ND	ug/L	1.0	1	01/24/17 09:53	02/12/17 19:18	7440-47-3	
Lead, Dissolved	ND	ug/L	1.0	1	01/24/17 09:53	02/12/17 19:18	7439-92-1	
Vanadium, Dissolved	ND	ug/L	5.0	1	01/24/17 09:53	02/12/17 19:18	7440-62-2	
7470 Mercury Analytical Method: EPA 7470 Preparation Method: EPA 7470								
Mercury	ND	ug/L	0.20	1	01/24/17 08:59	01/24/17 18:30	7439-97-6	
7470 Mercury, Dissolved (LF) Analytical Method: EPA 7470 Preparation Method: EPA 7470								
Mercury, Dissolved	ND	ug/L	0.20	1	01/24/17 09:49	01/24/17 18:50	7439-97-6	
8270 MSSV PAH by SIM SEP Analytical Method: EPA 8270 by SIM Preparation Method: EPA 3510								
Acenaphthene	ND	ug/L	0.10	1	01/21/17 12:15	01/30/17 22:45	83-32-9	
Acenaphthylene	ND	ug/L	0.10	1	01/21/17 12:15	01/30/17 22:45	208-96-8	
Anthracene	ND	ug/L	0.10	1	01/21/17 12:15	01/30/17 22:45	120-12-7	
Benzo(a)anthracene	ND	ug/L	0.10	1	01/21/17 12:15	01/30/17 22:45	56-55-3	
Benzo(a)pyrene	ND	ug/L	0.10	1	01/21/17 12:15	01/30/17 22:45	50-32-8	
Benzo(b)fluoranthene	ND	ug/L	0.10	1	01/21/17 12:15	01/30/17 22:45	205-99-2	
Benzo(g,h,i)perylene	ND	ug/L	0.10	1	01/21/17 12:15	01/30/17 22:45	191-24-2	
Benzo(k)fluoranthene	ND	ug/L	0.10	1	01/21/17 12:15	01/30/17 22:45	207-08-9	
Chrysene	ND	ug/L	0.10	1	01/21/17 12:15	01/30/17 22:45	218-01-9	
Dibenz(a,h)anthracene	ND	ug/L	0.10	1	01/21/17 12:15	01/30/17 22:45	53-70-3	
Fluoranthene	ND	ug/L	0.10	1	01/21/17 12:15	01/30/17 22:45	206-44-0	
Fluorene	ND	ug/L	0.10	1	01/21/17 12:15	01/30/17 22:45	86-73-7	
Indeno(1,2,3-cd)pyrene	ND	ug/L	0.10	1	01/21/17 12:15	01/30/17 22:45	193-39-5	
2-Methylnaphthalene	ND	ug/L	0.10	1	01/21/17 12:15	01/30/17 22:45	91-57-6	
Naphthalene	ND	ug/L	0.10	1	01/21/17 12:15	01/30/17 22:45	91-20-3	
Phenanthrene	ND	ug/L	0.10	1	01/21/17 12:15	01/30/17 22:45	85-01-8	
Pyrene	ND	ug/L	0.10	1	01/21/17 12:15	01/30/17 22:45	129-00-0	
Surrogates								
2-Fluorobiphenyl (S)	117	%	25-150	1	01/21/17 12:15	01/30/17 22:45	321-60-8	
Terphenyl-d14 (S)	123	%	25-150	1	01/21/17 12:15	01/30/17 22:45	1718-51-0	
8260 MSV Low Level Analytical Method: EPA 5030B/8260								
Acetone	4.3	ug/L	4.0	1		01/19/17 15:13	67-64-1	C9
Benzene	ND	ug/L	0.50	1		01/19/17 15:13	71-43-2	
Bromodichloromethane	ND	ug/L	0.50	1		01/19/17 15:13	75-27-4	
Bromoform	ND	ug/L	0.50	1		01/19/17 15:13	75-25-2	
Bromomethane	ND	ug/L	0.50	1		01/19/17 15:13	74-83-9	
2-Butanone (MEK)	ND	ug/L	2.0	1		01/19/17 15:13	78-93-3	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: PUMA TERMINAL CW SAMPLING

Pace Project No.: 2048890

Sample: MW-110B2	Lab ID: 2048890004	Collected: 01/17/17 11:38	Received: 01/18/17 14:45	Matrix: Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV Low Level	Analytical Method: EPA 5030B/8260							
Carbon disulfide	ND	ug/L	1.0	1		01/19/17 15:13	75-15-0	
Carbon tetrachloride	ND	ug/L	0.50	1		01/19/17 15:13	56-23-5	
Chlorobenzene	ND	ug/L	0.50	1		01/19/17 15:13	108-90-7	
Chloroethane	ND	ug/L	0.50	1		01/19/17 15:13	75-00-3	
Chloroform	ND	ug/L	0.50	1		01/19/17 15:13	67-66-3	
Chloromethane	ND	ug/L	0.50	1		01/19/17 15:13	74-87-3	
1,2-Dibromo-3-chloropropane	ND	ug/L	0.20	1		01/19/17 15:13	96-12-8	
Dibromochloromethane	ND	ug/L	0.50	1		01/19/17 15:13	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	1		01/19/17 15:13	106-93-4	
Dichlorodifluoromethane	ND	ug/L	1.0	1		01/19/17 15:13	75-71-8	
1,1-Dichloroethane	ND	ug/L	0.50	1		01/19/17 15:13	75-34-3	
1,2-Dichloroethane	ND	ug/L	0.50	1		01/19/17 15:13	107-06-2	
1,1-Dichloroethene	ND	ug/L	0.50	1		01/19/17 15:13	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	1		01/19/17 15:13	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	0.50	1		01/19/17 15:13	156-60-5	
1,2-Dichloropropane	ND	ug/L	0.50	1		01/19/17 15:13	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	0.50	1		01/19/17 15:13	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	0.50	1		01/19/17 15:13	10061-02-6	
Ethylbenzene	ND	ug/L	0.50	1		01/19/17 15:13	100-41-4	
2-Hexanone	ND	ug/L	1.0	1		01/19/17 15:13	591-78-6	
Isopropylbenzene (Cumene)	ND	ug/L	1.0	1		01/19/17 15:13	98-82-8	
Methyl acetate	ND	ug/L	2.0	1		01/19/17 15:13	79-20-9	
Methylene Chloride	ND	ug/L	0.50	1		01/19/17 15:13	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	1.0	1		01/19/17 15:13	108-10-1	
Methyl-tert-butyl ether	ND	ug/L	0.50	1		01/19/17 15:13	1634-04-4	
Styrene	ND	ug/L	1.0	1		01/19/17 15:13	100-42-5	
1,1,1,2-Tetrachloroethane	ND	ug/L	0.50	1		01/19/17 15:13	79-34-5	
Tetrachloroethene	ND	ug/L	0.50	1		01/19/17 15:13	127-18-4	
Toluene	ND	ug/L	0.50	1		01/19/17 15:13	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	0.50	1		01/19/17 15:13	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	0.50	1		01/19/17 15:13	79-00-5	
Trichloroethene	ND	ug/L	0.50	1		01/19/17 15:13	79-01-6	
Trichlorofluoromethane	ND	ug/L	0.50	1		01/19/17 15:13	75-69-4	
Vinyl chloride	ND	ug/L	0.50	1		01/19/17 15:13	75-01-4	
m&p-Xylene	ND	ug/L	2.0	1		01/19/17 15:13	179601-23-1	
o-Xylene	ND	ug/L	1.0	1		01/19/17 15:13	95-47-6	
Surrogates								
Dibromofluoromethane (S)	93	%	72-126	1		01/19/17 15:13	1868-53-7	
4-Bromofluorobenzene (S)	100	%	68-124	1		01/19/17 15:13	460-00-4	
Toluene-d8 (S)	106	%	79-119	1		01/19/17 15:13	2037-26-5	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: PUMA TERMINAL CW SAMPLING

Pace Project No.: 2048890

Sample: MW-111A	Lab ID: 2048890005	Collected: 01/17/17 12:36	Received: 01/18/17 14:45	Matrix: Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8015M DRO/ORO Organics								
Analytical Method: EPA 8015B Modified Preparation Method: EPA 3535								
Diesel Range Organic (C10-C28)	ND	mg/L	0.50	1	01/19/17 13:07	01/29/17 20:30		
Oil Range Organics (>C28-C40)	ND	mg/L	1.0	1	01/19/17 13:07	01/29/17 20:30		
Surrogates								
n-Pentacosane (S)	79	%.	16-137	1	01/19/17 13:07	01/29/17 20:30	629-99-2	
o-Terphenyl (S)	66	%.	10-121	1	01/19/17 13:07	01/29/17 20:30	84-15-1	
8021 GCV BTEX, MTBE, GRO								
Analytical Method: EPA 8015/8021								
Gasoline Range Organics	ND	ug/L	50.0	1		01/20/17 07:24		
Surrogates								
4-Bromofluorobenzene (S)	94	%.	44-148	1		01/20/17 07:24	460-00-4	
6020 MET ICPMS								
Analytical Method: EPA 6020 Preparation Method: EPA 3010								
Arsenic	0.0039	mg/L	0.0010	1	01/24/17 08:30	02/12/17 16:17	7440-38-2	
Chromium	0.0047	mg/L	0.0010	1	01/24/17 08:30	02/12/17 16:17	7440-47-3	
Lead	0.0017	mg/L	0.0010	1	01/24/17 08:30	02/12/17 16:17	7439-92-1	
Vanadium	ND	mg/L	0.0050	1	01/24/17 08:30	02/12/17 16:17	7440-62-2	
6020 MET ICPMS, Dissolved (LF)								
Analytical Method: EPA 6020 Preparation Method: EPA 3005A								
Arsenic, Dissolved	1.5	ug/L	1.0	1	01/24/17 09:53	02/12/17 19:22	7440-38-2	
Chromium, Dissolved	ND	ug/L	1.0	1	01/24/17 09:53	02/12/17 19:22	7440-47-3	
Lead, Dissolved	ND	ug/L	1.0	1	01/24/17 09:53	02/12/17 19:22	7439-92-1	
Vanadium, Dissolved	ND	ug/L	5.0	1	01/24/17 09:53	02/12/17 19:22	7440-62-2	
7470 Mercury								
Analytical Method: EPA 7470 Preparation Method: EPA 7470								
Mercury	ND	ug/L	0.20	1	01/24/17 08:59	01/24/17 18:32	7439-97-6	
7470 Mercury, Dissolved (LF)								
Analytical Method: EPA 7470 Preparation Method: EPA 7470								
Mercury, Dissolved	ND	ug/L	0.20	1	01/24/17 09:49	01/24/17 18:57	7439-97-6	
8270 MSSV PAH by SIM SEP								
Analytical Method: EPA 8270 by SIM Preparation Method: EPA 3510								
Acenaphthene	ND	ug/L	0.10	1	01/21/17 12:15	01/30/17 23:05	83-32-9	
Acenaphthylene	ND	ug/L	0.10	1	01/21/17 12:15	01/30/17 23:05	208-96-8	
Anthracene	ND	ug/L	0.10	1	01/21/17 12:15	01/30/17 23:05	120-12-7	
Benzo(a)anthracene	ND	ug/L	0.10	1	01/21/17 12:15	01/30/17 23:05	56-55-3	
Benzo(a)pyrene	ND	ug/L	0.10	1	01/21/17 12:15	01/30/17 23:05	50-32-8	
Benzo(b)fluoranthene	ND	ug/L	0.10	1	01/21/17 12:15	01/30/17 23:05	205-99-2	
Benzo(g,h,i)perylene	ND	ug/L	0.10	1	01/21/17 12:15	01/30/17 23:05	191-24-2	
Benzo(k)fluoranthene	ND	ug/L	0.10	1	01/21/17 12:15	01/30/17 23:05	207-08-9	
Chrysene	ND	ug/L	0.10	1	01/21/17 12:15	01/30/17 23:05	218-01-9	
Dibenz(a,h)anthracene	ND	ug/L	0.10	1	01/21/17 12:15	01/30/17 23:05	53-70-3	
Fluoranthene	ND	ug/L	0.10	1	01/21/17 12:15	01/30/17 23:05	206-44-0	
Fluorene	ND	ug/L	0.10	1	01/21/17 12:15	01/30/17 23:05	86-73-7	
Indeno(1,2,3-cd)pyrene	ND	ug/L	0.10	1	01/21/17 12:15	01/30/17 23:05	193-39-5	
2-Methylnaphthalene	ND	ug/L	0.10	1	01/21/17 12:15	01/30/17 23:05	91-57-6	
Naphthalene	ND	ug/L	0.10	1	01/21/17 12:15	01/30/17 23:05	91-20-3	
Phenanthrene	ND	ug/L	0.10	1	01/21/17 12:15	01/30/17 23:05	85-01-8	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: PUMA TERMINAL CW SAMPLING

Pace Project No.: 2048890

Sample: MW-111A	Lab ID: 2048890005	Collected: 01/17/17 12:36	Received: 01/18/17 14:45	Matrix: Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8270 MSSV PAH by SIM SEP		Analytical Method: EPA 8270 by SIM Preparation Method: EPA 3510						
Pyrene	ND	ug/L	0.10	1	01/21/17 12:15	01/30/17 23:05	129-00-0	
Surrogates								
2-Fluorobiphenyl (S)	121	%.	25-150	1	01/21/17 12:15	01/30/17 23:05	321-60-8	
Terphenyl-d14 (S)	109	%.	25-150	1	01/21/17 12:15	01/30/17 23:05	1718-51-0	
8260 MSV Low Level		Analytical Method: EPA 5030B/8260						
Acetone	ND	ug/L	4.0	1		01/19/17 15:31	67-64-1	
Benzene	ND	ug/L	0.50	1		01/19/17 15:31	71-43-2	
Bromodichloromethane	ND	ug/L	0.50	1		01/19/17 15:31	75-27-4	
Bromoform	ND	ug/L	0.50	1		01/19/17 15:31	75-25-2	
Bromomethane	ND	ug/L	0.50	1		01/19/17 15:31	74-83-9	
2-Butanone (MEK)	ND	ug/L	2.0	1		01/19/17 15:31	78-93-3	
Carbon disulfide	ND	ug/L	1.0	1		01/19/17 15:31	75-15-0	
Carbon tetrachloride	ND	ug/L	0.50	1		01/19/17 15:31	56-23-5	
Chlorobenzene	ND	ug/L	0.50	1		01/19/17 15:31	108-90-7	
Chloroethane	ND	ug/L	0.50	1		01/19/17 15:31	75-00-3	
Chloroform	ND	ug/L	0.50	1		01/19/17 15:31	67-66-3	
Chloromethane	ND	ug/L	0.50	1		01/19/17 15:31	74-87-3	
1,2-Dibromo-3-chloropropane	ND	ug/L	0.20	1		01/19/17 15:31	96-12-8	
Dibromochloromethane	ND	ug/L	0.50	1		01/19/17 15:31	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	1		01/19/17 15:31	106-93-4	
Dichlorodifluoromethane	ND	ug/L	1.0	1		01/19/17 15:31	75-71-8	
1,1-Dichloroethane	ND	ug/L	0.50	1		01/19/17 15:31	75-34-3	
1,2-Dichloroethane	ND	ug/L	0.50	1		01/19/17 15:31	107-06-2	
1,1-Dichloroethene	ND	ug/L	0.50	1		01/19/17 15:31	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	1		01/19/17 15:31	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	0.50	1		01/19/17 15:31	156-60-5	
1,2-Dichloropropane	ND	ug/L	0.50	1		01/19/17 15:31	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	0.50	1		01/19/17 15:31	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	0.50	1		01/19/17 15:31	10061-02-6	
Ethylbenzene	ND	ug/L	0.50	1		01/19/17 15:31	100-41-4	
2-Hexanone	ND	ug/L	1.0	1		01/19/17 15:31	591-78-6	
Isopropylbenzene (Cumene)	ND	ug/L	1.0	1		01/19/17 15:31	98-82-8	
Methyl acetate	ND	ug/L	2.0	1		01/19/17 15:31	79-20-9	
Methylene Chloride	ND	ug/L	0.50	1		01/19/17 15:31	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	1.0	1		01/19/17 15:31	108-10-1	
Methyl-tert-butyl ether	ND	ug/L	0.50	1		01/19/17 15:31	1634-04-4	
Styrene	ND	ug/L	1.0	1		01/19/17 15:31	100-42-5	
1,1,2,2-Tetrachloroethane	ND	ug/L	0.50	1		01/19/17 15:31	79-34-5	
Tetrachloroethene	ND	ug/L	0.50	1		01/19/17 15:31	127-18-4	
Toluene	ND	ug/L	0.50	1		01/19/17 15:31	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	0.50	1		01/19/17 15:31	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	0.50	1		01/19/17 15:31	79-00-5	
Trichloroethene	ND	ug/L	0.50	1		01/19/17 15:31	79-01-6	
Trichlorofluoromethane	ND	ug/L	0.50	1		01/19/17 15:31	75-69-4	
Vinyl chloride	ND	ug/L	0.50	1		01/19/17 15:31	75-01-4	
m&p-Xylene	ND	ug/L	2.0	1		01/19/17 15:31	179601-23-1	

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ANALYTICAL RESULTS

Project: PUMA TERMINAL CW SAMPLING
Pace Project No.: 2048890

Sample: MW-111A		Lab ID: 2048890005		Collected: 01/17/17 12:36		Received: 01/18/17 14:45		Matrix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual	
8260 MSV Low Level		Analytical Method: EPA 5030B/8260							
o-Xylene	ND	ug/L	1.0	1		01/19/17 15:31	95-47-6		
Surrogates									
Dibromofluoromethane (S)	96	%.	72-126	1		01/19/17 15:31	1868-53-7		
4-Bromofluorobenzene (S)	100	%.	68-124	1		01/19/17 15:31	460-00-4		
Toluene-d8 (S)	105	%.	79-119	1		01/19/17 15:31	2037-26-5		
Sample: MW-114A		Lab ID: 2048890006		Collected: 01/17/17 16:21		Received: 01/18/17 14:45		Matrix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual	
8015M DRO/ORO Organics		Analytical Method: EPA 8015B Modified Preparation Method: EPA 3535							
Diesel Range Organic (C10-C28)	ND	mg/L	0.50	1	01/19/17 13:07	01/29/17 21:00			
Oil Range Organics (>C28-C40)	ND	mg/L	1.0	1	01/19/17 13:07	01/29/17 21:00			
Surrogates									
n-Pentacosane (S)	17	%.	16-137	1	01/19/17 13:07	01/29/17 21:00	629-99-2		
o-Terphenyl (S)	50	%.	10-121	1	01/19/17 13:07	01/29/17 21:00	84-15-1		
8021 GCV BTEX, MTBE, GRO		Analytical Method: EPA 8015/8021							
Gasoline Range Organics	ND	ug/L	50.0	1		01/20/17 07:51			
Surrogates									
4-Bromofluorobenzene (S)	92	%.	44-148	1		01/20/17 07:51	460-00-4		
6020 MET ICPMS		Analytical Method: EPA 6020 Preparation Method: EPA 3010							
Arsenic	0.0051	mg/L	0.0010	1	01/24/17 08:30	02/12/17 16:21	7440-38-2		
Chromium	0.024	mg/L	0.0010	1	01/24/17 08:30	02/12/17 16:21	7440-47-3		
Lead	0.012	mg/L	0.0010	1	01/24/17 08:30	02/12/17 16:21	7439-92-1		
Vanadium	0.041	mg/L	0.0050	1	01/24/17 08:30	02/12/17 16:21	7440-62-2		
6020 MET ICPMS, Dissolved (LF)		Analytical Method: EPA 6020 Preparation Method: EPA 3005A							
Arsenic, Dissolved	ND	ug/L	1.0	1	01/24/17 09:53	02/12/17 19:26	7440-38-2		
Chromium, Dissolved	ND	ug/L	1.0	1	01/24/17 09:53	02/12/17 19:26	7440-47-3		
Lead, Dissolved	ND	ug/L	1.0	1	01/24/17 09:53	02/12/17 19:26	7439-92-1		
Vanadium, Dissolved	ND	ug/L	5.0	1	01/24/17 09:53	02/12/17 19:26	7440-62-2		
7470 Mercury		Analytical Method: EPA 7470 Preparation Method: EPA 7470							
Mercury	ND	ug/L	0.20	1	01/24/17 08:59	01/24/17 18:34	7439-97-6		
7470 Mercury, Dissolved (LF)		Analytical Method: EPA 7470 Preparation Method: EPA 7470							
Mercury, Dissolved	ND	ug/L	0.20	1	01/24/17 09:49	01/24/17 18:59	7439-97-6		
8270 MSSV PAH by SIM SEP		Analytical Method: EPA 8270 by SIM Preparation Method: EPA 3510							
Acenaphthene	ND	ug/L	0.10	1	01/21/17 12:15	01/30/17 23:25	83-32-9		
Acenaphthylene	ND	ug/L	0.10	1	01/21/17 12:15	01/30/17 23:25	208-96-8		
Anthracene	ND	ug/L	0.10	1	01/21/17 12:15	01/30/17 23:25	120-12-7		
Benzo(a)anthracene	ND	ug/L	0.10	1	01/21/17 12:15	01/30/17 23:25	56-55-3		

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: PUMA TERMINAL CW SAMPLING

Pace Project No.: 2048890

Sample: MW-114A	Lab ID: 2048890006	Collected: 01/17/17 16:21	Received: 01/18/17 14:45	Matrix: Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8270 MSSV PAH by SIM SEP		Analytical Method: EPA 8270 by SIM Preparation Method: EPA 3510						
Benzo(a)pyrene	ND	ug/L	0.10	1	01/21/17 12:15	01/30/17 23:25	50-32-8	
Benzo(b)fluoranthene	ND	ug/L	0.10	1	01/21/17 12:15	01/30/17 23:25	205-99-2	
Benzo(g,h,i)perylene	ND	ug/L	0.10	1	01/21/17 12:15	01/30/17 23:25	191-24-2	
Benzo(k)fluoranthene	ND	ug/L	0.10	1	01/21/17 12:15	01/30/17 23:25	207-08-9	
Chrysene	ND	ug/L	0.10	1	01/21/17 12:15	01/30/17 23:25	218-01-9	
Dibenz(a,h)anthracene	ND	ug/L	0.10	1	01/21/17 12:15	01/30/17 23:25	53-70-3	
Fluoranthene	ND	ug/L	0.10	1	01/21/17 12:15	01/30/17 23:25	206-44-0	
Fluorene	ND	ug/L	0.10	1	01/21/17 12:15	01/30/17 23:25	86-73-7	
Indeno(1,2,3-cd)pyrene	ND	ug/L	0.10	1	01/21/17 12:15	01/30/17 23:25	193-39-5	
2-Methylnaphthalene	ND	ug/L	0.10	1	01/21/17 12:15	01/30/17 23:25	91-57-6	
Naphthalene	ND	ug/L	0.10	1	01/21/17 12:15	01/30/17 23:25	91-20-3	
Phenanthrene	ND	ug/L	0.10	1	01/21/17 12:15	01/30/17 23:25	85-01-8	
Pyrene	ND	ug/L	0.10	1	01/21/17 12:15	01/30/17 23:25	129-00-0	
Surrogates								
2-Fluorobiphenyl (S)	106	%.	25-150	1	01/21/17 12:15	01/30/17 23:25	321-60-8	
Terphenyl-d14 (S)	107	%.	25-150	1	01/21/17 12:15	01/30/17 23:25	1718-51-0	
8260 MSV Low Level		Analytical Method: EPA 5030B/8260						
Acetone	ND	ug/L	4.0	1		01/19/17 15:49	67-64-1	C9
Benzene	ND	ug/L	0.50	1		01/19/17 15:49	71-43-2	
Bromodichloromethane	ND	ug/L	0.50	1		01/19/17 15:49	75-27-4	
Bromoform	ND	ug/L	0.50	1		01/19/17 15:49	75-25-2	
Bromomethane	ND	ug/L	0.50	1		01/19/17 15:49	74-83-9	
2-Butanone (MEK)	ND	ug/L	2.0	1		01/19/17 15:49	78-93-3	
Carbon disulfide	ND	ug/L	1.0	1		01/19/17 15:49	75-15-0	
Carbon tetrachloride	ND	ug/L	0.50	1		01/19/17 15:49	56-23-5	
Chlorobenzene	ND	ug/L	0.50	1		01/19/17 15:49	108-90-7	
Chloroethane	ND	ug/L	0.50	1		01/19/17 15:49	75-00-3	
Chloroform	ND	ug/L	0.50	1		01/19/17 15:49	67-66-3	
Chloromethane	ND	ug/L	0.50	1		01/19/17 15:49	74-87-3	
1,2-Dibromo-3-chloropropane	ND	ug/L	0.20	1		01/19/17 15:49	96-12-8	
Dibromochloromethane	ND	ug/L	0.50	1		01/19/17 15:49	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	1		01/19/17 15:49	106-93-4	
Dichlorodifluoromethane	ND	ug/L	1.0	1		01/19/17 15:49	75-71-8	
1,1-Dichloroethane	ND	ug/L	0.50	1		01/19/17 15:49	75-34-3	
1,2-Dichloroethane	ND	ug/L	0.50	1		01/19/17 15:49	107-06-2	
1,1-Dichloroethene	ND	ug/L	0.50	1		01/19/17 15:49	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	1		01/19/17 15:49	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	0.50	1		01/19/17 15:49	156-60-5	
1,2-Dichloropropane	ND	ug/L	0.50	1		01/19/17 15:49	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	0.50	1		01/19/17 15:49	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	0.50	1		01/19/17 15:49	10061-02-6	
Ethylbenzene	ND	ug/L	0.50	1		01/19/17 15:49	100-41-4	
2-Hexanone	ND	ug/L	1.0	1		01/19/17 15:49	591-78-6	
Isopropylbenzene (Cumene)	ND	ug/L	1.0	1		01/19/17 15:49	98-82-8	
Methyl acetate	ND	ug/L	2.0	1		01/19/17 15:49	79-20-9	
Methylene Chloride	ND	ug/L	0.50	1		01/19/17 15:49	75-09-2	

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ANALYTICAL RESULTS

Project: PUMA TERMINAL CW SAMPLING

Sample Project No.: 2048890

Sample: MW-114A		Lab ID: 2048890006		Collected: 01/17/17 16:21		Received: 01/18/17 14:45		Matrix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual	
8260 MSV Low Level		Analytical Method: EPA 5030B/8260							
4-Methyl-2-pentanone (MIBK)	ND	ug/L	1.0	1		01/19/17 15:49	108-10-1		
Methyl-tert-butyl ether	ND	ug/L	0.50	1		01/19/17 15:49	1634-04-4		
Styrene	ND	ug/L	1.0	1		01/19/17 15:49	100-42-5		
1,1,2,2-Tetrachloroethane	ND	ug/L	0.50	1		01/19/17 15:49	79-34-5		
Tetrachloroethene	ND	ug/L	0.50	1		01/19/17 15:49	127-18-4		
Toluene	ND	ug/L	0.50	1		01/19/17 15:49	108-88-3		
1,1,1-Trichloroethane	ND	ug/L	0.50	1		01/19/17 15:49	71-55-6		
1,1,2-Trichloroethane	ND	ug/L	0.50	1		01/19/17 15:49	79-00-5		
Trichloroethene	ND	ug/L	0.50	1		01/19/17 15:49	79-01-6		
Trichlorofluoromethane	ND	ug/L	0.50	1		01/19/17 15:49	75-69-4		
Vinyl chloride	ND	ug/L	0.50	1		01/19/17 15:49	75-01-4		
m&p-Xylene	ND	ug/L	2.0	1		01/19/17 15:49	179601-23-1		
o-Xylene	ND	ug/L	1.0	1		01/19/17 15:49	95-47-6		
Surrogates									
Dibromofluoromethane (S)	96	%.	72-126	1		01/19/17 15:49	1868-53-7		
4-Bromofluorobenzene (S)	98	%.	68-124	1		01/19/17 15:49	460-00-4		
Toluene-d8 (S)	106	%.	79-119	1		01/19/17 15:49	2037-26-5		

Sample: DUP006		Lab ID: 2048890007		Collected: 01/17/17 00:00		Received: 01/18/17 14:45		Matrix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual	
8015M DRO/ORO Organics		Analytical Method: EPA 8015B Modified Preparation Method: EPA 3535							
Diesel Range Organic (C10-C28)	ND	mg/L	0.50	1	01/19/17 13:07	01/29/17 21:31			
Oil Range Organics (>C28-C40)	ND	mg/L	1.0	1	01/19/17 13:07	01/29/17 21:31			
Surrogates									
n-Pentacosane (S)	51	%.	16-137	1	01/19/17 13:07	01/29/17 21:31	629-99-2		
o-Terphenyl (S)	51	%.	10-121	1	01/19/17 13:07	01/29/17 21:31	84-15-1		
8021 GCV BTEX, MTBE, GRO		Analytical Method: EPA 8015/8021							
Gasoline Range Organics	ND	ug/L	50.0	1		01/20/17 11:04			
Surrogates									
4-Bromofluorobenzene (S)	93	%.	44-148	1		01/20/17 11:04	460-00-4		
6020 MET ICPMS		Analytical Method: EPA 6020 Preparation Method: EPA 3010							
Arsenic	ND	mg/L	0.0010	1	01/24/17 08:30	02/12/17 16:25	7440-38-2		
Chromium	0.049	mg/L	0.0010	1	01/24/17 08:30	02/12/17 16:25	7440-47-3		
Lead	ND	mg/L	0.0010	1	01/24/17 08:30	02/12/17 16:25	7439-92-1		
Vanadium	ND	mg/L	0.0050	1	01/24/17 08:30	02/12/17 16:25	7440-62-2		
6020 MET ICPMS, Dissolved (LF)		Analytical Method: EPA 6020 Preparation Method: EPA 3005A							
Arsenic, Dissolved	ND	ug/L	1.0	1	01/24/17 09:53	02/12/17 19:29	7440-38-2		
Chromium, Dissolved	49.1	ug/L	1.0	1	01/24/17 09:53	02/12/17 19:29	7440-47-3		
Lead, Dissolved	ND	ug/L	1.0	1	01/24/17 09:53	02/12/17 19:29	7439-92-1		
Vanadium, Dissolved	ND	ug/L	5.0	1	01/24/17 09:53	02/12/17 19:29	7440-62-2		

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ANALYTICAL RESULTS

Project: PUMA TERMINAL CW SAMPLING

Pace Project No.: 2048890

Sample: DUP006	Lab ID: 2048890007	Collected: 01/17/17 00:00	Received: 01/18/17 14:45	Matrix: Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
7470 Mercury								
Analytical Method: EPA 7470 Preparation Method: EPA 7470								
Mercury	1.8	ug/L	0.20	1	01/24/17 08:59	01/24/17 18:37	7439-97-6	
7470 Mercury, Dissolved (LF)								
Analytical Method: EPA 7470 Preparation Method: EPA 7470								
Mercury, Dissolved	0.26	ug/L	0.20	1	01/24/17 09:49	01/24/17 19:01	7439-97-6	
8270 MSSV PAH by SIM SEP								
Analytical Method: EPA 8270 by SIM Preparation Method: EPA 3510								
Acenaphthene	ND	ug/L	0.10	1	01/21/17 12:15	01/30/17 23:45	83-32-9	
Acenaphthylene	ND	ug/L	0.10	1	01/21/17 12:15	01/30/17 23:45	208-96-8	
Anthracene	ND	ug/L	0.10	1	01/21/17 12:15	01/30/17 23:45	120-12-7	
Benzo(a)anthracene	ND	ug/L	0.10	1	01/21/17 12:15	01/30/17 23:45	56-55-3	
Benzo(a)pyrene	ND	ug/L	0.10	1	01/21/17 12:15	01/30/17 23:45	50-32-8	
Benzo(b)fluoranthene	ND	ug/L	0.10	1	01/21/17 12:15	01/30/17 23:45	205-99-2	
Benzo(g,h,i)perylene	ND	ug/L	0.10	1	01/21/17 12:15	01/30/17 23:45	191-24-2	
Benzo(k)fluoranthene	ND	ug/L	0.10	1	01/21/17 12:15	01/30/17 23:45	207-08-9	
Chrysene	ND	ug/L	0.10	1	01/21/17 12:15	01/30/17 23:45	218-01-9	
Dibenz(a,h)anthracene	ND	ug/L	0.10	1	01/21/17 12:15	01/30/17 23:45	53-70-3	
Fluoranthene	ND	ug/L	0.10	1	01/21/17 12:15	01/30/17 23:45	206-44-0	
Fluorene	ND	ug/L	0.10	1	01/21/17 12:15	01/30/17 23:45	86-73-7	
Indeno(1,2,3-cd)pyrene	ND	ug/L	0.10	1	01/21/17 12:15	01/30/17 23:45	193-39-5	
2-Methylnaphthalene	ND	ug/L	0.10	1	01/21/17 12:15	01/30/17 23:45	91-57-6	
Naphthalene	ND	ug/L	0.10	1	01/21/17 12:15	01/30/17 23:45	91-20-3	
Phenanthrene	ND	ug/L	0.10	1	01/21/17 12:15	01/30/17 23:45	85-01-8	
Pyrene	ND	ug/L	0.10	1	01/21/17 12:15	01/30/17 23:45	129-00-0	
Surrogates								
2-Fluorobiphenyl (S)	111	%	25-150	1	01/21/17 12:15	01/30/17 23:45	321-60-8	
Terphenyl-d14 (S)	116	%	25-150	1	01/21/17 12:15	01/30/17 23:45	1718-51-0	
8260 MSV Low Level								
Analytical Method: EPA 5030B/8260								
Acetone	7.4	ug/L	4.0	1		01/19/17 16:07	67-64-1	C9
Benzene	ND	ug/L	0.50	1		01/19/17 16:07	71-43-2	
Bromodichloromethane	ND	ug/L	0.50	1		01/19/17 16:07	75-27-4	
Bromoform	ND	ug/L	0.50	1		01/19/17 16:07	75-25-2	
Bromomethane	ND	ug/L	0.50	1		01/19/17 16:07	74-83-9	
2-Butanone (MEK)	ND	ug/L	2.0	1		01/19/17 16:07	78-93-3	
Carbon disulfide	ND	ug/L	1.0	1		01/19/17 16:07	75-15-0	
Carbon tetrachloride	ND	ug/L	0.50	1		01/19/17 16:07	56-23-5	
Chlorobenzene	ND	ug/L	0.50	1		01/19/17 16:07	108-90-7	
Chloroethane	ND	ug/L	0.50	1		01/19/17 16:07	75-00-3	
Chloroform	ND	ug/L	0.50	1		01/19/17 16:07	67-66-3	
Chloromethane	ND	ug/L	0.50	1		01/19/17 16:07	74-87-3	
1,2-Dibromo-3-chloropropane	ND	ug/L	0.20	1		01/19/17 16:07	96-12-8	
Dibromochloromethane	ND	ug/L	0.50	1		01/19/17 16:07	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	1		01/19/17 16:07	106-93-4	
Dichlorodifluoromethane	ND	ug/L	1.0	1		01/19/17 16:07	75-71-8	
1,1-Dichloroethane	ND	ug/L	0.50	1		01/19/17 16:07	75-34-3	
1,2-Dichloroethane	ND	ug/L	0.50	1		01/19/17 16:07	107-06-2	

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ANALYTICAL RESULTS

Project: PUMA TERMINAL CW SAMPLING

Pace Project No.: 2048890

Sample: DUP006		Lab ID: 2048890007		Collected: 01/17/17 00:00	Received: 01/18/17 14:45	Matrix: Water		
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV Low Level		Analytical Method: EPA 5030B/8260						
1,1-Dichloroethene	ND	ug/L	0.50	1		01/19/17 16:07	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	1		01/19/17 16:07	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	0.50	1		01/19/17 16:07	156-60-5	
1,2-Dichloropropane	ND	ug/L	0.50	1		01/19/17 16:07	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	0.50	1		01/19/17 16:07	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	0.50	1		01/19/17 16:07	10061-02-6	
Ethylbenzene	ND	ug/L	0.50	1		01/19/17 16:07	100-41-4	
2-Hexanone	ND	ug/L	1.0	1		01/19/17 16:07	591-78-6	
Isopropylbenzene (Cumene)	ND	ug/L	1.0	1		01/19/17 16:07	98-82-8	
Methyl acetate	ND	ug/L	2.0	1		01/19/17 16:07	79-20-9	
Methylene Chloride	ND	ug/L	0.50	1		01/19/17 16:07	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	1.0	1		01/19/17 16:07	108-10-1	
Methyl-tert-butyl ether	4.7	ug/L	0.50	1		01/19/17 16:07	1634-04-4	
Styrene	ND	ug/L	1.0	1		01/19/17 16:07	100-42-5	
1,1,2,2-Tetrachloroethane	ND	ug/L	0.50	1		01/19/17 16:07	79-34-5	
Tetrachloroethene	ND	ug/L	0.50	1		01/19/17 16:07	127-18-4	
Toluene	ND	ug/L	0.50	1		01/19/17 16:07	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	0.50	1		01/19/17 16:07	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	0.50	1		01/19/17 16:07	79-00-5	
Trichloroethene	0.84	ug/L	0.50	1		01/19/17 16:07	79-01-6	
Trichlorofluoromethane	ND	ug/L	0.50	1		01/19/17 16:07	75-69-4	
Vinyl chloride	ND	ug/L	0.50	1		01/19/17 16:07	75-01-4	
m&p-Xylene	ND	ug/L	2.0	1		01/19/17 16:07	179601-23-1	
o-Xylene	ND	ug/L	1.0	1		01/19/17 16:07	95-47-6	
Surrogates								
Dibromofluoromethane (S)	94	%	72-126	1		01/19/17 16:07	1868-53-7	
4-Bromofluorobenzene (S)	98	%	68-124	1		01/19/17 16:07	460-00-4	
Toluene-d8 (S)	106	%	79-119	1		01/19/17 16:07	2037-26-5	

Sample: MW-75B2		Lab ID: 2048890008		Collected: 01/17/17 14:50	Received: 01/18/17 14:45	Matrix: Water		
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8015M DRO/ORO Organics		Analytical Method: EPA 8015B Modified Preparation Method: EPA 3535						
Diesel Range Organic (C10-C28)	ND	mg/L	0.50	1	01/19/17 13:07	01/29/17 22:02		
Oil Range Organics (>C28-C40)	ND	mg/L	1.0	1	01/19/17 13:07	01/29/17 22:02		
Surrogates								
n-Pentacosane (S)	51	%	16-137	1	01/19/17 13:07	01/29/17 22:02	629-99-2	
o-Terphenyl (S)	56	%	10-121	1	01/19/17 13:07	01/29/17 22:02	84-15-1	
8021 GCV BTEX, MTBE, GRO		Analytical Method: EPA 8015/8021						
Gasoline Range Organics	ND	ug/L	50.0	1		01/20/17 11:31		
Surrogates								
4-Bromofluorobenzene (S)	92	%	44-148	1		01/20/17 11:31	460-00-4	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: PUMA TERMINAL CW SAMPLING

Pace Project No.: 2048890

Sample: MW-75B2	Lab ID: 2048890008	Collected: 01/17/17 14:50	Received: 01/18/17 14:45	Matrix: Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
6020 MET ICPMS Analytical Method: EPA 6020 Preparation Method: EPA 3010								
Arsenic	ND	mg/L	0.0010	1	01/24/17 08:30	02/12/17 15:41	7440-38-2	R1
Chromium	0.046	mg/L	0.0010	1	01/24/17 08:30	02/12/17 15:41	7440-47-3	M1,R1
Lead	ND	mg/L	0.0010	1	01/24/17 08:30	02/12/17 15:41	7439-92-1	R1
Vanadium	ND	mg/L	0.0050	1	01/24/17 08:30	02/12/17 15:41	7440-62-2	M1,R1
6020 MET ICPMS, Dissolved (LF) Analytical Method: EPA 6020 Preparation Method: EPA 3005A								
Arsenic, Dissolved	ND	ug/L	1.0	1	01/24/17 09:53	02/12/17 18:46	7440-38-2	
Chromium, Dissolved	47.9	ug/L	1.0	1	01/24/17 09:53	02/12/17 18:46	7440-47-3	
Lead, Dissolved	ND	ug/L	1.0	1	01/24/17 09:53	02/12/17 18:46	7439-92-1	
Vanadium, Dissolved	ND	ug/L	5.0	1	01/24/17 09:53	02/12/17 18:46	7440-62-2	M1
7470 Mercury Analytical Method: EPA 7470 Preparation Method: EPA 7470								
Mercury	1.9	ug/L	0.20	1	01/24/17 08:59	01/24/17 18:14	7439-97-6	
7470 Mercury, Dissolved (LF) Analytical Method: EPA 7470 Preparation Method: EPA 7470								
Mercury, Dissolved	ND	ug/L	0.20	1	01/24/17 09:49	01/24/17 19:03	7439-97-6	
8270 MSSV PAH by SIM SEP Analytical Method: EPA 8270 by SIM Preparation Method: EPA 3510								
Acenaphthene	ND	ug/L	0.10	1	01/23/17 11:36	01/30/17 19:06	83-32-9	
Acenaphthylene	ND	ug/L	0.10	1	01/23/17 11:36	01/30/17 19:06	208-96-8	
Anthracene	ND	ug/L	0.10	1	01/23/17 11:36	01/30/17 19:06	120-12-7	M1
Benzo(a)anthracene	ND	ug/L	0.10	1	01/23/17 11:36	01/30/17 19:06	56-55-3	
Benzo(a)pyrene	ND	ug/L	0.10	1	01/23/17 11:36	01/30/17 19:06	50-32-8	
Benzo(b)fluoranthene	ND	ug/L	0.10	1	01/23/17 11:36	01/30/17 19:06	205-99-2	
Benzo(g,h,i)perylene	ND	ug/L	0.10	1	01/23/17 11:36	01/30/17 19:06	191-24-2	
Benzo(k)fluoranthene	ND	ug/L	0.10	1	01/23/17 11:36	01/30/17 19:06	207-08-9	
Chrysene	ND	ug/L	0.10	1	01/23/17 11:36	01/30/17 19:06	218-01-9	
Dibenz(a,h)anthracene	ND	ug/L	0.10	1	01/23/17 11:36	01/30/17 19:06	53-70-3	
Fluoranthene	ND	ug/L	0.10	1	01/23/17 11:36	01/30/17 19:06	206-44-0	
Fluorene	ND	ug/L	0.10	1	01/23/17 11:36	01/30/17 19:06	86-73-7	
Indeno(1,2,3-cd)pyrene	ND	ug/L	0.10	1	01/23/17 11:36	01/30/17 19:06	193-39-5	
2-Methylnaphthalene	ND	ug/L	0.10	1	01/23/17 11:36	01/30/17 19:06	91-57-6	
Naphthalene	ND	ug/L	0.10	1	01/23/17 11:36	01/30/17 19:06	91-20-3	
Phenanthrene	ND	ug/L	0.10	1	01/23/17 11:36	01/30/17 19:06	85-01-8	
Pyrene	ND	ug/L	0.10	1	01/23/17 11:36	01/30/17 19:06	129-00-0	
Surrogates								
2-Fluorobiphenyl (S)	56	%	25-150	1	01/23/17 11:36	01/30/17 19:06	321-60-8	
Terphenyl-d14 (S)	62	%	25-150	1	01/23/17 11:36	01/30/17 19:06	1718-51-0	
8260 MSV Low Level Analytical Method: EPA 5030B/8260								
Acetone	ND	ug/L	4.0	1		01/19/17 14:00	67-64-1	C9
Benzene	ND	ug/L	0.50	1		01/19/17 14:00	71-43-2	
Bromodichloromethane	ND	ug/L	0.50	1		01/19/17 14:00	75-27-4	
Bromoform	ND	ug/L	0.50	1		01/19/17 14:00	75-25-2	
Bromomethane	ND	ug/L	0.50	1		01/19/17 14:00	74-83-9	
2-Butanone (MEK)	ND	ug/L	2.0	1		01/19/17 14:00	78-93-3	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: PUMA TERMINAL CW SAMPLING

Pace Project No.: 2048890

Sample: MW-75B2	Lab ID: 2048890008	Collected: 01/17/17 14:50	Received: 01/18/17 14:45	Matrix: Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV Low Level		Analytical Method: EPA 5030B/8260						
Carbon disulfide	ND	ug/L	1.0	1		01/19/17 14:00	75-15-0	
Carbon tetrachloride	ND	ug/L	0.50	1		01/19/17 14:00	56-23-5	
Chlorobenzene	ND	ug/L	0.50	1		01/19/17 14:00	108-90-7	
Chloroethane	ND	ug/L	0.50	1		01/19/17 14:00	75-00-3	
Chloroform	ND	ug/L	0.50	1		01/19/17 14:00	67-66-3	
Chloromethane	ND	ug/L	0.50	1		01/19/17 14:00	74-87-3	
1,2-Dibromo-3-chloropropane	ND	ug/L	0.20	1		01/19/17 14:00	96-12-8	
Dibromochloromethane	ND	ug/L	0.50	1		01/19/17 14:00	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	1		01/19/17 14:00	106-93-4	
Dichlorodifluoromethane	ND	ug/L	1.0	1		01/19/17 14:00	75-71-8	
1,1-Dichloroethane	ND	ug/L	0.50	1		01/19/17 14:00	75-34-3	
1,2-Dichloroethane	ND	ug/L	0.50	1		01/19/17 14:00	107-06-2	
1,1-Dichloroethene	ND	ug/L	0.50	1		01/19/17 14:00	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	1		01/19/17 14:00	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	0.50	1		01/19/17 14:00	156-60-5	
1,2-Dichloropropane	ND	ug/L	0.50	1		01/19/17 14:00	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	0.50	1		01/19/17 14:00	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	0.50	1		01/19/17 14:00	10061-02-6	
Ethylbenzene	ND	ug/L	0.50	1		01/19/17 14:00	100-41-4	
2-Hexanone	ND	ug/L	1.0	1		01/19/17 14:00	591-78-6	
Isopropylbenzene (Cumene)	ND	ug/L	1.0	1		01/19/17 14:00	98-82-8	
Methyl acetate	ND	ug/L	2.0	1		01/19/17 14:00	79-20-9	
Methylene Chloride	ND	ug/L	0.50	1		01/19/17 14:00	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	1.0	1		01/19/17 14:00	108-10-1	
Methyl-tert-butyl ether	4.7	ug/L	0.50	1		01/19/17 14:00	1634-04-4	
Styrene	ND	ug/L	1.0	1		01/19/17 14:00	100-42-5	M1
1,1,2,2-Tetrachloroethane	ND	ug/L	0.50	1		01/19/17 14:00	79-34-5	
Tetrachloroethene	ND	ug/L	0.50	1		01/19/17 14:00	127-18-4	
Toluene	ND	ug/L	0.50	1		01/19/17 14:00	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	0.50	1		01/19/17 14:00	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	0.50	1		01/19/17 14:00	79-00-5	
Trichloroethene	0.81	ug/L	0.50	1		01/19/17 14:00	79-01-6	
Trichlorofluoromethane	ND	ug/L	0.50	1		01/19/17 14:00	75-69-4	
Vinyl chloride	ND	ug/L	0.50	1		01/19/17 14:00	75-01-4	
m&p-Xylene	ND	ug/L	2.0	1		01/19/17 14:00	179601-23-1	
o-Xylene	ND	ug/L	1.0	1		01/19/17 14:00	95-47-6	
Surrogates								
Dibromofluoromethane (S)	95	%	72-126	1		01/19/17 14:00	1868-53-7	
4-Bromofluorobenzene (S)	99	%	68-124	1		01/19/17 14:00	460-00-4	
Toluene-d8 (S)	107	%	79-119	1		01/19/17 14:00	2037-26-5	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: PUMA TERMINAL CW SAMPLING

Pace Project No.: 2048890

Sample: FB-011717	Lab ID: 2048890009	Collected: 01/17/17 16:30	Received: 01/18/17 14:45	Matrix: Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8021 GCV BTEX, MTBE, GRO	Analytical Method: EPA 8015/8021							
Gasoline Range Organics	ND	ug/L	50.0	1		01/20/17 13:15		
Surrogates								
4-Bromofluorobenzene (S)	92	%	44-148	1		01/20/17 13:15	460-00-4	
8260 MSV Low Level	Analytical Method: EPA 5030B/8260							
Acetone	22.0	ug/L	4.0	1		01/19/17 16:25	67-64-1	C9
Benzene	ND	ug/L	0.50	1		01/19/17 16:25	71-43-2	
Bromodichloromethane	ND	ug/L	0.50	1		01/19/17 16:25	75-27-4	
Bromoform	ND	ug/L	0.50	1		01/19/17 16:25	75-25-2	
Bromomethane	ND	ug/L	0.50	1		01/19/17 16:25	74-83-9	
2-Butanone (MEK)	ND	ug/L	2.0	1		01/19/17 16:25	78-93-3	
Carbon disulfide	ND	ug/L	1.0	1		01/19/17 16:25	75-15-0	
Carbon tetrachloride	ND	ug/L	0.50	1		01/19/17 16:25	56-23-5	
Chlorobenzene	ND	ug/L	0.50	1		01/19/17 16:25	108-90-7	
Chloroethane	ND	ug/L	0.50	1		01/19/17 16:25	75-00-3	
Chloroform	2.0	ug/L	0.50	1		01/19/17 16:25	67-66-3	
Chloromethane	ND	ug/L	0.50	1		01/19/17 16:25	74-87-3	
1,2-Dibromo-3-chloropropane	ND	ug/L	0.20	1		01/19/17 16:25	96-12-8	
Dibromochloromethane	ND	ug/L	0.50	1		01/19/17 16:25	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	1		01/19/17 16:25	106-93-4	
Dichlorodifluoromethane	ND	ug/L	1.0	1		01/19/17 16:25	75-71-8	
1,1-Dichloroethane	ND	ug/L	0.50	1		01/19/17 16:25	75-34-3	
1,2-Dichloroethane	ND	ug/L	0.50	1		01/19/17 16:25	107-06-2	
1,1-Dichloroethene	ND	ug/L	0.50	1		01/19/17 16:25	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	1		01/19/17 16:25	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	0.50	1		01/19/17 16:25	156-60-5	
1,2-Dichloropropane	ND	ug/L	0.50	1		01/19/17 16:25	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	0.50	1		01/19/17 16:25	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	0.50	1		01/19/17 16:25	10061-02-6	
Ethylbenzene	ND	ug/L	0.50	1		01/19/17 16:25	100-41-4	
2-Hexanone	ND	ug/L	1.0	1		01/19/17 16:25	591-78-6	
Isopropylbenzene (Cumene)	ND	ug/L	1.0	1		01/19/17 16:25	98-82-8	
Methyl acetate	ND	ug/L	2.0	1		01/19/17 16:25	79-20-9	
Methylene Chloride	ND	ug/L	0.50	1		01/19/17 16:25	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	1.0	1		01/19/17 16:25	108-10-1	
Methyl-tert-butyl ether	ND	ug/L	0.50	1		01/19/17 16:25	1634-04-4	
Styrene	ND	ug/L	1.0	1		01/19/17 16:25	100-42-5	
1,1,2,2-Tetrachloroethane	ND	ug/L	0.50	1		01/19/17 16:25	79-34-5	
Tetrachloroethene	ND	ug/L	0.50	1		01/19/17 16:25	127-18-4	
Toluene	ND	ug/L	0.50	1		01/19/17 16:25	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	0.50	1		01/19/17 16:25	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	0.50	1		01/19/17 16:25	79-00-5	
Trichloroethene	ND	ug/L	0.50	1		01/19/17 16:25	79-01-6	
Trichlorofluoromethane	ND	ug/L	0.50	1		01/19/17 16:25	75-69-4	
Vinyl chloride	ND	ug/L	0.50	1		01/19/17 16:25	75-01-4	
m&p-Xylene	ND	ug/L	2.0	1		01/19/17 16:25	179601-23-1	
o-Xylene	ND	ug/L	1.0	1		01/19/17 16:25	95-47-6	

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ANALYTICAL RESULTS

Project: PUMA TERMINAL CW SAMPLING

Pace Project No.: 2048890

Sample: FB-011717	Lab ID: 2048890009	Collected: 01/17/17 16:30	Received: 01/18/17 14:45	Matrix: Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV Low Level		Analytical Method: EPA 5030B/8260						
Surrogates								
Dibromofluoromethane (S)	93	%.	72-126	1		01/19/17 16:25	1868-53-7	
4-Bromofluorobenzene (S)	98	%.	68-124	1		01/19/17 16:25	460-00-4	
Toluene-d8 (S)	104	%.	79-119	1		01/19/17 16:25	2037-26-5	
Sample: MW-63A		Lab ID: 2048890010 Collected: 01/18/17 10:33 Received: 01/18/17 14:45 Matrix: Water						
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8015M DRO/ORO Organics		Analytical Method: EPA 8015B Modified Preparation Method: EPA 3535						
Diesel Range Organic (C10-C28)	ND	mg/L	0.50	1	01/19/17 13:07	01/29/17 23:34		
Oil Range Organics (>C28-C40)	ND	mg/L	1.0	1	01/19/17 13:07	01/29/17 23:34		
Surrogates								
n-Pentacosane (S)	46	%.	16-137	1	01/19/17 13:07	01/29/17 23:34	629-99-2	
o-Terphenyl (S)	45	%.	10-121	1	01/19/17 13:07	01/29/17 23:34	84-15-1	
8021 GCV BTEX, MTBE, GRO		Analytical Method: EPA 8015/8021						
Gasoline Range Organics	ND	ug/L	50.0	1		01/20/17 12:49		
Surrogates								
4-Bromofluorobenzene (S)	93	%.	44-148	1		01/20/17 12:49	460-00-4	
6020 MET ICPMS		Analytical Method: EPA 6020 Preparation Method: EPA 3010						
Arsenic	ND	mg/L	0.0010	1	01/24/17 08:30	02/12/17 16:29	7440-38-2	
Chromium	ND	mg/L	0.0010	1	01/24/17 08:30	02/12/17 16:29	7440-47-3	
Lead	ND	mg/L	0.0010	1	01/24/17 08:30	02/12/17 16:29	7439-92-1	
Vanadium	ND	mg/L	0.0050	1	01/24/17 08:30	02/12/17 16:29	7440-62-2	
6020 MET ICPMS, Dissolved (LF)		Analytical Method: EPA 6020 Preparation Method: EPA 3005A						
Arsenic, Dissolved	ND	ug/L	1.0	1	01/24/17 09:53	02/12/17 19:33	7440-38-2	
Chromium, Dissolved	ND	ug/L	1.0	1	01/24/17 09:53	02/12/17 19:33	7440-47-3	
Lead, Dissolved	ND	ug/L	1.0	1	01/24/17 09:53	02/12/17 19:33	7439-92-1	
Vanadium, Dissolved	ND	ug/L	5.0	1	01/24/17 09:53	02/12/17 19:33	7440-62-2	
7470 Mercury		Analytical Method: EPA 7470 Preparation Method: EPA 7470						
Mercury	ND	ug/L	0.20	1	01/24/17 08:59	01/24/17 18:39	7439-97-6	
7470 Mercury, Dissolved (LF)		Analytical Method: EPA 7470 Preparation Method: EPA 7470						
Mercury, Dissolved	ND	ug/L	0.20	1	01/24/17 09:49	01/24/17 19:10	7439-97-6	
8270 MSSV PAH by SIM SEP		Analytical Method: EPA 8270 by SIM Preparation Method: EPA 3510						
Acenaphthene	ND	ug/L	0.10	1	01/23/17 11:36	01/30/17 20:06	83-32-9	
Acenaphthylene	ND	ug/L	0.10	1	01/23/17 11:36	01/30/17 20:06	208-96-8	
Anthracene	ND	ug/L	0.10	1	01/23/17 11:36	01/30/17 20:06	120-12-7	
Benzo(a)anthracene	ND	ug/L	0.10	1	01/23/17 11:36	01/30/17 20:06	56-55-3	
Benzo(a)pyrene	ND	ug/L	0.10	1	01/23/17 11:36	01/30/17 20:06	50-32-8	

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ANALYTICAL RESULTS

Project: PUMA TERMINAL CW SAMPLING

Sample Project No.: 2048890

Sample: MW-63A	Lab ID: 2048890010	Collected: 01/18/17 10:33	Received: 01/18/17 14:45	Matrix: Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual

8270 MSSV PAH by SIM SEP

Analytical Method: EPA 8270 by SIM Preparation Method: EPA 3510

Benzo(b)fluoranthene	ND	ug/L	0.10	1	01/23/17 11:36	01/30/17 20:06	205-99-2	
Benzo(g,h,i)perylene	ND	ug/L	0.10	1	01/23/17 11:36	01/30/17 20:06	191-24-2	
Benzo(k)fluoranthene	ND	ug/L	0.10	1	01/23/17 11:36	01/30/17 20:06	207-08-9	
Chrysene	ND	ug/L	0.10	1	01/23/17 11:36	01/30/17 20:06	218-01-9	
Dibenz(a,h)anthracene	ND	ug/L	0.10	1	01/23/17 11:36	01/30/17 20:06	53-70-3	
Fluoranthene	ND	ug/L	0.10	1	01/23/17 11:36	01/30/17 20:06	206-44-0	
Fluorene	ND	ug/L	0.10	1	01/23/17 11:36	01/30/17 20:06	86-73-7	
Indeno(1,2,3-cd)pyrene	ND	ug/L	0.10	1	01/23/17 11:36	01/30/17 20:06	193-39-5	
2-Methylnaphthalene	ND	ug/L	0.10	1	01/23/17 11:36	01/30/17 20:06	91-57-6	
Naphthalene	ND	ug/L	0.10	1	01/23/17 11:36	01/30/17 20:06	91-20-3	
Phenanthrene	ND	ug/L	0.10	1	01/23/17 11:36	01/30/17 20:06	85-01-8	
Pyrene	ND	ug/L	0.10	1	01/23/17 11:36	01/30/17 20:06	129-00-0	
Surrogates								
2-Fluorobiphenyl (S)	109	%	25-150	1	01/23/17 11:36	01/30/17 20:06	321-60-8	
Terphenyl-d14 (S)	110	%	25-150	1	01/23/17 11:36	01/30/17 20:06	1718-51-0	

8260 MSV Low Level

Analytical Method: EPA 5030B/8260

Acetone	4.9	ug/L	4.0	1		01/19/17 16:44	67-64-1	C9
Benzene	ND	ug/L	0.50	1		01/19/17 16:44	71-43-2	
Bromodichloromethane	ND	ug/L	0.50	1		01/19/17 16:44	75-27-4	
Bromoform	ND	ug/L	0.50	1		01/19/17 16:44	75-25-2	
Bromomethane	ND	ug/L	0.50	1		01/19/17 16:44	74-83-9	
2-Butanone (MEK)	ND	ug/L	2.0	1		01/19/17 16:44	78-93-3	
Carbon disulfide	ND	ug/L	1.0	1		01/19/17 16:44	75-15-0	
Carbon tetrachloride	ND	ug/L	0.50	1		01/19/17 16:44	56-23-5	
Chlorobenzene	ND	ug/L	0.50	1		01/19/17 16:44	108-90-7	
Chloroethane	ND	ug/L	0.50	1		01/19/17 16:44	75-00-3	
Chloroform	ND	ug/L	0.50	1		01/19/17 16:44	67-66-3	
Chloromethane	ND	ug/L	0.50	1		01/19/17 16:44	74-87-3	
1,2-Dibromo-3-chloropropane	ND	ug/L	0.20	1		01/19/17 16:44	96-12-8	
Dibromochloromethane	ND	ug/L	0.50	1		01/19/17 16:44	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	1		01/19/17 16:44	106-93-4	
Dichlorodifluoromethane	ND	ug/L	1.0	1		01/19/17 16:44	75-71-8	
1,1-Dichloroethane	ND	ug/L	0.50	1		01/19/17 16:44	75-34-3	
1,2-Dichloroethane	ND	ug/L	0.50	1		01/19/17 16:44	107-06-2	
1,1-Dichloroethene	ND	ug/L	0.50	1		01/19/17 16:44	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	1		01/19/17 16:44	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	0.50	1		01/19/17 16:44	156-60-5	
1,2-Dichloropropane	ND	ug/L	0.50	1		01/19/17 16:44	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	0.50	1		01/19/17 16:44	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	0.50	1		01/19/17 16:44	10061-02-6	
Ethylbenzene	ND	ug/L	0.50	1		01/19/17 16:44	100-41-4	
2-Hexanone	ND	ug/L	1.0	1		01/19/17 16:44	591-78-6	
Isopropylbenzene (Cumene)	ND	ug/L	1.0	1		01/19/17 16:44	98-82-8	
Methyl acetate	ND	ug/L	2.0	1		01/19/17 16:44	79-20-9	
Methylene Chloride	ND	ug/L	0.50	1		01/19/17 16:44	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	1.0	1		01/19/17 16:44	108-10-1	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: PUMA TERMINAL CW SAMPLING

Pace Project No.: 2048890

Sample: MW-63A		Lab ID: 2048890010		Collected: 01/18/17 10:33		Received: 01/18/17 14:45		Matrix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual	
8260 MSV Low Level		Analytical Method: EPA 5030B/8260							
Methyl-tert-butyl ether	ND	ug/L	0.50	1		01/19/17 16:44	1634-04-4		
Styrene	ND	ug/L	1.0	1		01/19/17 16:44	100-42-5		
1,1,2,2-Tetrachloroethane	ND	ug/L	0.50	1		01/19/17 16:44	79-34-5		
Tetrachloroethene	ND	ug/L	0.50	1		01/19/17 16:44	127-18-4		
Toluene	ND	ug/L	0.50	1		01/19/17 16:44	108-88-3		
1,1,1-Trichloroethane	ND	ug/L	0.50	1		01/19/17 16:44	71-55-6		
1,1,2-Trichloroethane	ND	ug/L	0.50	1		01/19/17 16:44	79-00-5		
Trichloroethene	ND	ug/L	0.50	1		01/19/17 16:44	79-01-6		
Trichlorofluoromethane	ND	ug/L	0.50	1		01/19/17 16:44	75-69-4		
Vinyl chloride	ND	ug/L	0.50	1		01/19/17 16:44	75-01-4		
m&p-Xylene	ND	ug/L	2.0	1		01/19/17 16:44	179601-23-1		
o-Xylene	ND	ug/L	1.0	1		01/19/17 16:44	95-47-6		
Surrogates									
Dibromofluoromethane (S)	95	%	72-126	1		01/19/17 16:44	1868-53-7		
4-Bromofluorobenzene (S)	99	%	68-124	1		01/19/17 16:44	460-00-4		
Toluene-d8 (S)	105	%	79-119	1		01/19/17 16:44	2037-26-5		

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: PUMA TERMINAL CW SAMPLING

Pace Project No.: 2048890

QC Batch: 72457 Analysis Method: EPA 8015/8021
 QC Batch Method: EPA 8015/8021 Analysis Description: 8021 W GCV BTEX , MTBE, GRO
 Associated Lab Samples: 2048890001, 2048890002, 2048890003, 2048890004, 2048890005, 2048890006, 2048890007, 2048890008,
 2048890009, 2048890010

METHOD BLANK: 303500 Matrix: Water
 Associated Lab Samples: 2048890001, 2048890002, 2048890003, 2048890004, 2048890005, 2048890006, 2048890007, 2048890008,
 2048890009, 2048890010

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Gasoline Range Organics	ug/L	ND	50.0	01/20/17 04:20	
4-Bromofluorobenzene (S)	%.	86	44-148	01/20/17 04:20	

LABORATORY CONTROL SAMPLE: 303501

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Gasoline Range Organics	ug/L	500	437	87	61-136	
4-Bromofluorobenzene (S)	%.			90	44-148	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 303502 303503

Parameter	Units	2048890008 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Gasoline Range Organics	ug/L	ND	500	500	475	467	88	86	15-147	2	20	
4-Bromofluorobenzene (S)	%.						97	97	44-148			

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QUALITY CONTROL DATA

Project: PUMA TERMINAL CW SAMPLING

Pace Project No.: 2048890

QC Batch: 72610

Analysis Method: EPA 7470

QC Batch Method: EPA 7470

Analysis Description: 7470 Mercury

Associated Lab Samples: 2048890002, 2048890003, 2048890004, 2048890005, 2048890006, 2048890007, 2048890008, 2048890010

METHOD BLANK: 304157

Matrix: Water

Associated Lab Samples: 2048890002, 2048890003, 2048890004, 2048890005, 2048890006, 2048890007, 2048890008, 2048890010

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Mercury	ug/L	ND	0.20	01/24/17 18:10	

LABORATORY CONTROL SAMPLE: 304158

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury	ug/L	1	1.0	103	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 304159 304160

Parameter	Units	2048890008 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Mercury	ug/L	1.9	1	1	2.6	2.6	77	77	75-125	0	20	

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QUALITY CONTROL DATA

Project: PUMA TERMINAL CW SAMPLING

Pace Project No.: 2048890

QC Batch: 72612

Analysis Method: EPA 7470

QC Batch Method: EPA 7470

Analysis Description: 7470 Mercury Dissolved

Associated Lab Samples: 2048890002, 2048890003, 2048890004, 2048890005, 2048890006, 2048890007, 2048890008, 2048890010

METHOD BLANK: 304161

Matrix: Water

Associated Lab Samples: 2048890002, 2048890003, 2048890004, 2048890005, 2048890006, 2048890007, 2048890008, 2048890010

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Mercury, Dissolved	ug/L	ND	0.20	01/24/17 18:41	

LABORATORY CONTROL SAMPLE: 304162

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury, Dissolved	ug/L	1	1.0	103	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 304163 304164

Parameter	Units	2048890008 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Mercury, Dissolved	ug/L	ND	1	1	1.1	1.1	91	90	75-125	1	20	

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QUALITY CONTROL DATA

Project: PUMA TERMINAL CW SAMPLING

Pace Project No.: 2048890

QC Batch: 72609 Analysis Method: EPA 6020

QC Batch Method: EPA 3010 Analysis Description: 6020 MET

Associated Lab Samples: 2048890002, 2048890003, 2048890004, 2048890005, 2048890006, 2048890007, 2048890008, 2048890010

METHOD BLANK: 304153 Matrix: Water

Associated Lab Samples: 2048890002, 2048890003, 2048890004, 2048890005, 2048890006, 2048890007, 2048890008, 2048890010

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Arsenic	mg/L	ND	0.0010	02/12/17 12:56	
Chromium	mg/L	ND	0.0010	02/12/17 12:56	
Lead	mg/L	ND	0.0010	02/12/17 12:56	
Vanadium	mg/L	ND	0.0050	02/12/17 12:56	

LABORATORY CONTROL SAMPLE: 304154

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Arsenic	mg/L	.02	0.020	102	83-115	
Chromium	mg/L	.02	0.020	102	85-115	
Lead	mg/L	.02	0.020	100	84-115	
Vanadium	mg/L	.02	0.016	82	81-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 304155 304156

Parameter	Units	2048890008 Result	MS		MSD		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
			Spike Conc.	MS Spike Conc.	MSD Spike Conc.	MS Result						
Arsenic	mg/L	ND	.02	.02	0.016	0.020	80	101	80-120	23	20	R1
Chromium	mg/L	0.046	.02	.02	0.058	0.074	57	136	80-120	24	20	M1,R1
Lead	mg/L	ND	.02	.02	0.017	0.021	83	107	80-120	25	20	R1
Vanadium	mg/L	ND	.02	.02	0.0097	0.014	49	70	80-120	35	20	M1,R1

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QUALITY CONTROL DATA

Project: PUMA TERMINAL CW SAMPLING

Pace Project No.: 2048890

QC Batch: 72614

Analysis Method: EPA 6020

QC Batch Method: EPA 3005A

Analysis Description: 6020 MET Dissolved

Associated Lab Samples: 2048890002, 2048890003, 2048890004, 2048890005, 2048890006, 2048890007, 2048890008, 2048890010

METHOD BLANK: 304165

Matrix: Water

Associated Lab Samples: 2048890002, 2048890003, 2048890004, 2048890005, 2048890006, 2048890007, 2048890008, 2048890010

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Arsenic, Dissolved	ug/L	ND	1.0	02/12/17 13:20	
Chromium, Dissolved	ug/L	ND	1.0	02/12/17 13:20	
Lead, Dissolved	ug/L	ND	1.0	02/12/17 13:20	
Vanadium, Dissolved	ug/L	ND	5.0	02/12/17 13:20	

LABORATORY CONTROL SAMPLE: 304166

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Arsenic, Dissolved	ug/L	20	20.6	103	80-120	
Chromium, Dissolved	ug/L	20	20.6	103	80-120	
Lead, Dissolved	ug/L	20	20.2	101	80-120	
Vanadium, Dissolved	ug/L	20	18.4	92	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 304167 304168

Parameter	Units	MS		MSD		MS % Rec	MSD % Rec	% Rec Limits	RPD	RPD	Qual
		2048890008 Result	Spike Conc.	Spike Conc.	Result						
Arsenic, Dissolved	ug/L	ND	20	20	19.5	19.5	96	97	75-125	0	20
Chromium, Dissolved	ug/L	47.9	20	20	67.5	68.0	98	100	75-125	1	20
Lead, Dissolved	ug/L	ND	20	20	20.3	20.6	102	103	75-125	2	20
Vanadium, Dissolved	ug/L	ND	20	20	12.4	12.2	62	61	75-125	2	20 M1

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QUALITY CONTROL DATA

Project: PUMA TERMINAL CW SAMPLING

Pace Project No.: 2048890

QC Batch: 72436 Analysis Method: EPA 5030B/8260
 QC Batch Method: EPA 5030B/8260 Analysis Description: 8260 MSV Low Level
 Associated Lab Samples: 2048890001, 2048890002, 2048890003, 2048890004, 2048890005, 2048890006, 2048890007, 2048890008,
 2048890009, 2048890010

METHOD BLANK: 303413 Matrix: Water
 Associated Lab Samples: 2048890001, 2048890002, 2048890003, 2048890004, 2048890005, 2048890006, 2048890007, 2048890008,
 2048890009, 2048890010

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
1,1,1-Trichloroethane	ug/L	ND	0.50	01/19/17 11:18	
1,1,2,2-Tetrachloroethane	ug/L	ND	0.50	01/19/17 11:18	
1,1,2-Trichloroethane	ug/L	ND	0.50	01/19/17 11:18	
1,1-Dichloroethane	ug/L	ND	0.50	01/19/17 11:18	
1,1-Dichloroethene	ug/L	ND	0.50	01/19/17 11:18	
1,2-Dibromo-3-chloropropane	ug/L	ND	0.20	01/19/17 11:18	
1,2-Dibromoethane (EDB)	ug/L	ND	1.0	01/19/17 11:18	
1,2-Dichloroethane	ug/L	ND	0.50	01/19/17 11:18	
1,2-Dichloropropane	ug/L	ND	0.50	01/19/17 11:18	
2-Butanone (MEK)	ug/L	ND	2.0	01/19/17 11:18	
2-Hexanone	ug/L	ND	1.0	01/19/17 11:18	
4-Methyl-2-pentanone (MIBK)	ug/L	ND	1.0	01/19/17 11:18	
Acetone	ug/L	ND	4.0	01/19/17 11:18	
Benzene	ug/L	ND	0.50	01/19/17 11:18	
Bromodichloromethane	ug/L	ND	0.50	01/19/17 11:18	
Bromoform	ug/L	ND	0.50	01/19/17 11:18	
Bromomethane	ug/L	ND	0.50	01/19/17 11:18	
Carbon disulfide	ug/L	ND	1.0	01/19/17 11:18	
Carbon tetrachloride	ug/L	ND	0.50	01/19/17 11:18	
Chlorobenzene	ug/L	ND	0.50	01/19/17 11:18	
Chloroethane	ug/L	ND	0.50	01/19/17 11:18	
Chloroform	ug/L	ND	0.50	01/19/17 11:18	
Chloromethane	ug/L	ND	0.50	01/19/17 11:18	
cis-1,2-Dichloroethene	ug/L	ND	1.0	01/19/17 11:18	
cis-1,3-Dichloropropene	ug/L	ND	0.50	01/19/17 11:18	
Dibromochloromethane	ug/L	ND	0.50	01/19/17 11:18	
Dichlorodifluoromethane	ug/L	ND	1.0	01/19/17 11:18	
Ethylbenzene	ug/L	ND	0.50	01/19/17 11:18	
Isopropylbenzene (Cumene)	ug/L	ND	1.0	01/19/17 11:18	
m&p-Xylene	ug/L	ND	2.0	01/19/17 11:18	
Methyl acetate	ug/L	ND	2.0	01/19/17 11:18	
Methyl-tert-butyl ether	ug/L	ND	0.50	01/19/17 11:18	
Methylene Chloride	ug/L	ND	0.50	01/19/17 11:18	
o-Xylene	ug/L	ND	1.0	01/19/17 11:18	
Styrene	ug/L	ND	1.0	01/19/17 11:18	
Tetrachloroethene	ug/L	ND	0.50	01/19/17 11:18	
Toluene	ug/L	ND	0.50	01/19/17 11:18	
trans-1,2-Dichloroethene	ug/L	ND	0.50	01/19/17 11:18	
trans-1,3-Dichloropropene	ug/L	ND	0.50	01/19/17 11:18	
Trichloroethene	ug/L	ND	0.50	01/19/17 11:18	

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QUALITY CONTROL DATA

Project: PUMA TERMINAL CW SAMPLING

Pace Project No.: 2048890

METHOD BLANK: 303413

Matrix: Water

Associated Lab Samples: 2048890001, 2048890002, 2048890003, 2048890004, 2048890005, 2048890006, 2048890007, 2048890008, 2048890009, 2048890010

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Trichlorofluoromethane	ug/L	ND	0.50	01/19/17 11:18	
Vinyl chloride	ug/L	ND	0.50	01/19/17 11:18	
4-Bromofluorobenzene (S)	%	99	68-124	01/19/17 11:18	
Dibromofluoromethane (S)	%	98	72-126	01/19/17 11:18	
Toluene-d8 (S)	%	107	79-119	01/19/17 11:18	

LABORATORY CONTROL SAMPLE: 303414

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,1,1-Trichloroethane	ug/L	50	44.6	89	62-131	
1,1,2,2-Tetrachloroethane	ug/L	50	42.6	85	15-179	
1,1,2-Trichloroethane	ug/L	50	45.5	91	58-144	
1,1-Dichloroethane	ug/L	50	43.8	88	63-129	
1,1-Dichloroethene	ug/L	50	43.5	87	51-139	
1,2-Dibromo-3-chloropropane	ug/L	50	49.1	98	21-160	
1,2-Dibromoethane (EDB)	ug/L	50	46.6	93	52-161	
1,2-Dichloroethane	ug/L	50	45.1	90	57-148	
1,2-Dichloropropane	ug/L	50	45.3	91	66-128	
2-Butanone (MEK)	ug/L	50	45.0	90	32-183	
2-Hexanone	ug/L	50	40.7	81	36-170	
4-Methyl-2-pentanone (MIBK)	ug/L	50	43.5	87	26-171	
Acetone	ug/L	50	44.1	88	22-165	
Benzene	ug/L	50	41.2	82	62-131	
Bromodichloromethane	ug/L	50	46.9	94	69-132	
Bromoform	ug/L	50	45.6	91	35-166	
Bromomethane	ug/L	50	64.0	128	34-158	
Carbon disulfide	ug/L	50	50.4	101	31-128	
Carbon tetrachloride	ug/L	50	47.6	95	54-144	
Chlorobenzene	ug/L	50	50.8	102	70-127	
Chloroethane	ug/L	50	71.6	143	17-195	
Chloroform	ug/L	50	44.4	89	73-134	
Chloromethane	ug/L	50	37.4	75	17-153	
cis-1,2-Dichloroethene	ug/L	50	43.4	87	68-129	
cis-1,3-Dichloropropene	ug/L	50	46.8	94	72-138	
Dibromochloromethane	ug/L	50	46.0	92	49-146	
Dichlorodifluoromethane	ug/L	50	45.4	91	10-179	
Ethylbenzene	ug/L	50	46.5	93	66-126	
Isopropylbenzene (Cumene)	ug/L	50	43.4	87	51-138	
m&p-Xylene	ug/L	100	92.3	92	65-129	
Methyl acetate	ug/L	50	45.7	91	20-142	
Methyl-tert-butyl ether	ug/L	50	46.9	94	37-166	
Methylene Chloride	ug/L	50	48.8	98	46-168	
o-Xylene	ug/L	50	44.4	89	65-124	

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QUALITY CONTROL DATA

Project: PUMA TERMINAL CW SAMPLING

Pace Project No.: 2048890

LABORATORY CONTROL SAMPLE: 303414

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Styrene	ug/L	50	48.4	97	72-133	
Tetrachloroethene	ug/L	50	47.9	96	46-157	
Toluene	ug/L	50	46.6	93	69-126	
trans-1,2-Dichloroethene	ug/L	50	43.4	87	60-129	
trans-1,3-Dichloropropene	ug/L	50	47.8	96	59-149	
Trichloroethene	ug/L	50	46.8	94	67-132	
Trichlorofluoromethane	ug/L	50	62.2	124	39-171	
Vinyl chloride	ug/L	50	54.9	110	27-149	
4-Bromofluorobenzene (S)	%			98	68-124	
Dibromofluoromethane (S)	%			98	72-126	
Toluene-d8 (S)	%			104	79-119	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 303415 303416

Parameter	Units	MS		MSD		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		2048890008 Result	Spike Conc.	Spike Conc.	MS Result						
1,1,1-Trichloroethane	ug/L	ND	50	50	49.5	49.0	99	98	54-137	1	20
1,1,2,2-Tetrachloroethane	ug/L	ND	50	50	42.5	43.2	85	86	15-187	2	20
1,1,2-Trichloroethane	ug/L	ND	50	50	46.0	45.2	92	90	59-148	2	20
1,1-Dichloroethane	ug/L	ND	50	50	46.5	45.5	93	91	59-133	2	20
1,1-Dichloroethene	ug/L	ND	50	50	46.3	45.1	93	90	44-146	3	20
1,2-Dibromo-3-chloropropane	ug/L	ND	50	50	47.8	48.3	96	97	23-166	1	20
1,2-Dibromoethane (EDB)	ug/L	ND	50	50	47.5	46.8	95	94	55-166	2	20
1,2-Dichloroethane	ug/L	ND	50	50	46.2	45.8	92	92	56-154	1	20
1,2-Dichloropropane	ug/L	ND	50	50	47.6	46.7	95	93	62-135	2	20
2-Butanone (MEK)	ug/L	ND	50	50	44.9	45.0	90	90	20-205	0	20
2-Hexanone	ug/L	ND	50	50	40.4	39.7	81	79	25-189	2	20
4-Methyl-2-pentanone (MIBK)	ug/L	ND	50	50	41.6	41.1	83	82	23-184	1	20
Acetone	ug/L	ND	50	50	48.3	47.2	93	91	11-217	2	20
Benzene	ug/L	ND	50	50	44.5	43.4	89	87	52-141	2	20
Bromodichloromethane	ug/L	ND	50	50	49.5	49.3	99	99	70-134	0	20
Bromoform	ug/L	ND	50	50	46.4	46.0	93	92	37-171	1	20
Bromomethane	ug/L	ND	50	50	69.3	66.5	139	133	34-155	4	20
Carbon disulfide	ug/L	ND	50	50	58.3	54.5	117	109	28-130	7	20
Carbon tetrachloride	ug/L	ND	50	50	52.3	51.3	105	103	48-146	2	20
Chlorobenzene	ug/L	ND	50	50	53.8	53.2	108	106	67-129	1	20
Chloroethane	ug/L	ND	50	50	80.3	77.0	161	154	12-192	4	20
Chloroform	ug/L	ND	50	50	47.0	46.5	94	93	66-143	1	20
Chloromethane	ug/L	ND	50	50	37.6	39.1	75	78	14-155	4	20
cis-1,2-Dichloroethene	ug/L	ND	50	50	46.6	45.2	93	90	56-141	3	20
cis-1,3-Dichloropropene	ug/L	ND	50	50	49.3	48.5	99	97	70-139	2	20
Dibromochloromethane	ug/L	ND	50	50	47.1	46.8	94	94	50-150	1	20
Dichlorodifluoromethane	ug/L	ND	50	50	46.2	45.3	92	91	10-173	2	20
Ethylbenzene	ug/L	ND	50	50	50.4	49.2	101	98	57-135	2	20

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: PUMA TERMINAL CW SAMPLING

Pace Project No.: 2048890

Parameter	Units	2048890008		303415		303416		% Rec	% Rec	% Rec	Limits	RPD	Max RPD	Qual
		Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec							
Isopropylbenzene (Cumene)	ug/L	ND	50	50	46.4	47.1	93	94	40-146	1	20			
m&p-Xylene	ug/L	ND	100	100	99.3	97.2	99	97	56-136	2	20			
Methyl acetate	ug/L	ND	50	50	44.2	45.2	88	90	10-142	2	20			
Methyl-tert-butyl ether	ug/L	4.7	50	50	51.6	51.5	94	94	35-176	0	20			
Methylene Chloride	ug/L	ND	50	50	50.8	49.1	102	98	45-166	3	20			
o-Xylene	ug/L	ND	50	50	47.0	46.7	94	93	57-133	1	20			
Styrene	ug/L	ND	50	50	16.7	14.4	33	29	58-144	15	20	M1		
Tetrachloroethene	ug/L	ND	50	50	52.2	50.9	104	102	48-143	2	20			
Toluene	ug/L	ND	50	50	50.6	49.7	101	99	59-136	2	20			
trans-1,2-Dichloroethene	ug/L	ND	50	50	47.4	45.4	95	91	57-132	4	20			
trans-1,3-Dichloropropene	ug/L	ND	50	50	49.4	48.1	99	96	59-154	3	20			
Trichloroethene	ug/L	0.81	50	50	52.6	50.8	104	100	58-140	3	20			
Trichlorofluoromethane	ug/L	ND	50	50	70.9	68.4	142	137	24-175	4	20			
Vinyl chloride	ug/L	ND	50	50	60.2	56.2	120	112	21-150	7	20			
4-Bromofluorobenzene (S)	%.						97	100	68-124					
Dibromofluoromethane (S)	%.						100	100	72-126					
Toluene-d8 (S)	%.						105	105	79-119					

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QUALITY CONTROL DATA

Project: PUMA TERMINAL CW SAMPLING

Pace Project No.: 2048890

QC Batch: 72438 Analysis Method: EPA 8015B Modified

QC Batch Method: EPA 3535 Analysis Description: EPA 8015 ORO

Associated Lab Samples: 2048890002, 2048890003, 2048890004, 2048890005, 2048890006, 2048890007, 2048890008, 2048890010

METHOD BLANK: 303428 Matrix: Water

Associated Lab Samples: 2048890002, 2048890003, 2048890004, 2048890005, 2048890006, 2048890007, 2048890008, 2048890010

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Diesel Range Organic (C10-C28)	mg/L	ND	0.25	01/29/17 17:56	
Oil Range Organics (>C28-C40)	mg/L	ND	0.50	01/29/17 17:56	
n-Pentacosane (S)	%	54	16-137	01/29/17 17:56	
o-Terphenyl (S)	%	65	10-121	01/29/17 17:56	

LABORATORY CONTROL SAMPLE: 303429

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Diesel Range Organic (C10-C28)	mg/L	.4	.16J	39	10-115	
n-Pentacosane (S)	%			47	16-137	
o-Terphenyl (S)	%			61	10-121	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 303430 303431

Parameter	Units	2048890008 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	Max RPD	Qual
Diesel Range Organic (C10-C28)	mg/L	ND	.8	.8	0.51	.43J	48	39	10-122	20	
n-Pentacosane (S)	%						65	48	16-137		
o-Terphenyl (S)	%						69	53	10-121		

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QUALITY CONTROL DATA

Project: PUMA TERMINAL CW SAMPLING

Pace Project No.: 2048890

QC Batch: 72547 Analysis Method: EPA 8270 by SIM
QC Batch Method: EPA 3510 Analysis Description: 8270 Water by SIM MSSV
Associated Lab Samples: 2048890002, 2048890003, 2048890004, 2048890005, 2048890006, 2048890007

METHOD BLANK: 303977 Matrix: Water
Associated Lab Samples: 2048890002, 2048890003, 2048890004, 2048890005, 2048890006, 2048890007

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
2-Methylnaphthalene	ug/L	ND	0.10	01/30/17 15:27	
Acenaphthene	ug/L	ND	0.10	01/30/17 15:27	
Acenaphthylene	ug/L	ND	0.10	01/30/17 15:27	
Anthracene	ug/L	ND	0.10	01/30/17 15:27	
Benzo(a)anthracene	ug/L	ND	0.10	01/30/17 15:27	
Benzo(a)pyrene	ug/L	ND	0.10	01/30/17 15:27	
Benzo(b)fluoranthene	ug/L	ND	0.10	01/30/17 15:27	
Benzo(g,h,i)perylene	ug/L	ND	0.10	01/30/17 15:27	
Benzo(k)fluoranthene	ug/L	ND	0.10	01/30/17 15:27	
Chrysene	ug/L	ND	0.10	01/30/17 15:27	
Dibenz(a,h)anthracene	ug/L	ND	0.10	01/30/17 15:27	
Fluoranthene	ug/L	ND	0.10	01/30/17 15:27	
Fluorene	ug/L	ND	0.10	01/30/17 15:27	
Indeno(1,2,3-cd)pyrene	ug/L	ND	0.10	01/30/17 15:27	
Naphthalene	ug/L	ND	0.10	01/30/17 15:27	
Phenanthrene	ug/L	ND	0.10	01/30/17 15:27	
Pyrene	ug/L	ND	0.10	01/30/17 15:27	
2-Fluorobiphenyl (S)	%	108	25-150	01/30/17 15:27	
Terphenyl-d14 (S)	%	121	25-150	01/30/17 15:27	

LABORATORY CONTROL SAMPLE: 303978

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
2-Methylnaphthalene	ug/L	4	4.6	116	35-150	
Acenaphthene	ug/L	4	4.1	101	35-150	
Acenaphthylene	ug/L	4	4.0	101	35-150	
Anthracene	ug/L	4	5.2	129	35-150	
Benzo(a)anthracene	ug/L	4	4.1	102	35-150	
Benzo(a)pyrene	ug/L	4	3.8	96	35-150	
Benzo(b)fluoranthene	ug/L	4	3.9	98	35-150	
Benzo(g,h,i)perylene	ug/L	4	4.3	108	35-150	
Benzo(k)fluoranthene	ug/L	4	3.7	93	35-150	
Chrysene	ug/L	4	3.9	99	35-150	
Dibenz(a,h)anthracene	ug/L	4	4.3	107	35-150	
Fluoranthene	ug/L	4	4.1	103	35-150	
Fluorene	ug/L	4	4.1	102	35-150	
Indeno(1,2,3-cd)pyrene	ug/L	4	4.3	108	35-150	
Naphthalene	ug/L	4	3.9	98	35-150	
Phenanthrene	ug/L	4	4.2	105	35-150	
Pyrene	ug/L	4	4.0	101	35-150	

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QUALITY CONTROL DATA

Project: PUMA TERMINAL CW SAMPLING

Pace Project No.: 2048890

LABORATORY CONTROL SAMPLE: 303978

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
2-Fluorobiphenyl (S)	%.			104	25-150	
Terphenyl-d14 (S)	%.			101	25-150	

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QUALITY CONTROL DATA

Project: PUMA TERMINAL CW SAMPLING
Pace Project No.: 2048890

QC Batch: 72592 Analysis Method: EPA 8270 by SIM
QC Batch Method: EPA 3510 Analysis Description: 8270 Water by SIM MSSV
Associated Lab Samples: 2048890008, 2048890010

METHOD BLANK: 304106 Matrix: Water
Associated Lab Samples: 2048890008, 2048890010

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
2-Methylnaphthalene	ug/L	ND	0.10	01/30/17 16:07	
Acenaphthene	ug/L	ND	0.10	01/30/17 16:07	
Acenaphthylene	ug/L	ND	0.10	01/30/17 16:07	
Anthracene	ug/L	ND	0.10	01/30/17 16:07	
Benzo(a)anthracene	ug/L	ND	0.10	01/30/17 16:07	
Benzo(a)pyrene	ug/L	ND	0.10	01/30/17 16:07	
Benzo(b)fluoranthene	ug/L	ND	0.10	01/30/17 16:07	
Benzo(g,h,i)perylene	ug/L	ND	0.10	01/30/17 16:07	
Benzo(k)fluoranthene	ug/L	ND	0.10	01/30/17 16:07	
Chrysene	ug/L	ND	0.10	01/30/17 16:07	
Dibenz(a,h)anthracene	ug/L	ND	0.10	01/30/17 16:07	
Fluoranthene	ug/L	ND	0.10	01/30/17 16:07	
Fluorene	ug/L	ND	0.10	01/30/17 16:07	
Indeno(1,2,3-cd)pyrene	ug/L	ND	0.10	01/30/17 16:07	
Naphthalene	ug/L	ND	0.10	01/30/17 16:07	
Phenanthrene	ug/L	ND	0.10	01/30/17 16:07	
Pyrene	ug/L	ND	0.10	01/30/17 16:07	
2-Fluorobiphenyl (S)	%	77	25-150	01/30/17 16:07	
Terphenyl-d14 (S)	%	81	25-150	01/30/17 16:07	

LABORATORY CONTROL SAMPLE: 304107

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
2-Methylnaphthalene	ug/L	4	3.6	90	35-150	
Acenaphthene	ug/L	4	3.3	82	35-150	
Acenaphthylene	ug/L	4	3.1	79	35-150	
Anthracene	ug/L	4	4.2	105	35-150	
Benzo(a)anthracene	ug/L	4	3.3	84	35-150	
Benzo(a)pyrene	ug/L	4	3.3	81	35-150	
Benzo(b)fluoranthene	ug/L	4	3.5	88	35-150	
Benzo(g,h,i)perylene	ug/L	4	3.3	82	35-150	
Benzo(k)fluoranthene	ug/L	4	3.5	87	35-150	
Chrysene	ug/L	4	3.4	86	35-150	
Dibenz(a,h)anthracene	ug/L	4	3.3	83	35-150	
Fluoranthene	ug/L	4	3.4	85	35-150	
Fluorene	ug/L	4	3.3	83	35-150	
Indeno(1,2,3-cd)pyrene	ug/L	4	3.3	83	35-150	
Naphthalene	ug/L	4	3.1	78	35-150	
Phenanthrene	ug/L	4	3.5	86	35-150	
Pyrene	ug/L	4	3.4	86	35-150	

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QUALITY CONTROL DATA

Project: PUMA TERMINAL CW SAMPLING

Pace Project No.: 2048890

LABORATORY CONTROL SAMPLE: 304107

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
2-Fluorobiphenyl (S)	%.			100	25-150	
Terphenyl-d14 (S)	%.			103	25-150	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 304108 304109

Parameter	Units	2048890008		304108		304109		% Rec Limits	RPD	Max RPD	Qual	
		MS Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec					MSD % Rec
2-Methylnaphthalene	ug/L	ND	4	4	5.2	5.0	131	125	35-150	4	20	
Acenaphthene	ug/L	ND	4	4	4.9	4.9	122	122	35-150	0	20	
Acenaphthylene	ug/L	ND	4	4	4.7	4.7	117	117	35-150	0	20	
Anthracene	ug/L	ND	4	4	6.5	6.8	162	171	35-150	5	20	M1
Benzo(a)anthracene	ug/L	ND	4	4	5.2	5.5	130	139	35-150	6	20	
Benzo(a)pyrene	ug/L	ND	4	4	5.0	5.3	124	132	35-150	6	20	
Benzo(b)fluoranthene	ug/L	ND	4	4	5.4	5.7	135	142	35-150	5	20	
Benzo(g,h,i)perylene	ug/L	ND	4	4	5.1	5.2	129	130	35-150	1	20	
Benzo(k)fluoranthene	ug/L	ND	4	4	5.2	5.7	129	142	35-150	9	20	
Chrysene	ug/L	ND	4	4	5.2	5.5	131	138	35-150	5	20	
Dibenz(a,h)anthracene	ug/L	ND	4	4	5.1	5.2	129	130	35-150	1	20	
Fluoranthene	ug/L	ND	4	4	5.3	5.6	132	140	35-150	6	20	
Fluorene	ug/L	ND	4	4	4.9	5.0	123	124	35-150	1	20	
Indeno(1,2,3-cd)pyrene	ug/L	ND	4	4	5.1	5.2	128	130	35-150	2	20	
Naphthalene	ug/L	ND	4	4	4.6	4.3	114	106	35-150	7	20	
Phenanthrene	ug/L	ND	4	4	5.3	5.5	132	139	35-150	5	20	
Pyrene	ug/L	ND	4	4	5.2	5.7	129	141	35-150	9	20	
2-Fluorobiphenyl (S)	%.						124	119	25-150		20	
Terphenyl-d14 (S)	%.						127	137	25-150		20	

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REPORT OF LABORATORY ANALYSIS

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QUALIFIERS

Project: PUMA TERMINAL CW SAMPLING

Pace Project No.: 2048890

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The Nelac Institute

LABORATORIES

PASI-N Pace Analytical Services - New Orleans

BATCH QUALIFIERS

Batch: 72701

[M5] A matrix spike/matrix spike duplicate was not performed for this batch due to insufficient sample volume.

ANALYTE QUALIFIERS

C9 Common Laboratory Contaminant.

M1 Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

R1 RPD value was outside control limits.

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: PUMA TERMINAL CW SAMPLING
Pace Project No.: 2048890

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
2048890002	EB-011717	EPA 3535	72438	EPA 8015B Modified	72991
2048890003	MW-110AB	EPA 3535	72438	EPA 8015B Modified	72991
2048890004	MW-110B2	EPA 3535	72438	EPA 8015B Modified	72991
2048890005	MW-111A	EPA 3535	72438	EPA 8015B Modified	72991
2048890006	MW-114A	EPA 3535	72438	EPA 8015B Modified	72991
2048890007	DUP006	EPA 3535	72438	EPA 8015B Modified	72991
2048890008	MW-75B2	EPA 3535	72438	EPA 8015B Modified	72991
2048890010	MW-63A	EPA 3535	72438	EPA 8015B Modified	72991
2048890001	TB-011717	EPA 8015/8021	72457		
2048890002	EB-011717	EPA 8015/8021	72457		
2048890003	MW-110AB	EPA 8015/8021	72457		
2048890004	MW-110B2	EPA 8015/8021	72457		
2048890005	MW-111A	EPA 8015/8021	72457		
2048890006	MW-114A	EPA 8015/8021	72457		
2048890007	DUP006	EPA 8015/8021	72457		
2048890008	MW-75B2	EPA 8015/8021	72457		
2048890009	FB-011717	EPA 8015/8021	72457		
2048890010	MW-63A	EPA 8015/8021	72457		
2048890002	EB-011717	EPA 3010	72609	EPA 6020	72692
2048890003	MW-110AB	EPA 3010	72609	EPA 6020	72692
2048890004	MW-110B2	EPA 3010	72609	EPA 6020	72692
2048890005	MW-111A	EPA 3010	72609	EPA 6020	72692
2048890006	MW-114A	EPA 3010	72609	EPA 6020	72692
2048890007	DUP006	EPA 3010	72609	EPA 6020	72692
2048890008	MW-75B2	EPA 3010	72609	EPA 6020	72692
2048890010	MW-63A	EPA 3010	72609	EPA 6020	72692
2048890002	EB-011717	EPA 3005A	72614	EPA 6020	72700
2048890003	MW-110AB	EPA 3005A	72614	EPA 6020	72700
2048890004	MW-110B2	EPA 3005A	72614	EPA 6020	72700
2048890005	MW-111A	EPA 3005A	72614	EPA 6020	72700
2048890006	MW-114A	EPA 3005A	72614	EPA 6020	72700
2048890007	DUP006	EPA 3005A	72614	EPA 6020	72700
2048890008	MW-75B2	EPA 3005A	72614	EPA 6020	72700
2048890010	MW-63A	EPA 3005A	72614	EPA 6020	72700
2048890002	EB-011717	EPA 7470	72610	EPA 7470	72698
2048890003	MW-110AB	EPA 7470	72610	EPA 7470	72698
2048890004	MW-110B2	EPA 7470	72610	EPA 7470	72698
2048890005	MW-111A	EPA 7470	72610	EPA 7470	72698
2048890006	MW-114A	EPA 7470	72610	EPA 7470	72698
2048890007	DUP006	EPA 7470	72610	EPA 7470	72698
2048890008	MW-75B2	EPA 7470	72610	EPA 7470	72698
2048890010	MW-63A	EPA 7470	72610	EPA 7470	72698
2048890002	EB-011717	EPA 7470	72612	EPA 7470	72699
2048890003	MW-110AB	EPA 7470	72612	EPA 7470	72699
2048890004	MW-110B2	EPA 7470	72612	EPA 7470	72699
2048890005	MW-111A	EPA 7470	72612	EPA 7470	72699

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: PUMA TERMINAL CW SAMPLING

Pace Project No.: 2048890

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
2048890006	MW-114A	EPA 7470	72612	EPA 7470	72699
2048890007	DUP006	EPA 7470	72612	EPA 7470	72699
2048890008	MW-75B2	EPA 7470	72612	EPA 7470	72699
2048890010	MW-63A	EPA 7470	72612	EPA 7470	72699
2048890002	EB-011717	EPA 3510	72547	EPA 8270 by SIM	72701
2048890003	MW-110AB	EPA 3510	72547	EPA 8270 by SIM	72701
2048890004	MW-110B2	EPA 3510	72547	EPA 8270 by SIM	72701
2048890005	MW-111A	EPA 3510	72547	EPA 8270 by SIM	72701
2048890006	MW-114A	EPA 3510	72547	EPA 8270 by SIM	72701
2048890007	DUP006	EPA 3510	72547	EPA 8270 by SIM	72701
2048890008	MW-75B2	EPA 3510	72592	EPA 8270 by SIM	72702
2048890010	MW-63A	EPA 3510	72592	EPA 8270 by SIM	72702
2048890001	TB-011717	EPA 5030B/8260	72436		
2048890002	EB-011717	EPA 5030B/8260	72436		
2048890003	MW-110AB	EPA 5030B/8260	72436		
2048890004	MW-110B2	EPA 5030B/8260	72436		
2048890005	MW-111A	EPA 5030B/8260	72436		
2048890006	MW-114A	EPA 5030B/8260	72436		
2048890007	DUP006	EPA 5030B/8260	72436		
2048890008	MW-75B2	EPA 5030B/8260	72436		
2048890009	FB-011717	EPA 5030B/8260	72436		
2048890010	MW-63A	EPA 5030B/8260	72436		

REPORT OF LABORATORY ANALYSIS

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Section A

Sect
Requ

2048890

Required Client Information:

Information:

Page: 1 of 1
2075273

Company: Arcadis	Report To: Efrain Calderon	Attention:	REGULATORY AGENCY		
Address: 45000 Avenida Plaza Suite 401 S.J.	Copy To:	Company Name:	<input type="checkbox"/> NPDES	<input type="checkbox"/> GROUND WATER	<input type="checkbox"/> DRINKING WATER
105 Km 32, Caguas P.R.		Address:	<input type="checkbox"/> UST	<input type="checkbox"/> RCRA	<input type="checkbox"/> OTHER
Email To: Efrain Calderon @ arcadis.com	Purchase Order No.:	Pace Quote Reference:	Site Location: P.R.		
Phone: 787-727-4000	Project Name: Puma Terminal CW Sample	Pace Project Manager: Juan Redondo	STATE: P.R.		
Fax: 787-727-4006	Project Number: F002.1605.A	Pace Profile #: 7252			
Requested Due Date/TAT: Standard					

ITEM #	Section D Required Client Information	Matrix Codes MATRIX / CODE	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED				SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives							Analysis Test ↓	Requested Analysis Filtered (Y/N)	Residual Chlorine (Y/N)	
					COMPOSITE START		COMPOSITE END/GRAB				Unpreserved	H ₂ SO ₄	HNO ₃	HCl	NaOH	Na ₂ S ₂ O ₃	Methanol				Other
					DATE	TIME	DATE	TIME													
1	TB-011713		WT	G			01/19/11	LAB	4												
2	EB-011713		WT	G			01/19/11	0946	10	S											
3	MW-110AB		WT	G			01/19/11	1049	10	S											
4	MW-110B2		WT	G			01/19/11	1138	10	S											
5	MW-111A		WT	G			01/19/11	1236	10	S											
6	MW-15B2		WT	G			01/19/11	1450	10	S											
7	DUP006		WT	G			01/19/11	/	10	S											
8	MW-15B2 (MS)		WT	G			01/19/11	1450	10	S											
9	MW-15B2 (MSD)		WT	G			01/19/11	1450	10	S											
10	MW-114A		WT	G			01/19/11	1623	10	S											
11	FB-011713		WT	G			01/19/11	1630	4												
12	MW-63A		WT	G			01/19/11	1033	10	S											

2048890
Pace Project No./ Lab I.D.

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS		
Level IV	Arcadis / Arcadis	01/19/11	1415	Juan Redondo / Pace	1-18-11	1445	1.3		
	Juan Redondo / Pace	1-18-11	17100	Juan Redondo / Pace	1-18-11	17100	1.1		
	Fed Exp	11-9-11	0830	Juan Redondo / Pace	11-9-11	0830	0.5	Y	Y

ORIGINAL	SAMPLER NAME AND SIGNATURE		Temp in °C	Received on Ice (Y/N)	Custody Sealed Cooler (Y/N)	Samples Intact (Y/N)
	PRINT Name of SAMPLER: Efrain Calderon					
	SIGNATURE of SAMPLER: <i>Efrain Calderon</i>					
		DATE Signed (MM/DD/YY): 01/19/11				



Sample Condition Upon Receipt

WO#: 2048890

Urb. Jardines de Guaynabo
Calle Marginal Bldg A-10
Guaynabo, PR 00969

PM: JAR1 Due Date: 02/01/17
CLIENT: 98-ARCADISPR

Project #:

Courier: Pace Courier Hired Courier Fed X UPS DHL USPS Customer Other

Custody Seal on Cooler/Box Present: [see COC]

Custody Seals intact: Yes No

Thermometer Used: Therm Fisher IR 4 Therm Fisher IR 6 Therm Fisher IR 7

Type of Ice: Wet Blue None

Samples on ice: [see COC]

Cooler Temperature: [see COC]

Temp should be above freezing to 6°C

Date and Initials of person examining contents: 1-18-12 [Signature]

Temp must be measured from Temperature blank when present Comments:

Table with 15 rows and 3 columns: Question, Yes/No/N/A checkboxes, and Number. Includes items like 'Temperature Blank Present?', 'Chain of Custody Present', etc.

Client Notification/ Resolution:

Person Contacted: _____ Date/Time: _____

Comments/ Resolution: _____



Sample Condition Upon Receipt

1000 Riverbend Blvd., Suite F
St. Rose, LA 70087

Project #: **20**

Courier: Pace Courier Hired Courier Fed X UPS DHL USPS Customer Other

Custody Seal on Cooler/Box Present: [see COC]

Custody Seals intact: Yes No

Thermometer Used: Therm Fisher IR 5
 Therm Fisher IR 6
 Therm Fisher IR 7

Type of Ice: Wet Blue None

Samples on ice: [see COC]

Cooler Temperature: [see COC]

Temp should be above freezing to 6°C

Date and Initials of person examining contents: 1-19-17 JMB

Temp must be measured from Temperature blank when present

Comments:

Temperature Blank Present?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	1
Chain of Custody Present:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	2
Chain of Custody Complete:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	3
Chain of Custody Relinquished:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	4
Sampler Name & Signature on COC:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	5
Samples Arrived within Hold Time:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	6
Sufficient Volume:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	7
Correct Containers Used:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	8
Filtered vol. Rec. for Diss. tests	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	9
Sample Labels match COC:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	10
All containers received within manufacture's precautionary and/or expiration dates.	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	11
All containers needing chemical preservation have been checked (except VOA, coliform, & O&G).	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	12
All containers preservation checked found to be in compliance with EPA recommendation.	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	13
Headspace in VOA Vials (>6mm):	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	14
Trip Blank Present:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	15

Client Notification/ Resolution:

Person Contacted: _____ Date/Time: _____

Comments/ Resolution: _____

February 15, 2017

Efrain Calderon
BBL Caribe Engineering P.S.C.
48 City View Plaza1, Suite 401
Road 16, Km. 1.2
Guaynabo, PR 00968

RE: Project: PUMA TERMINAL MS SAMPLING
Pace Project No.: 2048681

Dear Efrain Calderon:

Enclosed are the analytical results for sample(s) received by the laboratory on January 12, 2017. The results relate only to the samples included in this report. Results reported herein conform to the most current, applicable TNI/NELAC standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,



Juan Redondo
juan.redondo@pacelabs.com
Project Manager

Enclosures

cc: Sharon Colon
Abner Hernandez
Marianela Mercado-Burgos



REPORT OF LABORATORY ANALYSIS

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CERTIFICATIONS

Project: PUMA TERMINAL MS SAMPLING

Pace Project No.: 2048681

New Orleans Certification IDs

California Env. Lab Accreditation Program Branch:
11277CA

Florida Department of Health (NELAC): E87595

Illinois Environmental Protection Agency: 0025721

Kansas Department of Health and Environment (NELAC):
E-10266

Louisiana Dept. of Environmental Quality (NELAC/LELAP):
02006

Pennsylvania Dept. of Env Protection (NELAC): 68-04202

Texas Commission on Env. Quality (NELAC):
T104704405-09-TX

U.S. Dept. of Agriculture Foreign Soil Import: P330-10-
00119

Commonwealth of Virginia (TNI): 480246

REPORT OF LABORATORY ANALYSIS

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SAMPLE SUMMARY

Project: PUMA TERMINAL MS SAMPLING

Pace Project No.: 2048681

Lab ID	Sample ID	Matrix	Date Collected	Date Received
2048681001	TB-011217	Water	01/12/17 00:00	01/12/17 15:48
2048681002	EB-011217	Water	01/12/17 08:20	01/12/17 15:48
2048681003	MW-76B2	Water	01/12/17 09:41	01/12/17 15:48
2048681004	MW-76A	Water	01/12/17 10:35	01/12/17 15:48
2048681005	MW-13A	Water	01/12/17 12:45	01/12/17 15:48
2048681006	MW-13B2	Water	01/12/17 13:46	01/12/17 15:48
2048681007	MW-37A	Water	01/12/17 14:38	01/12/17 15:48
2048681008	FB-011217	Water	01/12/17 14:48	01/12/17 15:48

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SAMPLE ANALYTE COUNT

Project: PUMA TERMINAL MS SAMPLING

Pace Project No.: 2048681

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
2048681001	TB-011217	EPA 8015/8021	MHM	2	PASI-N
		EPA 5030B/8260	RMP	45	PASI-N
2048681002	EB-011217	EPA 8015B Modified	SLF	4	PASI-N
		EPA 8015/8021	MHM	2	PASI-N
		EPA 6020	KJR	4	PASI-N
		EPA 6020	KJR	4	PASI-N
		EPA 7470	MHB1	1	PASI-N
		EPA 7470	MHB1	1	PASI-N
		EPA 8270 by SIM	GEJ	19	PASI-N
		EPA 5030B/8260	RMP	45	PASI-N
2048681003	MW-76B2	EPA 8015B Modified	SLF	4	PASI-N
		EPA 8015/8021	MHM	2	PASI-N
		EPA 6020	KJR	4	PASI-N
		EPA 6020	KJR	4	PASI-N
		EPA 7470	MHB1	1	PASI-N
		EPA 7470	MHB1	1	PASI-N
		EPA 8270 by SIM	GEJ	19	PASI-N
		EPA 5030B/8260	RMP	45	PASI-N
2048681004	MW-76A	EPA 8015B Modified	SLF	4	PASI-N
		EPA 8015/8021	MHM	2	PASI-N
		EPA 6020	KJR	4	PASI-N
		EPA 6020	KJR	4	PASI-N
		EPA 7470	MHB1	1	PASI-N
		EPA 7470	MHB1	1	PASI-N
		EPA 8270 by SIM	GEJ	19	PASI-N
		EPA 5030B/8260	RMP	45	PASI-N
2048681005	MW-13A	EPA 8015B Modified	SLF	4	PASI-N
		EPA 8015/8021	MHM	2	PASI-N
		EPA 6020	KJR	4	PASI-N
		EPA 6020	KJR	4	PASI-N
		EPA 7470	MHB1	1	PASI-N
		EPA 7470	MHB1	1	PASI-N
		EPA 8270 by SIM	GEJ	19	PASI-N
		EPA 5030B/8260	RMP	45	PASI-N
2048681006	MW-13B2	EPA 8015B Modified	SLF	4	PASI-N
		EPA 8015/8021	MHM	2	PASI-N
		EPA 6020	KJR	4	PASI-N

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SAMPLE ANALYTE COUNT

Project: PUMA TERMINAL MS SAMPLING
Pace Project No.: 2048681

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
2048681007	MW-37A	EPA 6020	KJR	4	PASI-N
		EPA 7470	MHB1	1	PASI-N
		EPA 7470	MHB1	1	PASI-N
		EPA 8270 by SIM	GEJ	19	PASI-N
		EPA 5030B/8260	RMP	45	PASI-N
		EPA 8015B Modified	SLF	4	PASI-N
		EPA 8015/8021	MHM	2	PASI-N
		EPA 6020	KJR	4	PASI-N
		EPA 6020	KJR	4	PASI-N
		EPA 7470	MHB1	1	PASI-N
2048681008	FB-011217	EPA 7470	MHB1	1	PASI-N
		EPA 8270 by SIM	GEJ	19	PASI-N
		EPA 5030B/8260	RMP	45	PASI-N
		EPA 8015/8021	MHM	2	PASI-N
		EPA 5030B/8260	RMP	45	PASI-N

REPORT OF LABORATORY ANALYSIS

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PROJECT NARRATIVE

Project: PUMA TERMINAL MS SAMPLING

Pace Project No.: 2048681

Method: EPA 8015B Modified

Description: 8015M DRO/ORO Organics

Client: BBL Caribe / Arcadis PR

Date: February 15, 2017

General Information:

6 samples were analyzed for EPA 8015B Modified. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:

The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:

The samples were prepared in accordance with EPA 3535 with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):

All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:

All criteria were within method requirements with any exceptions noted below.

Surrogates:

All surrogates were within QC limits with any exceptions noted below.

Method Blank:

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

QC Batch: 72198

A matrix spike/matrix spike duplicate was not performed due to insufficient sample volume.

Additional Comments:

REPORT OF LABORATORY ANALYSIS

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PROJECT NARRATIVE

Project: PUMA TERMINAL MS SAMPLING

Pace Project No.: 2048681

Method: EPA 8015/8021

Description: 8021 GCV BTEX, MTBE, GRO

Client: BBL Caribe / Arcadis PR

Date: February 15, 2017

General Information:

8 samples were analyzed for EPA 8015/8021. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:

The samples were analyzed within the method required hold times with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):

All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:

All criteria were within method requirements with any exceptions noted below.

Surrogates:

All surrogates were within QC limits with any exceptions noted below.

Method Blank:

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

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PROJECT NARRATIVE

Project: PUMA TERMINAL MS SAMPLING

Pace Project No.: 2048681

Method: EPA 6020

Description: 6020 MET ICPMS

Client: BBL Caribe / Arcadis PR

Date: February 15, 2017

General Information:

6 samples were analyzed for EPA 6020. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:

The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:

The samples were prepared in accordance with EPA 3010 with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):

All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:

All criteria were within method requirements with any exceptions noted below.

Internal Standards:

All internal standards were within QC limits with any exceptions noted below.

Method Blank:

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

REPORT OF LABORATORY ANALYSIS

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PROJECT NARRATIVE

Project: PUMA TERMINAL MS SAMPLING
Pace Project No.: 2048681

Method: EPA 6020
Description: 6020 MET ICPMS, Dissolved (LF)
Client: BBL Caribe / Arcadis PR
Date: February 15, 2017

General Information:

6 samples were analyzed for EPA 6020. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:

The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:

The samples were prepared in accordance with EPA 3005A with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):

All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:

All criteria were within method requirements with any exceptions noted below.

Internal Standards:

All internal standards were within QC limits with any exceptions noted below.

Method Blank:

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

Batch Comments:

- Insufficient sample volume to perform MS/MSD analyses.
- QC Batch: 72356

REPORT OF LABORATORY ANALYSIS

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PROJECT NARRATIVE

Project: PUMA TERMINAL MS SAMPLING

Pace Project No.: 2048681

Method: EPA 7470

Description: 7470 Mercury

Client: BBL Caribe / Arcadis PR

Date: February 15, 2017

General Information:

6 samples were analyzed for EPA 7470. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:

The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:

The samples were prepared in accordance with EPA 7470 with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):

All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:

All criteria were within method requirements with any exceptions noted below.

Method Blank:

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

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PROJECT NARRATIVE

Project: PUMA TERMINAL MS SAMPLING

Pace Project No.: 2048681

Method: EPA 7470

Description: 7470 Mercury, Dissolved (LF)

Client: BBL Caribe / Arcadis PR

Date: February 15, 2017

General Information:

6 samples were analyzed for EPA 7470. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:

The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:

The samples were prepared in accordance with EPA 7470 with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):

All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:

All criteria were within method requirements with any exceptions noted below.

Method Blank:

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

REPORT OF LABORATORY ANALYSIS

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PROJECT NARRATIVE

Project: PUMA TERMINAL MS SAMPLING

Pace Project No.: 2048681

Method: EPA 8270 by SIM

Description: 8270 MSSV PAH by SIM SEP

Client: BBL Caribe / Arcadis PR

Date: February 15, 2017

General Information:

6 samples were analyzed for EPA 8270 by SIM. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:

The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:

The samples were prepared in accordance with EPA 3510 with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):

All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:

All criteria were within method requirements with any exceptions noted below.

Internal Standards:

All internal standards were within QC limits with any exceptions noted below.

Surrogates:

All surrogates were within QC limits with any exceptions noted below.

Method Blank:

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

QC Batch: 72204

A matrix spike/matrix spike duplicate was not performed due to insufficient sample volume.

Additional Comments:

REPORT OF LABORATORY ANALYSIS

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PROJECT NARRATIVE

Project: PUMA TERMINAL MS SAMPLING
Pace Project No.: 2048681

Method: EPA 5030B/8260
Description: 8260 MSV Low Level
Client: BBL Caribe / Arcadis PR
Date: February 15, 2017

General Information:

8 samples were analyzed for EPA 5030B/8260. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:

The samples were analyzed within the method required hold times with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):

All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:

All criteria were within method requirements with any exceptions noted below.

Internal Standards:

All internal standards were within QC limits with any exceptions noted below.

Surrogates:

All surrogates were within QC limits with any exceptions noted below.

Method Blank:

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

QC Batch: 72210

L0: Analyte recovery in the laboratory control sample (LCS) was outside QC limits.

- LCS (Lab ID: 302518)
- Carbon disulfide

Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

QC Batch: 72210

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 2048748001

M0: Matrix spike recovery and/or matrix spike duplicate recovery was outside laboratory control limits.

- MS (Lab ID: 302519)
 - Carbon disulfide
- MSD (Lab ID: 302520)
 - Carbon disulfide

R1: RPD value was outside control limits.

- MSD (Lab ID: 302520)
 - Bromomethane
 - Carbon disulfide

REPORT OF LABORATORY ANALYSIS

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PROJECT NARRATIVE

Project: PUMA TERMINAL MS SAMPLING
Pace Project No.: 2048681

Method: EPA 5030B/8260
Description: 8260 MSV Low Level
Client: BBL Caribe / Arcadis PR
Date: February 15, 2017

QC Batch: 72210

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 2048748001

R1: RPD value was outside control limits.

- Chloroethane

Additional Comments:

Analyte Comments:

QC Batch: 72210

C9: Common Laboratory Contaminant.

- EB-011217 (Lab ID: 2048681002)
 - Acetone
- FB-011217 (Lab ID: 2048681008)
 - Acetone
- MW-13A (Lab ID: 2048681005)
 - Acetone
- MW-13B2 (Lab ID: 2048681006)
 - Acetone
- MW-76A (Lab ID: 2048681004)
 - Acetone
- MW-76B2 (Lab ID: 2048681003)
 - Acetone
- TB-011217 (Lab ID: 2048681001)
 - Acetone

This data package has been reviewed for quality and completeness and is approved for release.

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: PUMA TERMINAL MS SAMPLING

Pace Project No.: 2048681

Sample: TB-011217	Lab ID: 2048681001	Collected: 01/12/17 00:00	Received: 01/12/17 15:48	Matrix: Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8021 GCV BTEX, MTBE, GRO	Analytical Method: EPA 8015/8021							
Gasoline Range Organics	ND	ug/L	50.0	1		01/18/17 21:00		
Surrogates								
4-Bromofluorobenzene (S)	98	%	44-148	1		01/18/17 21:00	460-00-4	
8260 MSV Low Level	Analytical Method: EPA 5030B/8260							
Acetone	22.2	ug/L	4.0	1		01/17/17 15:50	67-64-1	C9
Benzene	ND	ug/L	0.50	1		01/17/17 15:50	71-43-2	
Bromodichloromethane	0.67	ug/L	0.50	1		01/17/17 15:50	75-27-4	
Bromoform	ND	ug/L	0.50	1		01/17/17 15:50	75-25-2	
Bromomethane	ND	ug/L	0.50	1		01/17/17 15:50	74-83-9	
2-Butanone (MEK)	ND	ug/L	2.0	1		01/17/17 15:50	78-93-3	
Carbon disulfide	ND	ug/L	1.0	1		01/17/17 15:50	75-15-0	L3
Carbon tetrachloride	ND	ug/L	0.50	1		01/17/17 15:50	56-23-5	
Chlorobenzene	ND	ug/L	0.50	1		01/17/17 15:50	108-90-7	
Chloroethane	ND	ug/L	0.50	1		01/17/17 15:50	75-00-3	
Chloroform	3.4	ug/L	0.50	1		01/17/17 15:50	67-66-3	
Chloromethane	ND	ug/L	0.50	1		01/17/17 15:50	74-87-3	
1,2-Dibromo-3-chloropropane	ND	ug/L	0.20	1		01/17/17 15:50	96-12-8	
Dibromochloromethane	ND	ug/L	0.50	1		01/17/17 15:50	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	1		01/17/17 15:50	106-93-4	
Dichlorodifluoromethane	ND	ug/L	1.0	1		01/17/17 15:50	75-71-8	
1,1-Dichloroethane	ND	ug/L	0.50	1		01/17/17 15:50	75-34-3	
1,2-Dichloroethane	ND	ug/L	0.50	1		01/17/17 15:50	107-06-2	
1,1-Dichloroethene	ND	ug/L	0.50	1		01/17/17 15:50	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	1		01/17/17 15:50	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	0.50	1		01/17/17 15:50	156-60-5	
1,2-Dichloropropane	ND	ug/L	0.50	1		01/17/17 15:50	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	0.50	1		01/17/17 15:50	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	0.50	1		01/17/17 15:50	10061-02-6	
Ethylbenzene	ND	ug/L	0.50	1		01/17/17 15:50	100-41-4	
2-Hexanone	ND	ug/L	1.0	1		01/17/17 15:50	591-78-6	
Isopropylbenzene (Cumene)	ND	ug/L	1.0	1		01/17/17 15:50	98-82-8	
Methyl acetate	ND	ug/L	2.0	1		01/17/17 15:50	79-20-9	
Methylene Chloride	ND	ug/L	0.50	1		01/17/17 15:50	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	1.0	1		01/17/17 15:50	108-10-1	
Methyl-tert-butyl ether	ND	ug/L	0.50	1		01/17/17 15:50	1634-04-4	
Styrene	ND	ug/L	1.0	1		01/17/17 15:50	100-42-5	
1,1,2,2-Tetrachloroethane	ND	ug/L	0.50	1		01/17/17 15:50	79-34-5	
Tetrachloroethene	ND	ug/L	0.50	1		01/17/17 15:50	127-18-4	
Toluene	ND	ug/L	0.50	1		01/17/17 15:50	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	0.50	1		01/17/17 15:50	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	0.50	1		01/17/17 15:50	79-00-5	
Trichloroethene	ND	ug/L	0.50	1		01/17/17 15:50	79-01-6	
Trichlorofluoromethane	ND	ug/L	0.50	1		01/17/17 15:50	75-69-4	
Vinyl chloride	ND	ug/L	0.50	1		01/17/17 15:50	75-01-4	
m&p-Xylene	ND	ug/L	2.0	1		01/17/17 15:50	179601-23-1	
o-Xylene	ND	ug/L	1.0	1		01/17/17 15:50	95-47-6	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: PUMA TERMINAL MS SAMPLING

Project No.: 2048681

Sample:	Lab ID:	Collected:	Received:	Matrix:				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
Sample: TB-011217	Lab ID: 2048681001	Collected: 01/12/17 00:00	Received: 01/12/17 15:48	Matrix: Water				
8260 MSV Low Level Analytical Method: EPA 5030B/8260								
Surrogates								
Dibromofluoromethane (S)	107	%.	72-126	1		01/17/17 15:50	1868-53-7	
4-Bromofluorobenzene (S)	95	%.	68-124	1		01/17/17 15:50	460-00-4	
Toluene-d8 (S)	99	%.	79-119	1		01/17/17 15:50	2037-26-5	
Sample: EB-011217	Lab ID: 2048681002	Collected: 01/12/17 08:20	Received: 01/12/17 15:48	Matrix: Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8015M DRO/ORO Organics Analytical Method: EPA 8015B Modified Preparation Method: EPA 3535								
Diesel Range Organic (C10-C28)	ND	mg/L	0.50	1	01/17/17 09:23	01/18/17 16:35		
Oil Range Organics (>C28-C40)	ND	mg/L	1.0	1	01/17/17 09:23	01/18/17 16:35		
Surrogates								
n-Pentacosane (S)	57	%.	16-137	1	01/17/17 09:23	01/18/17 16:35	629-99-2	
o-Terphenyl (S)	58	%.	10-121	1	01/17/17 09:23	01/18/17 16:35	84-15-1	
8021 GCV BTEX, MTBE, GRO Analytical Method: EPA 8015/8021								
Gasoline Range Organics	ND	ug/L	50.0	1		01/18/17 21:27		
Surrogates								
4-Bromofluorobenzene (S)	97	%.	44-148	1		01/18/17 21:27	460-00-4	
6020 MET ICPMS Analytical Method: EPA 6020 Preparation Method: EPA 3010								
Arsenic	ND	mg/L	0.0010	1	01/17/17 06:56	02/11/17 14:03	7440-38-2	
Chromium	ND	mg/L	0.0010	1	01/17/17 06:56	02/11/17 14:03	7440-47-3	
Lead	ND	mg/L	0.0010	1	01/17/17 06:56	02/11/17 14:03	7439-92-1	
Vanadium	ND	mg/L	0.0050	1	01/17/17 06:56	02/11/17 14:03	7440-62-2	
6020 MET ICPMS, Dissolved (LF) Analytical Method: EPA 6020 Preparation Method: EPA 3005A								
Arsenic, Dissolved	ND	ug/L	1.0	1	01/18/17 10:15	02/11/17 13:28	7440-38-2	
Chromium, Dissolved	ND	ug/L	1.0	1	01/18/17 10:15	02/11/17 13:28	7440-47-3	
Lead, Dissolved	ND	ug/L	1.0	1	01/18/17 10:15	02/11/17 13:28	7439-92-1	
Vanadium, Dissolved	ND	ug/L	5.0	1	01/18/17 10:15	02/11/17 13:28	7440-62-2	
7470 Mercury Analytical Method: EPA 7470 Preparation Method: EPA 7470								
Mercury	ND	ug/L	0.20	1	01/18/17 10:01	01/19/17 11:06	7439-97-6	
7470 Mercury, Dissolved (LF) Analytical Method: EPA 7470 Preparation Method: EPA 7470								
Mercury, Dissolved	ND	ug/L	0.20	1	01/18/17 10:15	01/19/17 12:15	7439-97-6	
8270 MSSV PAH by SIM SEP Analytical Method: EPA 8270 by SIM Preparation Method: EPA 3510								
Acenaphthene	ND	ug/L	0.10	1	01/17/17 10:16	01/17/17 20:35	83-32-9	
Acenaphthylene	ND	ug/L	0.10	1	01/17/17 10:16	01/17/17 20:35	208-96-8	
Anthracene	ND	ug/L	0.10	1	01/17/17 10:16	01/17/17 20:35	120-12-7	
Benzo(a)anthracene	ND	ug/L	0.10	1	01/17/17 10:16	01/17/17 20:35	56-55-3	
Benzo(a)pyrene	ND	ug/L	0.10	1	01/17/17 10:16	01/17/17 20:35	50-32-8	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: PUMA TERMINAL MS SAMPLING

Pace Project No.: 2048681

Sample: EB-011217	Lab ID: 2048681002	Collected: 01/12/17 08:20	Received: 01/12/17 15:48	Matrix: Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual

8270 MSSV PAH by SIM SEP

Analytical Method: EPA 8270 by SIM Preparation Method: EPA 3510

Benzo(b)fluoranthene	ND	ug/L	0.10	1	01/17/17 10:16	01/17/17 20:35	205-99-2	
Benzo(g,h,i)perylene	ND	ug/L	0.10	1	01/17/17 10:16	01/17/17 20:35	191-24-2	
Benzo(k)fluoranthene	ND	ug/L	0.10	1	01/17/17 10:16	01/17/17 20:35	207-08-9	
Chrysene	ND	ug/L	0.10	1	01/17/17 10:16	01/17/17 20:35	218-01-9	
Dibenz(a,h)anthracene	ND	ug/L	0.10	1	01/17/17 10:16	01/17/17 20:35	53-70-3	
Fluoranthene	ND	ug/L	0.10	1	01/17/17 10:16	01/17/17 20:35	206-44-0	
Fluorene	ND	ug/L	0.10	1	01/17/17 10:16	01/17/17 20:35	86-73-7	
Indeno(1,2,3-cd)pyrene	ND	ug/L	0.10	1	01/17/17 10:16	01/17/17 20:35	193-39-5	
2-Methylnaphthalene	ND	ug/L	0.10	1	01/17/17 10:16	01/17/17 20:35	91-57-6	
Naphthalene	ND	ug/L	0.10	1	01/17/17 10:16	01/17/17 20:35	91-20-3	
Phenanthrene	ND	ug/L	0.10	1	01/17/17 10:16	01/17/17 20:35	85-01-8	
Pyrene	ND	ug/L	0.10	1	01/17/17 10:16	01/17/17 20:35	129-00-0	
Surrogates								
2-Fluorobiphenyl (S)	76	%	25-150	1	01/17/17 10:16	01/17/17 20:35	321-60-8	
Terphenyl-d14 (S)	76	%	25-150	1	01/17/17 10:16	01/17/17 20:35	1718-51-0	

8260 MSV Low Level

Analytical Method: EPA 5030B/8260

Acetone	16.0	ug/L	4.0	1		01/17/17 16:08	67-64-1	C9
Benzene	ND	ug/L	0.50	1		01/17/17 16:08	71-43-2	
Bromodichloromethane	1.1	ug/L	0.50	1		01/17/17 16:08	75-27-4	
Bromoform	ND	ug/L	0.50	1		01/17/17 16:08	75-25-2	
Bromomethane	ND	ug/L	0.50	1		01/17/17 16:08	74-83-9	
2-Butanone (MEK)	ND	ug/L	2.0	1		01/17/17 16:08	78-93-3	
Carbon disulfide	ND	ug/L	1.0	1		01/17/17 16:08	75-15-0	L3
Carbon tetrachloride	ND	ug/L	0.50	1		01/17/17 16:08	56-23-5	
Chlorobenzene	ND	ug/L	0.50	1		01/17/17 16:08	108-90-7	
Chloroethane	ND	ug/L	0.50	1		01/17/17 16:08	75-00-3	
Chloroform	4.8	ug/L	0.50	1		01/17/17 16:08	67-66-3	
Chloromethane	ND	ug/L	0.50	1		01/17/17 16:08	74-87-3	
1,2-Dibromo-3-chloropropane	ND	ug/L	0.20	1		01/17/17 16:08	96-12-8	
Dibromochloromethane	ND	ug/L	0.50	1		01/17/17 16:08	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	1		01/17/17 16:08	106-93-4	
Dichlorodifluoromethane	ND	ug/L	1.0	1		01/17/17 16:08	75-71-8	
1,1-Dichloroethane	ND	ug/L	0.50	1		01/17/17 16:08	75-34-3	
1,2-Dichloroethane	ND	ug/L	0.50	1		01/17/17 16:08	107-06-2	
1,1-Dichloroethene	ND	ug/L	0.50	1		01/17/17 16:08	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	1		01/17/17 16:08	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	0.50	1		01/17/17 16:08	156-60-5	
1,2-Dichloropropane	ND	ug/L	0.50	1		01/17/17 16:08	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	0.50	1		01/17/17 16:08	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	0.50	1		01/17/17 16:08	10061-02-6	
Ethylbenzene	ND	ug/L	0.50	1		01/17/17 16:08	100-41-4	
2-Hexanone	ND	ug/L	1.0	1		01/17/17 16:08	591-78-6	
Isopropylbenzene (Cumene)	ND	ug/L	1.0	1		01/17/17 16:08	98-82-8	
Methyl acetate	ND	ug/L	2.0	1		01/17/17 16:08	79-20-9	
Methylene Chloride	ND	ug/L	0.50	1		01/17/17 16:08	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	1.0	1		01/17/17 16:08	108-10-1	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: PUMA TERMINAL MS SAMPLING

Pace Project No.: 2048681

Sample: EB-011217	Lab ID: 2048681002	Collected: 01/12/17 08:20	Received: 01/12/17 15:48	Matrix: Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV Low Level		Analytical Method: EPA 5030B/8260						
Methyl-tert-butyl ether	ND	ug/L	0.50	1		01/17/17 16:08	1634-04-4	
Styrene	ND	ug/L	1.0	1		01/17/17 16:08	100-42-5	
1,1,2,2-Tetrachloroethane	ND	ug/L	0.50	1		01/17/17 16:08	79-34-5	
Tetrachloroethene	ND	ug/L	0.50	1		01/17/17 16:08	127-18-4	
Toluene	ND	ug/L	0.50	1		01/17/17 16:08	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	0.50	1		01/17/17 16:08	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	0.50	1		01/17/17 16:08	79-00-5	
Trichloroethene	ND	ug/L	0.50	1		01/17/17 16:08	79-01-6	
Trichlorofluoromethane	ND	ug/L	0.50	1		01/17/17 16:08	75-69-4	
Vinyl chloride	ND	ug/L	0.50	1		01/17/17 16:08	75-01-4	
m&p-Xylene	ND	ug/L	2.0	1		01/17/17 16:08	179601-23-1	
o-Xylene	ND	ug/L	1.0	1		01/17/17 16:08	95-47-6	
Surrogates								
Dibromofluoromethane (S)	109	%	72-126	1		01/17/17 16:08	1868-53-7	
4-Bromofluorobenzene (S)	96	%	68-124	1		01/17/17 16:08	460-00-4	
Toluene-d8 (S)	100	%	79-119	1		01/17/17 16:08	2037-26-5	
<hr/>								
Sample: MW-76B2	Lab ID: 2048681003	Collected: 01/12/17 09:41	Received: 01/12/17 15:48	Matrix: Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8015M DRO/ORO Organics		Analytical Method: EPA 8015B Modified Preparation Method: EPA 3535						
Diesel Range Organic (C10-C28)	ND	mg/L	0.50	1	01/17/17 09:23	01/18/17 17:03		
Oil Range Organics (>C28-C40)	ND	mg/L	1.0	1	01/17/17 09:23	01/18/17 17:03		
Surrogates								
n-Pentacosane (S)	50	%	16-137	1	01/17/17 09:23	01/18/17 17:03	629-99-2	
o-Terphenyl (S)	50	%	10-121	1	01/17/17 09:23	01/18/17 17:03	84-15-1	
8021 GCV BTEX, MTBE, GRO		Analytical Method: EPA 8015/8021						
Gasoline Range Organics	ND	ug/L	50.0	1		01/18/17 23:42		
Surrogates								
4-Bromofluorobenzene (S)	98	%	44-148	1		01/18/17 23:42	460-00-4	
6020 MET ICPMS		Analytical Method: EPA 6020 Preparation Method: EPA 3010						
Arsenic	ND	mg/L	0.0010	1	01/17/17 06:56	02/11/17 14:23	7440-38-2	
Chromium	ND	mg/L	0.0010	1	01/17/17 06:56	02/11/17 14:23	7440-47-3	
Lead	ND	mg/L	0.0010	1	01/17/17 06:56	02/11/17 14:23	7439-92-1	
Vanadium	ND	mg/L	0.0050	1	01/17/17 06:56	02/11/17 14:23	7440-62-2	
6020 MET ICPMS, Dissolved (LF)		Analytical Method: EPA 6020 Preparation Method: EPA 3005A						
Arsenic, Dissolved	ND	ug/L	1.0	1	01/18/17 10:15	02/11/17 13:32	7440-38-2	
Chromium, Dissolved	ND	ug/L	1.0	1	01/18/17 10:15	02/11/17 13:32	7440-47-3	
Lead, Dissolved	ND	ug/L	1.0	1	01/18/17 10:15	02/11/17 13:32	7439-92-1	
Vanadium, Dissolved	ND	ug/L	5.0	1	01/18/17 10:15	02/11/17 13:32	7440-62-2	

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ANALYTICAL RESULTS

Project: PUMA TERMINAL MS SAMPLING

Pace Project No.: 2048681

Sample: MW-76B2	Lab ID: 2048681003	Collected: 01/12/17 09:41	Received: 01/12/17 15:48	Matrix: Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
7470 Mercury								
Analytical Method: EPA 7470 Preparation Method: EPA 7470								
Mercury	ND	ug/L	0.20	1	01/18/17 10:01	01/19/17 11:13	7439-97-6	
7470 Mercury, Dissolved (LF)								
Analytical Method: EPA 7470 Preparation Method: EPA 7470								
Mercury, Dissolved	ND	ug/L	0.20	1	01/18/17 10:15	01/19/17 12:18	7439-97-6	
8270 MSSV PAH by SIM SEP								
Analytical Method: EPA 8270 by SIM Preparation Method: EPA 3510								
Acenaphthene	ND	ug/L	0.10	1	01/17/17 10:16	01/17/17 20:55	83-32-9	
Acenaphthylene	ND	ug/L	0.10	1	01/17/17 10:16	01/17/17 20:55	208-96-8	
Anthracene	ND	ug/L	0.10	1	01/17/17 10:16	01/17/17 20:55	120-12-7	
Benzo(a)anthracene	ND	ug/L	0.10	1	01/17/17 10:16	01/17/17 20:55	56-55-3	
Benzo(a)pyrene	ND	ug/L	0.10	1	01/17/17 10:16	01/17/17 20:55	50-32-8	
Benzo(b)fluoranthene	ND	ug/L	0.10	1	01/17/17 10:16	01/17/17 20:55	205-99-2	
Benzo(g,h,i)perylene	ND	ug/L	0.10	1	01/17/17 10:16	01/17/17 20:55	191-24-2	
Benzo(k)fluoranthene	ND	ug/L	0.10	1	01/17/17 10:16	01/17/17 20:55	207-08-9	
Chrysene	ND	ug/L	0.10	1	01/17/17 10:16	01/17/17 20:55	218-01-9	
Dibenz(a,h)anthracene	ND	ug/L	0.10	1	01/17/17 10:16	01/17/17 20:55	53-70-3	
Fluoranthene	ND	ug/L	0.10	1	01/17/17 10:16	01/17/17 20:55	206-44-0	
Fluorene	ND	ug/L	0.10	1	01/17/17 10:16	01/17/17 20:55	86-73-7	
Indeno(1,2,3-cd)pyrene	ND	ug/L	0.10	1	01/17/17 10:16	01/17/17 20:55	193-39-5	
2-Methylnaphthalene	ND	ug/L	0.10	1	01/17/17 10:16	01/17/17 20:55	91-57-6	
Naphthalene	ND	ug/L	0.10	1	01/17/17 10:16	01/17/17 20:55	91-20-3	
Phenanthrene	ND	ug/L	0.10	1	01/17/17 10:16	01/17/17 20:55	85-01-8	
Pyrene	ND	ug/L	0.10	1	01/17/17 10:16	01/17/17 20:55	129-00-0	
Surrogates								
2-Fluorobiphenyl (S)	86	%	25-150	1	01/17/17 10:16	01/17/17 20:55	321-60-8	
Terphenyl-d14 (S)	88	%	25-150	1	01/17/17 10:16	01/17/17 20:55	1718-51-0	
8260 MSV Low Level								
Analytical Method: EPA 5030B/8260								
Acetone	5.7	ug/L	4.0	1		01/17/17 16:26	67-64-1	C9
Benzene	ND	ug/L	0.50	1		01/17/17 16:26	71-43-2	
Bromodichloromethane	ND	ug/L	0.50	1		01/17/17 16:26	75-27-4	
Bromoform	ND	ug/L	0.50	1		01/17/17 16:26	75-25-2	
Bromomethane	ND	ug/L	0.50	1		01/17/17 16:26	74-83-9	
2-Butanone (MEK)	ND	ug/L	2.0	1		01/17/17 16:26	78-93-3	
Carbon disulfide	ND	ug/L	1.0	1		01/17/17 16:26	75-15-0	L3
Carbon tetrachloride	ND	ug/L	0.50	1		01/17/17 16:26	56-23-5	
Chlorobenzene	ND	ug/L	0.50	1		01/17/17 16:26	108-90-7	
Chloroethane	ND	ug/L	0.50	1		01/17/17 16:26	75-00-3	
Chloroform	ND	ug/L	0.50	1		01/17/17 16:26	67-66-3	
Chloromethane	ND	ug/L	0.50	1		01/17/17 16:26	74-87-3	
1,2-Dibromo-3-chloropropane	ND	ug/L	0.20	1		01/17/17 16:26	96-12-8	
Dibromochloromethane	ND	ug/L	0.50	1		01/17/17 16:26	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	1		01/17/17 16:26	106-93-4	
Dichlorodifluoromethane	ND	ug/L	1.0	1		01/17/17 16:26	75-71-8	
1,1-Dichloroethane	ND	ug/L	0.50	1		01/17/17 16:26	75-34-3	
1,2-Dichloroethane	ND	ug/L	0.50	1		01/17/17 16:26	107-06-2	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: PUMA TERMINAL MS SAMPLING

Sample Project No.: 2048681

Sample: MW-76B2		Lab ID: 2048681003	Collected: 01/12/17 09:41	Received: 01/12/17 15:48	Matrix: Water			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV Low Level		Analytical Method: EPA 5030B/8260						
1,1-Dichloroethene	ND	ug/L	0.50	1		01/17/17 16:26	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	1		01/17/17 16:26	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	0.50	1		01/17/17 16:26	156-60-5	
1,2-Dichloropropane	ND	ug/L	0.50	1		01/17/17 16:26	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	0.50	1		01/17/17 16:26	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	0.50	1		01/17/17 16:26	10061-02-6	
Ethylbenzene	ND	ug/L	0.50	1		01/17/17 16:26	100-41-4	
2-Hexanone	ND	ug/L	1.0	1		01/17/17 16:26	591-78-6	
Isopropylbenzene (Cumene)	ND	ug/L	1.0	1		01/17/17 16:26	98-82-8	
Methyl acetate	ND	ug/L	2.0	1		01/17/17 16:26	79-20-9	
Methylene Chloride	ND	ug/L	0.50	1		01/17/17 16:26	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	1.0	1		01/17/17 16:26	108-10-1	
Methyl-tert-butyl ether	ND	ug/L	0.50	1		01/17/17 16:26	1634-04-4	
Styrene	ND	ug/L	1.0	1		01/17/17 16:26	100-42-5	
1,1,2,2-Tetrachloroethane	ND	ug/L	0.50	1		01/17/17 16:26	79-34-5	
Tetrachloroethene	ND	ug/L	0.50	1		01/17/17 16:26	127-18-4	
Toluene	ND	ug/L	0.50	1		01/17/17 16:26	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	0.50	1		01/17/17 16:26	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	0.50	1		01/17/17 16:26	79-00-5	
Trichloroethene	ND	ug/L	0.50	1		01/17/17 16:26	79-01-6	
Trichlorofluoromethane	ND	ug/L	0.50	1		01/17/17 16:26	75-69-4	
Vinyl chloride	ND	ug/L	0.50	1		01/17/17 16:26	75-01-4	
m&p-Xylene	ND	ug/L	2.0	1		01/17/17 16:26	179601-23-1	
o-Xylene	ND	ug/L	1.0	1		01/17/17 16:26	95-47-6	
Surrogates								
Dibromofluoromethane (S)	110	%.	72-126	1		01/17/17 16:26	1868-53-7	
4-Bromofluorobenzene (S)	95	%.	68-124	1		01/17/17 16:26	460-00-4	
Toluene-d8 (S)	101	%.	79-119	1		01/17/17 16:26	2037-26-5	

Sample: MW-76A		Lab ID: 2048681004	Collected: 01/12/17 10:35	Received: 01/12/17 15:48	Matrix: Water			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8015M DRO/ORO Organics		Analytical Method: EPA 8015B Modified Preparation Method: EPA 3535						
Diesel Range Organic (C10-C28)	ND	mg/L	0.50	1	01/17/17 09:23	01/18/17 17:31		
Oil Range Organics (>C28-C40)	ND	mg/L	1.0	1	01/17/17 09:23	01/18/17 17:31		
Surrogates								
n-Pentacosane (S)	43	%.	16-137	1	01/17/17 09:23	01/18/17 17:31	629-99-2	
o-Terphenyl (S)	45	%.	10-121	1	01/17/17 09:23	01/18/17 17:31	84-15-1	
8021 GCV BTEX, MTBE, GRO		Analytical Method: EPA 8015/8021						
Gasoline Range Organics	ND	ug/L	50.0	1		01/19/17 00:09		
Surrogates								
4-Bromofluorobenzene (S)	98	%.	44-148	1		01/19/17 00:09	460-00-4	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: PUMA TERMINAL MS SAMPLING

Project No.: 2048681

Sample: MW-76A	Lab ID: 2048681004	Collected: 01/12/17 10:35	Received: 01/12/17 15:48	Matrix: Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
6020 MET ICPMS								
Analytical Method: EPA 6020 Preparation Method: EPA 3010								
Arsenic	ND	mg/L	0.0010	1	01/17/17 06:56	02/11/17 14:27	7440-38-2	
Chromium	ND	mg/L	0.0010	1	01/17/17 06:56	02/11/17 14:27	7440-47-3	
Lead	ND	mg/L	0.0010	1	01/17/17 06:56	02/11/17 14:27	7439-92-1	
Vanadium	0.0060	mg/L	0.0050	1	01/17/17 06:56	02/11/17 14:27	7440-62-2	
6020 MET ICPMS, Dissolved (LF)								
Analytical Method: EPA 6020 Preparation Method: EPA 3005A								
Arsenic, Dissolved	ND	ug/L	1.0	1	01/18/17 10:15	02/11/17 13:36	7440-38-2	
Chromium, Dissolved	ND	ug/L	1.0	1	01/18/17 10:15	02/11/17 13:36	7440-47-3	
Lead, Dissolved	ND	ug/L	1.0	1	01/18/17 10:15	02/11/17 13:36	7439-92-1	
Vanadium, Dissolved	5.8	ug/L	5.0	1	01/18/17 10:15	02/11/17 13:36	7440-62-2	
7470 Mercury								
Analytical Method: EPA 7470 Preparation Method: EPA 7470								
Mercury	ND	ug/L	0.20	1	01/18/17 10:01	01/19/17 11:15	7439-97-6	
7470 Mercury, Dissolved (LF)								
Analytical Method: EPA 7470 Preparation Method: EPA 7470								
Mercury, Dissolved	ND	ug/L	0.20	1	01/18/17 10:15	01/19/17 12:20	7439-97-6	
8270 MSSV PAH by SIM SEP								
Analytical Method: EPA 8270 by SIM Preparation Method: EPA 3510								
Acenaphthene	ND	ug/L	0.10	1	01/17/17 10:16	01/17/17 21:15	83-32-9	
Acenaphthylene	ND	ug/L	0.10	1	01/17/17 10:16	01/17/17 21:15	208-96-8	
Anthracene	ND	ug/L	0.10	1	01/17/17 10:16	01/17/17 21:15	120-12-7	
Benzo(a)anthracene	ND	ug/L	0.10	1	01/17/17 10:16	01/17/17 21:15	56-55-3	
Benzo(a)pyrene	ND	ug/L	0.10	1	01/17/17 10:16	01/17/17 21:15	50-32-8	
Benzo(b)fluoranthene	ND	ug/L	0.10	1	01/17/17 10:16	01/17/17 21:15	205-99-2	
Benzo(g,h,i)perylene	ND	ug/L	0.10	1	01/17/17 10:16	01/17/17 21:15	191-24-2	
Benzo(k)fluoranthene	ND	ug/L	0.10	1	01/17/17 10:16	01/17/17 21:15	207-08-9	
Chrysene	ND	ug/L	0.10	1	01/17/17 10:16	01/17/17 21:15	218-01-9	
Dibenz(a,h)anthracene	ND	ug/L	0.10	1	01/17/17 10:16	01/17/17 21:15	53-70-3	
Fluoranthene	ND	ug/L	0.10	1	01/17/17 10:16	01/17/17 21:15	206-44-0	
Fluorene	ND	ug/L	0.10	1	01/17/17 10:16	01/17/17 21:15	86-73-7	
Indeno(1,2,3-cd)pyrene	ND	ug/L	0.10	1	01/17/17 10:16	01/17/17 21:15	193-39-5	
2-Methylnaphthalene	ND	ug/L	0.10	1	01/17/17 10:16	01/17/17 21:15	91-57-6	
Naphthalene	ND	ug/L	0.10	1	01/17/17 10:16	01/17/17 21:15	91-20-3	
Phenanthrene	ND	ug/L	0.10	1	01/17/17 10:16	01/17/17 21:15	85-01-8	
Pyrene	ND	ug/L	0.10	1	01/17/17 10:16	01/17/17 21:15	129-00-0	
Surrogates								
2-Fluorobiphenyl (S)	65	%	25-150	1	01/17/17 10:16	01/17/17 21:15	321-60-8	
Terphenyl-d14 (S)	68	%	25-150	1	01/17/17 10:16	01/17/17 21:15	1718-51-0	
8260 MSV Low Level								
Analytical Method: EPA 5030B/8260								
Acetone	7.6	ug/L	4.0	1		01/17/17 16:44	67-64-1	C9
Benzene	ND	ug/L	0.50	1		01/17/17 16:44	71-43-2	
Bromodichloromethane	ND	ug/L	0.50	1		01/17/17 16:44	75-27-4	
Bromoform	ND	ug/L	0.50	1		01/17/17 16:44	75-25-2	
Bromomethane	ND	ug/L	0.50	1		01/17/17 16:44	74-83-9	
2-Butanone (MEK)	ND	ug/L	2.0	1		01/17/17 16:44	78-93-3	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: PUMA TERMINAL MS SAMPLING

Pace Project No.: 2048681

Sample: MW-76A	Lab ID: 2048681004	Collected: 01/12/17 10:35	Received: 01/12/17 15:48	Matrix: Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV Low Level		Analytical Method: EPA 5030B/8260						
Carbon disulfide	ND	ug/L	1.0	1		01/17/17 16:44	75-15-0	L3
Carbon tetrachloride	ND	ug/L	0.50	1		01/17/17 16:44	56-23-5	
Chlorobenzene	ND	ug/L	0.50	1		01/17/17 16:44	108-90-7	
Chloroethane	ND	ug/L	0.50	1		01/17/17 16:44	75-00-3	
Chloroform	ND	ug/L	0.50	1		01/17/17 16:44	67-66-3	
Chloromethane	ND	ug/L	0.50	1		01/17/17 16:44	74-87-3	
1,2-Dibromo-3-chloropropane	ND	ug/L	0.20	1		01/17/17 16:44	96-12-8	
Dibromochloromethane	ND	ug/L	0.50	1		01/17/17 16:44	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	1		01/17/17 16:44	106-93-4	
Dichlorodifluoromethane	ND	ug/L	1.0	1		01/17/17 16:44	75-71-8	
1,1-Dichloroethane	ND	ug/L	0.50	1		01/17/17 16:44	75-34-3	
1,2-Dichloroethane	ND	ug/L	0.50	1		01/17/17 16:44	107-06-2	
1,1-Dichloroethene	ND	ug/L	0.50	1		01/17/17 16:44	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	1		01/17/17 16:44	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	0.50	1		01/17/17 16:44	156-60-5	
1,2-Dichloropropane	ND	ug/L	0.50	1		01/17/17 16:44	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	0.50	1		01/17/17 16:44	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	0.50	1		01/17/17 16:44	10061-02-6	
Ethylbenzene	ND	ug/L	0.50	1		01/17/17 16:44	100-41-4	
2-Hexanone	ND	ug/L	1.0	1		01/17/17 16:44	591-78-6	
Isopropylbenzene (Cumene)	ND	ug/L	1.0	1		01/17/17 16:44	98-82-8	
Methyl acetate	ND	ug/L	2.0	1		01/17/17 16:44	79-20-9	
Methylene Chloride	ND	ug/L	0.50	1		01/17/17 16:44	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	1.0	1		01/17/17 16:44	108-10-1	
Methyl-tert-butyl ether	ND	ug/L	0.50	1		01/17/17 16:44	1634-04-4	
Styrene	ND	ug/L	1.0	1		01/17/17 16:44	100-42-5	
1,1,2,2-Tetrachloroethane	ND	ug/L	0.50	1		01/17/17 16:44	79-34-5	
Tetrachloroethene	ND	ug/L	0.50	1		01/17/17 16:44	127-18-4	
Toluene	ND	ug/L	0.50	1		01/17/17 16:44	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	0.50	1		01/17/17 16:44	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	0.50	1		01/17/17 16:44	79-00-5	
Trichloroethene	ND	ug/L	0.50	1		01/17/17 16:44	79-01-6	
Trichlorofluoromethane	ND	ug/L	0.50	1		01/17/17 16:44	75-69-4	
Vinyl chloride	ND	ug/L	0.50	1		01/17/17 16:44	75-01-4	
m&p-Xylene	ND	ug/L	2.0	1		01/17/17 16:44	179601-23-1	
o-Xylene	ND	ug/L	1.0	1		01/17/17 16:44	95-47-6	
Surrogates								
Dibromofluoromethane (S)	108	%.	72-126	1		01/17/17 16:44	1868-53-7	
4-Bromofluorobenzene (S)	97	%.	68-124	1		01/17/17 16:44	460-00-4	
Toluene-d8 (S)	101	%.	79-119	1		01/17/17 16:44	2037-26-5	

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ANALYTICAL RESULTS

Project: PUMA TERMINAL MS SAMPLING

Pace Project No.: 2048681

Sample: MW-13A	Lab ID: 2048681005	Collected: 01/12/17 12:45	Received: 01/12/17 15:48	Matrix: Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8015M DRO/ORO Organics								
Analytical Method: EPA 8015B Modified Preparation Method: EPA 3535								
Diesel Range Organic (C10-C28)	ND	mg/L	0.50	1	01/17/17 09:23	01/18/17 17:59		
Oil Range Organics (>C28-C40)	ND	mg/L	1.0	1	01/17/17 09:23	01/18/17 17:59		
Surrogates								
n-Pentacosane (S)	57	%	16-137	1	01/17/17 09:23	01/18/17 17:59	629-99-2	
o-Terphenyl (S)	57	%	10-121	1	01/17/17 09:23	01/18/17 17:59	84-15-1	
8021 GCV BTEX, MTBE, GRO								
Analytical Method: EPA 8015/8021								
Gasoline Range Organics	78.7	ug/L	50.0	1		01/19/17 00:36		
Surrogates								
4-Bromofluorobenzene (S)	97	%	44-148	1		01/19/17 00:36	460-00-4	
6020 MET ICPMS								
Analytical Method: EPA 6020 Preparation Method: EPA 3010								
Arsenic	0.0057	mg/L	0.0010	1	01/17/17 06:56	02/11/17 14:31	7440-38-2	
Chromium	ND	mg/L	0.0010	1	01/17/17 06:56	02/11/17 14:31	7440-47-3	
Lead	ND	mg/L	0.0010	1	01/17/17 06:56	02/11/17 14:31	7439-92-1	
Vanadium	ND	mg/L	0.0050	1	01/17/17 06:56	02/11/17 14:31	7440-62-2	
6020 MET ICPMS, Dissolved (LF)								
Analytical Method: EPA 6020 Preparation Method: EPA 3005A								
Arsenic, Dissolved	1.6	ug/L	1.0	1	01/18/17 10:15	02/11/17 13:40	7440-38-2	
Chromium, Dissolved	ND	ug/L	1.0	1	01/18/17 10:15	02/11/17 13:40	7440-47-3	
Lead, Dissolved	ND	ug/L	1.0	1	01/18/17 10:15	02/11/17 13:40	7439-92-1	
Vanadium, Dissolved	ND	ug/L	5.0	1	01/18/17 10:15	02/11/17 13:40	7440-62-2	
7470 Mercury								
Analytical Method: EPA 7470 Preparation Method: EPA 7470								
Mercury	ND	ug/L	0.20	1	01/18/17 10:01	01/19/17 11:17	7439-97-6	
7470 Mercury, Dissolved (LF)								
Analytical Method: EPA 7470 Preparation Method: EPA 7470								
Mercury, Dissolved	ND	ug/L	0.20	1	01/18/17 10:15	01/19/17 12:26	7439-97-6	
8270 MSSV PAH by SIM SEP								
Analytical Method: EPA 8270 by SIM Preparation Method: EPA 3510								
Acenaphthene	ND	ug/L	0.10	1	01/17/17 10:16	01/17/17 21:35	83-32-9	
Acenaphthylene	ND	ug/L	0.10	1	01/17/17 10:16	01/17/17 21:35	208-96-8	
Anthracene	ND	ug/L	0.10	1	01/17/17 10:16	01/17/17 21:35	120-12-7	
Benzo(a)anthracene	ND	ug/L	0.10	1	01/17/17 10:16	01/17/17 21:35	56-55-3	
Benzo(a)pyrene	ND	ug/L	0.10	1	01/17/17 10:16	01/17/17 21:35	50-32-8	
Benzo(b)fluoranthene	ND	ug/L	0.10	1	01/17/17 10:16	01/17/17 21:35	205-99-2	
Benzo(g,h,i)perylene	ND	ug/L	0.10	1	01/17/17 10:16	01/17/17 21:35	191-24-2	
Benzo(k)fluoranthene	ND	ug/L	0.10	1	01/17/17 10:16	01/17/17 21:35	207-08-9	
Chrysene	ND	ug/L	0.10	1	01/17/17 10:16	01/17/17 21:35	218-01-9	
Dibenz(a,h)anthracene	ND	ug/L	0.10	1	01/17/17 10:16	01/17/17 21:35	53-70-3	
Fluoranthene	ND	ug/L	0.10	1	01/17/17 10:16	01/17/17 21:35	206-44-0	
Fluorene	ND	ug/L	0.10	1	01/17/17 10:16	01/17/17 21:35	86-73-7	
Indeno(1,2,3-cd)pyrene	ND	ug/L	0.10	1	01/17/17 10:16	01/17/17 21:35	193-39-5	
2-Methylnaphthalene	ND	ug/L	0.10	1	01/17/17 10:16	01/17/17 21:35	91-57-6	
Naphthalene	ND	ug/L	0.10	1	01/17/17 10:16	01/17/17 21:35	91-20-3	
Phenanthrene	ND	ug/L	0.10	1	01/17/17 10:16	01/17/17 21:35	85-01-8	

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ANALYTICAL RESULTS

Project: PUMA TERMINAL MS SAMPLING

Pace Project No.: 2048681

Sample: MW-13A	Lab ID: 2048681005	Collected: 01/12/17 12:45	Received: 01/12/17 15:48	Matrix: Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8270 MSSV PAH by SIM SEP		Analytical Method: EPA 8270 by SIM Preparation Method: EPA 3510						
Pyrene	ND	ug/L	0.10	1	01/17/17 10:16	01/17/17 21:35	129-00-0	
Surrogates								
2-Fluorobiphenyl (S)	78	%.	25-150	1	01/17/17 10:16	01/17/17 21:35	321-60-8	
Terphenyl-d14 (S)	73	%.	25-150	1	01/17/17 10:16	01/17/17 21:35	1718-51-0	
8260 MSV Low Level		Analytical Method: EPA 5030B/8260						
Acetone	12.2	ug/L	4.0	1		01/17/17 17:01	67-64-1	C9
Benzene	ND	ug/L	0.50	1		01/17/17 17:01	71-43-2	
Bromodichloromethane	ND	ug/L	0.50	1		01/17/17 17:01	75-27-4	
Bromoform	ND	ug/L	0.50	1		01/17/17 17:01	75-25-2	
Bromomethane	ND	ug/L	0.50	1		01/17/17 17:01	74-83-9	
2-Butanone (MEK)	ND	ug/L	2.0	1		01/17/17 17:01	78-93-3	
Carbon disulfide	ND	ug/L	1.0	1		01/17/17 17:01	75-15-0	L3
Carbon tetrachloride	ND	ug/L	0.50	1		01/17/17 17:01	56-23-5	
Chlorobenzene	ND	ug/L	0.50	1		01/17/17 17:01	108-90-7	
Chloroethane	ND	ug/L	0.50	1		01/17/17 17:01	75-00-3	
Chloroform	ND	ug/L	0.50	1		01/17/17 17:01	67-66-3	
Chloromethane	ND	ug/L	0.50	1		01/17/17 17:01	74-87-3	
1,2-Dibromo-3-chloropropane	ND	ug/L	0.20	1		01/17/17 17:01	96-12-8	
Dibromochloromethane	ND	ug/L	0.50	1		01/17/17 17:01	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	1		01/17/17 17:01	106-93-4	
Dichlorodifluoromethane	ND	ug/L	1.0	1		01/17/17 17:01	75-71-8	
1,1-Dichloroethane	ND	ug/L	0.50	1		01/17/17 17:01	75-34-3	
1,2-Dichloroethane	ND	ug/L	0.50	1		01/17/17 17:01	107-06-2	
1,1-Dichloroethene	ND	ug/L	0.50	1		01/17/17 17:01	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	1		01/17/17 17:01	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	0.50	1		01/17/17 17:01	156-60-5	
1,2-Dichloropropane	ND	ug/L	0.50	1		01/17/17 17:01	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	0.50	1		01/17/17 17:01	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	0.50	1		01/17/17 17:01	10061-02-6	
Ethylbenzene	ND	ug/L	0.50	1		01/17/17 17:01	100-41-4	
2-Hexanone	ND	ug/L	1.0	1		01/17/17 17:01	591-78-6	
Isopropylbenzene (Cumene)	ND	ug/L	1.0	1		01/17/17 17:01	98-82-8	
Methyl acetate	ND	ug/L	2.0	1		01/17/17 17:01	79-20-9	
Methylene Chloride	ND	ug/L	0.50	1		01/17/17 17:01	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	1.0	1		01/17/17 17:01	108-10-1	
Methyl-tert-butyl ether	1.9	ug/L	0.50	1		01/17/17 17:01	1634-04-4	
Styrene	ND	ug/L	1.0	1		01/17/17 17:01	100-42-5	
1,1,2,2-Tetrachloroethane	ND	ug/L	0.50	1		01/17/17 17:01	79-34-5	
Tetrachloroethene	ND	ug/L	0.50	1		01/17/17 17:01	127-18-4	
Toluene	ND	ug/L	0.50	1		01/17/17 17:01	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	0.50	1		01/17/17 17:01	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	0.50	1		01/17/17 17:01	79-00-5	
Trichloroethene	ND	ug/L	0.50	1		01/17/17 17:01	79-01-6	
Trichlorofluoromethane	ND	ug/L	0.50	1		01/17/17 17:01	75-69-4	
Vinyl chloride	ND	ug/L	0.50	1		01/17/17 17:01	75-01-4	
m&p-Xylene	ND	ug/L	2.0	1		01/17/17 17:01	179601-23-1	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: PUMA TERMINAL MS SAMPLING

Pace Project No.: 2048681

Sample: MW-13A		Lab ID: 2048681005		Collected: 01/12/17 12:45		Received: 01/12/17 15:48		Matrix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual	
8260 MSV Low Level		Analytical Method: EPA 5030B/8260							
o-Xylene	ND	ug/L	1.0	1		01/17/17 17:01	95-47-6		
Surrogates									
Dibromofluoromethane (S)	110	%.	72-126	1		01/17/17 17:01	1868-53-7		
4-Bromofluorobenzene (S)	94	%.	68-124	1		01/17/17 17:01	460-00-4		
Toluene-d8 (S)	99	%.	79-119	1		01/17/17 17:01	2037-26-5		
Sample: MW-13B2		Lab ID: 2048681006		Collected: 01/12/17 13:46		Received: 01/12/17 15:48		Matrix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual	
8015M DRO/ORO Organics		Analytical Method: EPA 8015B Modified Preparation Method: EPA 3535							
Diesel Range Organic (C10-C28)	ND	mg/L	0.50	1	01/17/17 09:23	01/18/17 18:27			
Oil Range Organics (>C28-C40)	ND	mg/L	1.0	1	01/17/17 09:23	01/18/17 18:27			
Surrogates									
n-Pentacosane (S)	52	%.	16-137	1	01/17/17 09:23	01/18/17 18:27	629-99-2		
o-Terphenyl (S)	56	%.	10-121	1	01/17/17 09:23	01/18/17 18:27	84-15-1		
8021 GCV BTEX, MTBE, GRO		Analytical Method: EPA 8015/8021							
Gasoline Range Organics	500	ug/L	50.0	1		01/19/17 01:03			
Surrogates									
4-Bromofluorobenzene (S)	104	%.	44-148	1		01/19/17 01:03	460-00-4		
6020 MET ICPMS		Analytical Method: EPA 6020 Preparation Method: EPA 3010							
Arsenic	0.0049	mg/L	0.0010	1	01/17/17 06:56	02/11/17 14:35	7440-38-2		
Chromium	ND	mg/L	0.0010	1	01/17/17 06:56	02/11/17 14:35	7440-47-3		
Lead	ND	mg/L	0.0010	1	01/17/17 06:56	02/11/17 14:35	7439-92-1		
Vanadium	ND	mg/L	0.0050	1	01/17/17 06:56	02/11/17 14:35	7440-62-2		
6020 MET ICPMS, Dissolved (LF)		Analytical Method: EPA 6020 Preparation Method: EPA 3005A							
Arsenic, Dissolved	ND	ug/L	1.0	1	01/18/17 10:15	02/11/17 13:43	7440-38-2		
Chromium, Dissolved	ND	ug/L	1.0	1	01/18/17 10:15	02/11/17 13:43	7440-47-3		
Lead, Dissolved	ND	ug/L	1.0	1	01/18/17 10:15	02/11/17 13:43	7439-92-1		
Vanadium, Dissolved	ND	ug/L	5.0	1	01/18/17 10:15	02/11/17 13:43	7440-62-2		
7470 Mercury		Analytical Method: EPA 7470 Preparation Method: EPA 7470							
Mercury	ND	ug/L	0.20	1	01/18/17 10:01	01/19/17 11:20	7439-97-6		
7470 Mercury, Dissolved (LF)		Analytical Method: EPA 7470 Preparation Method: EPA 7470							
Mercury, Dissolved	ND	ug/L	0.20	1	01/18/17 10:15	01/19/17 12:29	7439-97-6		
8270 MSSV PAH by SIM SEP		Analytical Method: EPA 8270 by SIM Preparation Method: EPA 3510							
Acenaphthene	0.16	ug/L	0.10	1	01/17/17 10:16	01/17/17 21:54	83-32-9		
Acenaphthylene	ND	ug/L	0.10	1	01/17/17 10:16	01/17/17 21:54	208-96-8		
Anthracene	ND	ug/L	0.10	1	01/17/17 10:16	01/17/17 21:54	120-12-7		
Benzo(a)anthracene	ND	ug/L	0.10	1	01/17/17 10:16	01/17/17 21:54	56-55-3		

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: PUMA TERMINAL MS SAMPLING

Pace Project No.: 2048681

Sample: MW-13B2	Lab ID: 2048681006	Collected: 01/12/17 13:46	Received: 01/12/17 15:48	Matrix: Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual

8270 MSSV PAH by SIM SEP

Analytical Method: EPA 8270 by SIM Preparation Method: EPA 3510

Benzo(a)pyrene	ND	ug/L	0.10	1	01/17/17 10:16	01/17/17 21:54	50-32-8	
Benzo(b)fluoranthene	ND	ug/L	0.10	1	01/17/17 10:16	01/17/17 21:54	205-99-2	
Benzo(g,h,i)perylene	ND	ug/L	0.10	1	01/17/17 10:16	01/17/17 21:54	191-24-2	
Benzo(k)fluoranthene	ND	ug/L	0.10	1	01/17/17 10:16	01/17/17 21:54	207-08-9	
Chrysene	ND	ug/L	0.10	1	01/17/17 10:16	01/17/17 21:54	218-01-9	
Dibenz(a,h)anthracene	ND	ug/L	0.10	1	01/17/17 10:16	01/17/17 21:54	53-70-3	
Fluoranthene	ND	ug/L	0.10	1	01/17/17 10:16	01/17/17 21:54	206-44-0	
Fluorene	ND	ug/L	0.10	1	01/17/17 10:16	01/17/17 21:54	86-73-7	
Indeno(1,2,3-cd)pyrene	ND	ug/L	0.10	1	01/17/17 10:16	01/17/17 21:54	193-39-5	
2-Methylnaphthalene	ND	ug/L	0.10	1	01/17/17 10:16	01/17/17 21:54	91-57-6	
Naphthalene	0.24	ug/L	0.10	1	01/17/17 10:16	01/17/17 21:54	91-20-3	
Phenanthrene	ND	ug/L	0.10	1	01/17/17 10:16	01/17/17 21:54	85-01-8	
Pyrene	ND	ug/L	0.10	1	01/17/17 10:16	01/17/17 21:54	129-00-0	
Surrogates								
2-Fluorobiphenyl (S)	78	%.	25-150	1	01/17/17 10:16	01/17/17 21:54	321-60-8	
Terphenyl-d14 (S)	81	%.	25-150	1	01/17/17 10:16	01/17/17 21:54	1718-51-0	

8260 MSV Low Level

Analytical Method: EPA 5030B/8260

Acetone	10.3	ug/L	4.0	1		01/17/17 17:19	67-64-1	C9
Benzene	ND	ug/L	0.50	1		01/17/17 17:19	71-43-2	
Bromodichloromethane	ND	ug/L	0.50	1		01/17/17 17:19	75-27-4	
Bromoform	ND	ug/L	0.50	1		01/17/17 17:19	75-25-2	
Bromomethane	ND	ug/L	0.50	1		01/17/17 17:19	74-83-9	
2-Butanone (MEK)	ND	ug/L	2.0	1		01/17/17 17:19	78-93-3	
Carbon disulfide	ND	ug/L	1.0	1		01/17/17 17:19	75-15-0	L3
Carbon tetrachloride	ND	ug/L	0.50	1		01/17/17 17:19	56-23-5	
Chlorobenzene	ND	ug/L	0.50	1		01/17/17 17:19	108-90-7	
Chloroethane	ND	ug/L	0.50	1		01/17/17 17:19	75-00-3	
Chloroform	ND	ug/L	0.50	1		01/17/17 17:19	67-66-3	
Chloromethane	ND	ug/L	0.50	1		01/17/17 17:19	74-87-3	
1,2-Dibromo-3-chloropropane	ND	ug/L	0.20	1		01/17/17 17:19	96-12-8	
Dibromochloromethane	ND	ug/L	0.50	1		01/17/17 17:19	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	1		01/17/17 17:19	106-93-4	
Dichlorodifluoromethane	ND	ug/L	1.0	1		01/17/17 17:19	75-71-8	
1,1-Dichloroethane	ND	ug/L	0.50	1		01/17/17 17:19	75-34-3	
1,2-Dichloroethane	ND	ug/L	0.50	1		01/17/17 17:19	107-06-2	
1,1-Dichloroethene	ND	ug/L	0.50	1		01/17/17 17:19	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	1		01/17/17 17:19	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	0.50	1		01/17/17 17:19	156-60-5	
1,2-Dichloropropane	ND	ug/L	0.50	1		01/17/17 17:19	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	0.50	1		01/17/17 17:19	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	0.50	1		01/17/17 17:19	10061-02-6	
Ethylbenzene	ND	ug/L	0.50	1		01/17/17 17:19	100-41-4	
2-Hexanone	ND	ug/L	1.0	1		01/17/17 17:19	591-78-6	
Isopropylbenzene (Cumene)	ND	ug/L	1.0	1		01/17/17 17:19	98-82-8	
Methyl acetate	ND	ug/L	2.0	1		01/17/17 17:19	79-20-9	
Methylene Chloride	ND	ug/L	0.50	1		01/17/17 17:19	75-09-2	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: PUMA TERMINAL MS SAMPLING

Sample Project No.: 2048681

Sample: MW-13B2		Lab ID: 2048681006		Collected: 01/12/17 13:46		Received: 01/12/17 15:48		Matrix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual	
8260 MSV Low Level		Analytical Method: EPA 5030B/8260							
4-Methyl-2-pentanone (MIBK)	ND	ug/L	1.0	1		01/17/17 17:19	108-10-1		
Methyl-tert-butyl ether	14.5	ug/L	0.50	1		01/17/17 17:19	1634-04-4		
Styrene	ND	ug/L	1.0	1		01/17/17 17:19	100-42-5		
1,1,2,2-Tetrachloroethane	ND	ug/L	0.50	1		01/17/17 17:19	79-34-5		
Tetrachloroethene	ND	ug/L	0.50	1		01/17/17 17:19	127-18-4		
Toluene	ND	ug/L	0.50	1		01/17/17 17:19	108-88-3		
1,1,1-Trichloroethane	ND	ug/L	0.50	1		01/17/17 17:19	71-55-6		
1,1,2-Trichloroethane	ND	ug/L	0.50	1		01/17/17 17:19	79-00-5		
Trichloroethene	ND	ug/L	0.50	1		01/17/17 17:19	79-01-6		
Trichlorofluoromethane	ND	ug/L	0.50	1		01/17/17 17:19	75-69-4		
Vinyl chloride	ND	ug/L	0.50	1		01/17/17 17:19	75-01-4		
m&p-Xylene	ND	ug/L	2.0	1		01/17/17 17:19	179601-23-1		
o-Xylene	ND	ug/L	1.0	1		01/17/17 17:19	95-47-6		
Surrogates									
Dibromofluoromethane (S)	108	%.	72-126	1		01/17/17 17:19	1868-53-7		
4-Bromofluorobenzene (S)	100	%.	68-124	1		01/17/17 17:19	460-00-4		
Toluene-d8 (S)	99	%.	79-119	1		01/17/17 17:19	2037-26-5		

Sample: MW-37A		Lab ID: 2048681007		Collected: 01/12/17 14:38		Received: 01/12/17 15:48		Matrix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual	
8015M DRO/ORO Organics		Analytical Method: EPA 8015B Modified Preparation Method: EPA 3535							
Diesel Range Organic (C10-C28)	0.94	mg/L	0.50	1	01/17/17 09:23	01/18/17 18:55			
Oil Range Organics (>C28-C40)	ND	mg/L	1.0	1	01/17/17 09:23	01/18/17 18:55			
Surrogates									
n-Pentacosane (S)	48	%.	16-137	1	01/17/17 09:23	01/18/17 18:55	629-99-2		
o-Terphenyl (S)	54	%.	10-121	1	01/17/17 09:23	01/18/17 18:55	84-15-1		
8021 GCV BTEX, MTBE, GRO		Analytical Method: EPA 8015/8021							
Gasoline Range Organics	1740	ug/L	50.0	1		01/19/17 01:30			
Surrogates									
4-Bromofluorobenzene (S)	112	%.	44-148	1		01/19/17 01:30	460-00-4		
6020 MET ICPMS		Analytical Method: EPA 6020 Preparation Method: EPA 3010							
Arsenic	0.0014	mg/L	0.0010	1	01/17/17 06:56	02/11/17 14:38	7440-38-2		
Chromium	ND	mg/L	0.0010	1	01/17/17 06:56	02/11/17 14:38	7440-47-3		
Lead	ND	mg/L	0.0010	1	01/17/17 06:56	02/11/17 14:38	7439-92-1		
Vanadium	ND	mg/L	0.0050	1	01/17/17 06:56	02/11/17 14:38	7440-62-2		
6020 MET ICPMS, Dissolved (LF)		Analytical Method: EPA 6020 Preparation Method: EPA 3005A							
Arsenic, Dissolved	ND	ug/L	1.0	1	01/18/17 10:15	02/11/17 13:16	7440-38-2		
Chromium, Dissolved	ND	ug/L	1.0	1	01/18/17 10:15	02/11/17 13:16	7440-47-3		
Lead, Dissolved	ND	ug/L	1.0	1	01/18/17 10:15	02/11/17 13:16	7439-92-1		
Vanadium, Dissolved	ND	ug/L	5.0	1	01/18/17 10:15	02/11/17 13:16	7440-62-2		

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ANALYTICAL RESULTS

Project: PUMA TERMINAL MS SAMPLING

Pace Project No.: 2048681

Sample: MW-37A	Lab ID: 2048681007	Collected: 01/12/17 14:38	Received: 01/12/17 15:48	Matrix: Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
7470 Mercury Analytical Method: EPA 7470 Preparation Method: EPA 7470								
Mercury	ND	ug/L	0.20	1	01/18/17 10:01	01/19/17 11:22	7439-97-6	
7470 Mercury, Dissolved (LF) Analytical Method: EPA 7470 Preparation Method: EPA 7470								
Mercury, Dissolved	ND	ug/L	0.20	1	01/18/17 10:15	01/19/17 12:31	7439-97-6	
8270 MSSV PAH by SIM SEP Analytical Method: EPA 8270 by SIM Preparation Method: EPA 3510								
Acenaphthene	0.53	ug/L	0.10	1	01/17/17 10:16	01/17/17 22:14	83-32-9	
Acenaphthylene	0.15	ug/L	0.10	1	01/17/17 10:16	01/17/17 22:14	208-96-8	
Anthracene	ND	ug/L	0.10	1	01/17/17 10:16	01/17/17 22:14	120-12-7	
Benzo(a)anthracene	ND	ug/L	0.10	1	01/17/17 10:16	01/17/17 22:14	56-55-3	
Benzo(a)pyrene	ND	ug/L	0.10	1	01/17/17 10:16	01/17/17 22:14	50-32-8	
Benzo(b)fluoranthene	ND	ug/L	0.10	1	01/17/17 10:16	01/17/17 22:14	205-99-2	
Benzo(g,h,i)perylene	ND	ug/L	0.10	1	01/17/17 10:16	01/17/17 22:14	191-24-2	
Benzo(k)fluoranthene	ND	ug/L	0.10	1	01/17/17 10:16	01/17/17 22:14	207-08-9	
Chrysene	ND	ug/L	0.10	1	01/17/17 10:16	01/17/17 22:14	218-01-9	
Dibenz(a,h)anthracene	ND	ug/L	0.10	1	01/17/17 10:16	01/17/17 22:14	53-70-3	
Fluoranthene	ND	ug/L	0.10	1	01/17/17 10:16	01/17/17 22:14	206-44-0	
Fluorene	0.45	ug/L	0.10	1	01/17/17 10:16	01/17/17 22:14	86-73-7	
Indeno(1,2,3-cd)pyrene	ND	ug/L	0.10	1	01/17/17 10:16	01/17/17 22:14	193-39-5	
2-Methylnaphthalene	33.9	ug/L	0.10	1	01/17/17 10:16	01/17/17 22:14	91-57-6	
Naphthalene	41.4	ug/L	1.0	10	01/17/17 10:16	01/18/17 10:53	91-20-3	
Phenanthrene	0.20	ug/L	0.10	1	01/17/17 10:16	01/17/17 22:14	85-01-8	
Pyrene	ND	ug/L	0.10	1	01/17/17 10:16	01/17/17 22:14	129-00-0	
Surrogates								
2-Fluorobiphenyl (S)	71	%	25-150	1	01/17/17 10:16	01/17/17 22:14	321-60-8	
2-Fluorobiphenyl (S)	48	%	25-150	10	01/17/17 10:16	01/18/17 10:53	321-60-8	
Terphenyl-d14 (S)	71	%	25-150	1	01/17/17 10:16	01/17/17 22:14	1718-51-0	
Terphenyl-d14 (S)	54	%	25-150	10	01/17/17 10:16	01/18/17 10:53	1718-51-0	
8260 MSV Low Level Analytical Method: EPA 5030B/8260								
Acetone	ND	ug/L	4.0	1		01/17/17 17:37	67-64-1	
Benzene	2.3	ug/L	0.50	1		01/17/17 17:37	71-43-2	
Bromodichloromethane	ND	ug/L	0.50	1		01/17/17 17:37	75-27-4	
Bromoform	ND	ug/L	0.50	1		01/17/17 17:37	75-25-2	
Bromomethane	ND	ug/L	0.50	1		01/17/17 17:37	74-83-9	
2-Butanone (MEK)	ND	ug/L	2.0	1		01/17/17 17:37	78-93-3	
Carbon disulfide	ND	ug/L	1.0	1		01/17/17 17:37	75-15-0	L3
Carbon tetrachloride	ND	ug/L	0.50	1		01/17/17 17:37	56-23-5	
Chlorobenzene	ND	ug/L	0.50	1		01/17/17 17:37	108-90-7	
Chloroethane	ND	ug/L	0.50	1		01/17/17 17:37	75-00-3	
Chloroform	ND	ug/L	0.50	1		01/17/17 17:37	67-66-3	
Chloromethane	ND	ug/L	0.50	1		01/17/17 17:37	74-87-3	
1,2-Dibromo-3-chloropropane	ND	ug/L	0.20	1		01/17/17 17:37	96-12-8	
Dibromochloromethane	ND	ug/L	0.50	1		01/17/17 17:37	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	1		01/17/17 17:37	106-93-4	
Dichlorodifluoromethane	ND	ug/L	1.0	1		01/17/17 17:37	75-71-8	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: PUMA TERMINAL MS SAMPLING

Pace Project No.: 2048681

Sample: MW-37A	Lab ID: 2048681007	Collected: 01/12/17 14:38	Received: 01/12/17 15:48	Matrix: Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV Low Level		Analytical Method: EPA 5030B/8260						
1,1-Dichloroethane	ND	ug/L	0.50	1		01/17/17 17:37	75-34-3	
1,2-Dichloroethane	ND	ug/L	0.50	1		01/17/17 17:37	107-06-2	
1,1-Dichloroethene	ND	ug/L	0.50	1		01/17/17 17:37	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	1		01/17/17 17:37	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	0.50	1		01/17/17 17:37	156-60-5	
1,2-Dichloropropane	ND	ug/L	0.50	1		01/17/17 17:37	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	0.50	1		01/17/17 17:37	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	0.50	1		01/17/17 17:37	10061-02-6	
Ethylbenzene	17.9	ug/L	0.50	1		01/17/17 17:37	100-41-4	
2-Hexanone	ND	ug/L	1.0	1		01/17/17 17:37	591-78-6	
Isopropylbenzene (Cumene)	7.9	ug/L	1.0	1		01/17/17 17:37	98-82-8	
Methyl acetate	ND	ug/L	2.0	1		01/17/17 17:37	79-20-9	
Methylene Chloride	0.54	ug/L	0.50	1		01/17/17 17:37	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	1.0	1		01/17/17 17:37	108-10-1	
Methyl-tert-butyl ether	1.2	ug/L	0.50	1		01/17/17 17:37	1634-04-4	
Styrene	ND	ug/L	1.0	1		01/17/17 17:37	100-42-5	
1,1,2,2-Tetrachloroethane	ND	ug/L	0.50	1		01/17/17 17:37	79-34-5	
Tetrachloroethene	ND	ug/L	0.50	1		01/17/17 17:37	127-18-4	
Toluene	0.69	ug/L	0.50	1		01/17/17 17:37	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	0.50	1		01/17/17 17:37	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	0.50	1		01/17/17 17:37	79-00-5	
Trichloroethene	ND	ug/L	0.50	1		01/17/17 17:37	79-01-6	
Trichlorofluoromethane	ND	ug/L	0.50	1		01/17/17 17:37	75-69-4	
Vinyl chloride	ND	ug/L	0.50	1		01/17/17 17:37	75-01-4	
m&p-Xylene	40.3	ug/L	2.0	1		01/17/17 17:37	179601-23-1	
o-Xylene	2.7	ug/L	1.0	1		01/17/17 17:37	95-47-6	
Surrogates								
Dibromofluoromethane (S)	108	%	72-126	1		01/17/17 17:37	1868-53-7	
4-Bromofluorobenzene (S)	97	%	68-124	1		01/17/17 17:37	460-00-4	
Toluene-d8 (S)	102	%	79-119	1		01/17/17 17:37	2037-26-5	

Sample: FB-011217	Lab ID: 2048681008	Collected: 01/12/17 14:48	Received: 01/12/17 15:48	Matrix: Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8021 GCV BTEX, MTBE, GRO		Analytical Method: EPA 8015/8021						
Gasoline Range Organics	ND	ug/L	50.0	1		01/19/17 01:57		
Surrogates								
4-Bromofluorobenzene (S)	98	%	44-148	1		01/19/17 01:57	460-00-4	
8260 MSV Low Level		Analytical Method: EPA 5030B/8260						
Acetone	11.8	ug/L	4.0	1		01/17/17 17:55	67-64-1	C9
Benzene	ND	ug/L	0.50	1		01/17/17 17:55	71-43-2	
Bromodichloromethane	1.2	ug/L	0.50	1		01/17/17 17:55	75-27-4	
Bromoform	ND	ug/L	0.50	1		01/17/17 17:55	75-25-2	
Bromomethane	ND	ug/L	0.50	1		01/17/17 17:55	74-83-9	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: PUMA TERMINAL MS SAMPLING

Pace Project No.: 2048681

Sample: FB-011217	Lab ID: 2048681008	Collected: 01/12/17 14:48	Received: 01/12/17 15:48	Matrix: Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV Low Level		Analytical Method: EPA 5030B/8260						
2-Butanone (MEK)	ND	ug/L	2.0	1		01/17/17 17:55	78-93-3	
Carbon disulfide	ND	ug/L	1.0	1		01/17/17 17:55	75-15-0	L3
Carbon tetrachloride	ND	ug/L	0.50	1		01/17/17 17:55	56-23-5	
Chlorobenzene	ND	ug/L	0.50	1		01/17/17 17:55	108-90-7	
Chloroethane	ND	ug/L	0.50	1		01/17/17 17:55	75-00-3	
Chloroform	5.0	ug/L	0.50	1		01/17/17 17:55	67-66-3	
Chloromethane	ND	ug/L	0.50	1		01/17/17 17:55	74-87-3	
1,2-Dibromo-3-chloropropane	ND	ug/L	0.20	1		01/17/17 17:55	96-12-8	
Dibromochloromethane	ND	ug/L	0.50	1		01/17/17 17:55	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	1		01/17/17 17:55	106-93-4	
Dichlorodifluoromethane	ND	ug/L	1.0	1		01/17/17 17:55	75-71-8	
1,1-Dichloroethane	ND	ug/L	0.50	1		01/17/17 17:55	75-34-3	
1,2-Dichloroethane	ND	ug/L	0.50	1		01/17/17 17:55	107-06-2	
1,1-Dichloroethene	ND	ug/L	0.50	1		01/17/17 17:55	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	1		01/17/17 17:55	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	0.50	1		01/17/17 17:55	156-60-5	
1,2-Dichloropropane	ND	ug/L	0.50	1		01/17/17 17:55	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	0.50	1		01/17/17 17:55	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	0.50	1		01/17/17 17:55	10061-02-6	
Ethylbenzene	ND	ug/L	0.50	1		01/17/17 17:55	100-41-4	
2-Hexanone	ND	ug/L	1.0	1		01/17/17 17:55	591-78-6	
Isopropylbenzene (Cumene)	ND	ug/L	1.0	1		01/17/17 17:55	98-82-8	
Methyl acetate	ND	ug/L	2.0	1		01/17/17 17:55	79-20-9	
Methylene Chloride	ND	ug/L	0.50	1		01/17/17 17:55	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	1.0	1		01/17/17 17:55	108-10-1	
Methyl-tert-butyl ether	ND	ug/L	0.50	1		01/17/17 17:55	1634-04-4	
Styrene	ND	ug/L	1.0	1		01/17/17 17:55	100-42-5	
1,1,2,2-Tetrachloroethane	ND	ug/L	0.50	1		01/17/17 17:55	79-34-5	
Tetrachloroethene	ND	ug/L	0.50	1		01/17/17 17:55	127-18-4	
Toluene	ND	ug/L	0.50	1		01/17/17 17:55	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	0.50	1		01/17/17 17:55	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	0.50	1		01/17/17 17:55	79-00-5	
Trichloroethene	ND	ug/L	0.50	1		01/17/17 17:55	79-01-6	
Trichlorofluoromethane	ND	ug/L	0.50	1		01/17/17 17:55	75-69-4	
Vinyl chloride	ND	ug/L	0.50	1		01/17/17 17:55	75-01-4	
m&p-Xylene	ND	ug/L	2.0	1		01/17/17 17:55	179601-23-1	
o-Xylene	ND	ug/L	1.0	1		01/17/17 17:55	95-47-6	
Surrogates								
Dibromofluoromethane (S)	107	%	72-126	1		01/17/17 17:55	1868-53-7	
4-Bromofluorobenzene (S)	98	%	68-124	1		01/17/17 17:55	460-00-4	
Toluene-d8 (S)	101	%	79-119	1		01/17/17 17:55	2037-26-5	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: PUMA TERMINAL MS SAMPLING

Pace Project No.: 2048681

QC Batch: 72351 Analysis Method: EPA 8015/8021
 QC Batch Method: EPA 8015/8021 Analysis Description: 8021 W GCV BTEX , MTBE, GRO
 Associated Lab Samples: 2048681001, 2048681002, 2048681003, 2048681004, 2048681005, 2048681006, 2048681007, 2048681008

METHOD BLANK: 303024 Matrix: Water
 Associated Lab Samples: 2048681001, 2048681002, 2048681003, 2048681004, 2048681005, 2048681006, 2048681007, 2048681008

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Gasoline Range Organics	ug/L	ND	50.0	01/18/17 18:45	
4-Bromofluorobenzene (S)	%.	99	44-148	01/18/17 18:45	

LABORATORY CONTROL SAMPLE: 303025

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Gasoline Range Organics	ug/L	500	464	93	61-136	
4-Bromofluorobenzene (S)	%.			99	44-148	
4-Bromofluorobenzene (S)	%.			100	44-148	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 303026 303027

Parameter	Units	2048850001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Gasoline Range Organics	ug/L	25.4J	500	500	592	569	113	109	15-147	4	20	
4-Bromofluorobenzene (S)	%.						100	100	44-148			
4-Bromofluorobenzene (S)	%.						94	100	44-148			
4-Bromofluorobenzene (S)	%.						100	102	44-148			
4-Bromofluorobenzene (S)	%.						94	102	44-148			

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QUALITY CONTROL DATA

Project: PUMA TERMINAL MS SAMPLING

Pace Project No.: 2048681

QC Batch: 72219

Analysis Method: EPA 7470

QC Batch Method: EPA 7470

Analysis Description: 7470 Mercury

Associated Lab Samples: 2048681002, 2048681003, 2048681004, 2048681005, 2048681006, 2048681007

METHOD BLANK: 302543

Matrix: Water

Associated Lab Samples: 2048681002, 2048681003, 2048681004, 2048681005, 2048681006, 2048681007

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Mercury	ug/L	ND	0.20	01/19/17 10:57	

LABORATORY CONTROL SAMPLE: 302544

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury	ug/L	1	1.0	103	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 302545 302546

Parameter	Units	2048681002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Mercury	ug/L	ND	1	1	1.0	1.0	103	105	75-125	2	20	

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QUALITY CONTROL DATA

Project: PUMA TERMINAL MS SAMPLING

Pace Project No.: 2048681

QC Batch: 72220

Analysis Method: EPA 7470

QC Batch Method: EPA 7470

Analysis Description: 7470 Mercury Dissolved

Associated Lab Samples: 2048681002, 2048681003, 2048681004, 2048681005, 2048681006, 2048681007

METHOD BLANK: 302547

Matrix: Water

Associated Lab Samples: 2048681002, 2048681003, 2048681004, 2048681005, 2048681006, 2048681007

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Mercury, Dissolved	ug/L	ND	0.20	01/19/17 12:11	

LABORATORY CONTROL SAMPLE: 302548

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury, Dissolved	ug/L	1	1.1	110	80-120	

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QUALITY CONTROL DATA

Project: PUMA TERMINAL MS SAMPLING

Pace Project No.: 2048681

QC Batch: 72197 Analysis Method: EPA 6020

QC Batch Method: EPA 3010 Analysis Description: 6020 MET

Associated Lab Samples: 2048681002, 2048681003, 2048681004, 2048681005, 2048681006, 2048681007

METHOD BLANK: 302459 Matrix: Water

Associated Lab Samples: 2048681002, 2048681003, 2048681004, 2048681005, 2048681006, 2048681007

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Arsenic	mg/L	ND	0.0010	02/11/17 11:14	
Chromium	mg/L	ND	0.0010	02/11/17 11:14	
Lead	mg/L	ND	0.0010	02/11/17 11:14	
Vanadium	mg/L	ND	0.0050	02/11/17 11:14	

LABORATORY CONTROL SAMPLE: 302460

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Arsenic	mg/L	.02	0.020	101	83-115	
Chromium	mg/L	.02	0.020	102	85-115	
Lead	mg/L	.02	0.020	100	84-115	
Vanadium	mg/L	.02	0.019	93	81-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 302461 302462

Parameter	Units	MS		MSD		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		2048748001 Result	Spike Conc.	Spike Conc.	Result						
Arsenic	mg/L	0.00045J	.02	.02	0.020	0.021	98	100	80-120	2	20
Chromium	mg/L	0.0012	.02	.02	0.021	0.021	99	100	80-120	1	20
Lead	mg/L	0.00052J	.02	.02	0.021	0.021	102	104	80-120	3	20
Vanadium	mg/L	ND	.02	.02	0.022	0.021	108	107	80-120	1	20

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: PUMA TERMINAL MS SAMPLING
Pace Project No.: 2048681

QC Batch: 72224 Analysis Method: EPA 6020
QC Batch Method: EPA 3005A Analysis Description: 6020 MET Dissolved
Associated Lab Samples: 2048681002, 2048681003, 2048681004, 2048681005, 2048681006, 2048681007

METHOD BLANK: 302560 Matrix: Water
Associated Lab Samples: 2048681002, 2048681003, 2048681004, 2048681005, 2048681006, 2048681007

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Arsenic, Dissolved	ug/L	ND	1.0	02/11/17 11:07	
Chromium, Dissolved	ug/L	ND	1.0	02/11/17 11:07	
Lead, Dissolved	ug/L	ND	1.0	02/11/17 11:07	
Vanadium, Dissolved	ug/L	ND	5.0	02/11/17 11:07	

LABORATORY CONTROL SAMPLE: 302561

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Arsenic, Dissolved	ug/L	20	19.9	100	80-120	
Chromium, Dissolved	ug/L	20	21.3	107	80-120	
Lead, Dissolved	ug/L	20	19.6	98	80-120	
Vanadium, Dissolved	ug/L	20	17.2	86	80-120	

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QUALITY CONTROL DATA

Project: PUMA TERMINAL MS SAMPLING

Pace Project No.: 2048681

QC Batch: 72210 Analysis Method: EPA 5030B/8260
 QC Batch Method: EPA 5030B/8260 Analysis Description: 8260 MSV Low Level
 Associated Lab Samples: 2048681001, 2048681002, 2048681003, 2048681004, 2048681005, 2048681006, 2048681007, 2048681008

METHOD BLANK: 302517 Matrix: Water
 Associated Lab Samples: 2048681001, 2048681002, 2048681003, 2048681004, 2048681005, 2048681006, 2048681007, 2048681008

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
1,1,1-Trichloroethane	ug/L	ND	0.50	01/17/17 10:33	
1,1,2,2-Tetrachloroethane	ug/L	ND	0.50	01/17/17 10:33	
1,1,2-Trichloroethane	ug/L	ND	0.50	01/17/17 10:33	
1,1-Dichloroethane	ug/L	ND	0.50	01/17/17 10:33	
1,1-Dichloroethene	ug/L	ND	0.50	01/17/17 10:33	
1,2-Dibromo-3-chloropropane	ug/L	ND	0.20	01/17/17 10:33	
1,2-Dibromoethane (EDB)	ug/L	ND	1.0	01/17/17 10:33	
1,2-Dichloroethane	ug/L	ND	0.50	01/17/17 10:33	
1,2-Dichloropropane	ug/L	ND	0.50	01/17/17 10:33	
2-Butanone (MEK)	ug/L	ND	2.0	01/17/17 10:33	
2-Hexanone	ug/L	ND	1.0	01/17/17 10:33	
4-Methyl-2-pentanone (MIBK)	ug/L	ND	1.0	01/17/17 10:33	
Acetone	ug/L	ND	4.0	01/17/17 10:33	
Benzene	ug/L	ND	0.50	01/17/17 10:33	
Bromodichloromethane	ug/L	ND	0.50	01/17/17 10:33	
Bromoform	ug/L	ND	0.50	01/17/17 10:33	
Bromomethane	ug/L	ND	0.50	01/17/17 10:33	
Carbon disulfide	ug/L	ND	1.0	01/17/17 10:33	
Carbon tetrachloride	ug/L	ND	0.50	01/17/17 10:33	
Chlorobenzene	ug/L	ND	0.50	01/17/17 10:33	
Chloroethane	ug/L	ND	0.50	01/17/17 10:33	
Chloroform	ug/L	ND	0.50	01/17/17 10:33	
Chloromethane	ug/L	ND	0.50	01/17/17 10:33	
cis-1,2-Dichloroethene	ug/L	ND	1.0	01/17/17 10:33	
cis-1,3-Dichloropropene	ug/L	ND	0.50	01/17/17 10:33	
Dibromochloromethane	ug/L	ND	0.50	01/17/17 10:33	
Dichlorodifluoromethane	ug/L	ND	1.0	01/17/17 10:33	
Ethylbenzene	ug/L	ND	0.50	01/17/17 10:33	
Isopropylbenzene (Cumene)	ug/L	ND	1.0	01/17/17 10:33	
m&p-Xylene	ug/L	ND	2.0	01/17/17 10:33	
Methyl acetate	ug/L	ND	2.0	01/17/17 10:33	
Methyl-tert-butyl ether	ug/L	ND	0.50	01/17/17 10:33	
Methylene Chloride	ug/L	ND	0.50	01/17/17 10:33	
o-Xylene	ug/L	ND	1.0	01/17/17 10:33	
Styrene	ug/L	ND	1.0	01/17/17 10:33	
Tetrachloroethene	ug/L	ND	0.50	01/17/17 10:33	
Toluene	ug/L	ND	0.50	01/17/17 10:33	
trans-1,2-Dichloroethene	ug/L	ND	0.50	01/17/17 10:33	
trans-1,3-Dichloropropene	ug/L	ND	0.50	01/17/17 10:33	
Trichloroethene	ug/L	ND	0.50	01/17/17 10:33	
Trichlorofluoromethane	ug/L	ND	0.50	01/17/17 10:33	

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QUALITY CONTROL DATA

Project: PUMA TERMINAL MS SAMPLING

Pace Project No.: 2048681

METHOD BLANK: 302517

Matrix: Water

Associated Lab Samples: 2048681001, 2048681002, 2048681003, 2048681004, 2048681005, 2048681006, 2048681007, 2048681008

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Vinyl chloride	ug/L	ND	0.50	01/17/17 10:33	
4-Bromofluorobenzene (S)	%	95	68-124	01/17/17 10:33	
Dibromofluoromethane (S)	%	106	72-126	01/17/17 10:33	
Toluene-d8 (S)	%	100	79-119	01/17/17 10:33	

LABORATORY CONTROL SAMPLE: 302518

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,1,1-Trichloroethane	ug/L	50	53.9	108	62-131	
1,1,2,2-Tetrachloroethane	ug/L	50	52.7	105	15-179	
1,1,2-Trichloroethane	ug/L	50	50.9	102	58-144	
1,1-Dichloroethane	ug/L	50	58.4	117	63-129	
1,1-Dichloroethene	ug/L	50	54.5	109	51-139	
1,2-Dibromo-3-chloropropane	ug/L	50	52.5	105	21-160	
1,2-Dibromoethane (EDB)	ug/L	50	49.5	99	52-161	
1,2-Dichloroethane	ug/L	50	53.9	108	57-148	
1,2-Dichloropropane	ug/L	50	56.9	114	66-128	
2-Butanone (MEK)	ug/L	50	59.8	120	32-183	
2-Hexanone	ug/L	50	51.8	104	36-170	
4-Methyl-2-pentanone (MIBK)	ug/L	50	53.0	106	26-171	
Acetone	ug/L	50	54.5	109	22-165	
Benzene	ug/L	50	54.4	109	62-131	
Bromodichloromethane	ug/L	50	55.4	111	69-132	
Bromoform	ug/L	50	47.5	95	35-166	
Bromomethane	ug/L	50	45.1	90	34-158	
Carbon disulfide	ug/L	50	74.0	148	31-128	L0
Carbon tetrachloride	ug/L	50	52.2	104	54-144	
Chlorobenzene	ug/L	50	52.8	106	70-127	
Chloroethane	ug/L	50	40.3	81	17-195	
Chloroform	ug/L	50	56.6	113	73-134	
Chloromethane	ug/L	50	61.8	124	17-153	
cis-1,2-Dichloroethene	ug/L	50	54.1	108	68-129	
cis-1,3-Dichloropropene	ug/L	50	55.1	110	72-138	
Dibromochloromethane	ug/L	50	51.5	103	49-146	
Dichlorodifluoromethane	ug/L	50	53.0	106	10-179	
Ethylbenzene	ug/L	50	50.5	101	66-126	
Isopropylbenzene (Cumene)	ug/L	50	49.7	99	51-138	
m&p-Xylene	ug/L	100	101	101	65-129	
Methyl acetate	ug/L	50	56.4	113	20-142	
Methyl-tert-butyl ether	ug/L	50	53.1	106	37-166	
Methylene Chloride	ug/L	50	57.7	115	46-168	
o-Xylene	ug/L	50	49.3	99	65-124	
Styrene	ug/L	50	51.1	102	72-133	
Tetrachloroethene	ug/L	50	51.1	102	46-157	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: PUMA TERMINAL MS SAMPLING

Pace Project No.: 2048681

LABORATORY CONTROL SAMPLE: 302518

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Toluene	ug/L	50	53.3	107	69-126	
trans-1,2-Dichloroethene	ug/L	50	55.6	111	60-129	
trans-1,3-Dichloropropene	ug/L	50	54.0	108	59-149	
Trichloroethene	ug/L	50	54.5	109	67-132	
Trichlorofluoromethane	ug/L	50	54.4	109	39-171	
Vinyl chloride	ug/L	50	45.7	91	27-149	
4-Bromofluorobenzene (S)	%			97	68-124	
Dibromofluoromethane (S)	%			105	72-126	
Toluene-d8 (S)	%			101	79-119	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 302519 302520

Parameter	Units	MS		MSD		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		2048748001 Result	Spike Conc.	Spike Conc.	MS Result						
1,1,1-Trichloroethane	ug/L	ND	50	50	63.7	55.7	127	111	54-137	13	20
1,1,2,2-Tetrachloroethane	ug/L	ND	50	50	58.2	54.8	116	110	15-187	6	20
1,1,2-Trichloroethane	ug/L	ND	50	50	57.7	51.5	115	103	59-148	11	20
1,1-Dichloroethane	ug/L	ND	50	50	66.4	59.2	133	118	59-133	11	20
1,1-Dichloroethene	ug/L	ND	50	50	65.8	58.8	132	118	44-146	11	20
1,2-Dibromo-3-chloropropane	ug/L	ND	50	50	57.3	52.7	115	105	23-166	8	20
1,2-Dibromoethane (EDB)	ug/L	ND	50	50	54.8	51.1	110	102	55-166	7	20
1,2-Dichloroethane	ug/L	ND	50	50	59.4	53.0	119	106	56-154	11	20
1,2-Dichloropropane	ug/L	ND	50	50	61.4	55.6	123	111	62-135	10	20
2-Butanone (MEK)	ug/L	ND	50	50	64.9	58.8	130	118	20-205	10	20
2-Hexanone	ug/L	ND	50	50	54.7	52.9	109	106	25-189	3	20
4-Methyl-2-pentanone (MIBK)	ug/L	ND	50	50	57.9	54.1	116	108	23-184	7	20
Acetone	ug/L	0.0057 mg/L	50	50	63.1	56.4	115	101	11-217	11	20
Benzene	ug/L	ND	50	50	60.7	54.5	121	109	52-141	11	20
Bromodichloromethane	ug/L	ND	50	50	60.5	55.0	121	110	70-134	10	20
Bromoform	ug/L	ND	50	50	51.6	47.9	103	96	37-171	7	20
Bromomethane	ug/L	ND	50	50	52.5	39.2	105	78	34-155	29	20 R1
Carbon disulfide	ug/L	ND	50	50	93.4	75.3	187	151	28-130	21	20 M0,R1
Carbon tetrachloride	ug/L	ND	50	50	60.9	53.3	122	107	48-146	13	20
Chlorobenzene	ug/L	ND	50	50	59.5	53.4	119	107	67-129	11	20
Chloroethane	ug/L	ND	50	50	47.6	37.0	95	74	12-192	25	20 R1
Chloroform	ug/L	ND	50	50	63.7	57.1	127	114	66-143	11	20
Chloromethane	ug/L	ND	50	50	67.1	59.6	134	119	14-155	12	20
cis-1,2-Dichloroethene	ug/L	ND	50	50	61.2	56.3	122	113	56-141	8	20
cis-1,3-Dichloropropene	ug/L	ND	50	50	60.7	54.3	121	109	70-139	11	20
Dibromochloromethane	ug/L	ND	50	50	55.1	51.4	110	103	50-150	7	20
Dichlorodifluoromethane	ug/L	ND	50	50	55.6	48.6	111	97	10-173	14	20
Ethylbenzene	ug/L	ND	50	50	57.4	51.8	115	104	57-135	10	20
Isopropylbenzene (Cumene)	ug/L	ND	50	50	58.1	54.3	116	109	40-146	7	20

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: PUMA TERMINAL MS SAMPLING

Pace Project No.: 2048681

Parameter	Units	2048748001		302519		302520		% Rec	% Rec	Limits	RPD	Max RPD	Qual
		Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec						
m&p-Xylene	ug/L	ND	100	100	116	105	116	105	56-136	10	20		
Methyl acetate	ug/L	ND	50	50	57.5	58.6	115	117	10-142	2	20		
Methyl-tert-butyl ether	ug/L	ND	50	50	58.1	52.9	116	106	35-176	9	20		
Methylene Chloride	ug/L	ND	50	50	63.8	55.1	128	110	45-166	15	20		
o-Xylene	ug/L	ND	50	50	54.8	49.9	110	100	57-133	9	20		
Styrene	ug/L	ND	50	50	57.0	51.0	114	102	58-144	11	20		
Tetrachloroethene	ug/L	ND	50	50	60.2	54.5	120	109	48-143	10	20		
Toluene	ug/L	ND	50	50	58.8	53.8	118	108	59-136	9	20		
trans-1,2-Dichloroethene	ug/L	ND	50	50	64.5	57.7	129	115	57-132	11	20		
trans-1,3-Dichloropropene	ug/L	ND	50	50	60.8	55.1	122	110	59-154	10	20		
Trichloroethene	ug/L	ND	50	50	61.3	55.9	123	112	58-140	9	20		
Trichlorofluoromethane	ug/L	ND	50	50	67.6	57.1	135	114	24-175	17	20		
Vinyl chloride	ug/L	ND	50	50	51.7	44.1	103	88	21-150	16	20		
4-Bromofluorobenzene (S)	%						98	99	68-124				
Dibromofluoromethane (S)	%						108	107	72-126				
Toluene-d8 (S)	%						100	101	79-119				

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QUALITY CONTROL DATA

Project: PUMA TERMINAL MS SAMPLING

Pace Project No.: 2048681

QC Batch: 72198 Analysis Method: EPA 8015B Modified
 QC Batch Method: EPA 3535 Analysis Description: EPA 8015 ORO
 Associated Lab Samples: 2048681002, 2048681003, 2048681004, 2048681005, 2048681006, 2048681007

METHOD BLANK: 302463 Matrix: Water
 Associated Lab Samples: 2048681002, 2048681003, 2048681004, 2048681005, 2048681006, 2048681007

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Diesel Range Organic (C10-C28)	mg/L	ND	0.25	01/18/17 15:39	
Oil Range Organics (>C28-C40)	mg/L	ND	0.50	01/18/17 15:39	
n-Pentacosane (S)	%	38	16-137	01/18/17 15:39	
o-Terphenyl (S)	%	47	10-121	01/18/17 15:39	

LABORATORY CONTROL SAMPLE: 302464

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Diesel Range Organic (C10-C28)	mg/L	.4	.21J	52	10-115	
n-Pentacosane (S)	%			51	16-137	
o-Terphenyl (S)	%			61	10-121	

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QUALITY CONTROL DATA

Project: PUMA TERMINAL MS SAMPLING

Pace Project No.: 2048681

QC Batch: 72204 Analysis Method: EPA 8270 by SIM
 QC Batch Method: EPA 3510 Analysis Description: 8270 Water by SIM MSSV
 Associated Lab Samples: 2048681002, 2048681003, 2048681004, 2048681005, 2048681006, 2048681007

METHOD BLANK: 302499 Matrix: Water
 Associated Lab Samples: 2048681002, 2048681003, 2048681004, 2048681005, 2048681006, 2048681007

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
2-Methylnaphthalene	ug/L	ND	0.10	01/17/17 17:36	
Acenaphthene	ug/L	ND	0.10	01/17/17 17:36	
Acenaphthylene	ug/L	ND	0.10	01/17/17 17:36	
Anthracene	ug/L	ND	0.10	01/17/17 17:36	
Benzo(a)anthracene	ug/L	ND	0.10	01/17/17 17:36	
Benzo(a)pyrene	ug/L	ND	0.10	01/17/17 17:36	
Benzo(b)fluoranthene	ug/L	ND	0.10	01/17/17 17:36	
Benzo(g,h,i)perylene	ug/L	ND	0.10	01/17/17 17:36	
Benzo(k)fluoranthene	ug/L	ND	0.10	01/17/17 17:36	
Chrysene	ug/L	ND	0.10	01/17/17 17:36	
Dibenz(a,h)anthracene	ug/L	ND	0.10	01/17/17 17:36	
Fluoranthene	ug/L	ND	0.10	01/17/17 17:36	
Fluorene	ug/L	ND	0.10	01/17/17 17:36	
Indeno(1,2,3-cd)pyrene	ug/L	ND	0.10	01/17/17 17:36	
Naphthalene	ug/L	ND	0.10	01/17/17 17:36	
Phenanthrene	ug/L	ND	0.10	01/17/17 17:36	
Pyrene	ug/L	ND	0.10	01/17/17 17:36	
2-Fluorobiphenyl (S)	%	67	25-150	01/17/17 17:36	
Terphenyl-d14 (S)	%	72	25-150	01/17/17 17:36	

LABORATORY CONTROL SAMPLE: 302500

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
2-Methylnaphthalene	ug/L	4	3.6	90	35-150	
Acenaphthene	ug/L	4	3.6	91	35-150	
Acenaphthylene	ug/L	4	3.5	88	35-150	
Anthracene	ug/L	4	4.5	112	35-150	
Benzo(a)anthracene	ug/L	4	4.0	99	35-150	
Benzo(a)pyrene	ug/L	4	3.7	91	35-150	
Benzo(b)fluoranthene	ug/L	4	3.6	91	35-150	
Benzo(g,h,i)perylene	ug/L	4	4.1	102	35-150	
Benzo(k)fluoranthene	ug/L	4	3.7	93	35-150	
Chrysene	ug/L	4	3.7	93	35-150	
Dibenz(a,h)anthracene	ug/L	4	4.6	115	35-150	
Fluoranthene	ug/L	4	3.7	93	35-150	
Fluorene	ug/L	4	3.7	92	35-150	
Indeno(1,2,3-cd)pyrene	ug/L	4	4.4	110	35-150	
Naphthalene	ug/L	4	3.3	82	35-150	
Phenanthrene	ug/L	4	3.8	96	35-150	
Pyrene	ug/L	4	3.4	85	35-150	

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QUALITY CONTROL DATA

Project: PUMA TERMINAL MS SAMPLING
Pace Project No.: 2048681

LABORATORY CONTROL SAMPLE: 302500

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
2-Fluorobiphenyl (S)	%.			101	25-150	
Terphenyl-d14 (S)	%.			108	25-150	

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QUALIFIERS

Project: PUMA TERMINAL MS SAMPLING

Pace Project No.: 2048681

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The Nelac Institute

LABORATORIES

PASI-N Pace Analytical Services - New Orleans

BATCH QUALIFIERS

Batch: 72289

[M5] A matrix spike/matrix spike duplicate was not performed for this batch due to insufficient sample volume.

Batch: 72350

[M5] A matrix spike/matrix spike duplicate was not performed for this batch due to insufficient sample volume.

Batch: 72356

[1] Insufficient sample volume to perform MS/MSD analyses.

ANALYTE QUALIFIERS

C9 Common Laboratory Contaminant.

L0 Analyte recovery in the laboratory control sample (LCS) was outside QC limits.

L3 Analyte recovery in the laboratory control sample (LCS) exceeded QC limits. Analyte presence below reporting limits in associated samples.

M0 Matrix spike recovery and/or matrix spike duplicate recovery was outside laboratory control limits.

R1 RPD value was outside control limits.

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: PUMA TERMINAL MS SAMPLING

Pace Project No.: 2048681

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
2048681002	EB-011217	EPA 3535	72198	EPA 8015B Modified	72350
2048681003	MW-76B2	EPA 3535	72198	EPA 8015B Modified	72350
2048681004	MW-76A	EPA 3535	72198	EPA 8015B Modified	72350
2048681005	MW-13A	EPA 3535	72198	EPA 8015B Modified	72350
2048681006	MW-13B2	EPA 3535	72198	EPA 8015B Modified	72350
2048681007	MW-37A	EPA 3535	72198	EPA 8015B Modified	72350
2048681001	TB-011217	EPA 8015/8021	72351		
2048681002	EB-011217	EPA 8015/8021	72351		
2048681003	MW-76B2	EPA 8015/8021	72351		
2048681004	MW-76A	EPA 8015/8021	72351		
2048681005	MW-13A	EPA 8015/8021	72351		
2048681006	MW-13B2	EPA 8015/8021	72351		
2048681007	MW-37A	EPA 8015/8021	72351		
2048681008	FB-011217	EPA 8015/8021	72351		
2048681002	EB-011217	EPA 3010	72197	EPA 6020	72202
2048681003	MW-76B2	EPA 3010	72197	EPA 6020	72202
2048681004	MW-76A	EPA 3010	72197	EPA 6020	72202
2048681005	MW-13A	EPA 3010	72197	EPA 6020	72202
2048681006	MW-13B2	EPA 3010	72197	EPA 6020	72202
2048681007	MW-37A	EPA 3010	72197	EPA 6020	72202
2048681002	EB-011217	EPA 3005A	72224	EPA 6020	72356
2048681003	MW-76B2	EPA 3005A	72224	EPA 6020	72356
2048681004	MW-76A	EPA 3005A	72224	EPA 6020	72356
2048681005	MW-13A	EPA 3005A	72224	EPA 6020	72356
2048681006	MW-13B2	EPA 3005A	72224	EPA 6020	72356
2048681007	MW-37A	EPA 3005A	72224	EPA 6020	72356
2048681002	EB-011217	EPA 7470	72219	EPA 7470	72363
2048681003	MW-76B2	EPA 7470	72219	EPA 7470	72363
2048681004	MW-76A	EPA 7470	72219	EPA 7470	72363
2048681005	MW-13A	EPA 7470	72219	EPA 7470	72363
2048681006	MW-13B2	EPA 7470	72219	EPA 7470	72363
2048681007	MW-37A	EPA 7470	72219	EPA 7470	72363
2048681002	EB-011217	EPA 7470	72220	EPA 7470	72355
2048681003	MW-76B2	EPA 7470	72220	EPA 7470	72355
2048681004	MW-76A	EPA 7470	72220	EPA 7470	72355
2048681005	MW-13A	EPA 7470	72220	EPA 7470	72355
2048681006	MW-13B2	EPA 7470	72220	EPA 7470	72355
2048681007	MW-37A	EPA 7470	72220	EPA 7470	72355
2048681002	EB-011217	EPA 3510	72204	EPA 8270 by SIM	72289
2048681003	MW-76B2	EPA 3510	72204	EPA 8270 by SIM	72289
2048681004	MW-76A	EPA 3510	72204	EPA 8270 by SIM	72289
2048681005	MW-13A	EPA 3510	72204	EPA 8270 by SIM	72289
2048681006	MW-13B2	EPA 3510	72204	EPA 8270 by SIM	72289
2048681007	MW-37A	EPA 3510	72204	EPA 8270 by SIM	72289
2048681001	TB-011217	EPA 5030B/8260	72210		

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: PUMA TERMINAL MS SAMPLING

Pace Project No.: 2048681

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
2048681002	EB-011217	EPA 5030B/8260	72210		
2048681003	MW-76B2	EPA 5030B/8260	72210		
2048681004	MW-76A	EPA 5030B/8260	72210		
2048681005	MW-13A	EPA 5030B/8260	72210		
2048681006	MW-13B2	EPA 5030B/8260	72210		
2048681007	MW-37A	EPA 5030B/8260	72210		
2048681008	FB-011217	EPA 5030B/8260	72210		

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1 of 1
2075275

Section A Required Client Information:		Section B Required Project Information:		Section C Invoice Information:	
Company: <u>Arcadis</u>		Report To: <u>Efraim Calderon</u>		Attention: _____	
Address: <u>45 Citivier Plaza Suite</u>		Copy To: _____		Company Name: _____	
<u>401 Rd 165 Km 12 Umuho P.R.</u>		Purchase Order No.: _____		Address: _____	
Email To: <u>Efraim Calderon @ arcadis-us.com</u>		Project Name: <u>Puerto Terminal Mixtura</u>		Pace Quote Reference: _____	
Phone: <u>(787) 999-4000</u> Fax: <u>(787) 999-5086</u>		Project Number: <u>E002.165 B</u>		Pace Project Manager: <u>Juan Redona</u>	
Requested Due Date/TAT: <u>Standard</u>		Project Profile #: _____		Site Location: _____	
				STATE: <u>P.R.</u>	
				REGULATORY AGENCY	
				<input type="checkbox"/> NPDES <input type="checkbox"/> GROUND WATER <input type="checkbox"/> DRINKING WATER <input type="checkbox"/> UST <input type="checkbox"/> RCRA <input type="checkbox"/> OTHER _____	

ITEM #	Section D Required Client Information SAMPLE ID (A-Z, 0-9 / -) Sample IDs MUST BE UNIQUE	Matrix Codes MATRIX / CODE Drinking Water DW Water WT Waste Water WW Product P Soil/Solid SL Oil OL Wipe WP Air AR Tissue TS Other OT	COLLECTED	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives										Analysis Test	Residual Chlorine (Y/N)	Pace Project No./ Lab I.D.			
						DATE	TIME	DATE	TIME	Unpreserved	H ₂ SO ₄	HNO ₃	HCl	NaOH	Na ₂ S ₂ O ₃				Methanol	Other	Y/N
1	TB-011217	WT G		01/12/19	4																
2	EB-011217	WT G		01/12/19	10	S			1	4											
3	MW-96B2	WT G		01/12/19	10	S			1	4											
4	MW-96A	WT G		01/12/19	10	S			1	4											
5	MW-13A	WT G		01/12/19	10	S			1	4											
6	MW-13B2	WT G		01/12/19	10	S			1	4											
7	MW-37A	WT G		01/12/19	10	G			1	4											
8	FB-011217	WT G		01/12/19	4																

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS				
	<u>Arcadis Calderon / Arcadis</u>	<u>01/12/19</u>	<u>1549</u>	<u>Juan Redona</u>	<u>1-12-19</u>	<u>15:48</u>					
	<u>[Signature]</u>	<u>1-12-19</u>	<u>18:00</u>	<u>Fed Exp</u>							
	<u>Fed Exp</u>	<u>1-12-19</u>	<u>10:00</u>	<u>[Signature]</u>	<u>1-13-19</u>	<u>10:00</u>	<u>4.9</u>	<u>1.0</u>	<u>Y</u>	<u>Y</u>	<u>Y</u>

SAMPLER NAME AND SIGNATURE		Temp in °C	Received on ice (Y/N)	Custody Sealed Cooler (Y/N)	Samples Intact (Y/N)
PRINT Name of SAMPLER:	<u>Arcadis Calderon</u>				
SIGNATURE of SAMPLER:	<u>[Signature]</u>				
DATE Signed (MM/DD/YY):		<u>01/12/19</u>			

ORIGINAL



1000 Riverbend Blvd., Suite F
St. Rose, LA 70087

Sample Condition Upon Receipt

WO#: 2048681

PM: JAR1

Due Date: 01/26/17

CLIENT: 98-ARCADISPR

Project #. _____

Courier: Pace Courier Hired Courier Fed X UPS DHL USPS Customer Other

Custody Seal on Cooler/Box Present: [see COC]

Custody Seals intact: Yes No

Thermometer Used: Therm Fisher IR 5
 Therm Fisher IR 6
 Therm Fisher IR 7

Type of Ice: Wet Blue None

Samples on ice: [see COC]

Cooler Temperature: [see COC]

Temp should be above freezing to 6°C

Date and Initials of person examining contents: 1-13-17 JMB

Temp must be measured from Temperature blank when present

Comments:

Temperature Blank Present?"	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	1	
Chain of Custody Present:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	2	
Chain of Custody Complete:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	3	
Chain of Custody Relinquished:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	4	
Sampler Name & Signature on COC:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	5	
Samples Arrived within Hold Time:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	6	
Sufficient Volume:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	7	
Correct Containers Used:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	8	
Filtered vol. Rec. for Diss. tests	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	9	
Sample Labels match COC:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	10	
All containers received within manufacture's precautionary and/or expiration dates.	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	11	
All containers needing chemical preservation have been checked (except VOA, coliform, & O&G).	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	12	
All containers preservation checked found to be in compliance with EPA recommendation.	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	13	If No, was preservative added? <input type="checkbox"/> Yes <input type="checkbox"/> No If added record lot no.: HNO3 _____ H2SO4 _____
Headspace in VOA Vials (>6mm):	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	14	
Trip Blank Present:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	15	

Client Notification/ Resolution:

Person Contacted: _____

Date/Time: _____

Comments/ Resolution: _____

January 16, 2017

Efrain Calderon
BBL Caribe Engineering P.S.C.
48 City View Plaza1, Suite 401
Road 16, Km. 1.2
Guaynabo, PR 00968

RE: Project: PUMA TERMINAL MW SAMPLING
Pace Project No.: 2047967

Dear Efrain Calderon:

Enclosed are the analytical results for sample(s) received by the laboratory on December 28, 2016. The results relate only to the samples included in this report. Results reported herein conform to the most current, applicable TNI/NELAC standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,



Juan Redondo
juan.redondo@pacelabs.com
Project Manager

Enclosures

cc: Sharon Colon
Abner Hernandez
Marianela Mercado-Burgos



REPORT OF LABORATORY ANALYSIS

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CERTIFICATIONS

Project: PUMA TERMINAL MW SAMPLING

Pace Project No.: 2047967

New Orleans Certification IDs

California Env. Lab Accreditation Program Branch:
11277CA

Florida Department of Health (NELAC): E87595

Illinois Environmental Protection Agency: 0025721

Kansas Department of Health and Environment (NELAC):
E-10266

Louisiana Dept. of Environmental Quality (NELAC/LELAP):
02006

Pennsylvania Dept. of Env Protection (NELAC): 68-04202

Texas Commission on Env. Quality (NELAC):
T104704405-09-TX

U.S. Dept. of Agriculture Foreign Soil Import: P330-10-
00119

Commonwealth of Virginia (TNI): 480246

REPORT OF LABORATORY ANALYSIS

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SAMPLE SUMMARY

Project: PUMA TERMINAL MW SAMPLING
Pace Project No.: 2047967

Lab ID	Sample ID	Matrix	Date Collected	Date Received
2047967001	TB-122716	Water	12/27/16 00:00	12/28/16 15:50
2047967002	EB-122716	Water	12/27/16 08:54	12/28/16 15:50
2047967003	MW-18D	Water	12/27/16 09:34	12/28/16 15:50
2047967004	MW-87A	Water	12/27/16 10:29	12/28/16 15:50
2047967005	MW-91A	Water	12/27/16 11:18	12/28/16 15:50
2047967006	MW-88A	Water	12/27/16 12:53	12/28/16 15:50
2047967007	MW-99A	Water	12/27/16 13:46	12/28/16 15:50
2047967008	MW-98A	Water	12/27/16 15:03	12/28/16 15:50
2047967009	MW-30A	Water	12/27/16 15:53	12/28/16 15:50
2047967010	FB-122716	Water	12/27/16 15:58	12/28/16 15:50
2047967011	TB122816	Water	12/28/16 00:00	12/28/16 15:50
2047967012	EB-122816	Water	12/28/16 08:51	12/28/16 15:50
2047967013	MW-16C	Water	12/28/16 09:27	12/28/16 15:50
2047967014	WWTP-1	Water	12/28/16 10:19	12/28/16 15:50
2047967015	MW-B1	Water	12/28/16 11:37	12/28/16 15:50
2047967016	DUP003	Water	12/28/16 00:00	12/28/16 15:50
2047967017	WWTP-2	Water	12/28/16 13:33	12/28/16 15:50
2047967018	EB-101	Water	12/28/16 14:16	12/28/16 15:50
2047967019	EB-102	Water	12/28/16 14:59	12/28/16 15:50
2047967021	FB-122816	Water	12/28/16 15:05	12/28/16 15:50

REPORT OF LABORATORY ANALYSIS

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SAMPLE ANALYTE COUNT

Project: PUMA TERMINAL MW SAMPLING
Pace Project No.: 2047967

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
2047967001	TB-122716	EPA 8015/8021	MHM	2	PASI-N
		EPA 5030B/8260	RMP	45	PASI-N
2047967002	EB-122716	EPA 8015B Modified	SLF	4	PASI-N
		EPA 8015/8021	MHM	2	PASI-N
		EPA 6020	KJR	4	PASI-N
		EPA 6020	KJR	4	PASI-N
		EPA 7470	MHB1	1	PASI-N
		EPA 7470	MHB1	1	PASI-N
		EPA 8270 by SIM	GEJ	19	PASI-N
		EPA 5030B/8260	RMP	45	PASI-N
2047967003	MW-18D	EPA 8015B Modified	SLF	4	PASI-N
		EPA 8015/8021	MHM	2	PASI-N
		EPA 6020	KJR	4	PASI-N
		EPA 6020	KJR	4	PASI-N
		EPA 7470	MHB1	1	PASI-N
		EPA 7470	MHB1	1	PASI-N
		EPA 8270 by SIM	GEJ	19	PASI-N
		EPA 5030B/8260	RMP	45	PASI-N
2047967004	MW-87A	EPA 8015B Modified	SLF	4	PASI-N
		EPA 8015/8021	MHM	2	PASI-N
		EPA 6020	KJR	4	PASI-N
		EPA 6020	KJR	4	PASI-N
		EPA 7470	MHB1	1	PASI-N
		EPA 7470	MHB1	1	PASI-N
		EPA 8270 by SIM	GEJ	19	PASI-N
		EPA 5030B/8260	RMP	45	PASI-N
2047967005	MW-91A	EPA 8015B Modified	SLF	4	PASI-N
		EPA 8015/8021	MHM	2	PASI-N
		EPA 6020	KJR	4	PASI-N
		EPA 6020	KJR	4	PASI-N
		EPA 7470	MHB1	1	PASI-N
		EPA 7470	MHB1	1	PASI-N
		EPA 8270 by SIM	GEJ	19	PASI-N
		EPA 5030B/8260	RMP	45	PASI-N
2047967006	MW-88A	EPA 8015B Modified	SLF	4	PASI-N
		EPA 8015/8021	MHM	2	PASI-N
		EPA 6020	KJR	4	PASI-N

REPORT OF LABORATORY ANALYSIS

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SAMPLE ANALYTE COUNT

Project: PUMA TERMINAL MW SAMPLING

Pace Project No.: 2047967

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
2047967007	MW-99A	EPA 6020	KJR	4	PASI-N
		EPA 7470	MHB1	1	PASI-N
		EPA 7470	MHB1	1	PASI-N
		EPA 8270 by SIM	GEJ	19	PASI-N
		EPA 5030B/8260	RMP	45	PASI-N
		EPA 8015B Modified	SLF	4	PASI-N
		EPA 8015/8021	MHM	2	PASI-N
		EPA 6020	KJR	4	PASI-N
		EPA 6020	KJR	4	PASI-N
		EPA 7470	MHB1	1	PASI-N
2047967008	MW-98A	EPA 7470	MHB1	1	PASI-N
		EPA 7470	MHB1	1	PASI-N
		EPA 8270 by SIM	GEJ	19	PASI-N
		EPA 5030B/8260	RMP	45	PASI-N
		EPA 8015B Modified	SLF	4	PASI-N
		EPA 8015/8021	MHM	2	PASI-N
		EPA 6020	KJR	4	PASI-N
		EPA 6020	KJR	4	PASI-N
		EPA 7470	MHB1	1	PASI-N
		EPA 7470	MHB1	1	PASI-N
2047967009	MW-30A	EPA 8270 by SIM	GEJ	19	PASI-N
		EPA 5030B/8260	RMP	45	PASI-N
		EPA 8015B Modified	SLF	4	PASI-N
		EPA 8015/8021	MHM	2	PASI-N
		EPA 6020	KJR	4	PASI-N
		EPA 6020	KJR	4	PASI-N
		EPA 7470	MHB1	1	PASI-N
		EPA 7470	MHB1	1	PASI-N
		EPA 8270 by SIM	GEJ	19	PASI-N
		EPA 5030B/8260	RMP	45	PASI-N
2047967010	FB-122716	EPA 8015/8021	MHM	2	PASI-N
		EPA 5030B/8260	RMP	45	PASI-N
		EPA 8015/8021	MHM	2	PASI-N
2047967011	TB122816	EPA 5030B/8260	RMP	45	PASI-N
2047967012	EB-122816	EPA 8015B Modified	SLF	4	PASI-N
		EPA 8015/8021	MHM	2	PASI-N
		EPA 6020	KJR	4	PASI-N
		EPA 6020	KJR	4	PASI-N

REPORT OF LABORATORY ANALYSIS

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SAMPLE ANALYTE COUNT

Project: PUMA TERMINAL MW SAMPLING

Pace Project No.: 2047967

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
2047967013	MW-16C	EPA 7470	MHB1	1	PASI-N
		EPA 7470	MHB1	1	PASI-N
		EPA 8270 by SIM	GEJ	19	PASI-N
		EPA 5030B/8260	RMP	45	PASI-N
		EPA 8015B Modified	SLF	4	PASI-N
		EPA 8015/8021	MHM	2	PASI-N
		EPA 6020	KJR	4	PASI-N
		EPA 6020	KJR	4	PASI-N
		EPA 7470	MHB1	1	PASI-N
		EPA 7470	MHB1	1	PASI-N
2047967014	WWTP-1	EPA 8270 by SIM	GEJ	19	PASI-N
		EPA 5030B/8260	RMP	45	PASI-N
		EPA 8015B Modified	SLF	4	PASI-N
		EPA 8015/8021	MHM	2	PASI-N
		EPA 6020	KJR	4	PASI-N
		EPA 6020	KJR	4	PASI-N
		EPA 7470	MHB1	1	PASI-N
		EPA 7470	MHB1	1	PASI-N
		EPA 8270 by SIM	GEJ	19	PASI-N
		EPA 5030B/8260	RMP	45	PASI-N
2047967015	MW-B1	EPA 8015B Modified	SLF	4	PASI-N
		EPA 8015/8021	MHM	2	PASI-N
		EPA 6020	KJR	4	PASI-N
		EPA 6020	KJR	4	PASI-N
		EPA 7470	MHB1	1	PASI-N
		EPA 7470	MHB1	1	PASI-N
		EPA 8270 by SIM	GEJ	19	PASI-N
		EPA 5030B/8260	RMP	45	PASI-N
		EPA 8015B Modified	SLF	4	PASI-N
		EPA 8015/8021	MHM	2	PASI-N
2047967016	DUP003	EPA 6020	KJR	4	PASI-N
		EPA 6020	KJR	4	PASI-N
		EPA 7470	MHB1	1	PASI-N
		EPA 7470	MHB1	1	PASI-N
		EPA 8270 by SIM	GEJ	19	PASI-N
		EPA 5030B/8260	RMP	45	PASI-N
		EPA 8015B Modified	SLF	4	PASI-N
		EPA 8015/8021	MHM	2	PASI-N
		EPA 6020	KJR	4	PASI-N
		EPA 6020	KJR	4	PASI-N
2047967017	WWTP-2	EPA 7470	MHB1	1	PASI-N
		EPA 7470	MHB1	1	PASI-N
		EPA 8270 by SIM	GEJ	19	PASI-N
		EPA 5030B/8260	RMP	45	PASI-N
		EPA 8015B Modified	SLF	4	PASI-N

REPORT OF LABORATORY ANALYSIS

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SAMPLE ANALYTE COUNT

Project: PUMA TERMINAL MW SAMPLING

Pace Project No.: 2047967

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
2047967018	EB-101	EPA 8015/8021	MHM	2	PASI-N
		EPA 6020	KJR	4	PASI-N
		EPA 6020	KJR	4	PASI-N
		EPA 7470	MHB1	1	PASI-N
		EPA 7470	MHB1	1	PASI-N
		EPA 8270 by SIM	GEJ	19	PASI-N
		EPA 5030B/8260	RMP	45	PASI-N
		EPA 8015B Modified	SLF	4	PASI-N
		EPA 8015/8021	MHM	2	PASI-N
		EPA 6020	KJR	4	PASI-N
		EPA 6020	KJR	4	PASI-N
		EPA 7470	MHB1	1	PASI-N
		EPA 7470	MHB1	1	PASI-N
		EPA 8270 by SIM	GEJ	19	PASI-N
2047967019	EB-102	EPA 5030B/8260	RMP	45	PASI-N
		EPA 8015B Modified	SLF	4	PASI-N
		EPA 8015/8021	MHM	2	PASI-N
		EPA 6020	KJR	4	PASI-N
		EPA 6020	KJR	4	PASI-N
		EPA 7470	MHB1	1	PASI-N
		EPA 7470	MHB1	1	PASI-N
		EPA 8270 by SIM	GEJ	19	PASI-N
		EPA 5030B/8260	RMP	45	PASI-N
		EPA 8015/8021	MHM	2	PASI-N
2047967021	FB-122816	EPA 5030B/8260	RMP	45	PASI-N
		EPA 8015/8021	MHM	2	PASI-N
		EPA 5030B/8260	RMP	45	PASI-N

REPORT OF LABORATORY ANALYSIS

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PROJECT NARRATIVE

Project: PUMA TERMINAL MW SAMPLING
Pace Project No.: 2047967

Method: EPA 8015B Modified
Description: 8015M DRO/ORO Organics
Client: BBL Caribe / Arcadis PR
Date: January 16, 2017

General Information:

16 samples were analyzed for EPA 8015B Modified. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:

The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:

The samples were prepared in accordance with EPA 3535 with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):

All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:

All criteria were within method requirements with any exceptions noted below.

Surrogates:

All surrogates were within QC limits with any exceptions noted below.

Method Blank:

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

QC Batch: 71180

A matrix spike/matrix spike duplicate was not performed due to insufficient sample volume.

Additional Comments:

REPORT OF LABORATORY ANALYSIS

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PROJECT NARRATIVE

Project: PUMA TERMINAL MW SAMPLING

Pace Project No.: 2047967

Method: EPA 8015/8021

Description: 8021 GCV BTEX, MTBE, GRO

Client: BBL Caribe / Arcadis PR

Date: January 16, 2017

General Information:

20 samples were analyzed for EPA 8015/8021. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:

The samples were analyzed within the method required hold times with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):

All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:

All criteria were within method requirements with any exceptions noted below.

Surrogates:

All surrogates were within QC limits with any exceptions noted below.

Method Blank:

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

REPORT OF LABORATORY ANALYSIS

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PROJECT NARRATIVE

Project: PUMA TERMINAL MW SAMPLING

Pace Project No.: 2047967

Method: EPA 6020

Description: 6020 MET ICPMS

Client: BBL Caribe / Arcadis PR

Date: January 16, 2017

General Information:

16 samples were analyzed for EPA 6020. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:

The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:

The samples were prepared in accordance with EPA 3010 with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):

All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:

All criteria were within method requirements with any exceptions noted below.

Internal Standards:

All internal standards were within QC limits with any exceptions noted below.

Method Blank:

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

REPORT OF LABORATORY ANALYSIS

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PROJECT NARRATIVE

Project: PUMA TERMINAL MW SAMPLING

Pace Project No.: 2047967

Method: EPA 6020

Description: 6020 MET ICPMS, Dissolved (LF)

Client: BBL Caribe / Arcadis PR

Date: January 16, 2017

General Information:

16 samples were analyzed for EPA 6020. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:

The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:

The samples were prepared in accordance with EPA 3005A with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):

All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:

All criteria were within method requirements with any exceptions noted below.

Internal Standards:

All internal standards were within QC limits with any exceptions noted below.

Method Blank:

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

REPORT OF LABORATORY ANALYSIS

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PROJECT NARRATIVE

Project: PUMA TERMINAL MW SAMPLING
Pace Project No.: 2047967

Method: EPA 7470
Description: 7470 Mercury
Client: BBL Caribe / Arcadis PR
Date: January 16, 2017

General Information:

16 samples were analyzed for EPA 7470. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:

The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:

The samples were prepared in accordance with EPA 7470 with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):

All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:

All criteria were within method requirements with any exceptions noted below.

Method Blank:

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

REPORT OF LABORATORY ANALYSIS

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PROJECT NARRATIVE

Project: PUMA TERMINAL MW SAMPLING
Pace Project No.: 2047967

Method: EPA 7470
Description: 7470 Mercury, Dissolved (LF)
Client: BBL Caribe / Arcadis PR
Date: January 16, 2017

General Information:

16 samples were analyzed for EPA 7470. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:

The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:

The samples were prepared in accordance with EPA 7470 with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):

All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:

All criteria were within method requirements with any exceptions noted below.

Method Blank:

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

REPORT OF LABORATORY ANALYSIS

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PROJECT NARRATIVE

Project: PUMA TERMINAL MW SAMPLING
Pace Project No.: 2047967

Method: EPA 8270 by SIM
Description: 8270 MSSV PAH by SIM SEP
Client: BBL Caribe / Arcadis PR
Date: January 16, 2017

General Information:

16 samples were analyzed for EPA 8270 by SIM. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:

The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:

The samples were prepared in accordance with EPA 3510 with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):

All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:

All criteria were within method requirements with any exceptions noted below.

Internal Standards:

All internal standards were within QC limits with any exceptions noted below.

Surrogates:

All surrogates were within QC limits with any exceptions noted below.

Method Blank:

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

QC Batch: 71190

A matrix spike/matrix spike duplicate was not performed due to insufficient sample volume.

QC Batch: 71254

A matrix spike/matrix spike duplicate was not performed due to insufficient sample volume.

Additional Comments:

REPORT OF LABORATORY ANALYSIS

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PROJECT NARRATIVE

Project: PUMA TERMINAL MW SAMPLING
Pace Project No.: 2047967

Method: EPA 5030B/8260
Description: 8260 MSV Low Level
Client: BBL Caribe / Arcadis PR
Date: January 16, 2017

General Information:

20 samples were analyzed for EPA 5030B/8260. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:

The samples were analyzed within the method required hold times with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):

All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:

All criteria were within method requirements with any exceptions noted below.

Internal Standards:

All internal standards were within QC limits with any exceptions noted below.

Surrogates:

All surrogates were within QC limits with any exceptions noted below.

Method Blank:

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

QC Batch: 71181

L0: Analyte recovery in the laboratory control sample (LCS) was outside QC limits.

- LCS (Lab ID: 297711)
- Bromomethane

Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

QC Batch: 71181

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 2047967003

M0: Matrix spike recovery and/or matrix spike duplicate recovery was outside laboratory control limits.

- MS (Lab ID: 297712)
 - Bromomethane
- MSD (Lab ID: 297713)
 - Bromomethane

Additional Comments:

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PROJECT NARRATIVE

Project: PUMA TERMINAL MW SAMPLING
Pace Project No.: 2047967

Method: EPA 5030B/8260
Description: 8260 MSV Low Level
Client: BBL Caribe / Arcadis PR
Date: January 16, 2017

Analyte Comments:

QC Batch: 71181

C9: Common Laboratory Contaminant.

- DUP003 (Lab ID: 2047967016)
 - Acetone
- EB-101 (Lab ID: 2047967018)
 - Acetone
- EB-102 (Lab ID: 2047967019)
 - Acetone
- EB-122716 (Lab ID: 2047967002)
 - Acetone
- EB-122816 (Lab ID: 2047967012)
 - Acetone
- FB-122716 (Lab ID: 2047967010)
 - Acetone
- FB-122816 (Lab ID: 2047967021)
 - Acetone
- MW-16C (Lab ID: 2047967013)
 - Acetone
- MW-18D (Lab ID: 2047967003)
 - Acetone
- MW-30A (Lab ID: 2047967009)
 - Acetone
- MW-87A (Lab ID: 2047967004)
 - Acetone
- MW-88A (Lab ID: 2047967006)
 - Acetone
- MW-98A (Lab ID: 2047967008)
 - Acetone
- MW-99A (Lab ID: 2047967007)
 - Acetone
- MW-B1 (Lab ID: 2047967015)
 - Acetone
- TB-122716 (Lab ID: 2047967001)
 - Acetone
- TB122816 (Lab ID: 2047967011)
 - Acetone
- WWTP-1 (Lab ID: 2047967014)
 - Acetone
- WWTP-2 (Lab ID: 2047967017)
 - Acetone

This data package has been reviewed for quality and completeness and is approved for release.

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: PUMA TERMINAL MW SAMPLING

Pace Project No.: 2047967

Sample: TB-122716	Lab ID: 2047967001	Collected: 12/27/16 00:00	Received: 12/28/16 15:50	Matrix: Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8021 GCV BTEX, MTBE, GRO		Analytical Method: EPA 8015/8021						
Gasoline Range Organics	101	ug/L	50.0	1		01/04/17 17:12		
Surrogates								
4-Bromofluorobenzene (S)	86	%.	44-148	1		01/04/17 17:12	460-00-4	
8260 MSV Low Level		Analytical Method: EPA 5030B/8260						
Acetone	19.2	ug/L	4.0	1		12/29/16 13:32	67-64-1	C9
Benzene	ND	ug/L	0.50	1		12/29/16 13:32	71-43-2	
Bromodichloromethane	ND	ug/L	0.50	1		12/29/16 13:32	75-27-4	
Bromoform	ND	ug/L	0.50	1		12/29/16 13:32	75-25-2	
Bromomethane	ND	ug/L	0.50	1		12/29/16 13:32	74-83-9	L3
2-Butanone (MEK)	ND	ug/L	2.0	1		12/29/16 13:32	78-93-3	
Carbon disulfide	ND	ug/L	1.0	1		12/29/16 13:32	75-15-0	
Carbon tetrachloride	ND	ug/L	0.50	1		12/29/16 13:32	56-23-5	
Chlorobenzene	ND	ug/L	0.50	1		12/29/16 13:32	108-90-7	
Chloroethane	ND	ug/L	0.50	1		12/29/16 13:32	75-00-3	
Chloroform	ND	ug/L	0.50	1		12/29/16 13:32	67-66-3	
Chloromethane	ND	ug/L	0.50	1		12/29/16 13:32	74-87-3	
1,2-Dibromo-3-chloropropane	ND	ug/L	0.20	1		12/29/16 13:32	96-12-8	
Dibromochloromethane	ND	ug/L	0.50	1		12/29/16 13:32	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	1		12/29/16 13:32	106-93-4	
Dichlorodifluoromethane	ND	ug/L	1.0	1		12/29/16 13:32	75-71-8	
1,1-Dichloroethane	ND	ug/L	0.50	1		12/29/16 13:32	75-34-3	
1,2-Dichloroethane	ND	ug/L	0.50	1		12/29/16 13:32	107-06-2	
1,1-Dichloroethene	ND	ug/L	0.50	1		12/29/16 13:32	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	1		12/29/16 13:32	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	0.50	1		12/29/16 13:32	156-60-5	
1,2-Dichloropropane	ND	ug/L	0.50	1		12/29/16 13:32	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	0.50	1		12/29/16 13:32	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	0.50	1		12/29/16 13:32	10061-02-6	
Ethylbenzene	ND	ug/L	0.50	1		12/29/16 13:32	100-41-4	
2-Hexanone	ND	ug/L	1.0	1		12/29/16 13:32	591-78-6	
Isopropylbenzene (Cumene)	ND	ug/L	1.0	1		12/29/16 13:32	98-82-8	
Methyl acetate	ND	ug/L	2.0	1		12/29/16 13:32	79-20-9	
Methylene Chloride	ND	ug/L	0.50	1		12/29/16 13:32	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	1.0	1		12/29/16 13:32	108-10-1	
Methyl-tert-butyl ether	ND	ug/L	0.50	1		12/29/16 13:32	1634-04-4	
Styrene	ND	ug/L	1.0	1		12/29/16 13:32	100-42-5	
1,1,2,2-Tetrachloroethane	ND	ug/L	0.50	1		12/29/16 13:32	79-34-5	
Tetrachloroethene	ND	ug/L	0.50	1		12/29/16 13:32	127-18-4	
Toluene	ND	ug/L	0.50	1		12/29/16 13:32	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	0.50	1		12/29/16 13:32	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	0.50	1		12/29/16 13:32	79-00-5	
Trichloroethene	ND	ug/L	0.50	1		12/29/16 13:32	79-01-6	
Trichlorofluoromethane	ND	ug/L	0.50	1		12/29/16 13:32	75-69-4	
Vinyl chloride	ND	ug/L	0.50	1		12/29/16 13:32	75-01-4	
m&p-Xylene	ND	ug/L	2.0	1		12/29/16 13:32	179601-23-1	
o-Xylene	ND	ug/L	1.0	1		12/29/16 13:32	95-47-6	

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ANALYTICAL RESULTS

Project: PUMA TERMINAL MW SAMPLING
 Pace Project No.: 2047967

Sample: TB-122716	Lab ID: 2047967001	Collected: 12/27/16 00:00	Received: 12/28/16 15:50	Matrix: Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV Low Level		Analytical Method: EPA 5030B/8260						
Surrogates								
Dibromofluoromethane (S)	90	%.	72-126	1		12/29/16 13:32	1868-53-7	
4-Bromofluorobenzene (S)	93	%.	68-124	1		12/29/16 13:32	460-00-4	
Toluene-d8 (S)	104	%.	79-119	1		12/29/16 13:32	2037-26-5	
Sample: EB-122716		Lab ID: 2047967002		Collected: 12/27/16 08:54	Received: 12/28/16 15:50	Matrix: Water		
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8015M DRO/ORO Organics		Analytical Method: EPA 8015B Modified Preparation Method: EPA 3535						
Diesel Range Organic (C10-C28)	ND	mg/L	0.50	1	12/30/16 10:38	01/09/17 14:41		
Oil Range Organics (>C28-C40)	ND	mg/L	1.0	1	12/30/16 10:38	01/09/17 14:41		
Surrogates								
n-Pentacosane (S)	47	%.	16-137	1	12/30/16 10:38	01/09/17 14:41	629-99-2	
o-Terphenyl (S)	44	%.	10-121	1	12/30/16 10:38	01/09/17 14:41	84-15-1	
8021 GCV BTEX, MTBE, GRO		Analytical Method: EPA 8015/8021						
Gasoline Range Organics	ND	ug/L	50.0	1		01/04/17 17:37		
Surrogates								
4-Bromofluorobenzene (S)	88	%.	44-148	1		01/04/17 17:37	460-00-4	
6020 MET ICPMS		Analytical Method: EPA 6020 Preparation Method: EPA 3010						
Arsenic	ND	mg/L	0.0010	1	12/30/16 16:10	01/06/17 12:40	7440-38-2	
Chromium	ND	mg/L	0.0010	1	12/30/16 16:10	01/06/17 12:40	7440-47-3	
Lead	ND	mg/L	0.0010	1	12/30/16 16:10	01/06/17 12:40	7439-92-1	
Vanadium	ND	mg/L	0.0050	1	12/30/16 16:10	01/06/17 12:40	7440-62-2	
6020 MET ICPMS, Dissolved (LF)		Analytical Method: EPA 6020 Preparation Method: EPA 3005A						
Arsenic, Dissolved	ND	ug/L	1.0	1	12/30/16 18:15	01/06/17 14:10	7440-38-2	
Chromium, Dissolved	ND	ug/L	1.0	1	12/30/16 18:15	01/06/17 14:10	7440-47-3	
Lead, Dissolved	ND	ug/L	1.0	1	12/30/16 18:15	01/06/17 14:10	7439-92-1	
Vanadium, Dissolved	ND	ug/L	5.0	1	12/30/16 18:15	01/06/17 14:10	7440-62-2	
7470 Mercury		Analytical Method: EPA 7470 Preparation Method: EPA 7470						
Mercury	ND	ug/L	0.20	1	12/30/16 17:49	01/03/17 11:23	7439-97-6	
7470 Mercury, Dissolved (LF)		Analytical Method: EPA 7470 Preparation Method: EPA 7470						
Mercury, Dissolved	ND	ug/L	0.20	1	12/30/16 17:49	01/03/17 12:13	7439-97-6	
8270 MSSV PAH by SIM SEP		Analytical Method: EPA 8270 by SIM Preparation Method: EPA 3510						
Acenaphthene	ND	ug/L	0.10	1	12/30/16 11:29	01/09/17 14:41	83-32-9	
Acenaphthylene	ND	ug/L	0.10	1	12/30/16 11:29	01/09/17 14:41	208-96-8	
Anthracene	ND	ug/L	0.10	1	12/30/16 11:29	01/09/17 14:41	120-12-7	
Benzo(a)anthracene	ND	ug/L	0.10	1	12/30/16 11:29	01/09/17 14:41	56-55-3	
Benzo(a)pyrene	ND	ug/L	0.10	1	12/30/16 11:29	01/09/17 14:41	50-32-8	

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ANALYTICAL RESULTS

Project: PUMA TERMINAL MW SAMPLING

Pace Project No.: 2047967

Sample: EB-122716 **Lab ID: 2047967002** Collected: 12/27/16 08:54 Received: 12/28/16 15:50 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
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8270 MSSV PAH by SIM SEP

Analytical Method: EPA 8270 by SIM Preparation Method: EPA 3510

Benzo(b)fluoranthene	ND	ug/L	0.10	1	12/30/16 11:29	01/09/17 14:41	205-99-2	
Benzo(g,h,i)perylene	ND	ug/L	0.10	1	12/30/16 11:29	01/09/17 14:41	191-24-2	
Benzo(k)fluoranthene	ND	ug/L	0.10	1	12/30/16 11:29	01/09/17 14:41	207-08-9	
Chrysene	ND	ug/L	0.10	1	12/30/16 11:29	01/09/17 14:41	218-01-9	
Dibenz(a,h)anthracene	ND	ug/L	0.10	1	12/30/16 11:29	01/09/17 14:41	53-70-3	
Fluoranthene	ND	ug/L	0.10	1	12/30/16 11:29	01/09/17 14:41	206-44-0	
Fluorene	ND	ug/L	0.10	1	12/30/16 11:29	01/09/17 14:41	86-73-7	
Indeno(1,2,3-cd)pyrene	ND	ug/L	0.10	1	12/30/16 11:29	01/09/17 14:41	193-39-5	
2-Methylnaphthalene	ND	ug/L	0.10	1	12/30/16 11:29	01/09/17 14:41	91-57-6	
Naphthalene	ND	ug/L	0.10	1	12/30/16 11:29	01/09/17 14:41	91-20-3	
Phenanthrene	ND	ug/L	0.10	1	12/30/16 11:29	01/09/17 14:41	85-01-8	
Pyrene	ND	ug/L	0.10	1	12/30/16 11:29	01/09/17 14:41	129-00-0	

Surrogates

2-Fluorobiphenyl (S)	66	%	25-150	1	12/30/16 11:29	01/09/17 14:41	321-60-8	
Terphenyl-d14 (S)	65	%	25-150	1	12/30/16 11:29	01/09/17 14:41	1718-51-0	

8260 MSV Low Level

Analytical Method: EPA 5030B/8260

Acetone	11.8	ug/L	4.0	1		12/29/16 13:50	67-64-1	C9
Benzene	ND	ug/L	0.50	1		12/29/16 13:50	71-43-2	
Bromodichloromethane	ND	ug/L	0.50	1		12/29/16 13:50	75-27-4	
Bromoform	ND	ug/L	0.50	1		12/29/16 13:50	75-25-2	
Bromomethane	ND	ug/L	0.50	1		12/29/16 13:50	74-83-9	L3
2-Butanone (MEK)	ND	ug/L	2.0	1		12/29/16 13:50	78-93-3	
Carbon disulfide	ND	ug/L	1.0	1		12/29/16 13:50	75-15-0	
Carbon tetrachloride	ND	ug/L	0.50	1		12/29/16 13:50	56-23-5	
Chlorobenzene	ND	ug/L	0.50	1		12/29/16 13:50	108-90-7	
Chloroethane	ND	ug/L	0.50	1		12/29/16 13:50	75-00-3	
Chloroform	ND	ug/L	0.50	1		12/29/16 13:50	67-66-3	
Chloromethane	ND	ug/L	0.50	1		12/29/16 13:50	74-87-3	
1,2-Dibromo-3-chloropropane	ND	ug/L	0.20	1		12/29/16 13:50	96-12-8	
Dibromochloromethane	ND	ug/L	0.50	1		12/29/16 13:50	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	1		12/29/16 13:50	106-93-4	
Dichlorodifluoromethane	ND	ug/L	1.0	1		12/29/16 13:50	75-71-8	
1,1-Dichloroethane	ND	ug/L	0.50	1		12/29/16 13:50	75-34-3	
1,2-Dichloroethane	ND	ug/L	0.50	1		12/29/16 13:50	107-06-2	
1,1-Dichloroethene	ND	ug/L	0.50	1		12/29/16 13:50	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	1		12/29/16 13:50	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	0.50	1		12/29/16 13:50	156-60-5	
1,2-Dichloropropane	ND	ug/L	0.50	1		12/29/16 13:50	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	0.50	1		12/29/16 13:50	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	0.50	1		12/29/16 13:50	10061-02-6	
Ethylbenzene	ND	ug/L	0.50	1		12/29/16 13:50	100-41-4	
2-Hexanone	ND	ug/L	1.0	1		12/29/16 13:50	591-78-6	
Isopropylbenzene (Cumene)	ND	ug/L	1.0	1		12/29/16 13:50	98-82-8	
Methyl acetate	ND	ug/L	2.0	1		12/29/16 13:50	79-20-9	
Methylene Chloride	ND	ug/L	0.50	1		12/29/16 13:50	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	1.0	1		12/29/16 13:50	108-10-1	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: PUMA TERMINAL MW SAMPLING

Project No.: 2047967

Sample: EB-122716		Lab ID: 2047967002		Collected: 12/27/16 08:54	Received: 12/28/16 15:50	Matrix: Water		
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV Low Level		Analytical Method: EPA 5030B/8260						
Methyl-tert-butyl ether	ND	ug/L	0.50	1		12/29/16 13:50	1634-04-4	
Styrene	ND	ug/L	1.0	1		12/29/16 13:50	100-42-5	
1,1,2,2-Tetrachloroethane	ND	ug/L	0.50	1		12/29/16 13:50	79-34-5	
Tetrachloroethene	ND	ug/L	0.50	1		12/29/16 13:50	127-18-4	
Toluene	ND	ug/L	0.50	1		12/29/16 13:50	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	0.50	1		12/29/16 13:50	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	0.50	1		12/29/16 13:50	79-00-5	
Trichloroethene	ND	ug/L	0.50	1		12/29/16 13:50	79-01-6	
Trichlorofluoromethane	ND	ug/L	0.50	1		12/29/16 13:50	75-69-4	
Vinyl chloride	ND	ug/L	0.50	1		12/29/16 13:50	75-01-4	
m&p-Xylene	ND	ug/L	2.0	1		12/29/16 13:50	179601-23-1	
o-Xylene	ND	ug/L	1.0	1		12/29/16 13:50	95-47-6	
Surrogates								
Dibromofluoromethane (S)	91	%	72-126	1		12/29/16 13:50	1868-53-7	
4-Bromofluorobenzene (S)	94	%	68-124	1		12/29/16 13:50	460-00-4	
Toluene-d8 (S)	103	%	79-119	1		12/29/16 13:50	2037-26-5	
Sample: MW-18D		Lab ID: 2047967003		Collected: 12/27/16 09:34	Received: 12/28/16 15:50	Matrix: Water		
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8015M DRO/ORO Organics		Analytical Method: EPA 8015B Modified Preparation Method: EPA 3535						
Diesel Range Organic (C10-C28)	ND	mg/L	0.50	1	12/30/16 10:38	01/09/17 15:10		
Oil Range Organics (>C28-C40)	ND	mg/L	1.0	1	12/30/16 10:38	01/09/17 15:10		
Surrogates								
n-Pentacosane (S)	35	%	16-137	1	12/30/16 10:38	01/09/17 15:10	629-99-2	
o-Terphenyl (S)	36	%	10-121	1	12/30/16 10:38	01/09/17 15:10	84-15-1	
8021 GCV BTEX, MTBE, GRO		Analytical Method: EPA 8015/8021						
Gasoline Range Organics	ND	ug/L	50.0	1		01/04/17 18:03		
Surrogates								
4-Bromofluorobenzene (S)	88	%	44-148	1		01/04/17 18:03	460-00-4	
6020 MET ICPMS		Analytical Method: EPA 6020 Preparation Method: EPA 3010						
Arsenic	ND	mg/L	0.0010	1	12/30/16 16:10	01/06/17 12:44	7440-38-2	
Chromium	ND	mg/L	0.0010	1	12/30/16 16:10	01/06/17 12:44	7440-47-3	
Lead	ND	mg/L	0.0010	1	12/30/16 16:10	01/06/17 12:44	7439-92-1	
Vanadium	ND	mg/L	0.0050	1	12/30/16 16:10	01/06/17 12:44	7440-62-2	
6020 MET ICPMS, Dissolved (LF)		Analytical Method: EPA 6020 Preparation Method: EPA 3005A						
Arsenic, Dissolved	ND	ug/L	1.0	1	12/30/16 18:15	01/06/17 14:26	7440-38-2	
Chromium, Dissolved	ND	ug/L	1.0	1	12/30/16 18:15	01/06/17 14:26	7440-47-3	
Lead, Dissolved	ND	ug/L	1.0	1	12/30/16 18:15	01/06/17 14:26	7439-92-1	
Vanadium, Dissolved	ND	ug/L	5.0	1	12/30/16 18:15	01/06/17 14:26	7440-62-2	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: PUMA TERMINAL MW SAMPLING

Pace Project No.: 2047967

Sample: MW-18D	Lab ID: 2047967003	Collected: 12/27/16 09:34	Received: 12/28/16 15:50	Matrix: Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
7470 Mercury Analytical Method: EPA 7470 Preparation Method: EPA 7470								
Mercury	ND	ug/L	0.20	1	12/30/16 17:49	01/03/17 11:29	7439-97-6	
7470 Mercury, Dissolved (LF) Analytical Method: EPA 7470 Preparation Method: EPA 7470								
Mercury, Dissolved	ND	ug/L	0.20	1	12/30/16 17:49	01/03/17 12:15	7439-97-6	
8270 MSSV PAH by SIM SEP Analytical Method: EPA 8270 by SIM Preparation Method: EPA 3510								
Acenaphthene	ND	ug/L	0.10	1	12/30/16 11:29	01/09/17 15:01	83-32-9	
Acenaphthylene	ND	ug/L	0.10	1	12/30/16 11:29	01/09/17 15:01	208-96-8	
Anthracene	ND	ug/L	0.10	1	12/30/16 11:29	01/09/17 15:01	120-12-7	
Benzo(a)anthracene	ND	ug/L	0.10	1	12/30/16 11:29	01/09/17 15:01	56-55-3	
Benzo(a)pyrene	ND	ug/L	0.10	1	12/30/16 11:29	01/09/17 15:01	50-32-8	
Benzo(b)fluoranthene	ND	ug/L	0.10	1	12/30/16 11:29	01/09/17 15:01	205-99-2	
Benzo(g,h,i)perylene	ND	ug/L	0.10	1	12/30/16 11:29	01/09/17 15:01	191-24-2	
Benzo(k)fluoranthene	ND	ug/L	0.10	1	12/30/16 11:29	01/09/17 15:01	207-08-9	
Chrysene	ND	ug/L	0.10	1	12/30/16 11:29	01/09/17 15:01	218-01-9	
Dibenz(a,h)anthracene	ND	ug/L	0.10	1	12/30/16 11:29	01/09/17 15:01	53-70-3	
Fluoranthene	ND	ug/L	0.10	1	12/30/16 11:29	01/09/17 15:01	206-44-0	
Fluorene	ND	ug/L	0.10	1	12/30/16 11:29	01/09/17 15:01	86-73-7	
Indeno(1,2,3-cd)pyrene	ND	ug/L	0.10	1	12/30/16 11:29	01/09/17 15:01	193-39-5	
2-Methylnaphthalene	ND	ug/L	0.10	1	12/30/16 11:29	01/09/17 15:01	91-57-6	
Naphthalene	ND	ug/L	0.10	1	12/30/16 11:29	01/09/17 15:01	91-20-3	
Phenanthrene	ND	ug/L	0.10	1	12/30/16 11:29	01/09/17 15:01	85-01-8	
Pyrene	ND	ug/L	0.10	1	12/30/16 11:29	01/09/17 15:01	129-00-0	
Surrogates								
2-Fluorobiphenyl (S)	67	%	25-150	1	12/30/16 11:29	01/09/17 15:01	321-60-8	
Terphenyl-d14 (S)	65	%	25-150	1	12/30/16 11:29	01/09/17 15:01	1718-51-0	
8260 MSV Low Level Analytical Method: EPA 5030B/8260								
Acetone	28.2	ug/L	4.0	1		12/29/16 19:14	67-64-1	C9
Benzene	ND	ug/L	0.50	1		12/29/16 19:14	71-43-2	
Bromodichloromethane	ND	ug/L	0.50	1		12/29/16 19:14	75-27-4	
Bromoform	ND	ug/L	0.50	1		12/29/16 19:14	75-25-2	
Bromomethane	ND	ug/L	0.50	1		12/29/16 19:14	74-83-9	L3,MO
2-Butanone (MEK)	ND	ug/L	2.0	1		12/29/16 19:14	78-93-3	
Carbon disulfide	ND	ug/L	1.0	1		12/29/16 19:14	75-15-0	
Carbon tetrachloride	ND	ug/L	0.50	1		12/29/16 19:14	56-23-5	
Chlorobenzene	ND	ug/L	0.50	1		12/29/16 19:14	108-90-7	
Chloroethane	ND	ug/L	0.50	1		12/29/16 19:14	75-00-3	
Chloroform	ND	ug/L	0.50	1		12/29/16 19:14	67-66-3	
Chloromethane	ND	ug/L	0.50	1		12/29/16 19:14	74-87-3	
1,2-Dibromo-3-chloropropane	ND	ug/L	0.20	1		12/29/16 19:14	96-12-8	
Dibromochloromethane	ND	ug/L	0.50	1		12/29/16 19:14	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	1		12/29/16 19:14	106-93-4	
Dichlorodifluoromethane	ND	ug/L	1.0	1		12/29/16 19:14	75-71-8	
1,1-Dichloroethane	ND	ug/L	0.50	1		12/29/16 19:14	75-34-3	
1,2-Dichloroethane	ND	ug/L	0.50	1		12/29/16 19:14	107-06-2	

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ANALYTICAL RESULTS

Project: PUMA TERMINAL MW SAMPLING

Project No.: 2047967

Sample: MW-18D		Lab ID: 2047967003		Collected: 12/27/16 09:34		Received: 12/28/16 15:50		Matrix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual	
8260 MSV Low Level		Analytical Method: EPA 5030B/8260							
1,1-Dichloroethene	ND	ug/L	0.50	1		12/29/16 19:14	75-35-4		
cis-1,2-Dichloroethene	ND	ug/L	1.0	1		12/29/16 19:14	156-59-2		
trans-1,2-Dichloroethene	ND	ug/L	0.50	1		12/29/16 19:14	156-60-5		
1,2-Dichloropropane	ND	ug/L	0.50	1		12/29/16 19:14	78-87-5		
cis-1,3-Dichloropropene	ND	ug/L	0.50	1		12/29/16 19:14	10061-01-5		
trans-1,3-Dichloropropene	ND	ug/L	0.50	1		12/29/16 19:14	10061-02-6		
Ethylbenzene	ND	ug/L	0.50	1		12/29/16 19:14	100-41-4		
2-Hexanone	ND	ug/L	1.0	1		12/29/16 19:14	591-78-6		
Isopropylbenzene (Cumene)	ND	ug/L	1.0	1		12/29/16 19:14	98-82-8		
Methyl acetate	ND	ug/L	2.0	1		12/29/16 19:14	79-20-9		
Methylene Chloride	ND	ug/L	0.50	1		12/29/16 19:14	75-09-2		
4-Methyl-2-pentanone (MIBK)	ND	ug/L	1.0	1		12/29/16 19:14	108-10-1		
Methyl-tert-butyl ether	ND	ug/L	0.50	1		12/29/16 19:14	1634-04-4		
Styrene	ND	ug/L	1.0	1		12/29/16 19:14	100-42-5		
1,1,2,2-Tetrachloroethane	ND	ug/L	0.50	1		12/29/16 19:14	79-34-5		
Tetrachloroethene	ND	ug/L	0.50	1		12/29/16 19:14	127-18-4		
Toluene	ND	ug/L	0.50	1		12/29/16 19:14	108-88-3		
1,1,1-Trichloroethane	ND	ug/L	0.50	1		12/29/16 19:14	71-55-6		
1,1,2-Trichloroethane	ND	ug/L	0.50	1		12/29/16 19:14	79-00-5		
Trichloroethene	ND	ug/L	0.50	1		12/29/16 19:14	79-01-6		
Trichlorofluoromethane	ND	ug/L	0.50	1		12/29/16 19:14	75-69-4		
Vinyl chloride	ND	ug/L	0.50	1		12/29/16 19:14	75-01-4		
m&p-Xylene	ND	ug/L	2.0	1		12/29/16 19:14	179601-23-1		
o-Xylene	ND	ug/L	1.0	1		12/29/16 19:14	95-47-6		
Surrogates									
Dibromofluoromethane (S)	91	%	72-126	1		12/29/16 19:14	1868-53-7		
4-Bromofluorobenzene (S)	91	%	68-124	1		12/29/16 19:14	460-00-4		
Toluene-d8 (S)	104	%	79-119	1		12/29/16 19:14	2037-26-5		

Sample: MW-87A		Lab ID: 2047967004		Collected: 12/27/16 10:29		Received: 12/28/16 15:50		Matrix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual	
8015M DRO/ORO Organics		Analytical Method: EPA 8015B Modified Preparation Method: EPA 3535							
Diesel Range Organic (C10-C28)	ND	mg/L	0.50	1	12/30/16 10:38	01/09/17 15:38			
Oil Range Organics (>C28-C40)	ND	mg/L	1.0	1	12/30/16 10:38	01/09/17 15:38			
Surrogates									
n-Pentacosane (S)	49	%	16-137	1	12/30/16 10:38	01/09/17 15:38	629-99-2		
o-Terphenyl (S)	48	%	10-121	1	12/30/16 10:38	01/09/17 15:38	84-15-1		
8021 GCV BTEX, MTBE, GRO		Analytical Method: EPA 8015/8021							
Gasoline Range Organics	ND	ug/L	50.0	1		01/04/17 18:30			
Surrogates									
4-Bromofluorobenzene (S)	83	%	44-148	1		01/04/17 18:30	460-00-4		

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ANALYTICAL RESULTS

Project: PUMA TERMINAL MW SAMPLING

Project No.: 2047967

Sample: MW-87A	Lab ID: 2047967004	Collected: 12/27/16 10:29	Received: 12/28/16 15:50	Matrix: Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
6020 MET ICPMS Analytical Method: EPA 6020 Preparation Method: EPA 3010								
Arsenic	ND	mg/L	0.0010	1	12/30/16 16:10	01/06/17 12:16	7440-38-2	
Chromium	0.024	mg/L	0.0010	1	12/30/16 16:10	01/06/17 12:16	7440-47-3	
Lead	ND	mg/L	0.0010	1	12/30/16 16:10	01/06/17 12:16	7439-92-1	
Vanadium	ND	mg/L	0.0050	1	12/30/16 16:10	01/06/17 12:16	7440-62-2	
6020 MET ICPMS, Dissolved (LF) Analytical Method: EPA 6020 Preparation Method: EPA 3005A								
Arsenic, Dissolved	ND	ug/L	1.0	1	12/30/16 18:15	01/06/17 14:30	7440-38-2	
Chromium, Dissolved	24.0	ug/L	1.0	1	12/30/16 18:15	01/06/17 14:30	7440-47-3	
Lead, Dissolved	ND	ug/L	1.0	1	12/30/16 18:15	01/06/17 14:30	7439-92-1	
Vanadium, Dissolved	ND	ug/L	5.0	1	12/30/16 18:15	01/06/17 14:30	7440-62-2	
7470 Mercury Analytical Method: EPA 7470 Preparation Method: EPA 7470								
Mercury	ND	ug/L	0.20	1	12/30/16 17:49	01/03/17 11:31	7439-97-6	
7470 Mercury, Dissolved (LF) Analytical Method: EPA 7470 Preparation Method: EPA 7470								
Mercury, Dissolved	ND	ug/L	0.20	1	12/30/16 17:49	01/03/17 12:17	7439-97-6	
8270 MSSV PAH by SIM SEP Analytical Method: EPA 8270 by SIM Preparation Method: EPA 3510								
Acenaphthene	ND	ug/L	0.10	1	12/30/16 11:29	01/09/17 15:21	83-32-9	
Acenaphthylene	ND	ug/L	0.10	1	12/30/16 11:29	01/09/17 15:21	208-96-8	
Anthracene	ND	ug/L	0.10	1	12/30/16 11:29	01/09/17 15:21	120-12-7	
Benzo(a)anthracene	ND	ug/L	0.10	1	12/30/16 11:29	01/09/17 15:21	56-55-3	
Benzo(a)pyrene	ND	ug/L	0.10	1	12/30/16 11:29	01/09/17 15:21	50-32-8	
Benzo(b)fluoranthene	ND	ug/L	0.10	1	12/30/16 11:29	01/09/17 15:21	205-99-2	
Benzo(g,h,i)perylene	ND	ug/L	0.10	1	12/30/16 11:29	01/09/17 15:21	191-24-2	
Benzo(k)fluoranthene	ND	ug/L	0.10	1	12/30/16 11:29	01/09/17 15:21	207-08-9	
Chrysene	ND	ug/L	0.10	1	12/30/16 11:29	01/09/17 15:21	218-01-9	
Dibenz(a,h)anthracene	ND	ug/L	0.10	1	12/30/16 11:29	01/09/17 15:21	53-70-3	
Fluoranthene	ND	ug/L	0.10	1	12/30/16 11:29	01/09/17 15:21	206-44-0	
Fluorene	ND	ug/L	0.10	1	12/30/16 11:29	01/09/17 15:21	86-73-7	
Indeno(1,2,3-cd)pyrene	ND	ug/L	0.10	1	12/30/16 11:29	01/09/17 15:21	193-39-5	
2-Methylnaphthalene	ND	ug/L	0.10	1	12/30/16 11:29	01/09/17 15:21	91-57-6	
Naphthalene	ND	ug/L	0.10	1	12/30/16 11:29	01/09/17 15:21	91-20-3	
Phenanthrene	ND	ug/L	0.10	1	12/30/16 11:29	01/09/17 15:21	85-01-8	
Pyrene	ND	ug/L	0.10	1	12/30/16 11:29	01/09/17 15:21	129-00-0	
Surrogates								
2-Fluorobiphenyl (S)	76	%	25-150	1	12/30/16 11:29	01/09/17 15:21	321-60-8	
Terphenyl-d14 (S)	74	%	25-150	1	12/30/16 11:29	01/09/17 15:21	1718-51-0	
8260 MSV Low Level Analytical Method: EPA 5030B/8260								
Acetone	7.1	ug/L	4.0	1		12/29/16 14:08	67-64-1	C9
Benzene	ND	ug/L	0.50	1		12/29/16 14:08	71-43-2	
Bromodichloromethane	ND	ug/L	0.50	1		12/29/16 14:08	75-27-4	
Bromoform	ND	ug/L	0.50	1		12/29/16 14:08	75-25-2	
Bromomethane	ND	ug/L	0.50	1		12/29/16 14:08	74-83-9	L3
2-Butanone (MEK)	ND	ug/L	2.0	1		12/29/16 14:08	78-93-3	

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ANALYTICAL RESULTS

Project: PUMA TERMINAL MW SAMPLING

Pace Project No.: 2047967

Sample: MW-87A	Lab ID: 2047967004	Collected: 12/27/16 10:29	Received: 12/28/16 15:50	Matrix: Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV Low Level		Analytical Method: EPA 5030B/8260						
Carbon disulfide	ND	ug/L	1.0	1		12/29/16 14:08	75-15-0	
Carbon tetrachloride	ND	ug/L	0.50	1		12/29/16 14:08	56-23-5	
Chlorobenzene	ND	ug/L	0.50	1		12/29/16 14:08	108-90-7	
Chloroethane	ND	ug/L	0.50	1		12/29/16 14:08	75-00-3	
Chloroform	ND	ug/L	0.50	1		12/29/16 14:08	67-66-3	
Chloromethane	ND	ug/L	0.50	1		12/29/16 14:08	74-87-3	
1,2-Dibromo-3-chloropropane	ND	ug/L	0.20	1		12/29/16 14:08	96-12-8	
Dibromochloromethane	ND	ug/L	0.50	1		12/29/16 14:08	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	1		12/29/16 14:08	106-93-4	
Dichlorodifluoromethane	ND	ug/L	1.0	1		12/29/16 14:08	75-71-8	
1,1-Dichloroethane	ND	ug/L	0.50	1		12/29/16 14:08	75-34-3	
1,2-Dichloroethane	ND	ug/L	0.50	1		12/29/16 14:08	107-06-2	
1,1-Dichloroethene	ND	ug/L	0.50	1		12/29/16 14:08	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	1		12/29/16 14:08	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	0.50	1		12/29/16 14:08	156-60-5	
1,2-Dichloropropane	ND	ug/L	0.50	1		12/29/16 14:08	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	0.50	1		12/29/16 14:08	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	0.50	1		12/29/16 14:08	10061-02-6	
Ethylbenzene	ND	ug/L	0.50	1		12/29/16 14:08	100-41-4	
2-Hexanone	ND	ug/L	1.0	1		12/29/16 14:08	591-78-6	
Isopropylbenzene (Cumene)	ND	ug/L	1.0	1		12/29/16 14:08	98-82-8	
Methyl acetate	ND	ug/L	2.0	1		12/29/16 14:08	79-20-9	
Methylene Chloride	ND	ug/L	0.50	1		12/29/16 14:08	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	1.0	1		12/29/16 14:08	108-10-1	
Methyl-tert-butyl ether	ND	ug/L	0.50	1		12/29/16 14:08	1634-04-4	
Styrene	ND	ug/L	1.0	1		12/29/16 14:08	100-42-5	
1,1,2,2-Tetrachloroethane	ND	ug/L	0.50	1		12/29/16 14:08	79-34-5	
Tetrachloroethene	ND	ug/L	0.50	1		12/29/16 14:08	127-18-4	
Toluene	ND	ug/L	0.50	1		12/29/16 14:08	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	0.50	1		12/29/16 14:08	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	0.50	1		12/29/16 14:08	79-00-5	
Trichloroethene	ND	ug/L	0.50	1		12/29/16 14:08	79-01-6	
Trichlorofluoromethane	ND	ug/L	0.50	1		12/29/16 14:08	75-69-4	
Vinyl chloride	ND	ug/L	0.50	1		12/29/16 14:08	75-01-4	
m&p-Xylene	ND	ug/L	2.0	1		12/29/16 14:08	179601-23-1	
o-Xylene	ND	ug/L	1.0	1		12/29/16 14:08	95-47-6	
Surrogates								
Dibromofluoromethane (S)	92	%	72-126	1		12/29/16 14:08	1868-53-7	
4-Bromofluorobenzene (S)	95	%	68-124	1		12/29/16 14:08	460-00-4	
Toluene-d8 (S)	104	%	79-119	1		12/29/16 14:08	2037-26-5	

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ANALYTICAL RESULTS

Project: PUMA TERMINAL MW SAMPLING

Pace Project No.: 2047967

Sample: MW-91A	Lab ID: 2047967005	Collected: 12/27/16 11:18	Received: 12/28/16 15:50	Matrix: Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8015M DRO/ORO Organics								
Analytical Method: EPA 8015B Modified Preparation Method: EPA 3535								
Diesel Range Organic (C10-C28)	4.5	mg/L	0.50	1	12/30/16 10:38	01/09/17 16:06		
Oil Range Organics (>C28-C40)	ND	mg/L	1.0	1	12/30/16 10:38	01/09/17 16:06		
Surrogates								
n-Pentacosane (S)	82	%	16-137	1	12/30/16 10:38	01/09/17 16:06	629-99-2	
o-Terphenyl (S)	90	%	10-121	1	12/30/16 10:38	01/09/17 16:06	84-15-1	
8021 GCV BTEX, MTBE, GRO								
Analytical Method: EPA 8015/8021								
Gasoline Range Organics	32600	ug/L	500	10		01/04/17 16:46		
Surrogates								
4-Bromofluorobenzene (S)	99	%	44-148	10		01/04/17 16:46	460-00-4	
6020 MET ICPMS								
Analytical Method: EPA 6020 Preparation Method: EPA 3010								
Arsenic	0.0041	mg/L	0.0010	1	12/30/16 16:10	01/06/17 12:48	7440-38-2	
Chromium	ND	mg/L	0.0010	1	12/30/16 16:10	01/06/17 12:48	7440-47-3	
Lead	0.0012	mg/L	0.0010	1	12/30/16 16:10	01/06/17 12:48	7439-92-1	
Vanadium	ND	mg/L	0.0050	1	12/30/16 16:10	01/06/17 12:48	7440-62-2	
6020 MET ICPMS, Dissolved (LF)								
Analytical Method: EPA 6020 Preparation Method: EPA 3005A								
Arsenic, Dissolved	2.0	ug/L	1.0	1	12/30/16 18:15	01/06/17 14:34	7440-38-2	
Chromium, Dissolved	ND	ug/L	1.0	1	12/30/16 18:15	01/06/17 14:34	7440-47-3	
Lead, Dissolved	ND	ug/L	1.0	1	12/30/16 18:15	01/06/17 14:34	7439-92-1	
Vanadium, Dissolved	ND	ug/L	5.0	1	12/30/16 18:15	01/06/17 14:34	7440-62-2	
7470 Mercury								
Analytical Method: EPA 7470 Preparation Method: EPA 7470								
Mercury	ND	ug/L	0.20	1	12/30/16 17:49	01/03/17 11:33	7439-97-6	
7470 Mercury, Dissolved (LF)								
Analytical Method: EPA 7470 Preparation Method: EPA 7470								
Mercury, Dissolved	ND	ug/L	0.20	1	12/30/16 17:49	01/03/17 12:19	7439-97-6	
8270 MSSV PAH by SIM SEP								
Analytical Method: EPA 8270 by SIM Preparation Method: EPA 3510								
Acenaphthene	0.74	ug/L	0.10	1	12/30/16 11:29	01/09/17 15:41	83-32-9	
Acenaphthylene	0.28	ug/L	0.10	1	12/30/16 11:29	01/09/17 15:41	208-96-8	
Anthracene	ND	ug/L	0.10	1	12/30/16 11:29	01/09/17 15:41	120-12-7	
Benzo(a)anthracene	ND	ug/L	0.10	1	12/30/16 11:29	01/09/17 15:41	56-55-3	
Benzo(a)pyrene	ND	ug/L	0.10	1	12/30/16 11:29	01/09/17 15:41	50-32-8	
Benzo(b)fluoranthene	ND	ug/L	0.10	1	12/30/16 11:29	01/09/17 15:41	205-99-2	
Benzo(g,h,i)perylene	ND	ug/L	0.10	1	12/30/16 11:29	01/09/17 15:41	191-24-2	
Benzo(k)fluoranthene	ND	ug/L	0.10	1	12/30/16 11:29	01/09/17 15:41	207-08-9	
Chrysene	ND	ug/L	0.10	1	12/30/16 11:29	01/09/17 15:41	218-01-9	
Dibenz(a,h)anthracene	ND	ug/L	0.10	1	12/30/16 11:29	01/09/17 15:41	53-70-3	
Fluoranthene	ND	ug/L	0.10	1	12/30/16 11:29	01/09/17 15:41	206-44-0	
Fluorene	1.3	ug/L	0.10	1	12/30/16 11:29	01/09/17 15:41	86-73-7	
Indeno(1,2,3-cd)pyrene	ND	ug/L	0.10	1	12/30/16 11:29	01/09/17 15:41	193-39-5	
2-Methylnaphthalene	87.2	ug/L	1.0	10	12/30/16 11:29	01/10/17 11:01	91-57-6	
Naphthalene	210	ug/L	1.0	10	12/30/16 11:29	01/10/17 11:01	91-20-3	
Phenanthrene	0.73	ug/L	0.10	1	12/30/16 11:29	01/09/17 15:41	85-01-8	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: PUMA TERMINAL MW SAMPLING

Pace Project No.: 2047967

Sample: MW-91A	Lab ID: 2047967005	Collected: 12/27/16 11:18	Received: 12/28/16 15:50	Matrix: Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8270 MSSV PAH by SIM SEP		Analytical Method: EPA 8270 by SIM Preparation Method: EPA 3510						
Pyrene	ND	ug/L	0.10	1	12/30/16 11:29	01/09/17 15:41	129-00-0	
Surrogates								
2-Fluorobiphenyl (S)	71	%.	25-150	1	12/30/16 11:29	01/09/17 15:41	321-60-8	
2-Fluorobiphenyl (S)	80	%.	25-150	10	12/30/16 11:29	01/10/17 11:01	321-60-8	
Terphenyl-d14 (S)	69	%.	25-150	1	12/30/16 11:29	01/09/17 15:41	1718-51-0	
Terphenyl-d14 (S)	66	%.	25-150	10	12/30/16 11:29	01/10/17 11:01	1718-51-0	
8260 MSV Low Level		Analytical Method: EPA 5030B/8260						
Acetone	ND	ug/L	40.0	10		12/29/16 18:20	67-64-1	
Benzene	1080	ug/L	5.0	10		12/29/16 18:20	71-43-2	
Bromodichloromethane	ND	ug/L	5.0	10		12/29/16 18:20	75-27-4	
Bromoform	ND	ug/L	5.0	10		12/29/16 18:20	75-25-2	
Bromomethane	ND	ug/L	5.0	10		12/29/16 18:20	74-83-9	L3
2-Butanone (MEK)	ND	ug/L	20.0	10		12/29/16 18:20	78-93-3	
Carbon disulfide	ND	ug/L	10.0	10		12/29/16 18:20	75-15-0	
Carbon tetrachloride	ND	ug/L	5.0	10		12/29/16 18:20	56-23-5	
Chlorobenzene	ND	ug/L	5.0	10		12/29/16 18:20	108-90-7	
Chloroethane	ND	ug/L	5.0	10		12/29/16 18:20	75-00-3	
Chloroform	ND	ug/L	5.0	10		12/29/16 18:20	67-66-3	
Chloromethane	ND	ug/L	5.0	10		12/29/16 18:20	74-87-3	
1,2-Dibromo-3-chloropropane	ND	ug/L	2.0	10		12/29/16 18:20	96-12-8	
Dibromochloromethane	ND	ug/L	5.0	10		12/29/16 18:20	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/L	10.0	10		12/29/16 18:20	106-93-4	
Dichlorodifluoromethane	ND	ug/L	10.0	10		12/29/16 18:20	75-71-8	
1,1-Dichloroethane	ND	ug/L	5.0	10		12/29/16 18:20	75-34-3	
1,2-Dichloroethane	ND	ug/L	5.0	10		12/29/16 18:20	107-06-2	
1,1-Dichloroethene	ND	ug/L	5.0	10		12/29/16 18:20	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	10.0	10		12/29/16 18:20	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	5.0	10		12/29/16 18:20	156-60-5	
1,2-Dichloropropane	ND	ug/L	5.0	10		12/29/16 18:20	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	5.0	10		12/29/16 18:20	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	5.0	10		12/29/16 18:20	10061-02-6	
Ethylbenzene	690	ug/L	5.0	10		12/29/16 18:20	100-41-4	
2-Hexanone	ND	ug/L	10.0	10		12/29/16 18:20	591-78-6	
Isopropylbenzene (Cumene)	18.0	ug/L	10.0	10		12/29/16 18:20	98-82-8	
Methyl acetate	ND	ug/L	20.0	10		12/29/16 18:20	79-20-9	
Methylene Chloride	ND	ug/L	5.0	10		12/29/16 18:20	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	10.0	10		12/29/16 18:20	108-10-1	
Methyl-tert-butyl ether	ND	ug/L	5.0	10		12/29/16 18:20	1634-04-4	
Styrene	ND	ug/L	10.0	10		12/29/16 18:20	100-42-5	
1,1,2,2-Tetrachloroethane	ND	ug/L	5.0	10		12/29/16 18:20	79-34-5	
Tetrachloroethene	ND	ug/L	5.0	10		12/29/16 18:20	127-18-4	
Toluene	ND	ug/L	5.0	10		12/29/16 18:20	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	5.0	10		12/29/16 18:20	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	5.0	10		12/29/16 18:20	79-00-5	
Trichloroethene	ND	ug/L	5.0	10		12/29/16 18:20	79-01-6	
Trichlorofluoromethane	ND	ug/L	5.0	10		12/29/16 18:20	75-69-4	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: PUMA TERMINAL MW SAMPLING

Pace Project No.: 2047967

Sample: MW-91A		Lab ID: 2047967005		Collected: 12/27/16 11:18		Received: 12/28/16 15:50		Matrix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual	
8260 MSV Low Level		Analytical Method: EPA 5030B/8260							
Vinyl chloride	ND	ug/L	5.0	10		12/29/16 18:20	75-01-4		
m&p-Xylene	63.6	ug/L	20.0	10		12/29/16 18:20	179601-23-1		
o-Xylene	16.7	ug/L	10.0	10		12/29/16 18:20	95-47-6		
Surrogates									
Dibromofluoromethane (S)	91	%.	72-126	10		12/29/16 18:20	1868-53-7		
4-Bromofluorobenzene (S)	91	%.	68-124	10		12/29/16 18:20	460-00-4		
Toluene-d8 (S)	107	%.	79-119	10		12/29/16 18:20	2037-26-5		
Sample: MW-88A		Lab ID: 2047967006		Collected: 12/27/16 12:53		Received: 12/28/16 15:50		Matrix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual	
8015M DRO/ORO Organics		Analytical Method: EPA 8015B Modified Preparation Method: EPA 3535							
Diesel Range Organic (C10-C28)	ND	mg/L	0.50	1	12/30/16 10:38	01/09/17 16:34			
Oil Range Organics (>C28-C40)	ND	mg/L	1.0	1	12/30/16 10:38	01/09/17 16:34			
Surrogates									
n-Pentacosane (S)	58	%.	16-137	1	12/30/16 10:38	01/09/17 16:34	629-99-2		
o-Terphenyl (S)	59	%.	10-121	1	12/30/16 10:38	01/09/17 16:34	84-15-1		
8021 GCV BTEX, MTBE, GRO		Analytical Method: EPA 8015/8021							
Gasoline Range Organics	79.0	ug/L	50.0	1		01/04/17 18:56			
Surrogates									
4-Bromofluorobenzene (S)	92	%.	44-148	1		01/04/17 18:56	460-00-4		
6020 MET ICPMS		Analytical Method: EPA 6020 Preparation Method: EPA 3010							
Arsenic	0.0017	mg/L	0.0010	1	12/30/16 16:10	01/06/17 12:52	7440-38-2		
Chromium	ND	mg/L	0.0010	1	12/30/16 16:10	01/06/17 12:52	7440-47-3		
Lead	ND	mg/L	0.0010	1	12/30/16 16:10	01/06/17 12:52	7439-92-1		
Vanadium	ND	mg/L	0.0050	1	12/30/16 16:10	01/06/17 12:52	7440-62-2		
6020 MET ICPMS, Dissolved (LF)		Analytical Method: EPA 6020 Preparation Method: EPA 3005A							
Arsenic, Dissolved	ND	ug/L	1.0	1	12/30/16 18:15	01/06/17 14:38	7440-38-2		
Chromium, Dissolved	ND	ug/L	1.0	1	12/30/16 18:15	01/06/17 14:38	7440-47-3		
Lead, Dissolved	ND	ug/L	1.0	1	12/30/16 18:15	01/06/17 14:38	7439-92-1		
Vanadium, Dissolved	ND	ug/L	5.0	1	12/30/16 18:15	01/06/17 14:38	7440-62-2		
7470 Mercury		Analytical Method: EPA 7470 Preparation Method: EPA 7470							
Mercury	ND	ug/L	0.20	1	12/30/16 17:49	01/03/17 11:35	7439-97-6		
7470 Mercury, Dissolved (LF)		Analytical Method: EPA 7470 Preparation Method: EPA 7470							
Mercury, Dissolved	ND	ug/L	0.20	1	12/30/16 17:49	01/03/17 12:21	7439-97-6		
8270 MSSV PAH by SIM SEP		Analytical Method: EPA 8270 by SIM Preparation Method: EPA 3510							
Acenaphthene	1.3	ug/L	0.10	1	12/30/16 11:29	01/09/17 16:01	83-32-9		
Acenaphthylene	0.10	ug/L	0.10	1	12/30/16 11:29	01/09/17 16:01	208-96-8		

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ANALYTICAL RESULTS

Project: PUMA TERMINAL MW SAMPLING

Pace Project No.: 2047967

Sample: MW-88A	Lab ID: 2047967006	Collected: 12/27/16 12:53	Received: 12/28/16 15:50	Matrix: Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8270 MSSV PAH by SIM SEP		Analytical Method: EPA 8270 by SIM Preparation Method: EPA 3510						
Anthracene	ND	ug/L	0.10	1	12/30/16 11:29	01/09/17 16:01	120-12-7	
Benzo(a)anthracene	ND	ug/L	0.10	1	12/30/16 11:29	01/09/17 16:01	56-55-3	
Benzo(a)pyrene	ND	ug/L	0.10	1	12/30/16 11:29	01/09/17 16:01	50-32-8	
Benzo(b)fluoranthene	ND	ug/L	0.10	1	12/30/16 11:29	01/09/17 16:01	205-99-2	
Benzo(g,h,i)perylene	ND	ug/L	0.10	1	12/30/16 11:29	01/09/17 16:01	191-24-2	
Benzo(k)fluoranthene	ND	ug/L	0.10	1	12/30/16 11:29	01/09/17 16:01	207-08-9	
Chrysene	ND	ug/L	0.10	1	12/30/16 11:29	01/09/17 16:01	218-01-9	
Dibenz(a,h)anthracene	ND	ug/L	0.10	1	12/30/16 11:29	01/09/17 16:01	53-70-3	
Fluoranthene	ND	ug/L	0.10	1	12/30/16 11:29	01/09/17 16:01	206-44-0	
Fluorene	ND	ug/L	0.10	1	12/30/16 11:29	01/09/17 16:01	86-73-7	
Indeno(1,2,3-cd)pyrene	ND	ug/L	0.10	1	12/30/16 11:29	01/09/17 16:01	193-39-5	
2-Methylnaphthalene	ND	ug/L	0.10	1	12/30/16 11:29	01/09/17 16:01	91-57-6	
Naphthalene	0.23	ug/L	0.10	1	12/30/16 11:29	01/09/17 16:01	91-20-3	
Phenanthrene	ND	ug/L	0.10	1	12/30/16 11:29	01/09/17 16:01	85-01-8	
Pyrene	ND	ug/L	0.10	1	12/30/16 11:29	01/09/17 16:01	129-00-0	
Surrogates								
2-Fluorobiphenyl (S)	77	%.	25-150	1	12/30/16 11:29	01/09/17 16:01	321-60-8	
Terphenyl-d14 (S)	75	%.	25-150	1	12/30/16 11:29	01/09/17 16:01	1718-51-0	
8260 MSV Low Level		Analytical Method: EPA 5030B/8260						
Acetone	15.6	ug/L	4.0	1		12/29/16 14:26	67-64-1	C9
Benzene	ND	ug/L	0.50	1		12/29/16 14:26	71-43-2	
Bromodichloromethane	ND	ug/L	0.50	1		12/29/16 14:26	75-27-4	
Bromoform	ND	ug/L	0.50	1		12/29/16 14:26	75-25-2	
Bromomethane	ND	ug/L	0.50	1		12/29/16 14:26	74-83-9	L3
2-Butanone (MEK)	ND	ug/L	2.0	1		12/29/16 14:26	78-93-3	
Carbon disulfide	ND	ug/L	1.0	1		12/29/16 14:26	75-15-0	
Carbon tetrachloride	ND	ug/L	0.50	1		12/29/16 14:26	56-23-5	
Chlorobenzene	ND	ug/L	0.50	1		12/29/16 14:26	108-90-7	
Chloroethane	ND	ug/L	0.50	1		12/29/16 14:26	75-00-3	
Chloroform	ND	ug/L	0.50	1		12/29/16 14:26	67-66-3	
Chloromethane	ND	ug/L	0.50	1		12/29/16 14:26	74-87-3	
1,2-Dibromo-3-chloropropane	ND	ug/L	0.20	1		12/29/16 14:26	96-12-8	
Dibromochloromethane	ND	ug/L	0.50	1		12/29/16 14:26	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	1		12/29/16 14:26	106-93-4	
Dichlorodifluoromethane	ND	ug/L	1.0	1		12/29/16 14:26	75-71-8	
1,1-Dichloroethane	ND	ug/L	0.50	1		12/29/16 14:26	75-34-3	
1,2-Dichloroethane	ND	ug/L	0.50	1		12/29/16 14:26	107-06-2	
1,1-Dichloroethene	ND	ug/L	0.50	1		12/29/16 14:26	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	1		12/29/16 14:26	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	0.50	1		12/29/16 14:26	156-60-5	
1,2-Dichloropropane	ND	ug/L	0.50	1		12/29/16 14:26	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	0.50	1		12/29/16 14:26	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	0.50	1		12/29/16 14:26	10061-02-6	
Ethylbenzene	ND	ug/L	0.50	1		12/29/16 14:26	100-41-4	
2-Hexanone	ND	ug/L	1.0	1		12/29/16 14:26	591-78-6	
Isopropylbenzene (Cumene)	ND	ug/L	1.0	1		12/29/16 14:26	98-82-8	

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ANALYTICAL RESULTS

Project: PUMA TERMINAL MW SAMPLING

Pace Project No.: 2047967

Sample: MW-88A		Lab ID: 2047967006		Collected: 12/27/16 12:53		Received: 12/28/16 15:50		Matrix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual	
8260 MSV Low Level		Analytical Method: EPA 5030B/8260							
Methyl acetate	ND	ug/L	2.0	1		12/29/16 14:26	79-20-9		
Methylene Chloride	ND	ug/L	0.50	1		12/29/16 14:26	75-09-2		
4-Methyl-2-pentanone (MIBK)	ND	ug/L	1.0	1		12/29/16 14:26	108-10-1		
Methyl-tert-butyl ether	1.4	ug/L	0.50	1		12/29/16 14:26	1634-04-4		
Styrene	ND	ug/L	1.0	1		12/29/16 14:26	100-42-5		
1,1,2,2-Tetrachloroethane	ND	ug/L	0.50	1		12/29/16 14:26	79-34-5		
Tetrachloroethene	ND	ug/L	0.50	1		12/29/16 14:26	127-18-4		
Toluene	ND	ug/L	0.50	1		12/29/16 14:26	108-88-3		
1,1,1-Trichloroethane	ND	ug/L	0.50	1		12/29/16 14:26	71-55-6		
1,1,2-Trichloroethane	ND	ug/L	0.50	1		12/29/16 14:26	79-00-5		
Trichloroethene	ND	ug/L	0.50	1		12/29/16 14:26	79-01-6		
Trichlorofluoromethane	ND	ug/L	0.50	1		12/29/16 14:26	75-69-4		
Vinyl chloride	ND	ug/L	0.50	1		12/29/16 14:26	75-01-4		
m&p-Xylene	ND	ug/L	2.0	1		12/29/16 14:26	179601-23-1		
o-Xylene	ND	ug/L	1.0	1		12/29/16 14:26	95-47-6		
Surrogates									
Dibromofluoromethane (S)	90	%.	72-126	1		12/29/16 14:26	1868-53-7		
4-Bromofluorobenzene (S)	93	%.	68-124	1		12/29/16 14:26	460-00-4		
Toluene-d8 (S)	104	%.	79-119	1		12/29/16 14:26	2037-26-5		

Sample: MW-99A		Lab ID: 2047967007		Collected: 12/27/16 13:46		Received: 12/28/16 15:50		Matrix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual	
8015M DRO/ORO Organics		Analytical Method: EPA 8015B Modified Preparation Method: EPA 3535							
Diesel Range Organic (C10-C28)	ND	mg/L	0.50	1	12/30/16 10:38	01/09/17 17:02			
Oil Range Organics (>C28-C40)	ND	mg/L	1.0	1	12/30/16 10:38	01/09/17 17:02			
Surrogates									
n-Pentacosane (S)	33	%.	16-137	1	12/30/16 10:38	01/09/17 17:02	629-99-2		
o-Terphenyl (S)	40	%.	10-121	1	12/30/16 10:38	01/09/17 17:02	84-15-1		
8021 GCV BTEX, MTBE, GRO		Analytical Method: EPA 8015/8021							
Gasoline Range Organics	ND	ug/L	50.0	1		01/04/17 19:23			
Surrogates									
4-Bromofluorobenzene (S)	88	%.	44-148	1		01/04/17 19:23	460-00-4		
6020 MET ICPMS		Analytical Method: EPA 6020 Preparation Method: EPA 3010							
Arsenic	ND	mg/L	0.0010	1	12/30/16 16:10	01/06/17 12:56	7440-38-2		
Chromium	ND	mg/L	0.0010	1	12/30/16 16:10	01/06/17 12:56	7440-47-3		
Lead	ND	mg/L	0.0010	1	12/30/16 16:10	01/06/17 12:56	7439-92-1		
Vanadium	ND	mg/L	0.0050	1	12/30/16 16:10	01/06/17 12:56	7440-62-2		
6020 MET ICPMS, Dissolved (LF)		Analytical Method: EPA 6020 Preparation Method: EPA 3005A							
Arsenic, Dissolved	ND	ug/L	1.0	1	12/30/16 18:15	01/06/17 14:42	7440-38-2		
Chromium, Dissolved	ND	ug/L	1.0	1	12/30/16 18:15	01/06/17 14:42	7440-47-3		

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: PUMA TERMINAL MW SAMPLING

Pace Project No.: 2047967

Sample: MW-99A	Lab ID: 2047967007	Collected: 12/27/16 13:46	Received: 12/28/16 15:50	Matrix: Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
6020 MET ICPMS, Dissolved (LF)								
Analytical Method: EPA 6020 Preparation Method: EPA 3005A								
Lead, Dissolved	ND	ug/L	1.0	1	12/30/16 18:15	01/06/17 14:42	7439-92-1	
Vanadium, Dissolved	5.1	ug/L	5.0	1	12/30/16 18:15	01/06/17 14:42	7440-62-2	
7470 Mercury								
Analytical Method: EPA 7470 Preparation Method: EPA 7470								
Mercury	ND	ug/L	0.20	1	12/30/16 17:49	01/03/17 11:38	7439-97-6	
7470 Mercury, Dissolved (LF)								
Analytical Method: EPA 7470 Preparation Method: EPA 7470								
Mercury, Dissolved	ND	ug/L	0.20	1	12/30/16 17:49	01/03/17 12:23	7439-97-6	
8270 MSSV PAH by SIM SEP								
Analytical Method: EPA 8270 by SIM Preparation Method: EPA 3510								
Acenaphthene	ND	ug/L	0.10	1	12/30/16 11:29	01/09/17 16:21	83-32-9	
Acenaphthylene	ND	ug/L	0.10	1	12/30/16 11:29	01/09/17 16:21	208-96-8	
Anthracene	ND	ug/L	0.10	1	12/30/16 11:29	01/09/17 16:21	120-12-7	
Benzo(a)anthracene	ND	ug/L	0.10	1	12/30/16 11:29	01/09/17 16:21	56-55-3	
Benzo(a)pyrene	ND	ug/L	0.10	1	12/30/16 11:29	01/09/17 16:21	50-32-8	
Benzo(b)fluoranthene	ND	ug/L	0.10	1	12/30/16 11:29	01/09/17 16:21	205-99-2	
Benzo(g,h,i)perylene	ND	ug/L	0.10	1	12/30/16 11:29	01/09/17 16:21	191-24-2	
Benzo(k)fluoranthene	ND	ug/L	0.10	1	12/30/16 11:29	01/09/17 16:21	207-08-9	
Chrysene	ND	ug/L	0.10	1	12/30/16 11:29	01/09/17 16:21	218-01-9	
Dibenz(a,h)anthracene	ND	ug/L	0.10	1	12/30/16 11:29	01/09/17 16:21	53-70-3	
Fluoranthene	ND	ug/L	0.10	1	12/30/16 11:29	01/09/17 16:21	206-44-0	
Fluorene	ND	ug/L	0.10	1	12/30/16 11:29	01/09/17 16:21	86-73-7	
Indeno(1,2,3-cd)pyrene	ND	ug/L	0.10	1	12/30/16 11:29	01/09/17 16:21	193-39-5	
2-Methylnaphthalene	ND	ug/L	0.10	1	12/30/16 11:29	01/09/17 16:21	91-57-6	
Naphthalene	ND	ug/L	0.10	1	12/30/16 11:29	01/09/17 16:21	91-20-3	
Phenanthrene	ND	ug/L	0.10	1	12/30/16 11:29	01/09/17 16:21	85-01-8	
Pyrene	ND	ug/L	0.10	1	12/30/16 11:29	01/09/17 16:21	129-00-0	
Surrogates								
2-Fluorobiphenyl (S)	70	%	25-150	1	12/30/16 11:29	01/09/17 16:21	321-60-8	
Terphenyl-d14 (S)	65	%	25-150	1	12/30/16 11:29	01/09/17 16:21	1718-51-0	
8260 MSV Low Level								
Analytical Method: EPA 5030B/8260								
Acetone	15.6	ug/L	4.0	1		12/29/16 14:44	67-64-1	C9
Benzene	ND	ug/L	0.50	1		12/29/16 14:44	71-43-2	
Bromodichloromethane	ND	ug/L	0.50	1		12/29/16 14:44	75-27-4	
Bromoform	ND	ug/L	0.50	1		12/29/16 14:44	75-25-2	
Bromomethane	ND	ug/L	0.50	1		12/29/16 14:44	74-83-9	L3
2-Butanone (MEK)	ND	ug/L	2.0	1		12/29/16 14:44	78-93-3	
Carbon disulfide	ND	ug/L	1.0	1		12/29/16 14:44	75-15-0	
Carbon tetrachloride	ND	ug/L	0.50	1		12/29/16 14:44	56-23-5	
Chlorobenzene	ND	ug/L	0.50	1		12/29/16 14:44	108-90-7	
Chloroethane	ND	ug/L	0.50	1		12/29/16 14:44	75-00-3	
Chloroform	ND	ug/L	0.50	1		12/29/16 14:44	67-66-3	
Chloromethane	ND	ug/L	0.50	1		12/29/16 14:44	74-87-3	
1,2-Dibromo-3-chloropropane	ND	ug/L	0.20	1		12/29/16 14:44	96-12-8	
Dibromochloromethane	ND	ug/L	0.50	1		12/29/16 14:44	124-48-1	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: PUMA TERMINAL MW SAMPLING

Pace Project No.: 2047967

Sample: MW-99A	Lab ID: 2047967007	Collected: 12/27/16 13:46	Received: 12/28/16 15:50	Matrix: Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV Low Level		Analytical Method: EPA 5030B/8260						
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	1		12/29/16 14:44	106-93-4	
Dichlorodifluoromethane	ND	ug/L	1.0	1		12/29/16 14:44	75-71-8	
1,1-Dichloroethane	ND	ug/L	0.50	1		12/29/16 14:44	75-34-3	
1,2-Dichloroethane	ND	ug/L	0.50	1		12/29/16 14:44	107-06-2	
1,1-Dichloroethene	ND	ug/L	0.50	1		12/29/16 14:44	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	1		12/29/16 14:44	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	0.50	1		12/29/16 14:44	156-60-5	
1,2-Dichloropropane	ND	ug/L	0.50	1		12/29/16 14:44	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	0.50	1		12/29/16 14:44	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	0.50	1		12/29/16 14:44	10061-02-6	
Ethylbenzene	ND	ug/L	0.50	1		12/29/16 14:44	100-41-4	
2-Hexanone	ND	ug/L	1.0	1		12/29/16 14:44	591-78-6	
Isopropylbenzene (Cumene)	ND	ug/L	1.0	1		12/29/16 14:44	98-82-8	
Methyl acetate	ND	ug/L	2.0	1		12/29/16 14:44	79-20-9	
Methylene Chloride	ND	ug/L	0.50	1		12/29/16 14:44	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	1.0	1		12/29/16 14:44	108-10-1	
Methyl-tert-butyl ether	ND	ug/L	0.50	1		12/29/16 14:44	1634-04-4	
Styrene	ND	ug/L	1.0	1		12/29/16 14:44	100-42-5	
1,1,2,2-Tetrachloroethane	ND	ug/L	0.50	1		12/29/16 14:44	79-34-5	
Tetrachloroethene	ND	ug/L	0.50	1		12/29/16 14:44	127-18-4	
Toluene	ND	ug/L	0.50	1		12/29/16 14:44	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	0.50	1		12/29/16 14:44	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	0.50	1		12/29/16 14:44	79-00-5	
Trichloroethene	ND	ug/L	0.50	1		12/29/16 14:44	79-01-6	
Trichlorofluoromethane	ND	ug/L	0.50	1		12/29/16 14:44	75-69-4	
Vinyl chloride	ND	ug/L	0.50	1		12/29/16 14:44	75-01-4	
m&p-Xylene	ND	ug/L	2.0	1		12/29/16 14:44	179601-23-1	
o-Xylene	ND	ug/L	1.0	1		12/29/16 14:44	95-47-6	
Surrogates								
Dibromofluoromethane (S)	91	%	72-126	1		12/29/16 14:44	1868-53-7	
4-Bromofluorobenzene (S)	92	%	68-124	1		12/29/16 14:44	460-00-4	
Toluene-d8 (S)	104	%	79-119	1		12/29/16 14:44	2037-26-5	

Sample: MW-98A	Lab ID: 2047967008	Collected: 12/27/16 15:03	Received: 12/28/16 15:50	Matrix: Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8015M DRO/ORO Organics		Analytical Method: EPA 8015B Modified Preparation Method: EPA 3535						
Diesel Range Organic (C10-C28)	ND	mg/L	0.50	1	12/30/16 10:38	01/09/17 17:30		
Oil Range Organics (>C28-C40)	ND	mg/L	1.0	1	12/30/16 10:38	01/09/17 17:30		
Surrogates								
n-Pentacosane (S)	58	%	16-137	1	12/30/16 10:38	01/09/17 17:30	629-99-2	
o-Terphenyl (S)	63	%	10-121	1	12/30/16 10:38	01/09/17 17:30	84-15-1	
8021 GCV BTEX, MTBE, GRO		Analytical Method: EPA 8015/8021						
Gasoline Range Organics	ND	ug/L	50.0	1		01/04/17 19:49		

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ANALYTICAL RESULTS

Project: PUMA TERMINAL MW SAMPLING

Pace Project No.: 2047967

Sample: MW-98A	Lab ID: 2047967008	Collected: 12/27/16 15:03	Received: 12/28/16 15:50	Matrix: Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8021 GCV BTEX, MTBE, GRO Analytical Method: EPA 8015/8021								
Surrogates								
4-Bromofluorobenzene (S)	87	%	44-148	1		01/04/17 19:49	460-00-4	
6020 MET ICPMS Analytical Method: EPA 6020 Preparation Method: EPA 3010								
Arsenic	ND	mg/L	0.0010	1	12/30/16 16:10	01/06/17 13:00	7440-38-2	
Chromium	ND	mg/L	0.0010	1	12/30/16 16:10	01/06/17 13:00	7440-47-3	
Lead	ND	mg/L	0.0010	1	12/30/16 16:10	01/06/17 13:00	7439-92-1	
Vanadium	ND	mg/L	0.0050	1	12/30/16 16:10	01/06/17 13:00	7440-62-2	
6020 MET ICPMS, Dissolved (LF) Analytical Method: EPA 6020 Preparation Method: EPA 3005A								
Arsenic, Dissolved	ND	ug/L	1.0	1	12/30/16 18:15	01/06/17 14:54	7440-38-2	
Chromium, Dissolved	ND	ug/L	1.0	1	12/30/16 18:15	01/06/17 14:54	7440-47-3	
Lead, Dissolved	ND	ug/L	1.0	1	12/30/16 18:15	01/06/17 14:54	7439-92-1	
Vanadium, Dissolved	ND	ug/L	5.0	1	12/30/16 18:15	01/06/17 14:54	7440-62-2	
7470 Mercury Analytical Method: EPA 7470 Preparation Method: EPA 7470								
Mercury	ND	ug/L	0.20	1	12/30/16 17:49	01/03/17 11:44	7439-97-6	
7470 Mercury, Dissolved (LF) Analytical Method: EPA 7470 Preparation Method: EPA 7470								
Mercury, Dissolved	ND	ug/L	0.20	1	12/30/16 17:49	01/03/17 12:25	7439-97-6	
8270 MSSV PAH by SIM SEP Analytical Method: EPA 8270 by SIM Preparation Method: EPA 3510								
Acenaphthene	0.44	ug/L	0.10	1	12/30/16 11:29	01/09/17 16:41	83-32-9	
Acenaphthylene	ND	ug/L	0.10	1	12/30/16 11:29	01/09/17 16:41	208-96-8	
Anthracene	ND	ug/L	0.10	1	12/30/16 11:29	01/09/17 16:41	120-12-7	
Benzo(a)anthracene	ND	ug/L	0.10	1	12/30/16 11:29	01/09/17 16:41	56-55-3	
Benzo(a)pyrene	ND	ug/L	0.10	1	12/30/16 11:29	01/09/17 16:41	50-32-8	
Benzo(b)fluoranthene	ND	ug/L	0.10	1	12/30/16 11:29	01/09/17 16:41	205-99-2	
Benzo(g,h,i)perylene	ND	ug/L	0.10	1	12/30/16 11:29	01/09/17 16:41	191-24-2	
Benzo(k)fluoranthene	ND	ug/L	0.10	1	12/30/16 11:29	01/09/17 16:41	207-08-9	
Chrysene	ND	ug/L	0.10	1	12/30/16 11:29	01/09/17 16:41	218-01-9	
Dibenz(a,h)anthracene	ND	ug/L	0.10	1	12/30/16 11:29	01/09/17 16:41	53-70-3	
Fluoranthene	ND	ug/L	0.10	1	12/30/16 11:29	01/09/17 16:41	206-44-0	
Fluorene	ND	ug/L	0.10	1	12/30/16 11:29	01/09/17 16:41	86-73-7	
Indeno(1,2,3-cd)pyrene	ND	ug/L	0.10	1	12/30/16 11:29	01/09/17 16:41	193-39-5	
2-Methylnaphthalene	ND	ug/L	0.10	1	12/30/16 11:29	01/09/17 16:41	91-57-6	
Naphthalene	ND	ug/L	0.10	1	12/30/16 11:29	01/09/17 16:41	91-20-3	
Phenanthrene	ND	ug/L	0.10	1	12/30/16 11:29	01/09/17 16:41	85-01-8	
Pyrene	ND	ug/L	0.10	1	12/30/16 11:29	01/09/17 16:41	129-00-0	
Surrogates								
2-Fluorobiphenyl (S)	68	%	25-150	1	12/30/16 11:29	01/09/17 16:41	321-60-8	
Terphenyl-d14 (S)	67	%	25-150	1	12/30/16 11:29	01/09/17 16:41	1718-51-0	
8260 MSV Low Level Analytical Method: EPA 5030B/8260								
Acetone	14.8	ug/L	4.0	1		12/29/16 15:02	67-64-1	C9
Benzene	ND	ug/L	0.50	1		12/29/16 15:02	71-43-2	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: PUMA TERMINAL MW SAMPLING

Pace Project No.: 2047967

Sample: MW-98A	Lab ID: 2047967008	Collected: 12/27/16 15:03	Received: 12/28/16 15:50	Matrix: Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV Low Level		Analytical Method: EPA 5030B/8260						
Bromodichloromethane	ND	ug/L	0.50	1		12/29/16 15:02	75-27-4	
Bromoform	ND	ug/L	0.50	1		12/29/16 15:02	75-25-2	
Bromomethane	ND	ug/L	0.50	1		12/29/16 15:02	74-83-9	L3
2-Butanone (MEK)	ND	ug/L	2.0	1		12/29/16 15:02	78-93-3	
Carbon disulfide	ND	ug/L	1.0	1		12/29/16 15:02	75-15-0	
Carbon tetrachloride	ND	ug/L	0.50	1		12/29/16 15:02	56-23-5	
Chlorobenzene	ND	ug/L	0.50	1		12/29/16 15:02	108-90-7	
Chloroethane	ND	ug/L	0.50	1		12/29/16 15:02	75-00-3	
Chloroform	ND	ug/L	0.50	1		12/29/16 15:02	67-66-3	
Chloromethane	ND	ug/L	0.50	1		12/29/16 15:02	74-87-3	
1,2-Dibromo-3-chloropropane	ND	ug/L	0.20	1		12/29/16 15:02	96-12-8	
Dibromochloromethane	ND	ug/L	0.50	1		12/29/16 15:02	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	1		12/29/16 15:02	106-93-4	
Dichlorodifluoromethane	ND	ug/L	1.0	1		12/29/16 15:02	75-71-8	
1,1-Dichloroethane	ND	ug/L	0.50	1		12/29/16 15:02	75-34-3	
1,2-Dichloroethane	ND	ug/L	0.50	1		12/29/16 15:02	107-06-2	
1,1-Dichloroethene	ND	ug/L	0.50	1		12/29/16 15:02	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	1		12/29/16 15:02	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	0.50	1		12/29/16 15:02	156-60-5	
1,2-Dichloropropane	ND	ug/L	0.50	1		12/29/16 15:02	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	0.50	1		12/29/16 15:02	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	0.50	1		12/29/16 15:02	10061-02-6	
Ethylbenzene	ND	ug/L	0.50	1		12/29/16 15:02	100-41-4	
2-Hexanone	ND	ug/L	1.0	1		12/29/16 15:02	591-78-6	
Isopropylbenzene (Cumene)	ND	ug/L	1.0	1		12/29/16 15:02	98-82-8	
Methyl acetate	ND	ug/L	2.0	1		12/29/16 15:02	79-20-9	
Methylene Chloride	ND	ug/L	0.50	1		12/29/16 15:02	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	1.0	1		12/29/16 15:02	108-10-1	
Methyl-tert-butyl ether	ND	ug/L	0.50	1		12/29/16 15:02	1634-04-4	
Styrene	ND	ug/L	1.0	1		12/29/16 15:02	100-42-5	
1,1,2,2-Tetrachloroethane	ND	ug/L	0.50	1		12/29/16 15:02	79-34-5	
Tetrachloroethene	ND	ug/L	0.50	1		12/29/16 15:02	127-18-4	
Toluene	ND	ug/L	0.50	1		12/29/16 15:02	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	0.50	1		12/29/16 15:02	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	0.50	1		12/29/16 15:02	79-00-5	
Trichloroethene	ND	ug/L	0.50	1		12/29/16 15:02	79-01-6	
Trichlorofluoromethane	ND	ug/L	0.50	1		12/29/16 15:02	75-69-4	
Vinyl chloride	ND	ug/L	0.50	1		12/29/16 15:02	75-01-4	
m&p-Xylene	ND	ug/L	2.0	1		12/29/16 15:02	179601-23-1	
o-Xylene	ND	ug/L	1.0	1		12/29/16 15:02	95-47-6	
Surrogates								
Dibromofluoromethane (S)	92	%.	72-126	1		12/29/16 15:02	1868-53-7	
4-Bromofluorobenzene (S)	94	%.	68-124	1		12/29/16 15:02	460-00-4	
Toluene-d8 (S)	104	%.	79-119	1		12/29/16 15:02	2037-26-5	

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ANALYTICAL RESULTS

Project: PUMA TERMINAL MW SAMPLING

Pace Project No.: 2047967

Sample: MW-30A	Lab ID: 2047967009	Collected: 12/27/16 15:53	Received: 12/28/16 15:50	Matrix: Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8015M DRO/ORO Organics								
Analytical Method: EPA 8015B Modified Preparation Method: EPA 3535								
Diesel Range Organic (C10-C28)	ND	mg/L	0.50	1	12/30/16 10:38	01/09/17 17:58		
Oil Range Organics (>C28-C40)	ND	mg/L	1.0	1	12/30/16 10:38	01/09/17 17:58		
Surrogates								
n-Pentacosane (S)	38	%	16-137	1	12/30/16 10:38	01/09/17 17:58	629-99-2	
o-Terphenyl (S)	39	%	10-121	1	12/30/16 10:38	01/09/17 17:58	84-15-1	
8021 GCV BTEX, MTBE, GRO								
Analytical Method: EPA 8015/8021								
Gasoline Range Organics	ND	ug/L	50.0	1		01/04/17 20:15		
Surrogates								
4-Bromofluorobenzene (S)	89	%	44-148	1		01/04/17 20:15	460-00-4	
6020 MET ICPMS								
Analytical Method: EPA 6020 Preparation Method: EPA 3010								
Arsenic	0.0034	mg/L	0.0010	1	12/30/16 16:10	01/06/17 13:04	7440-38-2	
Chromium	ND	mg/L	0.0010	1	12/30/16 16:10	01/06/17 13:04	7440-47-3	
Lead	ND	mg/L	0.0010	1	12/30/16 16:10	01/06/17 13:04	7439-92-1	
Vanadium	ND	mg/L	0.0050	1	12/30/16 16:10	01/06/17 13:04	7440-62-2	
6020 MET ICPMS, Dissolved (LF)								
Analytical Method: EPA 6020 Preparation Method: EPA 3005A								
Arsenic, Dissolved	2.5	ug/L	1.0	1	12/30/16 18:15	01/06/17 14:58	7440-38-2	
Chromium, Dissolved	ND	ug/L	1.0	1	12/30/16 18:15	01/06/17 14:58	7440-47-3	
Lead, Dissolved	ND	ug/L	1.0	1	12/30/16 18:15	01/06/17 14:58	7439-92-1	
Vanadium, Dissolved	ND	ug/L	5.0	1	12/30/16 18:15	01/06/17 14:58	7440-62-2	
7470 Mercury								
Analytical Method: EPA 7470 Preparation Method: EPA 7470								
Mercury	ND	ug/L	0.20	1	12/30/16 17:49	01/03/17 11:46	7439-97-6	
7470 Mercury, Dissolved (LF)								
Analytical Method: EPA 7470 Preparation Method: EPA 7470								
Mercury, Dissolved	ND	ug/L	0.20	1	12/30/16 17:49	01/03/17 12:27	7439-97-6	
8270 MSSV PAH by SIM SEP								
Analytical Method: EPA 8270 by SIM Preparation Method: EPA 3510								
Acenaphthene	ND	ug/L	0.10	1	12/30/16 11:29	01/09/17 17:01	83-32-9	
Acenaphthylene	ND	ug/L	0.10	1	12/30/16 11:29	01/09/17 17:01	208-96-8	
Anthracene	ND	ug/L	0.10	1	12/30/16 11:29	01/09/17 17:01	120-12-7	
Benzo(a)anthracene	ND	ug/L	0.10	1	12/30/16 11:29	01/09/17 17:01	56-55-3	
Benzo(a)pyrene	ND	ug/L	0.10	1	12/30/16 11:29	01/09/17 17:01	50-32-8	
Benzo(b)fluoranthene	ND	ug/L	0.10	1	12/30/16 11:29	01/09/17 17:01	205-99-2	
Benzo(g,h,i)perylene	ND	ug/L	0.10	1	12/30/16 11:29	01/09/17 17:01	191-24-2	
Benzo(k)fluoranthene	ND	ug/L	0.10	1	12/30/16 11:29	01/09/17 17:01	207-08-9	
Chrysene	ND	ug/L	0.10	1	12/30/16 11:29	01/09/17 17:01	218-01-9	
Dibenz(a,h)anthracene	ND	ug/L	0.10	1	12/30/16 11:29	01/09/17 17:01	53-70-3	
Fluoranthene	ND	ug/L	0.10	1	12/30/16 11:29	01/09/17 17:01	206-44-0	
Fluorene	ND	ug/L	0.10	1	12/30/16 11:29	01/09/17 17:01	86-73-7	
Indeno(1,2,3-cd)pyrene	ND	ug/L	0.10	1	12/30/16 11:29	01/09/17 17:01	193-39-5	
2-Methylnaphthalene	ND	ug/L	0.10	1	12/30/16 11:29	01/09/17 17:01	91-57-6	
Naphthalene	ND	ug/L	0.10	1	12/30/16 11:29	01/09/17 17:01	91-20-3	
Phenanthrene	ND	ug/L	0.10	1	12/30/16 11:29	01/09/17 17:01	85-01-8	

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ANALYTICAL RESULTS

Project: PUMA TERMINAL MW SAMPLING

Pace Project No.: 2047967

Sample: MW-30A	Lab ID: 2047967009	Collected: 12/27/16 15:53	Received: 12/28/16 15:50	Matrix: Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8270 MSSV PAH by SIM SEP		Analytical Method: EPA 8270 by SIM Preparation Method: EPA 3510						
Pyrene	ND	ug/L	0.10	1	12/30/16 11:29	01/09/17 17:01	129-00-0	
Surrogates								
2-Fluorobiphenyl (S)	84	%.	25-150	1	12/30/16 11:29	01/09/17 17:01	321-60-8	
Terphenyl-d14 (S)	80	%.	25-150	1	12/30/16 11:29	01/09/17 17:01	1718-51-0	
8260 MSV Low Level		Analytical Method: EPA 5030B/8260						
Acetone	35.3	ug/L	4.0	1		12/29/16 15:20	67-64-1	C9
Benzene	ND	ug/L	0.50	1		12/29/16 15:20	71-43-2	
Bromodichloromethane	ND	ug/L	0.50	1		12/29/16 15:20	75-27-4	
Bromoform	ND	ug/L	0.50	1		12/29/16 15:20	75-25-2	
Bromomethane	ND	ug/L	0.50	1		12/29/16 15:20	74-83-9	L3
2-Butanone (MEK)	ND	ug/L	2.0	1		12/29/16 15:20	78-93-3	
Carbon disulfide	ND	ug/L	1.0	1		12/29/16 15:20	75-15-0	
Carbon tetrachloride	ND	ug/L	0.50	1		12/29/16 15:20	56-23-5	
Chlorobenzene	ND	ug/L	0.50	1		12/29/16 15:20	108-90-7	
Chloroethane	ND	ug/L	0.50	1		12/29/16 15:20	75-00-3	
Chloroform	ND	ug/L	0.50	1		12/29/16 15:20	67-66-3	
Chloromethane	0.51	ug/L	0.50	1		12/29/16 15:20	74-87-3	
1,2-Dibromo-3-chloropropane	ND	ug/L	0.20	1		12/29/16 15:20	96-12-8	
Dibromochloromethane	ND	ug/L	0.50	1		12/29/16 15:20	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	1		12/29/16 15:20	106-93-4	
Dichlorodifluoromethane	ND	ug/L	1.0	1		12/29/16 15:20	75-71-8	
1,1-Dichloroethane	ND	ug/L	0.50	1		12/29/16 15:20	75-34-3	
1,2-Dichloroethane	ND	ug/L	0.50	1		12/29/16 15:20	107-06-2	
1,1-Dichloroethene	ND	ug/L	0.50	1		12/29/16 15:20	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	1		12/29/16 15:20	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	0.50	1		12/29/16 15:20	156-60-5	
1,2-Dichloropropane	ND	ug/L	0.50	1		12/29/16 15:20	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	0.50	1		12/29/16 15:20	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	0.50	1		12/29/16 15:20	10061-02-6	
Ethylbenzene	ND	ug/L	0.50	1		12/29/16 15:20	100-41-4	
2-Hexanone	ND	ug/L	1.0	1		12/29/16 15:20	591-78-6	
Isopropylbenzene (Cumene)	ND	ug/L	1.0	1		12/29/16 15:20	98-82-8	
Methyl acetate	ND	ug/L	2.0	1		12/29/16 15:20	79-20-9	
Methylene Chloride	ND	ug/L	0.50	1		12/29/16 15:20	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	1.0	1		12/29/16 15:20	108-10-1	
Methyl-tert-butyl ether	ND	ug/L	0.50	1		12/29/16 15:20	1634-04-4	
Styrene	ND	ug/L	1.0	1		12/29/16 15:20	100-42-5	
1,1,2,2-Tetrachloroethane	ND	ug/L	0.50	1		12/29/16 15:20	79-34-5	
Tetrachloroethene	ND	ug/L	0.50	1		12/29/16 15:20	127-18-4	
Toluene	ND	ug/L	0.50	1		12/29/16 15:20	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	0.50	1		12/29/16 15:20	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	0.50	1		12/29/16 15:20	79-00-5	
Trichloroethene	ND	ug/L	0.50	1		12/29/16 15:20	79-01-6	
Trichlorofluoromethane	ND	ug/L	0.50	1		12/29/16 15:20	75-69-4	
Vinyl chloride	ND	ug/L	0.50	1		12/29/16 15:20	75-01-4	
m&p-Xylene	ND	ug/L	2.0	1		12/29/16 15:20	179601-23-1	

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ANALYTICAL RESULTS

Project: PUMA TERMINAL MW SAMPLING

Pace Project No.: 2047967

Sample: MW-30A		Lab ID: 2047967009		Collected: 12/27/16 15:53		Received: 12/28/16 15:50		Matrix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual	
8260 MSV Low Level		Analytical Method: EPA 5030B/8260							
o-Xylene	ND	ug/L	1.0	1		12/29/16 15:20	95-47-6		
Surrogates									
Dibromofluoromethane (S)	91	%.	72-126	1		12/29/16 15:20	1868-53-7		
4-Bromofluorobenzene (S)	93	%.	68-124	1		12/29/16 15:20	460-00-4		
Toluene-d8 (S)	103	%.	79-119	1		12/29/16 15:20	2037-26-5		

Sample: FB-122716		Lab ID: 2047967010		Collected: 12/27/16 15:58		Received: 12/28/16 15:50		Matrix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual	
8021 GCV BTEX, MTBE, GRO		Analytical Method: EPA 8015/8021							
Gasoline Range Organics	ND	ug/L	50.0	1		01/04/17 20:42			
Surrogates									
4-Bromofluorobenzene (S)	90	%.	44-148	1		01/04/17 20:42	460-00-4		

8260 MSV Low Level		Analytical Method: EPA 5030B/8260							
Acetone	4.9	ug/L	4.0	1		12/29/16 15:38	67-64-1	C9	
Benzene	ND	ug/L	0.50	1		12/29/16 15:38	71-43-2		
Bromodichloromethane	ND	ug/L	0.50	1		12/29/16 15:38	75-27-4		
Bromoform	ND	ug/L	0.50	1		12/29/16 15:38	75-25-2		
Bromomethane	ND	ug/L	0.50	1		12/29/16 15:38	74-83-9	L3	
2-Butanone (MEK)	ND	ug/L	2.0	1		12/29/16 15:38	78-93-3		
Carbon disulfide	ND	ug/L	1.0	1		12/29/16 15:38	75-15-0		
Carbon tetrachloride	ND	ug/L	0.50	1		12/29/16 15:38	56-23-5		
Chlorobenzene	ND	ug/L	0.50	1		12/29/16 15:38	108-90-7		
Chloroethane	ND	ug/L	0.50	1		12/29/16 15:38	75-00-3		
Chloroform	ND	ug/L	0.50	1		12/29/16 15:38	67-66-3		
Chloromethane	ND	ug/L	0.50	1		12/29/16 15:38	74-87-3		
1,2-Dibromo-3-chloropropane	ND	ug/L	0.20	1		12/29/16 15:38	96-12-8		
Dibromochloromethane	ND	ug/L	0.50	1		12/29/16 15:38	124-48-1		
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	1		12/29/16 15:38	106-93-4		
Dichlorodifluoromethane	ND	ug/L	1.0	1		12/29/16 15:38	75-71-8		
1,1-Dichloroethane	ND	ug/L	0.50	1		12/29/16 15:38	75-34-3		
1,2-Dichloroethane	ND	ug/L	0.50	1		12/29/16 15:38	107-06-2		
1,1-Dichloroethene	ND	ug/L	0.50	1		12/29/16 15:38	75-35-4		
cis-1,2-Dichloroethene	ND	ug/L	1.0	1		12/29/16 15:38	156-59-2		
trans-1,2-Dichloroethene	ND	ug/L	0.50	1		12/29/16 15:38	156-60-5		
1,2-Dichloropropane	ND	ug/L	0.50	1		12/29/16 15:38	78-87-5		
cis-1,3-Dichloropropene	ND	ug/L	0.50	1		12/29/16 15:38	10061-01-5		
trans-1,3-Dichloropropene	ND	ug/L	0.50	1		12/29/16 15:38	10061-02-6		
Ethylbenzene	ND	ug/L	0.50	1		12/29/16 15:38	100-41-4		
2-Hexanone	ND	ug/L	1.0	1		12/29/16 15:38	591-78-6		
Isopropylbenzene (Cumene)	ND	ug/L	1.0	1		12/29/16 15:38	98-82-8		
Methyl acetate	ND	ug/L	2.0	1		12/29/16 15:38	79-20-9		
Methylene Chloride	ND	ug/L	0.50	1		12/29/16 15:38	75-09-2		
4-Methyl-2-pentanone (MIBK)	ND	ug/L	1.0	1		12/29/16 15:38	108-10-1		

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ANALYTICAL RESULTS

Project: PUMA TERMINAL MW SAMPLING

Sample Project No.: 2047967

Sample: FB-122716		Lab ID: 2047967010		Collected: 12/27/16 15:58	Received: 12/28/16 15:50	Matrix: Water		
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV Low Level		Analytical Method: EPA 5030B/8260						
Methyl-tert-butyl ether	ND	ug/L	0.50	1		12/29/16 15:38	1634-04-4	
Styrene	ND	ug/L	1.0	1		12/29/16 15:38	100-42-5	
1,1,2,2-Tetrachloroethane	ND	ug/L	0.50	1		12/29/16 15:38	79-34-5	
Tetrachloroethene	ND	ug/L	0.50	1		12/29/16 15:38	127-18-4	
Toluene	ND	ug/L	0.50	1		12/29/16 15:38	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	0.50	1		12/29/16 15:38	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	0.50	1		12/29/16 15:38	79-00-5	
Trichloroethene	ND	ug/L	0.50	1		12/29/16 15:38	79-01-6	
Trichlorofluoromethane	ND	ug/L	0.50	1		12/29/16 15:38	75-69-4	
Vinyl chloride	ND	ug/L	0.50	1		12/29/16 15:38	75-01-4	
m&p-Xylene	ND	ug/L	2.0	1		12/29/16 15:38	179601-23-1	
o-Xylene	ND	ug/L	1.0	1		12/29/16 15:38	95-47-6	
Surrogates								
Dibromofluoromethane (S)	91	%	72-126	1		12/29/16 15:38	1868-53-7	
4-Bromofluorobenzene (S)	93	%	68-124	1		12/29/16 15:38	460-00-4	
Toluene-d8 (S)	104	%	79-119	1		12/29/16 15:38	2037-26-5	

Sample: TB122816		Lab ID: 2047967011		Collected: 12/28/16 00:00	Received: 12/28/16 15:50	Matrix: Water		
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8021 GCV BTEX, MTBE, GRO		Analytical Method: EPA 8015/8021						
Gasoline Range Organics	ND	ug/L	50.0	1		01/04/17 21:08		
Surrogates								
4-Bromofluorobenzene (S)	87	%	44-148	1		01/04/17 21:08	460-00-4	
8260 MSV Low Level		Analytical Method: EPA 5030B/8260						
Acetone	35.1	ug/L	4.0	1		12/29/16 15:56	67-64-1	C9
Benzene	ND	ug/L	0.50	1		12/29/16 15:56	71-43-2	
Bromodichloromethane	ND	ug/L	0.50	1		12/29/16 15:56	75-27-4	
Bromoform	ND	ug/L	0.50	1		12/29/16 15:56	75-25-2	
Bromomethane	ND	ug/L	0.50	1		12/29/16 15:56	74-83-9	L3
2-Butanone (MEK)	ND	ug/L	2.0	1		12/29/16 15:56	78-93-3	
Carbon disulfide	ND	ug/L	1.0	1		12/29/16 15:56	75-15-0	
Carbon tetrachloride	ND	ug/L	0.50	1		12/29/16 15:56	56-23-5	
Chlorobenzene	ND	ug/L	0.50	1		12/29/16 15:56	108-90-7	
Chloroethane	ND	ug/L	0.50	1		12/29/16 15:56	75-00-3	
Chloroform	ND	ug/L	0.50	1		12/29/16 15:56	67-66-3	
Chloromethane	ND	ug/L	0.50	1		12/29/16 15:56	74-87-3	
1,2-Dibromo-3-chloropropane	ND	ug/L	0.20	1		12/29/16 15:56	96-12-8	
Dibromochloromethane	ND	ug/L	0.50	1		12/29/16 15:56	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	1		12/29/16 15:56	106-93-4	
Dichlorodifluoromethane	ND	ug/L	1.0	1		12/29/16 15:56	75-71-8	
1,1-Dichloroethane	ND	ug/L	0.50	1		12/29/16 15:56	75-34-3	
1,2-Dichloroethane	ND	ug/L	0.50	1		12/29/16 15:56	107-06-2	
1,1-Dichloroethene	ND	ug/L	0.50	1		12/29/16 15:56	75-35-4	

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ANALYTICAL RESULTS

Project: PUMA TERMINAL MW SAMPLING

Pace Project No.: 2047967

Sample: TB122816		Lab ID: 2047967011		Collected: 12/28/16 00:00		Received: 12/28/16 15:50		Matrix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual	
8260 MSV Low Level		Analytical Method: EPA 5030B/8260							
cis-1,2-Dichloroethene	ND	ug/L	1.0	1		12/29/16 15:56	156-59-2		
trans-1,2-Dichloroethene	ND	ug/L	0.50	1		12/29/16 15:56	156-60-5		
1,2-Dichloropropane	ND	ug/L	0.50	1		12/29/16 15:56	78-87-5		
cis-1,3-Dichloropropene	ND	ug/L	0.50	1		12/29/16 15:56	10061-01-5		
trans-1,3-Dichloropropene	ND	ug/L	0.50	1		12/29/16 15:56	10061-02-6		
Ethylbenzene	ND	ug/L	0.50	1		12/29/16 15:56	100-41-4		
2-Hexanone	ND	ug/L	1.0	1		12/29/16 15:56	591-78-6		
Isopropylbenzene (Cumene)	ND	ug/L	1.0	1		12/29/16 15:56	98-82-8		
Methyl acetate	ND	ug/L	2.0	1		12/29/16 15:56	79-20-9		
Methylene Chloride	ND	ug/L	0.50	1		12/29/16 15:56	75-09-2		
4-Methyl-2-pentanone (MIBK)	ND	ug/L	1.0	1		12/29/16 15:56	108-10-1		
Methyl-tert-butyl ether	ND	ug/L	0.50	1		12/29/16 15:56	1634-04-4		
Styrene	ND	ug/L	1.0	1		12/29/16 15:56	100-42-5		
1,1,2,2-Tetrachloroethane	ND	ug/L	0.50	1		12/29/16 15:56	79-34-5		
Tetrachloroethene	ND	ug/L	0.50	1		12/29/16 15:56	127-18-4		
Toluene	ND	ug/L	0.50	1		12/29/16 15:56	108-88-3		
1,1,1-Trichloroethane	ND	ug/L	0.50	1		12/29/16 15:56	71-55-6		
1,1,2-Trichloroethane	ND	ug/L	0.50	1		12/29/16 15:56	79-00-5		
Trichloroethene	ND	ug/L	0.50	1		12/29/16 15:56	79-01-6		
Trichlorofluoromethane	ND	ug/L	0.50	1		12/29/16 15:56	75-69-4		
Vinyl chloride	ND	ug/L	0.50	1		12/29/16 15:56	75-01-4		
m&p-Xylene	ND	ug/L	2.0	1		12/29/16 15:56	179601-23-1		
o-Xylene	ND	ug/L	1.0	1		12/29/16 15:56	95-47-6		
Surrogates									
Dibromofluoromethane (S)	92	%.	72-126	1		12/29/16 15:56	1868-53-7		
4-Bromofluorobenzene (S)	92	%.	68-124	1		12/29/16 15:56	460-00-4		
Toluene-d8 (S)	105	%.	79-119	1		12/29/16 15:56	2037-26-5		

Sample: EB-122816		Lab ID: 2047967012		Collected: 12/28/16 08:51		Received: 12/28/16 15:50		Matrix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual	
8015M DRO/ORO Organics		Analytical Method: EPA 8015B Modified Preparation Method: EPA 3535							
Diesel Range Organic (C10-C28)	ND	mg/L	0.50	1	12/30/16 10:38	01/11/17 16:31			
Oil Range Organics (>C28-C40)	ND	mg/L	1.0	1	12/30/16 10:38	01/11/17 16:31			
Surrogates									
n-Pentacosane (S)	75	%.	16-137	1	12/30/16 10:38	01/11/17 16:31	629-99-2		
o-Terphenyl (S)	65	%.	10-121	1	12/30/16 10:38	01/11/17 16:31	84-15-1		
8021 GCV BTEX, MTBE, GRO		Analytical Method: EPA 8015/8021							
Gasoline Range Organics	ND	ug/L	50.0	1		01/04/17 22:27			
Surrogates									
4-Bromofluorobenzene (S)	88	%.	44-148	1		01/04/17 22:27	460-00-4		
6020 MET ICPMS		Analytical Method: EPA 6020 Preparation Method: EPA 3010							
Arsenic	ND	mg/L	0.0010	1	12/30/16 16:10	01/06/17 13:07	7440-38-2		

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ANALYTICAL RESULTS

Project: PUMA TERMINAL MW SAMPLING

Pace Project No.: 2047967

Sample: EB-122816	Lab ID: 2047967012	Collected: 12/28/16 08:51	Received: 12/28/16 15:50	Matrix: Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
6020 MET ICPMS								
Analytical Method: EPA 6020 Preparation Method: EPA 3010								
Chromium	ND	mg/L	0.0010	1	12/30/16 16:10	01/06/17 13:07	7440-47-3	
Lead	ND	mg/L	0.0010	1	12/30/16 16:10	01/06/17 13:07	7439-92-1	
Vanadium	ND	mg/L	0.0050	1	12/30/16 16:10	01/06/17 13:07	7440-62-2	
6020 MET ICPMS, Dissolved (LF)								
Analytical Method: EPA 6020 Preparation Method: EPA 3005A								
Arsenic, Dissolved	ND	ug/L	1.0	1	12/30/16 18:15	01/06/17 15:02	7440-38-2	
Chromium, Dissolved	ND	ug/L	1.0	1	12/30/16 18:15	01/06/17 15:02	7440-47-3	
Lead, Dissolved	ND	ug/L	1.0	1	12/30/16 18:15	01/06/17 15:02	7439-92-1	
Vanadium, Dissolved	ND	ug/L	5.0	1	12/30/16 18:15	01/06/17 15:02	7440-62-2	
7470 Mercury								
Analytical Method: EPA 7470 Preparation Method: EPA 7470								
Mercury	ND	ug/L	0.20	1	12/30/16 17:49	01/03/17 11:48	7439-97-6	
7470 Mercury, Dissolved (LF)								
Analytical Method: EPA 7470 Preparation Method: EPA 7470								
Mercury, Dissolved	ND	ug/L	0.20	1	12/30/16 17:49	01/03/17 12:33	7439-97-6	
8270 MSSV PAH by SIM SEP								
Analytical Method: EPA 8270 by SIM Preparation Method: EPA 3510								
Acenaphthene	ND	ug/L	0.10	1	12/31/16 11:49	01/09/17 17:20	83-32-9	
Acenaphthylene	ND	ug/L	0.10	1	12/31/16 11:49	01/09/17 17:20	208-96-8	
Anthracene	ND	ug/L	0.10	1	12/31/16 11:49	01/09/17 17:20	120-12-7	
Benzo(a)anthracene	ND	ug/L	0.10	1	12/31/16 11:49	01/09/17 17:20	56-55-3	
Benzo(a)pyrene	ND	ug/L	0.10	1	12/31/16 11:49	01/09/17 17:20	50-32-8	
Benzo(b)fluoranthene	ND	ug/L	0.10	1	12/31/16 11:49	01/09/17 17:20	205-99-2	
Benzo(g,h,i)perylene	ND	ug/L	0.10	1	12/31/16 11:49	01/09/17 17:20	191-24-2	
Benzo(k)fluoranthene	ND	ug/L	0.10	1	12/31/16 11:49	01/09/17 17:20	207-08-9	
Chrysene	ND	ug/L	0.10	1	12/31/16 11:49	01/09/17 17:20	218-01-9	
Dibenz(a,h)anthracene	ND	ug/L	0.10	1	12/31/16 11:49	01/09/17 17:20	53-70-3	
Fluoranthene	ND	ug/L	0.10	1	12/31/16 11:49	01/09/17 17:20	206-44-0	
Fluorene	ND	ug/L	0.10	1	12/31/16 11:49	01/09/17 17:20	86-73-7	
Indeno(1,2,3-cd)pyrene	ND	ug/L	0.10	1	12/31/16 11:49	01/09/17 17:20	193-39-5	
2-Methylnaphthalene	ND	ug/L	0.10	1	12/31/16 11:49	01/09/17 17:20	91-57-6	
Naphthalene	ND	ug/L	0.10	1	12/31/16 11:49	01/09/17 17:20	91-20-3	
Phenanthrene	ND	ug/L	0.10	1	12/31/16 11:49	01/09/17 17:20	85-01-8	
Pyrene	ND	ug/L	0.10	1	12/31/16 11:49	01/09/17 17:20	129-00-0	
Surrogates								
2-Fluorobiphenyl (S)	71	%	25-150	1	12/31/16 11:49	01/09/17 17:20	321-60-8	
Terphenyl-d14 (S)	78	%	25-150	1	12/31/16 11:49	01/09/17 17:20	1718-51-0	
8260 MSV Low Level								
Analytical Method: EPA 5030B/8260								
Acetone	24.9	ug/L	4.0	1		12/29/16 16:13	67-64-1	C9
Benzene	ND	ug/L	0.50	1		12/29/16 16:13	71-43-2	
Bromodichloromethane	ND	ug/L	0.50	1		12/29/16 16:13	75-27-4	
Bromoform	ND	ug/L	0.50	1		12/29/16 16:13	75-25-2	
Bromomethane	ND	ug/L	0.50	1		12/29/16 16:13	74-83-9	L3
2-Butanone (MEK)	ND	ug/L	2.0	1		12/29/16 16:13	78-93-3	
Carbon disulfide	ND	ug/L	1.0	1		12/29/16 16:13	75-15-0	

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ANALYTICAL RESULTS

Project: PUMA TERMINAL MW SAMPLING

Pace Project No.: 2047967

Sample: EB-122816	Lab ID: 2047967012	Collected: 12/28/16 08:51	Received: 12/28/16 15:50	Matrix: Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV Low Level		Analytical Method: EPA 5030B/8260						
Carbon tetrachloride	ND	ug/L	0.50	1		12/29/16 16:13	56-23-5	
Chlorobenzene	ND	ug/L	0.50	1		12/29/16 16:13	108-90-7	
Chloroethane	ND	ug/L	0.50	1		12/29/16 16:13	75-00-3	
Chloroform	ND	ug/L	0.50	1		12/29/16 16:13	67-66-3	
Chloromethane	0.53	ug/L	0.50	1		12/29/16 16:13	74-87-3	
1,2-Dibromo-3-chloropropane	ND	ug/L	0.20	1		12/29/16 16:13	96-12-8	
Dibromochloromethane	ND	ug/L	0.50	1		12/29/16 16:13	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	1		12/29/16 16:13	106-93-4	
Dichlorodifluoromethane	ND	ug/L	1.0	1		12/29/16 16:13	75-71-8	
1,1-Dichloroethane	ND	ug/L	0.50	1		12/29/16 16:13	75-34-3	
1,2-Dichloroethane	ND	ug/L	0.50	1		12/29/16 16:13	107-06-2	
1,1-Dichloroethene	ND	ug/L	0.50	1		12/29/16 16:13	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	1		12/29/16 16:13	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	0.50	1		12/29/16 16:13	156-60-5	
1,2-Dichloropropane	ND	ug/L	0.50	1		12/29/16 16:13	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	0.50	1		12/29/16 16:13	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	0.50	1		12/29/16 16:13	10061-02-6	
Ethylbenzene	ND	ug/L	0.50	1		12/29/16 16:13	100-41-4	
2-Hexanone	ND	ug/L	1.0	1		12/29/16 16:13	591-78-6	
Isopropylbenzene (Cumene)	ND	ug/L	1.0	1		12/29/16 16:13	98-82-8	
Methyl acetate	ND	ug/L	2.0	1		12/29/16 16:13	79-20-9	
Methylene Chloride	ND	ug/L	0.50	1		12/29/16 16:13	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	1.0	1		12/29/16 16:13	108-10-1	
Methyl-tert-butyl ether	ND	ug/L	0.50	1		12/29/16 16:13	1634-04-4	
Styrene	ND	ug/L	1.0	1		12/29/16 16:13	100-42-5	
1,1,2,2-Tetrachloroethane	ND	ug/L	0.50	1		12/29/16 16:13	79-34-5	
Tetrachloroethene	ND	ug/L	0.50	1		12/29/16 16:13	127-18-4	
Toluene	ND	ug/L	0.50	1		12/29/16 16:13	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	0.50	1		12/29/16 16:13	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	0.50	1		12/29/16 16:13	79-00-5	
Trichloroethene	ND	ug/L	0.50	1		12/29/16 16:13	79-01-6	
Trichlorofluoromethane	ND	ug/L	0.50	1		12/29/16 16:13	75-69-4	
Vinyl chloride	ND	ug/L	0.50	1		12/29/16 16:13	75-01-4	
m&p-Xylene	ND	ug/L	2.0	1		12/29/16 16:13	179601-23-1	
o-Xylene	ND	ug/L	1.0	1		12/29/16 16:13	95-47-6	
Surrogates								
Dibromofluoromethane (S)	91	%	72-126	1		12/29/16 16:13	1868-53-7	
4-Bromofluorobenzene (S)	91	%	68-124	1		12/29/16 16:13	460-00-4	
Toluene-d8 (S)	104	%	79-119	1		12/29/16 16:13	2037-26-5	

Sample: MW-16C	Lab ID: 2047967013	Collected: 12/28/16 09:27	Received: 12/28/16 15:50	Matrix: Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8015M DRO/ORO Organics		Analytical Method: EPA 8015B Modified Preparation Method: EPA 3535						
Diesel Range Organic (C10-C28)	ND	mg/L	0.50	1	12/30/16 10:38	01/11/17 16:59		

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ANALYTICAL RESULTS

Project: PUMA TERMINAL MW SAMPLING

Pace Project No.: 2047967

Sample: MW-16C	Lab ID: 2047967013	Collected: 12/28/16 09:27	Received: 12/28/16 15:50	Matrix: Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8015M DRO/ORO Organics								
Analytical Method: EPA 8015B Modified Preparation Method: EPA 3535								
Oil Range Organics (>C28-C40)	ND	mg/L	1.0	1	12/30/16 10:38	01/11/17 16:59		
Surrogates								
n-Pentacosane (S)	41	%.	16-137	1	12/30/16 10:38	01/11/17 16:59	629-99-2	
o-Terphenyl (S)	51	%.	10-121	1	12/30/16 10:38	01/11/17 16:59	84-15-1	
8021 GCV BTEX, MTBE, GRO								
Analytical Method: EPA 8015/8021								
Gasoline Range Organics	ND	ug/L	50.0	1		01/04/17 21:34		
Surrogates								
4-Bromofluorobenzene (S)	89	%.	44-148	1		01/04/17 21:34	460-00-4	
6020 MET ICPMS								
Analytical Method: EPA 6020 Preparation Method: EPA 3010								
Arsenic	0.0017	mg/L	0.0010	1	12/30/16 16:10	01/06/17 13:19	7440-38-2	
Chromium	0.0094	mg/L	0.0010	1	12/30/16 16:10	01/06/17 13:19	7440-47-3	
Lead	ND	mg/L	0.0010	1	12/30/16 16:10	01/06/17 13:19	7439-92-1	
Vanadium	0.024	mg/L	0.0050	1	12/30/16 16:10	01/06/17 13:19	7440-62-2	
6020 MET ICPMS, Dissolved (LF)								
Analytical Method: EPA 6020 Preparation Method: EPA 3005A								
Arsenic, Dissolved	1.7	ug/L	1.0	1	12/30/16 18:15	01/06/17 15:05	7440-38-2	
Chromium, Dissolved	9.3	ug/L	1.0	1	12/30/16 18:15	01/06/17 15:05	7440-47-3	
Lead, Dissolved	ND	ug/L	1.0	1	12/30/16 18:15	01/06/17 15:05	7439-92-1	
Vanadium, Dissolved	24.3	ug/L	5.0	1	12/30/16 18:15	01/06/17 15:05	7440-62-2	
7470 Mercury								
Analytical Method: EPA 7470 Preparation Method: EPA 7470								
Mercury	ND	ug/L	0.20	1	12/30/16 17:49	01/03/17 11:50	7439-97-6	
7470 Mercury, Dissolved (LF)								
Analytical Method: EPA 7470 Preparation Method: EPA 7470								
Mercury, Dissolved	ND	ug/L	0.20	1	12/30/16 17:49	01/03/17 12:35	7439-97-6	
8270 MSSV PAH by SIM SEP								
Analytical Method: EPA 8270 by SIM Preparation Method: EPA 3510								
Acenaphthene	ND	ug/L	0.10	1	12/31/16 11:49	01/09/17 17:40	83-32-9	
Acenaphthylene	ND	ug/L	0.10	1	12/31/16 11:49	01/09/17 17:40	208-96-8	
Anthracene	ND	ug/L	0.10	1	12/31/16 11:49	01/09/17 17:40	120-12-7	
Benzo(a)anthracene	ND	ug/L	0.10	1	12/31/16 11:49	01/09/17 17:40	56-55-3	
Benzo(a)pyrene	ND	ug/L	0.10	1	12/31/16 11:49	01/09/17 17:40	50-32-8	
Benzo(b)fluoranthene	ND	ug/L	0.10	1	12/31/16 11:49	01/09/17 17:40	205-99-2	
Benzo(g,h,i)perylene	ND	ug/L	0.10	1	12/31/16 11:49	01/09/17 17:40	191-24-2	
Benzo(k)fluoranthene	ND	ug/L	0.10	1	12/31/16 11:49	01/09/17 17:40	207-08-9	
Chrysene	ND	ug/L	0.10	1	12/31/16 11:49	01/09/17 17:40	218-01-9	
Dibenz(a,h)anthracene	ND	ug/L	0.10	1	12/31/16 11:49	01/09/17 17:40	53-70-3	
Fluoranthene	ND	ug/L	0.10	1	12/31/16 11:49	01/09/17 17:40	206-44-0	
Fluorene	ND	ug/L	0.10	1	12/31/16 11:49	01/09/17 17:40	86-73-7	
Indeno(1,2,3-cd)pyrene	ND	ug/L	0.10	1	12/31/16 11:49	01/09/17 17:40	193-39-5	
2-Methylnaphthalene	0.19	ug/L	0.10	1	12/31/16 11:49	01/09/17 17:40	91-57-6	
Naphthalene	0.12	ug/L	0.10	1	12/31/16 11:49	01/09/17 17:40	91-20-3	
Phenanthrene	0.15	ug/L	0.10	1	12/31/16 11:49	01/09/17 17:40	85-01-8	
Pyrene	ND	ug/L	0.10	1	12/31/16 11:49	01/09/17 17:40	129-00-0	

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ANALYTICAL RESULTS

Project: PUMA TERMINAL MW SAMPLING
Pace Project No.: 2047967

Sample: MW-16C	Lab ID: 2047967013	Collected: 12/28/16 09:27	Received: 12/28/16 15:50	Matrix: Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8270 MSSV PAH by SIM SEP		Analytical Method: EPA 8270 by SIM Preparation Method: EPA 3510						
Surrogates								
2-Fluorobiphenyl (S)	72	%	25-150	1	12/31/16 11:49	01/09/17 17:40	321-60-8	
Terphenyl-d14 (S)	75	%	25-150	1	12/31/16 11:49	01/09/17 17:40	1718-51-0	
8260 MSV Low Level		Analytical Method: EPA 5030B/8260						
Acetone	18.9	ug/L	4.0	1		12/29/16 16:32	67-64-1	C9
Benzene	ND	ug/L	0.50	1		12/29/16 16:32	71-43-2	
Bromodichloromethane	ND	ug/L	0.50	1		12/29/16 16:32	75-27-4	
Bromoform	ND	ug/L	0.50	1		12/29/16 16:32	75-25-2	
Bromomethane	ND	ug/L	0.50	1		12/29/16 16:32	74-83-9	L3
2-Butanone (MEK)	ND	ug/L	2.0	1		12/29/16 16:32	78-93-3	
Carbon disulfide	ND	ug/L	1.0	1		12/29/16 16:32	75-15-0	
Carbon tetrachloride	ND	ug/L	0.50	1		12/29/16 16:32	56-23-5	
Chlorobenzene	ND	ug/L	0.50	1		12/29/16 16:32	108-90-7	
Chloroethane	ND	ug/L	0.50	1		12/29/16 16:32	75-00-3	
Chloroform	ND	ug/L	0.50	1		12/29/16 16:32	67-66-3	
Chloromethane	ND	ug/L	0.50	1		12/29/16 16:32	74-87-3	
1,2-Dibromo-3-chloropropane	ND	ug/L	0.20	1		12/29/16 16:32	96-12-8	
Dibromochloromethane	ND	ug/L	0.50	1		12/29/16 16:32	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	1		12/29/16 16:32	106-93-4	
Dichlorodifluoromethane	ND	ug/L	1.0	1		12/29/16 16:32	75-71-8	
1,1-Dichloroethane	ND	ug/L	0.50	1		12/29/16 16:32	75-34-3	
1,2-Dichloroethane	ND	ug/L	0.50	1		12/29/16 16:32	107-06-2	
1,1-Dichloroethene	ND	ug/L	0.50	1		12/29/16 16:32	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	1		12/29/16 16:32	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	0.50	1		12/29/16 16:32	156-60-5	
1,2-Dichloropropane	ND	ug/L	0.50	1		12/29/16 16:32	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	0.50	1		12/29/16 16:32	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	0.50	1		12/29/16 16:32	10061-02-6	
Ethylbenzene	ND	ug/L	0.50	1		12/29/16 16:32	100-41-4	
2-Hexanone	ND	ug/L	1.0	1		12/29/16 16:32	591-78-6	
Isopropylbenzene (Cumene)	ND	ug/L	1.0	1		12/29/16 16:32	98-82-8	
Methyl acetate	ND	ug/L	2.0	1		12/29/16 16:32	79-20-9	
Methylene Chloride	ND	ug/L	0.50	1		12/29/16 16:32	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	1.0	1		12/29/16 16:32	108-10-1	
Methyl-tert-butyl ether	2.0	ug/L	0.50	1		12/29/16 16:32	1634-04-4	
Styrene	ND	ug/L	1.0	1		12/29/16 16:32	100-42-5	
1,1,2,2-Tetrachloroethane	ND	ug/L	0.50	1		12/29/16 16:32	79-34-5	
Tetrachloroethene	ND	ug/L	0.50	1		12/29/16 16:32	127-18-4	
Toluene	ND	ug/L	0.50	1		12/29/16 16:32	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	0.50	1		12/29/16 16:32	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	0.50	1		12/29/16 16:32	79-00-5	
Trichloroethene	ND	ug/L	0.50	1		12/29/16 16:32	79-01-6	
Trichlorofluoromethane	ND	ug/L	0.50	1		12/29/16 16:32	75-69-4	
Vinyl chloride	ND	ug/L	0.50	1		12/29/16 16:32	75-01-4	
m&p-Xylene	ND	ug/L	2.0	1		12/29/16 16:32	179601-23-1	
o-Xylene	ND	ug/L	1.0	1		12/29/16 16:32	95-47-6	

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ANALYTICAL RESULTS

Project: PUMA TERMINAL MW SAMPLING

Sample Project No.: 2047967

Sample: MW-16C	Lab ID: 2047967013	Collected: 12/28/16 09:27	Received: 12/28/16 15:50	Matrix: Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV Low Level		Analytical Method: EPA 5030B/8260						
Surrogates								
Dibromofluoromethane (S)	92	%.	72-126	1		12/29/16 16:32	1868-53-7	
4-Bromofluorobenzene (S)	94	%.	68-124	1		12/29/16 16:32	460-00-4	
Toluene-d8 (S)	104	%.	79-119	1		12/29/16 16:32	2037-26-5	
Sample: WWTP-1		Lab ID: 2047967014		Collected: 12/28/16 10:19	Received: 12/28/16 15:50	Matrix: Water		
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8015M DRO/ORO Organics		Analytical Method: EPA 8015B Modified Preparation Method: EPA 3535						
Diesel Range Organic (C10-C28)	1.0	mg/L	0.50	1	12/30/16 10:38	01/11/17 17:27		
Oil Range Organics (>C28-C40)	ND	mg/L	1.0	1	12/30/16 10:38	01/11/17 17:27		
Surrogates								
n-Pentacosane (S)	48	%.	16-137	1	12/30/16 10:38	01/11/17 17:27	629-99-2	
o-Terphenyl (S)	78	%.	10-121	1	12/30/16 10:38	01/11/17 17:27	84-15-1	
8021 GCV BTEX, MTBE, GRO		Analytical Method: EPA 8015/8021						
Gasoline Range Organics	113	ug/L	50.0	1		01/04/17 22:00		
Surrogates								
4-Bromofluorobenzene (S)	92	%.	44-148	1		01/04/17 22:00	460-00-4	
6020 MET ICPMS		Analytical Method: EPA 6020 Preparation Method: EPA 3010						
Arsenic	0.0020	mg/L	0.0010	1	12/30/16 16:10	01/06/17 13:23	7440-38-2	
Chromium	ND	mg/L	0.0010	1	12/30/16 16:10	01/06/17 13:23	7440-47-3	
Lead	ND	mg/L	0.0010	1	12/30/16 16:10	01/06/17 13:23	7439-92-1	
Vanadium	ND	mg/L	0.0050	1	12/30/16 16:10	01/06/17 13:23	7440-62-2	
6020 MET ICPMS, Dissolved (LF)		Analytical Method: EPA 6020 Preparation Method: EPA 3005A						
Arsenic, Dissolved	ND	ug/L	1.0	1	12/30/16 18:15	01/06/17 15:09	7440-38-2	
Chromium, Dissolved	ND	ug/L	1.0	1	12/30/16 18:15	01/06/17 15:09	7440-47-3	
Lead, Dissolved	ND	ug/L	1.0	1	12/30/16 18:15	01/06/17 15:09	7439-92-1	
Vanadium, Dissolved	ND	ug/L	5.0	1	12/30/16 18:15	01/06/17 15:09	7440-62-2	
7470 Mercury		Analytical Method: EPA 7470 Preparation Method: EPA 7470						
Mercury	ND	ug/L	0.20	1	12/30/16 17:49	01/03/17 11:52	7439-97-6	
7470 Mercury, Dissolved (LF)		Analytical Method: EPA 7470 Preparation Method: EPA 7470						
Mercury, Dissolved	ND	ug/L	0.20	1	12/30/16 17:49	01/03/17 12:37	7439-97-6	
8270 MSSV PAH by SIM SEP		Analytical Method: EPA 8270 by SIM Preparation Method: EPA 3510						
Acenaphthene	5.7	ug/L	0.10	1	12/31/16 11:49	01/09/17 18:00	83-32-9	
Acenaphthylene	0.59	ug/L	0.10	1	12/31/16 11:49	01/09/17 18:00	208-96-8	
Anthracene	0.67	ug/L	0.10	1	12/31/16 11:49	01/09/17 18:00	120-12-7	
Benzo(a)anthracene	ND	ug/L	0.10	1	12/31/16 11:49	01/09/17 18:00	56-55-3	
Benzo(a)pyrene	ND	ug/L	0.10	1	12/31/16 11:49	01/09/17 18:00	50-32-8	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: PUMA TERMINAL MW SAMPLING

Pace Project No.: 2047967

Sample: WWTP-1	Lab ID: 2047967014	Collected: 12/28/16 10:19	Received: 12/28/16 15:50	Matrix: Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8270 MSSV PAH by SIM SEP		Analytical Method: EPA 8270 by SIM Preparation Method: EPA 3510						
Benzo(b)fluoranthene	ND	ug/L	0.10	1	12/31/16 11:49	01/09/17 18:00	205-99-2	
Benzo(g,h,i)perylene	ND	ug/L	0.10	1	12/31/16 11:49	01/09/17 18:00	191-24-2	
Benzo(k)fluoranthene	ND	ug/L	0.10	1	12/31/16 11:49	01/09/17 18:00	207-08-9	
Chrysene	ND	ug/L	0.10	1	12/31/16 11:49	01/09/17 18:00	218-01-9	
Dibenz(a,h)anthracene	ND	ug/L	0.10	1	12/31/16 11:49	01/09/17 18:00	53-70-3	
Fluoranthene	ND	ug/L	0.10	1	12/31/16 11:49	01/09/17 18:00	206-44-0	
Fluorene	ND	ug/L	0.10	1	12/31/16 11:49	01/09/17 18:00	86-73-7	
Indeno(1,2,3-cd)pyrene	ND	ug/L	0.10	1	12/31/16 11:49	01/09/17 18:00	193-39-5	
2-Methylnaphthalene	0.81	ug/L	0.10	1	12/31/16 11:49	01/09/17 18:00	91-57-6	
Naphthalene	0.88	ug/L	0.10	1	12/31/16 11:49	01/09/17 18:00	91-20-3	
Phenanthrene	0.41	ug/L	0.10	1	12/31/16 11:49	01/09/17 18:00	85-01-8	
Pyrene	ND	ug/L	0.10	1	12/31/16 11:49	01/09/17 18:00	129-00-0	
Surrogates								
2-Fluorobiphenyl (S)	70	%	25-150	1	12/31/16 11:49	01/09/17 18:00	321-60-8	
Terphenyl-d14 (S)	72	%	25-150	1	12/31/16 11:49	01/09/17 18:00	1718-51-0	
8260 MSV Low Level		Analytical Method: EPA 5030B/8260						
Acetone	15.6	ug/L	4.0	1		12/29/16 16:50	67-64-1	C9
Benzene	ND	ug/L	0.50	1		12/29/16 16:50	71-43-2	
Bromodichloromethane	ND	ug/L	0.50	1		12/29/16 16:50	75-27-4	
Bromoform	ND	ug/L	0.50	1		12/29/16 16:50	75-25-2	
Bromomethane	ND	ug/L	0.50	1		12/29/16 16:50	74-83-9	L3
2-Butanone (MEK)	ND	ug/L	2.0	1		12/29/16 16:50	78-93-3	
Carbon disulfide	ND	ug/L	1.0	1		12/29/16 16:50	75-15-0	
Carbon tetrachloride	ND	ug/L	0.50	1		12/29/16 16:50	56-23-5	
Chlorobenzene	ND	ug/L	0.50	1		12/29/16 16:50	108-90-7	
Chloroethane	ND	ug/L	0.50	1		12/29/16 16:50	75-00-3	
Chloroform	ND	ug/L	0.50	1		12/29/16 16:50	67-66-3	
Chloromethane	ND	ug/L	0.50	1		12/29/16 16:50	74-87-3	
1,2-Dibromo-3-chloropropane	ND	ug/L	0.20	1		12/29/16 16:50	96-12-8	
Dibromochloromethane	ND	ug/L	0.50	1		12/29/16 16:50	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	1		12/29/16 16:50	106-93-4	
Dichlorodifluoromethane	ND	ug/L	1.0	1		12/29/16 16:50	75-71-8	
1,1-Dichloroethane	ND	ug/L	0.50	1		12/29/16 16:50	75-34-3	
1,2-Dichloroethane	ND	ug/L	0.50	1		12/29/16 16:50	107-06-2	
1,1-Dichloroethene	ND	ug/L	0.50	1		12/29/16 16:50	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	1		12/29/16 16:50	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	0.50	1		12/29/16 16:50	156-60-5	
1,2-Dichloropropane	ND	ug/L	0.50	1		12/29/16 16:50	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	0.50	1		12/29/16 16:50	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	0.50	1		12/29/16 16:50	10061-02-6	
Ethylbenzene	ND	ug/L	0.50	1		12/29/16 16:50	100-41-4	
2-Hexanone	ND	ug/L	1.0	1		12/29/16 16:50	591-78-6	
Isopropylbenzene (Cumene)	5.3	ug/L	1.0	1		12/29/16 16:50	98-82-8	
Methyl acetate	ND	ug/L	2.0	1		12/29/16 16:50	79-20-9	
Methylene Chloride	ND	ug/L	0.50	1		12/29/16 16:50	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	1.0	1		12/29/16 16:50	108-10-1	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: PUMA TERMINAL MW SAMPLING

Sample Project No.: 2047967

Sample: WWTP-1		Lab ID: 2047967014	Collected: 12/28/16 10:19	Received: 12/28/16 15:50	Matrix: Water			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV Low Level		Analytical Method: EPA 5030B/8260						
Methyl-tert-butyl ether	1.8	ug/L	0.50	1		12/29/16 16:50	1634-04-4	
Styrene	ND	ug/L	1.0	1		12/29/16 16:50	100-42-5	
1,1,2,2-Tetrachloroethane	ND	ug/L	0.50	1		12/29/16 16:50	79-34-5	
Tetrachloroethene	ND	ug/L	0.50	1		12/29/16 16:50	127-18-4	
Toluene	ND	ug/L	0.50	1		12/29/16 16:50	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	0.50	1		12/29/16 16:50	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	0.50	1		12/29/16 16:50	79-00-5	
Trichloroethene	ND	ug/L	0.50	1		12/29/16 16:50	79-01-6	
Trichlorofluoromethane	ND	ug/L	0.50	1		12/29/16 16:50	75-69-4	
Vinyl chloride	ND	ug/L	0.50	1		12/29/16 16:50	75-01-4	
m&p-Xylene	ND	ug/L	2.0	1		12/29/16 16:50	179601-23-1	
o-Xylene	ND	ug/L	1.0	1		12/29/16 16:50	95-47-6	
Surrogates								
Dibromofluoromethane (S)	92	%	72-126	1		12/29/16 16:50	1868-53-7	
4-Bromofluorobenzene (S)	93	%	68-124	1		12/29/16 16:50	460-00-4	
Toluene-d8 (S)	104	%	79-119	1		12/29/16 16:50	2037-26-5	

Sample: MW-B1		Lab ID: 2047967015	Collected: 12/28/16 11:37	Received: 12/28/16 15:50	Matrix: Water			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8015M DRO/ORO Organics		Analytical Method: EPA 8015B Modified Preparation Method: EPA 3535						
Diesel Range Organic (C10-C28)	ND	mg/L	0.50	1	12/30/16 10:38	01/11/17 17:55		
Oil Range Organics (>C28-C40)	ND	mg/L	1.0	1	12/30/16 10:38	01/11/17 17:55		
Surrogates								
n-Pentacosane (S)	53	%	16-137	1	12/30/16 10:38	01/11/17 17:55	629-99-2	
o-Terphenyl (S)	65	%	10-121	1	12/30/16 10:38	01/11/17 17:55	84-15-1	
8021 GCV BTEX, MTBE, GRO		Analytical Method: EPA 8015/8021						
Gasoline Range Organics	ND	ug/L	50.0	1		01/05/17 00:38		
Surrogates								
4-Bromofluorobenzene (S)	91	%	44-148	1		01/05/17 00:38	460-00-4	
6020 MET ICPMS		Analytical Method: EPA 6020 Preparation Method: EPA 3010						
Arsenic	0.0050	mg/L	0.0010	1	12/30/16 16:10	01/06/17 13:27	7440-38-2	
Chromium	0.018	mg/L	0.0010	1	12/30/16 16:10	01/06/17 13:27	7440-47-3	
Lead	0.0066	mg/L	0.0010	1	12/30/16 16:10	01/06/17 13:27	7439-92-1	
Vanadium	0.056	mg/L	0.0050	1	12/30/16 16:10	01/06/17 13:27	7440-62-2	
6020 MET ICPMS, Dissolved (LF)		Analytical Method: EPA 6020 Preparation Method: EPA 3005A						
Arsenic, Dissolved	1.0	ug/L	1.0	1	12/30/16 18:15	01/06/17 15:13	7440-38-2	
Chromium, Dissolved	ND	ug/L	1.0	1	12/30/16 18:15	01/06/17 15:13	7440-47-3	
Lead, Dissolved	ND	ug/L	1.0	1	12/30/16 18:15	01/06/17 15:13	7439-92-1	
Vanadium, Dissolved	ND	ug/L	5.0	1	12/30/16 18:15	01/06/17 15:13	7440-62-2	

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ANALYTICAL RESULTS

Project: PUMA TERMINAL MW SAMPLING

Pace Project No.: 2047967

Sample: MW-B1	Lab ID: 2047967015	Collected: 12/28/16 11:37	Received: 12/28/16 15:50	Matrix: Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
7470 Mercury Analytical Method: EPA 7470 Preparation Method: EPA 7470								
Mercury	ND	ug/L	0.20	1	12/30/16 17:49	01/03/17 11:54	7439-97-6	
7470 Mercury, Dissolved (LF) Analytical Method: EPA 7470 Preparation Method: EPA 7470								
Mercury, Dissolved	ND	ug/L	0.20	1	12/30/16 17:49	01/03/17 12:39	7439-97-6	
8270 MSSV PAH by SIM SEP Analytical Method: EPA 8270 by SIM Preparation Method: EPA 3510								
Acenaphthene	ND	ug/L	0.10	1	12/31/16 11:49	01/09/17 18:20	83-32-9	
Acenaphthylene	ND	ug/L	0.10	1	12/31/16 11:49	01/09/17 18:20	208-96-8	
Anthracene	ND	ug/L	0.10	1	12/31/16 11:49	01/09/17 18:20	120-12-7	
Benzo(a)anthracene	ND	ug/L	0.10	1	12/31/16 11:49	01/09/17 18:20	56-55-3	
Benzo(a)pyrene	ND	ug/L	0.10	1	12/31/16 11:49	01/09/17 18:20	50-32-8	
Benzo(b)fluoranthene	ND	ug/L	0.10	1	12/31/16 11:49	01/09/17 18:20	205-99-2	
Benzo(g,h,i)perylene	ND	ug/L	0.10	1	12/31/16 11:49	01/09/17 18:20	191-24-2	
Benzo(k)fluoranthene	ND	ug/L	0.10	1	12/31/16 11:49	01/09/17 18:20	207-08-9	
Chrysene	ND	ug/L	0.10	1	12/31/16 11:49	01/09/17 18:20	218-01-9	
Dibenz(a,h)anthracene	ND	ug/L	0.10	1	12/31/16 11:49	01/09/17 18:20	53-70-3	
Fluoranthene	ND	ug/L	0.10	1	12/31/16 11:49	01/09/17 18:20	206-44-0	
Fluorene	ND	ug/L	0.10	1	12/31/16 11:49	01/09/17 18:20	86-73-7	
Indeno(1,2,3-cd)pyrene	ND	ug/L	0.10	1	12/31/16 11:49	01/09/17 18:20	193-39-5	
2-Methylnaphthalene	ND	ug/L	0.10	1	12/31/16 11:49	01/09/17 18:20	91-57-6	
Naphthalene	ND	ug/L	0.10	1	12/31/16 11:49	01/09/17 18:20	91-20-3	
Phenanthrene	ND	ug/L	0.10	1	12/31/16 11:49	01/09/17 18:20	85-01-8	
Pyrene	ND	ug/L	0.10	1	12/31/16 11:49	01/09/17 18:20	129-00-0	
Surrogates								
2-Fluorobiphenyl (S)	68	%.	25-150	1	12/31/16 11:49	01/09/17 18:20	321-60-8	
Terphenyl-d14 (S)	60	%.	25-150	1	12/31/16 11:49	01/09/17 18:20	1718-51-0	
8260 MSV Low Level Analytical Method: EPA 5030B/8260								
Acetone	9.4	ug/L	4.0	1		12/29/16 17:08	67-64-1	C9
Benzene	ND	ug/L	0.50	1		12/29/16 17:08	71-43-2	
Bromodichloromethane	ND	ug/L	0.50	1		12/29/16 17:08	75-27-4	
Bromoform	ND	ug/L	0.50	1		12/29/16 17:08	75-25-2	
Bromomethane	ND	ug/L	0.50	1		12/29/16 17:08	74-83-9	L3
2-Butanone (MEK)	ND	ug/L	2.0	1		12/29/16 17:08	78-93-3	
Carbon disulfide	ND	ug/L	1.0	1		12/29/16 17:08	75-15-0	
Carbon tetrachloride	ND	ug/L	0.50	1		12/29/16 17:08	56-23-5	
Chlorobenzene	ND	ug/L	0.50	1		12/29/16 17:08	108-90-7	
Chloroethane	ND	ug/L	0.50	1		12/29/16 17:08	75-00-3	
Chloroform	ND	ug/L	0.50	1		12/29/16 17:08	67-66-3	
Chloromethane	ND	ug/L	0.50	1		12/29/16 17:08	74-87-3	
1,2-Dibromo-3-chloropropane	114	ug/L	0.20	1		12/29/16 17:08	96-12-8	
Dibromochloromethane	ND	ug/L	0.50	1		12/29/16 17:08	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	1		12/29/16 17:08	106-93-4	
Dichlorodifluoromethane	ND	ug/L	1.0	1		12/29/16 17:08	75-71-8	
1,1-Dichloroethane	ND	ug/L	0.50	1		12/29/16 17:08	75-34-3	
1,2-Dichloroethane	ND	ug/L	0.50	1		12/29/16 17:08	107-06-2	

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ANALYTICAL RESULTS

Project: PUMA TERMINAL MW SAMPLING

Pace Project No.: 2047967

Sample: MW-B1	Lab ID: 2047967015	Collected: 12/28/16 11:37	Received: 12/28/16 15:50	Matrix: Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV Low Level		Analytical Method: EPA 5030B/8260						
1,1-Dichloroethene	ND	ug/L	0.50	1		12/29/16 17:08	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	1		12/29/16 17:08	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	0.50	1		12/29/16 17:08	156-60-5	
1,2-Dichloropropane	ND	ug/L	0.50	1		12/29/16 17:08	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	0.50	1		12/29/16 17:08	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	0.50	1		12/29/16 17:08	10061-02-6	
Ethylbenzene	ND	ug/L	0.50	1		12/29/16 17:08	100-41-4	
2-Hexanone	ND	ug/L	1.0	1		12/29/16 17:08	591-78-6	
Isopropylbenzene (Cumene)	ND	ug/L	1.0	1		12/29/16 17:08	98-82-8	
Methyl acetate	ND	ug/L	2.0	1		12/29/16 17:08	79-20-9	
Methylene Chloride	ND	ug/L	0.50	1		12/29/16 17:08	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	1.0	1		12/29/16 17:08	108-10-1	
Methyl-tert-butyl ether	ND	ug/L	0.50	1		12/29/16 17:08	1634-04-4	
Styrene	ND	ug/L	1.0	1		12/29/16 17:08	100-42-5	
1,1,2,2-Tetrachloroethane	ND	ug/L	0.50	1		12/29/16 17:08	79-34-5	
Tetrachloroethene	ND	ug/L	0.50	1		12/29/16 17:08	127-18-4	
Toluene	ND	ug/L	0.50	1		12/29/16 17:08	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	0.50	1		12/29/16 17:08	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	0.50	1		12/29/16 17:08	79-00-5	
Trichloroethene	ND	ug/L	0.50	1		12/29/16 17:08	79-01-6	
Trichlorofluoromethane	ND	ug/L	0.50	1		12/29/16 17:08	75-69-4	
Vinyl chloride	ND	ug/L	0.50	1		12/29/16 17:08	75-01-4	
m&p-Xylene	ND	ug/L	2.0	1		12/29/16 17:08	179601-23-1	
o-Xylene	ND	ug/L	1.0	1		12/29/16 17:08	95-47-6	
Surrogates								
Dibromofluoromethane (S)	92	%	72-126	1		12/29/16 17:08	1868-53-7	
4-Bromofluorobenzene (S)	92	%	68-124	1		12/29/16 17:08	460-00-4	
Toluene-d8 (S)	104	%	79-119	1		12/29/16 17:08	2037-26-5	

Sample: DUP003	Lab ID: 2047967016	Collected: 12/28/16 00:00	Received: 12/28/16 15:50	Matrix: Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8015M DRO/ORO Organics		Analytical Method: EPA 8015B Modified Preparation Method: EPA 3535						
Diesel Range Organic (C10-C28)	ND	mg/L	0.50	1	12/30/16 10:38	01/11/17 18:23		
Oil Range Organics (>C28-C40)	ND	mg/L	1.0	1	12/30/16 10:38	01/11/17 18:23		
Surrogates								
n-Pentacosane (S)	41	%	16-137	1	12/30/16 10:38	01/11/17 18:23	629-99-2	
o-Terphenyl (S)	54	%	10-121	1	12/30/16 10:38	01/11/17 18:23	84-15-1	
8021 GCV BTEX, MTBE, GRO		Analytical Method: EPA 8015/8021						
Gasoline Range Organics	ND	ug/L	50.0	1		01/05/17 01:04		
Surrogates								
4-Bromofluorobenzene (S)	88	%	44-148	1		01/05/17 01:04	460-00-4	

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ANALYTICAL RESULTS

Project: PUMA TERMINAL MW SAMPLING

Pace Project No.: 2047967

Sample: DUP003	Lab ID: 2047967016	Collected: 12/28/16 00:00	Received: 12/28/16 15:50	Matrix: Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
6020 MET ICPMS								
Analytical Method: EPA 6020 Preparation Method: EPA 3010								
Arsenic	0.0066	mg/L	0.0010	1	12/30/16 16:10	01/06/17 13:31	7440-38-2	
Chromium	0.024	mg/L	0.0010	1	12/30/16 16:10	01/06/17 13:31	7440-47-3	
Lead	0.011	mg/L	0.0010	1	12/30/16 16:10	01/06/17 13:31	7439-92-1	
Vanadium	0.082	mg/L	0.0050	1	12/30/16 16:10	01/06/17 13:31	7440-62-2	
6020 MET ICPMS, Dissolved (LF)								
Analytical Method: EPA 6020 Preparation Method: EPA 3005A								
Arsenic, Dissolved	1.0	ug/L	1.0	1	12/30/16 18:15	01/06/17 15:17	7440-38-2	
Chromium, Dissolved	ND	ug/L	1.0	1	12/30/16 18:15	01/06/17 15:17	7440-47-3	
Lead, Dissolved	ND	ug/L	1.0	1	12/30/16 18:15	01/06/17 15:17	7439-92-1	
Vanadium, Dissolved	ND	ug/L	5.0	1	12/30/16 18:15	01/06/17 15:17	7440-62-2	
7470 Mercury								
Analytical Method: EPA 7470 Preparation Method: EPA 7470								
Mercury	ND	ug/L	0.20	1	12/30/16 17:49	01/03/17 11:56	7439-97-6	
7470 Mercury, Dissolved (LF)								
Analytical Method: EPA 7470 Preparation Method: EPA 7470								
Mercury, Dissolved	ND	ug/L	0.20	1	12/30/16 17:49	01/03/17 12:41	7439-97-6	
8270 MSSV PAH by SIM SEP								
Analytical Method: EPA 8270 by SIM Preparation Method: EPA 3510								
Acenaphthene	ND	ug/L	0.10	1	12/31/16 11:49	01/09/17 18:40	83-32-9	
Acenaphthylene	ND	ug/L	0.10	1	12/31/16 11:49	01/09/17 18:40	208-96-8	
Anthracene	ND	ug/L	0.10	1	12/31/16 11:49	01/09/17 18:40	120-12-7	
Benzo(a)anthracene	ND	ug/L	0.10	1	12/31/16 11:49	01/09/17 18:40	56-55-3	
Benzo(a)pyrene	ND	ug/L	0.10	1	12/31/16 11:49	01/09/17 18:40	50-32-8	
Benzo(b)fluoranthene	ND	ug/L	0.10	1	12/31/16 11:49	01/09/17 18:40	205-99-2	
Benzo(g,h,i)perylene	ND	ug/L	0.10	1	12/31/16 11:49	01/09/17 18:40	191-24-2	
Benzo(k)fluoranthene	ND	ug/L	0.10	1	12/31/16 11:49	01/09/17 18:40	207-08-9	
Chrysene	ND	ug/L	0.10	1	12/31/16 11:49	01/09/17 18:40	218-01-9	
Dibenz(a,h)anthracene	ND	ug/L	0.10	1	12/31/16 11:49	01/09/17 18:40	53-70-3	
Fluoranthene	ND	ug/L	0.10	1	12/31/16 11:49	01/09/17 18:40	206-44-0	
Fluorene	ND	ug/L	0.10	1	12/31/16 11:49	01/09/17 18:40	86-73-7	
Indeno(1,2,3-cd)pyrene	ND	ug/L	0.10	1	12/31/16 11:49	01/09/17 18:40	193-39-5	
2-Methylnaphthalene	ND	ug/L	0.10	1	12/31/16 11:49	01/09/17 18:40	91-57-6	
Naphthalene	ND	ug/L	0.10	1	12/31/16 11:49	01/09/17 18:40	91-20-3	
Phenanthrene	ND	ug/L	0.10	1	12/31/16 11:49	01/09/17 18:40	85-01-8	
Pyrene	ND	ug/L	0.10	1	12/31/16 11:49	01/09/17 18:40	129-00-0	
Surrogates								
2-Fluorobiphenyl (S)	74	%	25-150	1	12/31/16 11:49	01/09/17 18:40	321-60-8	
Terphenyl-d14 (S)	69	%	25-150	1	12/31/16 11:49	01/09/17 18:40	1718-51-0	
8260 MSV Low Level								
Analytical Method: EPA 5030B/8260								
Acetone	6.5	ug/L	4.0	1		12/29/16 17:26	67-64-1	C9
Benzene	ND	ug/L	0.50	1		12/29/16 17:26	71-43-2	
Bromodichloromethane	ND	ug/L	0.50	1		12/29/16 17:26	75-27-4	
Bromoform	ND	ug/L	0.50	1		12/29/16 17:26	75-25-2	
Bromomethane	ND	ug/L	0.50	1		12/29/16 17:26	74-83-9	L3
2-Butanone (MEK)	ND	ug/L	2.0	1		12/29/16 17:26	78-93-3	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: PUMA TERMINAL MW SAMPLING

Pace Project No.: 2047967

Sample: DUP003	Lab ID: 2047967016	Collected: 12/28/16 00:00	Received: 12/28/16 15:50	Matrix: Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV Low Level		Analytical Method: EPA 5030B/8260						
Carbon disulfide	ND	ug/L	1.0	1		12/29/16 17:26	75-15-0	
Carbon tetrachloride	ND	ug/L	0.50	1		12/29/16 17:26	56-23-5	
Chlorobenzene	ND	ug/L	0.50	1		12/29/16 17:26	108-90-7	
Chloroethane	ND	ug/L	0.50	1		12/29/16 17:26	75-00-3	
Chloroform	ND	ug/L	0.50	1		12/29/16 17:26	67-66-3	
Chloromethane	ND	ug/L	0.50	1		12/29/16 17:26	74-87-3	
1,2-Dibromo-3-chloropropane	ND	ug/L	0.20	1		12/29/16 17:26	96-12-8	
Dibromochloromethane	ND	ug/L	0.50	1		12/29/16 17:26	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	1		12/29/16 17:26	106-93-4	
Dichlorodifluoromethane	ND	ug/L	1.0	1		12/29/16 17:26	75-71-8	
1,1-Dichloroethane	ND	ug/L	0.50	1		12/29/16 17:26	75-34-3	
1,2-Dichloroethane	ND	ug/L	0.50	1		12/29/16 17:26	107-06-2	
1,1-Dichloroethene	ND	ug/L	0.50	1		12/29/16 17:26	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	1		12/29/16 17:26	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	0.50	1		12/29/16 17:26	156-60-5	
1,2-Dichloropropane	ND	ug/L	0.50	1		12/29/16 17:26	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	0.50	1		12/29/16 17:26	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	0.50	1		12/29/16 17:26	10061-02-6	
Ethylbenzene	ND	ug/L	0.50	1		12/29/16 17:26	100-41-4	
2-Hexanone	ND	ug/L	1.0	1		12/29/16 17:26	591-78-6	
Isopropylbenzene (Cumene)	ND	ug/L	1.0	1		12/29/16 17:26	98-82-8	
Methyl acetate	ND	ug/L	2.0	1		12/29/16 17:26	79-20-9	
Methylene Chloride	ND	ug/L	0.50	1		12/29/16 17:26	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	1.0	1		12/29/16 17:26	108-10-1	
Methyl-tert-butyl ether	ND	ug/L	0.50	1		12/29/16 17:26	1634-04-4	
Styrene	ND	ug/L	1.0	1		12/29/16 17:26	100-42-5	
1,1,2,2-Tetrachloroethane	ND	ug/L	0.50	1		12/29/16 17:26	79-34-5	
Tetrachloroethene	ND	ug/L	0.50	1		12/29/16 17:26	127-18-4	
Toluene	ND	ug/L	0.50	1		12/29/16 17:26	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	0.50	1		12/29/16 17:26	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	0.50	1		12/29/16 17:26	79-00-5	
Trichloroethene	ND	ug/L	0.50	1		12/29/16 17:26	79-01-6	
Trichlorofluoromethane	ND	ug/L	0.50	1		12/29/16 17:26	75-69-4	
Vinyl chloride	ND	ug/L	0.50	1		12/29/16 17:26	75-01-4	
m&p-Xylene	ND	ug/L	2.0	1		12/29/16 17:26	179601-23-1	
o-Xylene	ND	ug/L	1.0	1		12/29/16 17:26	95-47-6	
Surrogates								
Dibromofluoromethane (S)	92	%	72-126	1		12/29/16 17:26	1868-53-7	
4-Bromofluorobenzene (S)	93	%	68-124	1		12/29/16 17:26	460-00-4	
Toluene-d8 (S)	105	%	79-119	1		12/29/16 17:26	2037-26-5	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: PUMA TERMINAL MW SAMPLING

Project No.: 2047967

Sample: WWTP-2	Lab ID: 2047967017	Collected: 12/28/16 13:33	Received: 12/28/16 15:50	Matrix: Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8015M DRO/ORO Organics								
Analytical Method: EPA 8015B Modified Preparation Method: EPA 3535								
Diesel Range Organic (C10-C28)	ND	mg/L	0.50	1	12/30/16 10:38	01/11/17 18:51		
Oil Range Organics (>C28-C40)	ND	mg/L	1.0	1	12/30/16 10:38	01/11/17 18:51		
Surrogates								
n-Pentacosane (S)	56	%	16-137	1	12/30/16 10:38	01/11/17 18:51	629-99-2	
o-Terphenyl (S)	56	%	10-121	1	12/30/16 10:38	01/11/17 18:51	84-15-1	
8021 GCV BTEX, MTBE, GRO								
Analytical Method: EPA 8015/8021								
Gasoline Range Organics	ND	ug/L	50.0	1		01/05/17 01:31		
Surrogates								
4-Bromofluorobenzene (S)	91	%	44-148	1		01/05/17 01:31	460-00-4	
6020 MET ICPMS								
Analytical Method: EPA 6020 Preparation Method: EPA 3010								
Arsenic	ND	mg/L	0.0010	1	12/30/16 16:10	01/06/17 13:35	7440-38-2	
Chromium	ND	mg/L	0.0010	1	12/30/16 16:10	01/06/17 13:35	7440-47-3	
Lead	ND	mg/L	0.0010	1	12/30/16 16:10	01/06/17 13:35	7439-92-1	
Vanadium	ND	mg/L	0.0050	1	12/30/16 16:10	01/06/17 13:35	7440-62-2	
6020 MET ICPMS, Dissolved (LF)								
Analytical Method: EPA 6020 Preparation Method: EPA 3005A								
Arsenic, Dissolved	ND	ug/L	1.0	1	12/30/16 18:15	01/06/17 15:21	7440-38-2	
Chromium, Dissolved	ND	ug/L	1.0	1	12/30/16 18:15	01/06/17 15:21	7440-47-3	
Lead, Dissolved	ND	ug/L	1.0	1	12/30/16 18:15	01/06/17 15:21	7439-92-1	
Vanadium, Dissolved	ND	ug/L	5.0	1	12/30/16 18:15	01/06/17 15:21	7440-62-2	
7470 Mercury								
Analytical Method: EPA 7470 Preparation Method: EPA 7470								
Mercury	ND	ug/L	0.20	1	12/30/16 17:49	01/03/17 11:58	7439-97-6	
7470 Mercury, Dissolved (LF)								
Analytical Method: EPA 7470 Preparation Method: EPA 7470								
Mercury, Dissolved	ND	ug/L	0.20	1	12/30/16 17:49	01/03/17 12:43	7439-97-6	
8270 MSSV PAH by SIM SEP								
Analytical Method: EPA 8270 by SIM Preparation Method: EPA 3510								
Acenaphthene	ND	ug/L	0.10	1	12/31/16 11:49	01/09/17 19:00	83-32-9	
Acenaphthylene	ND	ug/L	0.10	1	12/31/16 11:49	01/09/17 19:00	208-96-8	
Anthracene	ND	ug/L	0.10	1	12/31/16 11:49	01/09/17 19:00	120-12-7	
Benzo(a)anthracene	ND	ug/L	0.10	1	12/31/16 11:49	01/09/17 19:00	56-55-3	
Benzo(a)pyrene	ND	ug/L	0.10	1	12/31/16 11:49	01/09/17 19:00	50-32-8	
Benzo(b)fluoranthene	ND	ug/L	0.10	1	12/31/16 11:49	01/09/17 19:00	205-99-2	
Benzo(g,h,i)perylene	ND	ug/L	0.10	1	12/31/16 11:49	01/09/17 19:00	191-24-2	
Benzo(k)fluoranthene	ND	ug/L	0.10	1	12/31/16 11:49	01/09/17 19:00	207-08-9	
Chrysene	ND	ug/L	0.10	1	12/31/16 11:49	01/09/17 19:00	218-01-9	
Dibenz(a,h)anthracene	ND	ug/L	0.10	1	12/31/16 11:49	01/09/17 19:00	53-70-3	
Fluoranthene	ND	ug/L	0.10	1	12/31/16 11:49	01/09/17 19:00	206-44-0	
Fluorene	ND	ug/L	0.10	1	12/31/16 11:49	01/09/17 19:00	86-73-7	
Indeno(1,2,3-cd)pyrene	ND	ug/L	0.10	1	12/31/16 11:49	01/09/17 19:00	193-39-5	
2-Methylnaphthalene	ND	ug/L	0.10	1	12/31/16 11:49	01/09/17 19:00	91-57-6	
Naphthalene	ND	ug/L	0.10	1	12/31/16 11:49	01/09/17 19:00	91-20-3	
Phenanthrene	ND	ug/L	0.10	1	12/31/16 11:49	01/09/17 19:00	85-01-8	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: PUMA TERMINAL MW SAMPLING

Pace Project No.: 2047967

Sample: WWTP-2	Lab ID: 2047967017	Collected: 12/28/16 13:33	Received: 12/28/16 15:50	Matrix: Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8270 MSSV PAH by SIM SEP		Analytical Method: EPA 8270 by SIM Preparation Method: EPA 3510						
Pyrene	ND	ug/L	0.10	1	12/31/16 11:49	01/09/17 19:00	129-00-0	
Surrogates								
2-Fluorobiphenyl (S)	84	%.	25-150	1	12/31/16 11:49	01/09/17 19:00	321-60-8	
Terphenyl-d14 (S)	78	%.	25-150	1	12/31/16 11:49	01/09/17 19:00	1718-51-0	
8260 MSV Low Level		Analytical Method: EPA 5030B/8260						
Acetone	18.0	ug/L	4.0	1		12/29/16 17:44	67-64-1	C9
Benzene	ND	ug/L	0.50	1		12/29/16 17:44	71-43-2	
Bromodichloromethane	ND	ug/L	0.50	1		12/29/16 17:44	75-27-4	
Bromoform	ND	ug/L	0.50	1		12/29/16 17:44	75-25-2	
Bromomethane	ND	ug/L	0.50	1		12/29/16 17:44	74-83-9	L3
2-Butanone (MEK)	ND	ug/L	2.0	1		12/29/16 17:44	78-93-3	
Carbon disulfide	ND	ug/L	1.0	1		12/29/16 17:44	75-15-0	
Carbon tetrachloride	ND	ug/L	0.50	1		12/29/16 17:44	56-23-5	
Chlorobenzene	ND	ug/L	0.50	1		12/29/16 17:44	108-90-7	
Chloroethane	ND	ug/L	0.50	1		12/29/16 17:44	75-00-3	
Chloroform	ND	ug/L	0.50	1		12/29/16 17:44	67-66-3	
Chloromethane	ND	ug/L	0.50	1		12/29/16 17:44	74-87-3	
1,2-Dibromo-3-chloropropane	ND	ug/L	0.20	1		12/29/16 17:44	96-12-8	
Dibromochloromethane	ND	ug/L	0.50	1		12/29/16 17:44	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	1		12/29/16 17:44	106-93-4	
Dichlorodifluoromethane	ND	ug/L	1.0	1		12/29/16 17:44	75-71-8	
1,1-Dichloroethane	ND	ug/L	0.50	1		12/29/16 17:44	75-34-3	
1,2-Dichloroethane	ND	ug/L	0.50	1		12/29/16 17:44	107-06-2	
1,1-Dichloroethene	ND	ug/L	0.50	1		12/29/16 17:44	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	1		12/29/16 17:44	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	0.50	1		12/29/16 17:44	156-60-5	
1,2-Dichloropropane	ND	ug/L	0.50	1		12/29/16 17:44	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	0.50	1		12/29/16 17:44	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	0.50	1		12/29/16 17:44	10061-02-6	
Ethylbenzene	ND	ug/L	0.50	1		12/29/16 17:44	100-41-4	
2-Hexanone	ND	ug/L	1.0	1		12/29/16 17:44	591-78-6	
Isopropylbenzene (Cumene)	ND	ug/L	1.0	1		12/29/16 17:44	98-82-8	
Methyl acetate	ND	ug/L	2.0	1		12/29/16 17:44	79-20-9	
Methylene Chloride	ND	ug/L	0.50	1		12/29/16 17:44	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	1.0	1		12/29/16 17:44	108-10-1	
Methyl-tert-butyl ether	ND	ug/L	0.50	1		12/29/16 17:44	1634-04-4	
Styrene	ND	ug/L	1.0	1		12/29/16 17:44	100-42-5	
1,1,2,2-Tetrachloroethane	ND	ug/L	0.50	1		12/29/16 17:44	79-34-5	
Tetrachloroethene	ND	ug/L	0.50	1		12/29/16 17:44	127-18-4	
Toluene	ND	ug/L	0.50	1		12/29/16 17:44	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	0.50	1		12/29/16 17:44	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	0.50	1		12/29/16 17:44	79-00-5	
Trichloroethene	ND	ug/L	0.50	1		12/29/16 17:44	79-01-6	
Trichlorofluoromethane	ND	ug/L	0.50	1		12/29/16 17:44	75-69-4	
Vinyl chloride	ND	ug/L	0.50	1		12/29/16 17:44	75-01-4	
m&p-Xylene	ND	ug/L	2.0	1		12/29/16 17:44	179601-23-1	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: PUMA TERMINAL MW SAMPLING
Pace Project No.: 2047967

Sample: WWTP-2		Lab ID: 2047967017		Collected: 12/28/16 13:33		Received: 12/28/16 15:50		Matrix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual	
8260 MSV Low Level		Analytical Method: EPA 5030B/8260							
o-Xylene	ND	ug/L	1.0	1		12/29/16 17:44	95-47-6		
Surrogates									
Dibromofluoromethane (S)	92	%.	72-126	1		12/29/16 17:44	1868-53-7		
4-Bromofluorobenzene (S)	92	%.	68-124	1		12/29/16 17:44	460-00-4		
Toluene-d8 (S)	105	%.	79-119	1		12/29/16 17:44	2037-26-5		
Sample: EB-101		Lab ID: 2047967018		Collected: 12/28/16 14:16		Received: 12/28/16 15:50		Matrix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual	
8015M DRO/ORO Organics		Analytical Method: EPA 8015B Modified Preparation Method: EPA 3535							
Diesel Range Organic (C10-C28)	ND	mg/L	0.50	1	12/30/16 10:38	01/11/17 19:19			
Oil Range Organics (>C28-C40)	ND	mg/L	1.0	1	12/30/16 10:38	01/11/17 19:19			
Surrogates									
n-Pentacosane (S)	37	%.	16-137	1	12/30/16 10:38	01/11/17 19:19	629-99-2		
o-Terphenyl (S)	37	%.	10-121	1	12/30/16 10:38	01/11/17 19:19	84-15-1		
8021 GCV BTEX, MTBE, GRO		Analytical Method: EPA 8015/8021							
Gasoline Range Organics	ND	ug/L	50.0	1		01/05/17 01:57			
Surrogates									
4-Bromofluorobenzene (S)	91	%.	44-148	1		01/05/17 01:57	460-00-4		
6020 MET ICPMS		Analytical Method: EPA 6020 Preparation Method: EPA 3010							
Arsenic	0.0013	mg/L	0.0010	1	12/30/16 16:10	01/06/17 13:39	7440-38-2		
Chromium	0.0053	mg/L	0.0010	1	12/30/16 16:10	01/06/17 13:39	7440-47-3		
Lead	ND	mg/L	0.0010	1	12/30/16 16:10	01/06/17 13:39	7439-92-1		
Vanadium	ND	mg/L	0.0050	1	12/30/16 16:10	01/06/17 13:39	7440-62-2		
6020 MET ICPMS, Dissolved (LF)		Analytical Method: EPA 6020 Preparation Method: EPA 3005A							
Arsenic, Dissolved	ND	ug/L	1.0	1	12/30/16 18:15	01/06/17 15:25	7440-38-2		
Chromium, Dissolved	ND	ug/L	1.0	1	12/30/16 18:15	01/06/17 15:25	7440-47-3		
Lead, Dissolved	ND	ug/L	1.0	1	12/30/16 18:15	01/06/17 15:25	7439-92-1		
Vanadium, Dissolved	ND	ug/L	5.0	1	12/30/16 18:15	01/06/17 15:25	7440-62-2		
7470 Mercury		Analytical Method: EPA 7470 Preparation Method: EPA 7470							
Mercury	ND	ug/L	0.20	1	12/30/16 17:49	01/03/17 12:00	7439-97-6		
7470 Mercury, Dissolved (LF)		Analytical Method: EPA 7470 Preparation Method: EPA 7470							
Mercury, Dissolved	ND	ug/L	0.20	1	12/30/16 17:49	01/03/17 12:46	7439-97-6		
8270 MSSV PAH by SIM SEP		Analytical Method: EPA 8270 by SIM Preparation Method: EPA 3510							
Acenaphthene	1.4	ug/L	0.10	1	12/31/16 11:49	01/09/17 19:20	83-32-9		
Acenaphthylene	0.24	ug/L	0.10	1	12/31/16 11:49	01/09/17 19:20	208-96-8		
Anthracene	0.13	ug/L	0.10	1	12/31/16 11:49	01/09/17 19:20	120-12-7		
Benzo(a)anthracene	ND	ug/L	0.10	1	12/31/16 11:49	01/09/17 19:20	56-55-3		

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ANALYTICAL RESULTS

Project: PUMA TERMINAL MW SAMPLING

Pace Project No.: 2047967

Sample: EB-101	Lab ID: 2047967018	Collected: 12/28/16 14:16	Received: 12/28/16 15:50	Matrix: Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8270 MSSV PAH by SIM SEP		Analytical Method: EPA 8270 by SIM Preparation Method: EPA 3510						
Benzo(a)pyrene	ND	ug/L	0.10	1	12/31/16 11:49	01/09/17 19:20	50-32-8	
Benzo(b)fluoranthene	ND	ug/L	0.10	1	12/31/16 11:49	01/09/17 19:20	205-99-2	
Benzo(g,h,i)perylene	ND	ug/L	0.10	1	12/31/16 11:49	01/09/17 19:20	191-24-2	
Benzo(k)fluoranthene	ND	ug/L	0.10	1	12/31/16 11:49	01/09/17 19:20	207-08-9	
Chrysene	ND	ug/L	0.10	1	12/31/16 11:49	01/09/17 19:20	218-01-9	
Dibenz(a,h)anthracene	ND	ug/L	0.10	1	12/31/16 11:49	01/09/17 19:20	53-70-3	
Fluoranthene	ND	ug/L	0.10	1	12/31/16 11:49	01/09/17 19:20	206-44-0	
Fluorene	ND	ug/L	0.10	1	12/31/16 11:49	01/09/17 19:20	86-73-7	
Indeno(1,2,3-cd)pyrene	ND	ug/L	0.10	1	12/31/16 11:49	01/09/17 19:20	193-39-5	
2-Methylnaphthalene	ND	ug/L	0.10	1	12/31/16 11:49	01/09/17 19:20	91-57-6	
Naphthalene	0.70	ug/L	0.10	1	12/31/16 11:49	01/09/17 19:20	91-20-3	
Phenanthrene	0.43	ug/L	0.10	1	12/31/16 11:49	01/09/17 19:20	85-01-8	
Pyrene	ND	ug/L	0.10	1	12/31/16 11:49	01/09/17 19:20	129-00-0	
Surrogates								
2-Fluorobiphenyl (S)	87	%.	25-150	1	12/31/16 11:49	01/09/17 19:20	321-60-8	
Terphenyl-d14 (S)	82	%.	25-150	1	12/31/16 11:49	01/09/17 19:20	1718-51-0	
8260 MSV Low Level		Analytical Method: EPA 5030B/8260						
Acetone	25.2	ug/L	4.0	1		12/29/16 18:02	67-64-1	C9
Benzene	ND	ug/L	0.50	1		12/29/16 18:02	71-43-2	
Bromodichloromethane	ND	ug/L	0.50	1		12/29/16 18:02	75-27-4	
Bromoform	ND	ug/L	0.50	1		12/29/16 18:02	75-25-2	
Bromomethane	ND	ug/L	0.50	1		12/29/16 18:02	74-83-9	L3
2-Butanone (MEK)	ND	ug/L	2.0	1		12/29/16 18:02	78-93-3	
Carbon disulfide	ND	ug/L	1.0	1		12/29/16 18:02	75-15-0	
Carbon tetrachloride	ND	ug/L	0.50	1		12/29/16 18:02	56-23-5	
Chlorobenzene	ND	ug/L	0.50	1		12/29/16 18:02	108-90-7	
Chloroethane	ND	ug/L	0.50	1		12/29/16 18:02	75-00-3	
Chloroform	ND	ug/L	0.50	1		12/29/16 18:02	67-66-3	
Chloromethane	ND	ug/L	0.50	1		12/29/16 18:02	74-87-3	
1,2-Dibromo-3-chloropropane	ND	ug/L	0.20	1		12/29/16 18:02	96-12-8	
Dibromochloromethane	ND	ug/L	0.50	1		12/29/16 18:02	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	1		12/29/16 18:02	106-93-4	
Dichlorodifluoromethane	ND	ug/L	1.0	1		12/29/16 18:02	75-71-8	
1,1-Dichloroethane	ND	ug/L	0.50	1		12/29/16 18:02	75-34-3	
1,2-Dichloroethane	ND	ug/L	0.50	1		12/29/16 18:02	107-06-2	
1,1-Dichloroethene	ND	ug/L	0.50	1		12/29/16 18:02	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	1		12/29/16 18:02	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	0.50	1		12/29/16 18:02	156-60-5	
1,2-Dichloropropane	ND	ug/L	0.50	1		12/29/16 18:02	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	0.50	1		12/29/16 18:02	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	0.50	1		12/29/16 18:02	10061-02-6	
Ethylbenzene	ND	ug/L	0.50	1		12/29/16 18:02	100-41-4	
2-Hexanone	ND	ug/L	1.0	1		12/29/16 18:02	591-78-6	
Isopropylbenzene (Cumene)	ND	ug/L	1.0	1		12/29/16 18:02	98-82-8	
Methyl acetate	ND	ug/L	2.0	1		12/29/16 18:02	79-20-9	
Methylene Chloride	ND	ug/L	0.50	1		12/29/16 18:02	75-09-2	

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ANALYTICAL RESULTS

Project: PUMA TERMINAL MW SAMPLING

Pace Project No.: 2047967

Sample: EB-101		Lab ID: 2047967018		Collected: 12/28/16 14:16		Received: 12/28/16 15:50		Matrix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual	
8260 MSV Low Level		Analytical Method: EPA 5030B/8260							
4-Methyl-2-pentanone (MIBK)	ND	ug/L	1.0	1		12/29/16 18:02	108-10-1		
Methyl-tert-butyl ether	ND	ug/L	0.50	1		12/29/16 18:02	1634-04-4		
Styrene	ND	ug/L	1.0	1		12/29/16 18:02	100-42-5		
1,1,2,2-Tetrachloroethane	ND	ug/L	0.50	1		12/29/16 18:02	79-34-5		
Tetrachloroethene	ND	ug/L	0.50	1		12/29/16 18:02	127-18-4		
Toluene	ND	ug/L	0.50	1		12/29/16 18:02	108-88-3		
1,1,1-Trichloroethane	ND	ug/L	0.50	1		12/29/16 18:02	71-55-6		
1,1,2-Trichloroethane	ND	ug/L	0.50	1		12/29/16 18:02	79-00-5		
Trichloroethene	ND	ug/L	0.50	1		12/29/16 18:02	79-01-6		
Trichlorofluoromethane	ND	ug/L	0.50	1		12/29/16 18:02	75-69-4		
Vinyl chloride	ND	ug/L	0.50	1		12/29/16 18:02	75-01-4		
m&p-Xylene	ND	ug/L	2.0	1		12/29/16 18:02	179601-23-1		
o-Xylene	ND	ug/L	1.0	1		12/29/16 18:02	95-47-6		
Surrogates									
Dibromofluoromethane (S)	92	%.	72-126	1		12/29/16 18:02	1868-53-7		
4-Bromofluorobenzene (S)	93	%.	68-124	1		12/29/16 18:02	460-00-4		
Toluene-d8 (S)	105	%.	79-119	1		12/29/16 18:02	2037-26-5		

Sample: EB-102		Lab ID: 2047967019		Collected: 12/28/16 14:59		Received: 12/28/16 15:50		Matrix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual	
8015M DRO/ORO Organics		Analytical Method: EPA 8015B Modified Preparation Method: EPA 3535							
Diesel Range Organic (C10-C28)	ND	mg/L	0.50	1	12/30/16 10:38	01/11/17 19:47			
Oil Range Organics (>C28-C40)	ND	mg/L	1.0	1	12/30/16 10:38	01/11/17 19:47			
Surrogates									
n-Pentacosane (S)	62	%.	16-137	1	12/30/16 10:38	01/11/17 19:47	629-99-2		
o-Terphenyl (S)	65	%.	10-121	1	12/30/16 10:38	01/11/17 19:47	84-15-1		
8021 GCV BTEX, MTBE, GRO		Analytical Method: EPA 8015/8021							
Gasoline Range Organics	ND	ug/L	50.0	1		01/05/17 02:23			
Surrogates									
4-Bromofluorobenzene (S)	88	%.	44-148	1		01/05/17 02:23	460-00-4		
6020 MET ICPMS		Analytical Method: EPA 6020 Preparation Method: EPA 3010							
Arsenic	ND	mg/L	0.0010	1	12/30/16 16:10	01/06/17 13:43	7440-38-2		
Chromium	0.0025	mg/L	0.0010	1	12/30/16 16:10	01/06/17 13:43	7440-47-3		
Lead	ND	mg/L	0.0010	1	12/30/16 16:10	01/06/17 13:43	7439-92-1		
Vanadium	ND	mg/L	0.0050	1	12/30/16 16:10	01/06/17 13:43	7440-62-2		
6020 MET ICPMS, Dissolved (LF)		Analytical Method: EPA 6020 Preparation Method: EPA 3005A							
Arsenic, Dissolved	ND	ug/L	1.0	1	12/30/16 18:15	01/06/17 15:29	7440-38-2		
Chromium, Dissolved	1.3	ug/L	1.0	1	12/30/16 18:15	01/06/17 15:29	7440-47-3		
Lead, Dissolved	ND	ug/L	1.0	1	12/30/16 18:15	01/06/17 15:29	7439-92-1		
Vanadium, Dissolved	ND	ug/L	5.0	1	12/30/16 18:15	01/06/17 15:29	7440-62-2		

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ANALYTICAL RESULTS

Project: PUMA TERMINAL MW SAMPLING

Pace Project No.: 2047967

Sample: EB-102	Lab ID: 2047967019	Collected: 12/28/16 14:59	Received: 12/28/16 15:50	Matrix: Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
7470 Mercury Analytical Method: EPA 7470 Preparation Method: EPA 7470								
Mercury	0.34	ug/L	0.20	1	12/30/16 17:49	01/03/17 12:02	7439-97-6	
7470 Mercury, Dissolved (LF) Analytical Method: EPA 7470 Preparation Method: EPA 7470								
Mercury, Dissolved	ND	ug/L	0.20	1	12/30/16 17:49	01/03/17 12:48	7439-97-6	
8270 MSSV PAH by SIM SEP Analytical Method: EPA 8270 by SIM Preparation Method: EPA 3510								
Acenaphthene	ND	ug/L	0.10	1	12/31/16 11:49	01/09/17 19:40	83-32-9	
Acenaphthylene	ND	ug/L	0.10	1	12/31/16 11:49	01/09/17 19:40	208-96-8	
Anthracene	ND	ug/L	0.10	1	12/31/16 11:49	01/09/17 19:40	120-12-7	
Benzo(a)anthracene	ND	ug/L	0.10	1	12/31/16 11:49	01/09/17 19:40	56-55-3	
Benzo(a)pyrene	ND	ug/L	0.10	1	12/31/16 11:49	01/09/17 19:40	50-32-8	
Benzo(b)fluoranthene	ND	ug/L	0.10	1	12/31/16 11:49	01/09/17 19:40	205-99-2	
Benzo(g,h,i)perylene	ND	ug/L	0.10	1	12/31/16 11:49	01/09/17 19:40	191-24-2	
Benzo(k)fluoranthene	ND	ug/L	0.10	1	12/31/16 11:49	01/09/17 19:40	207-08-9	
Chrysene	ND	ug/L	0.10	1	12/31/16 11:49	01/09/17 19:40	218-01-9	
Dibenz(a,h)anthracene	ND	ug/L	0.10	1	12/31/16 11:49	01/09/17 19:40	53-70-3	
Fluoranthene	ND	ug/L	0.10	1	12/31/16 11:49	01/09/17 19:40	206-44-0	
Fluorene	ND	ug/L	0.10	1	12/31/16 11:49	01/09/17 19:40	86-73-7	
Indeno(1,2,3-cd)pyrene	ND	ug/L	0.10	1	12/31/16 11:49	01/09/17 19:40	193-39-5	
2-Methylnaphthalene	ND	ug/L	0.10	1	12/31/16 11:49	01/09/17 19:40	91-57-6	
Naphthalene	ND	ug/L	0.10	1	12/31/16 11:49	01/09/17 19:40	91-20-3	
Phenanthrene	ND	ug/L	0.10	1	12/31/16 11:49	01/09/17 19:40	85-01-8	
Pyrene	ND	ug/L	0.10	1	12/31/16 11:49	01/09/17 19:40	129-00-0	
Surrogates								
2-Fluorobiphenyl (S)	77	%	25-150	1	12/31/16 11:49	01/09/17 19:40	321-60-8	
Terphenyl-d14 (S)	72	%	25-150	1	12/31/16 11:49	01/09/17 19:40	1718-51-0	
8260 MSV Low Level Analytical Method: EPA 5030B/8260								
Acetone	8.8	ug/L	4.0	1		12/29/16 18:38	67-64-1	C9
Benzene	ND	ug/L	0.50	1		12/29/16 18:38	71-43-2	
Bromodichloromethane	ND	ug/L	0.50	1		12/29/16 18:38	75-27-4	
Bromoform	ND	ug/L	0.50	1		12/29/16 18:38	75-25-2	
Bromomethane	ND	ug/L	0.50	1		12/29/16 18:38	74-83-9	L3
2-Butanone (MEK)	ND	ug/L	2.0	1		12/29/16 18:38	78-93-3	
Carbon disulfide	ND	ug/L	1.0	1		12/29/16 18:38	75-15-0	
Carbon tetrachloride	ND	ug/L	0.50	1		12/29/16 18:38	56-23-5	
Chlorobenzene	ND	ug/L	0.50	1		12/29/16 18:38	108-90-7	
Chloroethane	ND	ug/L	0.50	1		12/29/16 18:38	75-00-3	
Chloroform	ND	ug/L	0.50	1		12/29/16 18:38	67-66-3	
Chloromethane	ND	ug/L	0.50	1		12/29/16 18:38	74-87-3	
1,2-Dibromo-3-chloropropane	0.35	ug/L	0.20	1		12/29/16 18:38	96-12-8	
Dibromochloromethane	ND	ug/L	0.50	1		12/29/16 18:38	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	1		12/29/16 18:38	106-93-4	
Dichlorodifluoromethane	ND	ug/L	1.0	1		12/29/16 18:38	75-71-8	
1,1-Dichloroethane	ND	ug/L	0.50	1		12/29/16 18:38	75-34-3	
1,2-Dichloroethane	ND	ug/L	0.50	1		12/29/16 18:38	107-06-2	

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ANALYTICAL RESULTS

Project: PUMA TERMINAL MW SAMPLING
Pace Project No.: 2047967

Sample: EB-102	Lab ID: 2047967019	Collected: 12/28/16 14:59	Received: 12/28/16 15:50	Matrix: Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV Low Level		Analytical Method: EPA 5030B/8260						
1,1-Dichloroethene	ND	ug/L	0.50	1		12/29/16 18:38	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	1		12/29/16 18:38	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	0.50	1		12/29/16 18:38	156-60-5	
1,2-Dichloropropane	ND	ug/L	0.50	1		12/29/16 18:38	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	0.50	1		12/29/16 18:38	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	0.50	1		12/29/16 18:38	10061-02-6	
Ethylbenzene	ND	ug/L	0.50	1		12/29/16 18:38	100-41-4	
2-Hexanone	ND	ug/L	1.0	1		12/29/16 18:38	591-78-6	
Isopropylbenzene (Cumene)	ND	ug/L	1.0	1		12/29/16 18:38	98-82-8	
Methyl acetate	ND	ug/L	2.0	1		12/29/16 18:38	79-20-9	
Methylene Chloride	ND	ug/L	0.50	1		12/29/16 18:38	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	1.0	1		12/29/16 18:38	108-10-1	
Methyl-tert-butyl ether	1.8	ug/L	0.50	1		12/29/16 18:38	1634-04-4	
Styrene	ND	ug/L	1.0	1		12/29/16 18:38	100-42-5	
1,1,2,2-Tetrachloroethane	ND	ug/L	0.50	1		12/29/16 18:38	79-34-5	
Tetrachloroethene	ND	ug/L	0.50	1		12/29/16 18:38	127-18-4	
Toluene	ND	ug/L	0.50	1		12/29/16 18:38	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	0.50	1		12/29/16 18:38	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	0.50	1		12/29/16 18:38	79-00-5	
Trichloroethene	ND	ug/L	0.50	1		12/29/16 18:38	79-01-6	
Trichlorofluoromethane	ND	ug/L	0.50	1		12/29/16 18:38	75-69-4	
Vinyl chloride	ND	ug/L	0.50	1		12/29/16 18:38	75-01-4	
m&p-Xylene	ND	ug/L	2.0	1		12/29/16 18:38	179601-23-1	
o-Xylene	ND	ug/L	1.0	1		12/29/16 18:38	95-47-6	
Surrogates								
Dibromofluoromethane (S)	93	%	72-126	1		12/29/16 18:38	1868-53-7	
4-Bromofluorobenzene (S)	93	%	68-124	1		12/29/16 18:38	460-00-4	
Toluene-d8 (S)	104	%	79-119	1		12/29/16 18:38	2037-26-5	

Sample: FB-122816	Lab ID: 2047967021	Collected: 12/28/16 15:05	Received: 12/28/16 15:50	Matrix: Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8021 GCV BTEX, MTBE, GRO		Analytical Method: EPA 8015/8021						
Gasoline Range Organics	ND	ug/L	50.0	1		01/05/17 02:50		
Surrogates								
4-Bromofluorobenzene (S)	90	%	44-148	1		01/05/17 02:50	460-00-4	
8260 MSV Low Level		Analytical Method: EPA 5030B/8260						
Acetone	14.9	ug/L	4.0	1		12/29/16 18:56	67-64-1	C9
Benzene	ND	ug/L	0.50	1		12/29/16 18:56	71-43-2	
Bromodichloromethane	ND	ug/L	0.50	1		12/29/16 18:56	75-27-4	
Bromoform	ND	ug/L	0.50	1		12/29/16 18:56	75-25-2	
Bromomethane	ND	ug/L	0.50	1		12/29/16 18:56	74-83-9	L3
2-Butanone (MEK)	ND	ug/L	2.0	1		12/29/16 18:56	78-93-3	
Carbon disulfide	ND	ug/L	1.0	1		12/29/16 18:56	75-15-0	

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ANALYTICAL RESULTS

Project: PUMA TERMINAL MW SAMPLING

Pace Project No.: 2047967

Sample: FB-122816	Lab ID: 2047967021	Collected: 12/28/16 15:05	Received: 12/28/16 15:50	Matrix: Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV Low Level		Analytical Method: EPA 5030B/8260						
Carbon tetrachloride	ND	ug/L	0.50	1		12/29/16 18:56	56-23-5	
Chlorobenzene	ND	ug/L	0.50	1		12/29/16 18:56	108-90-7	
Chloroethane	ND	ug/L	0.50	1		12/29/16 18:56	75-00-3	
Chloroform	ND	ug/L	0.50	1		12/29/16 18:56	67-66-3	
Chloromethane	ND	ug/L	0.50	1		12/29/16 18:56	74-87-3	
1,2-Dibromo-3-chloropropane	ND	ug/L	0.20	1		12/29/16 18:56	96-12-8	
Dibromochloromethane	ND	ug/L	0.50	1		12/29/16 18:56	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	1		12/29/16 18:56	106-93-4	
Dichlorodifluoromethane	ND	ug/L	1.0	1		12/29/16 18:56	75-71-8	
1,1-Dichloroethane	ND	ug/L	0.50	1		12/29/16 18:56	75-34-3	
1,2-Dichloroethane	ND	ug/L	0.50	1		12/29/16 18:56	107-06-2	
1,1-Dichloroethene	ND	ug/L	0.50	1		12/29/16 18:56	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	1		12/29/16 18:56	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	0.50	1		12/29/16 18:56	156-60-5	
1,2-Dichloropropane	ND	ug/L	0.50	1		12/29/16 18:56	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	0.50	1		12/29/16 18:56	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	0.50	1		12/29/16 18:56	10061-02-6	
Ethylbenzene	ND	ug/L	0.50	1		12/29/16 18:56	100-41-4	
2-Hexanone	ND	ug/L	1.0	1		12/29/16 18:56	591-78-6	
Isopropylbenzene (Cumene)	ND	ug/L	1.0	1		12/29/16 18:56	98-82-8	
Methyl acetate	ND	ug/L	2.0	1		12/29/16 18:56	79-20-9	
Methylene Chloride	ND	ug/L	0.50	1		12/29/16 18:56	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	1.0	1		12/29/16 18:56	108-10-1	
Methyl-tert-butyl ether	ND	ug/L	0.50	1		12/29/16 18:56	1634-04-4	
Styrene	ND	ug/L	1.0	1		12/29/16 18:56	100-42-5	
1,1,2,2-Tetrachloroethane	ND	ug/L	0.50	1		12/29/16 18:56	79-34-5	
Tetrachloroethene	ND	ug/L	0.50	1		12/29/16 18:56	127-18-4	
Toluene	ND	ug/L	0.50	1		12/29/16 18:56	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	0.50	1		12/29/16 18:56	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	0.50	1		12/29/16 18:56	79-00-5	
Trichloroethene	ND	ug/L	0.50	1		12/29/16 18:56	79-01-6	
Trichlorofluoromethane	ND	ug/L	0.50	1		12/29/16 18:56	75-69-4	
Vinyl chloride	ND	ug/L	0.50	1		12/29/16 18:56	75-01-4	
m&p-Xylene	ND	ug/L	2.0	1		12/29/16 18:56	179601-23-1	
o-Xylene	ND	ug/L	1.0	1		12/29/16 18:56	95-47-6	
Surrogates								
Dibromofluoromethane (S)	91	%.	72-126	1		12/29/16 18:56	1868-53-7	
4-Bromofluorobenzene (S)	93	%.	68-124	1		12/29/16 18:56	460-00-4	
Toluene-d8 (S)	104	%.	79-119	1		12/29/16 18:56	2037-26-5	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: PUMA TERMINAL MW SAMPLING
Pace Project No.: 2047967

QC Batch: 71376 Analysis Method: EPA 8015/8021
QC Batch Method: EPA 8015/8021 Analysis Description: 8021 W GCV BTEX , MTBE, GRO
Associated Lab Samples: 2047967001, 2047967002, 2047967003, 2047967004, 2047967005, 2047967006, 2047967007, 2047967008, 2047967009, 2047967010, 2047967011, 2047967012, 2047967013, 2047967014, 2047967015, 2047967016, 2047967017, 2047967018, 2047967019, 2047967021

METHOD BLANK: 298562 Matrix: Water
Associated Lab Samples: 2047967001, 2047967002, 2047967003, 2047967004, 2047967005, 2047967006, 2047967007, 2047967008, 2047967009, 2047967010, 2047967011, 2047967012, 2047967013, 2047967014, 2047967015, 2047967016, 2047967017, 2047967018, 2047967019, 2047967021

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Gasoline Range Organics	ug/L	ND	50.0	01/04/17 15:54	
4-Bromofluorobenzene (S)	%.	90	44-148	01/04/17 15:54	

METHOD BLANK: 298774 Matrix: Water
Associated Lab Samples: 2047967001, 2047967002, 2047967003, 2047967004, 2047967005, 2047967006, 2047967007, 2047967008, 2047967009, 2047967010, 2047967011, 2047967012, 2047967013, 2047967014, 2047967015, 2047967016, 2047967017, 2047967018, 2047967019, 2047967021

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Gasoline Range Organics	ug/L	ND	50.0	01/05/17 17:16	
4-Bromofluorobenzene (S)	%.	93	44-148	01/05/17 17:16	

LABORATORY CONTROL SAMPLE: 298563

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Gasoline Range Organics	ug/L	500	464	93	61-136	
4-Bromofluorobenzene (S)	%.			89	44-148	

LABORATORY CONTROL SAMPLE: 298775

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Gasoline Range Organics	ug/L	500	446	89	61-136	
4-Bromofluorobenzene (S)	%.			88	44-148	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 298776 298777

Parameter	Units	298776		298777		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result						
Gasoline Range Organics	ug/L	ND	500	515	502	98	95	15-147	2	20	
4-Bromofluorobenzene (S)	%.					93	92	44-148			

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QUALITY CONTROL DATA

Project: PUMA TERMINAL MW SAMPLING

Pace Project No.: 2047967

QC Batch: 71211

Analysis Method: EPA 7470

QC Batch Method: EPA 7470

Analysis Description: 7470 Mercury

Associated Lab Samples: 2047967002, 2047967003, 2047967004, 2047967005, 2047967006, 2047967007, 2047967008, 2047967009, 2047967012, 2047967013, 2047967014, 2047967015, 2047967016, 2047967017, 2047967018, 2047967019

METHOD BLANK: 297862

Matrix: Water

Associated Lab Samples: 2047967002, 2047967003, 2047967004, 2047967005, 2047967006, 2047967007, 2047967008, 2047967009, 2047967012, 2047967013, 2047967014, 2047967015, 2047967016, 2047967017, 2047967018, 2047967019

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Mercury	ug/L	ND	0.20	01/03/17 11:19	

LABORATORY CONTROL SAMPLE: 297863

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury	ug/L	1	1.0	103	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 297864 297865

Parameter	Units	2047967002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Mercury	ug/L	ND	1	1	1.0	1.0	104	103	75-125	1	20	

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QUALITY CONTROL DATA

Project: PUMA TERMINAL MW SAMPLING

Pace Project No.: 2047967

QC Batch: 71229 Analysis Method: EPA 7470
 QC Batch Method: EPA 7470 Analysis Description: 7470 Mercury Dissolved
 Associated Lab Samples: 2047967002, 2047967003, 2047967004, 2047967005, 2047967006, 2047967007, 2047967008, 2047967009, 2047967012, 2047967013, 2047967014, 2047967015, 2047967016, 2047967017, 2047967018, 2047967019

METHOD BLANK: 297980 Matrix: Water
 Associated Lab Samples: 2047967002, 2047967003, 2047967004, 2047967005, 2047967006, 2047967007, 2047967008, 2047967009, 2047967012, 2047967013, 2047967014, 2047967015, 2047967016, 2047967017, 2047967018, 2047967019

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Mercury, Dissolved	ug/L	ND	0.20	01/03/17 12:08	

LABORATORY CONTROL SAMPLE: 297981

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury, Dissolved	ug/L	1	1.1	106	80-120	

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QUALITY CONTROL DATA

Project: PUMA TERMINAL MW SAMPLING

Pace Project No.: 2047967

QC Batch:	71212	Analysis Method:	EPA 6020
QC Batch Method:	EPA 3010	Analysis Description:	6020 MET
Associated Lab Samples:	2047967002, 2047967003, 2047967004, 2047967005, 2047967006, 2047967007, 2047967008, 2047967009, 2047967012, 2047967013, 2047967014, 2047967015, 2047967016, 2047967017, 2047967018, 2047967019		

METHOD BLANK:	297866	Matrix:	Water
Associated Lab Samples:	2047967002, 2047967003, 2047967004, 2047967005, 2047967006, 2047967007, 2047967008, 2047967009, 2047967012, 2047967013, 2047967014, 2047967015, 2047967016, 2047967017, 2047967018, 2047967019		

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Arsenic	mg/L	ND	0.0010	01/06/17 10:19	
Chromium	mg/L	ND	0.0010	01/06/17 10:19	
Lead	mg/L	ND	0.0010	01/06/17 10:19	
Vanadium	mg/L	ND	0.0050	01/06/17 10:19	

LABORATORY CONTROL SAMPLE: 297867

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Arsenic	mg/L	.02	0.020	100	83-115	
Chromium	mg/L	.02	0.020	99	85-115	
Lead	mg/L	.02	0.019	96	84-115	
Vanadium	mg/L	.02	0.019	97	81-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 297868 297869

Parameter	Units	297868		297869		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		2047967004 Result	MS Spike Conc.	MSD Spike Conc.	MS Result						
Arsenic	mg/L	ND	.02	.02	0.018	0.019	88	91	80-120	3	20
Chromium	mg/L	0.024	.02	.02	0.042	0.044	91	100	80-120	4	20
Lead	mg/L	ND	.02	.02	0.020	0.021	100	103	80-120	3	20
Vanadium	mg/L	ND	.02	.02	0.020	0.021	95	100	80-120	5	20

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QUALITY CONTROL DATA

Project: PUMA TERMINAL MW SAMPLING
Pace Project No.: 2047967

QC Batch: 71231 Analysis Method: EPA 6020
QC Batch Method: EPA 3005A Analysis Description: 6020 MET Dissolved
Associated Lab Samples: 2047967002, 2047967003, 2047967004, 2047967005, 2047967006, 2047967007, 2047967008, 2047967009, 2047967012, 2047967013, 2047967014, 2047967015, 2047967016, 2047967017, 2047967018, 2047967019

METHOD BLANK: 297988 Matrix: Water
Associated Lab Samples: 2047967002, 2047967003, 2047967004, 2047967005, 2047967006, 2047967007, 2047967008, 2047967009, 2047967012, 2047967013, 2047967014, 2047967015, 2047967016, 2047967017, 2047967018, 2047967019

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Arsenic, Dissolved	ug/L	ND	1.0	01/06/17 10:26	
Chromium, Dissolved	ug/L	ND	1.0	01/06/17 10:26	
Lead, Dissolved	ug/L	ND	1.0	01/06/17 10:26	
Vanadium, Dissolved	ug/L	ND	5.0	01/06/17 10:26	

LABORATORY CONTROL SAMPLE: 297989

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Arsenic, Dissolved	ug/L	20	19.8	99	80-120	
Chromium, Dissolved	ug/L	20	19.7	98	80-120	
Lead, Dissolved	ug/L	20	19.0	95	80-120	
Vanadium, Dissolved	ug/L	20	19.5	97	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 299026 299027

Parameter	Units	2047967002		299027		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		Result	MS Spike Conc.	MSD Spike Conc.	MS Result						
Arsenic, Dissolved	ug/L	ND	20	20	19.2	19.1	96	95	75-125	1	20
Chromium, Dissolved	ug/L	ND	20	20	19.2	19.2	95	96	75-125	0	20
Lead, Dissolved	ug/L	ND	20	20	18.8	18.9	94	95	75-125	1	20
Vanadium, Dissolved	ug/L	ND	20	20	20.6	20.8	92	93	75-125	1	20

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QUALITY CONTROL DATA

Project: PUMA TERMINAL MW SAMPLING

Pace Project No.: 2047967

QC Batch: 71181 Analysis Method: EPA 5030B/8260
 QC Batch Method: EPA 5030B/8260 Analysis Description: 8260 MSV Low Level
 Associated Lab Samples: 2047967001, 2047967002, 2047967003, 2047967004, 2047967005, 2047967006, 2047967007, 2047967008,
 2047967009, 2047967010, 2047967011, 2047967012, 2047967013, 2047967014, 2047967015, 2047967016,
 2047967017, 2047967018, 2047967019, 2047967021

METHOD BLANK: 297710 Matrix: Water

Associated Lab Samples: 2047967001, 2047967002, 2047967003, 2047967004, 2047967005, 2047967006, 2047967007, 2047967008,
 2047967009, 2047967010, 2047967011, 2047967012, 2047967013, 2047967014, 2047967015, 2047967016,
 2047967017, 2047967018, 2047967019, 2047967021

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
1,1,1-Trichloroethane	ug/L	ND	0.50	12/29/16 12:56	
1,1,2,2-Tetrachloroethane	ug/L	ND	0.50	12/29/16 12:56	
1,1,2-Trichloroethane	ug/L	ND	0.50	12/29/16 12:56	
1,1-Dichloroethane	ug/L	ND	0.50	12/29/16 12:56	
1,1-Dichloroethene	ug/L	ND	0.50	12/29/16 12:56	
1,2-Dibromo-3-chloropropane	ug/L	ND	0.20	12/29/16 12:56	
1,2-Dibromoethane (EDB)	ug/L	ND	1.0	12/29/16 12:56	
1,2-Dichloroethane	ug/L	ND	0.50	12/29/16 12:56	
1,2-Dichloropropane	ug/L	ND	0.50	12/29/16 12:56	
2-Butanone (MEK)	ug/L	ND	2.0	12/29/16 12:56	
2-Hexanone	ug/L	ND	1.0	12/29/16 12:56	
4-Methyl-2-pentanone (MIBK)	ug/L	ND	1.0	12/29/16 12:56	
Acetone	ug/L	ND	4.0	12/29/16 12:56	
Benzene	ug/L	ND	0.50	12/29/16 12:56	
Bromodichloromethane	ug/L	ND	0.50	12/29/16 12:56	
Bromoform	ug/L	ND	0.50	12/29/16 12:56	
Bromomethane	ug/L	ND	0.50	12/29/16 12:56	
Carbon disulfide	ug/L	ND	1.0	12/29/16 12:56	
Carbon tetrachloride	ug/L	ND	0.50	12/29/16 12:56	
Chlorobenzene	ug/L	ND	0.50	12/29/16 12:56	
Chloroethane	ug/L	ND	0.50	12/29/16 12:56	
Chloroform	ug/L	ND	0.50	12/29/16 12:56	
Chloromethane	ug/L	ND	0.50	12/29/16 12:56	
cis-1,2-Dichloroethene	ug/L	ND	1.0	12/29/16 12:56	
cis-1,3-Dichloropropene	ug/L	ND	0.50	12/29/16 12:56	
Dibromochloromethane	ug/L	ND	0.50	12/29/16 12:56	
Dichlorodifluoromethane	ug/L	ND	1.0	12/29/16 12:56	
Ethylbenzene	ug/L	ND	0.50	12/29/16 12:56	
Isopropylbenzene (Cumene)	ug/L	ND	1.0	12/29/16 12:56	
m&p-Xylene	ug/L	ND	2.0	12/29/16 12:56	
Methyl acetate	ug/L	ND	2.0	12/29/16 12:56	
Methyl-tert-butyl ether	ug/L	ND	0.50	12/29/16 12:56	
Methylene Chloride	ug/L	ND	0.50	12/29/16 12:56	
o-Xylene	ug/L	ND	1.0	12/29/16 12:56	
Styrene	ug/L	ND	1.0	12/29/16 12:56	
Tetrachloroethene	ug/L	ND	0.50	12/29/16 12:56	
Toluene	ug/L	ND	0.50	12/29/16 12:56	
trans-1,2-Dichloroethene	ug/L	ND	0.50	12/29/16 12:56	

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QUALITY CONTROL DATA

Project: PUMA TERMINAL MW SAMPLING

Pace Project No.: 2047967

METHOD BLANK: 297710

Matrix: Water

Associated Lab Samples: 2047967001, 2047967002, 2047967003, 2047967004, 2047967005, 2047967006, 2047967007, 2047967008, 2047967009, 2047967010, 2047967011, 2047967012, 2047967013, 2047967014, 2047967015, 2047967016, 2047967017, 2047967018, 2047967019, 2047967021

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
trans-1,3-Dichloropropene	ug/L	ND	0.50	12/29/16 12:56	
Trichloroethene	ug/L	ND	0.50	12/29/16 12:56	
Trichlorofluoromethane	ug/L	ND	0.50	12/29/16 12:56	
Vinyl chloride	ug/L	ND	0.50	12/29/16 12:56	
4-Bromofluorobenzene (S)	%	93	68-124	12/29/16 12:56	
Dibromofluoromethane (S)	%	91	72-126	12/29/16 12:56	
Toluene-d8 (S)	%	103	79-119	12/29/16 12:56	

LABORATORY CONTROL SAMPLE: 297711

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,1,1-Trichloroethane	ug/L	50	47.0	94	62-131	
1,1,2,2-Tetrachloroethane	ug/L	50	45.0	90	15-179	
1,1,2-Trichloroethane	ug/L	50	44.1	88	58-144	
1,1-Dichloroethane	ug/L	50	39.4	79	63-129	
1,1-Dichloroethene	ug/L	50	41.7	83	51-139	
1,2-Dibromo-3-chloropropane	ug/L	50	43.4	87	21-160	
1,2-Dibromoethane (EDB)	ug/L	50	47.6	95	52-161	
1,2-Dichloroethane	ug/L	50	40.6	81	57-148	
1,2-Dichloropropane	ug/L	50	43.0	86	66-128	
2-Butanone (MEK)	ug/L	50	42.9	86	32-183	
2-Hexanone	ug/L	50	46.5	93	36-170	
4-Methyl-2-pentanone (MIBK)	ug/L	50	46.6	93	26-171	
Acetone	ug/L	50	47.3	95	22-165	
Benzene	ug/L	50	41.9	84	62-131	
Bromodichloromethane	ug/L	50	45.7	91	69-132	
Bromoform	ug/L	50	44.0	88	35-166	
Bromomethane	ug/L	50	83.6	167	34-158	L0
Carbon disulfide	ug/L	50	49.8	100	31-128	
Carbon tetrachloride	ug/L	50	45.1	90	54-144	
Chlorobenzene	ug/L	50	49.7	99	70-127	
Chloroethane	ug/L	50	61.7	123	17-195	
Chloroform	ug/L	50	40.1	80	73-134	
Chloromethane	ug/L	50	28.5	57	17-153	
cis-1,2-Dichloroethene	ug/L	50	42.2	84	68-129	
cis-1,3-Dichloropropene	ug/L	50	47.3	95	72-138	
Dibromochloromethane	ug/L	50	44.6	89	49-146	
Dichlorodifluoromethane	ug/L	50	44.1	88	10-179	
Ethylbenzene	ug/L	50	46.4	93	66-126	
Isopropylbenzene (Cumene)	ug/L	50	45.7	91	51-138	
m&p-Xylene	ug/L	100	98.1	98	65-129	
Methyl acetate	ug/L	50	45.6	91	20-142	

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QUALITY CONTROL DATA

Project: PUMA TERMINAL MW SAMPLING

Pace Project No.: 2047967

LABORATORY CONTROL SAMPLE: 297711

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Methyl-tert-butyl ether	ug/L	50	46.2	92	37-166	
Methylene Chloride	ug/L	50	43.4	87	46-168	
o-Xylene	ug/L	50	47.1	94	65-124	
Styrene	ug/L	50	50.7	101	72-133	
Tetrachloroethene	ug/L	50	47.0	94	46-157	
Toluene	ug/L	50	47.3	95	69-126	
trans-1,2-Dichloroethene	ug/L	50	42.0	84	60-129	
trans-1,3-Dichloropropene	ug/L	50	46.9	94	59-149	
Trichloroethene	ug/L	50	51.2	102	67-132	
Trichlorofluoromethane	ug/L	50	69.6	139	39-171	
Vinyl chloride	ug/L	50	37.1	74	27-149	
4-Bromofluorobenzene (S)	%			90	68-124	
Dibromofluoromethane (S)	%			93	72-126	
Toluene-d8 (S)	%			103	79-119	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 297712 297713

Parameter	Units	MS		MSD		MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		2047967003 Result	Spike Conc.	Spike Conc.	Result								
1,1,1-Trichloroethane	ug/L	ND	50	50	51.9	50.7	104	101	54-137	2	20		
1,1,2,2-Tetrachloroethane	ug/L	ND	50	50	48.6	47.4	97	95	15-187	2	20		
1,1,2-Trichloroethane	ug/L	ND	50	50	47.8	45.3	96	91	59-148	5	20		
1,1-Dichloroethane	ug/L	ND	50	50	43.5	41.7	87	83	59-133	4	20		
1,1-Dichloroethene	ug/L	ND	50	50	46.0	42.9	92	86	44-146	7	20		
1,2-Dibromo-3-chloropropane	ug/L	ND	50	50	46.0	45.3	92	91	23-166	2	20		
1,2-Dibromoethane (EDB)	ug/L	ND	50	50	50.3	48.9	101	98	55-166	3	20		
1,2-Dichloroethane	ug/L	ND	50	50	43.7	42.2	87	84	56-154	3	20		
1,2-Dichloropropane	ug/L	ND	50	50	46.9	45.2	94	90	62-135	4	20		
2-Butanone (MEK)	ug/L	ND	50	50	45.6	43.4	91	87	20-205	5	20		
2-Hexanone	ug/L	ND	50	50	48.1	47.1	96	94	25-189	2	20		
4-Methyl-2-pentanone (MIBK)	ug/L	ND	50	50	48.6	47.9	97	96	23-184	1	20		
Acetone	ug/L	28.2	50	50	65.3	63.7	74	71	11-217	3	20		
Benzene	ug/L	ND	50	50	45.4	43.9	91	88	52-141	3	20		
Bromodichloromethane	ug/L	ND	50	50	49.2	48.0	98	96	70-134	3	20		
Bromoform	ug/L	ND	50	50	47.3	46.0	95	92	37-171	3	20		
Bromomethane	ug/L	ND	50	50	86.6	86.9	173	174	34-155	0	20	M0	
Carbon disulfide	ug/L	ND	50	50	58.0	53.3	116	107	28-130	8	20		
Carbon tetrachloride	ug/L	ND	50	50	50.5	48.1	101	96	48-146	5	20		
Chlorobenzene	ug/L	ND	50	50	52.4	50.6	105	101	67-129	4	20		
Chloroethane	ug/L	ND	50	50	70.8	65.0	142	130	12-192	8	20		
Chloroform	ug/L	ND	50	50	43.5	41.9	87	84	66-143	4	20		
Chloromethane	ug/L	ND	50	50	33.2	32.4	66	64	14-155	3	20		
cis-1,2-Dichloroethene	ug/L	ND	50	50	45.6	43.5	91	87	56-141	5	20		
cis-1,3-Dichloropropene	ug/L	ND	50	50	50.4	48.7	101	97	70-139	3	20		

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: PUMA TERMINAL MW SAMPLING

Pace Project No.: 2047967

Parameter	Units	2047967003		297712		297713		% Rec	% Rec	Limits	RPD	Max RPD	Qual
		Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec						
Dibromochloromethane	ug/L	ND	50	50	47.7	46.2	95	92	50-150	3	20		
Dichlorodifluoromethane	ug/L	ND	50	50	50.7	50.3	101	101	10-173	1	20		
Ethylbenzene	ug/L	ND	50	50	48.1	46.2	96	92	57-135	4	20		
Isopropylbenzene (Cumene)	ug/L	ND	50	50	49.7	48.4	99	97	40-146	3	20		
m&p-Xylene	ug/L	ND	100	100	104	99.3	104	99	56-136	4	20		
Methyl acetate	ug/L	ND	50	50	41.4	40.0	83	80	10-142	3	20		
Methyl-tert-butyl ether	ug/L	ND	50	50	49.2	48.7	98	97	35-176	1	20		
Methylene Chloride	ug/L	ND	50	50	45.4	44.7	91	89	45-166	2	20		
o-Xylene	ug/L	ND	50	50	49.1	47.4	98	95	57-133	4	20		
Styrene	ug/L	ND	50	50	52.8	50.8	106	102	58-144	4	20		
Tetrachloroethene	ug/L	ND	50	50	48.8	46.7	98	93	48-143	4	20		
Toluene	ug/L	ND	50	50	51.5	49.5	103	99	59-136	4	20		
trans-1,2-Dichloroethene	ug/L	ND	50	50	46.9	44.6	94	89	57-132	5	20		
trans-1,3-Dichloropropene	ug/L	ND	50	50	49.6	48.3	99	97	59-154	3	20		
Trichloroethene	ug/L	ND	50	50	54.6	52.7	109	105	58-140	4	20		
Trichlorofluoromethane	ug/L	ND	50	50	80.5	79.0	161	158	24-175	2	20		
Vinyl chloride	ug/L	ND	50	50	42.7	40.6	85	81	21-150	5	20		
4-Bromofluorobenzene (S)	%						91	91	68-124				
Dibromofluoromethane (S)	%						94	94	72-126				
Toluene-d8 (S)	%						103	103	79-119				

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QUALITY CONTROL DATA

Project: PUMA TERMINAL MW SAMPLING

Pace Project No.: 2047967

QC Batch: 71180 Analysis Method: EPA 8015B Modified
 QC Batch Method: EPA 3535 Analysis Description: EPA 8015 ORO
 Associated Lab Samples: 2047967002, 2047967003, 2047967004, 2047967005, 2047967006, 2047967007, 2047967008, 2047967009,
 2047967012, 2047967013, 2047967014, 2047967015, 2047967016, 2047967017, 2047967018, 2047967019

METHOD BLANK: 297707 Matrix: Water
 Associated Lab Samples: 2047967002, 2047967003, 2047967004, 2047967005, 2047967006, 2047967007, 2047967008, 2047967009,
 2047967012, 2047967013, 2047967014, 2047967015, 2047967016, 2047967017, 2047967018, 2047967019

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Diesel Range Organic (C10-C28)	mg/L	ND	0.25	01/09/17 13:46	
Oil Range Organics (>C28-C40)	mg/L	ND	0.50	01/09/17 13:46	
n-Pentacosane (S)	%	42	16-137	01/09/17 13:46	
o-Terphenyl (S)	%	50	10-121	01/09/17 13:46	

LABORATORY CONTROL SAMPLE: 297708

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Diesel Range Organic (C10-C28)	mg/L	.4	ND	62	10-115	
n-Pentacosane (S)	%			61	16-137	
o-Terphenyl (S)	%			77	10-121	

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QUALITY CONTROL DATA

Project: PUMA TERMINAL MW SAMPLING

Pace Project No.: 2047967

QC Batch: 71190

Analysis Method: EPA 8270 by SIM

QC Batch Method: EPA 3510

Analysis Description: 8270 Water by SIM MSSV

Associated Lab Samples: 2047967002, 2047967003, 2047967004, 2047967005, 2047967006, 2047967007, 2047967008, 2047967009

METHOD BLANK: 297751

Matrix: Water

Associated Lab Samples: 2047967002, 2047967003, 2047967004, 2047967005, 2047967006, 2047967007, 2047967008, 2047967009

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
2-Methylnaphthalene	ug/L	ND	0.10	01/09/17 13:41	
Acenaphthene	ug/L	ND	0.10	01/09/17 13:41	
Acenaphthylene	ug/L	ND	0.10	01/09/17 13:41	
Anthracene	ug/L	ND	0.10	01/09/17 13:41	
Benzo(a)anthracene	ug/L	ND	0.10	01/09/17 13:41	
Benzo(a)pyrene	ug/L	ND	0.10	01/09/17 13:41	
Benzo(b)fluoranthene	ug/L	ND	0.10	01/09/17 13:41	
Benzo(g,h,i)perylene	ug/L	ND	0.10	01/09/17 13:41	
Benzo(k)fluoranthene	ug/L	ND	0.10	01/09/17 13:41	
Chrysene	ug/L	ND	0.10	01/09/17 13:41	
Dibenz(a,h)anthracene	ug/L	ND	0.10	01/09/17 13:41	
Fluoranthene	ug/L	ND	0.10	01/09/17 13:41	
Fluorene	ug/L	ND	0.10	01/09/17 13:41	
Indeno(1,2,3-cd)pyrene	ug/L	ND	0.10	01/09/17 13:41	
Naphthalene	ug/L	ND	0.10	01/09/17 13:41	
Phenanthrene	ug/L	ND	0.10	01/09/17 13:41	
Pyrene	ug/L	ND	0.10	01/09/17 13:41	
2-Fluorobiphenyl (S)	%	73	25-150	01/09/17 13:41	
Terphenyl-d14 (S)	%	75	25-150	01/09/17 13:41	

LABORATORY CONTROL SAMPLE: 297752

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
2-Methylnaphthalene	ug/L	4	2.7	67	35-150	
Acenaphthene	ug/L	4	2.8	70	35-150	
Acenaphthylene	ug/L	4	2.8	70	35-150	
Anthracene	ug/L	4	3.1	78	35-150	
Benzo(a)anthracene	ug/L	4	2.8	70	35-150	
Benzo(a)pyrene	ug/L	4	2.6	64	35-150	
Benzo(b)fluoranthene	ug/L	4	2.5	63	35-150	
Benzo(g,h,i)perylene	ug/L	4	3.0	76	35-150	
Benzo(k)fluoranthene	ug/L	4	2.6	65	35-150	
Chrysene	ug/L	4	2.7	66	35-150	
Dibenz(a,h)anthracene	ug/L	4	3.3	83	35-150	
Fluoranthene	ug/L	4	2.5	63	35-150	
Fluorene	ug/L	4	2.7	68	35-150	
Indeno(1,2,3-cd)pyrene	ug/L	4	3.2	79	35-150	
Naphthalene	ug/L	4	2.5	64	35-150	
Phenanthrene	ug/L	4	2.8	70	35-150	
Pyrene	ug/L	4	2.5	64	35-150	

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QUALITY CONTROL DATA

Project: PUMA TERMINAL MW SAMPLING

Pace Project No.: 2047967

LABORATORY CONTROL SAMPLE: 297752

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
2-Fluorobiphenyl (S)	%.			87	25-150	
Terphenyl-d14 (S)	%.			84	25-150	

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QUALITY CONTROL DATA

Project: PUMA TERMINAL MW SAMPLING

Pace Project No.: 2047967

QC Batch: 71254

Analysis Method: EPA 8270 by SIM

QC Batch Method: EPA 3510

Analysis Description: 8270 Water by SIM MSSV

Associated Lab Samples: 2047967012, 2047967013, 2047967014, 2047967015, 2047967016, 2047967017, 2047967018, 2047967019

METHOD BLANK: 298033

Matrix: Water

Associated Lab Samples: 2047967012, 2047967013, 2047967014, 2047967015, 2047967016, 2047967017, 2047967018, 2047967019

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
2-Methylnaphthalene	ug/L	ND	0.10	01/09/17 13:02	
Acenaphthene	ug/L	ND	0.10	01/09/17 13:02	
Acenaphthylene	ug/L	ND	0.10	01/09/17 13:02	
Anthracene	ug/L	ND	0.10	01/09/17 13:02	
Benzo(a)anthracene	ug/L	ND	0.10	01/09/17 13:02	
Benzo(a)pyrene	ug/L	ND	0.10	01/09/17 13:02	
Benzo(b)fluoranthene	ug/L	ND	0.10	01/09/17 13:02	
Benzo(g,h,i)perylene	ug/L	ND	0.10	01/09/17 13:02	
Benzo(k)fluoranthene	ug/L	ND	0.10	01/09/17 13:02	
Chrysene	ug/L	ND	0.10	01/09/17 13:02	
Dibenz(a,h)anthracene	ug/L	ND	0.10	01/09/17 13:02	
Fluoranthene	ug/L	ND	0.10	01/09/17 13:02	
Fluorene	ug/L	ND	0.10	01/09/17 13:02	
Indeno(1,2,3-cd)pyrene	ug/L	ND	0.10	01/09/17 13:02	
Naphthalene	ug/L	ND	0.10	01/09/17 13:02	
Phenanthrene	ug/L	ND	0.10	01/09/17 13:02	
Pyrene	ug/L	ND	0.10	01/09/17 13:02	
2-Fluorobiphenyl (S)	%	65	25-150	01/09/17 13:02	
Terphenyl-d14 (S)	%	77	25-150	01/09/17 13:02	

LABORATORY CONTROL SAMPLE: 298034

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
2-Methylnaphthalene	ug/L	4	2.7	67	35-150	
Acenaphthene	ug/L	4	2.8	70	35-150	
Acenaphthylene	ug/L	4	2.8	70	35-150	
Anthracene	ug/L	4	3.4	84	35-150	
Benzo(a)anthracene	ug/L	4	3.1	77	35-150	
Benzo(a)pyrene	ug/L	4	2.8	71	35-150	
Benzo(b)fluoranthene	ug/L	4	2.8	70	35-150	
Benzo(g,h,i)perylene	ug/L	4	3.3	81	35-150	
Benzo(k)fluoranthene	ug/L	4	2.8	71	35-150	
Chrysene	ug/L	4	2.8	70	35-150	
Dibenz(a,h)anthracene	ug/L	4	3.5	88	35-150	
Fluoranthene	ug/L	4	2.7	69	35-150	
Fluorene	ug/L	4	2.8	70	35-150	
Indeno(1,2,3-cd)pyrene	ug/L	4	3.4	85	35-150	
Naphthalene	ug/L	4	2.5	63	35-150	
Phenanthrene	ug/L	4	3.0	76	35-150	
Pyrene	ug/L	4	2.7	69	35-150	

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QUALITY CONTROL DATA

Project: PUMA TERMINAL MW SAMPLING

Pace Project No.: 2047967

LABORATORY CONTROL SAMPLE: 298034

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
2-Fluorobiphenyl (S)	%.			81	25-150	
Terphenyl-d14 (S)	%.			87	25-150	

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QUALIFIERS

Project: PUMA TERMINAL MW SAMPLING

Pace Project No.: 2047967

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The Nelac Institute

LABORATORIES

PASI-N Pace Analytical Services - New Orleans

BATCH QUALIFIERS

Batch: 71594

[M5] A matrix spike/matrix spike duplicate was not performed for this batch due to insufficient sample volume.

Batch: 71595

[M5] A matrix spike/matrix spike duplicate was not performed for this batch due to insufficient sample volume.

Batch: 71621

[M5] A matrix spike/matrix spike duplicate was not performed for this batch due to insufficient sample volume.

ANALYTE QUALIFIERS

C9 Common Laboratory Contaminant.

L0 Analyte recovery in the laboratory control sample (LCS) was outside QC limits.

L3 Analyte recovery in the laboratory control sample (LCS) exceeded QC limits. Analyte presence below reporting limits in associated samples.

M0 Matrix spike recovery and/or matrix spike duplicate recovery was outside laboratory control limits.

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: PUMA TERMINAL MW SAMPLING
Pace Project No.: 2047967

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
2047967002	EB-122716	EPA 3535	71180	EPA 8015B Modified	71621
2047967003	MW-18D	EPA 3535	71180	EPA 8015B Modified	71621
2047967004	MW-87A	EPA 3535	71180	EPA 8015B Modified	71621
2047967005	MW-91A	EPA 3535	71180	EPA 8015B Modified	71621
2047967006	MW-88A	EPA 3535	71180	EPA 8015B Modified	71621
2047967007	MW-99A	EPA 3535	71180	EPA 8015B Modified	71621
2047967008	MW-98A	EPA 3535	71180	EPA 8015B Modified	71621
2047967009	MW-30A	EPA 3535	71180	EPA 8015B Modified	71621
2047967012	EB-122816	EPA 3535	71180	EPA 8015B Modified	71621
2047967013	MW-16C	EPA 3535	71180	EPA 8015B Modified	71621
2047967014	WWTP-1	EPA 3535	71180	EPA 8015B Modified	71621
2047967015	MW-B1	EPA 3535	71180	EPA 8015B Modified	71621
2047967016	DUP003	EPA 3535	71180	EPA 8015B Modified	71621
2047967017	WWTP-2	EPA 3535	71180	EPA 8015B Modified	71621
2047967018	EB-101	EPA 3535	71180	EPA 8015B Modified	71621
2047967019	EB-102	EPA 3535	71180	EPA 8015B Modified	71621
2047967001	TB-122716	EPA 8015/8021	71376		
2047967002	EB-122716	EPA 8015/8021	71376		
2047967003	MW-18D	EPA 8015/8021	71376		
2047967004	MW-87A	EPA 8015/8021	71376		
2047967005	MW-91A	EPA 8015/8021	71376		
2047967006	MW-88A	EPA 8015/8021	71376		
2047967007	MW-99A	EPA 8015/8021	71376		
2047967008	MW-98A	EPA 8015/8021	71376		
2047967009	MW-30A	EPA 8015/8021	71376		
2047967010	FB-122716	EPA 8015/8021	71376		
2047967011	TB122816	EPA 8015/8021	71376		
2047967012	EB-122816	EPA 8015/8021	71376		
2047967013	MW-16C	EPA 8015/8021	71376		
2047967014	WWTP-1	EPA 8015/8021	71376		
2047967015	MW-B1	EPA 8015/8021	71376		
2047967016	DUP003	EPA 8015/8021	71376		
2047967017	WWTP-2	EPA 8015/8021	71376		
2047967018	EB-101	EPA 8015/8021	71376		
2047967019	EB-102	EPA 8015/8021	71376		
2047967021	FB-122816	EPA 8015/8021	71376		
2047967002	EB-122716	EPA 3010	71212	EPA 6020	71238
2047967003	MW-18D	EPA 3010	71212	EPA 6020	71238
2047967004	MW-87A	EPA 3010	71212	EPA 6020	71238
2047967005	MW-91A	EPA 3010	71212	EPA 6020	71238
2047967006	MW-88A	EPA 3010	71212	EPA 6020	71238
2047967007	MW-99A	EPA 3010	71212	EPA 6020	71238
2047967008	MW-98A	EPA 3010	71212	EPA 6020	71238
2047967009	MW-30A	EPA 3010	71212	EPA 6020	71238
2047967012	EB-122816	EPA 3010	71212	EPA 6020	71238
2047967013	MW-16C	EPA 3010	71212	EPA 6020	71238
2047967014	WWTP-1	EPA 3010	71212	EPA 6020	71238
2047967015	MW-B1	EPA 3010	71212	EPA 6020	71238

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: PUMA TERMINAL MW SAMPLING

Pace Project No.: 2047967

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
2047967016	DUP003	EPA 3010	71212	EPA 6020	71238
2047967017	WWTP-2	EPA 3010	71212	EPA 6020	71238
2047967018	EB-101	EPA 3010	71212	EPA 6020	71238
2047967019	EB-102	EPA 3010	71212	EPA 6020	71238
2047967002	EB-122716	EPA 3005A	71231	EPA 6020	71239
2047967003	MW-18D	EPA 3005A	71231	EPA 6020	71239
2047967004	MW-87A	EPA 3005A	71231	EPA 6020	71239
2047967005	MW-91A	EPA 3005A	71231	EPA 6020	71239
2047967006	MW-88A	EPA 3005A	71231	EPA 6020	71239
2047967007	MW-99A	EPA 3005A	71231	EPA 6020	71239
2047967008	MW-98A	EPA 3005A	71231	EPA 6020	71239
2047967009	MW-30A	EPA 3005A	71231	EPA 6020	71239
2047967012	EB-122816	EPA 3005A	71231	EPA 6020	71239
2047967013	MW-16C	EPA 3005A	71231	EPA 6020	71239
2047967014	WWTP-1	EPA 3005A	71231	EPA 6020	71239
2047967015	MW-B1	EPA 3005A	71231	EPA 6020	71239
2047967016	DUP003	EPA 3005A	71231	EPA 6020	71239
2047967017	WWTP-2	EPA 3005A	71231	EPA 6020	71239
2047967018	EB-101	EPA 3005A	71231	EPA 6020	71239
2047967019	EB-102	EPA 3005A	71231	EPA 6020	71239
2047967002	EB-122716	EPA 7470	71211	EPA 7470	71244
2047967003	MW-18D	EPA 7470	71211	EPA 7470	71244
2047967004	MW-87A	EPA 7470	71211	EPA 7470	71244
2047967005	MW-91A	EPA 7470	71211	EPA 7470	71244
2047967006	MW-88A	EPA 7470	71211	EPA 7470	71244
2047967007	MW-99A	EPA 7470	71211	EPA 7470	71244
2047967008	MW-98A	EPA 7470	71211	EPA 7470	71244
2047967009	MW-30A	EPA 7470	71211	EPA 7470	71244
2047967012	EB-122816	EPA 7470	71211	EPA 7470	71244
2047967013	MW-16C	EPA 7470	71211	EPA 7470	71244
2047967014	WWTP-1	EPA 7470	71211	EPA 7470	71244
2047967015	MW-B1	EPA 7470	71211	EPA 7470	71244
2047967016	DUP003	EPA 7470	71211	EPA 7470	71244
2047967017	WWTP-2	EPA 7470	71211	EPA 7470	71244
2047967018	EB-101	EPA 7470	71211	EPA 7470	71244
2047967019	EB-102	EPA 7470	71211	EPA 7470	71244
2047967002	EB-122716	EPA 7470	71229	EPA 7470	71242
2047967003	MW-18D	EPA 7470	71229	EPA 7470	71242
2047967004	MW-87A	EPA 7470	71229	EPA 7470	71242
2047967005	MW-91A	EPA 7470	71229	EPA 7470	71242
2047967006	MW-88A	EPA 7470	71229	EPA 7470	71242
2047967007	MW-99A	EPA 7470	71229	EPA 7470	71242
2047967008	MW-98A	EPA 7470	71229	EPA 7470	71242
2047967009	MW-30A	EPA 7470	71229	EPA 7470	71242
2047967012	EB-122816	EPA 7470	71229	EPA 7470	71242
2047967013	MW-16C	EPA 7470	71229	EPA 7470	71242
2047967014	WWTP-1	EPA 7470	71229	EPA 7470	71242

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: PUMA TERMINAL MW SAMPLING
Pace Project No.: 2047967

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
2047967015	MW-B1	EPA 7470	71229	EPA 7470	71242
2047967016	DUP003	EPA 7470	71229	EPA 7470	71242
2047967017	WWTP-2	EPA 7470	71229	EPA 7470	71242
2047967018	EB-101	EPA 7470	71229	EPA 7470	71242
2047967019	EB-102	EPA 7470	71229	EPA 7470	71242
2047967002	EB-122716	EPA 3510	71190	EPA 8270 by SIM	71594
2047967003	MW-18D	EPA 3510	71190	EPA 8270 by SIM	71594
2047967004	MW-87A	EPA 3510	71190	EPA 8270 by SIM	71594
2047967005	MW-91A	EPA 3510	71190	EPA 8270 by SIM	71594
2047967006	MW-88A	EPA 3510	71190	EPA 8270 by SIM	71594
2047967007	MW-99A	EPA 3510	71190	EPA 8270 by SIM	71594
2047967008	MW-98A	EPA 3510	71190	EPA 8270 by SIM	71594
2047967009	MW-30A	EPA 3510	71190	EPA 8270 by SIM	71594
2047967012	EB-122816	EPA 3510	71254	EPA 8270 by SIM	71595
2047967013	MW-16C	EPA 3510	71254	EPA 8270 by SIM	71595
2047967014	WWTP-1	EPA 3510	71254	EPA 8270 by SIM	71595
2047967015	MW-B1	EPA 3510	71254	EPA 8270 by SIM	71595
2047967016	DUP003	EPA 3510	71254	EPA 8270 by SIM	71595
2047967017	WWTP-2	EPA 3510	71254	EPA 8270 by SIM	71595
2047967018	EB-101	EPA 3510	71254	EPA 8270 by SIM	71595
2047967019	EB-102	EPA 3510	71254	EPA 8270 by SIM	71595
2047967001	TB-122716	EPA 5030B/8260	71181		
2047967002	EB-122716	EPA 5030B/8260	71181		
2047967003	MW-18D	EPA 5030B/8260	71181		
2047967004	MW-87A	EPA 5030B/8260	71181		
2047967005	MW-91A	EPA 5030B/8260	71181		
2047967006	MW-88A	EPA 5030B/8260	71181		
2047967007	MW-99A	EPA 5030B/8260	71181		
2047967008	MW-98A	EPA 5030B/8260	71181		
2047967009	MW-30A	EPA 5030B/8260	71181		
2047967010	FB-122716	EPA 5030B/8260	71181		
2047967011	TB122816	EPA 5030B/8260	71181		
2047967012	EB-122816	EPA 5030B/8260	71181		
2047967013	MW-16C	EPA 5030B/8260	71181		
2047967014	WWTP-1	EPA 5030B/8260	71181		
2047967015	MW-B1	EPA 5030B/8260	71181		
2047967016	DUP003	EPA 5030B/8260	71181		
2047967017	WWTP-2	EPA 5030B/8260	71181		
2047967018	EB-101	EPA 5030B/8260	71181		
2047967019	EB-102	EPA 5030B/8260	71181		
2047967021	FB-122816	EPA 5030B/8260	71181		

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CHAIN-OF-CUSTODY / Analy

The Chain-of-Custody is a LEGAL DOCUMENT. All r

WO# : 2047967



Section A

Required Client Information:

Section B

Required Project Information:

Section C

Invoice Information:

1 of 2

2075136

Company: Arcadis		Report To: E-Frain Calderon		Attention:		REGULATORY AGENCY <input type="checkbox"/> NPDES <input type="checkbox"/> GROUND WATER <input type="checkbox"/> DRINKING WATER <input type="checkbox"/> UST <input type="checkbox"/> RCRA <input type="checkbox"/> OTHER _____
Address: 45 City View Plaza Suite 401 RA 1555-12 Cranberry PA		Copy To:		Company Name:		
Email To: E-Frain.Calderon@arcadis-us.com		Purchase Order No.:		Address:		
Phone: 717-717-4000 Fax: 717-717-4000		Project Name: Lima Terminal WW Sampling		Pace Quote Reference:		Site Location STATE: PA
Requested Due Date/TAT: 9/10		Project Number: E02-1605B		Pace Project Manager: Juan Redondo		
				Pace Profile #:		

ITEM #	Section D Required Client Information	Matrix Codes MATRIX / CODE	Matrix Code (see valid codes to left)	Sample Type (G=GRAB C=COMP)	COLLECTED				Sample Temp at Collection	# of Containers	Preservatives								Analysis Test ↓ Y/N	Residual Chlorine (Y/N)	Pace Project No./ Lab I.D.
					COMPOSITE START		COMPOSITE END/GRAB				Unpreserved	H ₂ SO ₄	HNO ₃	HCl	NaOH	Na ₂ S ₂ O ₃	Methanol	Other			
					DATE	TIME	DATE	TIME													
1	TB-122716	WT G	WT G	G		12/28/16	LAB	4					X	X							
2	EB-122716	WT G	WT G	G		12/28/16	0934	10	5	1	4		X	X	X	X	X				
3	MW-18D	WT G	WT G	G		12/28/16	0934	10	5	1	4		X	X	X	X	X				
4	MW-87A	WT G	WT G	G		12/28/16	1029	10	5	1	4		X	X	X	X	X				
5	MW-91A	WT G	WT G	G		12/28/16	1118	10	5	1	4		X	X	X	X	X				
6	MW-88A	WT G	WT G	G		12/28/16	1253	10	5	1	4		X	X	X	X	X				
7	MW-99A	WT G	WT G	G		12/28/16	1346	10	5	1	4		X	X	X	X	X				
8	MW-98A	WT G	WT G	G		12/28/16	1503	10	5	1	4		X	X	X	X	X				
9	MW-80A	WT G	WT G	G		12/28/16	1553	10	5	1	4		X	X	X	X	X				
10	FB-122716	WT G	WT G	G		12/28/16	1553	4					X	X							
11	TB-122816	WT G	WT G	G		12/28/16	LAB	4					X	X							
12	EB-122816	WT G	WT G	G		12/28/16	0857	10	6	1	4		X	X	X	X	X				

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS			
Level 10	Andre Calderon / Arcadis	12/28/16	1550	Pablo Jimenez / Pace	12/28/16	1530	4.2	Y	W	Y
	Juan Redondo / Fed Exp	12/28/16	17:00	Juan Redondo / Pace	12/29/16	0830	6.0	Y	Y	Y

ORIGINAL

SAMPLER NAME AND SIGNATURE		Temp in °C 37	Received on ice (Y/N) Y	Custody Sealed Cooler (Y/N) Y	Samples Intact (Y/N) Y
PRINT Name of SAMPLER: Andre Calderon					
SIGNATURE of SAMPLER: [Signature]	DATE Signed (MM/DD/YY): 12/28/16				

*Important Note: By signing this form you are accepting Pace's NET 30 day payment terms and agreeing to late charges of 1.5% per month for any invoices not paid within 30 days.

CHAIN-OF-CUSTODY / Analytical Request Document

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.



Page: 2 of 3
2075137

Section A Required Client Information: Company: <u>Arada</u> Address: <u>43 City View Plaza Suite 401 Dallas TX 75245</u> Email To: <u>Erica.Calton@arada.com</u> Phone: <u>972-977-4000</u> Fax: <u>972-977-4000</u> Requested Due Date/TAT: <u>GTU</u>	Section B Required Project Information: Report To: <u>Erica Calton</u> Copy To: Purchase Order No.: Project Name: <u>Pan Terminal NW Sampling</u> Project Number: <u>E002.165.A</u>	Section C Invoice Information: Attention: Company Name: Address: Pace Quote Reference: Pace Project Manager: <u>Alan Betonda</u> Pace Profile #:	REGULATORY AGENCY <input type="checkbox"/> NPDES <input type="checkbox"/> GROUND WATER <input type="checkbox"/> DRINKING WATER <input type="checkbox"/> UST <input type="checkbox"/> RCRA <input type="checkbox"/> OTHER Site Location: <u>P.B.</u> STATE:
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ITEM #	SAMPLE ID (A-Z, 0-9 / -) Sample IDs MUST BE UNIQUE	Matrix Codes MATRIX / CODE Drinking Water DW Water WT Waste Water WW Product P Soil/Solid SL Oil OL Wipe WP Air AR Tissue TS Other OT	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED				SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives							Analysis: Test ↓	Residual Chlorine (Y/N)	Pace Project No. / Lab I.D.						
					DATE	TIME	DATE	TIME			Unpreserved	H ₂ SO ₄	HNO ₃	HCl	NaOH	Na ₂ S ₂ O ₃	Methanol				Other					
1	MW-166		WT G				12/23/16	0927	10	S			4						X	X	X	X	X	X		
2	W WTP-1		WT G				12/23/16	1017	10	S			4						X	X	X	X	X	X		
3	MV-B1		WT G				12/23/16	1113	10	S			4						X	X	X	X	X	X		
4	DWP003		WT G				12/23/16		10	S			4						X	X	X	X	X	X		
5	W WTP-2		WT G				12/23/16	1333	10	S			4						X	X	X	X	X	X		
6	EB-101		WT G				12/23/16	1416	10	S			4						X	X	X	X	X	X		
7	EB-102		WT G				12/23/16	1459	10	S			4						X	X	X	X	X	X		
8	FB-12316		WT G				12/23/16	1505	4				4						X	X						

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS			
Level II	Andy Colon / Arada	12/24/16	1550	Alan Betonda - Pace	12/24/16	1550	4.0	Y	Y	Y
		Andy Colon	12/28/16	7:00	Fed Exp		4.6			
		Fed Exp	12/29/16	0830	J. D. Price - Pace	12-29-16	0830	4.2	Y	Y
							6.0			

ORIGINAL	SAMPLER NAME AND SIGNATURE			Temp in °C	Received on Ice (Y/N)	Custody Sealed Cooler (Y/N)	Samples Intact (Y/N)
	PRINT Name of SAMPLER: <u>Andy Colon</u>						
	SIGNATURE of SAMPLER: <u>[Signature]</u>		DATE Signed (MM/DD/YY): <u>12/24/16</u>				

*Important Note: By signing this form you are accepting Pace's NET 30 day payment terms and agreeing to late charges of 1.5% per month for any invoices not paid within 30 days.



1000 Riverbend, Blvd., Suite F
St. Rose, LA 70087

Sample Condition Upon Receipt Project

WO#: 2047967

PM: JAR1

Due Date: 01/12/17

CLIENT: 98-ARCADISPR

Courier: Pace Courier Hired Courier Fed X UPS DHL USPS Customer Other

Custody Seal on Cooler/Box Present: [see COC]

Custody Seals intact: Yes No

Thermometer Used: Therm Fisher IR 5
 Therm Fisher IR 6
 Therm Fisher IR 7

Type of Ice: Wet Blue None

Samples on ice: [see COC]

Cooler Temperature: [see COC]

Temp should be above freezing to 6°C

Date and Initials of person examining contents: 12-29-16 JMB

Temp must be measured from Temperature blank when present

Comments:

Temperature Blank Present?"	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	1
Chain of Custody Present:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	2
Chain of Custody Complete:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	3
Chain of Custody Relinquished:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	4
Sampler Name & Signature on COC:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	5
Samples Arrived within Hold Time:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	6
Sufficient Volume:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	7
Correct Containers Used:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	8
Filtered vol. Rec. for Diss. tests	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	9
Sample Labels match COC:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	10
All containers received within manufacture's precautionary and/or expiration dates.	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	11
All containers needing chemical preservation have been checked (except VOA, coliform, & O&G).	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	12
All containers preservation checked found to be in compliance with EPA recommendation.	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	13
	If No, was preservative added? <input type="checkbox"/> Yes <input type="checkbox"/> No If added record lot no.: HNO3 _____ H2SO4 _____	
Headspace in VOA Vials (>6mm):	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	14
Trip Blank Present:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	15 TB-120816 4 vials to Dnm

Client Notification/ Resolution:

Person Contacted: _____

Date/Time: _____

Comments/ Resolution: _____

January 12, 2017

Efrain Calderon
BBL Caribe Engineering P.S.C.
48 City View Plaza1, Suite 401
Road 16, Km. 1.2
Guaynabo, PR 00968

RE: Project: PUMA TERMINAL MW SAMPLING
Pace Project No.: 2047806

Dear Efrain Calderon:

Enclosed are the analytical results for sample(s) received by the laboratory on December 22, 2016. The results relate only to the samples included in this report. Results reported herein conform to the most current, applicable TNI/NELAC standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,



Juan Redondo
juan.redondo@pacelabs.com
Project Manager

Enclosures

cc: Sharon Colon
Abner Hernandez
Marianela Mercado-Burgos



REPORT OF LABORATORY ANALYSIS

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CERTIFICATIONS

Project: PUMA TERMINAL MW SAMPLING

Pace Project No.: 2047806

New Orleans Certification IDs

California Env. Lab Accreditation Program Branch:
11277CA

Florida Department of Health (NELAC): E87595

Illinois Environmental Protection Agency: 0025721

Kansas Department of Health and Environment (NELAC):
E-10266

Louisiana Dept. of Environmental Quality (NELAC/LELAP):
02006

Pennsylvania Dept. of Env Protection (NELAC): 68-04202

Texas Commission on Env. Quality (NELAC):
T104704405-09-TX

U.S. Dept. of Agriculture Foreign Soil Import: P330-10-
00119

Commonwealth of Virginia (TNI): 480246

REPORT OF LABORATORY ANALYSIS

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SAMPLE SUMMARY

Project: PUMA TERMINAL MW SAMPLING
Pace Project No.: 2047806

Lab ID	Sample ID	Matrix	Date Collected	Date Received
2047806001	TB-122116	Water	12/21/16 00:00	12/22/16 13:15
2047806002	EB-122116	Water	12/21/16 09:17	12/22/16 13:15
2047806003	MW-83B2	Water	12/21/16 09:59	12/22/16 13:15
2047806004	MW-AD-4	Water	12/21/16 10:56	12/22/16 13:15
2047806005	MW-33A	Water	12/21/16 11:44	12/22/16 13:15
2047806006	MW-P116	Water	12/21/16 14:05	12/22/16 13:15
2047806007	MW-P117	Water	12/21/16 15:21	12/22/16 13:15
2047806008	MW-65A	Water	12/21/16 16:07	12/22/16 13:15
2047806009	FB-122116	Water	12/21/16 16:15	12/22/16 13:15
2047806010	TB-122216	Water	12/22/16 00:00	12/22/16 13:15
2047806011	EB-122216	Water	12/22/16 08:42	12/22/16 13:15
2047806012	MW-15A	Water	12/22/16 09:38	12/22/16 13:15
2047806013	MW-15B2	Water	12/22/16 10:23	12/22/16 13:15
2047806015	DUP002	Water	12/22/16 00:00	12/22/16 13:15
2047806016	MW-15B MS/MSD	Water	12/22/16 11:42	12/22/16 13:15
2047806017	FB-122216	Water	12/22/16 11:50	12/22/16 13:15

REPORT OF LABORATORY ANALYSIS

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SAMPLE ANALYTE COUNT

Project: PUMA TERMINAL MW SAMPLING

Pace Project No.: 2047806

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
2047806001	TB-122116	EPA 8015/8021	MHM	2	PASI-N
		EPA 5030B/8260	MLS	45	PASI-N
2047806002	EB-122116	EPA 8015B Modified	SLF	4	PASI-N
		EPA 8015/8021	MHM	2	PASI-N
		EPA 6020	KJR	4	PASI-N
		EPA 6020	KJR	4	PASI-N
		EPA 7470	MHB1	1	PASI-N
		EPA 7470	MHB1	1	PASI-N
		EPA 8270 by SIM	GEJ	19	PASI-N
2047806003	MW-83B2	EPA 5030B/8260	MLS	45	PASI-N
		EPA 8015B Modified	SLF	4	PASI-N
		EPA 8015/8021	MHM	2	PASI-N
		EPA 6020	KJR	4	PASI-N
		EPA 6020	KJR	4	PASI-N
		EPA 7470	MHB1	1	PASI-N
		EPA 7470	MHB1	1	PASI-N
2047806004	MW-AD-4	EPA 8270 by SIM	GEJ	19	PASI-N
		EPA 5030B/8260	MLS	45	PASI-N
		EPA 8015B Modified	SLF	4	PASI-N
		EPA 8015/8021	MHM	2	PASI-N
		EPA 6020	KJR	4	PASI-N
		EPA 6020	KJR	4	PASI-N
		EPA 7470	MHB1	1	PASI-N
2047806005	MW-33A	EPA 7470	MHB1	1	PASI-N
		EPA 7470	MHB1	1	PASI-N
		EPA 8270 by SIM	GEJ	19	PASI-N
		EPA 5030B/8260	MLS	45	PASI-N
		EPA 8015B Modified	SLF	4	PASI-N
		EPA 8015/8021	MHM	2	PASI-N
		EPA 6020	KJR	4	PASI-N
2047806006	MW-P116	EPA 6020	KJR	4	PASI-N
		EPA 6020	KJR	4	PASI-N
		EPA 7470	MHB1	1	PASI-N
		EPA 7470	MHB1	1	PASI-N
		EPA 8270 by SIM	GEJ	19	PASI-N
		EPA 5030B/8260	MLS	45	PASI-N
		EPA 8015B Modified	SLF	4	PASI-N
2047806006	MW-P116	EPA 8015/8021	MHM	2	PASI-N
		EPA 6020	KJR	4	PASI-N

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SAMPLE ANALYTE COUNT

Project: PUMA TERMINAL MW SAMPLING

Pace Project No.: 2047806

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory		
2047806007	MW-P117	EPA 6020	KJR	4	PASI-N		
		EPA 7470	MHB1	1	PASI-N		
		EPA 7470	MHB1	1	PASI-N		
		EPA 8270 by SIM	GEJ	19	PASI-N		
		EPA 5030B/8260	MLS	45	PASI-N		
		EPA 8015B Modified	SLF	4	PASI-N		
		EPA 8015/8021	MHM	2	PASI-N		
		EPA 6020	KJR	4	PASI-N		
		EPA 6020	KJR	4	PASI-N		
		EPA 7470	MHB1	1	PASI-N		
		EPA 7470	MHB1	1	PASI-N		
		2047806008	MW-65A	EPA 8270 by SIM	GEJ	19	PASI-N
EPA 5030B/8260	MLS			45	PASI-N		
EPA 8015B Modified	SLF			4	PASI-N		
EPA 8015/8021	MHM			2	PASI-N		
EPA 6020	KJR			4	PASI-N		
EPA 6020	KJR			4	PASI-N		
EPA 7470	MHB1			1	PASI-N		
EPA 7470	MHB1			1	PASI-N		
EPA 8270 by SIM	GEJ			19	PASI-N		
EPA 5030B/8260	MLS			45	PASI-N		
2047806009	FB-122116			EPA 8015/8021	MHM	2	PASI-N
				EPA 5030B/8260	MLS	45	PASI-N
		EPA 8015/8021	MHM	2	PASI-N		
2047806010	TB-122216	EPA 5030B/8260	MLS	45	PASI-N		
2047806011	EB-122216	EPA 8015/8021	MHM	2	PASI-N		
		EPA 5030B/8260	MLS	45	PASI-N		
		EPA 8015B Modified	SLF	4	PASI-N		
		EPA 8015/8021	MHM	2	PASI-N		
		EPA 6020	KJR	4	PASI-N		
		EPA 6020	KJR	4	PASI-N		
		EPA 7470	MHB1	1	PASI-N		
		EPA 7470	MHB1	1	PASI-N		
		EPA 8270 by SIM	GEJ	19	PASI-N		
		EPA 5030B/8260	MLS	45	PASI-N		
		2047806012	MW-15A	EPA 8015B Modified	SLF	4	PASI-N
				EPA 8015/8021	MHM	2	PASI-N
EPA 6020	KJR			4	PASI-N		
EPA 6020	KJR			4	PASI-N		

REPORT OF LABORATORY ANALYSIS

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SAMPLE ANALYTE COUNT

Project: PUMA TERMINAL MW SAMPLING

Pace Project No.: 2047806

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory		
2047806013	MW-15B2	EPA 7470	MHB1	1	PASI-N		
		EPA 7470	MHB1	1	PASI-N		
		EPA 8270 by SIM	GEJ	19	PASI-N		
		EPA 5030B/8260	MLS	45	PASI-N		
		EPA 8015B Modified	SLF	4	PASI-N		
		EPA 8015/8021	MHM	2	PASI-N		
		EPA 6020	KJR	4	PASI-N		
		EPA 6020	KJR	4	PASI-N		
		EPA 7470	MHB1	1	PASI-N		
		EPA 7470	MHB1	1	PASI-N		
2047806015	DUP002	EPA 8270 by SIM	GEJ	19	PASI-N		
		EPA 5030B/8260	MLS	45	PASI-N		
		EPA 8015B Modified	SLF	4	PASI-N		
		EPA 8015/8021	MHM	2	PASI-N		
		EPA 6020	KJR	4	PASI-N		
		EPA 6020	KJR	4	PASI-N		
		EPA 7470	MHB1	1	PASI-N		
		EPA 7470	MHB1	1	PASI-N		
		EPA 8270 by SIM	GEJ	19	PASI-N		
		EPA 5030B/8260	MLS	45	PASI-N		
2047806016	MW-15B MS/MSD	EPA 8015B Modified	SLF	4	PASI-N		
		EPA 8015/8021	MHM	2	PASI-N		
		EPA 6020	KJR	4	PASI-N		
		EPA 6020	KJR	4	PASI-N		
		EPA 7470	MHB1	1	PASI-N		
		EPA 7470	MHB1	1	PASI-N		
		EPA 8270 by SIM	GEJ	19	PASI-N		
		EPA 5030B/8260	MLS	45	PASI-N		
		2047806017	FB-122216	EPA 8015/8021	MHM	2	PASI-N
				EPA 5030B/8260	MLS	45	PASI-N

REPORT OF LABORATORY ANALYSIS

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PROJECT NARRATIVE

Project: PUMA TERMINAL MW SAMPLING

Pace Project No.: 2047806

Method: EPA 8015B Modified

Description: 8015M DRO/ORO Organics

Client: BBL Caribe / Arcadis PR

Date: January 12, 2017

General Information:

12 samples were analyzed for EPA 8015B Modified. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:

The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:

The samples were prepared in accordance with EPA 3535 with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):

All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:

All criteria were within method requirements with any exceptions noted below.

Surrogates:

All surrogates were within QC limits with any exceptions noted below.

Method Blank:

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

QC Batch: 70938

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 2047806016

R1: RPD value was outside control limits.

- MSD (Lab ID: 296802)
- Diesel Range Organic (C10-C28)

Additional Comments:

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PROJECT NARRATIVE

Project: PUMA TERMINAL MW SAMPLING

Pace Project No.: 2047806

Method: EPA 8015/8021

Description: 8021 GCV BTEX, MTBE, GRO

Client: BBL Caribe / Arcadis PR

Date: January 12, 2017

General Information:

16 samples were analyzed for EPA 8015/8021. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:

The samples were analyzed within the method required hold times with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):

All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:

All criteria were within method requirements with any exceptions noted below.

Surrogates:

All surrogates were within QC limits with any exceptions noted below.

Method Blank:

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

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PROJECT NARRATIVE

Project: PUMA TERMINAL MW SAMPLING

Pace Project No.: 2047806

Method: EPA 6020

Description: 6020 MET ICPMS

Client: BBL Caribe / Arcadis PR

Date: January 12, 2017

General Information:

12 samples were analyzed for EPA 6020. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:

The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:

The samples were prepared in accordance with EPA 3010 with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):

All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:

All criteria were within method requirements with any exceptions noted below.

Internal Standards:

All internal standards were within QC limits with any exceptions noted below.

Method Blank:

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

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PROJECT NARRATIVE

Project: PUMA TERMINAL MW SAMPLING

Pace Project No.: 2047806

Method: EPA 6020

Description: 6020 MET ICPMS, Dissolved (LF)

Client: BBL Caribe / Arcadis PR

Date: January 12, 2017

General Information:

12 samples were analyzed for EPA 6020. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:

The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:

The samples were prepared in accordance with EPA 3005A with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):

All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:

All criteria were within method requirements with any exceptions noted below.

Internal Standards:

All internal standards were within QC limits with any exceptions noted below.

Method Blank:

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

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PROJECT NARRATIVE

Project: PUMA TERMINAL MW SAMPLING

Pace Project No.: 2047806

Method: EPA 7470

Description: 7470 Mercury

Client: BBL Caribe / Arcadis PR

Date: January 12, 2017

General Information:

12 samples were analyzed for EPA 7470. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:

The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:

The samples were prepared in accordance with EPA 7470 with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):

All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:

All criteria were within method requirements with any exceptions noted below.

Method Blank:

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

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PROJECT NARRATIVE

Project: PUMA TERMINAL MW SAMPLING
Pace Project No.: 2047806

Method: EPA 7470
Description: 7470 Mercury, Dissolved (LF)
Client: BBL Caribe / Arcadis PR
Date: January 12, 2017

General Information:

12 samples were analyzed for EPA 7470. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:

The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:

The samples were prepared in accordance with EPA 7470 with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):

All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:

All criteria were within method requirements with any exceptions noted below.

Method Blank:

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

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PROJECT NARRATIVE

Project: PUMA TERMINAL MW SAMPLING

Pace Project No.: 2047806

Method: EPA 8270 by SIM

Description: 8270 MSSV PAH by SIM SEP

Client: BBL Caribe / Arcadis PR

Date: January 12, 2017

General Information:

12 samples were analyzed for EPA 8270 by SIM. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:

The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:

The samples were prepared in accordance with EPA 3510 with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):

All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:

All criteria were within method requirements with any exceptions noted below.

Internal Standards:

All internal standards were within QC limits with any exceptions noted below.

Surrogates:

All surrogates were within QC limits with any exceptions noted below.

Method Blank:

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

QC Batch: 70942

A matrix spike/matrix spike duplicate was not performed due to insufficient sample volume.

QC Batch: 70982

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 2047806016

R1: RPD value was outside control limits.

- MSD (Lab ID: 296926)
 - 2-Methylnaphthalene
 - Acenaphthene
 - Acenaphthylene
 - Anthracene
 - Benzo(a)anthracene
 - Benzo(a)pyrene

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PROJECT NARRATIVE

Project: PUMA TERMINAL MW SAMPLING

Pace Project No.: 2047806

Method: EPA 8270 by SIM

Description: 8270 MSSV PAH by SIM SEP

Client: BBL Caribe / Arcadis PR

Date: January 12, 2017

QC Batch: 70982

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 2047806016

R1: RPD value was outside control limits.

- Benzo(b)fluoranthene
- Benzo(g,h,i)perylene
- Benzo(k)fluoranthene
- Chrysene
- Dibenz(a,h)anthracene
- Fluoranthene
- Fluorene
- Indeno(1,2,3-cd)pyrene
- Naphthalene
- Phenanthrene
- Pyrene

Additional Comments:

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PROJECT NARRATIVE

Project: PUMA TERMINAL MW SAMPLING
Pace Project No.: 2047806

Method: EPA 5030B/8260
Description: 8260 MSV Low Level
Client: BBL Caribe / Arcadis PR
Date: January 12, 2017

General Information:

16 samples were analyzed for EPA 5030B/8260. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:

The samples were analyzed within the method required hold times with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):

All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:

All criteria were within method requirements with any exceptions noted below.

Internal Standards:

All internal standards were within QC limits with any exceptions noted below.

Surrogates:

All surrogates were within QC limits with any exceptions noted below.

Method Blank:

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

QC Batch: 70952

L0: Analyte recovery in the laboratory control sample (LCS) was outside QC limits.

- LCS (Lab ID: 296850)
- Carbon disulfide

Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

QC Batch: 70952

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 2047806016

M0: Matrix spike recovery and/or matrix spike duplicate recovery was outside laboratory control limits.

- MS (Lab ID: 296851)
 - Carbon disulfide
- MSD (Lab ID: 296852)
 - Carbon disulfide

Additional Comments:

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PROJECT NARRATIVE

Project: PUMA TERMINAL MW SAMPLING
Pace Project No.: 2047806

Method: EPA 5030B/8260
Description: 8260 MSV Low Level
Client: BBL Caribe / Arcadis PR
Date: January 12, 2017

Analyte Comments:

QC Batch: 70952

C9: Common Laboratory Contaminant.

- DUP002 (Lab ID: 2047806015)
 - Acetone
- EB-122116 (Lab ID: 2047806002)
 - Acetone
- EB-122216 (Lab ID: 2047806011)
 - Acetone
- FB-122116 (Lab ID: 2047806009)
 - Acetone
- FB-122216 (Lab ID: 2047806017)
 - Acetone
- MW-15A (Lab ID: 2047806012)
 - Acetone
- MW-15B MS/MSD (Lab ID: 2047806016)
 - Acetone
- MW-15B2 (Lab ID: 2047806013)
 - Acetone
- MW-33A (Lab ID: 2047806005)
 - Acetone
- MW-65A (Lab ID: 2047806008)
 - Acetone
- MW-83B2 (Lab ID: 2047806003)
 - Acetone
- MW-AD-4 (Lab ID: 2047806004)
 - Acetone
- MW-P116 (Lab ID: 2047806006)
 - Acetone
- MW-P117 (Lab ID: 2047806007)
 - Acetone
- TB-122116 (Lab ID: 2047806001)
 - Acetone
- TB-122216 (Lab ID: 2047806010)
 - Acetone

This data package has been reviewed for quality and completeness and is approved for release.

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: PUMA TERMINAL MW SAMPLING

Pace Project No.: 2047806

Sample: TB-122116	Lab ID: 2047806001	Collected: 12/21/16 00:00	Received: 12/22/16 13:15	Matrix: Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8021 GCV BTEX, MTBE, GRO		Analytical Method: EPA 8015/8021						
Gasoline Range Organics	ND	ug/L	50.0	1		12/30/16 08:45		
Surrogates								
4-Bromofluorobenzene (S)	95	%	44-148	1		12/30/16 08:45	460-00-4	
8260 MSV Low Level		Analytical Method: EPA 5030B/8260						
Acetone	56.9	ug/L	4.0	1		12/28/16 17:53	67-64-1	C9
Benzene	ND	ug/L	0.50	1		12/28/16 17:53	71-43-2	
Bromodichloromethane	ND	ug/L	0.50	1		12/28/16 17:53	75-27-4	
Bromoform	ND	ug/L	0.50	1		12/28/16 17:53	75-25-2	
Bromomethane	ND	ug/L	0.50	1		12/28/16 17:53	74-83-9	
2-Butanone (MEK)	ND	ug/L	2.0	1		12/28/16 17:53	78-93-3	
Carbon disulfide	ND	ug/L	1.0	1		12/28/16 17:53	75-15-0	L3
Carbon tetrachloride	ND	ug/L	0.50	1		12/28/16 17:53	56-23-5	
Chlorobenzene	ND	ug/L	0.50	1		12/28/16 17:53	108-90-7	
Chloroethane	ND	ug/L	0.50	1		12/28/16 17:53	75-00-3	
Chloroform	ND	ug/L	0.50	1		12/28/16 17:53	67-66-3	
Chloromethane	1.1	ug/L	0.50	1		12/28/16 17:53	74-87-3	
1,2-Dibromo-3-chloropropane	ND	ug/L	0.20	1		12/28/16 17:53	96-12-8	
Dibromochloromethane	ND	ug/L	0.50	1		12/28/16 17:53	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	1		12/28/16 17:53	106-93-4	
Dichlorodifluoromethane	ND	ug/L	1.0	1		12/28/16 17:53	75-71-8	
1,1-Dichloroethane	ND	ug/L	0.50	1		12/28/16 17:53	75-34-3	
1,2-Dichloroethane	ND	ug/L	0.50	1		12/28/16 17:53	107-06-2	
1,1-Dichloroethene	ND	ug/L	0.50	1		12/28/16 17:53	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	1		12/28/16 17:53	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	0.50	1		12/28/16 17:53	156-60-5	
1,2-Dichloropropane	ND	ug/L	0.50	1		12/28/16 17:53	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	0.50	1		12/28/16 17:53	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	0.50	1		12/28/16 17:53	10061-02-6	
Ethylbenzene	ND	ug/L	0.50	1		12/28/16 17:53	100-41-4	
2-Hexanone	ND	ug/L	1.0	1		12/28/16 17:53	591-78-6	
Isopropylbenzene (Cumene)	ND	ug/L	1.0	1		12/28/16 17:53	98-82-8	
Methyl acetate	ND	ug/L	2.0	1		12/28/16 17:53	79-20-9	
Methylene Chloride	ND	ug/L	0.50	1		12/28/16 17:53	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	1.0	1		12/28/16 17:53	108-10-1	
Methyl-tert-butyl ether	ND	ug/L	0.50	1		12/28/16 17:53	1634-04-4	
Styrene	ND	ug/L	1.0	1		12/28/16 17:53	100-42-5	
1,1,2,2-Tetrachloroethane	ND	ug/L	0.50	1		12/28/16 17:53	79-34-5	
Tetrachloroethene	ND	ug/L	0.50	1		12/28/16 17:53	127-18-4	
Toluene	ND	ug/L	0.50	1		12/28/16 17:53	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	0.50	1		12/28/16 17:53	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	0.50	1		12/28/16 17:53	79-00-5	
Trichloroethene	ND	ug/L	0.50	1		12/28/16 17:53	79-01-6	
Trichlorofluoromethane	ND	ug/L	0.50	1		12/28/16 17:53	75-69-4	
Vinyl chloride	ND	ug/L	0.50	1		12/28/16 17:53	75-01-4	
m&p-Xylene	ND	ug/L	2.0	1		12/28/16 17:53	179601-23-1	
o-Xylene	ND	ug/L	1.0	1		12/28/16 17:53	95-47-6	

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ANALYTICAL RESULTS

Project: PUMA TERMINAL MW SAMPLING

Pace Project No.: 2047806

Sample: TB-122116	Lab ID: 2047806001	Collected: 12/21/16 00:00	Received: 12/22/16 13:15	Matrix: Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV Low Level		Analytical Method: EPA 5030B/8260						
Surrogates								
Dibromofluoromethane (S)	106	%.	72-126	1		12/28/16 17:53	1868-53-7	
4-Bromofluorobenzene (S)	98	%.	68-124	1		12/28/16 17:53	460-00-4	
Toluene-d8 (S)	100	%.	79-119	1		12/28/16 17:53	2037-26-5	
Sample: EB-122116		Lab ID: 2047806002		Collected: 12/21/16 09:17	Received: 12/22/16 13:15	Matrix: Water		
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8015M DRO/ORO Organics		Analytical Method: EPA 8015B Modified Preparation Method: EPA 3535						
Diesel Range Organic (C10-C28)	ND	mg/L	0.50	1	12/28/16 10:52	01/05/17 20:39		
Oil Range Organics (>C28-C40)	ND	mg/L	1.0	1	12/28/16 10:52	01/05/17 20:39		
Surrogates								
n-Pentacosane (S)	42	%.	16-137	1	12/28/16 10:52	01/05/17 20:39	629-99-2	
o-Terphenyl (S)	47	%.	10-121	1	12/28/16 10:52	01/05/17 20:39	84-15-1	
8021 GCV BTEX, MTBE, GRO		Analytical Method: EPA 8015/8021						
Gasoline Range Organics	ND	ug/L	50.0	1		12/30/16 09:37		
Surrogates								
4-Bromofluorobenzene (S)	91	%.	44-148	1		12/30/16 09:37	460-00-4	
6020 MET ICPMS		Analytical Method: EPA 6020 Preparation Method: EPA 3010						
Arsenic	ND	mg/L	0.0010	1	12/30/16 06:50	01/06/17 11:17	7440-38-2	
Chromium	ND	mg/L	0.0010	1	12/30/16 06:50	01/06/17 11:17	7440-47-3	
Lead	ND	mg/L	0.0010	1	12/30/16 06:50	01/06/17 11:17	7439-92-1	
Vanadium	ND	mg/L	0.0050	1	12/30/16 06:50	01/06/17 11:17	7440-62-2	
6020 MET ICPMS, Dissolved (LF)		Analytical Method: EPA 6020 Preparation Method: EPA 3005A						
Arsenic, Dissolved	ND	ug/L	1.0	1	12/30/16 06:50	01/03/17 15:33	7440-38-2	
Chromium, Dissolved	ND	ug/L	1.0	1	12/30/16 06:50	01/03/17 15:33	7440-47-3	
Lead, Dissolved	ND	ug/L	1.0	1	12/30/16 06:50	01/03/17 15:33	7439-92-1	
Vanadium, Dissolved	ND	ug/L	5.0	1	12/30/16 06:50	01/03/17 15:33	7440-62-2	
7470 Mercury		Analytical Method: EPA 7470 Preparation Method: EPA 7470						
Mercury	ND	ug/L	0.20	1	12/29/16 09:57	12/29/16 17:57	7439-97-6	
7470 Mercury, Dissolved (LF)		Analytical Method: EPA 7470 Preparation Method: EPA 7470						
Mercury, Dissolved	ND	ug/L	0.20	1	12/29/16 11:58	12/29/16 19:30	7439-97-6	
8270 MSSV PAH by SIM SEP		Analytical Method: EPA 8270 by SIM Preparation Method: EPA 3510						
Acenaphthene	ND	ug/L	0.10	1	12/28/16 10:04	01/06/17 20:14	83-32-9	
Acenaphthylene	ND	ug/L	0.10	1	12/28/16 10:04	01/06/17 20:14	208-96-8	
Anthracene	ND	ug/L	0.10	1	12/28/16 10:04	01/06/17 20:14	120-12-7	
Benzo(a)anthracene	ND	ug/L	0.10	1	12/28/16 10:04	01/06/17 20:14	56-55-3	
Benzo(a)pyrene	ND	ug/L	0.10	1	12/28/16 10:04	01/06/17 20:14	50-32-8	

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ANALYTICAL RESULTS

Project: PUMA TERMINAL MW SAMPLING

Sample Project No.: 2047806

Sample: EB-122116 **Lab ID: 2047806002** Collected: 12/21/16 09:17 Received: 12/22/16 13:15 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
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8270 MSSV PAH by SIM SEP

Analytical Method: EPA 8270 by SIM Preparation Method: EPA 3510

Benzo(b)fluoranthene	ND	ug/L	0.10	1	12/28/16 10:04	01/06/17 20:14	205-99-2	
Benzo(g,h,i)perylene	ND	ug/L	0.10	1	12/28/16 10:04	01/06/17 20:14	191-24-2	
Benzo(k)fluoranthene	ND	ug/L	0.10	1	12/28/16 10:04	01/06/17 20:14	207-08-9	
Chrysene	ND	ug/L	0.10	1	12/28/16 10:04	01/06/17 20:14	218-01-9	
Dibenz(a,h)anthracene	ND	ug/L	0.10	1	12/28/16 10:04	01/06/17 20:14	53-70-3	
Fluoranthene	ND	ug/L	0.10	1	12/28/16 10:04	01/06/17 20:14	206-44-0	
Fluorene	ND	ug/L	0.10	1	12/28/16 10:04	01/06/17 20:14	86-73-7	
Indeno(1,2,3-cd)pyrene	ND	ug/L	0.10	1	12/28/16 10:04	01/06/17 20:14	193-39-5	
2-Methylnaphthalene	ND	ug/L	0.10	1	12/28/16 10:04	01/06/17 20:14	91-57-6	
Naphthalene	ND	ug/L	0.10	1	12/28/16 10:04	01/06/17 20:14	91-20-3	
Phenanthrene	ND	ug/L	0.10	1	12/28/16 10:04	01/06/17 20:14	85-01-8	
Pyrene	ND	ug/L	0.10	1	12/28/16 10:04	01/06/17 20:14	129-00-0	

Surrogates

2-Fluorobiphenyl (S)	63	%	25-150	1	12/28/16 10:04	01/06/17 20:14	321-60-8	
Terphenyl-d14 (S)	49	%	25-150	1	12/28/16 10:04	01/06/17 20:14	1718-51-0	

8260 MSV Low Level

Analytical Method: EPA 5030B/8260

Acetone	29.5	ug/L	4.0	1		12/28/16 18:11	67-64-1	C9
Benzene	ND	ug/L	0.50	1		12/28/16 18:11	71-43-2	
Bromodichloromethane	ND	ug/L	0.50	1		12/28/16 18:11	75-27-4	
Bromoform	ND	ug/L	0.50	1		12/28/16 18:11	75-25-2	
Bromomethane	ND	ug/L	0.50	1		12/28/16 18:11	74-83-9	
2-Butanone (MEK)	ND	ug/L	2.0	1		12/28/16 18:11	78-93-3	
Carbon disulfide	ND	ug/L	1.0	1		12/28/16 18:11	75-15-0	L3
Carbon tetrachloride	ND	ug/L	0.50	1		12/28/16 18:11	56-23-5	
Chlorobenzene	ND	ug/L	0.50	1		12/28/16 18:11	108-90-7	
Chloroethane	ND	ug/L	0.50	1		12/28/16 18:11	75-00-3	
Chloroform	ND	ug/L	0.50	1		12/28/16 18:11	67-66-3	
Chloromethane	0.78	ug/L	0.50	1		12/28/16 18:11	74-87-3	
1,2-Dibromo-3-chloropropane	ND	ug/L	0.20	1		12/28/16 18:11	96-12-8	
Dibromochloromethane	ND	ug/L	0.50	1		12/28/16 18:11	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	1		12/28/16 18:11	106-93-4	
Dichlorodifluoromethane	ND	ug/L	1.0	1		12/28/16 18:11	75-71-8	
1,1-Dichloroethane	ND	ug/L	0.50	1		12/28/16 18:11	75-34-3	
1,2-Dichloroethane	ND	ug/L	0.50	1		12/28/16 18:11	107-06-2	
1,1-Dichloroethene	ND	ug/L	0.50	1		12/28/16 18:11	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	1		12/28/16 18:11	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	0.50	1		12/28/16 18:11	156-60-5	
1,2-Dichloropropane	ND	ug/L	0.50	1		12/28/16 18:11	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	0.50	1		12/28/16 18:11	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	0.50	1		12/28/16 18:11	10061-02-6	
Ethylbenzene	ND	ug/L	0.50	1		12/28/16 18:11	100-41-4	
2-Hexanone	ND	ug/L	1.0	1		12/28/16 18:11	591-78-6	
Isopropylbenzene (Cumene)	ND	ug/L	1.0	1		12/28/16 18:11	98-82-8	
Methyl acetate	ND	ug/L	2.0	1		12/28/16 18:11	79-20-9	
Methylene Chloride	ND	ug/L	0.50	1		12/28/16 18:11	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	1.0	1		12/28/16 18:11	108-10-1	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: PUMA TERMINAL MW SAMPLING

Pace Project No.: 2047806

Sample: EB-122116	Lab ID: 2047806002	Collected: 12/21/16 09:17	Received: 12/22/16 13:15	Matrix: Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV Low Level		Analytical Method: EPA 5030B/8260						
Methyl-tert-butyl ether	ND	ug/L	0.50	1		12/28/16 18:11	1634-04-4	
Styrene	ND	ug/L	1.0	1		12/28/16 18:11	100-42-5	
1,1,2,2-Tetrachloroethane	ND	ug/L	0.50	1		12/28/16 18:11	79-34-5	
Tetrachloroethene	ND	ug/L	0.50	1		12/28/16 18:11	127-18-4	
Toluene	ND	ug/L	0.50	1		12/28/16 18:11	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	0.50	1		12/28/16 18:11	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	0.50	1		12/28/16 18:11	79-00-5	
Trichloroethene	ND	ug/L	0.50	1		12/28/16 18:11	79-01-6	
Trichlorofluoromethane	ND	ug/L	0.50	1		12/28/16 18:11	75-69-4	
Vinyl chloride	ND	ug/L	0.50	1		12/28/16 18:11	75-01-4	
m&p-Xylene	ND	ug/L	2.0	1		12/28/16 18:11	179601-23-1	
o-Xylene	ND	ug/L	1.0	1		12/28/16 18:11	95-47-6	
Surrogates								
Dibromofluoromethane (S)	104	%	72-126	1		12/28/16 18:11	1868-53-7	
4-Bromofluorobenzene (S)	98	%	68-124	1		12/28/16 18:11	460-00-4	
Toluene-d8 (S)	101	%	79-119	1		12/28/16 18:11	2037-26-5	
<hr/>								
Sample: MW-83B2	Lab ID: 2047806003	Collected: 12/21/16 09:59	Received: 12/22/16 13:15	Matrix: Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8015M DRO/ORO Organics		Analytical Method: EPA 8015B Modified Preparation Method: EPA 3535						
Diesel Range Organic (C10-C28)	ND	mg/L	0.50	1	12/28/16 10:52	01/05/17 21:07		
Oil Range Organics (>C28-C40)	ND	mg/L	1.0	1	12/28/16 10:52	01/05/17 21:07		
Surrogates								
n-Pentacosane (S)	18	%	16-137	1	12/28/16 10:52	01/05/17 21:07	629-99-2	
o-Terphenyl (S)	18	%	10-121	1	12/28/16 10:52	01/05/17 21:07	84-15-1	
8021 GCV BTEX, MTBE, GRO		Analytical Method: EPA 8015/8021						
Gasoline Range Organics	ND	ug/L	50.0	1		12/30/16 09:11		
Surrogates								
4-Bromofluorobenzene (S)	90	%	44-148	1		12/30/16 09:11	460-00-4	
6020 MET ICPMS		Analytical Method: EPA 6020 Preparation Method: EPA 3010						
Arsenic	0.0019	mg/L	0.0010	1	12/30/16 06:50	01/06/17 11:21	7440-38-2	
Chromium	0.0056	mg/L	0.0010	1	12/30/16 06:50	01/06/17 11:21	7440-47-3	
Lead	0.0013	mg/L	0.0010	1	12/30/16 06:50	01/06/17 11:21	7439-92-1	
Vanadium	ND	mg/L	0.0050	1	12/30/16 06:50	01/06/17 11:21	7440-62-2	
6020 MET ICPMS, Dissolved (LF)		Analytical Method: EPA 6020 Preparation Method: EPA 3005A						
Arsenic, Dissolved	1.2	ug/L	1.0	1	12/30/16 06:50	01/03/17 15:37	7440-38-2	
Chromium, Dissolved	4.0	ug/L	1.0	1	12/30/16 06:50	01/03/17 15:37	7440-47-3	
Lead, Dissolved	ND	ug/L	1.0	1	12/30/16 06:50	01/03/17 15:37	7439-92-1	
Vanadium, Dissolved	ND	ug/L	5.0	1	12/30/16 06:50	01/03/17 15:37	7440-62-2	

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ANALYTICAL RESULTS

Project: PUMA TERMINAL MW SAMPLING

Pace Project No.: 2047806

Sample: MW-83B2	Lab ID: 2047806003	Collected: 12/21/16 09:59	Received: 12/22/16 13:15	Matrix: Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
7470 Mercury Analytical Method: EPA 7470 Preparation Method: EPA 7470								
Mercury	ND	ug/L	0.20	1	12/29/16 09:57	12/29/16 17:59	7439-97-6	
7470 Mercury, Dissolved (LF) Analytical Method: EPA 7470 Preparation Method: EPA 7470								
Mercury, Dissolved	ND	ug/L	0.20	1	12/29/16 11:58	12/29/16 19:33	7439-97-6	
8270 MSSV PAH by SIM SEP Analytical Method: EPA 8270 by SIM Preparation Method: EPA 3510								
Acenaphthene	ND	ug/L	0.10	1	12/28/16 10:04	01/06/17 20:34	83-32-9	
Acenaphthylene	ND	ug/L	0.10	1	12/28/16 10:04	01/06/17 20:34	208-96-8	
Anthracene	ND	ug/L	0.10	1	12/28/16 10:04	01/06/17 20:34	120-12-7	
Benzo(a)anthracene	ND	ug/L	0.10	1	12/28/16 10:04	01/06/17 20:34	56-55-3	
Benzo(a)pyrene	ND	ug/L	0.10	1	12/28/16 10:04	01/06/17 20:34	50-32-8	
Benzo(b)fluoranthene	ND	ug/L	0.10	1	12/28/16 10:04	01/06/17 20:34	205-99-2	
Benzo(g,h,i)perylene	ND	ug/L	0.10	1	12/28/16 10:04	01/06/17 20:34	191-24-2	
Benzo(k)fluoranthene	ND	ug/L	0.10	1	12/28/16 10:04	01/06/17 20:34	207-08-9	
Chrysene	ND	ug/L	0.10	1	12/28/16 10:04	01/06/17 20:34	218-01-9	
Dibenz(a,h)anthracene	ND	ug/L	0.10	1	12/28/16 10:04	01/06/17 20:34	53-70-3	
Fluoranthene	ND	ug/L	0.10	1	12/28/16 10:04	01/06/17 20:34	206-44-0	
Fluorene	ND	ug/L	0.10	1	12/28/16 10:04	01/06/17 20:34	86-73-7	
Indeno(1,2,3-cd)pyrene	ND	ug/L	0.10	1	12/28/16 10:04	01/06/17 20:34	193-39-5	
2-Methylnaphthalene	ND	ug/L	0.10	1	12/28/16 10:04	01/06/17 20:34	91-57-6	
Naphthalene	ND	ug/L	0.10	1	12/28/16 10:04	01/06/17 20:34	91-20-3	
Phenanthrene	ND	ug/L	0.10	1	12/28/16 10:04	01/06/17 20:34	85-01-8	
Pyrene	ND	ug/L	0.10	1	12/28/16 10:04	01/06/17 20:34	129-00-0	
Surrogates								
2-Fluorobiphenyl (S)	88	%	25-150	1	12/28/16 10:04	01/06/17 20:34	321-60-8	
Terphenyl-d14 (S)	57	%	25-150	1	12/28/16 10:04	01/06/17 20:34	1718-51-0	
8260 MSV Low Level Analytical Method: EPA 5030B/8260								
Acetone	20.7	ug/L	4.0	1		12/28/16 18:29	67-64-1	C9
Benzene	ND	ug/L	0.50	1		12/28/16 18:29	71-43-2	
Bromodichloromethane	ND	ug/L	0.50	1		12/28/16 18:29	75-27-4	
Bromoform	ND	ug/L	0.50	1		12/28/16 18:29	75-25-2	
Bromomethane	ND	ug/L	0.50	1		12/28/16 18:29	74-83-9	
2-Butanone (MEK)	ND	ug/L	2.0	1		12/28/16 18:29	78-93-3	
Carbon disulfide	ND	ug/L	1.0	1		12/28/16 18:29	75-15-0	L3
Carbon tetrachloride	ND	ug/L	0.50	1		12/28/16 18:29	56-23-5	
Chlorobenzene	ND	ug/L	0.50	1		12/28/16 18:29	108-90-7	
Chloroethane	ND	ug/L	0.50	1		12/28/16 18:29	75-00-3	
Chloroform	ND	ug/L	0.50	1		12/28/16 18:29	67-66-3	
Chloromethane	ND	ug/L	0.50	1		12/28/16 18:29	74-87-3	
1,2-Dibromo-3-chloropropane	ND	ug/L	0.20	1		12/28/16 18:29	96-12-8	
Dibromochloromethane	ND	ug/L	0.50	1		12/28/16 18:29	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	1		12/28/16 18:29	106-93-4	
Dichlorodifluoromethane	ND	ug/L	1.0	1		12/28/16 18:29	75-71-8	
1,1-Dichloroethane	ND	ug/L	0.50	1		12/28/16 18:29	75-34-3	
1,2-Dichloroethane	ND	ug/L	0.50	1		12/28/16 18:29	107-06-2	

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ANALYTICAL RESULTS

Project: PUMA TERMINAL MW SAMPLING

Project No.: 2047806

Sample: MW-83B2		Lab ID: 2047806003	Collected: 12/21/16 09:59	Received: 12/22/16 13:15	Matrix: Water			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV Low Level		Analytical Method: EPA 5030B/8260						
1,1-Dichloroethene	ND	ug/L	0.50	1		12/28/16 18:29	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	1		12/28/16 18:29	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	0.50	1		12/28/16 18:29	156-60-5	
1,2-Dichloropropane	ND	ug/L	0.50	1		12/28/16 18:29	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	0.50	1		12/28/16 18:29	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	0.50	1		12/28/16 18:29	10061-02-6	
Ethylbenzene	ND	ug/L	0.50	1		12/28/16 18:29	100-41-4	
2-Hexanone	ND	ug/L	1.0	1		12/28/16 18:29	591-78-6	
Isopropylbenzene (Cumene)	ND	ug/L	1.0	1		12/28/16 18:29	98-82-8	
Methyl acetate	ND	ug/L	2.0	1		12/28/16 18:29	79-20-9	
Methylene Chloride	ND	ug/L	0.50	1		12/28/16 18:29	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	1.0	1		12/28/16 18:29	108-10-1	
Methyl-tert-butyl ether	ND	ug/L	0.50	1		12/28/16 18:29	1634-04-4	
Styrene	ND	ug/L	1.0	1		12/28/16 18:29	100-42-5	
1,1,2,2-Tetrachloroethane	ND	ug/L	0.50	1		12/28/16 18:29	79-34-5	
Tetrachloroethene	ND	ug/L	0.50	1		12/28/16 18:29	127-18-4	
Toluene	ND	ug/L	0.50	1		12/28/16 18:29	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	0.50	1		12/28/16 18:29	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	0.50	1		12/28/16 18:29	79-00-5	
Trichloroethene	ND	ug/L	0.50	1		12/28/16 18:29	79-01-6	
Trichlorofluoromethane	ND	ug/L	0.50	1		12/28/16 18:29	75-69-4	
Vinyl chloride	ND	ug/L	0.50	1		12/28/16 18:29	75-01-4	
m&p-Xylene	ND	ug/L	2.0	1		12/28/16 18:29	179601-23-1	
o-Xylene	ND	ug/L	1.0	1		12/28/16 18:29	95-47-6	
Surrogates								
Dibromofluoromethane (S)	105	%.	72-126	1		12/28/16 18:29	1868-53-7	
4-Bromofluorobenzene (S)	98	%.	68-124	1		12/28/16 18:29	460-00-4	
Toluene-d8 (S)	101	%.	79-119	1		12/28/16 18:29	2037-26-5	

Sample: MW-AD-4		Lab ID: 2047806004	Collected: 12/21/16 10:56	Received: 12/22/16 13:15	Matrix: Water			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8015M DRO/ORO Organics		Analytical Method: EPA 8015B Modified Preparation Method: EPA 3535						
Diesel Range Organic (C10-C28)	ND	mg/L	0.25	1	12/28/16 10:52	01/06/17 02:45		
Oil Range Organics (>C28-C40)	ND	mg/L	0.50	1	12/28/16 10:52	01/06/17 02:45		
Surrogates								
n-Pentacosane (S)	35	%.	16-137	1	12/28/16 10:52	01/06/17 02:45	629-99-2	
o-Terphenyl (S)	48	%.	10-121	1	12/28/16 10:52	01/06/17 02:45	84-15-1	
8021 GCV BTEX, MTBE, GRO		Analytical Method: EPA 8015/8021						
Gasoline Range Organics	110	ug/L	50.0	1		12/30/16 11:49		
Surrogates								
4-Bromofluorobenzene (S)	94	%.	44-148	1		12/30/16 11:49	460-00-4	

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ANALYTICAL RESULTS

Project: PUMA TERMINAL MW SAMPLING

Project No.: 2047806

Sample: MW-AD-4	Lab ID: 2047806004	Collected: 12/21/16 10:56	Received: 12/22/16 13:15	Matrix: Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
6020 MET ICPMS								
Analytical Method: EPA 6020 Preparation Method: EPA 3010								
Arsenic	0.0028	mg/L	0.0010	1	12/30/16 06:50	01/06/17 11:25	7440-38-2	
Chromium	ND	mg/L	0.0010	1	12/30/16 06:50	01/06/17 11:25	7440-47-3	
Lead	ND	mg/L	0.0010	1	12/30/16 06:50	01/06/17 11:25	7439-92-1	
Vanadium	ND	mg/L	0.0050	1	12/30/16 06:50	01/06/17 11:25	7440-62-2	
6020 MET ICPMS, Dissolved (LF)								
Analytical Method: EPA 6020 Preparation Method: EPA 3005A								
Arsenic, Dissolved	ND	ug/L	1.0	1	12/30/16 06:50	01/03/17 15:41	7440-38-2	
Chromium, Dissolved	ND	ug/L	1.0	1	12/30/16 06:50	01/03/17 15:41	7440-47-3	
Lead, Dissolved	ND	ug/L	1.0	1	12/30/16 06:50	01/03/17 15:41	7439-92-1	
Vanadium, Dissolved	ND	ug/L	5.0	1	12/30/16 06:50	01/03/17 15:41	7440-62-2	
7470 Mercury								
Analytical Method: EPA 7470 Preparation Method: EPA 7470								
Mercury	ND	ug/L	0.20	1	12/29/16 09:57	12/29/16 18:01	7439-97-6	
7470 Mercury, Dissolved (LF)								
Analytical Method: EPA 7470 Preparation Method: EPA 7470								
Mercury, Dissolved	ND	ug/L	0.20	1	12/29/16 11:58	12/29/16 19:35	7439-97-6	
8270 MSSV PAH by SIM SEP								
Analytical Method: EPA 8270 by SIM Preparation Method: EPA 3510								
Acenaphthene	0.13	ug/L	0.10	1	12/28/16 10:06	01/05/17 12:10	83-32-9	
Acenaphthylene	ND	ug/L	0.10	1	12/28/16 10:06	01/05/17 12:10	208-96-8	
Anthracene	ND	ug/L	0.10	1	12/28/16 10:06	01/05/17 12:10	120-12-7	
Benzo(a)anthracene	ND	ug/L	0.10	1	12/28/16 10:06	01/05/17 12:10	56-55-3	
Benzo(a)pyrene	ND	ug/L	0.10	1	12/28/16 10:06	01/05/17 12:10	50-32-8	
Benzo(b)fluoranthene	ND	ug/L	0.10	1	12/28/16 10:06	01/05/17 12:10	205-99-2	
Benzo(g,h,i)perylene	ND	ug/L	0.10	1	12/28/16 10:06	01/05/17 12:10	191-24-2	
Benzo(k)fluoranthene	ND	ug/L	0.10	1	12/28/16 10:06	01/05/17 12:10	207-08-9	
Chrysene	ND	ug/L	0.10	1	12/28/16 10:06	01/05/17 12:10	218-01-9	
Dibenz(a,h)anthracene	ND	ug/L	0.10	1	12/28/16 10:06	01/05/17 12:10	53-70-3	
Fluoranthene	ND	ug/L	0.10	1	12/28/16 10:06	01/05/17 12:10	206-44-0	
Fluorene	0.17	ug/L	0.10	1	12/28/16 10:06	01/05/17 12:10	86-73-7	
Indeno(1,2,3-cd)pyrene	ND	ug/L	0.10	1	12/28/16 10:06	01/05/17 12:10	193-39-5	
2-Methylnaphthalene	0.20	ug/L	0.10	1	12/28/16 10:06	01/05/17 12:10	91-57-6	
Naphthalene	0.92	ug/L	0.10	1	12/28/16 10:06	01/05/17 12:10	91-20-3	
Phenanthrene	ND	ug/L	0.10	1	12/28/16 10:06	01/05/17 12:10	85-01-8	
Pyrene	ND	ug/L	0.10	1	12/28/16 10:06	01/05/17 12:10	129-00-0	
Surrogates								
2-Fluorobiphenyl (S)	80	%	25-150	1	12/28/16 10:06	01/05/17 12:10	321-60-8	
Terphenyl-d14 (S)	74	%	25-150	1	12/28/16 10:06	01/05/17 12:10	1718-51-0	
8260 MSV Low Level								
Analytical Method: EPA 5030B/8260								
Acetone	41.6	ug/L	4.0	1		12/28/16 18:47	67-64-1	C9
Benzene	ND	ug/L	0.50	1		12/28/16 18:47	71-43-2	
Bromodichloromethane	ND	ug/L	0.50	1		12/28/16 18:47	75-27-4	
Bromoform	ND	ug/L	0.50	1		12/28/16 18:47	75-25-2	
Bromomethane	ND	ug/L	0.50	1		12/28/16 18:47	74-83-9	
2-Butanone (MEK)	ND	ug/L	2.0	1		12/28/16 18:47	78-93-3	

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ANALYTICAL RESULTS

Project: PUMA TERMINAL MW SAMPLING

Pace Project No.: 2047806

Sample: MW-AD-4	Lab ID: 2047806004	Collected: 12/21/16 10:56	Received: 12/22/16 13:15	Matrix: Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV Low Level	Analytical Method: EPA 5030B/8260							
Carbon disulfide	ND	ug/L	1.0	1		12/28/16 18:47	75-15-0	L3
Carbon tetrachloride	ND	ug/L	0.50	1		12/28/16 18:47	56-23-5	
Chlorobenzene	ND	ug/L	0.50	1		12/28/16 18:47	108-90-7	
Chloroethane	ND	ug/L	0.50	1		12/28/16 18:47	75-00-3	
Chloroform	ND	ug/L	0.50	1		12/28/16 18:47	67-66-3	
Chloromethane	ND	ug/L	0.50	1		12/28/16 18:47	74-87-3	
1,2-Dibromo-3-chloropropane	ND	ug/L	0.20	1		12/28/16 18:47	96-12-8	
Dibromochloromethane	ND	ug/L	0.50	1		12/28/16 18:47	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	1		12/28/16 18:47	106-93-4	
Dichlorodifluoromethane	ND	ug/L	1.0	1		12/28/16 18:47	75-71-8	
1,1-Dichloroethane	ND	ug/L	0.50	1		12/28/16 18:47	75-34-3	
1,2-Dichloroethane	ND	ug/L	0.50	1		12/28/16 18:47	107-06-2	
1,1-Dichloroethene	ND	ug/L	0.50	1		12/28/16 18:47	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	1		12/28/16 18:47	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	0.50	1		12/28/16 18:47	156-60-5	
1,2-Dichloropropane	ND	ug/L	0.50	1		12/28/16 18:47	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	0.50	1		12/28/16 18:47	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	0.50	1		12/28/16 18:47	10061-02-6	
Ethylbenzene	ND	ug/L	0.50	1		12/28/16 18:47	100-41-4	
2-Hexanone	ND	ug/L	1.0	1		12/28/16 18:47	591-78-6	
Isopropylbenzene (Cumene)	ND	ug/L	1.0	1		12/28/16 18:47	98-82-8	
Methyl acetate	ND	ug/L	2.0	1		12/28/16 18:47	79-20-9	
Methylene Chloride	ND	ug/L	0.50	1		12/28/16 18:47	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	1.0	1		12/28/16 18:47	108-10-1	
Methyl-tert-butyl ether	1.4	ug/L	0.50	1		12/28/16 18:47	1634-04-4	
Styrene	ND	ug/L	1.0	1		12/28/16 18:47	100-42-5	
1,1,2,2-Tetrachloroethane	ND	ug/L	0.50	1		12/28/16 18:47	79-34-5	
Tetrachloroethene	ND	ug/L	0.50	1		12/28/16 18:47	127-18-4	
Toluene	ND	ug/L	0.50	1		12/28/16 18:47	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	0.50	1		12/28/16 18:47	71-55-6	
1,1,2-Trichloroethane	1.9	ug/L	0.50	1		12/28/16 18:47	79-00-5	
Trichloroethene	ND	ug/L	0.50	1		12/28/16 18:47	79-01-6	
Trichlorofluoromethane	ND	ug/L	0.50	1		12/28/16 18:47	75-69-4	
Vinyl chloride	ND	ug/L	0.50	1		12/28/16 18:47	75-01-4	
m&p-Xylene	ND	ug/L	2.0	1		12/28/16 18:47	179601-23-1	
o-Xylene	ND	ug/L	1.0	1		12/28/16 18:47	95-47-6	
Surrogates								
Dibromofluoromethane (S)	104	%.	72-126	1		12/28/16 18:47	1868-53-7	
4-Bromofluorobenzene (S)	98	%.	68-124	1		12/28/16 18:47	460-00-4	
Toluene-d8 (S)	101	%.	79-119	1		12/28/16 18:47	2037-26-5	

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ANALYTICAL RESULTS

Project: PUMA TERMINAL MW SAMPLING

Pace Project No.: 2047806

Sample: MW-33A	Lab ID: 2047806005	Collected: 12/21/16 11:44	Received: 12/22/16 13:15	Matrix: Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8015M DRO/ORO Organics								
Analytical Method: EPA 8015B Modified Preparation Method: EPA 3535								
Diesel Range Organic (C10-C28)	0.64	mg/L	0.50	1	12/28/16 10:52	01/05/17 21:35		
Oil Range Organics (>C28-C40)	ND	mg/L	1.0	1	12/28/16 10:52	01/05/17 21:35		
Surrogates								
n-Pentacosane (S)	42	%	16-137	1	12/28/16 10:52	01/05/17 21:35	629-99-2	
o-Terphenyl (S)	60	%	10-121	1	12/28/16 10:52	01/05/17 21:35	84-15-1	
8021 GCV BTEX, MTBE, GRO								
Analytical Method: EPA 8015/8021								
Gasoline Range Organics	383	ug/L	50.0	1		12/30/16 12:14		
Surrogates								
4-Bromofluorobenzene (S)	106	%	44-148	1		12/30/16 12:14	460-00-4	
6020 MET ICPMS								
Analytical Method: EPA 6020 Preparation Method: EPA 3010								
Arsenic	0.013	mg/L	0.0010	1	12/30/16 06:50	01/06/17 11:29	7440-38-2	
Chromium	ND	mg/L	0.0010	1	12/30/16 06:50	01/06/17 11:29	7440-47-3	
Lead	ND	mg/L	0.0010	1	12/30/16 06:50	01/06/17 11:29	7439-92-1	
Vanadium	ND	mg/L	0.0050	1	12/30/16 06:50	01/06/17 11:29	7440-62-2	
6020 MET ICPMS, Dissolved (LF)								
Analytical Method: EPA 6020 Preparation Method: EPA 3005A								
Arsenic, Dissolved	ND	ug/L	1.0	1	12/30/16 06:50	01/03/17 15:45	7440-38-2	
Chromium, Dissolved	ND	ug/L	1.0	1	12/30/16 06:50	01/03/17 15:45	7440-47-3	
Lead, Dissolved	ND	ug/L	1.0	1	12/30/16 06:50	01/03/17 15:45	7439-92-1	
Vanadium, Dissolved	ND	ug/L	5.0	1	12/30/16 06:50	01/03/17 15:45	7440-62-2	
7470 Mercury								
Analytical Method: EPA 7470 Preparation Method: EPA 7470								
Mercury	ND	ug/L	0.20	1	12/29/16 09:57	12/29/16 18:07	7439-97-6	
7470 Mercury, Dissolved (LF)								
Analytical Method: EPA 7470 Preparation Method: EPA 7470								
Mercury, Dissolved	ND	ug/L	0.20	1	12/29/16 11:58	12/29/16 19:37	7439-97-6	
8270 MSSV PAH by SIM SEP								
Analytical Method: EPA 8270 by SIM Preparation Method: EPA 3510								
Acenaphthene	1.0	ug/L	0.10	1	12/28/16 10:06	01/05/17 12:30	83-32-9	
Acenaphthylene	0.15	ug/L	0.10	1	12/28/16 10:06	01/05/17 12:30	208-96-8	
Anthracene	ND	ug/L	0.10	1	12/28/16 10:06	01/05/17 12:30	120-12-7	
Benzo(a)anthracene	ND	ug/L	0.10	1	12/28/16 10:06	01/05/17 12:30	56-55-3	
Benzo(a)pyrene	ND	ug/L	0.10	1	12/28/16 10:06	01/05/17 12:30	50-32-8	
Benzo(b)fluoranthene	ND	ug/L	0.10	1	12/28/16 10:06	01/05/17 12:30	205-99-2	
Benzo(g,h,i)perylene	ND	ug/L	0.10	1	12/28/16 10:06	01/05/17 12:30	191-24-2	
Benzo(k)fluoranthene	ND	ug/L	0.10	1	12/28/16 10:06	01/05/17 12:30	207-08-9	
Chrysene	ND	ug/L	0.10	1	12/28/16 10:06	01/05/17 12:30	218-01-9	
Dibenz(a,h)anthracene	ND	ug/L	0.10	1	12/28/16 10:06	01/05/17 12:30	53-70-3	
Fluoranthene	ND	ug/L	0.10	1	12/28/16 10:06	01/05/17 12:30	206-44-0	
Fluorene	0.25	ug/L	0.10	1	12/28/16 10:06	01/05/17 12:30	86-73-7	
Indeno(1,2,3-cd)pyrene	ND	ug/L	0.10	1	12/28/16 10:06	01/05/17 12:30	193-39-5	
2-Methylnaphthalene	ND	ug/L	0.10	1	12/28/16 10:06	01/05/17 12:30	91-57-6	
Naphthalene	1.5	ug/L	0.10	1	12/28/16 10:06	01/05/17 12:30	91-20-3	
Phenanthrene	ND	ug/L	0.10	1	12/28/16 10:06	01/05/17 12:30	85-01-8	

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ANALYTICAL RESULTS

Project: PUMA TERMINAL MW SAMPLING

Pace Project No.: 2047806

Sample: MW-33A	Lab ID: 2047806005	Collected: 12/21/16 11:44	Received: 12/22/16 13:15	Matrix: Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8270 MSSV PAH by SIM SEP		Analytical Method: EPA 8270 by SIM Preparation Method: EPA 3510						
Pyrene	ND	ug/L	0.10	1	12/28/16 10:06	01/05/17 12:30	129-00-0	
Surrogates								
2-Fluorobiphenyl (S)	63	%.	25-150	1	12/28/16 10:06	01/05/17 12:30	321-60-8	
Terphenyl-d14 (S)	60	%.	25-150	1	12/28/16 10:06	01/05/17 12:30	1718-51-0	
8260 MSV Low Level		Analytical Method: EPA 5030B/8260						
Acetone	13.4	ug/L	4.0	1		12/28/16 19:05	67-64-1	C9
Benzene	ND	ug/L	0.50	1		12/28/16 19:05	71-43-2	
Bromodichloromethane	ND	ug/L	0.50	1		12/28/16 19:05	75-27-4	
Bromoform	ND	ug/L	0.50	1		12/28/16 19:05	75-25-2	
Bromomethane	ND	ug/L	0.50	1		12/28/16 19:05	74-83-9	
2-Butanone (MEK)	ND	ug/L	2.0	1		12/28/16 19:05	78-93-3	
Carbon disulfide	ND	ug/L	1.0	1		12/28/16 19:05	75-15-0	L3
Carbon tetrachloride	ND	ug/L	0.50	1		12/28/16 19:05	56-23-5	
Chlorobenzene	ND	ug/L	0.50	1		12/28/16 19:05	108-90-7	
Chloroethane	ND	ug/L	0.50	1		12/28/16 19:05	75-00-3	
Chloroform	ND	ug/L	0.50	1		12/28/16 19:05	67-66-3	
Chloromethane	ND	ug/L	0.50	1		12/28/16 19:05	74-87-3	
1,2-Dibromo-3-chloropropane	ND	ug/L	0.20	1		12/28/16 19:05	96-12-8	
Dibromochloromethane	ND	ug/L	0.50	1		12/28/16 19:05	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	1		12/28/16 19:05	106-93-4	
Dichlorodifluoromethane	ND	ug/L	1.0	1		12/28/16 19:05	75-71-8	
1,1-Dichloroethane	ND	ug/L	0.50	1		12/28/16 19:05	75-34-3	
1,2-Dichloroethane	ND	ug/L	0.50	1		12/28/16 19:05	107-06-2	
1,1-Dichloroethene	ND	ug/L	0.50	1		12/28/16 19:05	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	1		12/28/16 19:05	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	0.50	1		12/28/16 19:05	156-60-5	
1,2-Dichloropropane	ND	ug/L	0.50	1		12/28/16 19:05	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	0.50	1		12/28/16 19:05	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	0.50	1		12/28/16 19:05	10061-02-6	
Ethylbenzene	ND	ug/L	0.50	1		12/28/16 19:05	100-41-4	
2-Hexanone	ND	ug/L	1.0	1		12/28/16 19:05	591-78-6	
Isopropylbenzene (Cumene)	ND	ug/L	1.0	1		12/28/16 19:05	98-82-8	
Methyl acetate	ND	ug/L	2.0	1		12/28/16 19:05	79-20-9	
Methylene Chloride	ND	ug/L	0.50	1		12/28/16 19:05	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	1.0	1		12/28/16 19:05	108-10-1	
Methyl-tert-butyl ether	8.4	ug/L	0.50	1		12/28/16 19:05	1634-04-4	
Styrene	ND	ug/L	1.0	1		12/28/16 19:05	100-42-5	
1,1,2,2-Tetrachloroethane	ND	ug/L	0.50	1		12/28/16 19:05	79-34-5	
Tetrachloroethene	ND	ug/L	0.50	1		12/28/16 19:05	127-18-4	
Toluene	ND	ug/L	0.50	1		12/28/16 19:05	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	0.50	1		12/28/16 19:05	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	0.50	1		12/28/16 19:05	79-00-5	
Trichloroethene	ND	ug/L	0.50	1		12/28/16 19:05	79-01-6	
Trichlorofluoromethane	ND	ug/L	0.50	1		12/28/16 19:05	75-69-4	
Vinyl chloride	ND	ug/L	0.50	1		12/28/16 19:05	75-01-4	
m&p-Xylene	ND	ug/L	2.0	1		12/28/16 19:05	179601-23-1	

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ANALYTICAL RESULTS

Project: PUMA TERMINAL MW SAMPLING

Pace Project No.: 2047806

Sample: MW-33A		Lab ID: 2047806005		Collected: 12/21/16 11:44	Received: 12/22/16 13:15	Matrix: Water		
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV Low Level		Analytical Method: EPA 5030B/8260						
o-Xylene	ND	ug/L	1.0	1		12/28/16 19:05	95-47-6	
Surrogates								
Dibromofluoromethane (S)	102	%.	72-126	1		12/28/16 19:05	1868-53-7	
4-Bromofluorobenzene (S)	100	%.	68-124	1		12/28/16 19:05	460-00-4	
Toluene-d8 (S)	99	%.	79-119	1		12/28/16 19:05	2037-26-5	
Sample: MW-P116		Lab ID: 2047806006		Collected: 12/21/16 14:05	Received: 12/22/16 13:15	Matrix: Water		
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8015M DRO/ORO Organics		Analytical Method: EPA 8015B Modified Preparation Method: EPA 3535						
Diesel Range Organic (C10-C28)	ND	mg/L	0.50	1	12/28/16 10:52	01/05/17 22:03		
Oil Range Organics (>C28-C40)	ND	mg/L	1.0	1	12/28/16 10:52	01/05/17 22:03		
Surrogates								
n-Pentacosane (S)	31	%.	16-137	1	12/28/16 10:52	01/05/17 22:03	629-99-2	
o-Terphenyl (S)	48	%.	10-121	1	12/28/16 10:52	01/05/17 22:03	84-15-1	
8021 GCV BTEX, MTBE, GRO		Analytical Method: EPA 8015/8021						
Gasoline Range Organics	ND	ug/L	50.0	1		12/30/16 12:41		
Surrogates								
4-Bromofluorobenzene (S)	92	%.	44-148	1		12/30/16 12:41	460-00-4	
6020 MET ICPMS		Analytical Method: EPA 6020 Preparation Method: EPA 3010						
Arsenic	0.0017	mg/L	0.0010	1	12/30/16 06:50	01/06/17 11:33	7440-38-2	
Chromium	0.0011	mg/L	0.0010	1	12/30/16 06:50	01/06/17 11:33	7440-47-3	
Lead	0.0010	mg/L	0.0010	1	12/30/16 06:50	01/06/17 11:33	7439-92-1	
Vanadium	ND	mg/L	0.0050	1	12/30/16 06:50	01/06/17 11:33	7440-62-2	
6020 MET ICPMS, Dissolved (LF)		Analytical Method: EPA 6020 Preparation Method: EPA 3005A						
Arsenic, Dissolved	ND	ug/L	1.0	1	12/30/16 06:50	01/03/17 15:49	7440-38-2	
Chromium, Dissolved	ND	ug/L	1.0	1	12/30/16 06:50	01/03/17 15:49	7440-47-3	
Lead, Dissolved	ND	ug/L	1.0	1	12/30/16 06:50	01/03/17 15:49	7439-92-1	
Vanadium, Dissolved	ND	ug/L	5.0	1	12/30/16 06:50	01/03/17 15:49	7440-62-2	
7470 Mercury		Analytical Method: EPA 7470 Preparation Method: EPA 7470						
Mercury	ND	ug/L	0.20	1	12/29/16 09:57	12/29/16 18:09	7439-97-6	
7470 Mercury, Dissolved (LF)		Analytical Method: EPA 7470 Preparation Method: EPA 7470						
Mercury, Dissolved	ND	ug/L	0.20	1	12/29/16 11:58	12/29/16 19:39	7439-97-6	
8270 MSSV PAH by SIM SEP		Analytical Method: EPA 8270 by SIM Preparation Method: EPA 3510						
Acenaphthene	ND	ug/L	0.10	1	12/28/16 10:06	01/05/17 12:50	83-32-9	
Acenaphthylene	ND	ug/L	0.10	1	12/28/16 10:06	01/05/17 12:50	208-96-8	
Anthracene	ND	ug/L	0.10	1	12/28/16 10:06	01/05/17 12:50	120-12-7	
Benzo(a)anthracene	ND	ug/L	0.10	1	12/28/16 10:06	01/05/17 12:50	56-55-3	

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ANALYTICAL RESULTS

Project: PUMA TERMINAL MW SAMPLING

Pace Project No.: 2047806

Sample: MW-P116	Lab ID: 2047806006	Collected: 12/21/16 14:05	Received: 12/22/16 13:15	Matrix: Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8270 MSSV PAH by SIM SEP		Analytical Method: EPA 8270 by SIM Preparation Method: EPA 3510						
Benzo(a)pyrene	ND	ug/L	0.10	1	12/28/16 10:06	01/05/17 12:50	50-32-8	
Benzo(b)fluoranthene	ND	ug/L	0.10	1	12/28/16 10:06	01/05/17 12:50	205-99-2	
Benzo(g,h,i)perylene	ND	ug/L	0.10	1	12/28/16 10:06	01/05/17 12:50	191-24-2	
Benzo(k)fluoranthene	ND	ug/L	0.10	1	12/28/16 10:06	01/05/17 12:50	207-08-9	
Chrysene	ND	ug/L	0.10	1	12/28/16 10:06	01/05/17 12:50	218-01-9	
Dibenz(a,h)anthracene	ND	ug/L	0.10	1	12/28/16 10:06	01/05/17 12:50	53-70-3	
Fluoranthene	ND	ug/L	0.10	1	12/28/16 10:06	01/05/17 12:50	206-44-0	
Fluorene	ND	ug/L	0.10	1	12/28/16 10:06	01/05/17 12:50	86-73-7	
Indeno(1,2,3-cd)pyrene	ND	ug/L	0.10	1	12/28/16 10:06	01/05/17 12:50	193-39-5	
2-Methylnaphthalene	ND	ug/L	0.10	1	12/28/16 10:06	01/05/17 12:50	91-57-6	
Naphthalene	ND	ug/L	0.10	1	12/28/16 10:06	01/05/17 12:50	91-20-3	
Phenanthrene	ND	ug/L	0.10	1	12/28/16 10:06	01/05/17 12:50	85-01-8	
Pyrene	ND	ug/L	0.10	1	12/28/16 10:06	01/05/17 12:50	129-00-0	
Surrogates								
2-Fluorobiphenyl (S)	76	%.	25-150	1	12/28/16 10:06	01/05/17 12:50	321-60-8	
Terphenyl-d14 (S)	75	%.	25-150	1	12/28/16 10:06	01/05/17 12:50	1718-51-0	
8260 MSV Low Level		Analytical Method: EPA 5030B/8260						
Acetone	14.9	ug/L	4.0	1		12/28/16 19:23	67-64-1	C9
Benzene	ND	ug/L	0.50	1		12/28/16 19:23	71-43-2	
Bromodichloromethane	ND	ug/L	0.50	1		12/28/16 19:23	75-27-4	
Bromoform	ND	ug/L	0.50	1		12/28/16 19:23	75-25-2	
Bromomethane	ND	ug/L	0.50	1		12/28/16 19:23	74-83-9	
2-Butanone (MEK)	ND	ug/L	2.0	1		12/28/16 19:23	78-93-3	
Carbon disulfide	ND	ug/L	1.0	1		12/28/16 19:23	75-15-0	L3
Carbon tetrachloride	ND	ug/L	0.50	1		12/28/16 19:23	56-23-5	
Chlorobenzene	ND	ug/L	0.50	1		12/28/16 19:23	108-90-7	
Chloroethane	ND	ug/L	0.50	1		12/28/16 19:23	75-00-3	
Chloroform	ND	ug/L	0.50	1		12/28/16 19:23	67-66-3	
Chloromethane	ND	ug/L	0.50	1		12/28/16 19:23	74-87-3	
1,2-Dibromo-3-chloropropane	ND	ug/L	0.20	1		12/28/16 19:23	96-12-8	
Dibromochloromethane	ND	ug/L	0.50	1		12/28/16 19:23	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	1		12/28/16 19:23	106-93-4	
Dichlorodifluoromethane	ND	ug/L	1.0	1		12/28/16 19:23	75-71-8	
1,1-Dichloroethane	ND	ug/L	0.50	1		12/28/16 19:23	75-34-3	
1,2-Dichloroethane	ND	ug/L	0.50	1		12/28/16 19:23	107-06-2	
1,1-Dichloroethene	ND	ug/L	0.50	1		12/28/16 19:23	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	1		12/28/16 19:23	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	0.50	1		12/28/16 19:23	156-60-5	
1,2-Dichloropropane	ND	ug/L	0.50	1		12/28/16 19:23	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	0.50	1		12/28/16 19:23	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	0.50	1		12/28/16 19:23	10061-02-6	
Ethylbenzene	ND	ug/L	0.50	1		12/28/16 19:23	100-41-4	
2-Hexanone	ND	ug/L	1.0	1		12/28/16 19:23	591-78-6	
Isopropylbenzene (Cumene)	ND	ug/L	1.0	1		12/28/16 19:23	98-82-8	
Methyl acetate	ND	ug/L	2.0	1		12/28/16 19:23	79-20-9	
Methylene Chloride	ND	ug/L	0.50	1		12/28/16 19:23	75-09-2	

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ANALYTICAL RESULTS

Project: PUMA TERMINAL MW SAMPLING

Sample Project No.: 2047806

Sample: MW-P116		Lab ID: 2047806006		Collected: 12/21/16 14:05		Received: 12/22/16 13:15		Matrix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual	
8260 MSV Low Level		Analytical Method: EPA 5030B/8260							
4-Methyl-2-pentanone (MIBK)	ND	ug/L	1.0	1		12/28/16 19:23	108-10-1		
Methyl-tert-butyl ether	ND	ug/L	0.50	1		12/28/16 19:23	1634-04-4		
Styrene	ND	ug/L	1.0	1		12/28/16 19:23	100-42-5		
1,1,2,2-Tetrachloroethane	ND	ug/L	0.50	1		12/28/16 19:23	79-34-5		
Tetrachloroethene	ND	ug/L	0.50	1		12/28/16 19:23	127-18-4		
Toluene	ND	ug/L	0.50	1		12/28/16 19:23	108-88-3		
1,1,1-Trichloroethane	ND	ug/L	0.50	1		12/28/16 19:23	71-55-6		
1,1,2-Trichloroethane	ND	ug/L	0.50	1		12/28/16 19:23	79-00-5		
Trichloroethene	ND	ug/L	0.50	1		12/28/16 19:23	79-01-6		
Trichlorofluoromethane	ND	ug/L	0.50	1		12/28/16 19:23	75-69-4		
Vinyl chloride	ND	ug/L	0.50	1		12/28/16 19:23	75-01-4		
m&p-Xylene	ND	ug/L	2.0	1		12/28/16 19:23	179601-23-1		
o-Xylene	ND	ug/L	1.0	1		12/28/16 19:23	95-47-6		
Surrogates									
Dibromofluoromethane (S)	105	%.	72-126	1		12/28/16 19:23	1868-53-7		
4-Bromofluorobenzene (S)	97	%.	68-124	1		12/28/16 19:23	460-00-4		
Toluene-d8 (S)	102	%.	79-119	1		12/28/16 19:23	2037-26-5		

Sample: MW-P117		Lab ID: 2047806007		Collected: 12/21/16 15:21		Received: 12/22/16 13:15		Matrix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual	
8015M DRO/ORO Organics		Analytical Method: EPA 8015B Modified Preparation Method: EPA 3535							
Diesel Range Organic (C10-C28)	ND	mg/L	0.50	1	12/28/16 10:52	01/05/17 22:32			
Oil Range Organics (>C28-C40)	ND	mg/L	1.0	1	12/28/16 10:52	01/05/17 22:32			
Surrogates									
n-Pentacosane (S)	32	%.	16-137	1	12/28/16 10:52	01/05/17 22:32	629-99-2		
o-Terphenyl (S)	39	%.	10-121	1	12/28/16 10:52	01/05/17 22:32	84-15-1		
8021 GCV BTEX, MTBE, GRO		Analytical Method: EPA 8015/8021							
Gasoline Range Organics	ND	ug/L	50.0	1		12/30/16 13:07			
Surrogates									
4-Bromofluorobenzene (S)	93	%.	44-148	1		12/30/16 13:07	460-00-4		
6020 MET ICPMS		Analytical Method: EPA 6020 Preparation Method: EPA 3010							
Arsenic	ND	mg/L	0.0010	1	12/30/16 06:50	01/06/17 11:45	7440-38-2		
Chromium	ND	mg/L	0.0010	1	12/30/16 06:50	01/06/17 11:45	7440-47-3		
Lead	ND	mg/L	0.0010	1	12/30/16 06:50	01/06/17 11:45	7439-92-1		
Vanadium	ND	mg/L	0.0050	1	12/30/16 06:50	01/06/17 11:45	7440-62-2		
6020 MET ICPMS, Dissolved (LF)		Analytical Method: EPA 6020 Preparation Method: EPA 3005A							
Arsenic, Dissolved	ND	ug/L	1.0	1	12/30/16 06:50	01/03/17 15:53	7440-38-2		
Chromium, Dissolved	ND	ug/L	1.0	1	12/30/16 06:50	01/03/17 15:53	7440-47-3		
Lead, Dissolved	ND	ug/L	1.0	1	12/30/16 06:50	01/03/17 15:53	7439-92-1		
Vanadium, Dissolved	ND	ug/L	5.0	1	12/30/16 06:50	01/03/17 15:53	7440-62-2		

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ANALYTICAL RESULTS

Project: PUMA TERMINAL MW SAMPLING

Pace Project No.: 2047806

Sample: MW-P117	Lab ID: 2047806007	Collected: 12/21/16 15:21	Received: 12/22/16 13:15	Matrix: Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
7470 Mercury Analytical Method: EPA 7470 Preparation Method: EPA 7470								
Mercury	ND	ug/L	0.20	1	12/29/16 09:57	12/29/16 18:11	7439-97-6	
7470 Mercury, Dissolved (LF) Analytical Method: EPA 7470 Preparation Method: EPA 7470								
Mercury, Dissolved	ND	ug/L	0.20	1	12/29/16 11:58	12/29/16 19:41	7439-97-6	
8270 MSSV PAH by SIM SEP Analytical Method: EPA 8270 by SIM Preparation Method: EPA 3510								
Acenaphthene	ND	ug/L	0.10	1	12/28/16 10:06	01/05/17 13:10	83-32-9	
Acenaphthylene	ND	ug/L	0.10	1	12/28/16 10:06	01/05/17 13:10	208-96-8	
Anthracene	ND	ug/L	0.10	1	12/28/16 10:06	01/05/17 13:10	120-12-7	
Benzo(a)anthracene	ND	ug/L	0.10	1	12/28/16 10:06	01/05/17 13:10	56-55-3	
Benzo(a)pyrene	ND	ug/L	0.10	1	12/28/16 10:06	01/05/17 13:10	50-32-8	
Benzo(b)fluoranthene	ND	ug/L	0.10	1	12/28/16 10:06	01/05/17 13:10	205-99-2	
Benzo(g,h,i)perylene	ND	ug/L	0.10	1	12/28/16 10:06	01/05/17 13:10	191-24-2	
Benzo(k)fluoranthene	ND	ug/L	0.10	1	12/28/16 10:06	01/05/17 13:10	207-08-9	
Chrysene	ND	ug/L	0.10	1	12/28/16 10:06	01/05/17 13:10	218-01-9	
Dibenz(a,h)anthracene	ND	ug/L	0.10	1	12/28/16 10:06	01/05/17 13:10	53-70-3	
Fluoranthene	ND	ug/L	0.10	1	12/28/16 10:06	01/05/17 13:10	206-44-0	
Fluorene	ND	ug/L	0.10	1	12/28/16 10:06	01/05/17 13:10	86-73-7	
Indeno(1,2,3-cd)pyrene	ND	ug/L	0.10	1	12/28/16 10:06	01/05/17 13:10	193-39-5	
2-Methylnaphthalene	ND	ug/L	0.10	1	12/28/16 10:06	01/05/17 13:10	91-57-6	
Naphthalene	ND	ug/L	0.10	1	12/28/16 10:06	01/05/17 13:10	91-20-3	
Phenanthrene	ND	ug/L	0.10	1	12/28/16 10:06	01/05/17 13:10	85-01-8	
Pyrene	ND	ug/L	0.10	1	12/28/16 10:06	01/05/17 13:10	129-00-0	
Surrogates								
2-Fluorobiphenyl (S)	75	%.	25-150	1	12/28/16 10:06	01/05/17 13:10	321-60-8	
Terphenyl-d14 (S)	69	%.	25-150	1	12/28/16 10:06	01/05/17 13:10	1718-51-0	
8260 MSV Low Level Analytical Method: EPA 5030B/8260								
Acetone	16.4	ug/L	4.0	1		12/28/16 19:41	67-64-1	C9
Benzene	ND	ug/L	0.50	1		12/28/16 19:41	71-43-2	
Bromodichloromethane	ND	ug/L	0.50	1		12/28/16 19:41	75-27-4	
Bromoform	ND	ug/L	0.50	1		12/28/16 19:41	75-25-2	
Bromomethane	ND	ug/L	0.50	1		12/28/16 19:41	74-83-9	
2-Butanone (MEK)	ND	ug/L	2.0	1		12/28/16 19:41	78-93-3	
Carbon disulfide	ND	ug/L	1.0	1		12/28/16 19:41	75-15-0	L3
Carbon tetrachloride	ND	ug/L	0.50	1		12/28/16 19:41	56-23-5	
Chlorobenzene	ND	ug/L	0.50	1		12/28/16 19:41	108-90-7	
Chloroethane	ND	ug/L	0.50	1		12/28/16 19:41	75-00-3	
Chloroform	ND	ug/L	0.50	1		12/28/16 19:41	67-66-3	
Chloromethane	ND	ug/L	0.50	1		12/28/16 19:41	74-87-3	
1,2-Dibromo-3-chloropropane	ND	ug/L	0.20	1		12/28/16 19:41	96-12-8	
Dibromochloromethane	ND	ug/L	0.50	1		12/28/16 19:41	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	1		12/28/16 19:41	106-93-4	
Dichlorodifluoromethane	ND	ug/L	1.0	1		12/28/16 19:41	75-71-8	
1,1-Dichloroethane	ND	ug/L	0.50	1		12/28/16 19:41	75-34-3	
1,2-Dichloroethane	ND	ug/L	0.50	1		12/28/16 19:41	107-06-2	

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ANALYTICAL RESULTS

Project: PUMA TERMINAL MW SAMPLING

Pace Project No.: 2047806

Sample: MW-P117		Lab ID: 2047806007		Collected: 12/21/16 15:21		Received: 12/22/16 13:15		Matrix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual	
8260 MSV Low Level		Analytical Method: EPA 5030B/8260							
1,1-Dichloroethene	ND	ug/L	0.50	1		12/28/16 19:41	75-35-4		
cis-1,2-Dichloroethene	ND	ug/L	1.0	1		12/28/16 19:41	156-59-2		
trans-1,2-Dichloroethene	ND	ug/L	0.50	1		12/28/16 19:41	156-60-5		
1,2-Dichloropropane	ND	ug/L	0.50	1		12/28/16 19:41	78-87-5		
cis-1,3-Dichloropropene	ND	ug/L	0.50	1		12/28/16 19:41	10061-01-5		
trans-1,3-Dichloropropene	ND	ug/L	0.50	1		12/28/16 19:41	10061-02-6		
Ethylbenzene	ND	ug/L	0.50	1		12/28/16 19:41	100-41-4		
2-Hexanone	ND	ug/L	1.0	1		12/28/16 19:41	591-78-6		
Isopropylbenzene (Cumene)	ND	ug/L	1.0	1		12/28/16 19:41	98-82-8		
Methyl acetate	ND	ug/L	2.0	1		12/28/16 19:41	79-20-9		
Methylene Chloride	ND	ug/L	0.50	1		12/28/16 19:41	75-09-2		
4-Methyl-2-pentanone (MIBK)	ND	ug/L	1.0	1		12/28/16 19:41	108-10-1		
Methyl-tert-butyl ether	1.5	ug/L	0.50	1		12/28/16 19:41	1634-04-4		
Styrene	ND	ug/L	1.0	1		12/28/16 19:41	100-42-5		
1,1,2,2-Tetrachloroethane	ND	ug/L	0.50	1		12/28/16 19:41	79-34-5		
Tetrachloroethene	ND	ug/L	0.50	1		12/28/16 19:41	127-18-4		
Toluene	ND	ug/L	0.50	1		12/28/16 19:41	108-88-3		
1,1,1-Trichloroethane	ND	ug/L	0.50	1		12/28/16 19:41	71-55-6		
1,1,2-Trichloroethane	ND	ug/L	0.50	1		12/28/16 19:41	79-00-5		
Trichloroethene	ND	ug/L	0.50	1		12/28/16 19:41	79-01-6		
Trichlorofluoromethane	ND	ug/L	0.50	1		12/28/16 19:41	75-69-4		
Vinyl chloride	ND	ug/L	0.50	1		12/28/16 19:41	75-01-4		
m&p-Xylene	ND	ug/L	2.0	1		12/28/16 19:41	179601-23-1		
o-Xylene	ND	ug/L	1.0	1		12/28/16 19:41	95-47-6		
Surrogates									
Dibromofluoromethane (S)	103	%	72-126	1		12/28/16 19:41	1868-53-7		
4-Bromofluorobenzene (S)	101	%	68-124	1		12/28/16 19:41	460-00-4		
Toluene-d8 (S)	99	%	79-119	1		12/28/16 19:41	2037-26-5		

Sample: MW-65A		Lab ID: 2047806008		Collected: 12/21/16 16:07		Received: 12/22/16 13:15		Matrix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual	
8015M DRO/ORO Organics		Analytical Method: EPA 8015B Modified Preparation Method: EPA 3535							
Diesel Range Organic (C10-C28)	ND	mg/L	0.50	1	12/28/16 10:52	01/05/17 23:00			
Oil Range Organics (>C28-C40)	ND	mg/L	1.0	1	12/28/16 10:52	01/05/17 23:00			
Surrogates									
n-Pentacosane (S)	54	%	16-137	1	12/28/16 10:52	01/05/17 23:00	629-99-2		
o-Terphenyl (S)	55	%	10-121	1	12/28/16 10:52	01/05/17 23:00	84-15-1		
8021 GCV BTEX, MTBE, GRO		Analytical Method: EPA 8015/8021							
Gasoline Range Organics	ND	ug/L	50.0	1		12/30/16 13:33			
Surrogates									
4-Bromofluorobenzene (S)	93	%	44-148	1		12/30/16 13:33	460-00-4		

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ANALYTICAL RESULTS

Project: PUMA TERMINAL MW SAMPLING

Project No.: 2047806

Sample: MW-65A	Lab ID: 2047806008	Collected: 12/21/16 16:07	Received: 12/22/16 13:15	Matrix: Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
6020 MET ICPMS								
Analytical Method: EPA 6020 Preparation Method: EPA 3010								
Arsenic	0.0013	mg/L	0.0010	1	12/30/16 06:50	01/06/17 11:49	7440-38-2	
Chromium	0.0012	mg/L	0.0010	1	12/30/16 06:50	01/06/17 11:49	7440-47-3	
Lead	ND	mg/L	0.0010	1	12/30/16 06:50	01/06/17 11:49	7439-92-1	
Vanadium	ND	mg/L	0.0050	1	12/30/16 06:50	01/06/17 11:49	7440-62-2	
6020 MET ICPMS, Dissolved (LF)								
Analytical Method: EPA 6020 Preparation Method: EPA 3005A								
Arsenic, Dissolved	ND	ug/L	1.0	1	12/30/16 06:50	01/03/17 15:57	7440-38-2	
Chromium, Dissolved	ND	ug/L	1.0	1	12/30/16 06:50	01/03/17 15:57	7440-47-3	
Lead, Dissolved	ND	ug/L	1.0	1	12/30/16 06:50	01/03/17 15:57	7439-92-1	
Vanadium, Dissolved	ND	ug/L	5.0	1	12/30/16 06:50	01/03/17 15:57	7440-62-2	
7470 Mercury								
Analytical Method: EPA 7470 Preparation Method: EPA 7470								
Mercury	ND	ug/L	0.20	1	12/29/16 09:37	12/29/16 16:30	7439-97-6	
7470 Mercury, Dissolved (LF)								
Analytical Method: EPA 7470 Preparation Method: EPA 7470								
Mercury, Dissolved	ND	ug/L	0.20	1	12/29/16 11:58	12/29/16 18:24	7439-97-6	
8270 MSSV PAH by SIM SEP								
Analytical Method: EPA 8270 by SIM Preparation Method: EPA 3510								
Acenaphthene	ND	ug/L	0.10	1	12/28/16 10:06	01/05/17 13:30	83-32-9	
Acenaphthylene	ND	ug/L	0.10	1	12/28/16 10:06	01/05/17 13:30	208-96-8	
Anthracene	ND	ug/L	0.10	1	12/28/16 10:06	01/05/17 13:30	120-12-7	
Benzo(a)anthracene	ND	ug/L	0.10	1	12/28/16 10:06	01/05/17 13:30	56-55-3	
Benzo(a)pyrene	ND	ug/L	0.10	1	12/28/16 10:06	01/05/17 13:30	50-32-8	
Benzo(b)fluoranthene	ND	ug/L	0.10	1	12/28/16 10:06	01/05/17 13:30	205-99-2	
Benzo(g,h,i)perylene	ND	ug/L	0.10	1	12/28/16 10:06	01/05/17 13:30	191-24-2	
Benzo(k)fluoranthene	ND	ug/L	0.10	1	12/28/16 10:06	01/05/17 13:30	207-08-9	
Chrysene	ND	ug/L	0.10	1	12/28/16 10:06	01/05/17 13:30	218-01-9	
Dibenz(a,h)anthracene	ND	ug/L	0.10	1	12/28/16 10:06	01/05/17 13:30	53-70-3	
Fluoranthene	ND	ug/L	0.10	1	12/28/16 10:06	01/05/17 13:30	206-44-0	
Fluorene	ND	ug/L	0.10	1	12/28/16 10:06	01/05/17 13:30	86-73-7	
Indeno(1,2,3-cd)pyrene	ND	ug/L	0.10	1	12/28/16 10:06	01/05/17 13:30	193-39-5	
2-Methylnaphthalene	ND	ug/L	0.10	1	12/28/16 10:06	01/05/17 13:30	91-57-6	
Naphthalene	ND	ug/L	0.10	1	12/28/16 10:06	01/05/17 13:30	91-20-3	
Phenanthrene	ND	ug/L	0.10	1	12/28/16 10:06	01/05/17 13:30	85-01-8	
Pyrene	ND	ug/L	0.10	1	12/28/16 10:06	01/05/17 13:30	129-00-0	
Surrogates								
2-Fluorobiphenyl (S)	84	%	25-150	1	12/28/16 10:06	01/05/17 13:30	321-60-8	
Terphenyl-d14 (S)	82	%	25-150	1	12/28/16 10:06	01/05/17 13:30	1718-51-0	
8260 MSV Low Level								
Analytical Method: EPA 5030B/8260								
Acetone	18.0	ug/L	4.0	1		12/28/16 19:58	67-64-1	C9
Benzene	ND	ug/L	0.50	1		12/28/16 19:58	71-43-2	
Bromodichloromethane	ND	ug/L	0.50	1		12/28/16 19:58	75-27-4	
Bromoform	ND	ug/L	0.50	1		12/28/16 19:58	75-25-2	
Bromomethane	ND	ug/L	0.50	1		12/28/16 19:58	74-83-9	
2-Butanone (MEK)	ND	ug/L	2.0	1		12/28/16 19:58	78-93-3	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: PUMA TERMINAL MW SAMPLING

Pace Project No.: 2047806

Sample: MW-65A	Lab ID: 2047806008	Collected: 12/21/16 16:07	Received: 12/22/16 13:15	Matrix: Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV Low Level	Analytical Method: EPA 5030B/8260							
Carbon disulfide	ND	ug/L	1.0	1		12/28/16 19:58	75-15-0	L3
Carbon tetrachloride	ND	ug/L	0.50	1		12/28/16 19:58	56-23-5	
Chlorobenzene	ND	ug/L	0.50	1		12/28/16 19:58	108-90-7	
Chloroethane	ND	ug/L	0.50	1		12/28/16 19:58	75-00-3	
Chloroform	ND	ug/L	0.50	1		12/28/16 19:58	67-66-3	
Chloromethane	ND	ug/L	0.50	1		12/28/16 19:58	74-87-3	
1,2-Dibromo-3-chloropropane	ND	ug/L	0.20	1		12/28/16 19:58	96-12-8	
Dibromochloromethane	ND	ug/L	0.50	1		12/28/16 19:58	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	1		12/28/16 19:58	106-93-4	
Dichlorodifluoromethane	ND	ug/L	1.0	1		12/28/16 19:58	75-71-8	
1,1-Dichloroethane	ND	ug/L	0.50	1		12/28/16 19:58	75-34-3	
1,2-Dichloroethane	ND	ug/L	0.50	1		12/28/16 19:58	107-06-2	
1,1-Dichloroethene	ND	ug/L	0.50	1		12/28/16 19:58	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	1		12/28/16 19:58	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	0.50	1		12/28/16 19:58	156-60-5	
1,2-Dichloropropane	ND	ug/L	0.50	1		12/28/16 19:58	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	0.50	1		12/28/16 19:58	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	0.50	1		12/28/16 19:58	10061-02-6	
Ethylbenzene	ND	ug/L	0.50	1		12/28/16 19:58	100-41-4	
2-Hexanone	ND	ug/L	1.0	1		12/28/16 19:58	591-78-6	
Isopropylbenzene (Cumene)	ND	ug/L	1.0	1		12/28/16 19:58	98-82-8	
Methyl acetate	ND	ug/L	2.0	1		12/28/16 19:58	79-20-9	
Methylene Chloride	ND	ug/L	0.50	1		12/28/16 19:58	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	1.0	1		12/28/16 19:58	108-10-1	
Methyl-tert-butyl ether	ND	ug/L	0.50	1		12/28/16 19:58	1634-04-4	
Styrene	ND	ug/L	1.0	1		12/28/16 19:58	100-42-5	
1,1,2,2-Tetrachloroethane	ND	ug/L	0.50	1		12/28/16 19:58	79-34-5	
Tetrachloroethene	ND	ug/L	0.50	1		12/28/16 19:58	127-18-4	
Toluene	ND	ug/L	0.50	1		12/28/16 19:58	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	0.50	1		12/28/16 19:58	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	0.50	1		12/28/16 19:58	79-00-5	
Trichloroethene	ND	ug/L	0.50	1		12/28/16 19:58	79-01-6	
Trichlorofluoromethane	ND	ug/L	0.50	1		12/28/16 19:58	75-69-4	
Vinyl chloride	ND	ug/L	0.50	1		12/28/16 19:58	75-01-4	
m&p-Xylene	ND	ug/L	2.0	1		12/28/16 19:58	179601-23-1	
o-Xylene	ND	ug/L	1.0	1		12/28/16 19:58	95-47-6	
Surrogates								
Dibromofluoromethane (S)	106	%	72-126	1		12/28/16 19:58	1868-53-7	
4-Bromofluorobenzene (S)	99	%	68-124	1		12/28/16 19:58	460-00-4	
Toluene-d8 (S)	99	%	79-119	1		12/28/16 19:58	2037-26-5	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: PUMA TERMINAL MW SAMPLING

Pace Project No.: 2047806

Sample: FB-122116	Lab ID: 2047806009	Collected: 12/21/16 16:15	Received: 12/22/16 13:15	Matrix: Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8021 GCV BTEX, MTBE, GRO		Analytical Method: EPA 8015/8021						
Gasoline Range Organics	ND	ug/L	50.0	1		12/30/16 13:59		
Surrogates								
4-Bromofluorobenzene (S)	92	%	44-148	1		12/30/16 13:59	460-00-4	
8260 MSV Low Level		Analytical Method: EPA 5030B/8260						
Acetone	19.4	ug/L	4.0	1		12/28/16 20:16	67-64-1	C9
Benzene	ND	ug/L	0.50	1		12/28/16 20:16	71-43-2	
Bromodichloromethane	ND	ug/L	0.50	1		12/28/16 20:16	75-27-4	
Bromoform	ND	ug/L	0.50	1		12/28/16 20:16	75-25-2	
Bromomethane	ND	ug/L	0.50	1		12/28/16 20:16	74-83-9	
2-Butanone (MEK)	ND	ug/L	2.0	1		12/28/16 20:16	78-93-3	
Carbon disulfide	ND	ug/L	1.0	1		12/28/16 20:16	75-15-0	L3
Carbon tetrachloride	ND	ug/L	0.50	1		12/28/16 20:16	56-23-5	
Chlorobenzene	ND	ug/L	0.50	1		12/28/16 20:16	108-90-7	
Chloroethane	ND	ug/L	0.50	1		12/28/16 20:16	75-00-3	
Chloroform	ND	ug/L	0.50	1		12/28/16 20:16	67-66-3	
Chloromethane	ND	ug/L	0.50	1		12/28/16 20:16	74-87-3	
1,2-Dibromo-3-chloropropane	ND	ug/L	0.20	1		12/28/16 20:16	96-12-8	
Dibromochloromethane	ND	ug/L	0.50	1		12/28/16 20:16	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	1		12/28/16 20:16	106-93-4	
Dichlorodifluoromethane	ND	ug/L	1.0	1		12/28/16 20:16	75-71-8	
1,1-Dichloroethane	ND	ug/L	0.50	1		12/28/16 20:16	75-34-3	
1,2-Dichloroethane	ND	ug/L	0.50	1		12/28/16 20:16	107-06-2	
1,1-Dichloroethene	ND	ug/L	0.50	1		12/28/16 20:16	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	1		12/28/16 20:16	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	0.50	1		12/28/16 20:16	156-60-5	
1,2-Dichloropropane	ND	ug/L	0.50	1		12/28/16 20:16	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	0.50	1		12/28/16 20:16	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	0.50	1		12/28/16 20:16	10061-02-6	
Ethylbenzene	ND	ug/L	0.50	1		12/28/16 20:16	100-41-4	
2-Hexanone	ND	ug/L	1.0	1		12/28/16 20:16	591-78-6	
Isopropylbenzene (Cumene)	ND	ug/L	1.0	1		12/28/16 20:16	98-82-8	
Methyl acetate	ND	ug/L	2.0	1		12/28/16 20:16	79-20-9	
Methylene Chloride	ND	ug/L	0.50	1		12/28/16 20:16	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	1.0	1		12/28/16 20:16	108-10-1	
Methyl-tert-butyl ether	ND	ug/L	0.50	1		12/28/16 20:16	1634-04-4	
Styrene	ND	ug/L	1.0	1		12/28/16 20:16	100-42-5	
1,1,2,2-Tetrachloroethane	ND	ug/L	0.50	1		12/28/16 20:16	79-34-5	
Tetrachloroethene	ND	ug/L	0.50	1		12/28/16 20:16	127-18-4	
Toluene	ND	ug/L	0.50	1		12/28/16 20:16	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	0.50	1		12/28/16 20:16	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	0.50	1		12/28/16 20:16	79-00-5	
Trichloroethene	ND	ug/L	0.50	1		12/28/16 20:16	79-01-6	
Trichlorofluoromethane	ND	ug/L	0.50	1		12/28/16 20:16	75-69-4	
Vinyl chloride	ND	ug/L	0.50	1		12/28/16 20:16	75-01-4	
m&p-Xylene	ND	ug/L	2.0	1		12/28/16 20:16	179601-23-1	
o-Xylene	ND	ug/L	1.0	1		12/28/16 20:16	95-47-6	

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ANALYTICAL RESULTS

Project: PUMA TERMINAL MW SAMPLING

Pace Project No.: 2047806

Sample: FB-122116	Lab ID: 2047806009	Collected: 12/21/16 16:15	Received: 12/22/16 13:15	Matrix: Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual

8260 MSV Low Level

Analytical Method: EPA 5030B/8260

Surrogates

Dibromofluoromethane (S)	104	%.	72-126	1		12/28/16 20:16	1868-53-7	
4-Bromofluorobenzene (S)	97	%.	68-124	1		12/28/16 20:16	460-00-4	
Toluene-d8 (S)	99	%.	79-119	1		12/28/16 20:16	2037-26-5	

Sample: TB-122216	Lab ID: 2047806010	Collected: 12/22/16 00:00	Received: 12/22/16 13:15	Matrix: Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual

8021 GCV BTEX, MTBE, GRO

Analytical Method: EPA 8015/8021

Gasoline Range Organics	ND	ug/L	50.0	1		12/30/16 14:25		
Surrogates								
4-Bromofluorobenzene (S)	91	%.	44-148	1		12/30/16 14:25	460-00-4	

8260 MSV Low Level

Analytical Method: EPA 5030B/8260

Acetone	62.0	ug/L	4.0	1		12/28/16 20:34	67-64-1	C9
Benzene	ND	ug/L	0.50	1		12/28/16 20:34	71-43-2	
Bromodichloromethane	ND	ug/L	0.50	1		12/28/16 20:34	75-27-4	
Bromoform	ND	ug/L	0.50	1		12/28/16 20:34	75-25-2	
Bromomethane	ND	ug/L	0.50	1		12/28/16 20:34	74-83-9	
2-Butanone (MEK)	ND	ug/L	2.0	1		12/28/16 20:34	78-93-3	
Carbon disulfide	ND	ug/L	1.0	1		12/28/16 20:34	75-15-0	L3
Carbon tetrachloride	ND	ug/L	0.50	1		12/28/16 20:34	56-23-5	
Chlorobenzene	ND	ug/L	0.50	1		12/28/16 20:34	108-90-7	
Chloroethane	ND	ug/L	0.50	1		12/28/16 20:34	75-00-3	
Chloroform	ND	ug/L	0.50	1		12/28/16 20:34	67-66-3	
Chloromethane	0.64	ug/L	0.50	1		12/28/16 20:34	74-87-3	
1,2-Dibromo-3-chloropropane	ND	ug/L	0.20	1		12/28/16 20:34	96-12-8	
Dibromochloromethane	ND	ug/L	0.50	1		12/28/16 20:34	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	1		12/28/16 20:34	106-93-4	
Dichlorodifluoromethane	ND	ug/L	1.0	1		12/28/16 20:34	75-71-8	
1,1-Dichloroethane	ND	ug/L	0.50	1		12/28/16 20:34	75-34-3	
1,2-Dichloroethane	ND	ug/L	0.50	1		12/28/16 20:34	107-06-2	
1,1-Dichloroethene	ND	ug/L	0.50	1		12/28/16 20:34	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	1		12/28/16 20:34	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	0.50	1		12/28/16 20:34	156-60-5	
1,2-Dichloropropane	ND	ug/L	0.50	1		12/28/16 20:34	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	0.50	1		12/28/16 20:34	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	0.50	1		12/28/16 20:34	10061-02-6	
Ethylbenzene	ND	ug/L	0.50	1		12/28/16 20:34	100-41-4	
2-Hexanone	ND	ug/L	1.0	1		12/28/16 20:34	591-78-6	
Isopropylbenzene (Cumene)	ND	ug/L	1.0	1		12/28/16 20:34	98-82-8	
Methyl acetate	ND	ug/L	2.0	1		12/28/16 20:34	79-20-9	
Methylene Chloride	ND	ug/L	0.50	1		12/28/16 20:34	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	1.0	1		12/28/16 20:34	108-10-1	
Methyl-tert-butyl ether	ND	ug/L	0.50	1		12/28/16 20:34	1634-04-4	

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ANALYTICAL RESULTS

Project: PUMA TERMINAL MW SAMPLING

Pace Project No.: 2047806

Sample: TB-122216		Lab ID: 2047806010		Collected: 12/22/16 00:00	Received: 12/22/16 13:15	Matrix: Water		
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV Low Level		Analytical Method: EPA 5030B/8260						
Styrene	ND	ug/L	1.0	1		12/28/16 20:34	100-42-5	
1,1,2,2-Tetrachloroethane	ND	ug/L	0.50	1		12/28/16 20:34	79-34-5	
Tetrachloroethene	ND	ug/L	0.50	1		12/28/16 20:34	127-18-4	
Toluene	ND	ug/L	0.50	1		12/28/16 20:34	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	0.50	1		12/28/16 20:34	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	0.50	1		12/28/16 20:34	79-00-5	
Trichloroethene	ND	ug/L	0.50	1		12/28/16 20:34	79-01-6	
Trichlorofluoromethane	ND	ug/L	0.50	1		12/28/16 20:34	75-69-4	
Vinyl chloride	ND	ug/L	0.50	1		12/28/16 20:34	75-01-4	
m&p-Xylene	ND	ug/L	2.0	1		12/28/16 20:34	179601-23-1	
o-Xylene	ND	ug/L	1.0	1		12/28/16 20:34	95-47-6	
Surrogates								
Dibromofluoromethane (S)	104	%.	72-126	1		12/28/16 20:34	1868-53-7	
4-Bromofluorobenzene (S)	100	%.	68-124	1		12/28/16 20:34	460-00-4	
Toluene-d8 (S)	101	%.	79-119	1		12/28/16 20:34	2037-26-5	

Sample: EB-122216		Lab ID: 2047806011		Collected: 12/22/16 08:42	Received: 12/22/16 13:15	Matrix: Water		
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8015M DRO/ORO Organics		Analytical Method: EPA 8015B Modified Preparation Method: EPA 3535						
Diesel Range Organic (C10-C28)	ND	mg/L	0.50	1	12/28/16 10:52	01/05/17 23:28		
Oil Range Organics (>C28-C40)	ND	mg/L	1.0	1	12/28/16 10:52	01/05/17 23:28		
Surrogates								
n-Pentacosane (S)	42	%.	16-137	1	12/28/16 10:52	01/05/17 23:28	629-99-2	
o-Terphenyl (S)	49	%.	10-121	1	12/28/16 10:52	01/05/17 23:28	84-15-1	
8021 GCV BTEX, MTBE, GRO		Analytical Method: EPA 8015/8021						
Gasoline Range Organics	ND	ug/L	50.0	1		12/30/16 14:51		
Surrogates								
4-Bromofluorobenzene (S)	89	%.	44-148	1		12/30/16 14:51	460-00-4	
6020 MET ICPMS		Analytical Method: EPA 6020 Preparation Method: EPA 3010						
Arsenic	ND	mg/L	0.0010	1	12/30/16 06:50	01/06/17 11:53	7440-38-2	
Chromium	ND	mg/L	0.0010	1	12/30/16 06:50	01/06/17 11:53	7440-47-3	
Lead	ND	mg/L	0.0010	1	12/30/16 06:50	01/06/17 11:53	7439-92-1	
Vanadium	ND	mg/L	0.0050	1	12/30/16 06:50	01/06/17 11:53	7440-62-2	
6020 MET ICPMS, Dissolved (LF)		Analytical Method: EPA 6020 Preparation Method: EPA 3005A						
Arsenic, Dissolved	ND	ug/L	1.0	1	12/30/16 06:50	01/03/17 16:09	7440-38-2	
Chromium, Dissolved	ND	ug/L	1.0	1	12/30/16 06:50	01/03/17 16:09	7440-47-3	
Lead, Dissolved	ND	ug/L	1.0	1	12/30/16 06:50	01/03/17 16:09	7439-92-1	
Vanadium, Dissolved	ND	ug/L	5.0	1	12/30/16 06:50	01/03/17 16:09	7440-62-2	

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ANALYTICAL RESULTS

Project: PUMA TERMINAL MW SAMPLING

Pace Project No.: 2047806

Sample: EB-122216	Lab ID: 2047806011	Collected: 12/22/16 08:42	Received: 12/22/16 13:15	Matrix: Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
7470 Mercury Analytical Method: EPA 7470 Preparation Method: EPA 7470								
Mercury	ND	ug/L	0.20	1	12/29/16 09:37	12/29/16 16:32	7439-97-6	
7470 Mercury, Dissolved (LF) Analytical Method: EPA 7470 Preparation Method: EPA 7470								
Mercury, Dissolved	ND	ug/L	0.20	1	12/29/16 11:58	12/29/16 18:26	7439-97-6	
8270 MSSV PAH by SIM SEP Analytical Method: EPA 8270 by SIM Preparation Method: EPA 3510								
Acenaphthene	ND	ug/L	0.10	1	12/28/16 11:52	01/06/17 15:15	83-32-9	
Acenaphthylene	ND	ug/L	0.10	1	12/28/16 11:52	01/06/17 15:15	208-96-8	
Anthracene	ND	ug/L	0.10	1	12/28/16 11:52	01/06/17 15:15	120-12-7	
Benzo(a)anthracene	ND	ug/L	0.10	1	12/28/16 11:52	01/06/17 15:15	56-55-3	
Benzo(a)pyrene	ND	ug/L	0.10	1	12/28/16 11:52	01/06/17 15:15	50-32-8	
Benzo(b)fluoranthene	ND	ug/L	0.10	1	12/28/16 11:52	01/06/17 15:15	205-99-2	
Benzo(g,h,i)perylene	ND	ug/L	0.10	1	12/28/16 11:52	01/06/17 15:15	191-24-2	
Benzo(k)fluoranthene	ND	ug/L	0.10	1	12/28/16 11:52	01/06/17 15:15	207-08-9	
Chrysene	ND	ug/L	0.10	1	12/28/16 11:52	01/06/17 15:15	218-01-9	
Dibenz(a,h)anthracene	ND	ug/L	0.10	1	12/28/16 11:52	01/06/17 15:15	53-70-3	
Fluoranthene	ND	ug/L	0.10	1	12/28/16 11:52	01/06/17 15:15	206-44-0	
Fluorene	ND	ug/L	0.10	1	12/28/16 11:52	01/06/17 15:15	86-73-7	
Indeno(1,2,3-cd)pyrene	ND	ug/L	0.10	1	12/28/16 11:52	01/06/17 15:15	193-39-5	
2-Methylnaphthalene	ND	ug/L	0.10	1	12/28/16 11:52	01/06/17 15:15	91-57-6	
Naphthalene	ND	ug/L	0.10	1	12/28/16 11:52	01/06/17 15:15	91-20-3	
Phenanthrene	ND	ug/L	0.10	1	12/28/16 11:52	01/06/17 15:15	85-01-8	
Pyrene	ND	ug/L	0.10	1	12/28/16 11:52	01/06/17 15:15	129-00-0	
Surrogates								
2-Fluorobiphenyl (S)	71	%.	25-150	1	12/28/16 11:52	01/06/17 15:15	321-60-8	
Terphenyl-d14 (S)	66	%.	25-150	1	12/28/16 11:52	01/06/17 15:15	1718-51-0	
8260 MSV Low Level Analytical Method: EPA 5030B/8260								
Acetone	28.2	ug/L	4.0	1		12/28/16 20:52	67-64-1	C9
Benzene	ND	ug/L	0.50	1		12/28/16 20:52	71-43-2	
Bromodichloromethane	ND	ug/L	0.50	1		12/28/16 20:52	75-27-4	
Bromoform	ND	ug/L	0.50	1		12/28/16 20:52	75-25-2	
Bromomethane	ND	ug/L	0.50	1		12/28/16 20:52	74-83-9	
2-Butanone (MEK)	ND	ug/L	2.0	1		12/28/16 20:52	78-93-3	
Carbon disulfide	ND	ug/L	1.0	1		12/28/16 20:52	75-15-0	L3
Carbon tetrachloride	ND	ug/L	0.50	1		12/28/16 20:52	56-23-5	
Chlorobenzene	ND	ug/L	0.50	1		12/28/16 20:52	108-90-7	
Chloroethane	ND	ug/L	0.50	1		12/28/16 20:52	75-00-3	
Chloroform	ND	ug/L	0.50	1		12/28/16 20:52	67-66-3	
Chloromethane	0.65	ug/L	0.50	1		12/28/16 20:52	74-87-3	
1,2-Dibromo-3-chloropropane	ND	ug/L	0.20	1		12/28/16 20:52	96-12-8	
Dibromochloromethane	ND	ug/L	0.50	1		12/28/16 20:52	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	1		12/28/16 20:52	106-93-4	
Dichlorodifluoromethane	ND	ug/L	1.0	1		12/28/16 20:52	75-71-8	
1,1-Dichloroethane	ND	ug/L	0.50	1		12/28/16 20:52	75-34-3	
1,2-Dichloroethane	ND	ug/L	0.50	1		12/28/16 20:52	107-06-2	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: PUMA TERMINAL MW SAMPLING

Project No.: 2047806

Sample: EB-122216		Lab ID: 2047806011		Collected: 12/22/16 08:42		Received: 12/22/16 13:15		Matrix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual	
8260 MSV Low Level		Analytical Method: EPA 5030B/8260							
1,1-Dichloroethene	ND	ug/L	0.50	1		12/28/16 20:52	75-35-4		
cis-1,2-Dichloroethene	ND	ug/L	1.0	1		12/28/16 20:52	156-59-2		
trans-1,2-Dichloroethene	ND	ug/L	0.50	1		12/28/16 20:52	156-60-5		
1,2-Dichloropropane	ND	ug/L	0.50	1		12/28/16 20:52	78-87-5		
cis-1,3-Dichloropropene	ND	ug/L	0.50	1		12/28/16 20:52	10061-01-5		
trans-1,3-Dichloropropene	ND	ug/L	0.50	1		12/28/16 20:52	10061-02-6		
Ethylbenzene	ND	ug/L	0.50	1		12/28/16 20:52	100-41-4		
2-Hexanone	ND	ug/L	1.0	1		12/28/16 20:52	591-78-6		
Isopropylbenzene (Cumene)	ND	ug/L	1.0	1		12/28/16 20:52	98-82-8		
Methyl acetate	ND	ug/L	2.0	1		12/28/16 20:52	79-20-9		
Methylene Chloride	ND	ug/L	0.50	1		12/28/16 20:52	75-09-2		
4-Methyl-2-pentanone (MIBK)	ND	ug/L	1.0	1		12/28/16 20:52	108-10-1		
Methyl-tert-butyl ether	ND	ug/L	0.50	1		12/28/16 20:52	1634-04-4		
Styrene	ND	ug/L	1.0	1		12/28/16 20:52	100-42-5		
1,1,2,2-Tetrachloroethane	ND	ug/L	0.50	1		12/28/16 20:52	79-34-5		
Tetrachloroethene	ND	ug/L	0.50	1		12/28/16 20:52	127-18-4		
Toluene	ND	ug/L	0.50	1		12/28/16 20:52	108-88-3		
1,1,1-Trichloroethane	ND	ug/L	0.50	1		12/28/16 20:52	71-55-6		
1,1,2-Trichloroethane	ND	ug/L	0.50	1		12/28/16 20:52	79-00-5		
Trichloroethene	ND	ug/L	0.50	1		12/28/16 20:52	79-01-6		
Trichlorofluoromethane	ND	ug/L	0.50	1		12/28/16 20:52	75-69-4		
Vinyl chloride	ND	ug/L	0.50	1		12/28/16 20:52	75-01-4		
m&p-Xylene	ND	ug/L	2.0	1		12/28/16 20:52	179601-23-1		
o-Xylene	ND	ug/L	1.0	1		12/28/16 20:52	95-47-6		
Surrogates									
Dibromofluoromethane (S)	105	%.	72-126	1		12/28/16 20:52	1868-53-7		
4-Bromofluorobenzene (S)	95	%.	68-124	1		12/28/16 20:52	460-00-4		
Toluene-d8 (S)	101	%.	79-119	1		12/28/16 20:52	2037-26-5		

Sample: MW-15A		Lab ID: 2047806012		Collected: 12/22/16 09:38		Received: 12/22/16 13:15		Matrix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual	
8015M DRO/ORO Organics		Analytical Method: EPA 8015B Modified Preparation Method: EPA 3535							
Diesel Range Organic (C10-C28)	ND	mg/L	0.50	1	12/28/16 10:52	01/05/17 23:56			
Oil Range Organics (>C28-C40)	ND	mg/L	1.0	1	12/28/16 10:52	01/05/17 23:56			
Surrogates									
n-Pentacosane (S)	35	%.	16-137	1	12/28/16 10:52	01/05/17 23:56	629-99-2		
o-Terphenyl (S)	44	%.	10-121	1	12/28/16 10:52	01/05/17 23:56	84-15-1		
8021 GCV BTEX, MTBE, GRO		Analytical Method: EPA 8015/8021							
Gasoline Range Organics	ND	ug/L	50.0	1		12/30/16 15:17			
Surrogates									
4-Bromofluorobenzene (S)	94	%.	44-148	1		12/30/16 15:17	460-00-4		

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: PUMA TERMINAL MW SAMPLING

Pace Project No.: 2047806

Sample: MW-15A	Lab ID: 2047806012	Collected: 12/22/16 09:38	Received: 12/22/16 13:15	Matrix: Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
6020 MET ICPMS								
Analytical Method: EPA 6020 Preparation Method: EPA 3010								
Arsenic	0.0016	mg/L	0.0010	1	12/30/16 06:50	01/06/17 11:57	7440-38-2	
Chromium	ND	mg/L	0.0010	1	12/30/16 06:50	01/06/17 11:57	7440-47-3	
Lead	ND	mg/L	0.0010	1	12/30/16 06:50	01/06/17 11:57	7439-92-1	
Vanadium	ND	mg/L	0.0050	1	12/30/16 06:50	01/06/17 11:57	7440-62-2	
6020 MET ICPMS, Dissolved (LF)								
Analytical Method: EPA 6020 Preparation Method: EPA 3005A								
Arsenic, Dissolved	ND	ug/L	1.0	1	12/30/16 06:50	01/03/17 16:13	7440-38-2	
Chromium, Dissolved	ND	ug/L	1.0	1	12/30/16 06:50	01/03/17 16:13	7440-47-3	
Lead, Dissolved	ND	ug/L	1.0	1	12/30/16 06:50	01/03/17 16:13	7439-92-1	
Vanadium, Dissolved	ND	ug/L	5.0	1	12/30/16 06:50	01/03/17 16:13	7440-62-2	
7470 Mercury								
Analytical Method: EPA 7470 Preparation Method: EPA 7470								
Mercury	ND	ug/L	0.20	1	12/29/16 09:37	12/29/16 16:34	7439-97-6	
7470 Mercury, Dissolved (LF)								
Analytical Method: EPA 7470 Preparation Method: EPA 7470								
Mercury, Dissolved	ND	ug/L	0.20	1	12/29/16 11:58	12/29/16 18:32	7439-97-6	
8270 MSSV PAH by SIM SEP								
Analytical Method: EPA 8270 by SIM Preparation Method: EPA 3510								
Acenaphthene	ND	ug/L	0.10	1	12/28/16 11:52	01/06/17 15:35	83-32-9	
Acenaphthylene	ND	ug/L	0.10	1	12/28/16 11:52	01/06/17 15:35	208-96-8	
Anthracene	ND	ug/L	0.10	1	12/28/16 11:52	01/06/17 15:35	120-12-7	
Benzo(a)anthracene	ND	ug/L	0.10	1	12/28/16 11:52	01/06/17 15:35	56-55-3	
Benzo(a)pyrene	ND	ug/L	0.10	1	12/28/16 11:52	01/06/17 15:35	50-32-8	
Benzo(b)fluoranthene	ND	ug/L	0.10	1	12/28/16 11:52	01/06/17 15:35	205-99-2	
Benzo(g,h,i)perylene	ND	ug/L	0.10	1	12/28/16 11:52	01/06/17 15:35	191-24-2	
Benzo(k)fluoranthene	ND	ug/L	0.10	1	12/28/16 11:52	01/06/17 15:35	207-08-9	
Chrysene	ND	ug/L	0.10	1	12/28/16 11:52	01/06/17 15:35	218-01-9	
Dibenz(a,h)anthracene	ND	ug/L	0.10	1	12/28/16 11:52	01/06/17 15:35	53-70-3	
Fluoranthene	ND	ug/L	0.10	1	12/28/16 11:52	01/06/17 15:35	206-44-0	
Fluorene	ND	ug/L	0.10	1	12/28/16 11:52	01/06/17 15:35	86-73-7	
Indeno(1,2,3-cd)pyrene	ND	ug/L	0.10	1	12/28/16 11:52	01/06/17 15:35	193-39-5	
2-Methylnaphthalene	ND	ug/L	0.10	1	12/28/16 11:52	01/06/17 15:35	91-57-6	
Naphthalene	ND	ug/L	0.10	1	12/28/16 11:52	01/06/17 15:35	91-20-3	
Phenanthrene	ND	ug/L	0.10	1	12/28/16 11:52	01/06/17 15:35	85-01-8	
Pyrene	ND	ug/L	0.10	1	12/28/16 11:52	01/06/17 15:35	129-00-0	
Surrogates								
2-Fluorobiphenyl (S)	66	%	25-150	1	12/28/16 11:52	01/06/17 15:35	321-60-8	
Terphenyl-d14 (S)	51	%	25-150	1	12/28/16 11:52	01/06/17 15:35	1718-51-0	
8260 MSV Low Level								
Analytical Method: EPA 5030B/8260								
Acetone	12.1	ug/L	4.0	1		12/28/16 21:10	67-64-1	C9
Benzene	ND	ug/L	0.50	1		12/28/16 21:10	71-43-2	
Bromodichloromethane	ND	ug/L	0.50	1		12/28/16 21:10	75-27-4	
Bromoform	ND	ug/L	0.50	1		12/28/16 21:10	75-25-2	
Bromomethane	ND	ug/L	0.50	1		12/28/16 21:10	74-83-9	
2-Butanone (MEK)	ND	ug/L	2.0	1		12/28/16 21:10	78-93-3	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: PUMA TERMINAL MW SAMPLING

Pace Project No.: 2047806

Sample: MW-15A	Lab ID: 2047806012	Collected: 12/22/16 09:38	Received: 12/22/16 13:15	Matrix: Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV Low Level		Analytical Method: EPA 5030B/8260						
Carbon disulfide	ND	ug/L	1.0	1		12/28/16 21:10	75-15-0	L3
Carbon tetrachloride	ND	ug/L	0.50	1		12/28/16 21:10	56-23-5	
Chlorobenzene	ND	ug/L	0.50	1		12/28/16 21:10	108-90-7	
Chloroethane	ND	ug/L	0.50	1		12/28/16 21:10	75-00-3	
Chloroform	ND	ug/L	0.50	1		12/28/16 21:10	67-66-3	
Chloromethane	ND	ug/L	0.50	1		12/28/16 21:10	74-87-3	
1,2-Dibromo-3-chloropropane	ND	ug/L	0.20	1		12/28/16 21:10	96-12-8	
Dibromochloromethane	ND	ug/L	0.50	1		12/28/16 21:10	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	1		12/28/16 21:10	106-93-4	
Dichlorodifluoromethane	ND	ug/L	1.0	1		12/28/16 21:10	75-71-8	
1,1-Dichloroethane	ND	ug/L	0.50	1		12/28/16 21:10	75-34-3	
1,2-Dichloroethane	ND	ug/L	0.50	1		12/28/16 21:10	107-06-2	
1,1-Dichloroethene	ND	ug/L	0.50	1		12/28/16 21:10	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	1		12/28/16 21:10	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	0.50	1		12/28/16 21:10	156-60-5	
1,2-Dichloropropane	ND	ug/L	0.50	1		12/28/16 21:10	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	0.50	1		12/28/16 21:10	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	0.50	1		12/28/16 21:10	10061-02-6	
Ethylbenzene	ND	ug/L	0.50	1		12/28/16 21:10	100-41-4	
2-Hexanone	ND	ug/L	1.0	1		12/28/16 21:10	591-78-6	
Isopropylbenzene (Cumene)	ND	ug/L	1.0	1		12/28/16 21:10	98-82-8	
Methyl acetate	ND	ug/L	2.0	1		12/28/16 21:10	79-20-9	
Methylene Chloride	ND	ug/L	0.50	1		12/28/16 21:10	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	1.0	1		12/28/16 21:10	108-10-1	
Methyl-tert-butyl ether	6.6	ug/L	0.50	1		12/28/16 21:10	1634-04-4	
Styrene	ND	ug/L	1.0	1		12/28/16 21:10	100-42-5	
1,1,2,2-Tetrachloroethane	ND	ug/L	0.50	1		12/28/16 21:10	79-34-5	
Tetrachloroethene	ND	ug/L	0.50	1		12/28/16 21:10	127-18-4	
Toluene	ND	ug/L	0.50	1		12/28/16 21:10	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	0.50	1		12/28/16 21:10	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	0.50	1		12/28/16 21:10	79-00-5	
Trichloroethene	ND	ug/L	0.50	1		12/28/16 21:10	79-01-6	
Trichlorofluoromethane	ND	ug/L	0.50	1		12/28/16 21:10	75-69-4	
Vinyl chloride	ND	ug/L	0.50	1		12/28/16 21:10	75-01-4	
m&p-Xylene	ND	ug/L	2.0	1		12/28/16 21:10	179601-23-1	
o-Xylene	ND	ug/L	1.0	1		12/28/16 21:10	95-47-6	
Surrogates								
Dibromofluoromethane (S)	106	%.	72-126	1		12/28/16 21:10	1868-53-7	
4-Bromofluorobenzene (S)	98	%.	68-124	1		12/28/16 21:10	460-00-4	
Toluene-d8 (S)	100	%.	79-119	1		12/28/16 21:10	2037-26-5	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: PUMA TERMINAL MW SAMPLING

Pace Project No.: 2047806

Sample: MW-15B2	Lab ID: 2047806013	Collected: 12/22/16 10:23	Received: 12/22/16 13:15	Matrix: Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8015M DRO/ORO Organics								
Analytical Method: EPA 8015B Modified Preparation Method: EPA 3535								
Diesel Range Organic (C10-C28)	ND	mg/L	0.50	1	12/28/16 10:52	01/06/17 00:24		
Oil Range Organics (>C28-C40)	ND	mg/L	1.0	1	12/28/16 10:52	01/06/17 00:24		
Surrogates								
n-Pentacosane (S)	36	%	16-137	1	12/28/16 10:52	01/06/17 00:24	629-99-2	
o-Terphenyl (S)	46	%	10-121	1	12/28/16 10:52	01/06/17 00:24	84-15-1	
8021 GCV BTEX, MTBE, GRO								
Analytical Method: EPA 8015/8021								
Gasoline Range Organics	78.4	ug/L	50.0	1		12/30/16 15:43		
Surrogates								
4-Bromofluorobenzene (S)	90	%	44-148	1		12/30/16 15:43	460-00-4	
6020 MET ICPMS								
Analytical Method: EPA 6020 Preparation Method: EPA 3010								
Arsenic	0.019	mg/L	0.0010	1	12/30/16 06:50	01/06/17 12:01	7440-38-2	
Chromium	ND	mg/L	0.0010	1	12/30/16 06:50	01/06/17 12:01	7440-47-3	
Lead	ND	mg/L	0.0010	1	12/30/16 06:50	01/06/17 12:01	7439-92-1	
Vanadium	ND	mg/L	0.0050	1	12/30/16 06:50	01/06/17 12:01	7440-62-2	
6020 MET ICPMS, Dissolved (LF)								
Analytical Method: EPA 6020 Preparation Method: EPA 3005A								
Arsenic, Dissolved	14.0	ug/L	1.0	1	12/30/16 06:50	01/03/17 16:17	7440-38-2	
Chromium, Dissolved	ND	ug/L	1.0	1	12/30/16 06:50	01/03/17 16:17	7440-47-3	
Lead, Dissolved	ND	ug/L	1.0	1	12/30/16 06:50	01/03/17 16:17	7439-92-1	
Vanadium, Dissolved	ND	ug/L	5.0	1	12/30/16 06:50	01/03/17 16:17	7440-62-2	
7470 Mercury								
Analytical Method: EPA 7470 Preparation Method: EPA 7470								
Mercury	ND	ug/L	0.20	1	12/29/16 09:37	12/29/16 16:36	7439-97-6	
7470 Mercury, Dissolved (LF)								
Analytical Method: EPA 7470 Preparation Method: EPA 7470								
Mercury, Dissolved	ND	ug/L	0.20	1	12/29/16 11:58	12/29/16 18:34	7439-97-6	
8270 MSSV PAH by SIM SEP								
Analytical Method: EPA 8270 by SIM Preparation Method: EPA 3510								
Acenaphthene	ND	ug/L	0.10	1	12/28/16 11:52	01/06/17 15:55	83-32-9	
Acenaphthylene	ND	ug/L	0.10	1	12/28/16 11:52	01/06/17 15:55	208-96-8	
Anthracene	ND	ug/L	0.10	1	12/28/16 11:52	01/06/17 15:55	120-12-7	
Benzo(a)anthracene	ND	ug/L	0.10	1	12/28/16 11:52	01/06/17 15:55	56-55-3	
Benzo(a)pyrene	ND	ug/L	0.10	1	12/28/16 11:52	01/06/17 15:55	50-32-8	
Benzo(b)fluoranthene	ND	ug/L	0.10	1	12/28/16 11:52	01/06/17 15:55	205-99-2	
Benzo(g,h,i)perylene	ND	ug/L	0.10	1	12/28/16 11:52	01/06/17 15:55	191-24-2	
Benzo(k)fluoranthene	ND	ug/L	0.10	1	12/28/16 11:52	01/06/17 15:55	207-08-9	
Chrysene	ND	ug/L	0.10	1	12/28/16 11:52	01/06/17 15:55	218-01-9	
Dibenz(a,h)anthracene	ND	ug/L	0.10	1	12/28/16 11:52	01/06/17 15:55	53-70-3	
Fluoranthene	ND	ug/L	0.10	1	12/28/16 11:52	01/06/17 15:55	206-44-0	
Fluorene	ND	ug/L	0.10	1	12/28/16 11:52	01/06/17 15:55	86-73-7	
Indeno(1,2,3-cd)pyrene	ND	ug/L	0.10	1	12/28/16 11:52	01/06/17 15:55	193-39-5	
2-Methylnaphthalene	ND	ug/L	0.10	1	12/28/16 11:52	01/06/17 15:55	91-57-6	
Naphthalene	ND	ug/L	0.10	1	12/28/16 11:52	01/06/17 15:55	91-20-3	
Phenanthrene	ND	ug/L	0.10	1	12/28/16 11:52	01/06/17 15:55	85-01-8	

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ANALYTICAL RESULTS

Project: PUMA TERMINAL MW SAMPLING

Pace Project No.: 2047806

Sample: MW-15B2	Lab ID: 2047806013	Collected: 12/22/16 10:23	Received: 12/22/16 13:15	Matrix: Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8270 MSSV PAH by SIM SEP		Analytical Method: EPA 8270 by SIM Preparation Method: EPA 3510						
Pyrene	ND	ug/L	0.10	1	12/28/16 11:52	01/06/17 15:55	129-00-0	
Surrogates								
2-Fluorobiphenyl (S)	69	%.	25-150	1	12/28/16 11:52	01/06/17 15:55	321-60-8	
Terphenyl-d14 (S)	63	%.	25-150	1	12/28/16 11:52	01/06/17 15:55	1718-51-0	
8260 MSV Low Level		Analytical Method: EPA 5030B/8260						
Acetone	15.6	ug/L	4.0	1		12/28/16 21:28	67-64-1	C9
Benzene	ND	ug/L	0.50	1		12/28/16 21:28	71-43-2	
Bromodichloromethane	ND	ug/L	0.50	1		12/28/16 21:28	75-27-4	
Bromoform	ND	ug/L	0.50	1		12/28/16 21:28	75-25-2	
Bromomethane	ND	ug/L	0.50	1		12/28/16 21:28	74-83-9	
2-Butanone (MEK)	ND	ug/L	2.0	1		12/28/16 21:28	78-93-3	
Carbon disulfide	ND	ug/L	1.0	1		12/28/16 21:28	75-15-0	L3
Carbon tetrachloride	ND	ug/L	0.50	1		12/28/16 21:28	56-23-5	
Chlorobenzene	ND	ug/L	0.50	1		12/28/16 21:28	108-90-7	
Chloroethane	ND	ug/L	0.50	1		12/28/16 21:28	75-00-3	
Chloroform	ND	ug/L	0.50	1		12/28/16 21:28	67-66-3	
Chloromethane	ND	ug/L	0.50	1		12/28/16 21:28	74-87-3	
1,2-Dibromo-3-chloropropane	ND	ug/L	0.20	1		12/28/16 21:28	96-12-8	
Dibromochloromethane	ND	ug/L	0.50	1		12/28/16 21:28	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	1		12/28/16 21:28	106-93-4	
Dichlorodifluoromethane	ND	ug/L	1.0	1		12/28/16 21:28	75-71-8	
1,1-Dichloroethane	ND	ug/L	0.50	1		12/28/16 21:28	75-34-3	
1,2-Dichloroethane	ND	ug/L	0.50	1		12/28/16 21:28	107-06-2	
1,1-Dichloroethene	ND	ug/L	0.50	1		12/28/16 21:28	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	1		12/28/16 21:28	156-59-2	
trans-1,2-Dichloroethene	1.6	ug/L	0.50	1		12/28/16 21:28	156-60-5	
1,2-Dichloropropane	ND	ug/L	0.50	1		12/28/16 21:28	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	0.50	1		12/28/16 21:28	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	0.50	1		12/28/16 21:28	10061-02-6	
Ethylbenzene	ND	ug/L	0.50	1		12/28/16 21:28	100-41-4	
2-Hexanone	ND	ug/L	1.0	1		12/28/16 21:28	591-78-6	
Isopropylbenzene (Cumene)	ND	ug/L	1.0	1		12/28/16 21:28	98-82-8	
Methyl acetate	ND	ug/L	2.0	1		12/28/16 21:28	79-20-9	
Methylene Chloride	ND	ug/L	0.50	1		12/28/16 21:28	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	1.0	1		12/28/16 21:28	108-10-1	
Methyl-tert-butyl ether	3.6	ug/L	0.50	1		12/28/16 21:28	1634-04-4	
Styrene	ND	ug/L	1.0	1		12/28/16 21:28	100-42-5	
1,1,2,2-Tetrachloroethane	ND	ug/L	0.50	1		12/28/16 21:28	79-34-5	
Tetrachloroethene	ND	ug/L	0.50	1		12/28/16 21:28	127-18-4	
Toluene	ND	ug/L	0.50	1		12/28/16 21:28	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	0.50	1		12/28/16 21:28	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	0.50	1		12/28/16 21:28	79-00-5	
Trichloroethene	ND	ug/L	0.50	1		12/28/16 21:28	79-01-6	
Trichlorofluoromethane	ND	ug/L	0.50	1		12/28/16 21:28	75-69-4	
Vinyl chloride	ND	ug/L	0.50	1		12/28/16 21:28	75-01-4	
m&p-Xylene	ND	ug/L	2.0	1		12/28/16 21:28	179601-23-1	

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ANALYTICAL RESULTS

Project: PUMA TERMINAL MW SAMPLING
Pace Project No.: 2047806

Sample: MW-15B2		Lab ID: 2047806013		Collected: 12/22/16 10:23	Received: 12/22/16 13:15	Matrix: Water		
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV Low Level		Analytical Method: EPA 5030B/8260						
o-Xylene	ND	ug/L	1.0	1		12/28/16 21:28	95-47-6	
Surrogates								
Dibromofluoromethane (S)	103	%	72-126	1		12/28/16 21:28	1868-53-7	
4-Bromofluorobenzene (S)	98	%	68-124	1		12/28/16 21:28	460-00-4	
Toluene-d8 (S)	100	%	79-119	1		12/28/16 21:28	2037-26-5	
Sample: DUP002		Lab ID: 2047806015		Collected: 12/22/16 00:00	Received: 12/22/16 13:15	Matrix: Water		
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8015M DRO/ORO Organics		Analytical Method: EPA 8015B Modified Preparation Method: EPA 3535						
Diesel Range Organic (C10-C28)	ND	mg/L	0.50	1	12/28/16 10:52	01/06/17 00:52		
Oil Range Organics (>C28-C40)	ND	mg/L	1.0	1	12/28/16 10:52	01/06/17 00:52		
Surrogates								
n-Pentacosane (S)	41	%	16-137	1	12/28/16 10:52	01/06/17 00:52	629-99-2	
o-Terphenyl (S)	44	%	10-121	1	12/28/16 10:52	01/06/17 00:52	84-15-1	
8021 GCV BTEX, MTBE, GRO		Analytical Method: EPA 8015/8021						
Gasoline Range Organics	ND	ug/L	50.0	1		12/30/16 16:10		
Surrogates								
4-Bromofluorobenzene (S)	92	%	44-148	1		12/30/16 16:10	460-00-4	
6020 MET ICPMS		Analytical Method: EPA 6020 Preparation Method: EPA 3010						
Arsenic	0.0014	mg/L	0.0010	1	12/30/16 06:50	01/06/17 12:05	7440-38-2	
Chromium	ND	mg/L	0.0010	1	12/30/16 06:50	01/06/17 12:05	7440-47-3	
Lead	ND	mg/L	0.0010	1	12/30/16 06:50	01/06/17 12:05	7439-92-1	
Vanadium	ND	mg/L	0.0050	1	12/30/16 06:50	01/06/17 12:05	7440-62-2	
6020 MET ICPMS, Dissolved (LF)		Analytical Method: EPA 6020 Preparation Method: EPA 3005A						
Arsenic, Dissolved	ND	ug/L	1.0	1	12/30/16 06:50	01/03/17 16:20	7440-38-2	
Chromium, Dissolved	ND	ug/L	1.0	1	12/30/16 06:50	01/03/17 16:20	7440-47-3	
Lead, Dissolved	ND	ug/L	1.0	1	12/30/16 06:50	01/03/17 16:20	7439-92-1	
Vanadium, Dissolved	ND	ug/L	5.0	1	12/30/16 06:50	01/03/17 16:20	7440-62-2	
7470 Mercury		Analytical Method: EPA 7470 Preparation Method: EPA 7470						
Mercury	ND	ug/L	0.20	1	12/29/16 09:37	12/29/16 16:38	7439-97-6	
7470 Mercury, Dissolved (LF)		Analytical Method: EPA 7470 Preparation Method: EPA 7470						
Mercury, Dissolved	ND	ug/L	0.20	1	12/29/16 11:58	12/29/16 18:36	7439-97-6	
8270 MSSV PAH by SIM SEP		Analytical Method: EPA 8270 by SIM Preparation Method: EPA 3510						
Acenaphthene	ND	ug/L	0.10	1	12/28/16 11:52	01/06/17 16:15	83-32-9	
Acenaphthylene	ND	ug/L	0.10	1	12/28/16 11:52	01/06/17 16:15	208-96-8	
Anthracene	ND	ug/L	0.10	1	12/28/16 11:52	01/06/17 16:15	120-12-7	
Benzo(a)anthracene	ND	ug/L	0.10	1	12/28/16 11:52	01/06/17 16:15	56-55-3	

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ANALYTICAL RESULTS

Project: PUMA TERMINAL MW SAMPLING

Sample Project No.: 2047806

Sample: DUP002	Lab ID: 2047806015	Collected: 12/22/16 00:00	Received: 12/22/16 13:15	Matrix: Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8270 MSSV PAH by SIM SEP		Analytical Method: EPA 8270 by SIM Preparation Method: EPA 3510						
Benzo(a)pyrene	ND	ug/L	0.10	1	12/28/16 11:52	01/06/17 16:15	50-32-8	
Benzo(b)fluoranthene	ND	ug/L	0.10	1	12/28/16 11:52	01/06/17 16:15	205-99-2	
Benzo(g,h,i)perylene	ND	ug/L	0.10	1	12/28/16 11:52	01/06/17 16:15	191-24-2	
Benzo(k)fluoranthene	ND	ug/L	0.10	1	12/28/16 11:52	01/06/17 16:15	207-08-9	
Chrysene	ND	ug/L	0.10	1	12/28/16 11:52	01/06/17 16:15	218-01-9	
Dibenz(a,h)anthracene	ND	ug/L	0.10	1	12/28/16 11:52	01/06/17 16:15	53-70-3	
Fluoranthene	ND	ug/L	0.10	1	12/28/16 11:52	01/06/17 16:15	206-44-0	
Fluorene	ND	ug/L	0.10	1	12/28/16 11:52	01/06/17 16:15	86-73-7	
Indeno(1,2,3-cd)pyrene	ND	ug/L	0.10	1	12/28/16 11:52	01/06/17 16:15	193-39-5	
2-Methylnaphthalene	ND	ug/L	0.10	1	12/28/16 11:52	01/06/17 16:15	91-57-6	
Naphthalene	ND	ug/L	0.10	1	12/28/16 11:52	01/06/17 16:15	91-20-3	
Phenanthrene	ND	ug/L	0.10	1	12/28/16 11:52	01/06/17 16:15	85-01-8	
Pyrene	ND	ug/L	0.10	1	12/28/16 11:52	01/06/17 16:15	129-00-0	
Surrogates								
2-Fluorobiphenyl (S)	68	%.	25-150	1	12/28/16 11:52	01/06/17 16:15	321-60-8	
Terphenyl-d14 (S)	56	%.	25-150	1	12/28/16 11:52	01/06/17 16:15	1718-51-0	
8260 MSV Low Level		Analytical Method: EPA 5030B/8260						
Acetone	27.0	ug/L	4.0	1		12/28/16 21:46	67-64-1	C9
Benzene	ND	ug/L	0.50	1		12/28/16 21:46	71-43-2	
Bromodichloromethane	ND	ug/L	0.50	1		12/28/16 21:46	75-27-4	
Bromoform	ND	ug/L	0.50	1		12/28/16 21:46	75-25-2	
Bromomethane	ND	ug/L	0.50	1		12/28/16 21:46	74-83-9	
2-Butanone (MEK)	ND	ug/L	2.0	1		12/28/16 21:46	78-93-3	
Carbon disulfide	ND	ug/L	1.0	1		12/28/16 21:46	75-15-0	L3
Carbon tetrachloride	ND	ug/L	0.50	1		12/28/16 21:46	56-23-5	
Chlorobenzene	ND	ug/L	0.50	1		12/28/16 21:46	108-90-7	
Chloroethane	ND	ug/L	0.50	1		12/28/16 21:46	75-00-3	
Chloroform	ND	ug/L	0.50	1		12/28/16 21:46	67-66-3	
Chloromethane	ND	ug/L	0.50	1		12/28/16 21:46	74-87-3	
1,2-Dibromo-3-chloropropane	ND	ug/L	0.20	1		12/28/16 21:46	96-12-8	
Dibromochloromethane	ND	ug/L	0.50	1		12/28/16 21:46	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	1		12/28/16 21:46	106-93-4	
Dichlorodifluoromethane	ND	ug/L	1.0	1		12/28/16 21:46	75-71-8	
1,1-Dichloroethane	ND	ug/L	0.50	1		12/28/16 21:46	75-34-3	
1,2-Dichloroethane	ND	ug/L	0.50	1		12/28/16 21:46	107-06-2	
1,1-Dichloroethene	ND	ug/L	0.50	1		12/28/16 21:46	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	1		12/28/16 21:46	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	0.50	1		12/28/16 21:46	156-60-5	
1,2-Dichloropropane	ND	ug/L	0.50	1		12/28/16 21:46	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	0.50	1		12/28/16 21:46	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	0.50	1		12/28/16 21:46	10061-02-6	
Ethylbenzene	ND	ug/L	0.50	1		12/28/16 21:46	100-41-4	
2-Hexanone	ND	ug/L	1.0	1		12/28/16 21:46	591-78-6	
Isopropylbenzene (Cumene)	ND	ug/L	1.0	1		12/28/16 21:46	98-82-8	
Methyl acetate	ND	ug/L	2.0	1		12/28/16 21:46	79-20-9	
Methylene Chloride	ND	ug/L	0.50	1		12/28/16 21:46	75-09-2	

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ANALYTICAL RESULTS

Project: PUMA TERMINAL MW SAMPLING
Project No.: 2047806

Sample: DUP002		Lab ID: 2047806015		Collected: 12/22/16 00:00	Received: 12/22/16 13:15	Matrix: Water		
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV Low Level		Analytical Method: EPA 5030B/8260						
4-Methyl-2-pentanone (MIBK)	ND	ug/L	1.0	1		12/28/16 21:46	108-10-1	
Methyl-tert-butyl ether	ND	ug/L	0.50	1		12/28/16 21:46	1634-04-4	
Styrene	ND	ug/L	1.0	1		12/28/16 21:46	100-42-5	
1,1,2,2-Tetrachloroethane	ND	ug/L	0.50	1		12/28/16 21:46	79-34-5	
Tetrachloroethene	ND	ug/L	0.50	1		12/28/16 21:46	127-18-4	
Toluene	ND	ug/L	0.50	1		12/28/16 21:46	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	0.50	1		12/28/16 21:46	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	0.50	1		12/28/16 21:46	79-00-5	
Trichloroethene	ND	ug/L	0.50	1		12/28/16 21:46	79-01-6	
Trichlorofluoromethane	ND	ug/L	0.50	1		12/28/16 21:46	75-69-4	
Vinyl chloride	ND	ug/L	0.50	1		12/28/16 21:46	75-01-4	
m&p-Xylene	ND	ug/L	2.0	1		12/28/16 21:46	179601-23-1	
o-Xylene	ND	ug/L	1.0	1		12/28/16 21:46	95-47-6	
Surrogates								
Dibromofluoromethane (S)	104	%.	72-126	1		12/28/16 21:46	1868-53-7	
4-Bromofluorobenzene (S)	98	%.	68-124	1		12/28/16 21:46	460-00-4	
Toluene-d8 (S)	100	%.	79-119	1		12/28/16 21:46	2037-26-5	

Sample: MW-15B MS/MSD		Lab ID: 2047806016		Collected: 12/22/16 11:42	Received: 12/22/16 13:15	Matrix: Water		
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8015M DRO/ORO Organics		Analytical Method: EPA 8015B Modified Preparation Method: EPA 3535						
Diesel Range Organic (C10-C28)	ND	mg/L	0.50	1	12/28/16 10:52	01/06/17 01:20		R1
Oil Range Organics (>C28-C40)	ND	mg/L	1.0	1	12/28/16 10:52	01/06/17 01:20		
Surrogates								
n-Pentacosane (S)	53	%.	16-137	1	12/28/16 10:52	01/06/17 01:20	629-99-2	
o-Terphenyl (S)	52	%.	10-121	1	12/28/16 10:52	01/06/17 01:20	84-15-1	
8021 GCV BTEX, MTBE, GRO		Analytical Method: EPA 8015/8021						
Gasoline Range Organics	ND	ug/L	50.0	1		12/30/16 16:36		
Surrogates								
4-Bromofluorobenzene (S)	90	%.	44-148	1		12/30/16 16:36	460-00-4	
6020 MET ICPMS		Analytical Method: EPA 6020 Preparation Method: EPA 3010						
Arsenic	0.0014	mg/L	0.0010	1	12/30/16 06:50	01/06/17 10:34	7440-38-2	
Chromium	ND	mg/L	0.0010	1	12/30/16 06:50	01/06/17 10:34	7440-47-3	
Lead	ND	mg/L	0.0010	1	12/30/16 06:50	01/06/17 10:34	7439-92-1	
Vanadium	ND	mg/L	0.0050	1	12/30/16 06:50	01/06/17 10:34	7440-62-2	
6020 MET ICPMS, Dissolved (LF)		Analytical Method: EPA 6020 Preparation Method: EPA 3005A						
Arsenic, Dissolved	ND	ug/L	1.0	1	12/30/16 06:50	01/03/17 15:10	7440-38-2	
Chromium, Dissolved	ND	ug/L	1.0	1	12/30/16 06:50	01/03/17 15:10	7440-47-3	
Lead, Dissolved	ND	ug/L	1.0	1	12/30/16 06:50	01/03/17 15:10	7439-92-1	
Vanadium, Dissolved	ND	ug/L	5.0	1	12/30/16 06:50	01/03/17 15:10	7440-62-2	

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ANALYTICAL RESULTS

Project: PUMA TERMINAL MW SAMPLING

Pace Project No.: 2047806

Sample: MW-15B MS/MSD	Lab ID: 2047806016	Collected: 12/22/16 11:42	Received: 12/22/16 13:15	Matrix: Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
7470 Mercury Analytical Method: EPA 7470 Preparation Method: EPA 7470								
Mercury	ND	ug/L	0.20	1	12/29/16 09:37	12/29/16 16:20	7439-97-6	
7470 Mercury, Dissolved (LF) Analytical Method: EPA 7470 Preparation Method: EPA 7470								
Mercury, Dissolved	ND	ug/L	0.20	1	12/29/16 11:58	12/29/16 18:17	7439-97-6	
8270 MSSV PAH by SIM SEP Analytical Method: EPA 8270 by SIM Preparation Method: EPA 3510								
Acenaphthene	ND	ug/L	0.10	1	12/28/16 11:52	01/06/17 16:35	83-32-9	R1
Acenaphthylene	ND	ug/L	0.10	1	12/28/16 11:52	01/06/17 16:35	208-96-8	R1
Anthracene	ND	ug/L	0.10	1	12/28/16 11:52	01/06/17 16:35	120-12-7	R1
Benzo(a)anthracene	ND	ug/L	0.10	1	12/28/16 11:52	01/06/17 16:35	56-55-3	R1
Benzo(a)pyrene	ND	ug/L	0.10	1	12/28/16 11:52	01/06/17 16:35	50-32-8	R1
Benzo(b)fluoranthene	ND	ug/L	0.10	1	12/28/16 11:52	01/06/17 16:35	205-99-2	R1
Benzo(g,h,i)perylene	ND	ug/L	0.10	1	12/28/16 11:52	01/06/17 16:35	191-24-2	R1
Benzo(k)fluoranthene	ND	ug/L	0.10	1	12/28/16 11:52	01/06/17 16:35	207-08-9	R1
Chrysene	ND	ug/L	0.10	1	12/28/16 11:52	01/06/17 16:35	218-01-9	R1
Dibenz(a,h)anthracene	ND	ug/L	0.10	1	12/28/16 11:52	01/06/17 16:35	53-70-3	R1
Fluoranthene	ND	ug/L	0.10	1	12/28/16 11:52	01/06/17 16:35	206-44-0	R1
Fluorene	ND	ug/L	0.10	1	12/28/16 11:52	01/06/17 16:35	86-73-7	R1
Indeno(1,2,3-cd)pyrene	ND	ug/L	0.10	1	12/28/16 11:52	01/06/17 16:35	193-39-5	R1
2-Methylnaphthalene	ND	ug/L	0.10	1	12/28/16 11:52	01/06/17 16:35	91-57-6	R1
Naphthalene	ND	ug/L	0.10	1	12/28/16 11:52	01/06/17 16:35	91-20-3	R1
Phenanthrene	ND	ug/L	0.10	1	12/28/16 11:52	01/06/17 16:35	85-01-8	R1
Pyrene	ND	ug/L	0.10	1	12/28/16 11:52	01/06/17 16:35	129-00-0	R1
Surrogates								
2-Fluorobiphenyl (S)	83	%.	25-150	1	12/28/16 11:52	01/06/17 16:35	321-60-8	
Terphenyl-d14 (S)	64	%.	25-150	1	12/28/16 11:52	01/06/17 16:35	1718-51-0	
8260 MSV Low Level Analytical Method: EPA 5030B/8260								
Acetone	22.9	ug/L	4.0	1		12/28/16 17:35	67-64-1	C9
Benzene	ND	ug/L	0.50	1		12/28/16 17:35	71-43-2	
Bromodichloromethane	ND	ug/L	0.50	1		12/28/16 17:35	75-27-4	
Bromoform	ND	ug/L	0.50	1		12/28/16 17:35	75-25-2	
Bromomethane	ND	ug/L	0.50	1		12/28/16 17:35	74-83-9	
2-Butanone (MEK)	ND	ug/L	2.0	1		12/28/16 17:35	78-93-3	
Carbon disulfide	ND	ug/L	1.0	1		12/28/16 17:35	75-15-0	L1,MO
Carbon tetrachloride	ND	ug/L	0.50	1		12/28/16 17:35	56-23-5	
Chlorobenzene	ND	ug/L	0.50	1		12/28/16 17:35	108-90-7	
Chloroethane	ND	ug/L	0.50	1		12/28/16 17:35	75-00-3	
Chloroform	ND	ug/L	0.50	1		12/28/16 17:35	67-66-3	
Chloromethane	ND	ug/L	0.50	1		12/28/16 17:35	74-87-3	
1,2-Dibromo-3-chloropropane	ND	ug/L	0.20	1		12/28/16 17:35	96-12-8	
Dibromochloromethane	ND	ug/L	0.50	1		12/28/16 17:35	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	1		12/28/16 17:35	106-93-4	
Dichlorodifluoromethane	ND	ug/L	1.0	1		12/28/16 17:35	75-71-8	
1,1-Dichloroethane	ND	ug/L	0.50	1		12/28/16 17:35	75-34-3	
1,2-Dichloroethane	ND	ug/L	0.50	1		12/28/16 17:35	107-06-2	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: PUMA TERMINAL MW SAMPLING

Pace Project No.: 2047806

Sample: MW-15B MS/MSD		Lab ID: 2047806016		Collected: 12/22/16 11:42	Received: 12/22/16 13:15	Matrix: Water		
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV Low Level		Analytical Method: EPA 5030B/8260						
1,1-Dichloroethene	ND	ug/L	0.50	1		12/28/16 17:35	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	1		12/28/16 17:35	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	0.50	1		12/28/16 17:35	156-60-5	
1,2-Dichloropropane	ND	ug/L	0.50	1		12/28/16 17:35	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	0.50	1		12/28/16 17:35	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	0.50	1		12/28/16 17:35	10061-02-6	
Ethylbenzene	ND	ug/L	0.50	1		12/28/16 17:35	100-41-4	
2-Hexanone	ND	ug/L	1.0	1		12/28/16 17:35	591-78-6	
Isopropylbenzene (Cumene)	ND	ug/L	1.0	1		12/28/16 17:35	98-82-8	
Methyl acetate	ND	ug/L	2.0	1		12/28/16 17:35	79-20-9	
Methylene Chloride	ND	ug/L	0.50	1		12/28/16 17:35	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	1.0	1		12/28/16 17:35	108-10-1	
Methyl-tert-butyl ether	ND	ug/L	0.50	1		12/28/16 17:35	1634-04-4	
Styrene	ND	ug/L	1.0	1		12/28/16 17:35	100-42-5	
1,1,2,2-Tetrachloroethane	ND	ug/L	0.50	1		12/28/16 17:35	79-34-5	
Tetrachloroethene	ND	ug/L	0.50	1		12/28/16 17:35	127-18-4	
Toluene	ND	ug/L	0.50	1		12/28/16 17:35	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	0.50	1		12/28/16 17:35	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	0.50	1		12/28/16 17:35	79-00-5	
Trichloroethene	ND	ug/L	0.50	1		12/28/16 17:35	79-01-6	
Trichlorofluoromethane	ND	ug/L	0.50	1		12/28/16 17:35	75-69-4	
Vinyl chloride	ND	ug/L	0.50	1		12/28/16 17:35	75-01-4	
m&p-Xylene	ND	ug/L	2.0	1		12/28/16 17:35	179601-23-1	
o-Xylene	ND	ug/L	1.0	1		12/28/16 17:35	95-47-6	
Surrogates								
Dibromofluoromethane (S)	106	%	72-126	1		12/28/16 17:35	1868-53-7	
4-Bromofluorobenzene (S)	97	%	68-124	1		12/28/16 17:35	460-00-4	
Toluene-d8 (S)	100	%	79-119	1		12/28/16 17:35	2037-26-5	

Sample: FB-122216		Lab ID: 2047806017		Collected: 12/22/16 11:50	Received: 12/22/16 13:15	Matrix: Water		
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8021 GCV BTEX, MTBE, GRO		Analytical Method: EPA 8015/8021						
Gasoline Range Organics	ND	ug/L	50.0	1		12/30/16 17:54		
Surrogates								
4-Bromofluorobenzene (S)	89	%	44-148	1		12/30/16 17:54	460-00-4	
8260 MSV Low Level		Analytical Method: EPA 5030B/8260						
Acetone	26.2	ug/L	4.0	1		12/28/16 22:04	67-64-1	C9
Benzene	ND	ug/L	0.50	1		12/28/16 22:04	71-43-2	
Bromodichloromethane	ND	ug/L	0.50	1		12/28/16 22:04	75-27-4	
Bromoform	ND	ug/L	0.50	1		12/28/16 22:04	75-25-2	
Bromomethane	ND	ug/L	0.50	1		12/28/16 22:04	74-83-9	
2-Butanone (MEK)	ND	ug/L	2.0	1		12/28/16 22:04	78-93-3	
Carbon disulfide	ND	ug/L	1.0	1		12/28/16 22:04	75-15-0	L3

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ANALYTICAL RESULTS

Project: PUMA TERMINAL MW SAMPLING
Pace Project No.: 2047806

Sample: FB-122216	Lab ID: 2047806017	Collected: 12/22/16 11:50	Received: 12/22/16 13:15	Matrix: Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV Low Level		Analytical Method: EPA 5030B/8260						
Carbon tetrachloride	ND	ug/L	0.50	1		12/28/16 22:04	56-23-5	
Chlorobenzene	ND	ug/L	0.50	1		12/28/16 22:04	108-90-7	
Chloroethane	ND	ug/L	0.50	1		12/28/16 22:04	75-00-3	
Chloroform	ND	ug/L	0.50	1		12/28/16 22:04	67-66-3	
Chloromethane	ND	ug/L	0.50	1		12/28/16 22:04	74-87-3	
1,2-Dibromo-3-chloropropane	ND	ug/L	0.20	1		12/28/16 22:04	96-12-8	
Dibromochloromethane	ND	ug/L	0.50	1		12/28/16 22:04	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	1		12/28/16 22:04	106-93-4	
Dichlorodifluoromethane	ND	ug/L	1.0	1		12/28/16 22:04	75-71-8	
1,1-Dichloroethane	ND	ug/L	0.50	1		12/28/16 22:04	75-34-3	
1,2-Dichloroethane	ND	ug/L	0.50	1		12/28/16 22:04	107-06-2	
1,1-Dichloroethene	ND	ug/L	0.50	1		12/28/16 22:04	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	1		12/28/16 22:04	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	0.50	1		12/28/16 22:04	156-60-5	
1,2-Dichloropropane	ND	ug/L	0.50	1		12/28/16 22:04	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	0.50	1		12/28/16 22:04	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	0.50	1		12/28/16 22:04	10061-02-6	
Ethylbenzene	ND	ug/L	0.50	1		12/28/16 22:04	100-41-4	
2-Hexanone	ND	ug/L	1.0	1		12/28/16 22:04	591-78-6	
Isopropylbenzene (Cumene)	ND	ug/L	1.0	1		12/28/16 22:04	98-82-8	
Methyl acetate	ND	ug/L	2.0	1		12/28/16 22:04	79-20-9	
Methylene Chloride	ND	ug/L	0.50	1		12/28/16 22:04	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	1.0	1		12/28/16 22:04	108-10-1	
Methyl-tert-butyl ether	ND	ug/L	0.50	1		12/28/16 22:04	1634-04-4	
Styrene	ND	ug/L	1.0	1		12/28/16 22:04	100-42-5	
1,1,2,2-Tetrachloroethane	ND	ug/L	0.50	1		12/28/16 22:04	79-34-5	
Tetrachloroethene	ND	ug/L	0.50	1		12/28/16 22:04	127-18-4	
Toluene	ND	ug/L	0.50	1		12/28/16 22:04	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	0.50	1		12/28/16 22:04	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	0.50	1		12/28/16 22:04	79-00-5	
Trichloroethene	ND	ug/L	0.50	1		12/28/16 22:04	79-01-6	
Trichlorofluoromethane	ND	ug/L	0.50	1		12/28/16 22:04	75-69-4	
Vinyl chloride	ND	ug/L	0.50	1		12/28/16 22:04	75-01-4	
m&p-Xylene	ND	ug/L	2.0	1		12/28/16 22:04	179601-23-1	
o-Xylene	ND	ug/L	1.0	1		12/28/16 22:04	95-47-6	
Surrogates								
Dibromofluoromethane (S)	105	%.	72-126	1		12/28/16 22:04	1868-53-7	
4-Bromofluorobenzene (S)	99	%.	68-124	1		12/28/16 22:04	460-00-4	
Toluene-d8 (S)	102	%.	79-119	1		12/28/16 22:04	2037-26-5	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: PUMA TERMINAL MW SAMPLING

Pace Project No.: 2047806

QC Batch: 71030

Analysis Method: EPA 8015/8021

QC Batch Method: EPA 8015/8021

Analysis Description: 8021 W GCV BTEX, MTBE, GRO

Associated Lab Samples: 2047806001, 2047806002, 2047806003, 2047806004, 2047806005, 2047806006, 2047806007, 2047806008, 2047806009, 2047806010, 2047806011, 2047806012, 2047806013, 2047806015, 2047806016, 2047806017

METHOD BLANK: 297171

Matrix: Water

Associated Lab Samples: 2047806001, 2047806002, 2047806003, 2047806004, 2047806005, 2047806006, 2047806007, 2047806008, 2047806009, 2047806010, 2047806011, 2047806012, 2047806013, 2047806015, 2047806016, 2047806017

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Gasoline Range Organics	ug/L	ND	50.0	12/30/16 07:53	
4-Bromofluorobenzene (S)	%.	92	44-148	12/30/16 07:53	

LABORATORY CONTROL SAMPLE: 297172

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Gasoline Range Organics	ug/L	500	427	85	61-136	
4-Bromofluorobenzene (S)	%.			95	44-148	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 297175 297176

Parameter	Units	2047806016 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Gasoline Range Organics	ug/L	ND	500	500	438	439	83	83	15-147	0	20	
4-Bromofluorobenzene (S)	%.						94	94	44-148			

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QUALITY CONTROL DATA

Project: PUMA TERMINAL MW SAMPLING

Pace Project No.: 2047806

QC Batch: 71004

Analysis Method: EPA 7470

QC Batch Method: EPA 7470

Analysis Description: 7470 Mercury

Associated Lab Samples: 2047806002, 2047806003, 2047806004, 2047806005, 2047806006, 2047806007

METHOD BLANK: 297033

Matrix: Water

Associated Lab Samples: 2047806002, 2047806003, 2047806004, 2047806005, 2047806006, 2047806007

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Mercury	ug/L	ND	0.20	12/29/16 17:11	

LABORATORY CONTROL SAMPLE: 297034

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury	ug/L	1	1.1	106	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 297035 297036

Parameter	Units	297035		297036		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		2047713002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result						
Mercury	ug/L	ND	1	1	1.0	1.0	101	101	75-125	0	20

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QUALITY CONTROL DATA

Project: PUMA TERMINAL MW SAMPLING

Pace Project No.: 2047806

QC Batch: 71005

Analysis Method: EPA 7470

QC Batch Method: EPA 7470

Analysis Description: 7470 Mercury

Associated Lab Samples: 2047806008, 2047806011, 2047806012, 2047806013, 2047806015, 2047806016

METHOD BLANK: 297037

Matrix: Water

Associated Lab Samples: 2047806008, 2047806011, 2047806012, 2047806013, 2047806015, 2047806016

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Mercury	ug/L	ND	0.20	12/29/16 16:16	

LABORATORY CONTROL SAMPLE: 297038

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury	ug/L	1	1.1	110	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 297039 297040

Parameter	Units	2047806016 Result	MS		MSD		MS		MSD		% Rec Limits	RPD	Max RPD	Qual
			Spike Conc.	Conc.	Spike Conc.	Conc.	% Rec	% Rec						
Mercury	ug/L	ND	1	1	1	1	1.0	1.0	105	105	75-125	0	20	

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QUALITY CONTROL DATA

Project: PUMA TERMINAL MW SAMPLING

Pace Project No.: 2047806

QC Batch: 71108

Analysis Method: EPA 7470

QC Batch Method: EPA 7470

Analysis Description: 7470 Mercury Dissolved

Associated Lab Samples: 2047806002, 2047806003, 2047806004, 2047806005, 2047806006, 2047806007

METHOD BLANK: 297493

Matrix: Water

Associated Lab Samples: 2047806002, 2047806003, 2047806004, 2047806005, 2047806006, 2047806007

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Mercury, Dissolved	ug/L	ND	0.20	12/29/16 18:44	

LABORATORY CONTROL SAMPLE: 297494

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury, Dissolved	ug/L	1	1.1	110	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 297495 297496

Parameter	Units	2047713002		297495		297496		% Rec Limits	RPD	Max RPD	Qual
		Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec				
Mercury, Dissolved	ug/L	ND	1	1	1.1	1.1	109	110	75-125	1	20

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QUALITY CONTROL DATA

Project: PUMA TERMINAL MW SAMPLING

Pace Project No.: 2047806

QC Batch: 71110

Analysis Method: EPA 7470

QC Batch Method: EPA 7470

Analysis Description: 7470 Mercury Dissolved

Associated Lab Samples: 2047806008, 2047806011, 2047806012, 2047806013, 2047806015, 2047806016

METHOD BLANK: 297497

Matrix: Water

Associated Lab Samples: 2047806008, 2047806011, 2047806012, 2047806013, 2047806015, 2047806016

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Mercury, Dissolved	ug/L	ND	0.20	12/29/16 18:13	

LABORATORY CONTROL SAMPLE: 297498

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury, Dissolved	ug/L	1	1.1	113	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 297499 297500

Parameter	Units	2047806016 Result	MS		MSD		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
			Spike Conc.	MS Result	Spike Conc.	MSD Result						
Mercury, Dissolved	ug/L	ND	1	1.0	1	1.0	102	102	75-125	0	20	

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QUALITY CONTROL DATA

Project: PUMA TERMINAL MW SAMPLING
Pace Project No.: 2047806

QC Batch: 71131 Analysis Method: EPA 6020
QC Batch Method: EPA 3010 Analysis Description: 6020 MET
Associated Lab Samples: 2047806002, 2047806003, 2047806004, 2047806005, 2047806006, 2047806007, 2047806008, 2047806011, 2047806012, 2047806013, 2047806015, 2047806016

METHOD BLANK: 297578 Matrix: Water
Associated Lab Samples: 2047806002, 2047806003, 2047806004, 2047806005, 2047806006, 2047806007, 2047806008, 2047806011, 2047806012, 2047806013, 2047806015, 2047806016

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Arsenic	mg/L	ND	0.0010	01/06/17 10:11	
Chromium	mg/L	ND	0.0010	01/06/17 10:11	
Lead	mg/L	ND	0.0010	01/06/17 10:11	
Vanadium	mg/L	ND	0.0050	01/06/17 10:11	

LABORATORY CONTROL SAMPLE: 297579

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Arsenic	mg/L	.02	0.020	102	83-115	
Chromium	mg/L	.02	0.020	100	85-115	
Lead	mg/L	.02	0.019	97	84-115	
Vanadium	mg/L	.02	0.020	98	81-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 297580 297581

Parameter	Units	297580		297581		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		2047806016 Result	MS Spike Conc.	MSD Spike Conc.	MS Result						
Arsenic	mg/L	0.0014	.02	.02	0.021	0.020	99	94	80-120	5	20
Chromium	mg/L	ND	.02	.02	0.020	0.019	98	91	80-120	6	20
Lead	mg/L	ND	.02	.02	0.020	0.019	100	94	80-120	6	20
Vanadium	mg/L	ND	.02	.02	0.021	0.020	100	94	80-120	6	20

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QUALITY CONTROL DATA

Project: PUMA TERMINAL MW SAMPLING

Pace Project No.: 2047806

QC Batch: 71126

Analysis Method: EPA 6020

QC Batch Method: EPA 3005A

Analysis Description: 6020 MET Dissolved

Associated Lab Samples: 2047806002, 2047806003, 2047806004, 2047806005, 2047806006, 2047806007, 2047806008, 2047806011, 2047806012, 2047806013, 2047806015, 2047806016

METHOD BLANK: 297560

Matrix: Water

Associated Lab Samples: 2047806002, 2047806003, 2047806004, 2047806005, 2047806006, 2047806007, 2047806008, 2047806011, 2047806012, 2047806013, 2047806015, 2047806016

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Arsenic, Dissolved	ug/L	ND	1.0	01/03/17 17:55	
Chromium, Dissolved	ug/L	ND	1.0	01/03/17 17:55	
Lead, Dissolved	ug/L	ND	1.0	01/03/17 17:55	
Vanadium, Dissolved	ug/L	ND	5.0	01/03/17 17:55	

LABORATORY CONTROL SAMPLE: 297561

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Arsenic, Dissolved	ug/L	20	20.2	101	80-120	
Chromium, Dissolved	ug/L	20	20.0	100	80-120	
Lead, Dissolved	ug/L	20	19.4	97	80-120	
Vanadium, Dissolved	ug/L	20	20.3	101	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 297562 297563

Parameter	Units	2047806016		297563		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result						
Arsenic, Dissolved	ug/L	ND	20	20.2	19.9	97	96	75-125	2	20	
Chromium, Dissolved	ug/L	ND	20	19.1	19.6	95	98	75-125	3	20	
Lead, Dissolved	ug/L	ND	20	20.4	20.2	102	101	75-125	1	20	
Vanadium, Dissolved	ug/L	ND	20	20.0	19.8	97	96	75-125	1	20	

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QUALITY CONTROL DATA

Project: PUMA TERMINAL MW SAMPLING

Pace Project No.: 2047806

QC Batch: 70952 Analysis Method: EPA 5030B/8260
 QC Batch Method: EPA 5030B/8260 Analysis Description: 8260 MSV Low Level
 Associated Lab Samples: 2047806001, 2047806002, 2047806003, 2047806004, 2047806005, 2047806006, 2047806007, 2047806008,
 2047806009, 2047806010, 2047806011, 2047806012, 2047806013, 2047806015, 2047806016, 2047806017

METHOD BLANK: 296849 Matrix: Water
 Associated Lab Samples: 2047806001, 2047806002, 2047806003, 2047806004, 2047806005, 2047806006, 2047806007, 2047806008,
 2047806009, 2047806010, 2047806011, 2047806012, 2047806013, 2047806015, 2047806016, 2047806017

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
1,1,1-Trichloroethane	ug/L	ND	0.50	12/28/16 16:07	
1,1,2,2-Tetrachloroethane	ug/L	ND	0.50	12/28/16 16:07	
1,1,2-Trichloroethane	ug/L	ND	0.50	12/28/16 16:07	
1,1-Dichloroethane	ug/L	ND	0.50	12/28/16 16:07	
1,1-Dichloroethene	ug/L	ND	0.50	12/28/16 16:07	
1,2-Dibromo-3-chloropropane	ug/L	ND	0.20	12/28/16 16:07	
1,2-Dibromoethane (EDB)	ug/L	ND	1.0	12/28/16 16:07	
1,2-Dichloroethane	ug/L	ND	0.50	12/28/16 16:07	
1,2-Dichloropropane	ug/L	ND	0.50	12/28/16 16:07	
2-Butanone (MEK)	ug/L	ND	2.0	12/28/16 16:07	
2-Hexanone	ug/L	ND	1.0	12/28/16 16:07	
4-Methyl-2-pentanone (MIBK)	ug/L	ND	1.0	12/28/16 16:07	
Acetone	ug/L	ND	4.0	12/28/16 16:07	
Benzene	ug/L	ND	0.50	12/28/16 16:07	
Bromodichloromethane	ug/L	ND	0.50	12/28/16 16:07	
Bromoform	ug/L	ND	0.50	12/28/16 16:07	
Bromomethane	ug/L	ND	0.50	12/28/16 16:07	
Carbon disulfide	ug/L	ND	1.0	12/28/16 16:07	
Carbon tetrachloride	ug/L	ND	0.50	12/28/16 16:07	
Chlorobenzene	ug/L	ND	0.50	12/28/16 16:07	
Chloroethane	ug/L	ND	0.50	12/28/16 16:07	
Chloroform	ug/L	ND	0.50	12/28/16 16:07	
Chloromethane	ug/L	ND	0.50	12/28/16 16:07	
cis-1,2-Dichloroethene	ug/L	ND	1.0	12/28/16 16:07	
cis-1,3-Dichloropropene	ug/L	ND	0.50	12/28/16 16:07	
Dibromochloromethane	ug/L	ND	0.50	12/28/16 16:07	
Dichlorodifluoromethane	ug/L	ND	1.0	12/28/16 16:07	
Ethylbenzene	ug/L	ND	0.50	12/28/16 16:07	
Isopropylbenzene (Cumene)	ug/L	ND	1.0	12/28/16 16:07	
m&p-Xylene	ug/L	ND	2.0	12/28/16 16:07	
Methyl acetate	ug/L	ND	2.0	12/28/16 16:07	
Methyl-tert-butyl ether	ug/L	ND	0.50	12/28/16 16:07	
Methylene Chloride	ug/L	ND	0.50	12/28/16 16:07	
o-Xylene	ug/L	ND	1.0	12/28/16 16:07	
Styrene	ug/L	ND	1.0	12/28/16 16:07	
Tetrachloroethene	ug/L	ND	0.50	12/28/16 16:07	
Toluene	ug/L	ND	0.50	12/28/16 16:07	
trans-1,2-Dichloroethene	ug/L	ND	0.50	12/28/16 16:07	
trans-1,3-Dichloropropene	ug/L	ND	0.50	12/28/16 16:07	
Trichloroethene	ug/L	ND	0.50	12/28/16 16:07	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: PUMA TERMINAL MW SAMPLING

Pace Project No.: 2047806

METHOD BLANK: 296849

Matrix: Water

Associated Lab Samples: 2047806001, 2047806002, 2047806003, 2047806004, 2047806005, 2047806006, 2047806007, 2047806008, 2047806009, 2047806010, 2047806011, 2047806012, 2047806013, 2047806015, 2047806016, 2047806017

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Trichlorofluoromethane	ug/L	ND	0.50	12/28/16 16:07	
Vinyl chloride	ug/L	ND	0.50	12/28/16 16:07	
4-Bromofluorobenzene (S)	%	100	68-124	12/28/16 16:07	
Dibromofluoromethane (S)	%	103	72-126	12/28/16 16:07	
Toluene-d8 (S)	%	99	79-119	12/28/16 16:07	

LABORATORY CONTROL SAMPLE: 296850

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,1,1-Trichloroethane	ug/L	50	56.5	113	62-131	
1,1,2,2-Tetrachloroethane	ug/L	50	51.3	103	15-179	
1,1,2-Trichloroethane	ug/L	50	51.6	103	58-144	
1,1-Dichloroethane	ug/L	50	54.6	109	63-129	
1,1-Dichloroethene	ug/L	50	53.9	108	51-139	
1,2-Dibromo-3-chloropropane	ug/L	50	51.1	102	21-160	
1,2-Dibromoethane (EDB)	ug/L	50	53.4	107	52-161	
1,2-Dichloroethane	ug/L	50	55.6	111	57-148	
1,2-Dichloropropane	ug/L	50	54.6	109	66-128	
2-Butanone (MEK)	ug/L	50	59.7	119	32-183	
2-Hexanone	ug/L	50	54.3	109	36-170	
4-Methyl-2-pentanone (MIBK)	ug/L	50	53.7	107	26-171	
Acetone	ug/L	50	61.3	123	22-165	
Benzene	ug/L	50	56.8	114	62-131	
Bromodichloromethane	ug/L	50	51.1	102	69-132	
Bromoform	ug/L	50	46.7	93	35-166	
Bromomethane	ug/L	50	52.1	104	34-158	
Carbon disulfide	ug/L	50	65.6	131	31-128	L0
Carbon tetrachloride	ug/L	50	52.0	104	54-144	
Chlorobenzene	ug/L	50	51.6	103	70-127	
Chloroethane	ug/L	50	46.9	94	17-195	
Chloroform	ug/L	50	51.9	104	73-134	
Chloromethane	ug/L	50	48.2	96	17-153	
cis-1,2-Dichloroethene	ug/L	50	51.8	104	68-129	
cis-1,3-Dichloropropene	ug/L	50	52.4	105	72-138	
Dibromochloromethane	ug/L	50	49.1	98	49-146	
Dichlorodifluoromethane	ug/L	50	45.4	91	10-179	
Ethylbenzene	ug/L	50	49.8	100	66-126	
Isopropylbenzene (Cumene)	ug/L	50	48.7	97	51-138	
m&p-Xylene	ug/L	100	100	100	65-129	
Methyl acetate	ug/L	50	54.7	109	20-142	
Methyl-tert-butyl ether	ug/L	50	51.7	103	37-166	
Methylene Chloride	ug/L	50	56.7	113	46-168	
o-Xylene	ug/L	50	50.0	100	65-124	

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QUALITY CONTROL DATA

Project: PUMA TERMINAL MW SAMPLING

Pace Project No.: 2047806

LABORATORY CONTROL SAMPLE: 296850

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Styrene	ug/L	50	50.9	102	72-133	
Tetrachloroethene	ug/L	50	48.9	98	46-157	
Toluene	ug/L	50	53.0	106	69-126	
trans-1,2-Dichloroethene	ug/L	50	53.3	107	60-129	
trans-1,3-Dichloropropene	ug/L	50	54.3	109	59-149	
Trichloroethene	ug/L	50	53.5	107	67-132	
Trichlorofluoromethane	ug/L	50	57.2	114	39-171	
Vinyl chloride	ug/L	50	42.6	85	27-149	
4-Bromofluorobenzene (S)	%			99	68-124	
Dibromofluoromethane (S)	%			104	72-126	
Toluene-d8 (S)	%			102	79-119	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 296851 296852

Parameter	Units	MS		MSD		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		2047806016 Result	Spike Conc.	Spike Conc.	MS Result						
1,1,1-Trichloroethane	ug/L	ND	50	50	65.0	56.2	130	112	54-137	14	20
1,1,2,2-Tetrachloroethane	ug/L	ND	50	50	57.2	49.4	114	99	15-187	15	20
1,1,2-Trichloroethane	ug/L	ND	50	50	56.1	49.1	112	98	59-148	13	20
1,1-Dichloroethane	ug/L	ND	50	50	60.7	53.2	121	106	59-133	13	20
1,1-Dichloroethene	ug/L	ND	50	50	63.0	55.4	126	111	44-146	13	20
1,2-Dibromo-3-chloropropane	ug/L	ND	50	50	56.4	48.8	113	98	23-166	14	20
1,2-Dibromoethane (EDB)	ug/L	ND	50	50	58.0	52.6	116	105	55-166	10	20
1,2-Dichloroethane	ug/L	ND	50	50	61.0	52.4	122	105	56-154	15	20
1,2-Dichloropropane	ug/L	ND	50	50	60.2	52.5	120	105	62-135	14	20
2-Butanone (MEK)	ug/L	ND	50	50	62.5	56.9	125	114	20-205	9	20
2-Hexanone	ug/L	ND	50	50	56.3	51.1	113	102	25-189	10	20
4-Methyl-2-pentanone (MIBK)	ug/L	ND	50	50	58.2	51.1	116	102	23-184	13	20
Acetone	ug/L	22.9	50	50	72.3	64.7	99	84	11-217	11	20
Benzene	ug/L	ND	50	50	64.5	55.1	129	110	52-141	16	20
Bromodichloromethane	ug/L	ND	50	50	57.0	49.8	114	100	70-134	14	20
Bromoform	ug/L	ND	50	50	51.4	44.6	103	89	37-171	14	20
Bromomethane	ug/L	ND	50	50	59.3	51.5	119	103	34-155	14	20
Carbon disulfide	ug/L	ND	50	50	83.1	68.3	166	136	28-130	19	20 MO
Carbon tetrachloride	ug/L	ND	50	50	61.2	53.7	122	107	48-146	13	20
Chlorobenzene	ug/L	ND	50	50	58.6	50.3	117	101	67-129	15	20
Chloroethane	ug/L	ND	50	50	54.3	47.6	109	95	12-192	13	20
Chloroform	ug/L	ND	50	50	57.9	50.5	116	101	66-143	14	20
Chloromethane	ug/L	ND	50	50	53.6	47.3	106	94	14-155	13	20
cis-1,2-Dichloroethene	ug/L	ND	50	50	59.4	52.9	119	106	56-141	12	20
cis-1,3-Dichloropropene	ug/L	ND	50	50	59.2	51.3	118	103	70-139	14	20
Dibromochloromethane	ug/L	ND	50	50	53.5	47.2	107	94	50-150	13	20
Dichlorodifluoromethane	ug/L	ND	50	50	54.8	47.6	110	95	10-173	14	20
Ethylbenzene	ug/L	ND	50	50	57.5	49.5	115	99	57-135	15	20

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QUALITY CONTROL DATA

Project: PUMA TERMINAL MW SAMPLING

Pace Project No.: 2047806

Parameter	Units	296851		296852		MS % Rec	MSD % Rec	% Rec Limits	Max RPD	RPD	Qual
		2047806016 Result	MS Spike Conc.	MSD Spike Conc.	MS Result						
Isopropylbenzene (Cumene)	ug/L	ND	50	50	56.9	50.9	114	102	40-146	11	20
m&p-Xylene	ug/L	ND	100	100	115	101	115	101	56-136	13	20
Methyl acetate	ug/L	ND	50	50	51.2	47.0	102	94	10-142	9	20
Methyl-tert-butyl ether	ug/L	ND	50	50	56.9	50.4	114	101	35-176	12	20
Methylene Chloride	ug/L	ND	50	50	60.5	51.8	121	104	45-166	16	20
o-Xylene	ug/L	ND	50	50	56.5	49.7	113	99	57-133	13	20
Styrene	ug/L	ND	50	50	48.5	41.6	97	83	58-144	15	20
Tetrachloroethene	ug/L	ND	50	50	58.7	51.1	117	102	48-143	14	20
Toluene	ug/L	ND	50	50	59.0	52.4	118	105	59-136	12	20
trans-1,2-Dichloroethene	ug/L	ND	50	50	61.9	54.3	124	109	57-132	13	20
trans-1,3-Dichloropropene	ug/L	ND	50	50	59.5	51.5	119	103	59-154	14	20
Trichloroethene	ug/L	ND	50	50	61.9	53.5	124	107	58-140	15	20
Trichlorofluoromethane	ug/L	ND	50	50	68.2	60.0	136	120	24-175	13	20
Vinyl chloride	ug/L	ND	50	50	50.3	43.2	101	86	21-150	15	20
4-Bromofluorobenzene (S)	%.						103	99	68-124		
Dibromofluoromethane (S)	%.						103	104	72-126		
Toluene-d8 (S)	%.						100	102	79-119		

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QUALITY CONTROL DATA

Project: PUMA TERMINAL MW SAMPLING

Pace Project No.: 2047806

QC Batch: 70938 Analysis Method: EPA 8015B Modified
 QC Batch Method: EPA 3535 Analysis Description: EPA 8015 ORO
 Associated Lab Samples: 2047806002, 2047806003, 2047806004, 2047806005, 2047806006, 2047806007, 2047806008, 2047806011,
 2047806012, 2047806013, 2047806015, 2047806016

METHOD BLANK: 296784 Matrix: Water
 Associated Lab Samples: 2047806002, 2047806003, 2047806004, 2047806005, 2047806006, 2047806007, 2047806008, 2047806011,
 2047806012, 2047806013, 2047806015, 2047806016

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Diesel Range Organic (C10-C28)	mg/L	ND	0.25	01/05/17 17:51	
Oil Range Organics (>C28-C40)	mg/L	ND	0.50	01/05/17 17:51	
n-Pentacosane (S)	%	35	16-137	01/05/17 17:51	
o-Terphenyl (S)	%	41	10-121	01/05/17 17:51	

LABORATORY CONTROL SAMPLE: 296785

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Diesel Range Organic (C10-C28)	mg/L	.4	.2J	50	10-115	
n-Pentacosane (S)	%			66	16-137	
o-Terphenyl (S)	%			77	10-121	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 296801 296802

Parameter	Units	2047806016		296802		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result						
Diesel Range Organic (C10-C28)	mg/L	ND	.8	.8	0.58	0.71	52	69	10-122	21	20 R1
n-Pentacosane (S)	%						64	76	16-137		
o-Terphenyl (S)	%						76	91	10-121		

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QUALITY CONTROL DATA

Project: PUMA TERMINAL MW SAMPLING
Pace Project No.: 2047806

QC Batch: 70942 Analysis Method: EPA 8270 by SIM
QC Batch Method: EPA 3510 Analysis Description: 8270 Water by SIM MSSV
Associated Lab Samples: 2047806002, 2047806003

METHOD BLANK: 296823 Matrix: Water
Associated Lab Samples: 2047806002, 2047806003

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
2-Methylnaphthalene	ug/L	ND	0.10	01/06/17 14:35	
Acenaphthene	ug/L	ND	0.10	01/06/17 14:35	
Acenaphthylene	ug/L	ND	0.10	01/06/17 14:35	
Anthracene	ug/L	ND	0.10	01/06/17 14:35	
Benzo(a)anthracene	ug/L	ND	0.10	01/06/17 14:35	
Benzo(a)pyrene	ug/L	ND	0.10	01/06/17 14:35	
Benzo(b)fluoranthene	ug/L	ND	0.10	01/06/17 14:35	
Benzo(g,h,i)perylene	ug/L	ND	0.10	01/06/17 14:35	
Benzo(k)fluoranthene	ug/L	ND	0.10	01/06/17 14:35	
Chrysene	ug/L	ND	0.10	01/06/17 14:35	
Dibenz(a,h)anthracene	ug/L	ND	0.10	01/06/17 14:35	
Fluoranthene	ug/L	ND	0.10	01/06/17 14:35	
Fluorene	ug/L	ND	0.10	01/06/17 14:35	
Indeno(1,2,3-cd)pyrene	ug/L	ND	0.10	01/06/17 14:35	
Naphthalene	ug/L	ND	0.10	01/06/17 14:35	
Phenanthrene	ug/L	ND	0.10	01/06/17 14:35	
Pyrene	ug/L	ND	0.10	01/06/17 14:35	
2-Fluorobiphenyl (S)	%	65	25-150	01/06/17 14:35	
Terphenyl-d14 (S)	%	56	25-150	01/06/17 14:35	

LABORATORY CONTROL SAMPLE: 296824

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
2-Methylnaphthalene	ug/L	4	2.4	60	35-150	
Acenaphthene	ug/L	4	2.6	65	35-150	
Acenaphthylene	ug/L	4	2.5	63	35-150	
Anthracene	ug/L	4	3.0	76	35-150	
Benzo(a)anthracene	ug/L	4	2.7	66	35-150	
Benzo(a)pyrene	ug/L	4	2.5	61	35-150	
Benzo(b)fluoranthene	ug/L	4	2.3	58	35-150	
Benzo(g,h,i)perylene	ug/L	4	2.6	64	35-150	
Benzo(k)fluoranthene	ug/L	4	2.3	58	35-150	
Chrysene	ug/L	4	2.5	62	35-150	
Dibenz(a,h)anthracene	ug/L	4	3.1	77	35-150	
Fluoranthene	ug/L	4	2.5	62	35-150	
Fluorene	ug/L	4	2.5	61	35-150	
Indeno(1,2,3-cd)pyrene	ug/L	4	2.9	73	35-150	
Naphthalene	ug/L	4	2.3	58	35-150	
Phenanthrene	ug/L	4	2.7	67	35-150	
Pyrene	ug/L	4	2.0	49	35-150	

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QUALITY CONTROL DATA

Project: PUMA TERMINAL MW SAMPLING

Pace Project No.: 2047806

LABORATORY CONTROL SAMPLE: 296824

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
2-Fluorobiphenyl (S)	%.			83	25-150	
Terphenyl-d14 (S)	%.			71	25-150	

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QUALITY CONTROL DATA

Project: PUMA TERMINAL MW SAMPLING
Pace Project No.: 2047806

QC Batch: 70943 Analysis Method: EPA 8270 by SIM
QC Batch Method: EPA 3510 Analysis Description: 8270 Water by SIM MSSV
Associated Lab Samples: 2047806004, 2047806005, 2047806006, 2047806007, 2047806008

METHOD BLANK: 296825 Matrix: Water
Associated Lab Samples: 2047806004, 2047806005, 2047806006, 2047806007, 2047806008

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
2-Methylnaphthalene	ug/L	ND	0.10	01/05/17 11:30	
Acenaphthene	ug/L	ND	0.10	01/05/17 11:30	
Acenaphthylene	ug/L	ND	0.10	01/05/17 11:30	
Anthracene	ug/L	ND	0.10	01/05/17 11:30	
Benzo(a)anthracene	ug/L	ND	0.10	01/05/17 11:30	
Benzo(a)pyrene	ug/L	ND	0.10	01/05/17 11:30	
Benzo(b)fluoranthene	ug/L	ND	0.10	01/05/17 11:30	
Benzo(g,h,i)perylene	ug/L	ND	0.10	01/05/17 11:30	
Benzo(k)fluoranthene	ug/L	ND	0.10	01/05/17 11:30	
Chrysene	ug/L	ND	0.10	01/05/17 11:30	
Dibenz(a,h)anthracene	ug/L	ND	0.10	01/05/17 11:30	
Fluoranthene	ug/L	ND	0.10	01/05/17 11:30	
Fluorene	ug/L	ND	0.10	01/05/17 11:30	
Indeno(1,2,3-cd)pyrene	ug/L	ND	0.10	01/05/17 11:30	
Naphthalene	ug/L	ND	0.10	01/05/17 11:30	
Phenanthrene	ug/L	ND	0.10	01/05/17 11:30	
Pyrene	ug/L	ND	0.10	01/05/17 11:30	
2-Fluorobiphenyl (S)	%	97	25-150	01/05/17 11:30	
Terphenyl-d14 (S)	%	98	25-150	01/05/17 11:30	

LABORATORY CONTROL SAMPLE: 296826

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
2-Methylnaphthalene	ug/L	4	3.3	83	35-150	
Acenaphthene	ug/L	4	3.6	89	35-150	
Acenaphthylene	ug/L	4	3.4	86	35-150	
Anthracene	ug/L	4	4.5	112	35-150	
Benzo(a)anthracene	ug/L	4	3.9	97	35-150	
Benzo(a)pyrene	ug/L	4	3.6	89	35-150	
Benzo(b)fluoranthene	ug/L	4	3.6	90	35-150	
Benzo(g,h,i)perylene	ug/L	4	4.1	101	35-150	
Benzo(k)fluoranthene	ug/L	4	3.6	90	35-150	
Chrysene	ug/L	4	3.6	91	35-150	
Dibenz(a,h)anthracene	ug/L	4	4.5	113	35-150	
Fluoranthene	ug/L	4	3.6	91	35-150	
Fluorene	ug/L	4	3.5	88	35-150	
Indeno(1,2,3-cd)pyrene	ug/L	4	4.3	108	35-150	
Naphthalene	ug/L	4	3.1	78	35-150	
Phenanthrene	ug/L	4	3.9	97	35-150	
Pyrene	ug/L	4	3.3	82	35-150	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: PUMA TERMINAL MW SAMPLING

Pace Project No.: 2047806

LABORATORY CONTROL SAMPLE: 296826

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
2-Fluorobiphenyl (S)	%.			85	25-150	
Terphenyl-d14 (S)	%.			91	25-150	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 296827 296828

Parameter	Units	2047817024	MS	MSD	MS	MSD	MS	MSD	% Rec	Max	Qual
		Result	Spike Conc.	Spike Conc.	Result	Result	% Rec	% Rec	Limits	RPD	
2-Methylnaphthalene	ug/L	ND	4	4	3.2	3.0	79	74	35-150	6	20
Acenaphthene	ug/L	0.0055	4	4	10.5	11.3	126	147	35-150	8	20
Acenaphthylene	ug/L	0.000056J	4	4	3.3	3.1	81	75	35-150	7	20
Anthracene	ug/L	0.00020	4	4	4.2	3.8	100	91	35-150	9	20
Benzo(a)anthracene	ug/L	0.000089J	4	4	3.4	3.1	82	74	35-150	10	20
Benzo(a)pyrene	ug/L	0.000080J	4	4	2.8	2.6	67	63	35-150	6	20
Benzo(b)fluoranthene	ug/L	0.00014	4	4	2.7	2.5	65	60	35-150	7	20
Benzo(g,h,i)perylene	ug/L	0.00010	4	4	2.9	3.0	71	73	35-150	3	20
Benzo(k)fluoranthene	ug/L	0.000051J	4	4	2.8	2.6	68	65	35-150	5	20
Chrysene	ug/L	0.000063J	4	4	3.1	2.8	76	68	35-150	10	20
Dibenz(a,h)anthracene	ug/L	ND	4	4	3.5	3.5	89	87	35-150	1	20
Fluoranthene	ug/L	0.00029	4	4	3.4	3.2	78	73	35-150	5	20
Fluorene	ug/L	0.00033	4	4	3.6	3.5	82	79	35-150	4	20
Indeno(1,2,3-cd)pyrene	ug/L	0.000075J	4	4	3.2	3.2	79	78	35-150	0	20
Naphthalene	ug/L	ND	4	4	2.9	2.9	73	71	35-150	2	20
Phenanthrene	ug/L	0.00096	4	4	4.9	5.1	97	103	35-150	4	20
Pyrene	ug/L	0.00022	4	4	3.2	3.1	75	72	35-150	4	20
2-Fluorobiphenyl (S)	%.						85	80	25-150		20
Terphenyl-d14 (S)	%.						82	74	25-150		20

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: PUMA TERMINAL MW SAMPLING
Pace Project No.: 2047806

QC Batch: 70982 Analysis Method: EPA 8270 by SIM
QC Batch Method: EPA 3510 Analysis Description: 8270 Water by SIM MSSV
Associated Lab Samples: 2047806011, 2047806012, 2047806013, 2047806015, 2047806016

METHOD BLANK: 296923 Matrix: Water
Associated Lab Samples: 2047806011, 2047806012, 2047806013, 2047806015, 2047806016

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
2-Methylnaphthalene	ug/L	ND	0.10	01/06/17 13:55	
Acenaphthene	ug/L	ND	0.10	01/06/17 13:55	
Acenaphthylene	ug/L	ND	0.10	01/06/17 13:55	
Anthracene	ug/L	ND	0.10	01/06/17 13:55	
Benzo(a)anthracene	ug/L	ND	0.10	01/06/17 13:55	
Benzo(a)pyrene	ug/L	ND	0.10	01/06/17 13:55	
Benzo(b)fluoranthene	ug/L	ND	0.10	01/06/17 13:55	
Benzo(g,h,i)perylene	ug/L	ND	0.10	01/06/17 13:55	
Benzo(k)fluoranthene	ug/L	ND	0.10	01/06/17 13:55	
Chrysene	ug/L	ND	0.10	01/06/17 13:55	
Dibenz(a,h)anthracene	ug/L	ND	0.10	01/06/17 13:55	
Fluoranthene	ug/L	ND	0.10	01/06/17 13:55	
Fluorene	ug/L	ND	0.10	01/06/17 13:55	
Indeno(1,2,3-cd)pyrene	ug/L	ND	0.10	01/06/17 13:55	
Naphthalene	ug/L	ND	0.10	01/06/17 13:55	
Phenanthrene	ug/L	ND	0.10	01/06/17 13:55	
Pyrene	ug/L	ND	0.10	01/06/17 13:55	
2-Fluorobiphenyl (S)	%	70	25-150	01/06/17 13:55	
Terphenyl-d14 (S)	%	60	25-150	01/06/17 13:55	

LABORATORY CONTROL SAMPLE: 296924

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
2-Methylnaphthalene	ug/L	4	2.7	68	35-150	
Acenaphthene	ug/L	4	2.9	72	35-150	
Acenaphthylene	ug/L	4	2.9	72	35-150	
Anthracene	ug/L	4	3.4	85	35-150	
Benzo(a)anthracene	ug/L	4	3.1	76	35-150	
Benzo(a)pyrene	ug/L	4	2.8	71	35-150	
Benzo(b)fluoranthene	ug/L	4	2.7	68	35-150	
Benzo(g,h,i)perylene	ug/L	4	3.0	75	35-150	
Benzo(k)fluoranthene	ug/L	4	2.7	66	35-150	
Chrysene	ug/L	4	2.8	69	35-150	
Dibenz(a,h)anthracene	ug/L	4	3.6	90	35-150	
Fluoranthene	ug/L	4	2.8	71	35-150	
Fluorene	ug/L	4	2.8	70	35-150	
Indeno(1,2,3-cd)pyrene	ug/L	4	3.4	84	35-150	
Naphthalene	ug/L	4	2.6	64	35-150	
Phenanthrene	ug/L	4	3.1	77	35-150	
Pyrene	ug/L	4	2.3	57	35-150	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: PUMA TERMINAL MW SAMPLING

Pace Project No.: 2047806

LABORATORY CONTROL SAMPLE: 296924

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
2-Fluorobiphenyl (S)	%.			94	25-150	
Terphenyl-d14 (S)	%.			79	25-150	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 296925 296926

Parameter	Units	2047806016		296925		296926		% Rec Limits	RPD	Max RPD	Qual
		MS Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec				
2-Methylnaphthalene	ug/L	ND	4	4	2.7	3.5	69	87	35-150	23	20 R1
Acenaphthene	ug/L	ND	4	4	2.9	3.6	72	90	35-150	23	20 R1
Acenaphthylene	ug/L	ND	4	4	2.9	3.7	73	91	35-150	22	20 R1
Anthracene	ug/L	ND	4	4	3.0	3.9	76	96	35-150	23	20 R1
Benzo(a)anthracene	ug/L	ND	4	4	3.0	3.7	74	93	35-150	23	20 R1
Benzo(a)pyrene	ug/L	ND	4	4	2.5	3.2	63	80	35-150	24	20 R1
Benzo(b)fluoranthene	ug/L	ND	4	4	2.6	3.3	66	83	35-150	23	20 R1
Benzo(g,h,i)perylene	ug/L	ND	4	4	2.8	3.6	70	89	35-150	24	20 R1
Benzo(k)fluoranthene	ug/L	ND	4	4	2.6	3.4	65	84	35-150	25	20 R1
Chrysene	ug/L	ND	4	4	2.8	3.6	70	89	35-150	24	20 R1
Dibenz(a,h)anthracene	ug/L	ND	4	4	3.4	4.4	85	109	35-150	25	20 R1
Fluoranthene	ug/L	ND	4	4	2.9	3.7	73	92	35-150	22	20 R1
Fluorene	ug/L	ND	4	4	2.9	3.6	73	91	35-150	22	20 R1
Indeno(1,2,3-cd)pyrene	ug/L	ND	4	4	3.2	4.1	79	101	35-150	25	20 R1
Naphthalene	ug/L	ND	4	4	2.6	3.3	65	83	35-150	24	20 R1
Phenanthrene	ug/L	ND	4	4	3.1	3.9	78	98	35-150	22	20 R1
Pyrene	ug/L	ND	4	4	2.1	2.7	54	67	35-150	22	20 R1
2-Fluorobiphenyl (S)	%.						73	96	25-150		20
Terphenyl-d14 (S)	%.						60	78	25-150		20

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REPORT OF LABORATORY ANALYSIS

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QUALIFIERS

Project: PUMA TERMINAL MW SAMPLING

Pace Project No.: 2047806

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The Nelac Institute

LABORATORIES

PASI-N Pace Analytical Services - New Orleans

BATCH QUALIFIERS

Batch: 71522

[M5] A matrix spike/matrix spike duplicate was not performed for this batch due to insufficient sample volume.

ANALYTE QUALIFIERS

C9 Common Laboratory Contaminant.

L0 Analyte recovery in the laboratory control sample (LCS) was outside QC limits.

L1 Analyte recovery in the laboratory control sample (LCS) was above QC limits. Results for this analyte in associated samples may be biased high.

L3 Analyte recovery in the laboratory control sample (LCS) exceeded QC limits. Analyte presence below reporting limits in associated samples.

M0 Matrix spike recovery and/or matrix spike duplicate recovery was outside laboratory control limits.

R1 RPD value was outside control limits.

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: PUMA TERMINAL MW SAMPLING
Pace Project No.: 2047806

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
2047806002	EB-122116	EPA 3535	70938	EPA 8015B Modified	71466
2047806003	MW-83B2	EPA 3535	70938	EPA 8015B Modified	71466
2047806004	MW-AD-4	EPA 3535	70938	EPA 8015B Modified	71466
2047806005	MW-33A	EPA 3535	70938	EPA 8015B Modified	71466
2047806006	MW-P116	EPA 3535	70938	EPA 8015B Modified	71466
2047806007	MW-P117	EPA 3535	70938	EPA 8015B Modified	71466
2047806008	MW-65A	EPA 3535	70938	EPA 8015B Modified	71466
2047806011	EB-122216	EPA 3535	70938	EPA 8015B Modified	71466
2047806012	MW-15A	EPA 3535	70938	EPA 8015B Modified	71466
2047806013	MW-15B2	EPA 3535	70938	EPA 8015B Modified	71466
2047806015	DUP002	EPA 3535	70938	EPA 8015B Modified	71466
2047806016	MW-15B MS/MSD	EPA 3535	70938	EPA 8015B Modified	71466
2047806001	TB-122116	EPA 8015/8021	71030		
2047806002	EB-122116	EPA 8015/8021	71030		
2047806003	MW-83B2	EPA 8015/8021	71030		
2047806004	MW-AD-4	EPA 8015/8021	71030		
2047806005	MW-33A	EPA 8015/8021	71030		
2047806006	MW-P116	EPA 8015/8021	71030		
2047806007	MW-P117	EPA 8015/8021	71030		
2047806008	MW-65A	EPA 8015/8021	71030		
2047806009	FB-122116	EPA 8015/8021	71030		
2047806010	TB-122216	EPA 8015/8021	71030		
2047806011	EB-122216	EPA 8015/8021	71030		
2047806012	MW-15A	EPA 8015/8021	71030		
2047806013	MW-15B2	EPA 8015/8021	71030		
2047806015	DUP002	EPA 8015/8021	71030		
2047806016	MW-15B MS/MSD	EPA 8015/8021	71030		
2047806017	FB-122216	EPA 8015/8021	71030		
2047806002	EB-122116	EPA 3010	71131	EPA 6020	71235
2047806003	MW-83B2	EPA 3010	71131	EPA 6020	71235
2047806004	MW-AD-4	EPA 3010	71131	EPA 6020	71235
2047806005	MW-33A	EPA 3010	71131	EPA 6020	71235
2047806006	MW-P116	EPA 3010	71131	EPA 6020	71235
2047806007	MW-P117	EPA 3010	71131	EPA 6020	71235
2047806008	MW-65A	EPA 3010	71131	EPA 6020	71235
2047806011	EB-122216	EPA 3010	71131	EPA 6020	71235
2047806012	MW-15A	EPA 3010	71131	EPA 6020	71235
2047806013	MW-15B2	EPA 3010	71131	EPA 6020	71235
2047806015	DUP002	EPA 3010	71131	EPA 6020	71235
2047806016	MW-15B MS/MSD	EPA 3010	71131	EPA 6020	71235
2047806002	EB-122116	EPA 3005A	71126	EPA 6020	71232
2047806003	MW-83B2	EPA 3005A	71126	EPA 6020	71232
2047806004	MW-AD-4	EPA 3005A	71126	EPA 6020	71232
2047806005	MW-33A	EPA 3005A	71126	EPA 6020	71232
2047806006	MW-P116	EPA 3005A	71126	EPA 6020	71232
2047806007	MW-P117	EPA 3005A	71126	EPA 6020	71232
2047806008	MW-65A	EPA 3005A	71126	EPA 6020	71232

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: PUMA TERMINAL MW SAMPLING

Pace Project No.: 2047806

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
2047806011	EB-122216	EPA 3005A	71126	EPA 6020	71232
2047806012	MW-15A	EPA 3005A	71126	EPA 6020	71232
2047806013	MW-15B2	EPA 3005A	71126	EPA 6020	71232
2047806015	DUP002	EPA 3005A	71126	EPA 6020	71232
2047806016	MW-15B MS/MSD	EPA 3005A	71126	EPA 6020	71232
2047806002	EB-122116	EPA 7470	71004	EPA 7470	71141
2047806003	MW-83B2	EPA 7470	71004	EPA 7470	71141
2047806004	MW-AD-4	EPA 7470	71004	EPA 7470	71141
2047806005	MW-33A	EPA 7470	71004	EPA 7470	71141
2047806006	MW-P116	EPA 7470	71004	EPA 7470	71141
2047806007	MW-P117	EPA 7470	71004	EPA 7470	71141
2047806008	MW-65A	EPA 7470	71005	EPA 7470	71139
2047806011	EB-122216	EPA 7470	71005	EPA 7470	71139
2047806012	MW-15A	EPA 7470	71005	EPA 7470	71139
2047806013	MW-15B2	EPA 7470	71005	EPA 7470	71139
2047806015	DUP002	EPA 7470	71005	EPA 7470	71139
2047806016	MW-15B MS/MSD	EPA 7470	71005	EPA 7470	71139
2047806002	EB-122116	EPA 7470	71108	EPA 7470	71142
2047806003	MW-83B2	EPA 7470	71108	EPA 7470	71142
2047806004	MW-AD-4	EPA 7470	71108	EPA 7470	71142
2047806005	MW-33A	EPA 7470	71108	EPA 7470	71142
2047806006	MW-P116	EPA 7470	71108	EPA 7470	71142
2047806007	MW-P117	EPA 7470	71108	EPA 7470	71142
2047806008	MW-65A	EPA 7470	71110	EPA 7470	71140
2047806011	EB-122216	EPA 7470	71110	EPA 7470	71140
2047806012	MW-15A	EPA 7470	71110	EPA 7470	71140
2047806013	MW-15B2	EPA 7470	71110	EPA 7470	71140
2047806015	DUP002	EPA 7470	71110	EPA 7470	71140
2047806016	MW-15B MS/MSD	EPA 7470	71110	EPA 7470	71140
2047806002	EB-122116	EPA 3510	70942	EPA 8270 by SIM	71522
2047806003	MW-83B2	EPA 3510	70942	EPA 8270 by SIM	71522
2047806004	MW-AD-4	EPA 3510	70943	EPA 8270 by SIM	71436
2047806005	MW-33A	EPA 3510	70943	EPA 8270 by SIM	71436
2047806006	MW-P116	EPA 3510	70943	EPA 8270 by SIM	71436
2047806007	MW-P117	EPA 3510	70943	EPA 8270 by SIM	71436
2047806008	MW-65A	EPA 3510	70943	EPA 8270 by SIM	71436
2047806011	EB-122216	EPA 3510	70982	EPA 8270 by SIM	71521
2047806012	MW-15A	EPA 3510	70982	EPA 8270 by SIM	71521
2047806013	MW-15B2	EPA 3510	70982	EPA 8270 by SIM	71521
2047806015	DUP002	EPA 3510	70982	EPA 8270 by SIM	71521
2047806016	MW-15B MS/MSD	EPA 3510	70982	EPA 8270 by SIM	71521
2047806001	TB-122116	EPA 5030B/8260	70952		
2047806002	EB-122116	EPA 5030B/8260	70952		
2047806003	MW-83B2	EPA 5030B/8260	70952		
2047806004	MW-AD-4	EPA 5030B/8260	70952		

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: PUMA TERMINAL MW SAMPLING

Pace Project No.: 2047806

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
2047806005	MW-33A	EPA 5030B/8260	70952		
2047806006	MW-P116	EPA 5030B/8260	70952		
2047806007	MW-P117	EPA 5030B/8260	70952		
2047806008	MW-65A	EPA 5030B/8260	70952		
2047806009	FB-122116	EPA 5030B/8260	70952		
2047806010	TB-122216	EPA 5030B/8260	70952		
2047806011	EB-122216	EPA 5030B/8260	70952		
2047806012	MW-15A	EPA 5030B/8260	70952		
2047806013	MW-15B2	EPA 5030B/8260	70952		
2047806015	DUP002	EPA 5030B/8260	70952		
2047806016	MW-15B MS/MSD	EPA 5030B/8260	70952		
2047806017	FB-122216	EPA 5030B/8260	70952		

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1621433

Section A Required Client Information:	Section B Required Project Information:	Section C Invoice Information:	
Company: Arcadis	Report To: EFrain Caldera	Attention:	
Address: 48 cityview plaza 1 suite 401 R3 165 Km 112 Guaymas RR	Copy To:	Company Name:	REGULATORY AGENCY
Email To: EFrain Caldera @ arcadis-usa.com	Purchase Order No.:	Address:	<input type="checkbox"/> NPDES <input type="checkbox"/> GROUND WATER <input type="checkbox"/> DRINKING WATER
Phone: 505-977-4000 Fax: 505-977-6050	Project Name: Puma Terminal MWSamp	Pace Quote Reference:	<input type="checkbox"/> UST <input type="checkbox"/> RCRA <input type="checkbox"/> OTHER
Requested Due Date/TAT: STC	Project Number: E002.1605B	Pace Project Manager: Juan Roldan	Site Location STATE: P.R.

ITEM #	SAMPLE ID (A-Z, 0-9 /, -) Sample IDs MUST BE UNIQUE	Matrix Codes MATRIX / CODE	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED				SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives								Analysis Test ↓	Residual Chlorine (Y/N)	Pace Project No./ Lab I.D.						
					COMPOSITE START	COMPOSITE END/GRAB	DATE	TIME			DATE	TIME	Unpreserved	H ₂ SO ₄	HNO ₃	HCl	NaOH	Na ₂ S ₂ O ₃				Methanol	Other				
1	TB-122116	WT G		G			12/21/16	LAB	4																		
2	EB-122116	WT G		G			12/21/16	0917	10	S		1	4														
3	MW-83B2	WT G		G			12/21/16	0959	10	S		1	4														
4	MW-AD-4	WT G		G			12/21/16	1056	10	S		1	4														
5	MW-33A	WT G		G			12/21/16	1144	10	S		1	4														
6	MW-P116	WT G		G			12/21/16	1405	10	S		1	4														
7	MW-P117	WT G		G			12/21/16	1521	10	S		1	4														
8	MW-65A	WT G		G			12/21/16	1609	10	S		1	4														
9	FB-122116	WT G		G			12/21/16	1615	4				4														
10	TB-122216	WT G		G			12/22/16	LAB	4				4														
11	EB-122216	WT G		G			12/22/16	0842	10	S		1	4														
12	MW-15A	WT G		G			12/22/16	0938	10	S		1	4														

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS			
level 10	Arcadis	12/22/16	1315	Fred Ex	12/22/16	1715	40	Y	N	Y
	Fed Ex	12-22-16	17:00	Fred Ex			5.3			
	Fred Ex	12-23-16	1000	Fred Ex	12-23-16	1020	4.1	Y	Y	Y

SAMPLER NAME AND SIGNATURE		Temp in °C	Received on ice (Y/N)	Custody Sealed Cooler (Y/N)	Samples Intact (Y/N)
PRINT Name of SAMPLER: Arcadis	DATE Signed (MM/DD/YY): 12/22/16				
SIGNATURE of SAMPLER: <i>[Signature]</i>					

ORIGINAL



CHAIN-OF-CUSTODY / Analytical Request Document

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

Page: **2 of 2**
1621434

Section A
Required Client Information:
Company: **Arcaads**
Address: **44 City View Plaza Suite 401 Rd 165 Km 1.2**
Email To: **Efrain Caldera@arcaads-us.com**
Phone: **(787-977-4000)** Fax: **(787-977-4006)**
Requested Due Date/TAT: **90**

Section B
Required Project Information:
Report To: **Efrain Caldera**
Copy To:
Purchase Order No.:
Project Name:
Project Number: **202-1605A**

Section C
Invoice Information:
Attention:
Company Name:
Address:
Pace Quote Reference:
Pace Project Manager: **Juan Redondo**
Pace Profile #:

REGULATORY AGENCY
 NPDES GROUND WATER DRINKING WATER
 UST RCRA OTHER
Site Location: **PR**
STATE: **PR**

ITEM #	SAMPLE ID (A-Z, 0-9 / -) Sample IDs MUST BE UNIQUE	Matrix Codes MATRIX / CODE	COLLECTED				SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives							↓ Analysis Test ↓	Requested Analysis Filtered (Y/N)	Residual Chlorine (Y/N)	Pace Project No./ Lab I.D.							
			COMPOSITE START		COMPOSITE END/GRAB				Unpreserved	H ₂ SO ₄	HNO ₃	HCl	NaOH	Na ₂ S ₂ O ₃	Methanol					Other						
			DATE	TIME	DATE	TIME																				
1	MW-15B2	WT G			12/22/16	1023	10									X	X	X	X	X	X	X	X			
2	MW-15B	WT G			12/22/16	1142	10									X	X	X	X	X	X	X	X			
3	DUP002	WT G			12/22/16	/	10									X	X	X	X	X	X	X	X			
4	MW-15B (MS)	WT G			12/22/16	1142	10									X	X	X	X	X	X	X	X			
5	MW-15B (MSD)	WT G			12/22/16	1142	10									X	X	X	X	X	X	X	X			
6	FR-122216	WT G			12/22/16	1150	4									X	X									
7																										
8																										
9																										
10																										
11																										
12																										

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS				
Level IV	Andres Colon / Arcaads	12/22/16	1315	[Signature]	12/22/16	1315	4.0	Y	Y	Y	Y
	[Signature]	12-22-16	17:00	Fed Exp			5.3				
	Fed Exp	12-23-16	10:20	[Signature]	12-23-16	10:20	4.1	Y	Y	Y	Y
							1.1				

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ORIGINAL

SAMPLER NAME AND SIGNATURE
PRINT Name of SAMPLER: **Andres Colon**
SIGNATURE of SAMPLER: **[Signature]**
DATE Signed (MM/DD/YY): **12/22/16**

Temp in °C
Received on Ice (Y/N)
Custody Sealed Cooler (Y/N)
Samples Intact (Y/N)



1000 Riverbend, Blvd., Suite F
St. Rose, LA 70087

Sample Condition Upo

WO#: 2047806

PM: JAR1

Due Date: 01/09/17

CLIENT: 98-ARCADISPR

Pi

Courier: Pace Courier Hired Courier Fed X UPS DHL USPS Customer Other

Custody Seal on Cooler/Box Present: [see COC]

Custody Seals intact: Yes No

Thermometer Used: Therm Fisher IR 5
 Therm Fisher IR 6
 Therm Fisher IR 7

Type of Ice: Wet Blue None

Samples on ice: [see COC]

Date and Initials of person examining contents: 12-23-16 LMB

Cooler Temperature: [see COC] Temp should be above freezing to 6°C

Temp must be measured from Temperature blank when present Comments:

Temperature Blank Present?"	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	1
Chain of Custody Present:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	2
Chain of Custody Complete:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	3
Chain of Custody Relinquished:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	4
Sampler Name & Signature on COC:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	5
Samples Arrived within Hold Time:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	6
Sufficient Volume:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	7
Correct Containers Used:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	8
Filtered vol. Rec. for Diss. tests	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	9
Sample Labels match COC:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	10
All containers received within manufacture's precautionary and/or expiration dates.	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	11
All containers needing chemical preservation have been checked (except VOA, coliform, & O&G).	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	12
All containers preservation checked found to be in compliance with EPA recommendation.	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	13
Headspace in VOA Vials (>6mm):	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	14
Trip Blank Present:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	15

Client Notification/ Resolution:

Person Contacted: _____ Date/Time: _____

Comments/ Resolution: _____

January 12, 2017

Efrain Calderon
BBL Caribe Engineering P.S.C.
48 City View Plaza1, Suite 401
Road 16, Km. 1.2
Guaynabo, PR 00968

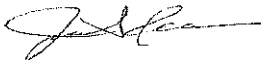
RE: Project: PUMA TERMINAL MW SAMPLING
Pace Project No.: 2047806

Dear Efrain Calderon:

Enclosed are the analytical results for sample(s) received by the laboratory on December 22, 2016. The results relate only to the samples included in this report. Results reported herein conform to the most current, applicable TNI/NELAC standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,



Juan Redondo
juan.redondo@pacelabs.com
Project Manager

Enclosures

cc: Sharon Colon
Abner Hernandez
Marianela Mercado-Burgos



REPORT OF LABORATORY ANALYSIS

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CERTIFICATIONS

Project: PUMA TERMINAL MW SAMPLING
Pace Project No.: 2047806

New Orleans Certification IDs

California Env. Lab Accreditation Program Branch:
11277CA
Florida Department of Health (NELAC): E87595
Illinois Environmental Protection Agency: 0025721
Kansas Department of Health and Environment (NELAC):
E-10266
Louisiana Dept. of Environmental Quality (NELAC/LELAP):
02006

Pennsylvania Dept. of Env Protection (NELAC): 68-04202
Texas Commission on Env. Quality (NELAC):
T104704405-09-TX
U.S. Dept. of Agriculture Foreign Soil Import: P330-10-
00119
Commonwealth of Virginia (TNI): 480246

REPORT OF LABORATORY ANALYSIS

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SAMPLE SUMMARY

Project: PUMA TERMINAL MW SAMPLING
Pace Project No.: 2047806

Lab ID	Sample ID	Matrix	Date Collected	Date Received
2047806001	TB-122116	Water	12/21/16 00:00	12/22/16 13:15
2047806002	EB-122116	Water	12/21/16 09:17	12/22/16 13:15
2047806003	MW-83B2	Water	12/21/16 09:59	12/22/16 13:15
2047806004	MW-AD-4	Water	12/21/16 10:56	12/22/16 13:15
2047806005	MW-33A	Water	12/21/16 11:44	12/22/16 13:15
2047806006	MW-P116	Water	12/21/16 14:05	12/22/16 13:15
2047806007	MW-P117	Water	12/21/16 15:21	12/22/16 13:15
2047806008	MW-65A	Water	12/21/16 16:07	12/22/16 13:15
2047806009	FB-122116	Water	12/21/16 16:15	12/22/16 13:15
2047806010	TB-122216	Water	12/22/16 00:00	12/22/16 13:15
2047806011	EB-122216	Water	12/22/16 08:42	12/22/16 13:15
2047806012	MW-15A	Water	12/22/16 09:38	12/22/16 13:15
2047806013	MW-15B2	Water	12/22/16 10:23	12/22/16 13:15
2047806015	DUP002	Water	12/22/16 00:00	12/22/16 13:15
2047806016	MW-15B MS/MSD	Water	12/22/16 11:42	12/22/16 13:15
2047806017	FB-122216	Water	12/22/16 11:50	12/22/16 13:15

REPORT OF LABORATORY ANALYSIS

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SAMPLE ANALYTE COUNT

Project: PUMA TERMINAL MW SAMPLING
Pace Project No.: 2047806

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
2047806001	TB-122116	EPA 8015/8021	MHM	2	PASI-N
		EPA 5030B/8260	MLS	45	PASI-N
2047806002	EB-122116	EPA 8015B Modified	SLF	4	PASI-N
		EPA 8015/8021	MHM	2	PASI-N
		EPA 6020	KJR	4	PASI-N
		EPA 6020	KJR	4	PASI-N
		EPA 7470	MHB1	1	PASI-N
		EPA 7470	MHB1	1	PASI-N
		EPA 8270 by SIM	GEJ	19	PASI-N
		EPA 5030B/8260	MLS	45	PASI-N
2047806003	MW-83B2	EPA 8015B Modified	SLF	4	PASI-N
		EPA 8015/8021	MHM	2	PASI-N
		EPA 6020	KJR	4	PASI-N
		EPA 6020	KJR	4	PASI-N
		EPA 7470	MHB1	1	PASI-N
		EPA 7470	MHB1	1	PASI-N
		EPA 8270 by SIM	GEJ	19	PASI-N
		EPA 5030B/8260	MLS	45	PASI-N
2047806004	MW-AD-4	EPA 8015B Modified	SLF	4	PASI-N
		EPA 8015/8021	MHM	2	PASI-N
		EPA 6020	KJR	4	PASI-N
		EPA 6020	KJR	4	PASI-N
		EPA 7470	MHB1	1	PASI-N
		EPA 7470	MHB1	1	PASI-N
		EPA 8270 by SIM	GEJ	19	PASI-N
		EPA 5030B/8260	MLS	45	PASI-N
2047806005	MW-33A	EPA 8015B Modified	SLF	4	PASI-N
		EPA 8015/8021	MHM	2	PASI-N
		EPA 6020	KJR	4	PASI-N
		EPA 6020	KJR	4	PASI-N
		EPA 7470	MHB1	1	PASI-N
		EPA 7470	MHB1	1	PASI-N
		EPA 8270 by SIM	GEJ	19	PASI-N
		EPA 5030B/8260	MLS	45	PASI-N
2047806006	MW-P116	EPA 8015B Modified	SLF	4	PASI-N
		EPA 8015/8021	MHM	2	PASI-N
		EPA 6020	KJR	4	PASI-N

REPORT OF LABORATORY ANALYSIS

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SAMPLE ANALYTE COUNT

Project: PUMA TERMINAL MW SAMPLING
Pace Project No.: 2047806

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
		EPA 6020	KJR	4	PASI-N
		EPA 7470	MHB1	1	PASI-N
		EPA 7470	MHB1	1	PASI-N
		EPA 8270 by SIM	GEJ	19	PASI-N
		EPA 5030B/8260	MLS	45	PASI-N
2047806007	MW-P117	EPA 8015B Modified	SLF	4	PASI-N
		EPA 8015/8021	MHM	2	PASI-N
		EPA 6020	KJR	4	PASI-N
		EPA 6020	KJR	4	PASI-N
		EPA 7470	MHB1	1	PASI-N
		EPA 7470	MHB1	1	PASI-N
		EPA 8270 by SIM	GEJ	19	PASI-N
		EPA 5030B/8260	MLS	45	PASI-N
2047806008	MW-65A	EPA 8015B Modified	SLF	4	PASI-N
		EPA 8015/8021	MHM	2	PASI-N
		EPA 6020	KJR	4	PASI-N
		EPA 6020	KJR	4	PASI-N
		EPA 7470	MHB1	1	PASI-N
		EPA 7470	MHB1	1	PASI-N
		EPA 8270 by SIM	GEJ	19	PASI-N
		EPA 5030B/8260	MLS	45	PASI-N
2047806009	FB-122116	EPA 8015/8021	MHM	2	PASI-N
		EPA 5030B/8260	MLS	45	PASI-N
2047806010	TB-122216	EPA 8015/8021	MHM	2	PASI-N
		EPA 5030B/8260	MLS	45	PASI-N
2047806011	EB-122216	EPA 8015B Modified	SLF	4	PASI-N
		EPA 8015/8021	MHM	2	PASI-N
		EPA 6020	KJR	4	PASI-N
		EPA 6020	KJR	4	PASI-N
		EPA 7470	MHB1	1	PASI-N
		EPA 7470	MHB1	1	PASI-N
		EPA 8270 by SIM	GEJ	19	PASI-N
		EPA 5030B/8260	MLS	45	PASI-N
2047806012	MW-15A	EPA 8015B Modified	SLF	4	PASI-N
		EPA 8015/8021	MHM	2	PASI-N
		EPA 6020	KJR	4	PASI-N
		EPA 6020	KJR	4	PASI-N

REPORT OF LABORATORY ANALYSIS

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SAMPLE ANALYTE COUNT

Project: PUMA TERMINAL MW SAMPLING
Pace Project No.: 2047806

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
2047806013	MW-15B2	EPA 7470	MHB1	1	PASI-N
		EPA 7470	MHB1	1	PASI-N
		EPA 8270 by SIM	GEJ	19	PASI-N
		EPA 5030B/8260	MLS	45	PASI-N
		EPA 8015B Modified	SLF	4	PASI-N
		EPA 8015/8021	MHM	2	PASI-N
		EPA 6020	KJR	4	PASI-N
		EPA 6020	KJR	4	PASI-N
		EPA 7470	MHB1	1	PASI-N
		EPA 7470	MHB1	1	PASI-N
2047806015	DUP002	EPA 8270 by SIM	GEJ	19	PASI-N
		EPA 5030B/8260	MLS	45	PASI-N
		EPA 8015B Modified	SLF	4	PASI-N
		EPA 8015/8021	MHM	2	PASI-N
		EPA 6020	KJR	4	PASI-N
		EPA 6020	KJR	4	PASI-N
		EPA 7470	MHB1	1	PASI-N
		EPA 7470	MHB1	1	PASI-N
		EPA 8270 by SIM	GEJ	19	PASI-N
		EPA 5030B/8260	MLS	45	PASI-N
2047806016	MW-15B MS/MSD	EPA 8015B Modified	SLF	4	PASI-N
		EPA 8015/8021	MHM	2	PASI-N
		EPA 6020	KJR	4	PASI-N
		EPA 6020	KJR	4	PASI-N
		EPA 7470	MHB1	1	PASI-N
		EPA 7470	MHB1	1	PASI-N
		EPA 8270 by SIM	GEJ	19	PASI-N
		EPA 5030B/8260	MLS	45	PASI-N
		EPA 8015/8021	MHM	2	PASI-N
		EPA 5030B/8260	MLS	45	PASI-N
2047806017	FB-122216	EPA 8015/8021	MHM	2	PASI-N
		EPA 5030B/8260	MLS	45	PASI-N

REPORT OF LABORATORY ANALYSIS

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PROJECT NARRATIVE

Project: PUMA TERMINAL MW SAMPLING
Pace Project No.: 2047806

Method: EPA 8015B Modified
Description: 8015M DRO/ORO Organics
Client: BBL Caribe / Arcadis PR
Date: January 12, 2017

General Information:

12 samples were analyzed for EPA 8015B Modified. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:

The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:

The samples were prepared in accordance with EPA 3535 with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):

All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:

All criteria were within method requirements with any exceptions noted below.

Surrogates:

All surrogates were within QC limits with any exceptions noted below.

Method Blank:

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

QC Batch: 70938

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 2047806016

R1: RPD value was outside control limits.

- MSD (Lab ID: 296802)
- Diesel Range Organic (C10-C28)

Additional Comments:

REPORT OF LABORATORY ANALYSIS

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PROJECT NARRATIVE

Project: PUMA TERMINAL MW SAMPLING

Pace Project No.: 2047806

Method: EPA 8015/8021

Description: 8021 GCV BTEX, MTBE, GRO

Client: BBL Caribe / Arcadis PR

Date: January 12, 2017

General Information:

16 samples were analyzed for EPA 8015/8021. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:

The samples were analyzed within the method required hold times with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):

All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:

All criteria were within method requirements with any exceptions noted below.

Surrogates:

All surrogates were within QC limits with any exceptions noted below.

Method Blank:

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

REPORT OF LABORATORY ANALYSIS

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PROJECT NARRATIVE

Project: PUMA TERMINAL MW SAMPLING
Pace Project No.: 2047806

Method: EPA 6020
Description: 6020 MET ICPMS
Client: BBL Caribe / Arcadis PR
Date: January 12, 2017

General Information:

12 samples were analyzed for EPA 6020. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:

The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:

The samples were prepared in accordance with EPA 3010 with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):

All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:

All criteria were within method requirements with any exceptions noted below.

Internal Standards:

All internal standards were within QC limits with any exceptions noted below.

Method Blank:

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

REPORT OF LABORATORY ANALYSIS

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PROJECT NARRATIVE

Project: PUMA TERMINAL MW SAMPLING
Pace Project No.: 2047806

Method: EPA 6020
Description: 6020 MET ICPMS, Dissolved (LF)
Client: BBL Caribe / Arcadis PR
Date: January 12, 2017

General Information:

12 samples were analyzed for EPA 6020. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:

The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:

The samples were prepared in accordance with EPA 3005A with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):

All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:

All criteria were within method requirements with any exceptions noted below.

Internal Standards:

All internal standards were within QC limits with any exceptions noted below.

Method Blank:

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

REPORT OF LABORATORY ANALYSIS

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PROJECT NARRATIVE

Project: PUMA TERMINAL MW SAMPLING
Pace Project No.: 2047806

Method: EPA 7470
Description: 7470 Mercury
Client: BBL Caribe / Arcadis PR
Date: January 12, 2017

General Information:

12 samples were analyzed for EPA 7470. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:

The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:

The samples were prepared in accordance with EPA 7470 with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):

All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:

All criteria were within method requirements with any exceptions noted below.

Method Blank:

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

REPORT OF LABORATORY ANALYSIS

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PROJECT NARRATIVE

Project: PUMA TERMINAL MW SAMPLING
Pace Project No.: 2047806

Method: EPA 7470
Description: 7470 Mercury, Dissolved (LF)
Client: BBL Caribe / Arcadis PR
Date: January 12, 2017

General Information:

12 samples were analyzed for EPA 7470. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:

The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:

The samples were prepared in accordance with EPA 7470 with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):

All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:

All criteria were within method requirements with any exceptions noted below.

Method Blank:

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

REPORT OF LABORATORY ANALYSIS

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PROJECT NARRATIVE

Project: PUMA TERMINAL MW SAMPLING
Pace Project No.: 2047806

Method: EPA 8270 by SIM
Description: 8270 MSSV PAH by SIM SEP
Client: BBL Caribe / Arcadis PR
Date: January 12, 2017

General Information:

12 samples were analyzed for EPA 8270 by SIM. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:

The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:

The samples were prepared in accordance with EPA 3510 with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):

All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:

All criteria were within method requirements with any exceptions noted below.

Internal Standards:

All internal standards were within QC limits with any exceptions noted below.

Surrogates:

All surrogates were within QC limits with any exceptions noted below.

Method Blank:

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

QC Batch: 70942

A matrix spike/matrix spike duplicate was not performed due to insufficient sample volume.

QC Batch: 70982

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 2047806016

R1: RPD value was outside control limits.

- MSD (Lab ID: 296926)
 - 2-Methylnaphthalene
 - Acenaphthene
 - Acenaphthylene
 - Anthracene
 - Benzo(a)anthracene
 - Benzo(a)pyrene

REPORT OF LABORATORY ANALYSIS

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PROJECT NARRATIVE

Project: PUMA TERMINAL MW SAMPLING
Pace Project No.: 2047806

Method: EPA 8270 by SIM
Description: 8270 MSSV PAH by SIM SEP
Client: BBL Caribe / Arcadis PR
Date: January 12, 2017

QC Batch: 70982

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 2047806016

R1: RPD value was outside control limits.

- Benzo(b)fluoranthene
- Benzo(g,h,i)perylene
- Benzo(k)fluoranthene
- Chrysene
- Dibenz(a,h)anthracene
- Fluoranthene
- Fluorene
- Indeno(1,2,3-cd)pyrene
- Naphthalene
- Phenanthrene
- Pyrene

Additional Comments:

REPORT OF LABORATORY ANALYSIS

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PROJECT NARRATIVE

Project: PUMA TERMINAL MW SAMPLING
Pace Project No.: 2047806

Method: EPA 5030B/8260
Description: 8260 MSV Low Level
Client: BBL Caribe / Arcadis PR
Date: January 12, 2017

Analyte Comments:

QC Batch: 70952

C9: Common Laboratory Contaminant.

- DUP002 (Lab ID: 2047806015)
 - Acetone
- EB-122116 (Lab ID: 2047806002)
 - Acetone
- EB-122216 (Lab ID: 2047806011)
 - Acetone
- FB-122116 (Lab ID: 2047806009)
 - Acetone
- FB-122216 (Lab ID: 2047806017)
 - Acetone
- MW-15A (Lab ID: 2047806012)
 - Acetone
- MW-15B MS/MSD (Lab ID: 2047806016)
 - Acetone
- MW-15B2 (Lab ID: 2047806013)
 - Acetone
- MW-33A (Lab ID: 2047806005)
 - Acetone
- MW-65A (Lab ID: 2047806008)
 - Acetone
- MW-83B2 (Lab ID: 2047806003)
 - Acetone
- MW-AD-4 (Lab ID: 2047806004)
 - Acetone
- MW-P116 (Lab ID: 2047806006)
 - Acetone
- MW-P117 (Lab ID: 2047806007)
 - Acetone
- TB-122116 (Lab ID: 2047806001)
 - Acetone
- TB-122216 (Lab ID: 2047806010)
 - Acetone

This data package has been reviewed for quality and completeness and is approved for release.

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

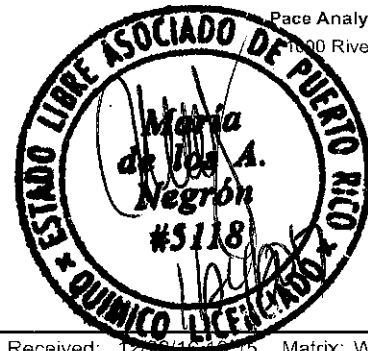
Project: PUMA TERMINAL MW SAMPLING
Pace Project No.: 2047806

Sample: TB-122116 Lab ID: 2047806001 Collected: 12/21/16 00:00 Receptor: Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8021 GCV BTEX, MTBE, GRO		Analytical Method: EPA 8015/8021						
Gasoline Range Organics Surrogates	ND	ug/L	50.0	1		12/30/16 08:45		
4-Bromofluorobenzene (S)	95	%	44-148	1		12/30/16 08:45	460-00-4	
8260 MSV Low Level		Analytical Method: EPA 5030B/8260						
Acetone	56.9	ug/L	4.0	1		12/28/16 17:53	67-64-1	C9
Benzene	ND	ug/L	0.50	1		12/28/16 17:53	71-43-2	
Bromodichloromethane	ND	ug/L	0.50	1		12/28/16 17:53	75-27-4	
Bromoform	ND	ug/L	0.50	1		12/28/16 17:53	75-25-2	
Bromomethane	ND	ug/L	0.50	1		12/28/16 17:53	74-83-9	
2-Butanone (MEK)	ND	ug/L	2.0	1		12/28/16 17:53	78-93-3	
Carbon disulfide	ND	ug/L	1.0	1		12/28/16 17:53	75-15-0	L3
Carbon tetrachloride	ND	ug/L	0.50	1		12/28/16 17:53	56-23-5	
Chlorobenzene	ND	ug/L	0.50	1		12/28/16 17:53	108-90-7	
Chloroethane	ND	ug/L	0.50	1		12/28/16 17:53	75-00-3	
Chloroform	ND	ug/L	0.50	1		12/28/16 17:53	67-66-3	
Chloromethane	1.1	ug/L	0.50	1		12/28/16 17:53	74-87-3	
1,2-Dibromo-3-chloropropane	ND	ug/L	0.20	1		12/28/16 17:53	96-12-8	
Dibromochloromethane	ND	ug/L	0.50	1		12/28/16 17:53	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	1		12/28/16 17:53	106-93-4	
Dichlorodifluoromethane	ND	ug/L	1.0	1		12/28/16 17:53	75-71-8	
1,1-Dichloroethane	ND	ug/L	0.50	1		12/28/16 17:53	75-34-3	
1,2-Dichloroethane	ND	ug/L	0.50	1		12/28/16 17:53	107-06-2	
1,1-Dichloroethene	ND	ug/L	0.50	1		12/28/16 17:53	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	1		12/28/16 17:53	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	0.50	1		12/28/16 17:53	156-60-5	
1,2-Dichloropropane	ND	ug/L	0.50	1		12/28/16 17:53	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	0.50	1		12/28/16 17:53	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	0.50	1		12/28/16 17:53	10061-02-6	
Ethylbenzene	ND	ug/L	0.50	1		12/28/16 17:53	100-41-4	
2-Hexanone	ND	ug/L	1.0	1		12/28/16 17:53	591-78-6	
Isopropylbenzene (Cumene)	ND	ug/L	1.0	1		12/28/16 17:53	98-82-8	
Methyl acetate	ND	ug/L	2.0	1		12/28/16 17:53	79-20-9	
Methylene Chloride	ND	ug/L	0.50	1		12/28/16 17:53	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	1.0	1		12/28/16 17:53	108-10-1	
Methyl-tert-butyl ether	ND	ug/L	0.50	1		12/28/16 17:53	1634-04-4	
Styrene	ND	ug/L	1.0	1		12/28/16 17:53	100-42-5	
1,1,2,2-Tetrachloroethane	ND	ug/L	0.50	1		12/28/16 17:53	79-34-5	
Tetrachloroethene	ND	ug/L	0.50	1		12/28/16 17:53	127-18-4	
Toluene	ND	ug/L	0.50	1		12/28/16 17:53	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	0.50	1		12/28/16 17:53	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	0.50	1		12/28/16 17:53	79-00-5	
Trichloroethene	ND	ug/L	0.50	1		12/28/16 17:53	79-01-6	
Trichlorofluoromethane	ND	ug/L	0.50	1		12/28/16 17:53	75-69-4	
Vinyl chloride	ND	ug/L	0.50	1		12/28/16 17:53	75-01-4	
m&p-Xylene	ND	ug/L	2.0	1		12/28/16 17:53	179601-23-1	
o-Xylene	ND	ug/L	1.0	1		12/28/16 17:53	95-47-6	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: PUMA TERMINAL MW SAMPLING
Pace Project No.: 2047806

Sample: TB-122116	Lab ID: 2047806001	Collected: 12/21/16 00:00	Received: 12/28/16 17:53	Matrix: Water
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Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV Low Level		Analytical Method: EPA 5030B/8260						
Surrogates								
Dibromofluoromethane (S)	106	%	72-126	1		12/28/16 17:53	1868-53-7	
4-Bromofluorobenzene (S)	98	%	68-124	1		12/28/16 17:53	460-00-4	
Toluene-d8 (S)	100	%	79-119	1		12/28/16 17:53	2037-26-5	

Sample: EB-122116	Lab ID: 2047806002	Collected: 12/21/16 09:17	Received: 12/22/16 13:15	Matrix: Water
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Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8015M DRO/ORO Organics		Analytical Method: EPA 8015B Modified Preparation Method: EPA 3535						
Diesel Range Organic (C10-C28)	ND	mg/L	0.50	1	12/28/16 10:52	01/05/17 20:39		
Oil Range Organics (>C28-C40)	ND	mg/L	1.0	1	12/28/16 10:52	01/05/17 20:39		
Surrogates								
n-Pentacosane (S)	42	%	16-137	1	12/28/16 10:52	01/05/17 20:39	629-99-2	
o-Terphenyl (S)	47	%	10-121	1	12/28/16 10:52	01/05/17 20:39	84-15-1	

8021 GCV BTEX, MTBE, GRO		Analytical Method: EPA 8015/8021						
Gasoline Range Organics	ND	ug/L	50.0	1		12/30/16 09:37		
Surrogates								
4-Bromofluorobenzene (S)	91	%	44-148	1		12/30/16 09:37	460-00-4	

6020 MET ICPMS		Analytical Method: EPA 6020 Preparation Method: EPA 3010						
Arsenic	ND	mg/L	0.0010	1	12/30/16 06:50	01/06/17 11:17	7440-38-2	
Chromium	ND	mg/L	0.0010	1	12/30/16 06:50	01/06/17 11:17	7440-47-3	
Lead	ND	mg/L	0.0010	1	12/30/16 06:50	01/06/17 11:17	7439-92-1	
Vanadium	ND	mg/L	0.0050	1	12/30/16 06:50	01/06/17 11:17	7440-62-2	

6020 MET ICPMS, Dissolved (LF)		Analytical Method: EPA 6020 Preparation Method: EPA 3005A						
Arsenic, Dissolved	ND	ug/L	1.0	1	12/30/16 06:50	01/03/17 15:33	7440-38-2	
Chromium, Dissolved	ND	ug/L	1.0	1	12/30/16 06:50	01/03/17 15:33	7440-47-3	
Lead, Dissolved	ND	ug/L	1.0	1	12/30/16 06:50	01/03/17 15:33	7439-92-1	
Vanadium, Dissolved	ND	ug/L	5.0	1	12/30/16 06:50	01/03/17 15:33	7440-62-2	

7470 Mercury		Analytical Method: EPA 7470 Preparation Method: EPA 7470						
Mercury	ND	ug/L	0.20	1	12/29/16 09:57	12/29/16 17:57	7439-97-6	

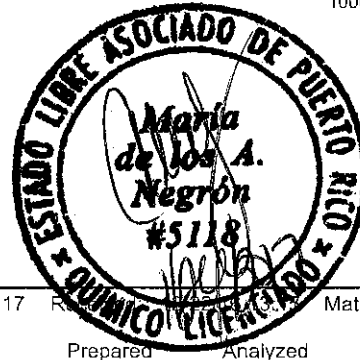
7470 Mercury, Dissolved (LF)		Analytical Method: EPA 7470 Preparation Method: EPA 7470						
Mercury, Dissolved	ND	ug/L	0.20	1	12/29/16 11:58	12/29/16 19:30	7439-97-6	

8270 MSSV PAH by SIM SEP		Analytical Method: EPA 8270 by SIM Preparation Method: EPA 3510						
Acenaphthene	ND	ug/L	0.10	1	12/28/16 10:04	01/06/17 20:14	83-32-9	
Acenaphthylene	ND	ug/L	0.10	1	12/28/16 10:04	01/06/17 20:14	208-96-8	
Anthracene	ND	ug/L	0.10	1	12/28/16 10:04	01/06/17 20:14	120-12-7	
Benzo(a)anthracene	ND	ug/L	0.10	1	12/28/16 10:04	01/06/17 20:14	56-55-3	
Benzo(a)pyrene	ND	ug/L	0.10	1	12/28/16 10:04	01/06/17 20:14	50-32-8	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS



Project: PUMA TERMINAL MW SAMPLING
Pace Project No.: 2047806

Sample: EB-122116 Lab ID: 2047806002 Collected: 12/21/16 09:17 R Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
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8270 MSSV PAH by SIM SEP

Analytical Method: EPA 8270 by SIM Preparation Method: EPA 3510

Benzo(b)fluoranthene	ND	ug/L	0.10	1	12/28/16 10:04	01/06/17 20:14	205-99-2	
Benzo(g,h,i)perylene	ND	ug/L	0.10	1	12/28/16 10:04	01/06/17 20:14	191-24-2	
Benzo(k)fluoranthene	ND	ug/L	0.10	1	12/28/16 10:04	01/06/17 20:14	207-08-9	
Chrysene	ND	ug/L	0.10	1	12/28/16 10:04	01/06/17 20:14	218-01-9	
Dibenz(a,h)anthracene	ND	ug/L	0.10	1	12/28/16 10:04	01/06/17 20:14	53-70-3	
Fluoranthene	ND	ug/L	0.10	1	12/28/16 10:04	01/06/17 20:14	206-44-0	
Fluorene	ND	ug/L	0.10	1	12/28/16 10:04	01/06/17 20:14	86-73-7	
Indeno(1,2,3-cd)pyrene	ND	ug/L	0.10	1	12/28/16 10:04	01/06/17 20:14	193-39-5	
2-Methylnaphthalene	ND	ug/L	0.10	1	12/28/16 10:04	01/06/17 20:14	91-57-6	
Naphthalene	ND	ug/L	0.10	1	12/28/16 10:04	01/06/17 20:14	91-20-3	
Phenanthrene	ND	ug/L	0.10	1	12/28/16 10:04	01/06/17 20:14	85-01-8	
Pyrene	ND	ug/L	0.10	1	12/28/16 10:04	01/06/17 20:14	129-00-0	
Surrogates								
2-Fluorobiphenyl (S)	63	%.	25-150	1	12/28/16 10:04	01/06/17 20:14	321-60-8	
Terphenyl-d14 (S)	49	%.	25-150	1	12/28/16 10:04	01/06/17 20:14	1718-51-0	

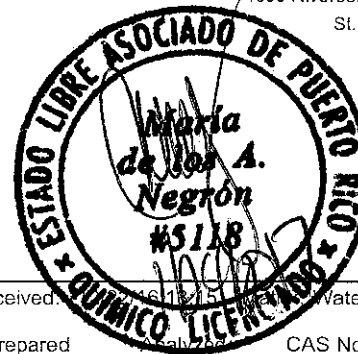
8260 MSV Low Level

Analytical Method: EPA 5030B/8260

Acetone	29.5	ug/L	4.0	1	12/28/16 18:11	67-64-1		C9
Benzene	ND	ug/L	0.50	1	12/28/16 18:11	71-43-2		
Bromodichloromethane	ND	ug/L	0.50	1	12/28/16 18:11	75-27-4		
Bromoform	ND	ug/L	0.50	1	12/28/16 18:11	75-25-2		
Bromomethane	ND	ug/L	0.50	1	12/28/16 18:11	74-83-9		
2-Butanone (MEK)	ND	ug/L	2.0	1	12/28/16 18:11	78-93-3		
Carbon disulfide	ND	ug/L	1.0	1	12/28/16 18:11	75-15-0		L3
Carbon tetrachloride	ND	ug/L	0.50	1	12/28/16 18:11	56-23-5		
Chlorobenzene	ND	ug/L	0.50	1	12/28/16 18:11	108-90-7		
Chloroethane	ND	ug/L	0.50	1	12/28/16 18:11	75-00-3		
Chloroform	ND	ug/L	0.50	1	12/28/16 18:11	67-66-3		
Chloromethane	0.78	ug/L	0.50	1	12/28/16 18:11	74-87-3		
1,2-Dibromo-3-chloropropane	ND	ug/L	0.20	1	12/28/16 18:11	96-12-8		
Dibromochloromethane	ND	ug/L	0.50	1	12/28/16 18:11	124-48-1		
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	1	12/28/16 18:11	106-93-4		
Dichlorodifluoromethane	ND	ug/L	1.0	1	12/28/16 18:11	75-71-8		
1,1-Dichloroethane	ND	ug/L	0.50	1	12/28/16 18:11	75-34-3		
1,2-Dichloroethane	ND	ug/L	0.50	1	12/28/16 18:11	107-06-2		
1,1-Dichloroethene	ND	ug/L	0.50	1	12/28/16 18:11	75-35-4		
cis-1,2-Dichloroethene	ND	ug/L	1.0	1	12/28/16 18:11	156-59-2		
trans-1,2-Dichloroethene	ND	ug/L	0.50	1	12/28/16 18:11	156-60-5		
1,2-Dichloropropane	ND	ug/L	0.50	1	12/28/16 18:11	78-87-5		
cis-1,3-Dichloropropene	ND	ug/L	0.50	1	12/28/16 18:11	10061-01-5		
trans-1,3-Dichloropropene	ND	ug/L	0.50	1	12/28/16 18:11	10061-02-6		
Ethylbenzene	ND	ug/L	0.50	1	12/28/16 18:11	100-41-4		
2-Hexanone	ND	ug/L	1.0	1	12/28/16 18:11	591-78-6		
Isopropylbenzene (Cumene)	ND	ug/L	1.0	1	12/28/16 18:11	98-82-8		
Methyl acetate	ND	ug/L	2.0	1	12/28/16 18:11	79-20-9		
Methylene Chloride	ND	ug/L	0.50	1	12/28/16 18:11	75-09-2		
4-Methyl-2-pentanone (MIBK)	ND	ug/L	1.0	1	12/28/16 18:11	108-10-1		

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ANALYTICAL RESULTS

Project: PUMA TERMINAL MW SAMPLING
Pace Project No.: 2047806

Sample: EB-122116 Lab ID: 2047806002 Collected: 12/21/16 09:17 Received: 12/28/16 18:11 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analized	CAS No.	Qual
8260 MSV Low Level		Analytical Method: EPA 5030B/8260						
Methyl-tert-butyl ether	ND	ug/L	0.50	1	12/28/16 18:11		1634-04-4	
Styrene	ND	ug/L	1.0	1	12/28/16 18:11		100-42-5	
1,1,2,2-Tetrachloroethane	ND	ug/L	0.50	1	12/28/16 18:11		79-34-5	
Tetrachloroethene	ND	ug/L	0.50	1	12/28/16 18:11		127-18-4	
Toluene	ND	ug/L	0.50	1	12/28/16 18:11		108-88-3	
1,1,1-Trichloroethane	ND	ug/L	0.50	1	12/28/16 18:11		71-55-6	
1,1,2-Trichloroethane	ND	ug/L	0.50	1	12/28/16 18:11		79-00-5	
Trichloroethene	ND	ug/L	0.50	1	12/28/16 18:11		79-01-6	
Trichlorofluoromethane	ND	ug/L	0.50	1	12/28/16 18:11		75-69-4	
Vinyl chloride	ND	ug/L	0.50	1	12/28/16 18:11		75-01-4	
m&p-Xylene	ND	ug/L	2.0	1	12/28/16 18:11		179601-23-1	
o-Xylene	ND	ug/L	1.0	1	12/28/16 18:11		95-47-6	
Surrogates								
Dibromofluoromethane (S)	104	%	72-126	1	12/28/16 18:11		1868-53-7	
4-Bromofluorobenzene (S)	98	%	68-124	1	12/28/16 18:11		460-00-4	
Toluene-d8 (S)	101	%	79-119	1	12/28/16 18:11		2037-26-5	

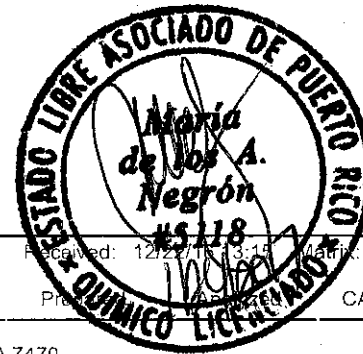
Sample: MW-83B2 Lab ID: 2047806003 Collected: 12/21/16 09:59 Received: 12/22/16 13:15 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analized	CAS No.	Qual
8015M DRO/ORO Organics		Analytical Method: EPA 8015B Modified Preparation Method: EPA 3535						
Diesel Range Organic (C10-C28)	ND	mg/L	0.50	1	12/28/16 10:52	01/05/17 21:07		
Oil Range Organics (>C28-C40)	ND	mg/L	1.0	1	12/28/16 10:52	01/05/17 21:07		
Surrogates								
n-Pentacosane (S)	18	%	16-137	1	12/28/16 10:52	01/05/17 21:07	629-99-2	
o-Terphenyl (S)	18	%	10-121	1	12/28/16 10:52	01/05/17 21:07	84-15-1	
8021 GCV BTEX, MTBE, GRO		Analytical Method: EPA 8015/8021						
Gasoline Range Organics	ND	ug/L	50.0	1	12/30/16 09:11			
Surrogates								
4-Bromofluorobenzene (S)	90	%	44-148	1	12/30/16 09:11		460-00-4	
6020 MET ICPMS		Analytical Method: EPA 6020 Preparation Method: EPA 3010						
Arsenic	0.0019	mg/L	0.0010	1	12/30/16 06:50	01/06/17 11:21	7440-38-2	
Chromium	0.0056	mg/L	0.0010	1	12/30/16 06:50	01/06/17 11:21	7440-47-3	
Lead	0.0013	mg/L	0.0010	1	12/30/16 06:50	01/06/17 11:21	7439-92-1	
Vanadium	ND	mg/L	0.0050	1	12/30/16 06:50	01/06/17 11:21	7440-62-2	
6020 MET ICPMS, Dissolved (LF)		Analytical Method: EPA 6020 Preparation Method: EPA 3005A						
Arsenic, Dissolved	1.2	ug/L	1.0	1	12/30/16 06:50	01/03/17 15:37	7440-38-2	
Chromium, Dissolved	4.0	ug/L	1.0	1	12/30/16 06:50	01/03/17 15:37	7440-47-3	
Lead, Dissolved	ND	ug/L	1.0	1	12/30/16 06:50	01/03/17 15:37	7439-92-1	
Vanadium, Dissolved	ND	ug/L	5.0	1	12/30/16 06:50	01/03/17 15:37	7440-62-2	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS



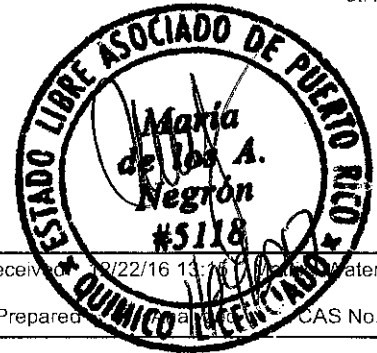
Project: PUMA TERMINAL MW SAMPLING
Pace Project No.: 2047806

Sample:	Lab ID:	Collected:	Received:	Matrix:			
MW-83B2	2047806003	12/21/16 09:59	12/27/16 13:15	Water			
Parameters	Results	Units	Report Limit	DF	Print	CAS No.	Qual
7470 Mercury Analytical Method: EPA 7470 Preparation Method: EPA 7470							
Mercury	ND	ug/L	0.20	1	12/29/16 09:57	12/29/16 17:59	7439-97-6
7470 Mercury, Dissolved (LF) Analytical Method: EPA 7470 Preparation Method: EPA 7470							
Mercury, Dissolved	ND	ug/L	0.20	1	12/29/16 11:58	12/29/16 19:33	7439-97-6
8270 MSSV PAH by SIM SEP Analytical Method: EPA 8270 by SIM Preparation Method: EPA 3510							
Acenaphthene	ND	ug/L	0.10	1	12/28/16 10:04	01/06/17 20:34	83-32-9
Acenaphthylene	ND	ug/L	0.10	1	12/28/16 10:04	01/06/17 20:34	208-96-8
Anthracene	ND	ug/L	0.10	1	12/28/16 10:04	01/06/17 20:34	120-12-7
Benzo(a)anthracene	ND	ug/L	0.10	1	12/28/16 10:04	01/06/17 20:34	56-55-3
Benzo(a)pyrene	ND	ug/L	0.10	1	12/28/16 10:04	01/06/17 20:34	50-32-8
Benzo(b)fluoranthene	ND	ug/L	0.10	1	12/28/16 10:04	01/06/17 20:34	205-99-2
Benzo(g,h,i)perylene	ND	ug/L	0.10	1	12/28/16 10:04	01/06/17 20:34	191-24-2
Benzo(k)fluoranthene	ND	ug/L	0.10	1	12/28/16 10:04	01/06/17 20:34	207-08-9
Chrysene	ND	ug/L	0.10	1	12/28/16 10:04	01/06/17 20:34	218-01-9
Dibenz(a,h)anthracene	ND	ug/L	0.10	1	12/28/16 10:04	01/06/17 20:34	53-70-3
Fluoranthene	ND	ug/L	0.10	1	12/28/16 10:04	01/06/17 20:34	206-44-0
Fluorene	ND	ug/L	0.10	1	12/28/16 10:04	01/06/17 20:34	86-73-7
Indeno(1,2,3-cd)pyrene	ND	ug/L	0.10	1	12/28/16 10:04	01/06/17 20:34	193-39-5
2-Methylnaphthalene	ND	ug/L	0.10	1	12/28/16 10:04	01/06/17 20:34	91-57-6
Naphthalene	ND	ug/L	0.10	1	12/28/16 10:04	01/06/17 20:34	91-20-3
Phenanthrene	ND	ug/L	0.10	1	12/28/16 10:04	01/06/17 20:34	85-01-8
Pyrene	ND	ug/L	0.10	1	12/28/16 10:04	01/06/17 20:34	129-00-0
Surrogates							
2-Fluorobiphenyl (S)	88	%	25-150	1	12/28/16 10:04	01/06/17 20:34	321-60-8
Terphenyl-d14 (S)	57	%	25-150	1	12/28/16 10:04	01/06/17 20:34	1718-51-0
8260 MSV Low Level Analytical Method: EPA 5030B/8260							
Acetone	20.7	ug/L	4.0	1	12/28/16 18:29	67-64-1	C9
Benzene	ND	ug/L	0.50	1	12/28/16 18:29	71-43-2	
Bromodichloromethane	ND	ug/L	0.50	1	12/28/16 18:29	75-27-4	
Bromoform	ND	ug/L	0.50	1	12/28/16 18:29	75-25-2	
Bromomethane	ND	ug/L	0.50	1	12/28/16 18:29	74-83-9	
2-Butanone (MEK)	ND	ug/L	2.0	1	12/28/16 18:29	78-93-3	
Carbon disulfide	ND	ug/L	1.0	1	12/28/16 18:29	75-15-0	L3
Carbon tetrachloride	ND	ug/L	0.50	1	12/28/16 18:29	56-23-5	
Chlorobenzene	ND	ug/L	0.50	1	12/28/16 18:29	108-90-7	
Chloroethane	ND	ug/L	0.50	1	12/28/16 18:29	75-00-3	
Chloroform	ND	ug/L	0.50	1	12/28/16 18:29	67-66-3	
Chloromethane	ND	ug/L	0.50	1	12/28/16 18:29	74-87-3	
1,2-Dibromo-3-chloropropane	ND	ug/L	0.20	1	12/28/16 18:29	96-12-8	
Dibromochloromethane	ND	ug/L	0.50	1	12/28/16 18:29	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	1	12/28/16 18:29	106-93-4	
Dichlorodifluoromethane	ND	ug/L	1.0	1	12/28/16 18:29	75-71-8	
1,1-Dichloroethane	ND	ug/L	0.50	1	12/28/16 18:29	75-34-3	
1,2-Dichloroethane	ND	ug/L	0.50	1	12/28/16 18:29	107-06-2	

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ANALYTICAL RESULTS



Project: PUMA TERMINAL MW SAMPLING
Pace Project No.: 2047806

Sample: MW-83B2 Lab ID: 2047806003 Collected: 12/21/16 09:59 Received: 12/22/16 13:15 Matrix: Water
Parameters Results Units Report Limit DF Prepared Analyzed CAS No. Qual

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV Low Level		Analytical Method: EPA 5030B/8260						
1,1-Dichloroethene	ND	ug/L	0.50	1	12/28/16 18:29	75-35-4		
cis-1,2-Dichloroethene	ND	ug/L	1.0	1	12/28/16 18:29	156-59-2		
trans-1,2-Dichloroethene	ND	ug/L	0.50	1	12/28/16 18:29	156-60-5		
1,2-Dichloropropane	ND	ug/L	0.50	1	12/28/16 18:29	78-87-5		
cis-1,3-Dichloropropene	ND	ug/L	0.50	1	12/28/16 18:29	10061-01-5		
trans-1,3-Dichloropropene	ND	ug/L	0.50	1	12/28/16 18:29	10061-02-6		
Ethylbenzene	ND	ug/L	0.50	1	12/28/16 18:29	100-41-4		
2-Hexanone	ND	ug/L	1.0	1	12/28/16 18:29	591-78-6		
Isopropylbenzene (Cumene)	ND	ug/L	1.0	1	12/28/16 18:29	98-82-8		
Methyl acetate	ND	ug/L	2.0	1	12/28/16 18:29	79-20-9		
Methylene Chloride	ND	ug/L	0.50	1	12/28/16 18:29	75-09-2		
4-Methyl-2-pentanone (MIBK)	ND	ug/L	1.0	1	12/28/16 18:29	108-10-1		
Methyl-tert-butyl ether	ND	ug/L	0.50	1	12/28/16 18:29	1634-04-4		
Styrene	ND	ug/L	1.0	1	12/28/16 18:29	100-42-5		
1,1,2,2-Tetrachloroethane	ND	ug/L	0.50	1	12/28/16 18:29	79-34-5		
Tetrachloroethene	ND	ug/L	0.50	1	12/28/16 18:29	127-18-4		
Toluene	ND	ug/L	0.50	1	12/28/16 18:29	108-88-3		
1,1,1-Trichloroethane	ND	ug/L	0.50	1	12/28/16 18:29	71-55-6		
1,1,2-Trichloroethane	ND	ug/L	0.50	1	12/28/16 18:29	79-00-5		
Trichloroethene	ND	ug/L	0.50	1	12/28/16 18:29	79-01-6		
Trichlorofluoromethane	ND	ug/L	0.50	1	12/28/16 18:29	75-69-4		
Vinyl chloride	ND	ug/L	0.50	1	12/28/16 18:29	75-01-4		
m&p-Xylene	ND	ug/L	2.0	1	12/28/16 18:29	179601-23-1		
o-Xylene	ND	ug/L	1.0	1	12/28/16 18:29	95-47-6		
Surrogates								
Dibromofluoromethane (S)	105	%	72-126	1	12/28/16 18:29	1868-53-7		
4-Bromofluorobenzene (S)	98	%	68-124	1	12/28/16 18:29	460-00-4		
Toluene-d8 (S)	101	%	79-119	1	12/28/16 18:29	2037-26-5		

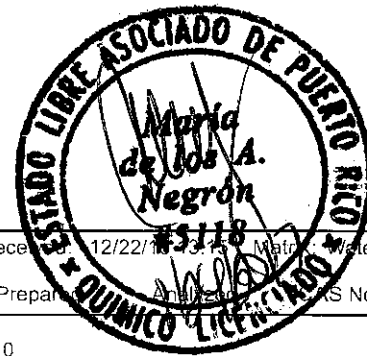
Sample: MW-AD-4 Lab ID: 2047806004 Collected: 12/21/16 10:56 Received: 12/22/16 13:15 Matrix: Water
Parameters Results Units Report Limit DF Prepared Analyzed CAS No. Qual

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8015M DRO/ORO Organics		Analytical Method: EPA 8015B Modified Preparation Method: EPA 3535						
Diesel Range Organic (C10-C28)	ND	mg/L	0.25	1	12/28/16 10:52	01/06/17 02:45		
Oil Range Organics (>C28-C40)	ND	mg/L	0.50	1	12/28/16 10:52	01/06/17 02:45		
Surrogates								
n-Pentacosane (S)	35	%	16-137	1	12/28/16 10:52	01/06/17 02:45	629-99-2	
o-Terphenyl (S)	48	%	10-121	1	12/28/16 10:52	01/06/17 02:45	84-15-1	
8021 GCV BTEX, MTBE, GRO		Analytical Method: EPA 8015/8021						
Gasoline Range Organics	110	ug/L	50.0	1	12/30/16 11:49			
Surrogates								
4-Bromofluorobenzene (S)	94	%	44-148	1	12/30/16 11:49		460-00-4	

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ANALYTICAL RESULTS



Project: PUMA TERMINAL MW SAMPLING
Pace Project No.: 2047806

Sample: MW-AD-4 Lab ID: 2047806004 Collected: 12/21/16 10:56 Received: 12/22/16 10:56 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Preparation	Analysis No.	Qual
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6020 MET ICPMS Analytical Method: EPA 6020 Preparation Method: EPA 3010

Arsenic	0.0028	mg/L	0.0010	1	12/30/16 06:50	01/06/17 11:25	7440-38-2
Chromium	ND	mg/L	0.0010	1	12/30/16 06:50	01/06/17 11:25	7440-47-3
Lead	ND	mg/L	0.0010	1	12/30/16 06:50	01/06/17 11:25	7439-92-1
Vanadium	ND	mg/L	0.0050	1	12/30/16 06:50	01/06/17 11:25	7440-62-2

6020 MET ICPMS, Dissolved (LF) Analytical Method: EPA 6020 Preparation Method: EPA 3005A

Arsenic, Dissolved	ND	ug/L	1.0	1	12/30/16 06:50	01/03/17 15:41	7440-38-2
Chromium, Dissolved	ND	ug/L	1.0	1	12/30/16 06:50	01/03/17 15:41	7440-47-3
Lead, Dissolved	ND	ug/L	1.0	1	12/30/16 06:50	01/03/17 15:41	7439-92-1
Vanadium, Dissolved	ND	ug/L	5.0	1	12/30/16 06:50	01/03/17 15:41	7440-62-2

7470 Mercury Analytical Method: EPA 7470 Preparation Method: EPA 7470

Mercury	ND	ug/L	0.20	1	12/29/16 09:57	12/29/16 18:01	7439-97-6
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7470 Mercury, Dissolved (LF) Analytical Method: EPA 7470 Preparation Method: EPA 7470

Mercury, Dissolved	ND	ug/L	0.20	1	12/29/16 11:58	12/29/16 19:35	7439-97-6
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8270 MSSV PAH by SIM SEP Analytical Method: EPA 8270 by SIM Preparation Method: EPA 3510

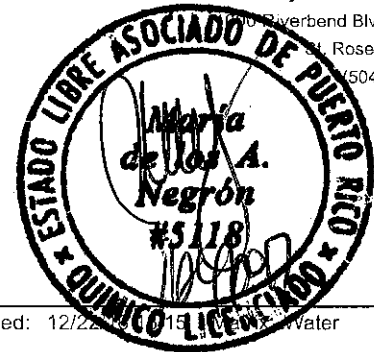
Acenaphthene	0.13	ug/L	0.10	1	12/28/16 10:06	01/05/17 12:10	83-32-9
Acenaphthylene	ND	ug/L	0.10	1	12/28/16 10:06	01/05/17 12:10	208-96-8
Anthracene	ND	ug/L	0.10	1	12/28/16 10:06	01/05/17 12:10	120-12-7
Benzo(a)anthracene	ND	ug/L	0.10	1	12/28/16 10:06	01/05/17 12:10	56-55-3
Benzo(a)pyrene	ND	ug/L	0.10	1	12/28/16 10:06	01/05/17 12:10	50-32-8
Benzo(b)fluoranthene	ND	ug/L	0.10	1	12/28/16 10:06	01/05/17 12:10	205-99-2
Benzo(g,h,i)perylene	ND	ug/L	0.10	1	12/28/16 10:06	01/05/17 12:10	191-24-2
Benzo(k)fluoranthene	ND	ug/L	0.10	1	12/28/16 10:06	01/05/17 12:10	207-08-9
Chrysene	ND	ug/L	0.10	1	12/28/16 10:06	01/05/17 12:10	218-01-9
Dibenz(a,h)anthracene	ND	ug/L	0.10	1	12/28/16 10:06	01/05/17 12:10	53-70-3
Fluoranthene	ND	ug/L	0.10	1	12/28/16 10:06	01/05/17 12:10	206-44-0
Fluorene	0.17	ug/L	0.10	1	12/28/16 10:06	01/05/17 12:10	86-73-7
Indeno(1,2,3-cd)pyrene	ND	ug/L	0.10	1	12/28/16 10:06	01/05/17 12:10	193-39-5
2-Methylnaphthalene	0.20	ug/L	0.10	1	12/28/16 10:06	01/05/17 12:10	91-57-6
Naphthalene	0.92	ug/L	0.10	1	12/28/16 10:06	01/05/17 12:10	91-20-3
Phenanthrene	ND	ug/L	0.10	1	12/28/16 10:06	01/05/17 12:10	85-01-8
Pyrene	ND	ug/L	0.10	1	12/28/16 10:06	01/05/17 12:10	129-00-0
Surrogates							
2-Fluorobiphenyl (S)	80	%	25-150	1	12/28/16 10:06	01/05/17 12:10	321-60-8
Terphenyl-d14 (S)	74	%	25-150	1	12/28/16 10:06	01/05/17 12:10	1718-51-0

8260 MSV Low Level Analytical Method: EPA 5030B/8260

Acetone	41.6	ug/L	4.0	1	12/28/16 18:47	67-64-1	C9
Benzene	ND	ug/L	0.50	1	12/28/16 18:47	71-43-2	
Bromodichloromethane	ND	ug/L	0.50	1	12/28/16 18:47	75-27-4	
Bromoform	ND	ug/L	0.50	1	12/28/16 18:47	75-25-2	
Bromomethane	ND	ug/L	0.50	1	12/28/16 18:47	74-83-9	
2-Butanone (MEK)	ND	ug/L	2.0	1	12/28/16 18:47	78-93-3	

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ANALYTICAL RESULTS

Project: PUMA TERMINAL MW SAMPLING

Pace Project No.: 2047806

Sample: MW-AD-4 Lab ID: 2047806004 Collected: 12/21/16 10:56 Received: 12/22/16 15:15 Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV Low Level		Analytical Method: EPA 5030B/8260						
Carbon disulfide	ND	ug/L	1.0	1		12/28/16 18:47	75-15-0	L3
Carbon tetrachloride	ND	ug/L	0.50	1		12/28/16 18:47	56-23-5	
Chlorobenzene	ND	ug/L	0.50	1		12/28/16 18:47	108-90-7	
Chloroethane	ND	ug/L	0.50	1		12/28/16 18:47	75-00-3	
Chloroform	ND	ug/L	0.50	1		12/28/16 18:47	67-66-3	
Chloromethane	ND	ug/L	0.50	1		12/28/16 18:47	74-87-3	
1,2-Dibromo-3-chloropropane	ND	ug/L	0.20	1		12/28/16 18:47	96-12-8	
Dibromochloromethane	ND	ug/L	0.50	1		12/28/16 18:47	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	1		12/28/16 18:47	106-93-4	
Dichlorodifluoromethane	ND	ug/L	1.0	1		12/28/16 18:47	75-71-8	
1,1-Dichloroethane	ND	ug/L	0.50	1		12/28/16 18:47	75-34-3	
1,2-Dichloroethane	ND	ug/L	0.50	1		12/28/16 18:47	107-06-2	
1,1-Dichloroethene	ND	ug/L	0.50	1		12/28/16 18:47	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	1		12/28/16 18:47	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	0.50	1		12/28/16 18:47	156-60-5	
1,2-Dichloropropane	ND	ug/L	0.50	1		12/28/16 18:47	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	0.50	1		12/28/16 18:47	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	0.50	1		12/28/16 18:47	10061-02-6	
Ethylbenzene	ND	ug/L	0.50	1		12/28/16 18:47	100-41-4	
2-Hexanone	ND	ug/L	1.0	1		12/28/16 18:47	591-78-6	
Isopropylbenzene (Cumene)	ND	ug/L	1.0	1		12/28/16 18:47	98-82-8	
Methyl acetate	ND	ug/L	2.0	1		12/28/16 18:47	79-20-9	
Methylene Chloride	ND	ug/L	0.50	1		12/28/16 18:47	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	1.0	1		12/28/16 18:47	108-10-1	
Methyl-tert-butyl ether	1.4	ug/L	0.50	1		12/28/16 18:47	1634-04-4	
Styrene	ND	ug/L	1.0	1		12/28/16 18:47	100-42-5	
1,1,2,2-Tetrachloroethane	ND	ug/L	0.50	1		12/28/16 18:47	79-34-5	
Tetrachloroethene	ND	ug/L	0.50	1		12/28/16 18:47	127-18-4	
Toluene	ND	ug/L	0.50	1		12/28/16 18:47	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	0.50	1		12/28/16 18:47	71-55-6	
1,1,2-Trichloroethane	1.9	ug/L	0.50	1		12/28/16 18:47	79-00-5	
Trichloroethene	ND	ug/L	0.50	1		12/28/16 18:47	79-01-6	
Trichlorofluoromethane	ND	ug/L	0.50	1		12/28/16 18:47	75-69-4	
Vinyl chloride	ND	ug/L	0.50	1		12/28/16 18:47	75-01-4	
m&p-Xylene	ND	ug/L	2.0	1		12/28/16 18:47	179601-23-1	
o-Xylene	ND	ug/L	1.0	1		12/28/16 18:47	95-47-6	
Surrogates								
Dibromofluoromethane (S)	104	%	72-126	1		12/28/16 18:47	1868-53-7	
4-Bromofluorobenzene (S)	98	%	68-124	1		12/28/16 18:47	460-00-4	
Toluene-d8 (S)	101	%	79-119	1		12/28/16 18:47	2037-26-5	

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ANALYTICAL RESULTS



Project: PUMA TERMINAL MW SAMPLING
Pace Project No.: 2047806

Sample: MW-33A Lab ID: 2047806005 Collected: 12/21/16 11:44 Received: 12/21/16 13:15
Parameters Results Units Report Limit DF Prepared CAS No. Qual

8015M DRO/ORO Organics

Analytical Method: EPA 8015B Modified Preparation Method: EPA 3535

Diesel Range Organic (C10-C28)	0.64	mg/L	0.50	1	12/28/16 10:52	01/05/17 21:35	
Oil Range Organics (>C28-C40)	ND	mg/L	1.0	1	12/28/16 10:52	01/05/17 21:35	
Surrogates							
n-Pentacosane (S)	42	%	16-137	1	12/28/16 10:52	01/05/17 21:35	629-99-2
o-Terphenyl (S)	60	%	10-121	1	12/28/16 10:52	01/05/17 21:35	84-15-1

8021 GCV BTEX, MTBE, GRO

Analytical Method: EPA 8015/8021

Gasoline Range Organics	383	ug/L	50.0	1		12/30/16 12:14	
Surrogates							
4-Bromofluorobenzene (S)	106	%	44-148	1		12/30/16 12:14	460-00-4

6020 MET ICPMS

Analytical Method: EPA 6020 Preparation Method: EPA 3010

Arsenic	0.013	mg/L	0.0010	1	12/30/16 06:50	01/06/17 11:29	7440-38-2
Chromium	ND	mg/L	0.0010	1	12/30/16 06:50	01/06/17 11:29	7440-47-3
Lead	ND	mg/L	0.0010	1	12/30/16 06:50	01/06/17 11:29	7439-92-1
Vanadium	ND	mg/L	0.0050	1	12/30/16 06:50	01/06/17 11:29	7440-62-2

6020 MET ICPMS, Dissolved (LF)

Analytical Method: EPA 6020 Preparation Method: EPA 3005A

Arsenic, Dissolved	ND	ug/L	1.0	1	12/30/16 06:50	01/03/17 15:45	7440-38-2
Chromium, Dissolved	ND	ug/L	1.0	1	12/30/16 06:50	01/03/17 15:45	7440-47-3
Lead, Dissolved	ND	ug/L	1.0	1	12/30/16 06:50	01/03/17 15:45	7439-92-1
Vanadium, Dissolved	ND	ug/L	5.0	1	12/30/16 06:50	01/03/17 15:45	7440-62-2

7470 Mercury

Analytical Method: EPA 7470 Preparation Method: EPA 7470

Mercury	ND	ug/L	0.20	1	12/29/16 09:57	12/29/16 18:07	7439-97-6
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7470 Mercury, Dissolved (LF)

Analytical Method: EPA 7470 Preparation Method: EPA 7470

Mercury, Dissolved	ND	ug/L	0.20	1	12/29/16 11:58	12/29/16 19:37	7439-97-6
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8270 MSSV PAH by SIM SEP

Analytical Method: EPA 8270 by SIM Preparation Method: EPA 3510

Acenaphthene	1.0	ug/L	0.10	1	12/28/16 10:06	01/05/17 12:30	83-32-9
Acenaphthylene	0.15	ug/L	0.10	1	12/28/16 10:06	01/05/17 12:30	208-96-8
Anthracene	ND	ug/L	0.10	1	12/28/16 10:06	01/05/17 12:30	120-12-7
Benzo(a)anthracene	ND	ug/L	0.10	1	12/28/16 10:06	01/05/17 12:30	56-55-3
Benzo(a)pyrene	ND	ug/L	0.10	1	12/28/16 10:06	01/05/17 12:30	50-32-8
Benzo(b)fluoranthene	ND	ug/L	0.10	1	12/28/16 10:06	01/05/17 12:30	205-99-2
Benzo(g,h,i)perylene	ND	ug/L	0.10	1	12/28/16 10:06	01/05/17 12:30	191-24-2
Benzo(k)fluoranthene	ND	ug/L	0.10	1	12/28/16 10:06	01/05/17 12:30	207-08-9
Chrysene	ND	ug/L	0.10	1	12/28/16 10:06	01/05/17 12:30	218-01-9
Dibenz(a,h)anthracene	ND	ug/L	0.10	1	12/28/16 10:06	01/05/17 12:30	53-70-3
Fluoranthene	ND	ug/L	0.10	1	12/28/16 10:06	01/05/17 12:30	206-44-0
Fluorene	0.25	ug/L	0.10	1	12/28/16 10:06	01/05/17 12:30	86-73-7
Indeno(1,2,3-cd)pyrene	ND	ug/L	0.10	1	12/28/16 10:06	01/05/17 12:30	193-39-5
2-Methylnaphthalene	ND	ug/L	0.10	1	12/28/16 10:06	01/05/17 12:30	91-57-6
Naphthalene	1.5	ug/L	0.10	1	12/28/16 10:06	01/05/17 12:30	91-20-3
Phenanthrene	ND	ug/L	0.10	1	12/28/16 10:06	01/05/17 12:30	85-01-8

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: PUMA TERMINAL MW SAMPLING
Pace Project No.: 2047806

Sample: MW-33A Lab ID: 2047806005 Collected: 12/21/16 11:44 Received: 12/22/16 10:15 Matrix: Water



Parameters	Results	Units	Report Limit	DF	Preparation	Analysis No.	Qual
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8270 MSSV PAH by SIM SEP

Analytical Method: EPA 8270 by SIM Preparation Method: EPA 3510

Pyrene	ND	ug/L	0.10	1	12/28/16 10:06	01/05/17 12:30	129-00-0
Surrogates							
2-Fluorobiphenyl (S)	63	%	25-150	1	12/28/16 10:06	01/05/17 12:30	321-60-8
Terphenyl-d14 (S)	60	%	25-150	1	12/28/16 10:06	01/05/17 12:30	1718-51-0

8260 MSV Low Level

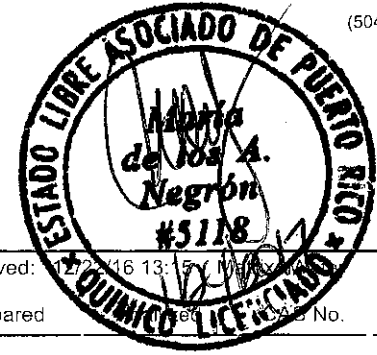
Analytical Method: EPA 5030B/8260

Acetone	13.4	ug/L	4.0	1	12/28/16 19:05	67-64-1	C9
Benzene	ND	ug/L	0.50	1	12/28/16 19:05	71-43-2	
Bromodichloromethane	ND	ug/L	0.50	1	12/28/16 19:05	75-27-4	
Bromoform	ND	ug/L	0.50	1	12/28/16 19:05	75-25-2	
Bromomethane	ND	ug/L	0.50	1	12/28/16 19:05	74-83-9	
2-Butanone (MEK)	ND	ug/L	2.0	1	12/28/16 19:05	78-93-3	
Carbon disulfide	ND	ug/L	1.0	1	12/28/16 19:05	75-15-0	L3
Carbon tetrachloride	ND	ug/L	0.50	1	12/28/16 19:05	56-23-5	
Chlorobenzene	ND	ug/L	0.50	1	12/28/16 19:05	108-90-7	
Chloroethane	ND	ug/L	0.50	1	12/28/16 19:05	75-00-3	
Chloroform	ND	ug/L	0.50	1	12/28/16 19:05	67-66-3	
Chloromethane	ND	ug/L	0.50	1	12/28/16 19:05	74-87-3	
1,2-Dibromo-3-chloropropane	ND	ug/L	0.20	1	12/28/16 19:05	96-12-8	
Dibromochloromethane	ND	ug/L	0.50	1	12/28/16 19:05	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	1	12/28/16 19:05	106-93-4	
Dichlorodifluoromethane	ND	ug/L	1.0	1	12/28/16 19:05	75-71-8	
1,1-Dichloroethane	ND	ug/L	0.50	1	12/28/16 19:05	75-34-3	
1,2-Dichloroethane	ND	ug/L	0.50	1	12/28/16 19:05	107-06-2	
1,1-Dichloroethene	ND	ug/L	0.50	1	12/28/16 19:05	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	1	12/28/16 19:05	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	0.50	1	12/28/16 19:05	156-60-5	
1,2-Dichloropropane	ND	ug/L	0.50	1	12/28/16 19:05	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	0.50	1	12/28/16 19:05	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	0.50	1	12/28/16 19:05	10061-02-6	
Ethylbenzene	ND	ug/L	0.50	1	12/28/16 19:05	100-41-4	
2-Hexanone	ND	ug/L	1.0	1	12/28/16 19:05	591-78-6	
Isopropylbenzene (Cumene)	ND	ug/L	1.0	1	12/28/16 19:05	98-82-8	
Methyl acetate	ND	ug/L	2.0	1	12/28/16 19:05	79-20-9	
Methylene Chloride	ND	ug/L	0.50	1	12/28/16 19:05	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	1.0	1	12/28/16 19:05	108-10-1	
Methyl-tert-butyl ether	8.4	ug/L	0.50	1	12/28/16 19:05	1634-04-4	
Styrene	ND	ug/L	1.0	1	12/28/16 19:05	100-42-5	
1,1,2,2-Tetrachloroethane	ND	ug/L	0.50	1	12/28/16 19:05	79-34-5	
Tetrachloroethene	ND	ug/L	0.50	1	12/28/16 19:05	127-18-4	
Toluene	ND	ug/L	0.50	1	12/28/16 19:05	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	0.50	1	12/28/16 19:05	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	0.50	1	12/28/16 19:05	79-00-5	
Trichloroethene	ND	ug/L	0.50	1	12/28/16 19:05	79-01-6	
Trichlorofluoromethane	ND	ug/L	0.50	1	12/28/16 19:05	75-69-4	
Vinyl chloride	ND	ug/L	0.50	1	12/28/16 19:05	75-01-4	
m&p-Xylene	ND	ug/L	2.0	1	12/28/16 19:05	179601-23-1	

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ANALYTICAL RESULTS



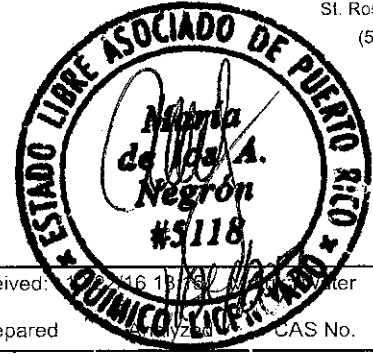
Project: PUMA TERMINAL MW SAMPLING
Pace Project No.: 2047806

Sample:	Lab ID:	Collected:	Received:	Prepared	Anal. No.	Qual
Sample: MW-33A	Lab ID: 2047806005	12/21/16 11:44	12/22/16 13:15			
8260 MSV Low Level	Analytical Method: EPA 5030B/8260					
o-Xylene	ND	ug/L	1.0	1	12/28/16 19:05	95-47-6
Surrogates						
Dibromofluoromethane (S)	102	%.	72-126	1	12/28/16 19:05	1868-53-7
4-Bromofluorobenzene (S)	100	%.	68-124	1	12/28/16 19:05	460-00-4
Toluene-d8 (S)	99	%.	79-119	1	12/28/16 19:05	2037-26-5
Sample: MW-P116	Lab ID: 2047806006	12/21/16 14:05	12/22/16 13:15		Matrix: Water	
8015M DRO/ORO Organics	Analytical Method: EPA 8015B Modified Preparation Method: EPA 3535					
Diesel Range Organic (C10-C28)	ND	mg/L	0.50	1	12/28/16 10:52	01/05/17 22:03
Oil Range Organics (>C28-C40)	ND	mg/L	1.0	1	12/28/16 10:52	01/05/17 22:03
Surrogates						
n-Pentacosane (S)	31	%.	16-137	1	12/28/16 10:52	01/05/17 22:03 629-99-2
o-Terphenyl (S)	48	%.	10-121	1	12/28/16 10:52	01/05/17 22:03 84-15-1
8021 GCV BTEX, MTBE, GRO	Analytical Method: EPA 8015/8021					
Gasoline Range Organics	ND	ug/L	50.0	1	12/30/16 12:41	
Surrogates						
4-Bromofluorobenzene (S)	92	%.	44-148	1	12/30/16 12:41	460-00-4
6020 MET ICPMS	Analytical Method: EPA 6020 Preparation Method: EPA 3010					
Arsenic	0.0017	mg/L	0.0010	1	12/30/16 06:50	01/06/17 11:33 7440-38-2
Chromium	0.0011	mg/L	0.0010	1	12/30/16 06:50	01/06/17 11:33 7440-47-3
Lead	0.0010	mg/L	0.0010	1	12/30/16 06:50	01/06/17 11:33 7439-92-1
Vanadium	ND	mg/L	0.0050	1	12/30/16 06:50	01/06/17 11:33 7440-62-2
6020 MET ICPMS, Dissolved (LF)	Analytical Method: EPA 6020 Preparation Method: EPA 3005A					
Arsenic, Dissolved	ND	ug/L	1.0	1	12/30/16 06:50	01/03/17 15:49 7440-38-2
Chromium, Dissolved	ND	ug/L	1.0	1	12/30/16 06:50	01/03/17 15:49 7440-47-3
Lead, Dissolved	ND	ug/L	1.0	1	12/30/16 06:50	01/03/17 15:49 7439-92-1
Vanadium, Dissolved	ND	ug/L	5.0	1	12/30/16 06:50	01/03/17 15:49 7440-62-2
7470 Mercury	Analytical Method: EPA 7470 Preparation Method: EPA 7470					
Mercury	ND	ug/L	0.20	1	12/29/16 09:57	12/29/16 18:09 7439-97-6
7470 Mercury, Dissolved (LF)	Analytical Method: EPA 7470 Preparation Method: EPA 7470					
Mercury, Dissolved	ND	ug/L	0.20	1	12/29/16 11:58	12/29/16 19:39 7439-97-6
8270 MSSV PAH by SIM SEP	Analytical Method: EPA 8270 by SIM Preparation Method: EPA 3510					
Acenaphthene	ND	ug/L	0.10	1	12/28/16 10:06	01/05/17 12:50 83-32-9
Acenaphthylene	ND	ug/L	0.10	1	12/28/16 10:06	01/05/17 12:50 208-96-8
Anthracene	ND	ug/L	0.10	1	12/28/16 10:06	01/05/17 12:50 120-12-7
Benzo(a)anthracene	ND	ug/L	0.10	1	12/28/16 10:06	01/05/17 12:50 56-55-3

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS



Project: PUMA TERMINAL MW SAMPLING
Pace Project No.: 2047806

Sample: MW-P116	Lab ID: 2047806006	Collected: 12/21/16 14:05	Received: 12/28/16 10:06	Prepared: 12/28/16 10:06	CAS No.	Qual
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8270 MSSV PAH by SIM SEP

Analytical Method: EPA 8270 by SIM Preparation Method: EPA 3510

Parameters	Results	Units	Report Limit	DF	Prepared	CAS No.	Qual
Benzo(a)pyrene	ND	ug/L	0.10	1	12/28/16 10:06	01/05/17 12:50 50-32-8	
Benzo(b)fluoranthene	ND	ug/L	0.10	1	12/28/16 10:06	01/05/17 12:50 205-99-2	
Benzo(g,h,i)perylene	ND	ug/L	0.10	1	12/28/16 10:06	01/05/17 12:50 191-24-2	
Benzo(k)fluoranthene	ND	ug/L	0.10	1	12/28/16 10:06	01/05/17 12:50 207-08-9	
Chrysene	ND	ug/L	0.10	1	12/28/16 10:06	01/05/17 12:50 218-01-9	
Dibenz(a,h)anthracene	ND	ug/L	0.10	1	12/28/16 10:06	01/05/17 12:50 53-70-3	
Fluoranthene	ND	ug/L	0.10	1	12/28/16 10:06	01/05/17 12:50 206-44-0	
Fluorene	ND	ug/L	0.10	1	12/28/16 10:06	01/05/17 12:50 86-73-7	
Indeno(1,2,3-cd)pyrene	ND	ug/L	0.10	1	12/28/16 10:06	01/05/17 12:50 193-39-5	
2-Methylnaphthalene	ND	ug/L	0.10	1	12/28/16 10:06	01/05/17 12:50 91-57-6	
Naphthalene	ND	ug/L	0.10	1	12/28/16 10:06	01/05/17 12:50 91-20-3	
Phenanthrene	ND	ug/L	0.10	1	12/28/16 10:06	01/05/17 12:50 85-01-8	
Pyrene	ND	ug/L	0.10	1	12/28/16 10:06	01/05/17 12:50 129-00-0	
Surrogates							
2-Fluorobiphenyl (S)	76	%.	25-150	1	12/28/16 10:06	01/05/17 12:50 321-60-8	
Terphenyl-d14 (S)	75	%.	25-150	1	12/28/16 10:06	01/05/17 12:50 1718-51-0	

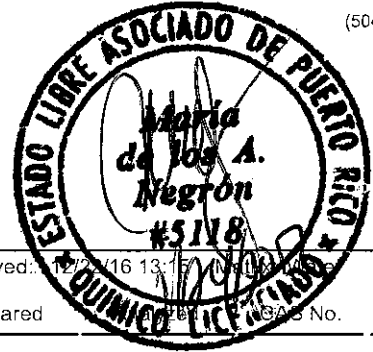
8260 MSV Low Level

Analytical Method: EPA 5030B/8260

Acetone	14.9	ug/L	4.0	1	12/28/16 19:23	67-64-1	C9
Benzene	ND	ug/L	0.50	1	12/28/16 19:23	71-43-2	
Bromodichloromethane	ND	ug/L	0.50	1	12/28/16 19:23	75-27-4	
Bromoform	ND	ug/L	0.50	1	12/28/16 19:23	75-25-2	
Bromomethane	ND	ug/L	0.50	1	12/28/16 19:23	74-83-9	
2-Butanone (MEK)	ND	ug/L	2.0	1	12/28/16 19:23	78-93-3	
Carbon disulfide	ND	ug/L	1.0	1	12/28/16 19:23	75-15-0	L3
Carbon tetrachloride	ND	ug/L	0.50	1	12/28/16 19:23	56-23-5	
Chlorobenzene	ND	ug/L	0.50	1	12/28/16 19:23	108-90-7	
Chloroethane	ND	ug/L	0.50	1	12/28/16 19:23	75-00-3	
Chloroform	ND	ug/L	0.50	1	12/28/16 19:23	67-66-3	
Chloromethane	ND	ug/L	0.50	1	12/28/16 19:23	74-87-3	
1,2-Dibromo-3-chloropropane	ND	ug/L	0.20	1	12/28/16 19:23	96-12-8	
Dibromochloromethane	ND	ug/L	0.50	1	12/28/16 19:23	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	1	12/28/16 19:23	106-93-4	
Dichlorodifluoromethane	ND	ug/L	1.0	1	12/28/16 19:23	75-71-8	
1,1-Dichloroethane	ND	ug/L	0.50	1	12/28/16 19:23	75-34-3	
1,2-Dichloroethane	ND	ug/L	0.50	1	12/28/16 19:23	107-06-2	
1,1-Dichloroethene	ND	ug/L	0.50	1	12/28/16 19:23	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	1	12/28/16 19:23	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	0.50	1	12/28/16 19:23	156-60-5	
1,2-Dichloropropane	ND	ug/L	0.50	1	12/28/16 19:23	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	0.50	1	12/28/16 19:23	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	0.50	1	12/28/16 19:23	10061-02-6	
Ethylbenzene	ND	ug/L	0.50	1	12/28/16 19:23	100-41-4	
2-Hexanone	ND	ug/L	1.0	1	12/28/16 19:23	591-78-6	
Isopropylbenzene (Cumene)	ND	ug/L	1.0	1	12/28/16 19:23	98-82-8	
Methyl acetate	ND	ug/L	2.0	1	12/28/16 19:23	79-20-9	
Methylene Chloride	ND	ug/L	0.50	1	12/28/16 19:23	75-09-2	

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ANALYTICAL RESULTS

Project: PUMA TERMINAL MW SAMPLING
Pace Project No.: 2047806

Sample: MW-P116 Lab ID: 2047806006 Collected: 12/21/16 14:05 Received: 12/21/16 13:15
Parameters Results Units Report Limit DF Prepared Analyzed CAS No. Qual

8260 MSV Low Level Analytical Method: EPA 5030B/8260

4-Methyl-2-pentanone (MIBK)	ND	ug/L	1.0	1	12/28/16 19:23	108-10-1	
Methyl-terf-butyl ether	ND	ug/L	0.50	1	12/28/16 19:23	1634-04-4	
Styrene	ND	ug/L	1.0	1	12/28/16 19:23	100-42-5	
1,1,2,2-Tetrachloroethane	ND	ug/L	0.50	1	12/28/16 19:23	79-34-5	
Tetrachloroethene	ND	ug/L	0.50	1	12/28/16 19:23	127-18-4	
Toluene	ND	ug/L	0.50	1	12/28/16 19:23	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	0.50	1	12/28/16 19:23	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	0.50	1	12/28/16 19:23	79-00-5	
Trichloroethene	ND	ug/L	0.50	1	12/28/16 19:23	79-01-6	
Trichlorofluoromethane	ND	ug/L	0.50	1	12/28/16 19:23	75-69-4	
Vinyl chloride	ND	ug/L	0.50	1	12/28/16 19:23	75-01-4	
m&p-Xylene	ND	ug/L	2.0	1	12/28/16 19:23	179601-23-1	
o-Xylene	ND	ug/L	1.0	1	12/28/16 19:23	95-47-6	
Surrogates							
Dibromofluoromethane (S)	105	%.	72-126	1	12/28/16 19:23	1868-53-7	
4-Bromofluorobenzene (S)	97	%.	68-124	1	12/28/16 19:23	460-00-4	
Toluene-d8 (S)	102	%.	79-119	1	12/28/16 19:23	2037-26-5	

Sample: MW-P117 Lab ID: 2047806007 Collected: 12/21/16 15:21 Received: 12/22/16 13:15 Matrix: Water
Parameters Results Units Report Limit DF Prepared Analyzed CAS No. Qual

8015M DRO/ORO Organics Analytical Method: EPA 8015B Modified Preparation Method: EPA 3535

Diesel Range Organic (C10-C28)	ND	mg/L	0.50	1	12/28/16 10:52	01/05/17 22:32	
Oil Range Organics (>C28-C40)	ND	mg/L	1.0	1	12/28/16 10:52	01/05/17 22:32	
Surrogates							
n-Pentacosane (S)	32	%.	16-137	1	12/28/16 10:52	01/05/17 22:32	629-99-2
o-Terphenyl (S)	39	%.	10-121	1	12/28/16 10:52	01/05/17 22:32	84-15-1

8021 GCV BTEX, MTBE, GRO Analytical Method: EPA 8015/8021

Gasoline Range Organics	ND	ug/L	50.0	1	12/30/16 13:07		
Surrogates							
4-Bromofluorobenzene (S)	93	%.	44-148	1	12/30/16 13:07	460-00-4	

6020 MET ICPMS Analytical Method: EPA 6020 Preparation Method: EPA 3010

Arsenic	ND	mg/L	0.0010	1	12/30/16 06:50	01/06/17 11:45	7440-38-2
Chromium	ND	mg/L	0.0010	1	12/30/16 06:50	01/06/17 11:45	7440-47-3
Lead	ND	mg/L	0.0010	1	12/30/16 06:50	01/06/17 11:45	7439-92-1
Vanadium	ND	mg/L	0.0050	1	12/30/16 06:50	01/06/17 11:45	7440-62-2

6020 MET ICPMS, Dissolved (LF) Analytical Method: EPA 6020 Preparation Method: EPA 3005A

Arsenic, Dissolved	ND	ug/L	1.0	1	12/30/16 06:50	01/03/17 15:53	7440-38-2
Chromium, Dissolved	ND	ug/L	1.0	1	12/30/16 06:50	01/03/17 15:53	7440-47-3
Lead, Dissolved	ND	ug/L	1.0	1	12/30/16 06:50	01/03/17 15:53	7439-92-1
Vanadium, Dissolved	ND	ug/L	5.0	1	12/30/16 06:50	01/03/17 15:53	7440-62-2

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ANALYTICAL RESULTS



Project: PUMA TERMINAL MW SAMPLING
Pace Project No.: 2047806

Sample: MW-P117 Lab ID: 2047806007 Collected: 12/21/16 15:21 Received: 12/22/16 13:15

Parameters Results Units Report Limit DF Prepared: 12/29/16 09:57 12/29/16 18:11 7439-97-6

7470 Mercury Analytical Method: EPA 7470 Preparation Method: EPA 7470

Mercury ND ug/L 0.20 1 12/29/16 09:57 12/29/16 18:11 7439-97-6

7470 Mercury, Dissolved (LF) Analytical Method: EPA 7470 Preparation Method: EPA 7470

Mercury, Dissolved ND ug/L 0.20 1 12/29/16 11:58 12/29/16 19:41 7439-97-6

8270 MSSV PAH by SIM SEP Analytical Method: EPA 8270 by SIM Preparation Method: EPA 3510

Parameters	Results	Units	Report Limit	DF	Prepared	AS No.	Qual
Acenaphthene	ND	ug/L	0.10	1	12/28/16 10:06	01/05/17 13:10	83-32-9
Acenaphthylene	ND	ug/L	0.10	1	12/28/16 10:06	01/05/17 13:10	208-96-8
Anthracene	ND	ug/L	0.10	1	12/28/16 10:06	01/05/17 13:10	120-12-7
Benzo(a)anthracene	ND	ug/L	0.10	1	12/28/16 10:06	01/05/17 13:10	56-55-3
Benzo(a)pyrene	ND	ug/L	0.10	1	12/28/16 10:06	01/05/17 13:10	50-32-8
Benzo(b)fluoranthene	ND	ug/L	0.10	1	12/28/16 10:06	01/05/17 13:10	205-99-2
Benzo(g,h,i)perylene	ND	ug/L	0.10	1	12/28/16 10:06	01/05/17 13:10	191-24-2
Benzo(k)fluoranthene	ND	ug/L	0.10	1	12/28/16 10:06	01/05/17 13:10	207-08-9
Chrysene	ND	ug/L	0.10	1	12/28/16 10:06	01/05/17 13:10	218-01-9
Dibenz(a,h)anthracene	ND	ug/L	0.10	1	12/28/16 10:06	01/05/17 13:10	53-70-3
Fluoranthene	ND	ug/L	0.10	1	12/28/16 10:06	01/05/17 13:10	206-44-0
Fluorene	ND	ug/L	0.10	1	12/28/16 10:06	01/05/17 13:10	86-73-7
Indeno(1,2,3-cd)pyrene	ND	ug/L	0.10	1	12/28/16 10:06	01/05/17 13:10	193-39-5
2-Methylnaphthalene	ND	ug/L	0.10	1	12/28/16 10:06	01/05/17 13:10	91-57-6
Naphthalene	ND	ug/L	0.10	1	12/28/16 10:06	01/05/17 13:10	91-20-3
Phenanthrene	ND	ug/L	0.10	1	12/28/16 10:06	01/05/17 13:10	85-01-8
Pyrene	ND	ug/L	0.10	1	12/28/16 10:06	01/05/17 13:10	129-00-0
Surrogates							
2-Fluorobiphenyl (S)	75	%	25-150	1	12/28/16 10:06	01/05/17 13:10	321-60-8
Terphenyl-d14 (S)	69	%	25-150	1	12/28/16 10:06	01/05/17 13:10	1718-51-0

8260 MSV Low Level Analytical Method: EPA 5030B/8260

Parameters	Results	Units	Report Limit	DF	Prepared	AS No.	Qual
Acetone	16.4	ug/L	4.0	1	12/28/16 19:41	67-64-1	C9
Benzene	ND	ug/L	0.50	1	12/28/16 19:41	71-43-2	
Bromodichloromethane	ND	ug/L	0.50	1	12/28/16 19:41	75-27-4	
Bromoform	ND	ug/L	0.50	1	12/28/16 19:41	75-25-2	
Bromomethane	ND	ug/L	0.50	1	12/28/16 19:41	74-83-9	
2-Butanone (MEK)	ND	ug/L	2.0	1	12/28/16 19:41	78-93-3	
Carbon disulfide	ND	ug/L	1.0	1	12/28/16 19:41	75-15-0	L3
Carbon tetrachloride	ND	ug/L	0.50	1	12/28/16 19:41	56-23-5	
Chlorobenzene	ND	ug/L	0.50	1	12/28/16 19:41	108-90-7	
Chloroethane	ND	ug/L	0.50	1	12/28/16 19:41	75-00-3	
Chloroform	ND	ug/L	0.50	1	12/28/16 19:41	67-66-3	
Chloromethane	ND	ug/L	0.50	1	12/28/16 19:41	74-87-3	
1,2-Dibromo-3-chloropropane	ND	ug/L	0.20	1	12/28/16 19:41	96-12-8	
Dibromochloromethane	ND	ug/L	0.50	1	12/28/16 19:41	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	1	12/28/16 19:41	106-93-4	
Dichlorodifluoromethane	ND	ug/L	1.0	1	12/28/16 19:41	75-71-8	
1,1-Dichloroethane	ND	ug/L	0.50	1	12/28/16 19:41	75-34-3	
1,2-Dichloroethane	ND	ug/L	0.50	1	12/28/16 19:41	107-06-2	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: PUMA TERMINAL MW SAMPLING
Pace Project No.: 2047806



Sample: MW-P117	Lab ID: 2047806007	Collected: 12/21/16 15:21	Received: 12/22/16 13:15	Matrix: Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual

8260 MSV Low Level		Analytical Method: EPA 5030B/8260						
1,1-Dichloroethene	ND	ug/L	0.50	1	12/28/16 19:41	75-35-4		
cis-1,2-Dichloroethene	ND	ug/L	1.0	1	12/28/16 19:41	156-59-2		
trans-1,2-Dichloroethene	ND	ug/L	0.50	1	12/28/16 19:41	156-60-5		
1,2-Dichloropropane	ND	ug/L	0.50	1	12/28/16 19:41	78-87-5		
cis-1,3-Dichloropropene	ND	ug/L	0.50	1	12/28/16 19:41	10061-01-5		
trans-1,3-Dichloropropene	ND	ug/L	0.50	1	12/28/16 19:41	10061-02-6		
Ethylbenzene	ND	ug/L	0.50	1	12/28/16 19:41	100-41-4		
2-Hexanone	ND	ug/L	1.0	1	12/28/16 19:41	591-78-6		
Isopropylbenzene (Cumene)	ND	ug/L	1.0	1	12/28/16 19:41	98-82-8		
Methyl acetate	ND	ug/L	2.0	1	12/28/16 19:41	79-20-9		
Methylene Chloride	ND	ug/L	0.50	1	12/28/16 19:41	75-09-2		
4-Methyl-2-pentanone (MIBK)	ND	ug/L	1.0	1	12/28/16 19:41	108-10-1		
Methyl-tert-butyl ether	1.5	ug/L	0.50	1	12/28/16 19:41	1634-04-4		
Styrene	ND	ug/L	1.0	1	12/28/16 19:41	100-42-5		
1,1,1,2-Tetrachloroethane	ND	ug/L	0.50	1	12/28/16 19:41	79-34-5		
Tetrachloroethene	ND	ug/L	0.50	1	12/28/16 19:41	127-18-4		
Toluene	ND	ug/L	0.50	1	12/28/16 19:41	108-88-3		
1,1,1-Trichloroethane	ND	ug/L	0.50	1	12/28/16 19:41	71-55-6		
1,1,2-Trichloroethane	ND	ug/L	0.50	1	12/28/16 19:41	79-00-5		
Trichloroethene	ND	ug/L	0.50	1	12/28/16 19:41	79-01-6		
Trichlorofluoromethane	ND	ug/L	0.50	1	12/28/16 19:41	75-69-4		
Vinyl chloride	ND	ug/L	0.50	1	12/28/16 19:41	75-01-4		
m&p-Xylene	ND	ug/L	2.0	1	12/28/16 19:41	179601-23-1		
o-Xylene	ND	ug/L	1.0	1	12/28/16 19:41	95-47-6		
Surrogates								
Dibromofluoromethane (S)	103	%	72-126	1	12/28/16 19:41	1868-53-7		
4-Bromofluorobenzene (S)	101	%	68-124	1	12/28/16 19:41	460-00-4		
Toluene-d8 (S)	99	%	79-119	1	12/28/16 19:41	2037-26-5		

Sample: MW-65A	Lab ID: 2047806008	Collected: 12/21/16 16:07	Received: 12/22/16 13:15	Matrix: Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual

8015M DRO/ORO Organics		Analytical Method: EPA 8015B Modified Preparation Method: EPA 3535						
Diesel Range Organic (C10-C28)	ND	mg/L	0.50	1	12/28/16 10:52	01/05/17 23:00		
Oil Range Organics (>C28-C40)	ND	mg/L	1.0	1	12/28/16 10:52	01/05/17 23:00		
Surrogates								
n-Pentacosane (S)	54	%	16-137	1	12/28/16 10:52	01/05/17 23:00	629-99-2	
o-Terphenyl (S)	55	%	10-121	1	12/28/16 10:52	01/05/17 23:00	84-15-1	
8021 GCV BTEX, MTBE, GRO								
Analytical Method: EPA 8015/8021								
Gasoline Range Organics	ND	ug/L	50.0	1	12/30/16 13:33			
Surrogates								
4-Bromofluorobenzene (S)	93	%	44-148	1	12/30/16 13:33		460-00-4	

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ANALYTICAL RESULTS

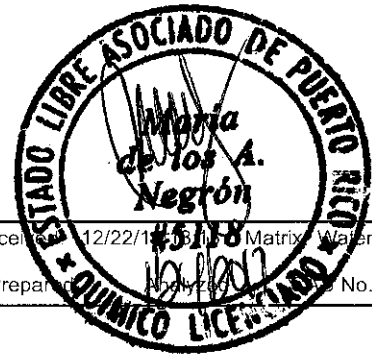
Project: PUMA TERMINAL MW SAMPLING
Pace Project No.: 2047806

Sample:	Lab ID:	Collected:	Received:	Prepared:	Analyzed:	CAS No.	Qual
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.
6020 MET ICPMS Analytical Method: EPA 6020 Preparation Method: EPA 3010							
Arsenic	0.0013	mg/L	0.0010	1	12/30/16 06:50	01/06/17 11:49	7440-38-2
Chromium	0.0012	mg/L	0.0010	1	12/30/16 06:50	01/06/17 11:49	7440-47-3
Lead	ND	mg/L	0.0010	1	12/30/16 06:50	01/06/17 11:49	7439-92-1
Vanadium	ND	mg/L	0.0050	1	12/30/16 06:50	01/06/17 11:49	7440-62-2
6020 MET ICPMS, Dissolved (LF) Analytical Method: EPA 6020 Preparation Method: EPA 3005A							
Arsenic, Dissolved	ND	ug/L	1.0	1	12/30/16 06:50	01/03/17 15:57	7440-38-2
Chromium, Dissolved	ND	ug/L	1.0	1	12/30/16 06:50	01/03/17 15:57	7440-47-3
Lead, Dissolved	ND	ug/L	1.0	1	12/30/16 06:50	01/03/17 15:57	7439-92-1
Vanadium, Dissolved	ND	ug/L	5.0	1	12/30/16 06:50	01/03/17 15:57	7440-62-2
7470 Mercury Analytical Method: EPA 7470 Preparation Method: EPA 7470							
Mercury	ND	ug/L	0.20	1	12/29/16 09:37	12/29/16 16:30	7439-97-6
7470 Mercury, Dissolved (LF) Analytical Method: EPA 7470 Preparation Method: EPA 7470							
Mercury, Dissolved	ND	ug/L	0.20	1	12/29/16 11:58	12/29/16 18:24	7439-97-6
8270 MSSV PAH by SIM SEP Analytical Method: EPA 8270 by SIM Preparation Method: EPA 3510							
Acenaphthene	ND	ug/L	0.10	1	12/28/16 10:06	01/05/17 13:30	83-32-9
Acenaphthylene	ND	ug/L	0.10	1	12/28/16 10:06	01/05/17 13:30	208-96-8
Anthracene	ND	ug/L	0.10	1	12/28/16 10:06	01/05/17 13:30	120-12-7
Benzo(a)anthracene	ND	ug/L	0.10	1	12/28/16 10:06	01/05/17 13:30	56-55-3
Benzo(a)pyrene	ND	ug/L	0.10	1	12/28/16 10:06	01/05/17 13:30	50-32-8
Benzo(b)fluoranthene	ND	ug/L	0.10	1	12/28/16 10:06	01/05/17 13:30	205-99-2
Benzo(g,h,i)perylene	ND	ug/L	0.10	1	12/28/16 10:06	01/05/17 13:30	191-24-2
Benzo(k)fluoranthene	ND	ug/L	0.10	1	12/28/16 10:06	01/05/17 13:30	207-08-9
Chrysene	ND	ug/L	0.10	1	12/28/16 10:06	01/05/17 13:30	218-01-9
Dibenz(a,h)anthracene	ND	ug/L	0.10	1	12/28/16 10:06	01/05/17 13:30	53-70-3
Fluoranthene	ND	ug/L	0.10	1	12/28/16 10:06	01/05/17 13:30	206-44-0
Fluorene	ND	ug/L	0.10	1	12/28/16 10:06	01/05/17 13:30	86-73-7
Indeno(1,2,3-cd)pyrene	ND	ug/L	0.10	1	12/28/16 10:06	01/05/17 13:30	193-39-5
2-Methylnaphthalene	ND	ug/L	0.10	1	12/28/16 10:06	01/05/17 13:30	91-57-6
Naphthalene	ND	ug/L	0.10	1	12/28/16 10:06	01/05/17 13:30	91-20-3
Phenanthrene	ND	ug/L	0.10	1	12/28/16 10:06	01/05/17 13:30	85-01-8
Pyrene	ND	ug/L	0.10	1	12/28/16 10:06	01/05/17 13:30	129-00-0
Surrogates							
2-Fluorobiphenyl (S)	84	%	25-150	1	12/28/16 10:06	01/05/17 13:30	321-60-8
Terphenyl-d14 (S)	82	%	25-150	1	12/28/16 10:06	01/05/17 13:30	1718-51-0
8260 MSV Low Level Analytical Method: EPA 5030B/8260							
Acetone	18.0	ug/L	4.0	1	12/28/16 19:58	67-64-1	C9
Benzene	ND	ug/L	0.50	1	12/28/16 19:58	71-43-2	
Bromodichloromethane	ND	ug/L	0.50	1	12/28/16 19:58	75-27-4	
Bromoform	ND	ug/L	0.50	1	12/28/16 19:58	75-25-2	
Bromomethane	ND	ug/L	0.50	1	12/28/16 19:58	74-83-9	
2-Butanone (MEK)	ND	ug/L	2.0	1	12/28/16 19:58	78-93-3	

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ANALYTICAL RESULTS



Project: PUMA TERMINAL MW SAMPLING
Pace Project No.: 2047806

Sample: MW-65A Lab ID: 2047806008 Collected: 12/21/16 16:07 Received: 12/22/16 15:10 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Preparation	No.	Qual
8260 MSV Low Level		Analytical Method: EPA 5030B/8260					
Carbon disulfide	ND	ug/L	1.0	1	12/28/16 19:58	75-15-0	L3
Carbon tetrachloride	ND	ug/L	0.50	1	12/28/16 19:58	56-23-5	
Chlorobenzene	ND	ug/L	0.50	1	12/28/16 19:58	108-90-7	
Chloroethane	ND	ug/L	0.50	1	12/28/16 19:58	75-00-3	
Chloroform	ND	ug/L	0.50	1	12/28/16 19:58	67-66-3	
Chloromethane	ND	ug/L	0.50	1	12/28/16 19:58	74-87-3	
1,2-Dibromo-3-chloropropane	ND	ug/L	0.20	1	12/28/16 19:58	96-12-8	
Dibromochloromethane	ND	ug/L	0.50	1	12/28/16 19:58	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	1	12/28/16 19:58	106-93-4	
Dichlorodifluoromethane	ND	ug/L	1.0	1	12/28/16 19:58	75-71-8	
1,1-Dichloroethane	ND	ug/L	0.50	1	12/28/16 19:58	75-34-3	
1,2-Dichloroethane	ND	ug/L	0.50	1	12/28/16 19:58	107-06-2	
1,1-Dichloroethene	ND	ug/L	0.50	1	12/28/16 19:58	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	1	12/28/16 19:58	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	0.50	1	12/28/16 19:58	156-60-5	
1,2-Dichloropropane	ND	ug/L	0.50	1	12/28/16 19:58	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	0.50	1	12/28/16 19:58	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	0.50	1	12/28/16 19:58	10061-02-6	
Ethylbenzene	ND	ug/L	0.50	1	12/28/16 19:58	100-41-4	
2-Hexanone	ND	ug/L	1.0	1	12/28/16 19:58	591-78-6	
Isopropylbenzene (Cumene)	ND	ug/L	1.0	1	12/28/16 19:58	98-82-8	
Methyl acetate	ND	ug/L	2.0	1	12/28/16 19:58	79-20-9	
Methylene Chloride	ND	ug/L	0.50	1	12/28/16 19:58	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	1.0	1	12/28/16 19:58	108-10-1	
Methyl-tert-butyl ether	ND	ug/L	0.50	1	12/28/16 19:58	1634-04-4	
Styrene	ND	ug/L	1.0	1	12/28/16 19:58	100-42-5	
1,1,2,2-Tetrachloroethane	ND	ug/L	0.50	1	12/28/16 19:58	79-34-5	
Tetrachloroethene	ND	ug/L	0.50	1	12/28/16 19:58	127-18-4	
Toluene	ND	ug/L	0.50	1	12/28/16 19:58	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	0.50	1	12/28/16 19:58	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	0.50	1	12/28/16 19:58	79-00-5	
Trichloroethene	ND	ug/L	0.50	1	12/28/16 19:58	79-01-6	
Trichlorofluoromethane	ND	ug/L	0.50	1	12/28/16 19:58	75-69-4	
Vinyl chloride	ND	ug/L	0.50	1	12/28/16 19:58	75-01-4	
m&p-Xylene	ND	ug/L	2.0	1	12/28/16 19:58	179601-23-1	
o-Xylene	ND	ug/L	1.0	1	12/28/16 19:58	95-47-6	
Surrogates							
Dibromofluoromethane (S)	106	%	72-126	1	12/28/16 19:58	1868-53-7	
4-Bromofluorobenzene (S)	99	%	68-124	1	12/28/16 19:58	460-00-4	
Toluene-d8 (S)	99	%	79-119	1	12/28/16 19:58	2037-26-5	

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ANALYTICAL RESULTS

Project: PUMA TERMINAL MW SAMPLING

Pace Project No.: 2047806

Sample: FB-122116	Lab ID: 2047806009	Collected: 12/21/16 16:15	Received: 12/28/16 13:59	Water
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Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8021 GCV BTEX, MTBE, GRO		Analytical Method: EPA 8015/8021						
Gasoline Range Organics	ND	ug/L	50.0	1		12/30/16 13:59		
Surrogates								
4-Bromofluorobenzene (S)	92	%	44-148	1		12/30/16 13:59	460-00-4	
8260 MSV Low Level		Analytical Method: EPA 5030B/8260						
Acetone	19.4	ug/L	4.0	1		12/28/16 20:16	67-64-1	C9
Benzene	ND	ug/L	0.50	1		12/28/16 20:16	71-43-2	
Bromodichloromethane	ND	ug/L	0.50	1		12/28/16 20:16	75-27-4	
Bromoform	ND	ug/L	0.50	1		12/28/16 20:16	75-25-2	
Bromomethane	ND	ug/L	0.50	1		12/28/16 20:16	74-83-9	
2-Butanone (MEK)	ND	ug/L	2.0	1		12/28/16 20:16	78-93-3	
Carbon disulfide	ND	ug/L	1.0	1		12/28/16 20:16	75-15-0	L3
Carbon tetrachloride	ND	ug/L	0.50	1		12/28/16 20:16	56-23-5	
Chlorobenzene	ND	ug/L	0.50	1		12/28/16 20:16	108-90-7	
Chloroethane	ND	ug/L	0.50	1		12/28/16 20:16	75-00-3	
Chloroform	ND	ug/L	0.50	1		12/28/16 20:16	67-66-3	
Chloromethane	ND	ug/L	0.50	1		12/28/16 20:16	74-87-3	
1,2-Dibromo-3-chloropropane	ND	ug/L	0.20	1		12/28/16 20:16	96-12-8	
Dibromochloromethane	ND	ug/L	0.50	1		12/28/16 20:16	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	1		12/28/16 20:16	106-93-4	
Dichlorodifluoromethane	ND	ug/L	1.0	1		12/28/16 20:16	75-71-8	
1,1-Dichloroethane	ND	ug/L	0.50	1		12/28/16 20:16	75-34-3	
1,2-Dichloroethane	ND	ug/L	0.50	1		12/28/16 20:16	107-06-2	
1,1-Dichloroethene	ND	ug/L	0.50	1		12/28/16 20:16	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	1		12/28/16 20:16	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	0.50	1		12/28/16 20:16	156-60-5	
1,2-Dichloropropane	ND	ug/L	0.50	1		12/28/16 20:16	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	0.50	1		12/28/16 20:16	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	0.50	1		12/28/16 20:16	10061-02-6	
Ethylbenzene	ND	ug/L	0.50	1		12/28/16 20:16	100-41-4	
2-Hexanone	ND	ug/L	1.0	1		12/28/16 20:16	591-78-6	
Isopropylbenzene (Cumene)	ND	ug/L	1.0	1		12/28/16 20:16	98-82-8	
Methyl acetate	ND	ug/L	2.0	1		12/28/16 20:16	79-20-9	
Methylene Chloride	ND	ug/L	0.50	1		12/28/16 20:16	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	1.0	1		12/28/16 20:16	108-10-1	
Methyl-tert-butyl ether	ND	ug/L	0.50	1		12/28/16 20:16	1634-04-4	
Styrene	ND	ug/L	1.0	1		12/28/16 20:16	100-42-5	
1,1,2,2-Tetrachloroethane	ND	ug/L	0.50	1		12/28/16 20:16	79-34-5	
Tetrachloroethene	ND	ug/L	0.50	1		12/28/16 20:16	127-18-4	
Toluene	ND	ug/L	0.50	1		12/28/16 20:16	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	0.50	1		12/28/16 20:16	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	0.50	1		12/28/16 20:16	79-00-5	
Trichloroethene	ND	ug/L	0.50	1		12/28/16 20:16	79-01-6	
Trichlorofluoromethane	ND	ug/L	0.50	1		12/28/16 20:16	75-69-4	
Vinyl chloride	ND	ug/L	0.50	1		12/28/16 20:16	75-01-4	
m&p-Xylene	ND	ug/L	2.0	1		12/28/16 20:16	179601-23-1	
o-Xylene	ND	ug/L	1.0	1		12/28/16 20:16	95-47-6	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS



Project: PUMA TERMINAL MW SAMPLING
Pace Project No.: 2047806

Sample: FB-122116 Lab ID: 2047806009 Collected: 12/21/16 16:15 Received: 12/22/16 13:15 Matrix: Water
Parameters Results Units Report Limit DF Prepared Analyzed CAS No. Qual

8260 MSV Low Level Analytical Method: EPA 5030B/8260

Surrogates

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
Dibromofluoromethane (S)	104	%	72-126	1	12/28/16 20:16	12/28/16 20:16	1868-53-7	
4-Bromofluorobenzene (S)	97	%	68-124	1	12/28/16 20:16	12/28/16 20:16	460-00-4	
Toluene-d8 (S)	99	%	79-119	1	12/28/16 20:16	12/28/16 20:16	2037-26-5	

Sample: TB-122216 Lab ID: 2047806010 Collected: 12/22/16 00:00 Received: 12/22/16 13:15 Matrix: Water

Parameters Results Units Report Limit DF Prepared Analyzed CAS No. Qual

8021 GCV BTEX, MTBE, GRO Analytical Method: EPA 8015/8021

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
Gasoline Range Organics	ND	ug/L	50.0	1	12/30/16 14:25	12/30/16 14:25		
Surrogates								
4-Bromofluorobenzene (S)	91	%	44-148	1	12/30/16 14:25	12/30/16 14:25	460-00-4	

8260 MSV Low Level Analytical Method: EPA 5030B/8260

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
Acetone	62.0	ug/L	4.0	1	12/28/16 20:34	12/28/16 20:34	67-64-1	C9
Benzene	ND	ug/L	0.50	1	12/28/16 20:34	12/28/16 20:34	71-43-2	
Bromodichloromethane	ND	ug/L	0.50	1	12/28/16 20:34	12/28/16 20:34	75-27-4	
Bromoform	ND	ug/L	0.50	1	12/28/16 20:34	12/28/16 20:34	75-25-2	
Bromomethane	ND	ug/L	0.50	1	12/28/16 20:34	12/28/16 20:34	74-83-9	
2-Butanone (MEK)	ND	ug/L	2.0	1	12/28/16 20:34	12/28/16 20:34	78-93-3	
Carbon disulfide	ND	ug/L	1.0	1	12/28/16 20:34	12/28/16 20:34	75-15-0	L3
Carbon tetrachloride	ND	ug/L	0.50	1	12/28/16 20:34	12/28/16 20:34	56-23-5	
Chlorobenzene	ND	ug/L	0.50	1	12/28/16 20:34	12/28/16 20:34	108-90-7	
Chloroethane	ND	ug/L	0.50	1	12/28/16 20:34	12/28/16 20:34	75-00-3	
Chloroform	ND	ug/L	0.50	1	12/28/16 20:34	12/28/16 20:34	67-66-3	
Chloromethane	0.64	ug/L	0.50	1	12/28/16 20:34	12/28/16 20:34	74-87-3	
1,2-Dibromo-3-chloropropane	ND	ug/L	0.20	1	12/28/16 20:34	12/28/16 20:34	96-12-8	
Dibromochloromethane	ND	ug/L	0.50	1	12/28/16 20:34	12/28/16 20:34	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	1	12/28/16 20:34	12/28/16 20:34	106-93-4	
Dichlorodifluoromethane	ND	ug/L	1.0	1	12/28/16 20:34	12/28/16 20:34	75-71-8	
1,1-Dichloroethane	ND	ug/L	0.50	1	12/28/16 20:34	12/28/16 20:34	75-34-3	
1,2-Dichloroethane	ND	ug/L	0.50	1	12/28/16 20:34	12/28/16 20:34	107-06-2	
1,1-Dichloroethene	ND	ug/L	0.50	1	12/28/16 20:34	12/28/16 20:34	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	1	12/28/16 20:34	12/28/16 20:34	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	0.50	1	12/28/16 20:34	12/28/16 20:34	156-60-5	
1,2-Dichloropropane	ND	ug/L	0.50	1	12/28/16 20:34	12/28/16 20:34	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	0.50	1	12/28/16 20:34	12/28/16 20:34	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	0.50	1	12/28/16 20:34	12/28/16 20:34	10061-02-6	
Ethylbenzene	ND	ug/L	0.50	1	12/28/16 20:34	12/28/16 20:34	100-41-4	
2-Hexanone	ND	ug/L	1.0	1	12/28/16 20:34	12/28/16 20:34	591-78-6	
Isopropylbenzene (Cumene)	ND	ug/L	1.0	1	12/28/16 20:34	12/28/16 20:34	98-82-8	
Methyl acetate	ND	ug/L	2.0	1	12/28/16 20:34	12/28/16 20:34	79-20-9	
Methylene Chloride	ND	ug/L	0.50	1	12/28/16 20:34	12/28/16 20:34	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	1.0	1	12/28/16 20:34	12/28/16 20:34	108-10-1	
Methyl-tert-butyl ether	ND	ug/L	0.50	1	12/28/16 20:34	12/28/16 20:34	1634-04-4	

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ANALYTICAL RESULTS

Project: PUMA TERMINAL MW SAMPLING
Pace Project No.: 2047806



Sample: TB-122216 Lab ID: 2047806010 Collected: 12/22/16 00:00 Received: 12/28/16 11:18 Matrix: Water
Prepared: 12/28/16 20:34 Analyzed: 01/05/17 23:28 CAS No. Qual

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV Low Level		Analytical Method: EPA 5030B/8260						
Styrene	ND	ug/L	1.0	1	12/28/16 20:34	100-42-5		
1,1,2,2-Tetrachloroethane	ND	ug/L	0.50	1	12/28/16 20:34	79-34-5		
Tetrachloroethene	ND	ug/L	0.50	1	12/28/16 20:34	127-18-4		
Toluene	ND	ug/L	0.50	1	12/28/16 20:34	108-88-3		
1,1,1-Trichloroethane	ND	ug/L	0.50	1	12/28/16 20:34	71-55-6		
1,1,2-Trichloroethane	ND	ug/L	0.50	1	12/28/16 20:34	79-00-5		
Trichloroethene	ND	ug/L	0.50	1	12/28/16 20:34	79-01-6		
Trichlorofluoromethane	ND	ug/L	0.50	1	12/28/16 20:34	75-69-4		
Vinyl chloride	ND	ug/L	0.50	1	12/28/16 20:34	75-01-4		
m&p-Xylene	ND	ug/L	2.0	1	12/28/16 20:34	179601-23-1		
o-Xylene	ND	ug/L	1.0	1	12/28/16 20:34	95-47-6		
Surrogates								
Dibromofluoromethane (S)	104	%	72-126	1	12/28/16 20:34	1868-53-7		
4-Bromofluorobenzene (S)	100	%	68-124	1	12/28/16 20:34	460-00-4		
Toluene-d8 (S)	101	%	79-119	1	12/28/16 20:34	2037-26-5		

Sample: EB-122216 Lab ID: 2047806011 Collected: 12/22/16 08:42 Received: 12/22/16 13:15 Matrix: Water
Prepared: 12/28/16 20:34 Analyzed: 01/05/17 23:28 CAS No. Qual

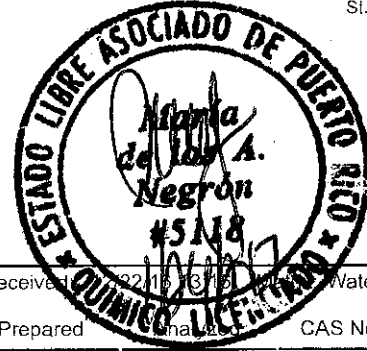
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8015M DRO/ORO Organics		Analytical Method: EPA 8015B Modified Preparation Method: EPA 3535						
Diesel Range Organic (C10-C28)	ND	mg/L	0.50	1	12/28/16 10:52	01/05/17 23:28		
Oil Range Organics (>C28-C40)	ND	mg/L	1.0	1	12/28/16 10:52	01/05/17 23:28		
Surrogates								
n-Pentacosane (S)	42	%	16-137	1	12/28/16 10:52	01/05/17 23:28	629-99-2	
o-Terphenyl (S)	49	%	10-121	1	12/28/16 10:52	01/05/17 23:28	84-15-1	
8021 GCV BTEX, MTBE, GRO		Analytical Method: EPA 8015/8021						
Gasoline Range Organics	ND	ug/L	50.0	1	12/30/16 14:51			
Surrogates								
4-Bromofluorobenzene (S)	89	%	44-148	1	12/30/16 14:51		460-00-4	
6020 MET ICPMS		Analytical Method: EPA 6020 Preparation Method: EPA 3010						
Arsenic	ND	mg/L	0.0010	1	12/30/16 06:50	01/06/17 11:53	7440-38-2	
Chromium	ND	mg/L	0.0010	1	12/30/16 06:50	01/06/17 11:53	7440-47-3	
Lead	ND	mg/L	0.0010	1	12/30/16 06:50	01/06/17 11:53	7439-92-1	
Vanadium	ND	mg/L	0.0050	1	12/30/16 06:50	01/06/17 11:53	7440-62-2	
6020 MET ICPMS, Dissolved (LF)		Analytical Method: EPA 6020 Preparation Method: EPA 3005A						
Arsenic, Dissolved	ND	ug/L	1.0	1	12/30/16 06:50	01/03/17 16:09	7440-38-2	
Chromium, Dissolved	ND	ug/L	1.0	1	12/30/16 06:50	01/03/17 16:09	7440-47-3	
Lead, Dissolved	ND	ug/L	1.0	1	12/30/16 06:50	01/03/17 16:09	7439-92-1	
Vanadium, Dissolved	ND	ug/L	5.0	1	12/30/16 06:50	01/03/17 16:09	7440-62-2	

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ANALYTICAL RESULTS

Project: PUMA TERMINAL MW SAMPLING
Pace Project No.: 2047806



Sample: EB-122216 Lab ID: 2047806011 Collected: 12/22/16 08:42 Received: 12/21/16 13:15 Water
Parameters Results Units Report Limit DF Prepared CAS No. Qual

7470 Mercury Analytical Method: EPA 7470 Preparation Method: EPA 7470
Mercury ND ug/L 0.20 1 12/29/16 09:37 12/29/16 16:32 7439-97-6

7470 Mercury, Dissolved (LF) Analytical Method: EPA 7470 Preparation Method: EPA 7470
Mercury, Dissolved ND ug/L 0.20 1 12/29/16 11:58 12/29/16 18:26 7439-97-6

8270 MSSV PAH by SIM SEP Analytical Method: EPA 8270 by SIM Preparation Method: EPA 3510

Acenaphthene	ND	ug/L	0.10	1	12/28/16 11:52	01/06/17 15:15	83-32-9
Acenaphthylene	ND	ug/L	0.10	1	12/28/16 11:52	01/06/17 15:15	208-96-8
Anthracene	ND	ug/L	0.10	1	12/28/16 11:52	01/06/17 15:15	120-12-7
Benzo(a)anthracene	ND	ug/L	0.10	1	12/28/16 11:52	01/06/17 15:15	56-55-3
Benzo(a)pyrene	ND	ug/L	0.10	1	12/28/16 11:52	01/06/17 15:15	50-32-8
Benzo(b)fluoranthene	ND	ug/L	0.10	1	12/28/16 11:52	01/06/17 15:15	205-99-2
Benzo(g,h,i)perylene	ND	ug/L	0.10	1	12/28/16 11:52	01/06/17 15:15	191-24-2
Benzo(k)fluoranthene	ND	ug/L	0.10	1	12/28/16 11:52	01/06/17 15:15	207-08-9
Chrysene	ND	ug/L	0.10	1	12/28/16 11:52	01/06/17 15:15	218-01-9
Dibenz(a,h)anthracene	ND	ug/L	0.10	1	12/28/16 11:52	01/06/17 15:15	53-70-3
Fluoranthene	ND	ug/L	0.10	1	12/28/16 11:52	01/06/17 15:15	206-44-0
Fluorene	ND	ug/L	0.10	1	12/28/16 11:52	01/06/17 15:15	86-73-7
Indeno(1,2,3-cd)pyrene	ND	ug/L	0.10	1	12/28/16 11:52	01/06/17 15:15	193-39-5
2-Methylnaphthalene	ND	ug/L	0.10	1	12/28/16 11:52	01/06/17 15:15	91-57-6
Naphthalene	ND	ug/L	0.10	1	12/28/16 11:52	01/06/17 15:15	91-20-3
Phenanthrene	ND	ug/L	0.10	1	12/28/16 11:52	01/06/17 15:15	85-01-8
Pyrene	ND	ug/L	0.10	1	12/28/16 11:52	01/06/17 15:15	129-00-0
Surrogates							
2-Fluorobiphenyl (S)	71	%	25-150	1	12/28/16 11:52	01/06/17 15:15	321-60-8
Terphenyl-d14 (S)	66	%	25-150	1	12/28/16 11:52	01/06/17 15:15	1718-51-0

8260 MSV Low Level Analytical Method: EPA 5030B/8260

Acetone	28.2	ug/L	4.0	1	12/28/16 20:52	67-64-1	C9
Benzene	ND	ug/L	0.50	1	12/28/16 20:52	71-43-2	
Bromodichloromethane	ND	ug/L	0.50	1	12/28/16 20:52	75-27-4	
Bromoform	ND	ug/L	0.50	1	12/28/16 20:52	75-25-2	
Bromomethane	ND	ug/L	0.50	1	12/28/16 20:52	74-83-9	
2-Butanone (MEK)	ND	ug/L	2.0	1	12/28/16 20:52	78-93-3	
Carbon disulfide	ND	ug/L	1.0	1	12/28/16 20:52	75-15-0	L3
Carbon tetrachloride	ND	ug/L	0.50	1	12/28/16 20:52	56-23-5	
Chlorobenzene	ND	ug/L	0.50	1	12/28/16 20:52	108-90-7	
Chloroethane	ND	ug/L	0.50	1	12/28/16 20:52	75-00-3	
Chloroform	ND	ug/L	0.50	1	12/28/16 20:52	67-66-3	
Chloromethane	0.65	ug/L	0.50	1	12/28/16 20:52	74-87-3	
1,2-Dibromo-3-chloropropane	ND	ug/L	0.20	1	12/28/16 20:52	96-12-8	
Dibromochloromethane	ND	ug/L	0.50	1	12/28/16 20:52	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	1	12/28/16 20:52	106-93-4	
Dichlorodifluoromethane	ND	ug/L	1.0	1	12/28/16 20:52	75-71-8	
1,1-Dichloroethane	ND	ug/L	0.50	1	12/28/16 20:52	75-34-3	
1,2-Dichloroethane	ND	ug/L	0.50	1	12/28/16 20:52	107-06-2	

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ANALYTICAL RESULTS



Project: PUMA TERMINAL MW SAMPLING
Pace Project No.: 2047806

Sample: EB-122216 Lab ID: 2047806011 Collected: 12/22/16 08:42 Received: 12/22/16 13:15 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analysed	CAS No.	Qual
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8260 MSV Low Level

Analytical Method: EPA 5030B/8260

1,1-Dichloroethene	ND	ug/L	0.50	1	12/28/16 20:52	75-35-4		
cis-1,2-Dichloroethene	ND	ug/L	1.0	1	12/28/16 20:52	156-59-2		
trans-1,2-Dichloroethene	ND	ug/L	0.50	1	12/28/16 20:52	156-60-5		
1,2-Dichloropropane	ND	ug/L	0.50	1	12/28/16 20:52	78-87-5		
cis-1,3-Dichloropropene	ND	ug/L	0.50	1	12/28/16 20:52	10061-01-5		
trans-1,3-Dichloropropene	ND	ug/L	0.50	1	12/28/16 20:52	10061-02-6		
Ethylbenzene	ND	ug/L	0.50	1	12/28/16 20:52	100-41-4		
2-Hexanone	ND	ug/L	1.0	1	12/28/16 20:52	591-78-6		
Isopropylbenzene (Cumene)	ND	ug/L	1.0	1	12/28/16 20:52	98-82-8		
Methyl acetate	ND	ug/L	2.0	1	12/28/16 20:52	79-20-9		
Methylene Chloride	ND	ug/L	0.50	1	12/28/16 20:52	75-09-2		
4-Methyl-2-pentanone (MIBK)	ND	ug/L	1.0	1	12/28/16 20:52	108-10-1		
Methyl-tert-butyl ether	ND	ug/L	0.50	1	12/28/16 20:52	1634-04-4		
Styrene	ND	ug/L	1.0	1	12/28/16 20:52	100-42-5		
1,1,2,2-Tetrachloroethane	ND	ug/L	0.50	1	12/28/16 20:52	79-34-5		
Tetrachloroethene	ND	ug/L	0.50	1	12/28/16 20:52	127-18-4		
Toluene	ND	ug/L	0.50	1	12/28/16 20:52	108-88-3		
1,1,1-Trichloroethane	ND	ug/L	0.50	1	12/28/16 20:52	71-55-6		
1,1,2-Trichloroethane	ND	ug/L	0.50	1	12/28/16 20:52	79-00-5		
Trichloroethene	ND	ug/L	0.50	1	12/28/16 20:52	79-01-6		
Trichlorofluoromethane	ND	ug/L	0.50	1	12/28/16 20:52	75-69-4		
Vinyl chloride	ND	ug/L	0.50	1	12/28/16 20:52	75-01-4		
m&p-Xylene	ND	ug/L	2.0	1	12/28/16 20:52	179601-23-1		
o-Xylene	ND	ug/L	1.0	1	12/28/16 20:52	95-47-6		
Surrogates								
Dibromofluoromethane (S)	105	%	72-126	1	12/28/16 20:52	1868-53-7		
4-Bromofluorobenzene (S)	95	%	68-124	1	12/28/16 20:52	460-00-4		
Toluene-d8 (S)	101	%	79-119	1	12/28/16 20:52	2037-26-5		

Sample: MW-15A Lab ID: 2047806012 Collected: 12/22/16 09:38 Received: 12/22/16 13:15 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analysed	CAS No.	Qual
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8015M DRO/ORO Organics

Analytical Method: EPA 8015B Modified Preparation Method: EPA 3535

Diesel Range Organic (C10-C28)	ND	mg/L	0.50	1	12/28/16 10:52	01/05/17 23:56		
Oil Range Organics (>C28-C40)	ND	mg/L	1.0	1	12/28/16 10:52	01/05/17 23:56		
Surrogates								
n-Pentacosane (S)	35	%	16-137	1	12/28/16 10:52	01/05/17 23:56	629-99-2	
o-Terphenyl (S)	44	%	10-121	1	12/28/16 10:52	01/05/17 23:56	84-15-1	

8021 GCV BTEX, MTBE, GRO

Analytical Method: EPA 8015/8021

Gasoline Range Organics	ND	ug/L	50.0	1	12/30/16 15:17			
Surrogates								
4-Bromofluorobenzene (S)	94	%	44-148	1	12/30/16 15:17		460-00-4	

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ANALYTICAL RESULTS



Project: PUMA TERMINAL MW SAMPLING
Pace Project No.: 2047806

Sample: MW-15A Lab ID: 2047806012 Collected: 12/22/16 09:38 Received: 12/16/16 15:18
Parameters Results Units Report Limit DF Prepared Qual

6020 MET ICPMS Analytical Method: EPA 6020 Preparation Method: EPA 3010

Arsenic	0.0016	mg/L	0.0010	1	12/30/16 06:50	01/06/17 11:57	7440-38-2
Chromium	ND	mg/L	0.0010	1	12/30/16 06:50	01/06/17 11:57	7440-47-3
Lead	ND	mg/L	0.0010	1	12/30/16 06:50	01/06/17 11:57	7439-92-1
Vanadium	ND	mg/L	0.0050	1	12/30/16 06:50	01/06/17 11:57	7440-62-2

6020 MET ICPMS, Dissolved (LF) Analytical Method: EPA 6020 Preparation Method: EPA 3005A

Arsenic, Dissolved	ND	ug/L	1.0	1	12/30/16 06:50	01/03/17 16:13	7440-38-2
Chromium, Dissolved	ND	ug/L	1.0	1	12/30/16 06:50	01/03/17 16:13	7440-47-3
Lead, Dissolved	ND	ug/L	1.0	1	12/30/16 06:50	01/03/17 16:13	7439-92-1
Vanadium, Dissolved	ND	ug/L	5.0	1	12/30/16 06:50	01/03/17 16:13	7440-62-2

7470 Mercury Analytical Method: EPA 7470 Preparation Method: EPA 7470

Mercury	ND	ug/L	0.20	1	12/29/16 09:37	12/29/16 16:34	7439-97-6
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7470 Mercury, Dissolved (LF) Analytical Method: EPA 7470 Preparation Method: EPA 7470

Mercury, Dissolved	ND	ug/L	0.20	1	12/29/16 11:58	12/29/16 18:32	7439-97-6
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8270 MSSV PAH by SIM SEP Analytical Method: EPA 8270 by SIM Preparation Method: EPA 3510

Acenaphthene	ND	ug/L	0.10	1	12/28/16 11:52	01/06/17 15:35	83-32-9
Acenaphthylene	ND	ug/L	0.10	1	12/28/16 11:52	01/06/17 15:35	208-96-8
Anthracene	ND	ug/L	0.10	1	12/28/16 11:52	01/06/17 15:35	120-12-7
Benzo(a)anthracene	ND	ug/L	0.10	1	12/28/16 11:52	01/06/17 15:35	56-55-3
Benzo(a)pyrene	ND	ug/L	0.10	1	12/28/16 11:52	01/06/17 15:35	50-32-8
Benzo(b)fluoranthene	ND	ug/L	0.10	1	12/28/16 11:52	01/06/17 15:35	205-99-2
Benzo(g,h,i)perylene	ND	ug/L	0.10	1	12/28/16 11:52	01/06/17 15:35	191-24-2
Benzo(k)fluoranthene	ND	ug/L	0.10	1	12/28/16 11:52	01/06/17 15:35	207-08-9
Chrysene	ND	ug/L	0.10	1	12/28/16 11:52	01/06/17 15:35	218-01-9
Dibenz(a,h)anthracene	ND	ug/L	0.10	1	12/28/16 11:52	01/06/17 15:35	53-70-3
Fluoranthene	ND	ug/L	0.10	1	12/28/16 11:52	01/06/17 15:35	206-44-0
Fluorene	ND	ug/L	0.10	1	12/28/16 11:52	01/06/17 15:35	86-73-7
Indeno(1,2,3-cd)pyrene	ND	ug/L	0.10	1	12/28/16 11:52	01/06/17 15:35	193-39-5
2-Methylnaphthalene	ND	ug/L	0.10	1	12/28/16 11:52	01/06/17 15:35	91-57-6
Naphthalene	ND	ug/L	0.10	1	12/28/16 11:52	01/06/17 15:35	91-20-3
Phenanthrene	ND	ug/L	0.10	1	12/28/16 11:52	01/06/17 15:35	85-01-8
Pyrene	ND	ug/L	0.10	1	12/28/16 11:52	01/06/17 15:35	129-00-0
Surrogates							
2-Fluorobiphenyl (S)	66	%	25-150	1	12/28/16 11:52	01/06/17 15:35	321-60-8
Terphenyl-d14 (S)	51	%	25-150	1	12/28/16 11:52	01/06/17 15:35	1718-51-0

8260 MSV Low Level Analytical Method: EPA 5030B/8260

Acetone	12.1	ug/L	4.0	1	12/28/16 21:10	67-64-1	C9
Benzene	ND	ug/L	0.50	1	12/28/16 21:10	71-43-2	
Bromodichloromethane	ND	ug/L	0.50	1	12/28/16 21:10	75-27-4	
Bromoform	ND	ug/L	0.50	1	12/28/16 21:10	75-25-2	
Bromomethane	ND	ug/L	0.50	1	12/28/16 21:10	74-83-9	
2-Butanone (MEK)	ND	ug/L	2.0	1	12/28/16 21:10	78-93-3	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS



Project: PUMA TERMINAL MW SAMPLING
Pace Project No.: 2047806

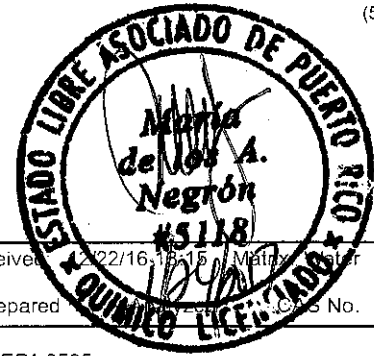
Sample: MW-15A Lab ID: 2047806012 Collected: 12/22/16 09:38 Received: 12/28/16 11:15
Parameters Results Units Report Limit DF Prepared: 12/28/16 11:15 Analyst: [Signature] S No. Qual

Parameters	Results	Units	Report Limit	DF	Prepared	S No.	Qual
8260 MSV Low Level		Analytical Method: EPA 5030B/8260					
Carbon disulfide	ND	ug/L	1.0	1	12/28/16 21:10	75-15-0	L3
Carbon tetrachloride	ND	ug/L	0.50	1	12/28/16 21:10	56-23-5	
Chlorobenzene	ND	ug/L	0.50	1	12/28/16 21:10	108-90-7	
Chloroethane	ND	ug/L	0.50	1	12/28/16 21:10	75-00-3	
Chloroform	ND	ug/L	0.50	1	12/28/16 21:10	67-66-3	
Chloromethane	ND	ug/L	0.50	1	12/28/16 21:10	74-87-3	
1,2-Dibromo-3-chloropropane	ND	ug/L	0.20	1	12/28/16 21:10	96-12-8	
Dibromochloromethane	ND	ug/L	0.50	1	12/28/16 21:10	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	1	12/28/16 21:10	106-93-4	
Dichlorodifluoromethane	ND	ug/L	1.0	1	12/28/16 21:10	75-71-8	
1,1-Dichloroethane	ND	ug/L	0.50	1	12/28/16 21:10	75-34-3	
1,2-Dichloroethane	ND	ug/L	0.50	1	12/28/16 21:10	107-06-2	
1,1-Dichloroethene	ND	ug/L	0.50	1	12/28/16 21:10	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	1	12/28/16 21:10	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	0.50	1	12/28/16 21:10	156-60-5	
1,2-Dichloropropane	ND	ug/L	0.50	1	12/28/16 21:10	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	0.50	1	12/28/16 21:10	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	0.50	1	12/28/16 21:10	10061-02-6	
Ethylbenzene	ND	ug/L	0.50	1	12/28/16 21:10	100-41-4	
2-Hexanone	ND	ug/L	1.0	1	12/28/16 21:10	591-78-6	
Isopropylbenzene (Cumene)	ND	ug/L	1.0	1	12/28/16 21:10	98-82-8	
Methyl acetate	ND	ug/L	2.0	1	12/28/16 21:10	79-20-9	
Methylene Chloride	ND	ug/L	0.50	1	12/28/16 21:10	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	1.0	1	12/28/16 21:10	108-10-1	
Methyl-tert-butyl ether	6.6	ug/L	0.50	1	12/28/16 21:10	1634-04-4	
Styrene	ND	ug/L	1.0	1	12/28/16 21:10	100-42-5	
1,1,2,2-Tetrachloroethane	ND	ug/L	0.50	1	12/28/16 21:10	79-34-5	
Tetrachloroethene	ND	ug/L	0.50	1	12/28/16 21:10	127-18-4	
Toluene	ND	ug/L	0.50	1	12/28/16 21:10	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	0.50	1	12/28/16 21:10	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	0.50	1	12/28/16 21:10	79-00-5	
Trichloroethene	ND	ug/L	0.50	1	12/28/16 21:10	79-01-6	
Trichlorofluoromethane	ND	ug/L	0.50	1	12/28/16 21:10	75-69-4	
Vinyl chloride	ND	ug/L	0.50	1	12/28/16 21:10	75-01-4	
m&p-Xylene	ND	ug/L	2.0	1	12/28/16 21:10	179601-23-1	
o-Xylene	ND	ug/L	1.0	1	12/28/16 21:10	95-47-6	
Surrogates							
Dibromofluoromethane (S)	106	%	72-126	1	12/28/16 21:10	1868-53-7	
4-Bromofluorobenzene (S)	98	%	68-124	1	12/28/16 21:10	460-00-4	
Toluene-d8 (S)	100	%	79-119	1	12/28/16 21:10	2037-26-5	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS



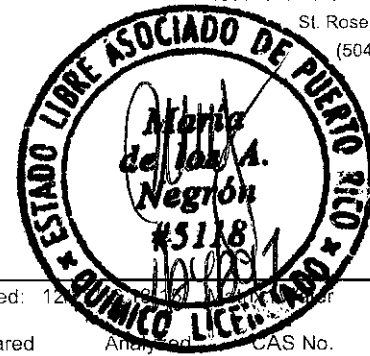
Project: PUMA TERMINAL MW SAMPLING
Pace Project No.: 2047806

Sample: MW-15B2 Lab ID: 2047806013 Collected: 12/22/16 10:23 Received: 12/22/16 10:15 Matrix: Water
Parameters Results Units Report Limit DF Prepared

Parameters	Results	Units	Report Limit	DF	Prepared	Analysis No.	Qual
8015M DRO/ORO Organics Analytical Method: EPA 8015B Modified Preparation Method: EPA 3535							
Diesel Range Organic (C10-C28)	ND	mg/L	0.50	1	12/28/16 10:52	01/06/17 00:24	
Oil Range Organics (>C28-C40)	ND	mg/L	1.0	1	12/28/16 10:52	01/06/17 00:24	
Surrogates							
n-Pentacosane (S)	36	%	16-137	1	12/28/16 10:52	01/06/17 00:24	629-99-2
o-Terphenyl (S)	46	%	10-121	1	12/28/16 10:52	01/06/17 00:24	84-15-1
8021 GCV BTEX, MTBE, GRO Analytical Method: EPA 8015/8021							
Gasoline Range Organics	78.4	ug/L	50.0	1		12/30/16 15:43	
Surrogates							
4-Bromofluorobenzene (S)	90	%	44-148	1		12/30/16 15:43	460-00-4
6020 MET ICPMS Analytical Method: EPA 6020 Preparation Method: EPA 3010							
Arsenic	0.019	mg/L	0.0010	1	12/30/16 06:50	01/06/17 12:01	7440-38-2
Chromium	ND	mg/L	0.0010	1	12/30/16 06:50	01/06/17 12:01	7440-47-3
Lead	ND	mg/L	0.0010	1	12/30/16 06:50	01/06/17 12:01	7439-92-1
Vanadium	ND	mg/L	0.0050	1	12/30/16 06:50	01/06/17 12:01	7440-62-2
6020 MET ICPMS, Dissolved (LF) Analytical Method: EPA 6020 Preparation Method: EPA 3005A							
Arsenic, Dissolved	14.0	ug/L	1.0	1	12/30/16 06:50	01/03/17 16:17	7440-38-2
Chromium, Dissolved	ND	ug/L	1.0	1	12/30/16 06:50	01/03/17 16:17	7440-47-3
Lead, Dissolved	ND	ug/L	1.0	1	12/30/16 06:50	01/03/17 16:17	7439-92-1
Vanadium, Dissolved	ND	ug/L	5.0	1	12/30/16 06:50	01/03/17 16:17	7440-62-2
7470 Mercury Analytical Method: EPA 7470 Preparation Method: EPA 7470							
Mercury	ND	ug/L	0.20	1	12/29/16 09:37	12/29/16 16:36	7439-97-6
7470 Mercury, Dissolved (LF) Analytical Method: EPA 7470 Preparation Method: EPA 7470							
Mercury, Dissolved	ND	ug/L	0.20	1	12/29/16 11:58	12/29/16 18:34	7439-97-6
8270 MSSV PAH by SIM SEP Analytical Method: EPA 8270 by SIM Preparation Method: EPA 3510							
Acenaphthene	ND	ug/L	0.10	1	12/28/16 11:52	01/06/17 15:55	83-32-9
Acenaphthylene	ND	ug/L	0.10	1	12/28/16 11:52	01/06/17 15:55	208-96-8
Anthracene	ND	ug/L	0.10	1	12/28/16 11:52	01/06/17 15:55	120-12-7
Benzo(a)anthracene	ND	ug/L	0.10	1	12/28/16 11:52	01/06/17 15:55	56-55-3
Benzo(a)pyrene	ND	ug/L	0.10	1	12/28/16 11:52	01/06/17 15:55	50-32-8
Benzo(b)fluoranthene	ND	ug/L	0.10	1	12/28/16 11:52	01/06/17 15:55	205-99-2
Benzo(g,h,i)perylene	ND	ug/L	0.10	1	12/28/16 11:52	01/06/17 15:55	191-24-2
Benzo(k)fluoranthene	ND	ug/L	0.10	1	12/28/16 11:52	01/06/17 15:55	207-08-9
Chrysene	ND	ug/L	0.10	1	12/28/16 11:52	01/06/17 15:55	218-01-9
Dibenz(a,h)anthracene	ND	ug/L	0.10	1	12/28/16 11:52	01/06/17 15:55	53-70-3
Fluoranthene	ND	ug/L	0.10	1	12/28/16 11:52	01/06/17 15:55	206-44-0
Fluorene	ND	ug/L	0.10	1	12/28/16 11:52	01/06/17 15:55	86-73-7
Indeno(1,2,3-cd)pyrene	ND	ug/L	0.10	1	12/28/16 11:52	01/06/17 15:55	193-39-5
2-Methylnaphthalene	ND	ug/L	0.10	1	12/28/16 11:52	01/06/17 15:55	91-57-6
Naphthalene	ND	ug/L	0.10	1	12/28/16 11:52	01/06/17 15:55	91-20-3
Phenanthrene	ND	ug/L	0.10	1	12/28/16 11:52	01/06/17 15:55	85-01-8

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: PUMA TERMINAL MW SAMPLING
Pace Project No.: 2047806

Sample: MW-15B2 Lab ID: 2047806013 Collected: 12/22/16 10:23 Received: 12/28/16 11:52
Parameters Results Units Report Limit DF Prepared Analytical Method CAS No. Qual

Parameters	Results	Units	Report Limit	DF	Prepared	Analytical Method	CAS No.	Qual
8270 MSSV PAH by SIM SEP		Analytical Method: EPA 8270 by SIM Preparation Method: EPA 3510						
Pyrene	ND	ug/L	0.10	1	12/28/16 11:52	01/06/17 15:55	129-00-0	
Surrogates								
2-Fluorobiphenyl (S)	69	%	25-150	1	12/28/16 11:52	01/06/17 15:55	321-60-8	
Terphenyl-d14 (S)	63	%	25-150	1	12/28/16 11:52	01/06/17 15:55	1718-51-0	
8260 MSV Low Level		Analytical Method: EPA 5030B/8260						
Acetone	15.6	ug/L	4.0	1	12/28/16 21:28	67-64-1		C9
Benzene	ND	ug/L	0.50	1	12/28/16 21:28	71-43-2		
Bromodichloromethane	ND	ug/L	0.50	1	12/28/16 21:28	75-27-4		
Bromoform	ND	ug/L	0.50	1	12/28/16 21:28	75-25-2		
Bromomethane	ND	ug/L	0.50	1	12/28/16 21:28	74-83-9		
2-Butanone (MEK)	ND	ug/L	2.0	1	12/28/16 21:28	78-93-3		
Carbon disulfide	ND	ug/L	1.0	1	12/28/16 21:28	75-15-0		L3
Carbon tetrachloride	ND	ug/L	0.50	1	12/28/16 21:28	56-23-5		
Chlorobenzene	ND	ug/L	0.50	1	12/28/16 21:28	108-90-7		
Chloroethane	ND	ug/L	0.50	1	12/28/16 21:28	75-00-3		
Chloroform	ND	ug/L	0.50	1	12/28/16 21:28	67-66-3		
Chloromethane	ND	ug/L	0.50	1	12/28/16 21:28	74-87-3		
1,2-Dibromo-3-chloropropane	ND	ug/L	0.20	1	12/28/16 21:28	96-12-8		
Dibromochloromethane	ND	ug/L	0.50	1	12/28/16 21:28	124-48-1		
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	1	12/28/16 21:28	106-93-4		
Dichlorodifluoromethane	ND	ug/L	1.0	1	12/28/16 21:28	75-71-8		
1,1-Dichloroethane	ND	ug/L	0.50	1	12/28/16 21:28	75-34-3		
1,2-Dichloroethane	ND	ug/L	0.50	1	12/28/16 21:28	107-06-2		
1,1-Dichloroethene	ND	ug/L	0.50	1	12/28/16 21:28	75-35-4		
cis-1,2-Dichloroethene	ND	ug/L	1.0	1	12/28/16 21:28	156-59-2		
trans-1,2-Dichloroethene	1.6	ug/L	0.50	1	12/28/16 21:28	156-60-5		
1,2-Dichloropropane	ND	ug/L	0.50	1	12/28/16 21:28	78-87-5		
cis-1,3-Dichloropropene	ND	ug/L	0.50	1	12/28/16 21:28	10061-01-5		
trans-1,3-Dichloropropene	ND	ug/L	0.50	1	12/28/16 21:28	10061-02-6		
Ethylbenzene	ND	ug/L	0.50	1	12/28/16 21:28	100-41-4		
2-Hexanone	ND	ug/L	1.0	1	12/28/16 21:28	591-78-6		
Isopropylbenzene (Cumene)	ND	ug/L	1.0	1	12/28/16 21:28	98-82-8		
Methyl acetate	ND	ug/L	2.0	1	12/28/16 21:28	79-20-9		
Methylene Chloride	ND	ug/L	0.50	1	12/28/16 21:28	75-09-2		
4-Methyl-2-pentanone (MIBK)	ND	ug/L	1.0	1	12/28/16 21:28	108-10-1		
Methyl-tert-butyl ether	3.6	ug/L	0.50	1	12/28/16 21:28	1634-04-4		
Styrene	ND	ug/L	1.0	1	12/28/16 21:28	100-42-5		
1,1,2,2-Tetrachloroethane	ND	ug/L	0.50	1	12/28/16 21:28	79-34-5		
Tetrachloroethene	ND	ug/L	0.50	1	12/28/16 21:28	127-18-4		
Toluene	ND	ug/L	0.50	1	12/28/16 21:28	108-88-3		
1,1,1-Trichloroethane	ND	ug/L	0.50	1	12/28/16 21:28	71-55-6		
1,1,2-Trichloroethane	ND	ug/L	0.50	1	12/28/16 21:28	79-00-5		
Trichloroethene	ND	ug/L	0.50	1	12/28/16 21:28	79-01-6		
Trichlorofluoromethane	ND	ug/L	0.50	1	12/28/16 21:28	75-69-4		
Vinyl chloride	ND	ug/L	0.50	1	12/28/16 21:28	75-01-4		
m&p-Xylene	ND	ug/L	2.0	1	12/28/16 21:28	179601-23-1		

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS



Project: PUMA TERMINAL MW SAMPLING
Pace Project No.: 2047806

Sample: MW-15B2 Lab ID: 2047806013 Collected: 12/22/16 10:23 Received: 12/22/16 13:15 Matrix: Water
Parameters Results Units Report Limit DF Prepared Analyzed CAS No. Qual

8260 MSV Low Level Analytical Method: EPA 5030B/8260

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
o-Xylene	ND	ug/L	1.0	1	12/28/16 21:28	12/28/16 21:28	95-47-6	
Surrogates								
Dibromofluoromethane (S)	103	%	72-126	1	12/28/16 21:28	12/28/16 21:28	1868-53-7	
4-Bromofluorobenzene (S)	98	%	68-124	1	12/28/16 21:28	12/28/16 21:28	460-00-4	
Toluene-d8 (S)	100	%	79-119	1	12/28/16 21:28	12/28/16 21:28	2037-26-5	

Sample: DUP002 Lab ID: 2047806015 Collected: 12/22/16 00:00 Received: 12/22/16 13:15 Matrix: Water
Parameters Results Units Report Limit DF Prepared Analyzed CAS No. Qual

8015M DRO/ORO Organics Analytical Method: EPA 8015B Modified Preparation Method: EPA 3535

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
Diesel Range Organic (C10-C28)	ND	mg/L	0.50	1	12/28/16 10:52	01/06/17 00:52		
Oil Range Organics (>C28-C40)	ND	mg/L	1.0	1	12/28/16 10:52	01/06/17 00:52		
Surrogates								
n-Pentacosane (S)	41	%	16-137	1	12/28/16 10:52	01/06/17 00:52	629-99-2	
o-Terphenyl (S)	44	%	10-121	1	12/28/16 10:52	01/06/17 00:52	84-15-1	

8021 GCV BTEX, MTBE, GRO Analytical Method: EPA 8015/8021

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
Gasoline Range Organics	ND	ug/L	50.0	1	12/30/16 16:10	12/30/16 16:10		
Surrogates								
4-Bromofluorobenzene (S)	92	%	44-148	1	12/30/16 16:10	12/30/16 16:10	460-00-4	

6020 MET ICPMS Analytical Method: EPA 6020 Preparation Method: EPA 3010

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
Arsenic	0.0014	mg/L	0.0010	1	12/30/16 06:50	01/06/17 12:05	7440-38-2	
Chromium	ND	mg/L	0.0010	1	12/30/16 06:50	01/06/17 12:05	7440-47-3	
Lead	ND	mg/L	0.0010	1	12/30/16 06:50	01/06/17 12:05	7439-92-1	
Vanadium	ND	mg/L	0.0050	1	12/30/16 06:50	01/06/17 12:05	7440-62-2	

6020 MET ICPMS, Dissolved (LF) Analytical Method: EPA 6020 Preparation Method: EPA 3005A

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
Arsenic, Dissolved	ND	ug/L	1.0	1	12/30/16 06:50	01/03/17 16:20	7440-38-2	
Chromium, Dissolved	ND	ug/L	1.0	1	12/30/16 06:50	01/03/17 16:20	7440-47-3	
Lead, Dissolved	ND	ug/L	1.0	1	12/30/16 06:50	01/03/17 16:20	7439-92-1	
Vanadium, Dissolved	ND	ug/L	5.0	1	12/30/16 06:50	01/03/17 16:20	7440-62-2	

7470 Mercury Analytical Method: EPA 7470 Preparation Method: EPA 7470

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
Mercury	ND	ug/L	0.20	1	12/29/16 09:37	12/29/16 16:38	7439-97-6	

7470 Mercury, Dissolved (LF) Analytical Method: EPA 7470 Preparation Method: EPA 7470

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
Mercury, Dissolved	ND	ug/L	0.20	1	12/29/16 11:58	12/29/16 18:36	7439-97-6	

8270 MSSV PAH by SIM SEP Analytical Method: EPA 8270 by SIM Preparation Method: EPA 3510

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
Acenaphthene	ND	ug/L	0.10	1	12/28/16 11:52	01/06/17 16:15	83-32-9	
Acenaphthylene	ND	ug/L	0.10	1	12/28/16 11:52	01/06/17 16:15	208-96-8	
Anthracene	ND	ug/L	0.10	1	12/28/16 11:52	01/06/17 16:15	120-12-7	
Benzo(a)anthracene	ND	ug/L	0.10	1	12/28/16 11:52	01/06/17 16:15	56-55-3	

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ANALYTICAL RESULTS

Project: PUMA TERMINAL MW SAMPLING
Pace Project No.: 2047806



Sample: DUP002	Lab ID: 2047806015	Collected: 12/22/16 00:00	Received: 12/22/16 13:05	Water			
Parameters	Results	Units	Report Limit	DF	Preparation	CAS No.	Qual

8270 MSSV PAH by SIM SEP

Analytical Method: EPA 8270 by SIM Preparation Method: EPA 3510

Benzo(a)pyrene	ND	ug/L	0.10	1	12/28/16 11:52	01/06/17 16:15	50-32-8
Benzo(b)fluoranthene	ND	ug/L	0.10	1	12/28/16 11:52	01/06/17 16:15	205-99-2
Benzo(g,h,i)perylene	ND	ug/L	0.10	1	12/28/16 11:52	01/06/17 16:15	191-24-2
Benzo(k)fluoranthene	ND	ug/L	0.10	1	12/28/16 11:52	01/06/17 16:15	207-08-9
Chrysene	ND	ug/L	0.10	1	12/28/16 11:52	01/06/17 16:15	218-01-9
Dibenz(a,h)anthracene	ND	ug/L	0.10	1	12/28/16 11:52	01/06/17 16:15	53-70-3
Fluoranthene	ND	ug/L	0.10	1	12/28/16 11:52	01/06/17 16:15	206-44-0
Fluorene	ND	ug/L	0.10	1	12/28/16 11:52	01/06/17 16:15	86-73-7
Indeno(1,2,3-cd)pyrene	ND	ug/L	0.10	1	12/28/16 11:52	01/06/17 16:15	193-39-5
2-Methylnaphthalene	ND	ug/L	0.10	1	12/28/16 11:52	01/06/17 16:15	91-57-6
Naphthalene	ND	ug/L	0.10	1	12/28/16 11:52	01/06/17 16:15	91-20-3
Phenanthrene	ND	ug/L	0.10	1	12/28/16 11:52	01/06/17 16:15	85-01-8
Pyrene	ND	ug/L	0.10	1	12/28/16 11:52	01/06/17 16:15	129-00-0
Surrogates							
2-Fluorobiphenyl (S)	68	%	25-150	1	12/28/16 11:52	01/06/17 16:15	321-60-8
Terphenyl-d14 (S)	56	%	25-150	1	12/28/16 11:52	01/06/17 16:15	1718-51-0

8260 MSV Low Level

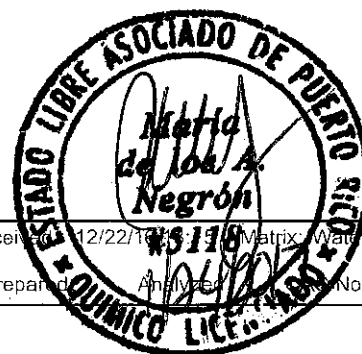
Analytical Method: EPA 5030B/8260

Acetone	27.0	ug/L	4.0	1	12/28/16 21:46	67-64-1	C9
Benzene	ND	ug/L	0.50	1	12/28/16 21:46	71-43-2	
Bromodichloromethane	ND	ug/L	0.50	1	12/28/16 21:46	75-27-4	
Bromoform	ND	ug/L	0.50	1	12/28/16 21:46	75-25-2	
Bromomethane	ND	ug/L	0.50	1	12/28/16 21:46	74-83-9	
2-Butanone (MEK)	ND	ug/L	2.0	1	12/28/16 21:46	78-93-3	
Carbon disulfide	ND	ug/L	1.0	1	12/28/16 21:46	75-15-0	L3
Carbon tetrachloride	ND	ug/L	0.50	1	12/28/16 21:46	56-23-5	
Chlorobenzene	ND	ug/L	0.50	1	12/28/16 21:46	108-90-7	
Chloroethane	ND	ug/L	0.50	1	12/28/16 21:46	75-00-3	
Chloroform	ND	ug/L	0.50	1	12/28/16 21:46	67-66-3	
Chloromethane	ND	ug/L	0.50	1	12/28/16 21:46	74-87-3	
1,2-Dibromo-3-chloropropane	ND	ug/L	0.20	1	12/28/16 21:46	96-12-8	
Dibromochloromethane	ND	ug/L	0.50	1	12/28/16 21:46	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	1	12/28/16 21:46	106-93-4	
Dichlorodifluoromethane	ND	ug/L	1.0	1	12/28/16 21:46	75-71-8	
1,1-Dichloroethane	ND	ug/L	0.50	1	12/28/16 21:46	75-34-3	
1,2-Dichloroethane	ND	ug/L	0.50	1	12/28/16 21:46	107-06-2	
1,1-Dichloroethene	ND	ug/L	0.50	1	12/28/16 21:46	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	1	12/28/16 21:46	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	0.50	1	12/28/16 21:46	156-60-5	
1,2-Dichloropropane	ND	ug/L	0.50	1	12/28/16 21:46	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	0.50	1	12/28/16 21:46	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	0.50	1	12/28/16 21:46	10061-02-6	
Ethylbenzene	ND	ug/L	0.50	1	12/28/16 21:46	100-41-4	
2-Hexanone	ND	ug/L	1.0	1	12/28/16 21:46	591-78-6	
Isopropylbenzene (Cumene)	ND	ug/L	1.0	1	12/28/16 21:46	98-82-8	
Methyl acetate	ND	ug/L	2.0	1	12/28/16 21:46	79-20-9	
Methylene Chloride	ND	ug/L	0.50	1	12/28/16 21:46	75-09-2	

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ANALYTICAL RESULTS



Project: PUMA TERMINAL MW SAMPLING
Pace Project No.: 2047806

Sample:	DUP002	Lab ID:	2047806015	Collected:	12/22/16 00:00	Received:	12/22/16 11:15	Matrix:	Water
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual	
8260 MSV Low Level Analytical Method: EPA 5030B/8260									
4-Methyl-2-pentanone (MIBK)	ND	ug/L	1.0	1		12/28/16 21:46	108-10-1		
Methyl-tert-butyl ether	ND	ug/L	0.50	1		12/28/16 21:46	1634-04-4		
Styrene	ND	ug/L	1.0	1		12/28/16 21:46	100-42-5		
1,1,2,2-Tetrachloroethane	ND	ug/L	0.50	1		12/28/16 21:46	79-34-5		
Tetrachloroethene	ND	ug/L	0.50	1		12/28/16 21:46	127-18-4		
Toluene	ND	ug/L	0.50	1		12/28/16 21:46	108-88-3		
1,1,1-Trichloroethane	ND	ug/L	0.50	1		12/28/16 21:46	71-55-6		
1,1,2-Trichloroethane	ND	ug/L	0.50	1		12/28/16 21:46	79-00-5		
Trichloroethene	ND	ug/L	0.50	1		12/28/16 21:46	79-01-6		
Trichlorofluoromethane	ND	ug/L	0.50	1		12/28/16 21:46	75-69-4		
Vinyl chloride	ND	ug/L	0.50	1		12/28/16 21:46	75-01-4		
m&p-Xylene	ND	ug/L	2.0	1		12/28/16 21:46	179601-23-1		
o-Xylene	ND	ug/L	1.0	1		12/28/16 21:46	95-47-6		
Surrogates									
Dibromofluoromethane (S)	104	%	72-126	1		12/28/16 21:46	1868-53-7		
4-Bromofluorobenzene (S)	98	%	68-124	1		12/28/16 21:46	460-00-4		
Toluene-d8 (S)	100	%	79-119	1		12/28/16 21:46	2037-26-5		

Sample:	MW-15B MS/MSD	Lab ID:	2047806016	Collected:	12/22/16 11:42	Received:	12/22/16 13:15	Matrix:	Water
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual	
8015M DRO/ORO Organics Analytical Method: EPA 8015B Modified Preparation Method: EPA 3535									
Diesel Range Organic (C10-C28)	ND	mg/L	0.50	1	12/28/16 10:52	01/06/17 01:20			R1
Oil Range Organics (>C28-C40)	ND	mg/L	1.0	1	12/28/16 10:52	01/06/17 01:20			
Surrogates									
n-Pentacosane (S)	53	%	16-137	1	12/28/16 10:52	01/06/17 01:20	629-99-2		
o-Terphenyl (S)	52	%	10-121	1	12/28/16 10:52	01/06/17 01:20	84-15-1		
8021 GCV BTEX, MTBE, GRO Analytical Method: EPA 8015/8021									
Gasoline Range Organics	ND	ug/L	50.0	1		12/30/16 16:36			
Surrogates									
4-Bromofluorobenzene (S)	90	%	44-148	1		12/30/16 16:36	460-00-4		
6020 MET ICPMS Analytical Method: EPA 6020 Preparation Method: EPA 3010									
Arsenic	0.0014	mg/L	0.0010	1	12/30/16 06:50	01/06/17 10:34	7440-38-2		
Chromium	ND	mg/L	0.0010	1	12/30/16 06:50	01/06/17 10:34	7440-47-3		
Lead	ND	mg/L	0.0010	1	12/30/16 06:50	01/06/17 10:34	7439-92-1		
Vanadium	ND	mg/L	0.0050	1	12/30/16 06:50	01/06/17 10:34	7440-62-2		
6020 MET ICPMS, Dissolved (LF) Analytical Method: EPA 6020 Preparation Method: EPA 3005A									
Arsenic, Dissolved	ND	ug/L	1.0	1	12/30/16 06:50	01/03/17 15:10	7440-38-2		
Chromium, Dissolved	ND	ug/L	1.0	1	12/30/16 06:50	01/03/17 15:10	7440-47-3		
Lead, Dissolved	ND	ug/L	1.0	1	12/30/16 06:50	01/03/17 15:10	7439-92-1		
Vanadium, Dissolved	ND	ug/L	5.0	1	12/30/16 06:50	01/03/17 15:10	7440-62-2		

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ANALYTICAL RESULTS

Project: PUMA TERMINAL MW SAMPLING
Pace Project No.: 2047806



Sample: MW-15B MS/MSD Lab ID: 2047806016 Collected: 12/22/16 11:42 Received: 12/22/16 13:15 Analyte: Water

Parameters	Results	Units	Report Limit	DF	Prepared	AS No.	Qual
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7470 Mercury Analytical Method: EPA 7470 Preparation Method: EPA 7470

Mercury	ND	ug/L	0.20	1	12/29/16 09:37	12/29/16 16:20	7439-97-6
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7470 Mercury, Dissolved (LF) Analytical Method: EPA 7470 Preparation Method: EPA 7470

Mercury, Dissolved	ND	ug/L	0.20	1	12/29/16 11:58	12/29/16 18:17	7439-97-6
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8270 MSSV PAH by SIM SEP Analytical Method: EPA 8270 by SIM Preparation Method: EPA 3510

Acenaphthene	ND	ug/L	0.10	1	12/28/16 11:52	01/06/17 16:35	83-32-9	R1
Acenaphthylene	ND	ug/L	0.10	1	12/28/16 11:52	01/06/17 16:35	208-96-8	R1
Anthracene	ND	ug/L	0.10	1	12/28/16 11:52	01/06/17 16:35	120-12-7	R1
Benzo(a)anthracene	ND	ug/L	0.10	1	12/28/16 11:52	01/06/17 16:35	56-55-3	R1
Benzo(a)pyrene	ND	ug/L	0.10	1	12/28/16 11:52	01/06/17 16:35	50-32-8	R1
Benzo(b)fluoranthene	ND	ug/L	0.10	1	12/28/16 11:52	01/06/17 16:35	205-99-2	R1
Benzo(g,h,i)perylene	ND	ug/L	0.10	1	12/28/16 11:52	01/06/17 16:35	191-24-2	R1
Benzo(k)fluoranthene	ND	ug/L	0.10	1	12/28/16 11:52	01/06/17 16:35	207-08-9	R1
Chrysene	ND	ug/L	0.10	1	12/28/16 11:52	01/06/17 16:35	218-01-9	R1
Dibenz(a,h)anthracene	ND	ug/L	0.10	1	12/28/16 11:52	01/06/17 16:35	53-70-3	R1
Fluoranthene	ND	ug/L	0.10	1	12/28/16 11:52	01/06/17 16:35	206-44-0	R1
Fluorene	ND	ug/L	0.10	1	12/28/16 11:52	01/06/17 16:35	86-73-7	R1
Indeno(1,2,3-cd)pyrene	ND	ug/L	0.10	1	12/28/16 11:52	01/06/17 16:35	193-39-5	R1
2-Methylnaphthalene	ND	ug/L	0.10	1	12/28/16 11:52	01/06/17 16:35	91-57-6	R1
Naphthalene	ND	ug/L	0.10	1	12/28/16 11:52	01/06/17 16:35	91-20-3	R1
Phenanthrene	ND	ug/L	0.10	1	12/28/16 11:52	01/06/17 16:35	85-01-8	R1
Pyrene	ND	ug/L	0.10	1	12/28/16 11:52	01/06/17 16:35	129-00-0	R1
Surrogates								
2-Fluorobiphenyl (S)	83	%	25-150	1	12/28/16 11:52	01/06/17 16:35	321-60-8	
Terphenyl-d14 (S)	64	%	25-150	1	12/28/16 11:52	01/06/17 16:35	1718-51-0	

8260 MSV Low Level Analytical Method: EPA 5030B/8260

Acetone	22.9	ug/L	4.0	1	12/28/16 17:35	67-64-1	C9
Benzene	ND	ug/L	0.50	1	12/28/16 17:35	71-43-2	
Bromodichloromethane	ND	ug/L	0.50	1	12/28/16 17:35	75-27-4	
Bromoform	ND	ug/L	0.50	1	12/28/16 17:35	75-25-2	
Bromomethane	ND	ug/L	0.50	1	12/28/16 17:35	74-83-9	
2-Butanone (MEK)	ND	ug/L	2.0	1	12/28/16 17:35	78-93-3	
Carbon disulfide	ND	ug/L	1.0	1	12/28/16 17:35	75-15-0	L1,M0
Carbon tetrachloride	ND	ug/L	0.50	1	12/28/16 17:35	56-23-5	
Chlorobenzene	ND	ug/L	0.50	1	12/28/16 17:35	108-90-7	
Chloroethane	ND	ug/L	0.50	1	12/28/16 17:35	75-00-3	
Chloroform	ND	ug/L	0.50	1	12/28/16 17:35	67-66-3	
Chloromethane	ND	ug/L	0.50	1	12/28/16 17:35	74-87-3	
1,2-Dibromo-3-chloropropane	ND	ug/L	0.20	1	12/28/16 17:35	96-12-8	
Dibromochloromethane	ND	ug/L	0.50	1	12/28/16 17:35	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	1	12/28/16 17:35	106-93-4	
Dichlorodifluoromethane	ND	ug/L	1.0	1	12/28/16 17:35	75-71-8	
1,1-Dichloroethane	ND	ug/L	0.50	1	12/28/16 17:35	75-34-3	
1,2-Dichloroethane	ND	ug/L	0.50	1	12/28/16 17:35	107-06-2	

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ANALYTICAL RESULTS



Project: PUMA TERMINAL MW SAMPLING
Pace Project No.: 2047806

Sample: MW-15B MS/MSD Lab ID: 2047806016 Collected: 12/22/16 11:42 Received: 12/22/16 13:15 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV Low Level		Analytical Method: EPA 5030B/8260						
1,1-Dichloroethene	ND	ug/L	0.50	1	12/28/16 17:35	75-35-4		
cis-1,2-Dichloroethene	ND	ug/L	1.0	1	12/28/16 17:35	156-59-2		
trans-1,2-Dichloroethene	ND	ug/L	0.50	1	12/28/16 17:35	156-60-5		
1,2-Dichloropropane	ND	ug/L	0.50	1	12/28/16 17:35	78-87-5		
cis-1,3-Dichloropropene	ND	ug/L	0.50	1	12/28/16 17:35	10061-01-5		
trans-1,3-Dichloropropene	ND	ug/L	0.50	1	12/28/16 17:35	10061-02-6		
Ethylbenzene	ND	ug/L	0.50	1	12/28/16 17:35	100-41-4		
2-Hexanone	ND	ug/L	1.0	1	12/28/16 17:35	591-78-6		
Isopropylbenzene (Cumene)	ND	ug/L	1.0	1	12/28/16 17:35	98-82-8		
Methyl acetate	ND	ug/L	2.0	1	12/28/16 17:35	79-20-9		
Methylene Chloride	ND	ug/L	0.50	1	12/28/16 17:35	75-09-2		
4-Methyl-2-pentanone (MIBK)	ND	ug/L	1.0	1	12/28/16 17:35	108-10-1		
Methyl-tert-butyl ether	ND	ug/L	0.50	1	12/28/16 17:35	1634-04-4		
Styrene	ND	ug/L	1.0	1	12/28/16 17:35	100-42-5		
1,1,2,2-Tetrachloroethane	ND	ug/L	0.50	1	12/28/16 17:35	79-34-5		
Tetrachloroethene	ND	ug/L	0.50	1	12/28/16 17:35	127-18-4		
Toluene	ND	ug/L	0.50	1	12/28/16 17:35	108-88-3		
1,1,1-Trichloroethane	ND	ug/L	0.50	1	12/28/16 17:35	71-55-6		
1,1,2-Trichloroethane	ND	ug/L	0.50	1	12/28/16 17:35	79-00-5		
Trichloroethene	ND	ug/L	0.50	1	12/28/16 17:35	79-01-6		
Trichlorofluoromethane	ND	ug/L	0.50	1	12/28/16 17:35	75-69-4		
Vinyl chloride	ND	ug/L	0.50	1	12/28/16 17:35	75-01-4		
m&p-Xylene	ND	ug/L	2.0	1	12/28/16 17:35	179601-23-1		
o-Xylene	ND	ug/L	1.0	1	12/28/16 17:35	95-47-6		
Surrogates								
Dibromofluoromethane (S)	106	%	72-126	1	12/28/16 17:35	1868-53-7		
4-Bromofluorobenzene (S)	97	%	68-124	1	12/28/16 17:35	460-00-4		
Toluene-d8 (S)	100	%	79-119	1	12/28/16 17:35	2037-26-5		

Sample: FB-122216 Lab ID: 2047806017 Collected: 12/22/16 11:50 Received: 12/22/16 13:15 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8021 GCV BTEX, MTBE, GRO		Analytical Method: EPA 8015/8021						
Gasoline Range Organics	ND	ug/L	50.0	1	12/30/16 17:54			
Surrogates								
4-Bromofluorobenzene (S)	89	%	44-148	1	12/30/16 17:54	460-00-4		
8260 MSV Low Level		Analytical Method: EPA 5030B/8260						
Acetone	26.2	ug/L	4.0	1	12/28/16 22:04	67-64-1		C9
Benzene	ND	ug/L	0.50	1	12/28/16 22:04	71-43-2		
Bromodichloromethane	ND	ug/L	0.50	1	12/28/16 22:04	75-27-4		
Bromoform	ND	ug/L	0.50	1	12/28/16 22:04	75-25-2		
Bromomethane	ND	ug/L	0.50	1	12/28/16 22:04	74-83-9		
2-Butanone (MEK)	ND	ug/L	2.0	1	12/28/16 22:04	78-93-3		
Carbon disulfide	ND	ug/L	1.0	1	12/28/16 22:04	75-15-0		L3

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ANALYTICAL RESULTS

Project: PUMA TERMINAL MW SAMPLING
Pace Project No.: 2047806

Sample: FB-122216	Lab ID: 2047806017	Collected: 12/22/16 11:50	Received: 12/22/16 13:15	Matrix: Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV Low Level		Analytical Method: EPA 5030B/8260						
Carbon tetrachloride	ND	ug/L	0.50	1		12/28/16 22:04	56-23-5	
Chlorobenzene	ND	ug/L	0.50	1		12/28/16 22:04	108-90-7	
Chloroethane	ND	ug/L	0.50	1		12/28/16 22:04	75-00-3	
Chloroform	ND	ug/L	0.50	1		12/28/16 22:04	67-66-3	
Chloromethane	ND	ug/L	0.50	1		12/28/16 22:04	74-87-3	
1,2-Dibromo-3-chloropropane	ND	ug/L	0.20	1		12/28/16 22:04	96-12-8	
Dibromochloromethane	ND	ug/L	0.50	1		12/28/16 22:04	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	1		12/28/16 22:04	106-93-4	
Dichlorodifluoromethane	ND	ug/L	1.0	1		12/28/16 22:04	75-71-8	
1,1-Dichloroethane	ND	ug/L	0.50	1		12/28/16 22:04	75-34-3	
1,2-Dichloroethane	ND	ug/L	0.50	1		12/28/16 22:04	107-06-2	
1,1-Dichloroethene	ND	ug/L	0.50	1		12/28/16 22:04	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	1		12/28/16 22:04	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	0.50	1		12/28/16 22:04	156-80-5	
1,2-Dichloropropane	ND	ug/L	0.50	1		12/28/16 22:04	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	0.50	1		12/28/16 22:04	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	0.50	1		12/28/16 22:04	10061-02-6	
Ethylbenzene	ND	ug/L	0.50	1		12/28/16 22:04	100-41-4	
2-Hexanone	ND	ug/L	1.0	1		12/28/16 22:04	591-78-6	
Isopropylbenzene (Cumene)	ND	ug/L	1.0	1		12/28/16 22:04	98-82-8	
Methyl acetate	ND	ug/L	2.0	1		12/28/16 22:04	79-20-9	
Methylene Chloride	ND	ug/L	0.50	1		12/28/16 22:04	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	1.0	1		12/28/16 22:04	108-10-1	
Methyl-tert-butyl ether	ND	ug/L	0.50	1		12/28/16 22:04	1634-04-4	
Styrene	ND	ug/L	1.0	1		12/28/16 22:04	100-42-5	
1,1,2,2-Tetrachloroethane	ND	ug/L	0.50	1		12/28/16 22:04	79-34-5	
Tetrachloroethene	ND	ug/L	0.50	1		12/28/16 22:04	127-18-4	
Toluene	ND	ug/L	0.50	1		12/28/16 22:04	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	0.50	1		12/28/16 22:04	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	0.50	1		12/28/16 22:04	79-00-5	
Trichloroethene	ND	ug/L	0.50	1		12/28/16 22:04	79-01-6	
Trichlorofluoromethane	ND	ug/L	0.50	1		12/28/16 22:04	75-69-4	
Vinyl chloride	ND	ug/L	0.50	1		12/28/16 22:04	75-01-4	
m&p-Xylene	ND	ug/L	2.0	1		12/28/16 22:04	179601-23-1	
o-Xylene	ND	ug/L	1.0	1		12/28/16 22:04	95-47-6	
Surrogates								
Dibromofluoromethane (S)	105	%.	72-126	1		12/28/16 22:04	1868-53-7	
4-Bromofluorobenzene (S)	99	%.	68-124	1		12/28/16 22:04	460-00-4	
Toluene-d8 (S)	102	%.	79-119	1		12/28/16 22:04	2037-26-5	

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QUALITY CONTROL DATA

Project: PUMA TERMINAL MW SAMPLING
Pace Project No.: 2047806

QC Batch: 71030 Analysis Method: EPA 8015/8021
QC Batch Method: EPA 8015/8021 Analysis Description: 8021 W GCV BTEX , MTBE, GRO
Associated Lab Samples: 2047806001, 2047806002, 2047806003, 2047806004, 2047806005, 2047806006, 2047806007, 2047806008, 2047806009, 2047806010, 2047806011, 2047806012, 2047806013, 2047806015, 2047806016, 2047806017

METHOD BLANK: 297171 Matrix: Water
Associated Lab Samples: 2047806001, 2047806002, 2047806003, 2047806004, 2047806005, 2047806006, 2047806007, 2047806008, 2047806009, 2047806010, 2047806011, 2047806012, 2047806013, 2047806015, 2047806016, 2047806017

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Gasoline Range Organics	ug/L	ND	50.0	12/30/16 07:53	
4-Bromofluorobenzene (S)	%	92	44-148	12/30/16 07:53	

LABORATORY CONTROL SAMPLE: 297172

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Gasoline Range Organics	ug/L	500	427	85	61-136	
4-Bromofluorobenzene (S)	%			95	44-148	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 297175 297176

Parameter	Units	297175		297176		MS % Rec	MSD % Rec	% Rec Limits	Max RPD	Qual
		MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result					
Gasoline Range Organics	ug/L	ND	500	438	439	83	83	15-147	0	20
4-Bromofluorobenzene (S)	%					94	94	44-148		

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QUALITY CONTROL DATA

Project: PUMA TERMINAL MW SAMPLING
Pace Project No.: 2047806

QC Batch: 71004 Analysis Method: EPA 7470
QC Batch Method: EPA 7470 Analysis Description: 7470 Mercury
Associated Lab Samples: 2047806002, 2047806003, 2047806004, 2047806005, 2047806006, 2047806007

METHOD BLANK: 297033 Matrix: Water
Associated Lab Samples: 2047806002, 2047806003, 2047806004, 2047806005, 2047806006, 2047806007

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Mercury	ug/L	ND	0.20	12/29/16 17:11	

LABORATORY CONTROL SAMPLE: 297034

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury	ug/L	1	1.1	106	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 297035 297036

Parameter	Units	2047713002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	Max RPD	Qual
Mercury	ug/L	ND	1	1	1.0	1.0	101	101	75-125	0 20	

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QUALITY CONTROL DATA

Project: PUMA TERMINAL MW SAMPLING
Pace Project No.: 2047806

QC Batch: 71005 Analysis Method: EPA 7470
QC Batch Method: EPA 7470 Analysis Description: 7470 Mercury
Associated Lab Samples: 2047806008, 2047806011, 2047806012, 2047806013, 2047806015, 2047806016

METHOD BLANK: 297037 Matrix: Water
Associated Lab Samples: 2047806008, 2047806011, 2047806012, 2047806013, 2047806015, 2047806016

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Mercury	ug/L	ND	0.20	12/29/16 16:16	

LABORATORY CONTROL SAMPLE: 297038

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury	ug/L	1	1.1	110	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 297039 297040

Parameter	Units	297039		297040		MS % Rec	MSD % Rec	% Rec Limits	Max RPD	Qual
		2047806016 Result	MS Spike Conc.	MSD Spike Conc.	MS Result					
Mercury	ug/L	ND	1	1	1.0	1.0	105	105	75-125	0 20

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QUALITY CONTROL DATA

Project: PUMA TERMINAL MW SAMPLING
Pace Project No.: 2047806

QC Batch: 71108 Analysis Method: EPA 7470
QC Batch Method: EPA 7470 Analysis Description: 7470 Mercury Dissolved
Associated Lab Samples: 2047806002, 2047806003, 2047806004, 2047806005, 2047806006, 2047806007

METHOD BLANK: 297493 Matrix: Water
Associated Lab Samples: 2047806002, 2047806003, 2047806004, 2047806005, 2047806006, 2047806007

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Mercury, Dissolved	ug/L	ND	0.20	12/29/16 18:44	

LABORATORY CONTROL SAMPLE: 297494

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury, Dissolved	ug/L	1	1.1	110	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 297495 297496

Parameter	Units	2047713002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	Max RPD	RPD	Qual
Mercury, Dissolved	ug/L	ND	1	1	1.1	1.1	109	110	75-125	1	20	

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QUALITY CONTROL DATA

Project: PUMA TERMINAL MW SAMPLING
Pace Project No.: 2047806

QC Batch: 71110 Analysis Method: EPA 7470
QC Batch Method: EPA 7470 Analysis Description: 7470 Mercury Dissolved
Associated Lab Samples: 2047806008, 2047806011, 2047806012, 2047806013, 2047806015, 2047806016

METHOD BLANK: 297497 Matrix: Water
Associated Lab Samples: 2047806008, 2047806011, 2047806012, 2047806013, 2047806015, 2047806016

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Mercury, Dissolved	ug/L	ND	0.20	12/29/16 18:13	

LABORATORY CONTROL SAMPLE: 297498

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury, Dissolved	ug/L	1	1.1	113	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 297499 297500

Parameter	Units	2047806016 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	Max RPD	Qual
Mercury, Dissolved	ug/L	ND	1	1	1.0	1.0	102	102	75-125	0 20	

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QUALITY CONTROL DATA

Project: PUMA TERMINAL MW SAMPLING
Pace Project No.: 2047806

QC Batch: 71131 Analysis Method: EPA 6020
QC Batch Method: EPA 3010 Analysis Description: 6020 MET
Associated Lab Samples: 2047806002, 2047806003, 2047806004, 2047806005, 2047806006, 2047806007, 2047806008, 2047806011, 2047806012, 2047806013, 2047806015, 2047806016

METHOD BLANK: 297578 Matrix: Water
Associated Lab Samples: 2047806002, 2047806003, 2047806004, 2047806005, 2047806006, 2047806007, 2047806008, 2047806011, 2047806012, 2047806013, 2047806015, 2047806016

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Arsenic	mg/L	ND	0.0010	01/06/17 10:11	
Chromium	mg/L	ND	0.0010	01/06/17 10:11	
Lead	mg/L	ND	0.0010	01/06/17 10:11	
Vanadium	mg/L	ND	0.0050	01/06/17 10:11	

LABORATORY CONTROL SAMPLE: 297579

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Arsenic	mg/L	.02	0.020	102	83-115	
Chromium	mg/L	.02	0.020	100	85-115	
Lead	mg/L	.02	0.019	97	84-115	
Vanadium	mg/L	.02	0.020	98	81-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 297580 297581

Parameter	Units	2047806016 Result	MS		MSD		MS % Rec	MSD % Rec	% Rec Limits	Max RPD	Qual
			Spike Conc.	MS Result	Spike Conc.	MSD Result					
Arsenic	mg/L	0.0014	.02	0.021	.02	0.020	99	94	80-120	5	20
Chromium	mg/L	ND	.02	0.020	.02	0.019	98	91	80-120	6	20
Lead	mg/L	ND	.02	0.020	.02	0.019	100	94	80-120	6	20
Vanadium	mg/L	ND	.02	0.021	.02	0.020	100	94	80-120	6	20

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QUALITY CONTROL DATA

Project: PUMA TERMINAL MW SAMPLING
Pace Project No.: 2047806

QC Batch: 71126 Analysis Method: EPA 6020
QC Batch Method: EPA 3005A Analysis Description: 6020 MET Dissolved
Associated Lab Samples: 2047806002, 2047806003, 2047806004, 2047806005, 2047806006, 2047806007, 2047806008, 2047806011, 2047806012, 2047806013, 2047806015, 2047806016

METHOD BLANK: 297560 Matrix: Water
Associated Lab Samples: 2047806002, 2047806003, 2047806004, 2047806005, 2047806006, 2047806007, 2047806008, 2047806011, 2047806012, 2047806013, 2047806015, 2047806016

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Arsenic, Dissolved	ug/L	ND	1.0	01/03/17 17:55	
Chromium, Dissolved	ug/L	ND	1.0	01/03/17 17:55	
Lead, Dissolved	ug/L	ND	1.0	01/03/17 17:55	
Vanadium, Dissolved	ug/L	ND	5.0	01/03/17 17:55	

LABORATORY CONTROL SAMPLE: 297561

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Arsenic, Dissolved	ug/L	20	20.2	101	80-120	
Chromium, Dissolved	ug/L	20	20.0	100	80-120	
Lead, Dissolved	ug/L	20	19.4	97	80-120	
Vanadium, Dissolved	ug/L	20	20.3	101	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 297562 297563

Parameter	Units	2047806016 Result	MS		MSD		MS % Rec	MSD % Rec	% Rec Limits	Max RPD	Qual
			Spike Conc.	MS Result	Spike Conc.	MSD Result					
Arsenic, Dissolved	ug/L	ND	20	20.2	20	19.9	97	96	75-125	2	20
Chromium, Dissolved	ug/L	ND	20	19.1	20	19.6	95	98	75-125	3	20
Lead, Dissolved	ug/L	ND	20	20.4	20	20.2	102	101	75-125	1	20
Vanadium, Dissolved	ug/L	ND	20	20.0	20	19.8	97	96	75-125	1	20

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QUALITY CONTROL DATA

Project: PUMA TERMINAL MW SAMPLING
Pace Project No.: 2047806

QC Batch: 70952 Analysis Method: EPA 5030B/8260
QC Batch Method: EPA 5030B/8260 Analysis Description: 8260 MSV Low Level
Associated Lab Samples: 2047806001, 2047806002, 2047806003, 2047806004, 2047806005, 2047806006, 2047806007, 2047806008, 2047806009, 2047806010, 2047806011, 2047806012, 2047806013, 2047806015, 2047806016, 2047806017

METHOD BLANK: 296849 Matrix: Water
Associated Lab Samples: 2047806001, 2047806002, 2047806003, 2047806004, 2047806005, 2047806006, 2047806007, 2047806008, 2047806009, 2047806010, 2047806011, 2047806012, 2047806013, 2047806015, 2047806016, 2047806017

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
1,1,1-Trichloroethane	ug/L	ND	0.50	12/28/16 16:07	
1,1,2,2-Tetrachloroethane	ug/L	ND	0.50	12/28/16 16:07	
1,1,2-Trichloroethane	ug/L	ND	0.50	12/28/16 16:07	
1,1-Dichloroethane	ug/L	ND	0.50	12/28/16 16:07	
1,1-Dichloroethene	ug/L	ND	0.50	12/28/16 16:07	
1,2-Dibromo-3-chloropropane	ug/L	ND	0.20	12/28/16 16:07	
1,2-Dibromoethane (EDB)	ug/L	ND	1.0	12/28/16 16:07	
1,2-Dichloroethane	ug/L	ND	0.50	12/28/16 16:07	
1,2-Dichloropropane	ug/L	ND	0.50	12/28/16 16:07	
2-Butanone (MEK)	ug/L	ND	2.0	12/28/16 16:07	
2-Hexanone	ug/L	ND	1.0	12/28/16 16:07	
4-Methyl-2-pentanone (MIBK)	ug/L	ND	1.0	12/28/16 16:07	
Acetone	ug/L	ND	4.0	12/28/16 16:07	
Benzene	ug/L	ND	0.50	12/28/16 16:07	
Bromodichloromethane	ug/L	ND	0.50	12/28/16 16:07	
Bromoform	ug/L	ND	0.50	12/28/16 16:07	
Bromomethane	ug/L	ND	0.50	12/28/16 16:07	
Carbon disulfide	ug/L	ND	1.0	12/28/16 16:07	
Carbon tetrachloride	ug/L	ND	0.50	12/28/16 16:07	
Chlorobenzene	ug/L	ND	0.50	12/28/16 16:07	
Chloroethane	ug/L	ND	0.50	12/28/16 16:07	
Chloroform	ug/L	ND	0.50	12/28/16 16:07	
Chloromethane	ug/L	ND	0.50	12/28/16 16:07	
cis-1,2-Dichloroethene	ug/L	ND	1.0	12/28/16 16:07	
cis-1,3-Dichloropropene	ug/L	ND	0.50	12/28/16 16:07	
Dibromochloromethane	ug/L	ND	0.50	12/28/16 16:07	
Dichlorodifluoromethane	ug/L	ND	1.0	12/28/16 16:07	
Ethylbenzene	ug/L	ND	0.50	12/28/16 16:07	
Isopropylbenzene (Cumene)	ug/L	ND	1.0	12/28/16 16:07	
m&p-Xylene	ug/L	ND	2.0	12/28/16 16:07	
Methyl acetate	ug/L	ND	2.0	12/28/16 16:07	
Methyl-tert-butyl ether	ug/L	ND	0.50	12/28/16 16:07	
Methylene Chloride	ug/L	ND	0.50	12/28/16 16:07	
o-Xylene	ug/L	ND	1.0	12/28/16 16:07	
Styrene	ug/L	ND	1.0	12/28/16 16:07	
Tetrachloroethene	ug/L	ND	0.50	12/28/16 16:07	
Toluene	ug/L	ND	0.50	12/28/16 16:07	
trans-1,2-Dichloroethene	ug/L	ND	0.50	12/28/16 16:07	
trans-1,3-Dichloropropene	ug/L	ND	0.50	12/28/16 16:07	
Trichloroethene	ug/L	ND	0.50	12/28/16 16:07	

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QUALITY CONTROL DATA

Project: PUMA TERMINAL MW SAMPLING
Pace Project No.: 2047806

METHOD BLANK: 296849 Matrix: Water
Associated Lab Samples: 2047806001, 2047806002, 2047806003, 2047806004, 2047806005, 2047806006, 2047806007, 2047806008, 2047806009, 2047806010, 2047806011, 2047806012, 2047806013, 2047806015, 2047806016, 2047806017

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Trichlorofluoromethane	ug/L	ND	0.50	12/28/16 16:07	
Vinyl chloride	ug/L	ND	0.50	12/28/16 16:07	
4-Bromofluorobenzene (S)	%	100	68-124	12/28/16 16:07	
Dibromofluoromethane (S)	%	103	72-126	12/28/16 16:07	
Toluene-d8 (S)	%	99	79-119	12/28/16 16:07	

LABORATORY CONTROL SAMPLE: 296850

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,1,1-Trichloroethane	ug/L	50	56.5	113	62-131	
1,1,2,2-Tetrachloroethane	ug/L	50	51.3	103	15-179	
1,1,2-Trichloroethane	ug/L	50	51.6	103	58-144	
1,1-Dichloroethane	ug/L	50	54.6	109	63-129	
1,1-Dichloroethene	ug/L	50	53.9	108	51-139	
1,2-Dibromo-3-chloropropane	ug/L	50	51.1	102	21-160	
1,2-Dibromoethane (EDB)	ug/L	50	53.4	107	52-161	
1,2-Dichloroethane	ug/L	50	55.6	111	57-148	
1,2-Dichloropropane	ug/L	50	54.6	109	66-128	
2-Butanone (MEK)	ug/L	50	59.7	119	32-183	
2-Hexanone	ug/L	50	54.3	109	36-170	
4-Methyl-2-pentanone (MIBK)	ug/L	50	53.7	107	26-171	
Acetone	ug/L	50	61.3	123	22-165	
Benzene	ug/L	50	56.8	114	62-131	
Bromodichloromethane	ug/L	50	51.1	102	69-132	
Bromoform	ug/L	50	46.7	93	35-166	
Bromomethane	ug/L	50	52.1	104	34-158	
Carbon disulfide	ug/L	50	65.6	131	31-128 L0	
Carbon tetrachloride	ug/L	50	52.0	104	54-144	
Chlorobenzene	ug/L	50	51.6	103	70-127	
Chloroethane	ug/L	50	46.9	94	17-195	
Chloroform	ug/L	50	51.9	104	73-134	
Chloromethane	ug/L	50	48.2	96	17-153	
cis-1,2-Dichloroethene	ug/L	50	51.8	104	68-129	
cis-1,3-Dichloropropene	ug/L	50	52.4	105	72-138	
Dibromochloromethane	ug/L	50	49.1	98	49-146	
Dichlorodifluoromethane	ug/L	50	45.4	91	10-179	
Ethylbenzene	ug/L	50	49.8	100	66-126	
Isopropylbenzene (Cumene)	ug/L	50	48.7	97	51-138	
m&p-Xylene	ug/L	100	100	100	65-129	
Methyl acetate	ug/L	50	54.7	109	20-142	
Methyl-tert-butyl ether	ug/L	50	51.7	103	37-166	
Methylene Chloride	ug/L	50	56.7	113	46-168	
o-Xylene	ug/L	50	50.0	100	65-124	

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QUALITY CONTROL DATA

Project: PUMA TERMINAL MW SAMPLING
Pace Project No.: 2047806

LABORATORY CONTROL SAMPLE: 296850

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Styrene	ug/L	50	50.9	102	72-133	
Tetrachloroethene	ug/L	50	48.9	98	46-157	
Toluene	ug/L	50	53.0	106	69-126	
trans-1,2-Dichloroethene	ug/L	50	53.3	107	60-129	
trans-1,3-Dichloropropene	ug/L	50	54.3	109	59-149	
Trichloroethene	ug/L	50	53.5	107	67-132	
Trichlorofluoromethane	ug/L	50	57.2	114	39-171	
Vinyl chloride	ug/L	50	42.6	85	27-149	
4-Bromofluorobenzene (S)	%			99	68-124	
Dibromofluoromethane (S)	%			104	72-126	
Toluene-d8 (S)	%			102	79-119	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 296851 296852

Parameter	Units	2047806016		MS	MSD	MS		MSD		% Rec Limits	Max RPD	Qual
		Result	Spike Conc.	Spike Conc.	Result	Result	% Rec	% Rec				
1,1,1-Trichloroethane	ug/L	ND	50	50	65.0	56.2	130	112	54-137	14	20	
1,1,2,2-Tetrachloroethane	ug/L	ND	50	50	57.2	49.4	114	99	15-187	15	20	
1,1,2-Trichloroethane	ug/L	ND	50	50	56.1	49.1	112	98	59-148	13	20	
1,1-Dichloroethane	ug/L	ND	50	50	60.7	53.2	121	106	59-133	13	20	
1,1-Dichloroethene	ug/L	ND	50	50	63.0	55.4	126	111	44-146	13	20	
1,2-Dibromo-3-chloropropane	ug/L	ND	50	50	56.4	48.8	113	98	23-166	14	20	
1,2-Dibromoethane (EDB)	ug/L	ND	50	50	58.0	52.6	116	105	55-166	10	20	
1,2-Dichloroethane	ug/L	ND	50	50	61.0	52.4	122	105	56-154	15	20	
1,2-Dichloropropane	ug/L	ND	50	50	60.2	52.5	120	105	62-135	14	20	
2-Butanone (MEK)	ug/L	ND	50	50	62.5	56.9	125	114	20-205	9	20	
2-Hexanone	ug/L	ND	50	50	56.3	51.1	113	102	25-189	10	20	
4-Methyl-2-pentanone (MIBK)	ug/L	ND	50	50	58.2	51.1	116	102	23-184	13	20	
Acetone	ug/L	22.9	50	50	72.3	64.7	99	84	11-217	11	20	
Benzene	ug/L	ND	50	50	64.5	55.1	129	110	52-141	16	20	
Bromodichloromethane	ug/L	ND	50	50	57.0	49.8	114	100	70-134	14	20	
Bromoform	ug/L	ND	50	50	51.4	44.6	103	89	37-171	14	20	
Bromomethane	ug/L	ND	50	50	59.3	51.5	119	103	34-155	14	20	
Carbon disulfide	ug/L	ND	50	50	83.1	68.3	166	136	28-130	19	20	MO
Carbon tetrachloride	ug/L	ND	50	50	61.2	53.7	122	107	48-146	13	20	
Chlorobenzene	ug/L	ND	50	50	58.6	50.3	117	101	67-129	15	20	
Chloroethane	ug/L	ND	50	50	54.3	47.6	109	95	12-192	13	20	
Chloroform	ug/L	ND	50	50	57.9	50.5	116	101	66-143	14	20	
Chloromethane	ug/L	ND	50	50	53.6	47.3	106	94	14-155	13	20	
cis-1,2-Dichloroethene	ug/L	ND	50	50	59.4	52.9	119	106	56-141	12	20	
cis-1,3-Dichloropropene	ug/L	ND	50	50	59.2	51.3	118	103	70-139	14	20	
Dibromochloromethane	ug/L	ND	50	50	53.5	47.2	107	94	50-150	13	20	
Dichlorodifluoromethane	ug/L	ND	50	50	54.8	47.6	110	95	10-173	14	20	
Ethylbenzene	ug/L	ND	50	50	57.5	49.5	115	99	57-135	15	20	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: PUMA TERMINAL MW SAMPLING
Pace Project No.: 2047806

Parameter	Units	2047806016		296851		296852		% Rec	% Rec	% Rec	Limits	Max RPD	Qual
		Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec						
Isopropylbenzene (Cumene)	ug/L	ND	50	50	56.9	50.9	114	102	40-146	11	20		
m&p-Xylene	ug/L	ND	100	100	115	101	115	101	56-136	13	20		
Methyl acetate	ug/L	ND	50	50	51.2	47.0	102	94	10-142	9	20		
Methyl-tert-butyl ether	ug/L	ND	50	50	56.9	50.4	114	101	35-176	12	20		
Methylene Chloride	ug/L	ND	50	50	60.5	51.8	121	104	45-166	16	20		
o-Xylene	ug/L	ND	50	50	56.5	49.7	113	99	57-133	13	20		
Styrene	ug/L	ND	50	50	48.5	41.6	97	83	58-144	15	20		
Tetrachloroethene	ug/L	ND	50	50	58.7	51.1	117	102	48-143	14	20		
Toluene	ug/L	ND	50	50	59.0	52.4	118	105	59-136	12	20		
trans-1,2-Dichloroethene	ug/L	ND	50	50	61.9	54.3	124	109	57-132	13	20		
trans-1,3-Dichloropropene	ug/L	ND	50	50	59.5	51.5	119	103	59-154	14	20		
Trichloroethene	ug/L	ND	50	50	61.9	53.5	124	107	58-140	15	20		
Trichlorofluoromethane	ug/L	ND	50	50	68.2	60.0	136	120	24-175	13	20		
Vinyl chloride	ug/L	ND	50	50	50.3	43.2	101	86	21-150	15	20		
4-Bromofluorobenzene (S)	%						103	99	68-124				
Dibromofluoromethane (S)	%						103	104	72-126				
Toluene-d8 (S)	%						100	102	79-119				

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: PUMA TERMINAL MW SAMPLING
Pace Project No.: 2047806

QC Batch: 70938 Analysis Method: EPA 8015B Modified
QC Batch Method: EPA 3535 Analysis Description: EPA 8015 ORO
Associated Lab Samples: 2047806002, 2047806003, 2047806004, 2047806005, 2047806006, 2047806007, 2047806008, 2047806011, 2047806012, 2047806013, 2047806015, 2047806016

METHOD BLANK: 296784 Matrix: Water
Associated Lab Samples: 2047806002, 2047806003, 2047806004, 2047806005, 2047806006, 2047806007, 2047806008, 2047806011, 2047806012, 2047806013, 2047806015, 2047806016

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Diesel Range Organic (C10-C28)	mg/L	ND	0.25	01/05/17 17:51	
Oil Range Organics (>C28-C40)	mg/L	ND	0.50	01/05/17 17:51	
n-Pentacosane (S)	%	35	16-137	01/05/17 17:51	
o-Terphenyl (S)	%	41	10-121	01/05/17 17:51	

LABORATORY CONTROL SAMPLE: 296785

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Diesel Range Organic (C10-C28)	mg/L	.4	.2J	50	10-115	
n-Pentacosane (S)	%			66	16-137	
o-Terphenyl (S)	%			77	10-121	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 296801 296802

Parameter	Units	2047806016 Result	MS		MSD		MS % Rec	MSD % Rec	% Rec Limits	Max		
			Spike Conc.	MS Result	Spike Conc.	MSD Result				RPD	RPD	Qual
Diesel Range Organic (C10-C28)	mg/L	ND	.8	.8	0.58	0.71	52	69	10-122	21	20	R1
n-Pentacosane (S)	%						64	76	16-137			
o-Terphenyl (S)	%						76	91	10-121			

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QUALITY CONTROL DATA

Project: PUMA TERMINAL MW SAMPLING
Pace Project No.: 2047806

QC Batch: 70942 Analysis Method: EPA 8270 by SIM
QC Batch Method: EPA 3510 Analysis Description: 8270 Water by SIM MSSV
Associated Lab Samples: 2047806002, 2047806003

METHOD BLANK: 296823 Matrix: Water
Associated Lab Samples: 2047806002, 2047806003

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
2-Methylnaphthalene	ug/L	ND	0.10	01/06/17 14:35	
Acenaphthene	ug/L	ND	0.10	01/06/17 14:35	
Acenaphthylene	ug/L	ND	0.10	01/06/17 14:35	
Anthracene	ug/L	ND	0.10	01/06/17 14:35	
Benzo(a)anthracene	ug/L	ND	0.10	01/06/17 14:35	
Benzo(a)pyrene	ug/L	ND	0.10	01/06/17 14:35	
Benzo(b)fluoranthene	ug/L	ND	0.10	01/06/17 14:35	
Benzo(g,h,i)perylene	ug/L	ND	0.10	01/06/17 14:35	
Benzo(k)fluoranthene	ug/L	ND	0.10	01/06/17 14:35	
Chrysene	ug/L	ND	0.10	01/06/17 14:35	
Dibenz(a,h)anthracene	ug/L	ND	0.10	01/06/17 14:35	
Fluoranthene	ug/L	ND	0.10	01/06/17 14:35	
Fluorene	ug/L	ND	0.10	01/06/17 14:35	
Indeno(1,2,3-cd)pyrene	ug/L	ND	0.10	01/06/17 14:35	
Naphthalene	ug/L	ND	0.10	01/06/17 14:35	
Phenanthrene	ug/L	ND	0.10	01/06/17 14:35	
Pyrene	ug/L	ND	0.10	01/06/17 14:35	
2-Fluorobiphenyl (S)	%	65	25-150	01/06/17 14:35	
Terphenyl-d14 (S)	%	56	25-150	01/06/17 14:35	

LABORATORY CONTROL SAMPLE: 296824

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
2-Methylnaphthalene	ug/L	4	2.4	60	35-150	
Acenaphthene	ug/L	4	2.6	65	35-150	
Acenaphthylene	ug/L	4	2.5	63	35-150	
Anthracene	ug/L	4	3.0	76	35-150	
Benzo(a)anthracene	ug/L	4	2.7	66	35-150	
Benzo(a)pyrene	ug/L	4	2.5	61	35-150	
Benzo(b)fluoranthene	ug/L	4	2.3	58	35-150	
Benzo(g,h,i)perylene	ug/L	4	2.6	64	35-150	
Benzo(k)fluoranthene	ug/L	4	2.3	58	35-150	
Chrysene	ug/L	4	2.5	62	35-150	
Dibenz(a,h)anthracene	ug/L	4	3.1	77	35-150	
Fluoranthene	ug/L	4	2.5	62	35-150	
Fluorene	ug/L	4	2.5	61	35-150	
Indeno(1,2,3-cd)pyrene	ug/L	4	2.9	73	35-150	
Naphthalene	ug/L	4	2.3	58	35-150	
Phenanthrene	ug/L	4	2.7	67	35-150	
Pyrene	ug/L	4	2.0	49	35-150	

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QUALITY CONTROL DATA

Project: PUMA TERMINAL MW SAMPLING
Pace Project No.: 2047806

LABORATORY CONTROL SAMPLE: 296824

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
2-Fluorobiphenyl (S)	%.			83	25-150	
Terphenyl-d14 (S)	%.			71	25-150	

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QUALITY CONTROL DATA

Project: PUMA TERMINAL MW SAMPLING
Pace Project No.: 2047806

QC Batch: 70943 Analysis Method: EPA 8270 by SIM
QC Batch Method: EPA 3510 Analysis Description: 8270 Water by SIM MSSV
Associated Lab Samples: 2047806004, 2047806005, 2047806006, 2047806007, 2047806008

METHOD BLANK: 296826 Matrix: Water
Associated Lab Samples: 2047806004, 2047806005, 2047806006, 2047806007, 2047806008

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
2-Methylnaphthalene	ug/L	ND	0.10	01/05/17 11:30	
Acenaphthene	ug/L	ND	0.10	01/05/17 11:30	
Acenaphthylene	ug/L	ND	0.10	01/05/17 11:30	
Anthracene	ug/L	ND	0.10	01/05/17 11:30	
Benzo(a)anthracene	ug/L	ND	0.10	01/05/17 11:30	
Benzo(a)pyrene	ug/L	ND	0.10	01/05/17 11:30	
Benzo(b)fluoranthene	ug/L	ND	0.10	01/05/17 11:30	
Benzo(g,h,i)perylene	ug/L	ND	0.10	01/05/17 11:30	
Benzo(k)fluoranthene	ug/L	ND	0.10	01/05/17 11:30	
Chrysene	ug/L	ND	0.10	01/05/17 11:30	
Dibenz(a,h)anthracene	ug/L	ND	0.10	01/05/17 11:30	
Fluoranthene	ug/L	ND	0.10	01/05/17 11:30	
Fluorene	ug/L	ND	0.10	01/05/17 11:30	
Indeno(1,2,3-cd)pyrene	ug/L	ND	0.10	01/05/17 11:30	
Naphthalene	ug/L	ND	0.10	01/05/17 11:30	
Phenanthrene	ug/L	ND	0.10	01/05/17 11:30	
Pyrene	ug/L	ND	0.10	01/05/17 11:30	
2-Fluorobiphenyl (S)	%	97	25-150	01/05/17 11:30	
Terphenyl-d14 (S)	%	98	25-150	01/05/17 11:30	

LABORATORY CONTROL SAMPLE: 296826

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
2-Methylnaphthalene	ug/L	4	3.3	83	35-150	
Acenaphthene	ug/L	4	3.6	89	35-150	
Acenaphthylene	ug/L	4	3.4	86	35-150	
Anthracene	ug/L	4	4.5	112	35-150	
Benzo(a)anthracene	ug/L	4	3.9	97	35-150	
Benzo(a)pyrene	ug/L	4	3.6	89	35-150	
Benzo(b)fluoranthene	ug/L	4	3.6	90	35-150	
Benzo(g,h,i)perylene	ug/L	4	4.1	101	35-150	
Benzo(k)fluoranthene	ug/L	4	3.6	90	35-150	
Chrysene	ug/L	4	3.6	91	35-150	
Dibenz(a,h)anthracene	ug/L	4	4.5	113	35-150	
Fluoranthene	ug/L	4	3.6	91	35-150	
Fluorene	ug/L	4	3.5	88	35-150	
Indeno(1,2,3-cd)pyrene	ug/L	4	4.3	108	35-150	
Naphthalene	ug/L	4	3.1	78	35-150	
Phenanthrene	ug/L	4	3.9	97	35-150	
Pyrene	ug/L	4	3.3	82	35-150	

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QUALITY CONTROL DATA

Project: PUMA TERMINAL MW SAMPLING
Pace Project No.: 2047806

QC Batch: 70982 Analysis Method: EPA 8270 by SIM
QC Batch Method: EPA 3510 Analysis Description: 8270 Water by SIM MSSV
Associated Lab Samples: 2047806011, 2047806012, 2047806013, 2047806015, 2047806016

METHOD BLANK: 296923 Matrix: Water
Associated Lab Samples: 2047806011, 2047806012, 2047806013, 2047806015, 2047806016

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
2-Methylnaphthalene	ug/L	ND	0.10	01/06/17 13:55	
Acenaphthene	ug/L	ND	0.10	01/06/17 13:55	
Acenaphthylene	ug/L	ND	0.10	01/06/17 13:55	
Anthracene	ug/L	ND	0.10	01/06/17 13:55	
Benzo(a)anthracene	ug/L	ND	0.10	01/06/17 13:55	
Benzo(a)pyrene	ug/L	ND	0.10	01/06/17 13:55	
Benzo(b)fluoranthene	ug/L	ND	0.10	01/06/17 13:55	
Benzo(g,h,i)perylene	ug/L	ND	0.10	01/06/17 13:55	
Benzo(k)fluoranthene	ug/L	ND	0.10	01/06/17 13:55	
Chrysene	ug/L	ND	0.10	01/06/17 13:55	
Dibenz(a,h)anthracene	ug/L	ND	0.10	01/06/17 13:55	
Fluoranthene	ug/L	ND	0.10	01/06/17 13:55	
Fluorene	ug/L	ND	0.10	01/06/17 13:55	
Indeno(1,2,3-cd)pyrene	ug/L	ND	0.10	01/06/17 13:55	
Naphthalene	ug/L	ND	0.10	01/06/17 13:55	
Phenanthrene	ug/L	ND	0.10	01/06/17 13:55	
Pyrene	ug/L	ND	0.10	01/06/17 13:55	
2-Fluorobiphenyl (S)	%	70	25-150	01/06/17 13:55	
Terphenyl-d14 (S)	%	60	25-150	01/06/17 13:55	

LABORATORY CONTROL SAMPLE: 296924

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
2-Methylnaphthalene	ug/L	4	2.7	68	35-150	
Acenaphthene	ug/L	4	2.9	72	35-150	
Acenaphthylene	ug/L	4	2.9	72	35-150	
Anthracene	ug/L	4	3.4	85	35-150	
Benzo(a)anthracene	ug/L	4	3.1	76	35-150	
Benzo(a)pyrene	ug/L	4	2.8	71	35-150	
Benzo(b)fluoranthene	ug/L	4	2.7	68	35-150	
Benzo(g,h,i)perylene	ug/L	4	3.0	75	35-150	
Benzo(k)fluoranthene	ug/L	4	2.7	66	35-150	
Chrysene	ug/L	4	2.8	69	35-150	
Dibenz(a,h)anthracene	ug/L	4	3.6	90	35-150	
Fluoranthene	ug/L	4	2.8	71	35-150	
Fluorene	ug/L	4	2.8	70	35-150	
Indeno(1,2,3-cd)pyrene	ug/L	4	3.4	84	35-150	
Naphthalene	ug/L	4	2.6	64	35-150	
Phenanthrene	ug/L	4	3.1	77	35-150	
Pyrene	ug/L	4	2.3	57	35-150	

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QUALITY CONTROL DATA

Project: PUMA TERMINAL MW SAMPLING
Pace Project No.: 2047806

LABORATORY CONTROL SAMPLE: 296924

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
2-Fluorobiphenyl (S)	%.			94	25-150	
Terphenyl-d14 (S)	%.			79	25-150	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 296925 296926

Parameter	Units	2047806016		296925		296926		% Rec Limits	Max RPD	Qual		
		MS Result	MSD Spike Conc.	MS Result	MSD Spike Conc.	MS Result	MSD Result					
2-Methylnaphthalene	ug/L	ND	4	4	2.7	3.5	69	87	35-150	23	20	R1
Acenaphthene	ug/L	ND	4	4	2.9	3.6	72	90	35-150	23	20	R1
Acenaphthylene	ug/L	ND	4	4	2.9	3.7	73	91	35-150	22	20	R1
Anthracene	ug/L	ND	4	4	3.0	3.9	76	96	35-150	23	20	R1
Benzo(a)anthracene	ug/L	ND	4	4	3.0	3.7	74	93	35-150	23	20	R1
Benzo(a)pyrene	ug/L	ND	4	4	2.5	3.2	63	80	35-150	24	20	R1
Benzo(b)fluoranthene	ug/L	ND	4	4	2.6	3.3	66	83	35-150	23	20	R1
Benzo(g,h,i)perylene	ug/L	ND	4	4	2.8	3.6	70	89	35-150	24	20	R1
Benzo(k)fluoranthene	ug/L	ND	4	4	2.6	3.4	65	84	35-150	25	20	R1
Chrysene	ug/L	ND	4	4	2.8	3.6	70	89	35-150	24	20	R1
Dibenz(a,h)anthracene	ug/L	ND	4	4	3.4	4.4	85	109	35-150	25	20	R1
Fluoranthene	ug/L	ND	4	4	2.9	3.7	73	92	35-150	22	20	R1
Fluorene	ug/L	ND	4	4	2.9	3.6	73	91	35-150	22	20	R1
Indeno(1,2,3-cd)pyrene	ug/L	ND	4	4	3.2	4.1	79	101	35-150	25	20	R1
Naphthalene	ug/L	ND	4	4	2.6	3.3	65	83	35-150	24	20	R1
Phenanthrene	ug/L	ND	4	4	3.1	3.9	78	98	35-150	22	20	R1
Pyrene	ug/L	ND	4	4	2.1	2.7	54	67	35-150	22	20	R1
2-Fluorobiphenyl (S)	%.						73	96	25-150		20	
Terphenyl-d14 (S)	%.						60	78	25-150		20	

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: PUMA TERMINAL MW SAMPLING
Pace Project No.: 2047806

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
2047806002	EB-122116	EPA 3535	70938	EPA 8015B Modified	71466
2047806003	MW-83B2	EPA 3535	70938	EPA 8015B Modified	71466
2047806004	MW-AD-4	EPA 3535	70938	EPA 8015B Modified	71466
2047806005	MW-33A	EPA 3535	70938	EPA 8015B Modified	71466
2047806006	MW-P116	EPA 3535	70938	EPA 8015B Modified	71466
2047806007	MW-P117	EPA 3535	70938	EPA 8015B Modified	71466
2047806008	MW-65A	EPA 3535	70938	EPA 8015B Modified	71466
2047806011	EB-122216	EPA 3535	70938	EPA 8015B Modified	71466
2047806012	MW-15A	EPA 3535	70938	EPA 8015B Modified	71466
2047806013	MW-15B2	EPA 3535	70938	EPA 8015B Modified	71466
2047806015	DUP002	EPA 3535	70938	EPA 8015B Modified	71466
2047806016	MW-15B MS/MSD	EPA 3535	70938	EPA 8015B Modified	71466
2047806001	TB-122116	EPA 8015/8021	71030		
2047806002	EB-122116	EPA 8015/8021	71030		
2047806003	MW-83B2	EPA 8015/8021	71030		
2047806004	MW-AD-4	EPA 8015/8021	71030		
2047806005	MW-33A	EPA 8015/8021	71030		
2047806006	MW-P116	EPA 8015/8021	71030		
2047806007	MW-P117	EPA 8015/8021	71030		
2047806008	MW-65A	EPA 8015/8021	71030		
2047806009	FB-122116	EPA 8015/8021	71030		
2047806010	TB-122216	EPA 8015/8021	71030		
2047806011	EB-122216	EPA 8015/8021	71030		
2047806012	MW-15A	EPA 8015/8021	71030		
2047806013	MW-15B2	EPA 8015/8021	71030		
2047806015	DUP002	EPA 8015/8021	71030		
2047806016	MW-15B MS/MSD	EPA 8015/8021	71030		
2047806017	FB-122216	EPA 8015/8021	71030		
2047806002	EB-122116	EPA 3010	71131	EPA 6020	71235
2047806003	MW-83B2	EPA 3010	71131	EPA 6020	71235
2047806004	MW-AD-4	EPA 3010	71131	EPA 6020	71235
2047806005	MW-33A	EPA 3010	71131	EPA 6020	71235
2047806006	MW-P116	EPA 3010	71131	EPA 6020	71235
2047806007	MW-P117	EPA 3010	71131	EPA 6020	71235
2047806008	MW-65A	EPA 3010	71131	EPA 6020	71235
2047806011	EB-122216	EPA 3010	71131	EPA 6020	71235
2047806012	MW-15A	EPA 3010	71131	EPA 6020	71235
2047806013	MW-15B2	EPA 3010	71131	EPA 6020	71235
2047806015	DUP002	EPA 3010	71131	EPA 6020	71235
2047806016	MW-15B MS/MSD	EPA 3010	71131	EPA 6020	71235
2047806002	EB-122116	EPA 3005A	71126	EPA 6020	71232
2047806003	MW-83B2	EPA 3005A	71126	EPA 6020	71232
2047806004	MW-AD-4	EPA 3005A	71126	EPA 6020	71232
2047806005	MW-33A	EPA 3005A	71126	EPA 6020	71232
2047806006	MW-P116	EPA 3005A	71126	EPA 6020	71232
2047806007	MW-P117	EPA 3005A	71126	EPA 6020	71232
2047806008	MW-65A	EPA 3005A	71126	EPA 6020	71232

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: PUMA TERMINAL MW SAMPLING
Pace Project No.: 2047806

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
2047806011	EB-122216	EPA 3005A	71126	EPA 6020	71232
2047806012	MW-15A	EPA 3005A	71126	EPA 6020	71232
2047806013	MW-15B2	EPA 3005A	71126	EPA 6020	71232
2047806015	DUP002	EPA 3005A	71126	EPA 6020	71232
2047806016	MW-15B MS/MSD	EPA 3005A	71126	EPA 6020	71232
2047806002	EB-122116	EPA 7470	71004	EPA 7470	71141
2047806003	MW-83B2	EPA 7470	71004	EPA 7470	71141
2047806004	MW-AD-4	EPA 7470	71004	EPA 7470	71141
2047806005	MW-33A	EPA 7470	71004	EPA 7470	71141
2047806006	MW-P116	EPA 7470	71004	EPA 7470	71141
2047806007	MW-P117	EPA 7470	71004	EPA 7470	71141
2047806008	MW-65A	EPA 7470	71005	EPA 7470	71139
2047806011	EB-122216	EPA 7470	71005	EPA 7470	71139
2047806012	MW-15A	EPA 7470	71005	EPA 7470	71139
2047806013	MW-15B2	EPA 7470	71005	EPA 7470	71139
2047806015	DUP002	EPA 7470	71005	EPA 7470	71139
2047806016	MW-15B MS/MSD	EPA 7470	71005	EPA 7470	71139
2047806002	EB-122116	EPA 7470	71108	EPA 7470	71142
2047806003	MW-83B2	EPA 7470	71108	EPA 7470	71142
2047806004	MW-AD-4	EPA 7470	71108	EPA 7470	71142
2047806005	MW-33A	EPA 7470	71108	EPA 7470	71142
2047806006	MW-P116	EPA 7470	71108	EPA 7470	71142
2047806007	MW-P117	EPA 7470	71108	EPA 7470	71142
2047806008	MW-65A	EPA 7470	71110	EPA 7470	71140
2047806011	EB-122216	EPA 7470	71110	EPA 7470	71140
2047806012	MW-15A	EPA 7470	71110	EPA 7470	71140
2047806013	MW-15B2	EPA 7470	71110	EPA 7470	71140
2047806015	DUP002	EPA 7470	71110	EPA 7470	71140
2047806016	MW-15B MS/MSD	EPA 7470	71110	EPA 7470	71140
2047806002	EB-122116	EPA 3510	70942	EPA 8270 by SIM	71522
2047806003	MW-83B2	EPA 3510	70942	EPA 8270 by SIM	71522
2047806004	MW-AD-4	EPA 3510	70943	EPA 8270 by SIM	71436
2047806005	MW-33A	EPA 3510	70943	EPA 8270 by SIM	71436
2047806006	MW-P116	EPA 3510	70943	EPA 8270 by SIM	71436
2047806007	MW-P117	EPA 3510	70943	EPA 8270 by SIM	71436
2047806008	MW-65A	EPA 3510	70943	EPA 8270 by SIM	71436
2047806011	EB-122216	EPA 3510	70982	EPA 8270 by SIM	71521
2047806012	MW-15A	EPA 3510	70982	EPA 8270 by SIM	71521
2047806013	MW-15B2	EPA 3510	70982	EPA 8270 by SIM	71521
2047806015	DUP002	EPA 3510	70982	EPA 8270 by SIM	71521
2047806016	MW-15B MS/MSD	EPA 3510	70982	EPA 8270 by SIM	71521
2047806001	TB-122116	EPA 5030B/8260	70952		
2047806002	EB-122116	EPA 5030B/8260	70952		
2047806003	MW-83B2	EPA 5030B/8260	70952		
2047806004	MW-AD-4	EPA 5030B/8260	70952		

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: PUMA TERMINAL MW SAMPLING
Pace Project No.: 2047806

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
2047806005	MW-33A	EPA 5030B/8260	70952		
2047806006	MW-P116	EPA 5030B/8260	70952		
2047806007	MW-P117	EPA 5030B/8260	70952		
2047806008	MW-65A	EPA 5030B/8260	70952		
2047806009	FB-122116	EPA 5030B/8260	70952		
2047806010	TB-122216	EPA 5030B/8260	70952		
2047806011	EB-122216	EPA 5030B/8260	70952		
2047806012	MW-15A	EPA 5030B/8260	70952		
2047806013	MW-15B2	EPA 5030B/8260	70952		
2047806015	DUP002	EPA 5030B/8260	70952		
2047806016	MW-15B MS/MSD	EPA 5030B/8260	70952		
2047806017	FB-122216	EPA 5030B/8260	70952		

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CHAIN-OF-CUSTODY / Analytical Worksheet
 The Chain-of-Custody is a LEGAL DOCUMENT
WO#: 2047806



1 of 2
1621433

Section A Required Client Information:		Section B Required Project Information:		Section C Invoice Information:	
Company: Arcadis		Report To: E Frain Caldera		Attention:	
Address: 48 cityview plaza 1 suite 401 R3 165 Km 12 Guaymas B		Copy To:		Company Name:	
Email To: E Frain Caldera @ arcadis.com		Purchase Order No.:		REGULATORY AGENCY	
Phone: 505-971-4000 / 505-971-4056		Project Name: Puma Terminal MWSamp		Address:	
Requested Due Date/TAT: STD		Project Number: E002.1605B		Site Location STATE: P.R.	
				<input type="checkbox"/> NPDES <input type="checkbox"/> GROUND WATER <input type="checkbox"/> DRINKING WATER <input type="checkbox"/> UST <input type="checkbox"/> RCRA <input type="checkbox"/> OTHER	

ITEM #	SAMPLE ID (A-Z, 0-9 / -) Sample IDs MUST BE UNIQUE	Matrix Codes MATRIX I CODE Drinking Water DW Water WT Waste Water WW Product P Soil/Solid SL Oil OL Wipe WP Air AR Tissue TS Other OT	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED				SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives								Requested Analysis Filtered (Y/N)	Residual Chlorine (Y/N)	Pace Project No / Lab I.D.							
					COMPOSITE START		COMPOSITE END/GRAB				Unpreserved	H ₂ SO ₄	HNO ₃	HCl	NaOH	Na ₂ S ₂ O ₈	Methanol	Other				Analysis Test 1	Analysis Test 2	Analysis Test 3	Analysis Test 4	Analysis Test 5		
					DATE	TIME	DATE	TIME																				
1	TB-122116		WT G		12/21/16		LAB	4																				
2	EB-122116		WT G		12/21/16		0917	10	S																			
3	MW-8382		WT G		12/21/16		0959	10	S																			
4	MW-AD-4		WT G		12/21/16		1056	10	S																			
5	MW-33A		WT G		12/21/16		1144	10	S																			
6	MW-P116		WT G		12/21/16		1405	10	S																			
7	MW-P117		WT G		12/21/16		1521	10	S																			
8	MW-65A		WT G		12/21/16		1609	10	S																			
9	FB-122116		WT G		12/21/16		1615	4																				
10	TB-122216		WT G		12/21/16		LAB	4																				
11	EB-122216		WT G		12/21/16		0842	10	S																			
12	MW-15A		WT G		12/22/16		0738	10	S																			

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS						
level 10	Arcadis / Arcadis	12/22/16	1315	Paula Jones - Pace	12/22/16	1315	40	Y	N	Y			
	Arcadis / Arcadis	12-22-16	07:00	Fed Ex			5:3						
	Fed Ex	12-23-16	1000	Pace	12-23-16	1000	4.1	Y	Y	Y			

SAMPLER NAME AND SIGNATURE		Temp in °C	Received on Ice (Y/N)	Custody Sealed Cooler (Y/N)	Samples Intact (Y/N)
PRINT Name of SAMPLER: Arcadis / Arcadis					
SIGNATURE OF SAMPLER: [Signature]					
DATE Signed (MM/DD/YY): 12/22/16					

ORIGINAL

*Important Note: By signing this form you are accepting Pace's NET 30 day payment terms and agreeing to late charges of 1.5% per month for any invoices not paid within 30 days.



CHAIN-OF-CUSTODY / Analytical Request Document

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

Page: 2 of 2
1621434

Section A Required Client Information:		Section B Required Project Information:		Section C Invoice Information:	
Company: <u>Arcadis</u>		Report To: <u>Efrain Calderon</u>		Attention:	
Address: <u>44 City view plaza 1 suite</u>		Copy To:		Company Name:	
<u>401 Rd 165 Km 1.2 uny...</u>				Address:	
Email To: <u>Efrain Calderon@arcadis-us.com</u>		Purchase Order No.:		Pace Quote Reference:	
Phone: <u>(502-977-4000)</u> Fax: <u>(502-977-4000)</u>		Project Name:		Pace Project Manager: <u>Juan Redondo</u>	
Requested Due Date/TAT: <u>9TD</u>		Project Number: <u>E02-1605A</u>		Pace Profile #:	
				REGULATORY AGENCY	
				<input type="checkbox"/> NPDES <input type="checkbox"/> GROUND WATER <input type="checkbox"/> DRINKING WATER <input type="checkbox"/> UST <input type="checkbox"/> RCRA <input type="checkbox"/> OTHER	
				Site Location	
				STATE: <u>PR</u>	

ITEM #	SAMPLE ID (A-Z, 0-9 / -) Sample IDs MUST BE UNIQUE	Matrix Codes MATRIX / CODE		COLLECTED				SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives							Requested Analysis Filtered (Y/N)							Residual Chlorine (Y/N)	Pace Project No. / Lab I.D.					
		DW	WT	WW	P	SL	CL			WP	AR	TS	OT	Unpreserved	H ₂ SO ₄	HNO ₃	HCl	NaOH	Na ₂ S ₂ O ₃	Methanol	Other	Analysis Test	VOCs 8260			GR 8015	DR/DR 8015	Seeds 8210	Metals /mercury	Dissolved Metals
		DATE	TIME	DATE	TIME	COMPOSITE START	COMPOSITE END/GRAB			COMPOSITE START	COMPOSITE END/GRAB	COMPOSITE START	COMPOSITE END/GRAB	COMPOSITE START	COMPOSITE END/GRAB	COMPOSITE START	COMPOSITE END/GRAB	COMPOSITE START	COMPOSITE END/GRAB	COMPOSITE START	COMPOSITE END/GRAB	COMPOSITE START	COMPOSITE END/GRAB			COMPOSITE START	COMPOSITE END/GRAB	COMPOSITE START	COMPOSITE END/GRAB	COMPOSITE START
1	MW-15A2	WT	G			12/21/16	1023	10	1											X	X	X	X	X	X	X				
2	MW-15B	WT	G			12/21/16	1142	10	5											X	X	X	X	X	X	X				
3	DUP002	WT	G			12/21/16		10	5											X	X	X	X	X	X	X				
4	MW-15B (MS)	WT	G			12/21/16	1142	10	5											X	X	X	X	X	X	X				
5	MW-15B (MSD)	WT	G			12/21/16	1142	10	5											X	X	X	X	X	X	X				
6	FR-122216	WT	G			12/21/16	1150	4												X	X									

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS				
Level IV	Andrés Colon / Arcadis	12/21/16	1315	Michelle Nervis - Arcadis	12/22/16	1315	4.0	Y	Y	Y	Y
	Andrés Colon / Arcadis	12-22-16	1710	Fed Exp			5.3				
	Fed Exp	12-23-16	1020	J/S - Arcadis	12-23-16	1020	4.1	Y	Y	Y	Y
							4.1				

ORIGINAL	SAMPLER NAME AND SIGNATURE				Temp in °C	Received on Ice (Y/N)	Custody Sealed Cooler (Y/N)	Samples Intact (Y/N)
	PRINT Name of SAMPLER: <u>Andrés Colon</u>							
	SIGNATURE of SAMPLER: <u>[Signature]</u> DATE Signed (MM/DD/YY): <u>12/22/16</u>							

*Important Note: By signing this form you are accepting Pace's NET 30 day payment terms and agreeing to late charges of 1.5% per month for any invoices not paid within 30 days.



1000 Riverbend, Blvd., Suite F
St. Rose, LA 70087

Sample Condition Upo

WO#: 2047806

PM: JAR1

Due Date: 01/09/17

CLIENT: 98-ARCADISPR

Pi

Courier: Pace Courier Hired Courier Fed X UPS DHL USPS Customer Other

Custody Seal on Cooler/Box Present: [see COC]

Custody Seals intact: Yes No

Thermometer Used: Therm Fisher IR 5
 Therm Fisher IR 6
 Therm Fisher IR 7

Type of Ice: Wet Blue None

Samples on ice: [see COC]

Cooler Temperature: [see COC]

Temp should be above freezing to 6°C

Date and Initials of person examining contents: 12-23-16 JMB

Temp must be measured from Temperature blank when present

Comments:

Temperature Blank Present?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	1	
Chain of Custody Present:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	2	
Chain of Custody Complete:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	3	
Chain of Custody Relinquished:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	4	
Sampler Name & Signature on COC:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	5	
Samples Arrived within Hold Time:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	6	
Sufficient Volume:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	7	
Correct Containers Used:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	8	
Filtered vol. Rec. for Diss. tests	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	9	
Sample Labels match COC:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	10	
All containers received within manufacture's precautionary and/or expiration dates.	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	11	
All containers needing chemical preservation have been checked (except VOA, coliform, & O&G).	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	12	
All containers preservation checked found to be in compliance with EPA recommendation.	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	13	If No, was preservative added? <input type="checkbox"/> Yes <input type="checkbox"/> No If added record lot no.: HNO3 _____ H2SO4 _____
Headspace in VOA Vials (>6mm):	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	14	
Trip Blank Present:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	15	

Client Notification/ Resolution:

Person Contacted: _____

Date/Time: _____

Comments/ Resolution: _____

January 12, 2017

Efrain Calderon
BBL Caribe Engineering P.S.C.
48 City View Plaza1, Suite 401
Road 16, Km. 1.2
Guaynabo, PR 00968

RE: Project: PUMA TERMIANL MW-SAMPLING
Pace Project No.: 2047713

Dear Efrain Calderon:

Enclosed are the analytical results for sample(s) received by the laboratory on December 20, 2016. The results relate only to the samples included in this report. Results reported herein conform to the most current, applicable TNI/NELAC standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,



Juan Redondo
juan.redondo@pacelabs.com
Project Manager

Enclosures

cc: Sharon Colon
Abner Hernandez
Marianela Mercado-Burgos



REPORT OF LABORATORY ANALYSIS

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CERTIFICATIONS

Project: PUMA TERMIANL MW-SAMPLING

Pace Project No.: 2047713

New Orleans Certification IDs

California Env. Lab Accreditation Program Branch:
11277CA

Florida Department of Health (NELAC): E87595

Illinois Environmental Protection Agency: 0025721

Kansas Department of Health and Environment (NELAC):
E-10266

Louisiana Dept. of Environmental Quality (NELAC/LELAP):
02006

Pennsylvania Dept. of Env Protection (NELAC): 68-04202

Texas Commission on Env. Quality (NELAC):
T104704405-09-TX

U.S. Dept. of Agriculture Foreign Soil Import: P330-10-
00119

Commonwealth of Virginia (TNI): 480246

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SAMPLE SUMMARY

Project: PUMA TERMIANL MW-SAMPLING
Pace Project No.: 2047713

Lab ID	Sample ID	Matrix	Date Collected	Date Received
2047713001	TB-121916	Water	12/19/16 00:00	12/20/16 16:15
2047713002	EB-121916	Water	12/19/16 09:58	12/20/16 16:15
2047713003	MW-P120	Water	12/19/16 11:10	12/20/16 16:15
2047713004	MW-P122	Water	12/19/16 12:08	12/20/16 16:15
2047713005	MW-P123	Water	12/19/16 14:21	12/20/16 16:15
2047713006	MW-P124	Water	12/19/16 15:45	12/20/16 16:15
2047713007	MW-P121	Water	12/19/16 16:27	12/20/16 16:15
2047713008	FB-121916	Water	12/19/16 16:45	12/20/16 16:15
2047713009	TB-122016	Water	12/20/16 00:00	12/20/16 16:15
2047713010	EB-122016	Water	12/20/16 08:33	12/20/16 16:15
2047713011	MW-P119	Water	12/20/16 09:18	12/20/16 16:15
2047713012	MW-P118	Water	12/20/16 10:09	12/20/16 16:15
2047713013	MW-83A	Water	12/20/16 11:13	12/20/16 16:15
2047713014	MW-AD-01	Water	12/20/16 13:12	12/20/16 16:15
2047713015	MW-57A	Water	12/20/16 14:30	12/20/16 16:15
2047713016	MW-AD-03	Water	12/20/16 15:16	12/20/16 16:15
2047713017	FB-122016	Water	12/20/16 15:25	12/20/16 16:15
2047713018	DUP001	Water	12/20/16 00:00	12/20/16 16:15

REPORT OF LABORATORY ANALYSIS

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SAMPLE ANALYTE COUNT

Project: PUMA TERMIANL MW-SAMPLING

Pace Project No.: 2047713

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
2047713001	TB-121916	EPA 8015/8021	MHM	2	PASI-N
		EPA 5030B/8260	MLS	45	PASI-N
2047713002	EB-121916	EPA 8015B Modified	SLF	4	PASI-N
		EPA 8015/8021	MHM	2	PASI-N
		EPA 6020	KJR	4	PASI-N
		EPA 6020	KJR	4	PASI-N
		EPA 7470	MHB1	1	PASI-N
		EPA 7470	MHB1	1	PASI-N
		EPA 8270 by SIM	GEJ	19	PASI-N
		EPA 5030B/8260	MLS	45	PASI-N
2047713003	MW-P120	EPA 8015B Modified	SLF	4	PASI-N
		EPA 8015/8021	MHM	2	PASI-N
		EPA 6020	KJR	4	PASI-N
		EPA 6020	KJR	4	PASI-N
		EPA 7470	MHB1	1	PASI-N
		EPA 7470	MHB1	1	PASI-N
		EPA 8270 by SIM	GEJ	19	PASI-N
		EPA 5030B/8260	MLS	45	PASI-N
2047713004	MW-P122	EPA 8015B Modified	SLF	4	PASI-N
		EPA 8015/8021	MHM	2	PASI-N
		EPA 6020	KJR	4	PASI-N
		EPA 6020	KJR	4	PASI-N
		EPA 7470	MHB1	1	PASI-N
		EPA 7470	MHB1	1	PASI-N
		EPA 8270 by SIM	GEJ	19	PASI-N
		EPA 5030B/8260	MLS	45	PASI-N
2047713005	MW-P123	EPA 8015B Modified	SLF	4	PASI-N
		EPA 8015/8021	MHM	2	PASI-N
		EPA 6020	KJR	4	PASI-N
		EPA 6020	KJR	4	PASI-N
		EPA 7470	MHB1	1	PASI-N
		EPA 7470	MHB1	1	PASI-N
		EPA 8270 by SIM	GEJ	19	PASI-N
		EPA 5030B/8260	MLS	45	PASI-N
2047713006	MW-P124	EPA 8015B Modified	SLF	4	PASI-N
		EPA 8015/8021	MHM	2	PASI-N
		EPA 6020	KJR	4	PASI-N

REPORT OF LABORATORY ANALYSIS

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SAMPLE ANALYTE COUNT

Project: PUMA TERMIANL MW-SAMPLING

Pace Project No.: 2047713

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
		EPA 6020	KJR	4	PASI-N
		EPA 7470	MHB1	1	PASI-N
		EPA 7470	MHB1	1	PASI-N
		EPA 8270 by SIM	GEJ	19	PASI-N
		EPA 5030B/8260	MLS	45	PASI-N
2047713007	MW-P121	EPA 8015B Modified	SLF	4	PASI-N
		EPA 8015/8021	MHM	2	PASI-N
		EPA 6020	KJR	4	PASI-N
		EPA 6020	KJR	4	PASI-N
		EPA 7470	MHB1	1	PASI-N
		EPA 7470	MHB1	1	PASI-N
		EPA 8270 by SIM	GEJ	19	PASI-N
		EPA 5030B/8260	MLS	45	PASI-N
2047713008	FB-121916	EPA 8015/8021	MHM	2	PASI-N
		EPA 5030B/8260	MLS	45	PASI-N
2047713009	TB-122016	EPA 8015/8021	MHM	2	PASI-N
		EPA 5030B/8260	MLS	45	PASI-N
2047713010	EB-122016	EPA 8015B Modified	SLF	4	PASI-N
		EPA 8015/8021	MHM	2	PASI-N
		EPA 6020	KJR	4	PASI-N
		EPA 6020	KJR	4	PASI-N
		EPA 7470	MHB1	1	PASI-N
		EPA 7470	MHB1	1	PASI-N
		EPA 8270 by SIM	GEJ	19	PASI-N
		EPA 5030B/8260	MLS	45	PASI-N
2047713011	MW-P119	EPA 8015B Modified	SLF	4	PASI-N
		EPA 8015/8021	MHM	2	PASI-N
		EPA 6020	KJR	4	PASI-N
		EPA 6020	KJR	4	PASI-N
		EPA 7470	MHB1	1	PASI-N
		EPA 7470	MHB1	1	PASI-N
		EPA 8270 by SIM	GEJ	19	PASI-N
		EPA 5030B/8260	MLS	45	PASI-N
2047713012	MW-P118	EPA 8015B Modified	SLF	4	PASI-N
		EPA 8015/8021	MHM	2	PASI-N
		EPA 6020	KJR	4	PASI-N
		EPA 6020	KJR	4	PASI-N

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SAMPLE ANALYTE COUNT

Project: PUMA TERMIANL MW-SAMPLING

Pace Project No.: 2047713

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
2047713013	MW-83A	EPA 7470	MHB1	1	PASI-N
		EPA 7470	MHB1	1	PASI-N
		EPA 8270 by SIM	GEJ	19	PASI-N
		EPA 5030B/8260	MLS	45	PASI-N
		EPA 8015B Modified	SLF	4	PASI-N
		EPA 8015/8021	MHM	2	PASI-N
		EPA 6020	KJR	4	PASI-N
		EPA 6020	KJR	4	PASI-N
		EPA 7470	MHB1	1	PASI-N
		EPA 7470	MHB1	1	PASI-N
2047713014	MW-AD-01	EPA 8270 by SIM	GEJ	19	PASI-N
		EPA 5030B/8260	MLS	45	PASI-N
		EPA 8015B Modified	SLF	4	PASI-N
		EPA 8015/8021	MHM	2	PASI-N
		EPA 6020	KJR	4	PASI-N
		EPA 6020	KJR	4	PASI-N
		EPA 7470	MHB1	1	PASI-N
		EPA 7470	MHB1	1	PASI-N
		EPA 8270 by SIM	GEJ	3	PASI-N
		EPA 5030B/8260	MLS	45	PASI-N
2047713015	MW-57A	EPA 8015B Modified	SLF	4	PASI-N
		EPA 8015/8021	MHM	2	PASI-N
		EPA 6020	KJR	4	PASI-N
		EPA 6020	KJR	4	PASI-N
		EPA 7470	MHB1	1	PASI-N
		EPA 7470	MHB1	1	PASI-N
		EPA 8270 by SIM	GEJ	3	PASI-N
		EPA 5030B/8260	MLS	45	PASI-N
		EPA 8015B Modified	SLF	4	PASI-N
		EPA 8015/8021	MHM	2	PASI-N
2047713016	MW-AD-03	EPA 6020	KJR	4	PASI-N
		EPA 6020	KJR	4	PASI-N
		EPA 7470	MHB1	1	PASI-N
		EPA 7470	MHB1	1	PASI-N
		EPA 8270 by SIM	GEJ	3	PASI-N
		EPA 5030B/8260	MLS	45	PASI-N
		EPA 8015B Modified	SLF	4	PASI-N
		EPA 8015/8021	MHM	2	PASI-N
		EPA 6020	KJR	4	PASI-N
		EPA 6020	KJR	4	PASI-N
2047713017	FB-122016	EPA 7470	MHB1	1	PASI-N
		EPA 7470	MHB1	1	PASI-N

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SAMPLE ANALYTE COUNT

Project: PUMA TERMIANL MW-SAMPLING

Pace Project No.: 2047713

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
2047713018	DUP001	EPA 5030B/8260	MLS	45	PASI-N
		EPA 8015B Modified	SLF	4	PASI-N
		EPA 8015/8021	MHM	2	PASI-N
		EPA 6020	KJR	4	PASI-N
		EPA 6020	KJR	4	PASI-N
		EPA 7470	MHB1	1	PASI-N
		EPA 7470	MHB1	1	PASI-N
		EPA 8270 by SIM	GEJ	3	PASI-N
		EPA 5030B/8260	MLS	45	PASI-N

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PROJECT NARRATIVE

Project: PUMA TERMIANL MW-SAMPLING

Pace Project No.: 2047713

Method: EPA 8015B Modified

Description: 8015M DRO/ORO Organics

Client: BBL Caribe / Arcadis PR

Date: January 12, 2017

General Information:

14 samples were analyzed for EPA 8015B Modified. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:

The samples were analyzed within the method required hold times with any exceptions noted below.

H2: Extraction or preparation conducted outside EPA method holding time.

- EB-121916 (Lab ID: 2047713002)
- MW-P120 (Lab ID: 2047713003)
- MW-P121 (Lab ID: 2047713007)
- MW-P122 (Lab ID: 2047713004)
- MW-P123 (Lab ID: 2047713005)
- MW-P124 (Lab ID: 2047713006)

Sample Preparation:

The samples were prepared in accordance with EPA 3535 with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):

All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:

All criteria were within method requirements with any exceptions noted below.

Surrogates:

All surrogates were within QC limits with any exceptions noted below.

Method Blank:

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

QC Batch: 70881

A matrix spike/matrix spike duplicate was not performed due to insufficient sample volume.

Additional Comments:

REPORT OF LABORATORY ANALYSIS

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PROJECT NARRATIVE

Project: PUMA TERMIANL MW-SAMPLING

Pace Project No.: 2047713

Method: EPA 8015/8021

Description: 8021 GCV BTEX, MTBE, GRO

Client: BBL Caribe / Arcadis PR

Date: January 12, 2017

General Information:

18 samples were analyzed for EPA 8015/8021. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:

The samples were analyzed within the method required hold times with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):

All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:

All criteria were within method requirements with any exceptions noted below.

Surrogates:

All surrogates were within QC limits with any exceptions noted below.

Method Blank:

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

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PROJECT NARRATIVE

Project: PUMA TERMIANL MW-SAMPLING

Pace Project No.: 2047713

Method: EPA 6020

Description: 6020 MET ICPMS

Client: BBL Caribe / Arcadis PR

Date: January 12, 2017

General Information:

14 samples were analyzed for EPA 6020. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:

The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:

The samples were prepared in accordance with EPA 3010 with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):

All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:

All criteria were within method requirements with any exceptions noted below.

Internal Standards:

All internal standards were within QC limits with any exceptions noted below.

Method Blank:

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

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PROJECT NARRATIVE

Project: PUMA TERMIANL MW-SAMPLING

Pace Project No.: 2047713

Method: EPA 6020

Description: 6020 MET ICPMS, Dissolved (LF)

Client: BBL Caribe / Arcadis PR

Date: January 12, 2017

General Information:

14 samples were analyzed for EPA 6020. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:

The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:

The samples were prepared in accordance with EPA 3005A with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):

All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:

All criteria were within method requirements with any exceptions noted below.

Internal Standards:

All internal standards were within QC limits with any exceptions noted below.

Method Blank:

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

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PROJECT NARRATIVE

Project: PUMA TERMIANL MW-SAMPLING

Pace Project No.: 2047713

Method: EPA 7470

Description: 7470 Mercury

Client: BBL Caribe / Arcadis PR

Date: January 12, 2017

General Information:

14 samples were analyzed for EPA 7470. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:

The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:

The samples were prepared in accordance with EPA 7470 with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):

All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:

All criteria were within method requirements with any exceptions noted below.

Method Blank:

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

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PROJECT NARRATIVE

Project: PUMA TERMIANL MW-SAMPLING

Pace Project No.: 2047713

Method: EPA 7470

Description: 7470 Mercury, Dissolved (LF)

Client: BBL Caribe / Arcadis PR

Date: January 12, 2017

General Information:

14 samples were analyzed for EPA 7470. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:

The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:

The samples were prepared in accordance with EPA 7470 with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):

All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:

All criteria were within method requirements with any exceptions noted below.

Method Blank:

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

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PROJECT NARRATIVE

Project: PUMA TERMIANL MW-SAMPLING

Pace Project No.: 2047713

Method: EPA 8270 by SIM

Description: 8270 MSSV PAH by SIM SEP

Client: BBL Caribe / Arcadis PR

Date: January 12, 2017

General Information:

14 samples were analyzed for EPA 8270 by SIM. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:

The samples were analyzed within the method required hold times with any exceptions noted below.

H2: Extraction or preparation conducted outside EPA method holding time.

- DUP001 (Lab ID: 2047713018)
- MW-57A (Lab ID: 2047713015)
- MW-AD-01 (Lab ID: 2047713014)
- MW-AD-03 (Lab ID: 2047713016)

Sample Preparation:

The samples were prepared in accordance with EPA 3510 with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):

All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:

All criteria were within method requirements with any exceptions noted below.

Internal Standards:

All internal standards were within QC limits with any exceptions noted below.

Surrogates:

All surrogates were within QC limits with any exceptions noted below.

Method Blank:

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

QC Batch: 70811

A matrix spike/matrix spike duplicate was not performed due to insufficient sample volume.

QC Batch: 70840

A matrix spike/matrix spike duplicate was not performed due to insufficient sample volume.

QC Batch: 71324

A matrix spike/matrix spike duplicate was not performed due to insufficient sample volume.

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PROJECT NARRATIVE

Project: PUMA TERMIANL MW-SAMPLING

Pace Project No.: 2047713

Method: EPA 8270 by SIM

Description: 8270 MSSV PAH by SIM SEP

Client: BBL Caribe / Arcadis PR

Date: January 12, 2017

Additional Comments:

REPORT OF LABORATORY ANALYSIS

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PROJECT NARRATIVE

Project: PUMA TERMIANL MW-SAMPLING

Pace Project No.: 2047713

Method: EPA 5030B/8260

Description: 8260 MSV Low Level

Client: BBL Caribe / Arcadis PR

Date: January 12, 2017

General Information:

18 samples were analyzed for EPA 5030B/8260. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:

The samples were analyzed within the method required hold times with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):

All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:

All criteria were within method requirements with any exceptions noted below.

Internal Standards:

All internal standards were within QC limits with any exceptions noted below.

Surrogates:

All surrogates were within QC limits with any exceptions noted below.

Method Blank:

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

QC Batch: 70852

L0: Analyte recovery in the laboratory control sample (LCS) was outside QC limits.

- LCS (Lab ID: 296511)
- Carbon disulfide

Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

QC Batch: 70852

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 2047713003

M0: Matrix spike recovery and/or matrix spike duplicate recovery was outside laboratory control limits.

- MS (Lab ID: 296587)
 - Carbon disulfide
- MSD (Lab ID: 296588)
 - Carbon disulfide

Additional Comments:

This data package has been reviewed for quality and completeness and is approved for release.

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: PUMA TERMIANL MW-SAMPLING

Pace Project No.: 2047713

Sample: TB-121916	Lab ID: 2047713001	Collected: 12/19/16 00:00	Received: 12/20/16 16:15	Matrix: Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8021 GCV BTEX, MTBE, GRO	Analytical Method: EPA 8015/8021							
Gasoline Range Organics	ND	ug/L	50.0	1		12/29/16 02:34		
Surrogates								
4-Bromofluorobenzene (S)	92	%	44-148	1		12/29/16 02:34	460-00-4	
8260 MSV Low Level	Analytical Method: EPA 5030B/8260							
Acetone	43.2	ug/L	4.0	1		12/27/16 12:17	67-64-1	
Benzene	ND	ug/L	0.50	1		12/27/16 12:17	71-43-2	
Bromodichloromethane	ND	ug/L	0.50	1		12/27/16 12:17	75-27-4	
Bromoform	ND	ug/L	0.50	1		12/27/16 12:17	75-25-2	
Bromomethane	ND	ug/L	0.50	1		12/27/16 12:17	74-83-9	
2-Butanone (MEK)	ND	ug/L	2.0	1		12/27/16 12:17	78-93-3	
Carbon disulfide	ND	ug/L	1.0	1		12/27/16 12:17	75-15-0	L3
Carbon tetrachloride	ND	ug/L	0.50	1		12/27/16 12:17	56-23-5	
Chlorobenzene	ND	ug/L	0.50	1		12/27/16 12:17	108-90-7	
Chloroethane	ND	ug/L	0.50	1		12/27/16 12:17	75-00-3	
Chloroform	ND	ug/L	0.50	1		12/27/16 12:17	67-66-3	
Chloromethane	ND	ug/L	0.50	1		12/27/16 12:17	74-87-3	
1,2-Dibromo-3-chloropropane	ND	ug/L	0.20	1		12/27/16 12:17	96-12-8	
Dibromochloromethane	ND	ug/L	0.50	1		12/27/16 12:17	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	1		12/27/16 12:17	106-93-4	
Dichlorodifluoromethane	ND	ug/L	1.0	1		12/27/16 12:17	75-71-8	
1,1-Dichloroethane	ND	ug/L	0.50	1		12/27/16 12:17	75-34-3	
1,2-Dichloroethane	ND	ug/L	0.50	1		12/27/16 12:17	107-06-2	
1,1-Dichloroethene	ND	ug/L	0.50	1		12/27/16 12:17	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	1		12/27/16 12:17	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	0.50	1		12/27/16 12:17	156-60-5	
1,2-Dichloropropane	ND	ug/L	0.50	1		12/27/16 12:17	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	0.50	1		12/27/16 12:17	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	0.50	1		12/27/16 12:17	10061-02-6	
Ethylbenzene	ND	ug/L	0.50	1		12/27/16 12:17	100-41-4	
2-Hexanone	ND	ug/L	1.0	1		12/27/16 12:17	591-78-6	
Isopropylbenzene (Cumene)	ND	ug/L	1.0	1		12/27/16 12:17	98-82-8	
Methyl acetate	ND	ug/L	2.0	1		12/27/16 12:17	79-20-9	
Methylene Chloride	ND	ug/L	0.50	1		12/27/16 12:17	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	1.0	1		12/27/16 12:17	108-10-1	
Methyl-tert-butyl ether	ND	ug/L	0.50	1		12/27/16 12:17	1634-04-4	
Styrene	ND	ug/L	1.0	1		12/27/16 12:17	100-42-5	
1,1,2,2-Tetrachloroethane	ND	ug/L	0.50	1		12/27/16 12:17	79-34-5	
Tetrachloroethene	ND	ug/L	0.50	1		12/27/16 12:17	127-18-4	
Toluene	ND	ug/L	0.50	1		12/27/16 12:17	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	0.50	1		12/27/16 12:17	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	0.50	1		12/27/16 12:17	79-00-5	
Trichloroethene	ND	ug/L	0.50	1		12/27/16 12:17	79-01-6	
Trichlorofluoromethane	ND	ug/L	0.50	1		12/27/16 12:17	75-69-4	
Vinyl chloride	ND	ug/L	0.50	1		12/27/16 12:17	75-01-4	
m&p-Xylene	ND	ug/L	2.0	1		12/27/16 12:17	179601-23-1	
o-Xylene	ND	ug/L	1.0	1		12/27/16 12:17	95-47-6	

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ANALYTICAL RESULTS

Project: PUMA TERMIANL MW-SAMPLING

Pace Project No.: 2047713

Sample: TB-121916	Lab ID: 2047713001	Collected: 12/19/16 00:00	Received: 12/20/16 16:15	Matrix: Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV Low Level		Analytical Method: EPA 5030B/8260						
Surrogates								
Dibromofluoromethane (S)	111	%.	72-126	1		12/27/16 12:17	1868-53-7	
4-Bromofluorobenzene (S)	100	%.	68-124	1		12/27/16 12:17	460-00-4	
Toluene-d8 (S)	101	%.	79-119	1		12/27/16 12:17	2037-26-5	
Sample: EB-121916		Lab ID: 2047713002		Collected: 12/19/16 09:58	Received: 12/20/16 16:15	Matrix: Water		
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8015M DRO/ORO Organics		Analytical Method: EPA 8015B Modified Preparation Method: EPA 3535						
Diesel Range Organic (C10-C28)	ND	mg/L	0.50	1	12/27/16 11:20	01/04/17 12:16		H2
Oil Range Organics (>C28-C40)	ND	mg/L	1.0	1	12/27/16 11:20	01/04/17 12:16		H2
Surrogates								
n-Pentacosane (S)	38	%.	16-137	1	12/27/16 11:20	01/04/17 12:16	629-99-2	
o-Terphenyl (S)	51	%.	10-121	1	12/27/16 11:20	01/04/17 12:16	84-15-1	
8021 GCV BTEX, MTBE, GRO		Analytical Method: EPA 8015/8021						
Gasoline Range Organics	ND	ug/L	50.0	1		12/29/16 03:01		
Surrogates								
4-Bromofluorobenzene (S)	92	%.	44-148	1		12/29/16 03:01	460-00-4	
6020 MET ICPMS		Analytical Method: EPA 6020 Preparation Method: EPA 3010						
Arsenic	ND	mg/L	0.0010	1	12/27/16 07:44	01/03/17 14:07	7440-38-2	
Chromium	ND	mg/L	0.0010	1	12/27/16 07:44	01/03/17 14:07	7440-47-3	
Lead	ND	mg/L	0.0010	1	12/27/16 07:44	01/03/17 14:07	7439-92-1	
Vanadium	ND	mg/L	0.0050	1	12/27/16 07:44	01/03/17 14:07	7440-62-2	
6020 MET ICPMS, Dissolved (LF)		Analytical Method: EPA 6020 Preparation Method: EPA 3005A						
Arsenic, Dissolved	ND	ug/L	1.0	1	12/30/16 06:50	01/03/17 16:24	7440-38-2	
Chromium, Dissolved	ND	ug/L	1.0	1	12/30/16 06:50	01/03/17 16:24	7440-47-3	
Lead, Dissolved	ND	ug/L	1.0	1	12/30/16 06:50	01/03/17 16:24	7439-92-1	
Vanadium, Dissolved	ND	ug/L	5.0	1	12/30/16 06:50	01/03/17 16:24	7440-62-2	
7470 Mercury		Analytical Method: EPA 7470 Preparation Method: EPA 7470						
Mercury	ND	ug/L	0.20	1	12/29/16 09:57	12/29/16 17:20	7439-97-6	
7470 Mercury, Dissolved (LF)		Analytical Method: EPA 7470 Preparation Method: EPA 7470						
Mercury, Dissolved	ND	ug/L	0.20	1	12/29/16 11:58	12/29/16 18:48	7439-97-6	
8270 MSSV PAH by SIM SEP		Analytical Method: EPA 8270 by SIM Preparation Method: EPA 3510						
Acenaphthene	ND	ug/L	0.10	1	12/24/16 11:23	12/30/16 20:12	83-32-9	
Acenaphthylene	ND	ug/L	0.10	1	12/24/16 11:23	12/30/16 20:12	208-96-8	
Anthracene	ND	ug/L	0.10	1	12/24/16 11:23	12/30/16 20:12	120-12-7	
Benzo(a)anthracene	ND	ug/L	0.10	1	12/24/16 11:23	12/30/16 20:12	56-55-3	
Benzo(a)pyrene	ND	ug/L	0.10	1	12/24/16 11:23	12/30/16 20:12	50-32-8	

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ANALYTICAL RESULTS

Project: PUMA TERMIANL MW-SAMPLING

Sample Project No.: 2047713

Sample: EB-121916	Lab ID: 2047713002	Collected: 12/19/16 09:58	Received: 12/20/16 16:15	Matrix: Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8270 MSSV PAH by SIM SEP		Analytical Method: EPA 8270 by SIM Preparation Method: EPA 3510						
Benzo(b)fluoranthene	ND	ug/L	0.10	1	12/24/16 11:23	12/30/16 20:12	205-99-2	
Benzo(g,h,i)perylene	ND	ug/L	0.10	1	12/24/16 11:23	12/30/16 20:12	191-24-2	
Benzo(k)fluoranthene	ND	ug/L	0.10	1	12/24/16 11:23	12/30/16 20:12	207-08-9	
Chrysene	ND	ug/L	0.10	1	12/24/16 11:23	12/30/16 20:12	218-01-9	
Dibenz(a,h)anthracene	ND	ug/L	0.10	1	12/24/16 11:23	12/30/16 20:12	53-70-3	
Fluoranthene	ND	ug/L	0.10	1	12/24/16 11:23	12/30/16 20:12	206-44-0	
Fluorene	ND	ug/L	0.10	1	12/24/16 11:23	12/30/16 20:12	86-73-7	
Indeno(1,2,3-cd)pyrene	ND	ug/L	0.10	1	12/24/16 11:23	12/30/16 20:12	193-39-5	
2-Methylnaphthalene	ND	ug/L	0.10	1	12/24/16 11:23	12/30/16 20:12	91-57-6	
Naphthalene	ND	ug/L	0.10	1	12/24/16 11:23	12/30/16 20:12	91-20-3	
Phenanthrene	ND	ug/L	0.10	1	12/24/16 11:23	12/30/16 20:12	85-01-8	
Pyrene	ND	ug/L	0.10	1	12/24/16 11:23	12/30/16 20:12	129-00-0	
Surrogates								
2-Fluorobiphenyl (S)	84	%	25-150	1	12/24/16 11:23	12/30/16 20:12	321-60-8	
Terphenyl-d14 (S)	92	%	25-150	1	12/24/16 11:23	12/30/16 20:12	1718-51-0	
8260 MSV Low Level		Analytical Method: EPA 5030B/8260						
Acetone	79.9	ug/L	4.0	1		12/27/16 12:35	67-64-1	
Benzene	ND	ug/L	0.50	1		12/27/16 12:35	71-43-2	
Bromodichloromethane	ND	ug/L	0.50	1		12/27/16 12:35	75-27-4	
Bromoform	ND	ug/L	0.50	1		12/27/16 12:35	75-25-2	
Bromomethane	ND	ug/L	0.50	1		12/27/16 12:35	74-83-9	
2-Butanone (MEK)	ND	ug/L	2.0	1		12/27/16 12:35	78-93-3	
Carbon disulfide	ND	ug/L	1.0	1		12/27/16 12:35	75-15-0	L3
Carbon tetrachloride	ND	ug/L	0.50	1		12/27/16 12:35	56-23-5	
Chlorobenzene	ND	ug/L	0.50	1		12/27/16 12:35	108-90-7	
Chloroethane	ND	ug/L	0.50	1		12/27/16 12:35	75-00-3	
Chloroform	ND	ug/L	0.50	1		12/27/16 12:35	67-66-3	
Chloromethane	ND	ug/L	0.50	1		12/27/16 12:35	74-87-3	
1,2-Dibromo-3-chloropropane	ND	ug/L	0.20	1		12/27/16 12:35	96-12-8	
Dibromochloromethane	ND	ug/L	0.50	1		12/27/16 12:35	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	1		12/27/16 12:35	106-93-4	
Dichlorodifluoromethane	ND	ug/L	1.0	1		12/27/16 12:35	75-71-8	
1,1-Dichloroethane	ND	ug/L	0.50	1		12/27/16 12:35	75-34-3	
1,2-Dichloroethane	ND	ug/L	0.50	1		12/27/16 12:35	107-06-2	
1,1-Dichloroethene	ND	ug/L	0.50	1		12/27/16 12:35	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	1		12/27/16 12:35	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	0.50	1		12/27/16 12:35	156-60-5	
1,2-Dichloropropane	ND	ug/L	0.50	1		12/27/16 12:35	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	0.50	1		12/27/16 12:35	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	0.50	1		12/27/16 12:35	10061-02-6	
Ethylbenzene	ND	ug/L	0.50	1		12/27/16 12:35	100-41-4	
2-Hexanone	ND	ug/L	1.0	1		12/27/16 12:35	591-78-6	
Isopropylbenzene (Cumene)	ND	ug/L	1.0	1		12/27/16 12:35	98-82-8	
Methyl acetate	ND	ug/L	2.0	1		12/27/16 12:35	79-20-9	
Methylene Chloride	ND	ug/L	0.50	1		12/27/16 12:35	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	1.0	1		12/27/16 12:35	108-10-1	

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ANALYTICAL RESULTS

Project: PUMA TERMIANL MW-SAMPLING

Sample Project No.: 2047713

Sample: EB-121916	Lab ID: 2047713002	Collected: 12/19/16 09:58	Received: 12/20/16 16:15	Matrix: Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV Low Level		Analytical Method: EPA 5030B/8260						
Methyl-tert-butyl ether	ND	ug/L	0.50	1		12/27/16 12:35	1634-04-4	
Styrene	ND	ug/L	1.0	1		12/27/16 12:35	100-42-5	
1,1,2,2-Tetrachloroethane	ND	ug/L	0.50	1		12/27/16 12:35	79-34-5	
Tetrachloroethene	ND	ug/L	0.50	1		12/27/16 12:35	127-18-4	
Toluene	ND	ug/L	0.50	1		12/27/16 12:35	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	0.50	1		12/27/16 12:35	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	0.50	1		12/27/16 12:35	79-00-5	
Trichloroethene	ND	ug/L	0.50	1		12/27/16 12:35	79-01-6	
Trichlorofluoromethane	ND	ug/L	0.50	1		12/27/16 12:35	75-69-4	
Vinyl chloride	ND	ug/L	0.50	1		12/27/16 12:35	75-01-4	
m&p-Xylene	ND	ug/L	2.0	1		12/27/16 12:35	179601-23-1	
o-Xylene	ND	ug/L	1.0	1		12/27/16 12:35	95-47-6	
Surrogates								
Dibromofluoromethane (S)	111	%	72-126	1		12/27/16 12:35	1868-53-7	
4-Bromofluorobenzene (S)	98	%	68-124	1		12/27/16 12:35	460-00-4	
Toluene-d8 (S)	102	%	79-119	1		12/27/16 12:35	2037-26-5	
<hr/>								
Sample: MW-P120	Lab ID: 2047713003	Collected: 12/19/16 11:10	Received: 12/20/16 16:15	Matrix: Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8015M DRO/ORO Organics		Analytical Method: EPA 8015B Modified Preparation Method: EPA 3535						
Diesel Range Organic (C10-C28)	ND	mg/L	0.50	1	12/27/16 11:20	01/04/17 12:45		H2
Oil Range Organics (>C28-C40)	ND	mg/L	1.0	1	12/27/16 11:20	01/04/17 12:45		H2
Surrogates								
n-Pentacosane (S)	30	%	16-137	1	12/27/16 11:20	01/04/17 12:45	629-99-2	
o-Terphenyl (S)	40	%	10-121	1	12/27/16 11:20	01/04/17 12:45	84-15-1	
8021 GCV BTEX, MTBE, GRO		Analytical Method: EPA 8015/8021						
Gasoline Range Organics	ND	ug/L	50.0	1		12/29/16 03:27		
Surrogates								
4-Bromofluorobenzene (S)	91	%	44-148	1		12/29/16 03:27	460-00-4	
6020 MET ICPMS		Analytical Method: EPA 6020 Preparation Method: EPA 3010						
Arsenic	ND	mg/L	0.0010	1	12/27/16 07:44	01/03/17 14:11	7440-38-2	
Chromium	ND	mg/L	0.0010	1	12/27/16 07:44	01/03/17 14:11	7440-47-3	
Lead	ND	mg/L	0.0010	1	12/27/16 07:44	01/03/17 14:11	7439-92-1	
Vanadium	ND	mg/L	0.0050	1	12/27/16 07:44	01/03/17 14:11	7440-62-2	
6020 MET ICPMS, Dissolved (LF)		Analytical Method: EPA 6020 Preparation Method: EPA 3005A						
Arsenic, Dissolved	ND	ug/L	1.0	1	12/30/16 06:50	01/03/17 16:28	7440-38-2	
Chromium, Dissolved	ND	ug/L	1.0	1	12/30/16 06:50	01/03/17 16:28	7440-47-3	
Lead, Dissolved	ND	ug/L	1.0	1	12/30/16 06:50	01/03/17 16:28	7439-92-1	
Vanadium, Dissolved	ND	ug/L	5.0	1	12/30/16 06:50	01/03/17 16:28	7440-62-2	

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ANALYTICAL RESULTS

Project: PUMA TERMIANL MW-SAMPLING

Pace Project No.: 2047713

Sample: MW-P120	Lab ID: 2047713003	Collected: 12/19/16 11:10	Received: 12/20/16 16:15	Matrix: Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
7470 Mercury Analytical Method: EPA 7470 Preparation Method: EPA 7470								
Mercury	ND	ug/L	0.20	1	12/29/16 09:57	12/29/16 17:26	7439-97-6	
7470 Mercury, Dissolved (LF) Analytical Method: EPA 7470 Preparation Method: EPA 7470								
Mercury, Dissolved	ND	ug/L	0.20	1	12/29/16 11:58	12/29/16 18:59	7439-97-6	
8270 MSSV PAH by SIM SEP Analytical Method: EPA 8270 by SIM Preparation Method: EPA 3510								
Acenaphthene	ND	ug/L	0.10	1	12/24/16 11:23	12/30/16 20:32	83-32-9	
Acenaphthylene	ND	ug/L	0.10	1	12/24/16 11:23	12/30/16 20:32	208-96-8	
Anthracene	ND	ug/L	0.10	1	12/24/16 11:23	12/30/16 20:32	120-12-7	
Benzo(a)anthracene	ND	ug/L	0.10	1	12/24/16 11:23	12/30/16 20:32	56-55-3	
Benzo(a)pyrene	ND	ug/L	0.10	1	12/24/16 11:23	12/30/16 20:32	50-32-8	
Benzo(b)fluoranthene	ND	ug/L	0.10	1	12/24/16 11:23	12/30/16 20:32	205-99-2	
Benzo(g,h,i)perylene	ND	ug/L	0.10	1	12/24/16 11:23	12/30/16 20:32	191-24-2	
Benzo(k)fluoranthene	ND	ug/L	0.10	1	12/24/16 11:23	12/30/16 20:32	207-08-9	
Chrysene	ND	ug/L	0.10	1	12/24/16 11:23	12/30/16 20:32	218-01-9	
Dibenz(a,h)anthracene	ND	ug/L	0.10	1	12/24/16 11:23	12/30/16 20:32	53-70-3	
Fluoranthene	ND	ug/L	0.10	1	12/24/16 11:23	12/30/16 20:32	206-44-0	
Fluorene	ND	ug/L	0.10	1	12/24/16 11:23	12/30/16 20:32	86-73-7	
Indeno(1,2,3-cd)pyrene	ND	ug/L	0.10	1	12/24/16 11:23	12/30/16 20:32	193-39-5	
2-Methylnaphthalene	ND	ug/L	0.10	1	12/24/16 11:23	12/30/16 20:32	91-57-6	
Naphthalene	ND	ug/L	0.10	1	12/24/16 11:23	12/30/16 20:32	91-20-3	
Phenanthrene	ND	ug/L	0.10	1	12/24/16 11:23	12/30/16 20:32	85-01-8	
Pyrene	ND	ug/L	0.10	1	12/24/16 11:23	12/30/16 20:32	129-00-0	
Surrogates								
2-Fluorobiphenyl (S)	60	%	25-150	1	12/24/16 11:23	12/30/16 20:32	321-60-8	
Terphenyl-d14 (S)	73	%	25-150	1	12/24/16 11:23	12/30/16 20:32	1718-51-0	
8260 MSV Low Level Analytical Method: EPA 5030B/8260								
Acetone	15.1	ug/L	4.0	1		12/27/16 11:59	67-64-1	
Benzene	ND	ug/L	0.50	1		12/27/16 11:59	71-43-2	
Bromodichloromethane	ND	ug/L	0.50	1		12/27/16 11:59	75-27-4	
Bromoform	ND	ug/L	0.50	1		12/27/16 11:59	75-25-2	
Bromomethane	ND	ug/L	0.50	1		12/27/16 11:59	74-83-9	
2-Butanone (MEK)	ND	ug/L	2.0	1		12/27/16 11:59	78-93-3	
Carbon disulfide	ND	ug/L	1.0	1		12/27/16 11:59	75-15-0	L3,M0
Carbon tetrachloride	ND	ug/L	0.50	1		12/27/16 11:59	56-23-5	
Chlorobenzene	ND	ug/L	0.50	1		12/27/16 11:59	108-90-7	
Chloroethane	ND	ug/L	0.50	1		12/27/16 11:59	75-00-3	
Chloroform	ND	ug/L	0.50	1		12/27/16 11:59	67-66-3	
Chloromethane	ND	ug/L	0.50	1		12/27/16 11:59	74-87-3	
1,2-Dibromo-3-chloropropane	ND	ug/L	0.20	1		12/27/16 11:59	96-12-8	
Dibromochloromethane	ND	ug/L	0.50	1		12/27/16 11:59	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	1		12/27/16 11:59	106-93-4	
Dichlorodifluoromethane	ND	ug/L	1.0	1		12/27/16 11:59	75-71-8	
1,1-Dichloroethane	ND	ug/L	0.50	1		12/27/16 11:59	75-34-3	
1,2-Dichloroethane	ND	ug/L	0.50	1		12/27/16 11:59	107-06-2	

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ANALYTICAL RESULTS

Project: PUMA TERMIANL MW-SAMPLING

Pace Project No.: 2047713

Sample: MW-P120		Lab ID: 2047713003		Collected: 12/19/16 11:10	Received: 12/20/16 16:15	Matrix: Water		
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV Low Level		Analytical Method: EPA 5030B/8260						
1,1-Dichloroethene	ND	ug/L	0.50	1		12/27/16 11:59	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	1		12/27/16 11:59	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	0.50	1		12/27/16 11:59	156-60-5	
1,2-Dichloropropane	ND	ug/L	0.50	1		12/27/16 11:59	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	0.50	1		12/27/16 11:59	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	0.50	1		12/27/16 11:59	10061-02-6	
Ethylbenzene	ND	ug/L	0.50	1		12/27/16 11:59	100-41-4	
2-Hexanone	ND	ug/L	1.0	1		12/27/16 11:59	591-78-6	
Isopropylbenzene (Cumene)	ND	ug/L	1.0	1		12/27/16 11:59	98-82-8	
Methyl acetate	ND	ug/L	2.0	1		12/27/16 11:59	79-20-9	
Methylene Chloride	ND	ug/L	0.50	1		12/27/16 11:59	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	1.0	1		12/27/16 11:59	108-10-1	
Methyl-tert-butyl ether	ND	ug/L	0.50	1		12/27/16 11:59	1634-04-4	
Styrene	ND	ug/L	1.0	1		12/27/16 11:59	100-42-5	
1,1,2,2-Tetrachloroethane	ND	ug/L	0.50	1		12/27/16 11:59	79-34-5	
Tetrachloroethene	ND	ug/L	0.50	1		12/27/16 11:59	127-18-4	
Toluene	ND	ug/L	0.50	1		12/27/16 11:59	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	0.50	1		12/27/16 11:59	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	0.50	1		12/27/16 11:59	79-00-5	
Trichloroethene	ND	ug/L	0.50	1		12/27/16 11:59	79-01-6	
Trichlorofluoromethane	ND	ug/L	0.50	1		12/27/16 11:59	75-69-4	
Vinyl chloride	ND	ug/L	0.50	1		12/27/16 11:59	75-01-4	
m&p-Xylene	ND	ug/L	2.0	1		12/27/16 11:59	179601-23-1	
o-Xylene	ND	ug/L	1.0	1		12/27/16 11:59	95-47-6	
Surrogates								
Dibromofluoromethane (S)	109	%.	72-126	1		12/27/16 11:59	1868-53-7	
4-Bromofluorobenzene (S)	97	%.	68-124	1		12/27/16 11:59	460-00-4	
Toluene-d8 (S)	100	%.	79-119	1		12/27/16 11:59	2037-26-5	

Sample: MW-P122		Lab ID: 2047713004		Collected: 12/19/16 12:08	Received: 12/20/16 16:15	Matrix: Water		
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8015M DRO/ORO Organics		Analytical Method: EPA 8015B Modified Preparation Method: EPA 3535						
Diesel Range Organic (C10-C28)	ND	mg/L	0.50	1	12/27/16 11:20	01/04/17 13:13		H2
Oil Range Organics (>C28-C40)	ND	mg/L	1.0	1	12/27/16 11:20	01/04/17 13:13		H2
Surrogates								
n-Pentacosane (S)	46	%.	16-137	1	12/27/16 11:20	01/04/17 13:13	629-99-2	
o-Terphenyl (S)	48	%.	10-121	1	12/27/16 11:20	01/04/17 13:13	84-15-1	
8021 GCV BTEX, MTBE, GRO		Analytical Method: EPA 8015/8021						
Gasoline Range Organics	ND	ug/L	50.0	1		12/29/16 03:53		
Surrogates								
4-Bromofluorobenzene (S)	92	%.	44-148	1		12/29/16 03:53	460-00-4	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: PUMA TERMIANL MW-SAMPLING

Pace Project No.: 2047713

Sample: MW-P122	Lab ID: 2047713004	Collected: 12/19/16 12:08	Received: 12/20/16 16:15	Matrix: Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
6020 MET ICPMS								
Analytical Method: EPA 6020 Preparation Method: EPA 3010								
Arsenic	ND	mg/L	0.0010	1	12/27/16 07:44	01/03/17 14:15	7440-38-2	
Chromium	ND	mg/L	0.0010	1	12/27/16 07:44	01/03/17 14:15	7440-47-3	
Lead	ND	mg/L	0.0010	1	12/27/16 07:44	01/03/17 14:15	7439-92-1	
Vanadium	ND	mg/L	0.0050	1	12/27/16 07:44	01/03/17 14:15	7440-62-2	
6020 MET ICPMS, Dissolved (LF)								
Analytical Method: EPA 6020 Preparation Method: EPA 3005A								
Arsenic, Dissolved	ND	ug/L	1.0	1	12/30/16 06:50	01/03/17 16:32	7440-38-2	
Chromium, Dissolved	ND	ug/L	1.0	1	12/30/16 06:50	01/03/17 16:32	7440-47-3	
Lead, Dissolved	ND	ug/L	1.0	1	12/30/16 06:50	01/03/17 16:32	7439-92-1	
Vanadium, Dissolved	ND	ug/L	5.0	1	12/30/16 06:50	01/03/17 16:32	7440-62-2	
7470 Mercury								
Analytical Method: EPA 7470 Preparation Method: EPA 7470								
Mercury	ND	ug/L	0.20	1	12/29/16 09:57	12/29/16 17:28	7439-97-6	
7470 Mercury, Dissolved (LF)								
Analytical Method: EPA 7470 Preparation Method: EPA 7470								
Mercury, Dissolved	ND	ug/L	0.20	1	12/29/16 11:58	12/29/16 19:01	7439-97-6	
8270 MSSV PAH by SIM SEP								
Analytical Method: EPA 8270 by SIM Preparation Method: EPA 3510								
Acenaphthene	ND	ug/L	0.10	1	12/24/16 11:23	12/30/16 20:52	83-32-9	
Acenaphthylene	ND	ug/L	0.10	1	12/24/16 11:23	12/30/16 20:52	208-96-8	
Anthracene	ND	ug/L	0.10	1	12/24/16 11:23	12/30/16 20:52	120-12-7	
Benzo(a)anthracene	ND	ug/L	0.10	1	12/24/16 11:23	12/30/16 20:52	56-55-3	
Benzo(a)pyrene	ND	ug/L	0.10	1	12/24/16 11:23	12/30/16 20:52	50-32-8	
Benzo(b)fluoranthene	ND	ug/L	0.10	1	12/24/16 11:23	12/30/16 20:52	205-99-2	
Benzo(g,h,i)perylene	ND	ug/L	0.10	1	12/24/16 11:23	12/30/16 20:52	191-24-2	
Benzo(k)fluoranthene	ND	ug/L	0.10	1	12/24/16 11:23	12/30/16 20:52	207-08-9	
Chrysene	ND	ug/L	0.10	1	12/24/16 11:23	12/30/16 20:52	218-01-9	
Dibenz(a,h)anthracene	ND	ug/L	0.10	1	12/24/16 11:23	12/30/16 20:52	53-70-3	
Fluoranthene	ND	ug/L	0.10	1	12/24/16 11:23	12/30/16 20:52	206-44-0	
Fluorene	ND	ug/L	0.10	1	12/24/16 11:23	12/30/16 20:52	86-73-7	
Indeno(1,2,3-cd)pyrene	ND	ug/L	0.10	1	12/24/16 11:23	12/30/16 20:52	193-39-5	
2-Methylnaphthalene	ND	ug/L	0.10	1	12/24/16 11:23	12/30/16 20:52	91-57-6	
Naphthalene	ND	ug/L	0.10	1	12/24/16 11:23	12/30/16 20:52	91-20-3	
Phenanthrene	ND	ug/L	0.10	1	12/24/16 11:23	12/30/16 20:52	85-01-8	
Pyrene	ND	ug/L	0.10	1	12/24/16 11:23	12/30/16 20:52	129-00-0	
Surrogates								
2-Fluorobiphenyl (S)	68	%	25-150	1	12/24/16 11:23	12/30/16 20:52	321-60-8	
Terphenyl-d14 (S)	87	%	25-150	1	12/24/16 11:23	12/30/16 20:52	1718-51-0	
8260 MSV Low Level								
Analytical Method: EPA 5030B/8260								
Acetone	13.6	ug/L	4.0	1		12/27/16 12:53	67-64-1	
Benzene	ND	ug/L	0.50	1		12/27/16 12:53	71-43-2	
Bromodichloromethane	ND	ug/L	0.50	1		12/27/16 12:53	75-27-4	
Bromoform	ND	ug/L	0.50	1		12/27/16 12:53	75-25-2	
Bromomethane	ND	ug/L	0.50	1		12/27/16 12:53	74-83-9	
2-Butanone (MEK)	ND	ug/L	2.0	1		12/27/16 12:53	78-93-3	

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ANALYTICAL RESULTS

Project: PUMA TERMIANL MW-SAMPLING

Pace Project No.: 2047713

Sample: MW-P122	Lab ID: 2047713004	Collected: 12/19/16 12:08	Received: 12/20/16 16:15	Matrix: Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV Low Level	Analytical Method: EPA 5030B/8260							
Carbon disulfide	ND	ug/L	1.0	1		12/27/16 12:53	75-15-0	L3
Carbon tetrachloride	ND	ug/L	0.50	1		12/27/16 12:53	56-23-5	
Chlorobenzene	ND	ug/L	0.50	1		12/27/16 12:53	108-90-7	
Chloroethane	ND	ug/L	0.50	1		12/27/16 12:53	75-00-3	
Chloroform	ND	ug/L	0.50	1		12/27/16 12:53	67-66-3	
Chloromethane	ND	ug/L	0.50	1		12/27/16 12:53	74-87-3	
1,2-Dibromo-3-chloropropane	ND	ug/L	0.20	1		12/27/16 12:53	96-12-8	
Dibromochloromethane	ND	ug/L	0.50	1		12/27/16 12:53	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	1		12/27/16 12:53	106-93-4	
Dichlorodifluoromethane	ND	ug/L	1.0	1		12/27/16 12:53	75-71-8	
1,1-Dichloroethane	ND	ug/L	0.50	1		12/27/16 12:53	75-34-3	
1,2-Dichloroethane	ND	ug/L	0.50	1		12/27/16 12:53	107-06-2	
1,1-Dichloroethene	ND	ug/L	0.50	1		12/27/16 12:53	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	1		12/27/16 12:53	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	0.50	1		12/27/16 12:53	156-60-5	
1,2-Dichloropropane	ND	ug/L	0.50	1		12/27/16 12:53	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	0.50	1		12/27/16 12:53	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	0.50	1		12/27/16 12:53	10061-02-6	
Ethylbenzene	ND	ug/L	0.50	1		12/27/16 12:53	100-41-4	
2-Hexanone	ND	ug/L	1.0	1		12/27/16 12:53	591-78-6	
Isopropylbenzene (Cumene)	ND	ug/L	1.0	1		12/27/16 12:53	98-82-8	
Methyl acetate	ND	ug/L	2.0	1		12/27/16 12:53	79-20-9	
Methylene Chloride	ND	ug/L	0.50	1		12/27/16 12:53	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	1.0	1		12/27/16 12:53	108-10-1	
Methyl-tert-butyl ether	ND	ug/L	0.50	1		12/27/16 12:53	1634-04-4	
Styrene	ND	ug/L	1.0	1		12/27/16 12:53	100-42-5	
1,1,2,2-Tetrachloroethane	ND	ug/L	0.50	1		12/27/16 12:53	79-34-5	
Tetrachloroethene	ND	ug/L	0.50	1		12/27/16 12:53	127-18-4	
Toluene	ND	ug/L	0.50	1		12/27/16 12:53	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	0.50	1		12/27/16 12:53	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	0.50	1		12/27/16 12:53	79-00-5	
Trichloroethene	ND	ug/L	0.50	1		12/27/16 12:53	79-01-6	
Trichlorofluoromethane	ND	ug/L	0.50	1		12/27/16 12:53	75-69-4	
Vinyl chloride	ND	ug/L	0.50	1		12/27/16 12:53	75-01-4	
m&p-Xylene	ND	ug/L	2.0	1		12/27/16 12:53	179601-23-1	
o-Xylene	ND	ug/L	1.0	1		12/27/16 12:53	95-47-6	
Surrogates								
Dibromofluoromethane (S)	112	%.	72-126	1		12/27/16 12:53	1868-53-7	
4-Bromofluorobenzene (S)	98	%.	68-124	1		12/27/16 12:53	460-00-4	
Toluene-d8 (S)	101	%.	79-119	1		12/27/16 12:53	2037-26-5	

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ANALYTICAL RESULTS

Project: PUMA TERMIANL MW-SAMPLING

Pace Project No.: 2047713

Sample: MW-P123	Lab ID: 2047713005	Collected: 12/19/16 14:21	Received: 12/20/16 16:15	Matrix: Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8015M DRO/ORO Organics								
Analytical Method: EPA 8015B Modified Preparation Method: EPA 3535								
Diesel Range Organic (C10-C28)	ND	mg/L	0.50	1	12/27/16 11:20	01/04/17 13:41		H2
Oil Range Organics (>C28-C40)	ND	mg/L	1.0	1	12/27/16 11:20	01/04/17 13:41		H2
Surrogates								
n-Pentacosane (S)	42	%	16-137	1	12/27/16 11:20	01/04/17 13:41	629-99-2	
o-Terphenyl (S)	44	%	10-121	1	12/27/16 11:20	01/04/17 13:41	84-15-1	
8021 GCV BTEX, MTBE, GRO								
Analytical Method: EPA 8015/8021								
Gasoline Range Organics	ND	ug/L	50.0	1		12/29/16 04:19		
Surrogates								
4-Bromofluorobenzene (S)	94	%	44-148	1		12/29/16 04:19	460-00-4	
6020 MET ICPMS								
Analytical Method: EPA 6020 Preparation Method: EPA 3010								
Arsenic	ND	mg/L	0.0010	1	12/27/16 07:44	01/03/17 14:19	7440-38-2	
Chromium	ND	mg/L	0.0010	1	12/27/16 07:44	01/03/17 14:19	7440-47-3	
Lead	ND	mg/L	0.0010	1	12/27/16 07:44	01/03/17 14:19	7439-92-1	
Vanadium	ND	mg/L	0.0050	1	12/27/16 07:44	01/03/17 14:19	7440-62-2	
6020 MET ICPMS, Dissolved (LF)								
Analytical Method: EPA 6020 Preparation Method: EPA 3005A								
Arsenic, Dissolved	ND	ug/L	1.0	1	12/30/16 06:50	01/03/17 16:36	7440-38-2	
Chromium, Dissolved	ND	ug/L	1.0	1	12/30/16 06:50	01/03/17 16:36	7440-47-3	
Lead, Dissolved	ND	ug/L	1.0	1	12/30/16 06:50	01/03/17 16:36	7439-92-1	
Vanadium, Dissolved	ND	ug/L	5.0	1	12/30/16 06:50	01/03/17 16:36	7440-62-2	
7470 Mercury								
Analytical Method: EPA 7470 Preparation Method: EPA 7470								
Mercury	0.43	ug/L	0.20	1	12/29/16 09:57	12/29/16 17:30	7439-97-6	
7470 Mercury, Dissolved (LF)								
Analytical Method: EPA 7470 Preparation Method: EPA 7470								
Mercury, Dissolved	ND	ug/L	0.20	1	12/29/16 11:58	12/29/16 19:04	7439-97-6	
8270 MSSV PAH by SIM SEP								
Analytical Method: EPA 8270 by SIM Preparation Method: EPA 3510								
Acenaphthene	ND	ug/L	0.10	1	12/24/16 11:23	12/30/16 21:12	83-32-9	
Acenaphthylene	0.10	ug/L	0.10	1	12/24/16 11:23	12/30/16 21:12	208-96-8	
Anthracene	ND	ug/L	0.10	1	12/24/16 11:23	12/30/16 21:12	120-12-7	
Benzo(a)anthracene	ND	ug/L	0.10	1	12/24/16 11:23	12/30/16 21:12	56-55-3	
Benzo(a)pyrene	ND	ug/L	0.10	1	12/24/16 11:23	12/30/16 21:12	50-32-8	
Benzo(b)fluoranthene	ND	ug/L	0.10	1	12/24/16 11:23	12/30/16 21:12	205-99-2	
Benzo(g,h,i)perylene	ND	ug/L	0.10	1	12/24/16 11:23	12/30/16 21:12	191-24-2	
Benzo(k)fluoranthene	ND	ug/L	0.10	1	12/24/16 11:23	12/30/16 21:12	207-08-9	
Chrysene	ND	ug/L	0.10	1	12/24/16 11:23	12/30/16 21:12	218-01-9	
Dibenz(a,h)anthracene	ND	ug/L	0.10	1	12/24/16 11:23	12/30/16 21:12	53-70-3	
Fluoranthene	ND	ug/L	0.10	1	12/24/16 11:23	12/30/16 21:12	206-44-0	
Fluorene	0.25	ug/L	0.10	1	12/24/16 11:23	12/30/16 21:12	86-73-7	
Indeno(1,2,3-cd)pyrene	ND	ug/L	0.10	1	12/24/16 11:23	12/30/16 21:12	193-39-5	
2-Methylnaphthalene	ND	ug/L	0.10	1	12/24/16 11:23	12/30/16 21:12	91-57-6	
Naphthalene	ND	ug/L	0.10	1	12/24/16 11:23	12/30/16 21:12	91-20-3	
Phenanthrene	0.34	ug/L	0.10	1	12/24/16 11:23	12/30/16 21:12	85-01-8	

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ANALYTICAL RESULTS

Project: PUMA TERMIANL MW-SAMPLING

Pace Project No.: 2047713

Sample: MW-P123	Lab ID: 2047713005	Collected: 12/19/16 14:21	Received: 12/20/16 16:15	Matrix: Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8270 MSSV PAH by SIM SEP		Analytical Method: EPA 8270 by SIM Preparation Method: EPA 3510						
Pyrene	ND	ug/L	0.10	1	12/24/16 11:23	12/30/16 21:12	129-00-0	
Surrogates								
2-Fluorobiphenyl (S)	75	%.	25-150	1	12/24/16 11:23	12/30/16 21:12	321-60-8	
Terphenyl-d14 (S)	92	%.	25-150	1	12/24/16 11:23	12/30/16 21:12	1718-51-0	
8260 MSV Low Level		Analytical Method: EPA 5030B/8260						
Acetone	11.3	ug/L	4.0	1		12/27/16 13:10	67-64-1	
Benzene	ND	ug/L	0.50	1		12/27/16 13:10	71-43-2	
Bromodichloromethane	ND	ug/L	0.50	1		12/27/16 13:10	75-27-4	
Bromoform	ND	ug/L	0.50	1		12/27/16 13:10	75-25-2	
Bromomethane	ND	ug/L	0.50	1		12/27/16 13:10	74-83-9	
2-Butanone (MEK)	ND	ug/L	2.0	1		12/27/16 13:10	78-93-3	
Carbon disulfide	ND	ug/L	1.0	1		12/27/16 13:10	75-15-0	L3
Carbon tetrachloride	ND	ug/L	0.50	1		12/27/16 13:10	56-23-5	
Chlorobenzene	ND	ug/L	0.50	1		12/27/16 13:10	108-90-7	
Chloroethane	ND	ug/L	0.50	1		12/27/16 13:10	75-00-3	
Chloroform	ND	ug/L	0.50	1		12/27/16 13:10	67-66-3	
Chloromethane	ND	ug/L	0.50	1		12/27/16 13:10	74-87-3	
1,2-Dibromo-3-chloropropane	ND	ug/L	0.20	1		12/27/16 13:10	96-12-8	
Dibromochloromethane	ND	ug/L	0.50	1		12/27/16 13:10	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	1		12/27/16 13:10	106-93-4	
Dichlorodifluoromethane	ND	ug/L	1.0	1		12/27/16 13:10	75-71-8	
1,1-Dichloroethane	ND	ug/L	0.50	1		12/27/16 13:10	75-34-3	
1,2-Dichloroethane	ND	ug/L	0.50	1		12/27/16 13:10	107-06-2	
1,1-Dichloroethene	ND	ug/L	0.50	1		12/27/16 13:10	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	1		12/27/16 13:10	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	0.50	1		12/27/16 13:10	156-60-5	
1,2-Dichloropropane	ND	ug/L	0.50	1		12/27/16 13:10	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	0.50	1		12/27/16 13:10	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	0.50	1		12/27/16 13:10	10061-02-6	
Ethylbenzene	ND	ug/L	0.50	1		12/27/16 13:10	100-41-4	
2-Hexanone	ND	ug/L	1.0	1		12/27/16 13:10	591-78-6	
Isopropylbenzene (Cumene)	ND	ug/L	1.0	1		12/27/16 13:10	98-82-8	
Methyl acetate	ND	ug/L	2.0	1		12/27/16 13:10	79-20-9	
Methylene Chloride	ND	ug/L	0.50	1		12/27/16 13:10	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	1.0	1		12/27/16 13:10	108-10-1	
Methyl-tert-butyl ether	ND	ug/L	0.50	1		12/27/16 13:10	1634-04-4	
Styrene	ND	ug/L	1.0	1		12/27/16 13:10	100-42-5	
1,1,2,2-Tetrachloroethane	ND	ug/L	0.50	1		12/27/16 13:10	79-34-5	
Tetrachloroethene	ND	ug/L	0.50	1		12/27/16 13:10	127-18-4	
Toluene	ND	ug/L	0.50	1		12/27/16 13:10	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	0.50	1		12/27/16 13:10	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	0.50	1		12/27/16 13:10	79-00-5	
Trichloroethene	ND	ug/L	0.50	1		12/27/16 13:10	79-01-6	
Trichlorofluoromethane	ND	ug/L	0.50	1		12/27/16 13:10	75-69-4	
Vinyl chloride	ND	ug/L	0.50	1		12/27/16 13:10	75-01-4	
m&p-Xylene	ND	ug/L	2.0	1		12/27/16 13:10	179601-23-1	

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ANALYTICAL RESULTS

Project: PUMA TERMIANL MW-SAMPLING

Pace Project No.: 2047713

Sample: MW-P123		Lab ID: 2047713005		Collected: 12/19/16 14:21		Received: 12/20/16 16:15		Matrix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual	
8260 MSV Low Level		Analytical Method: EPA 5030B/8260							
o-Xylene	ND	ug/L	1.0	1		12/27/16 13:10	95-47-6		
Surrogates									
Dibromofluoromethane (S)	114	%.	72-126	1		12/27/16 13:10	1868-53-7		
4-Bromofluorobenzene (S)	100	%.	68-124	1		12/27/16 13:10	460-00-4		
Toluene-d8 (S)	102	%.	79-119	1		12/27/16 13:10	2037-26-5		
Sample: MW-P124		Lab ID: 2047713006		Collected: 12/19/16 15:45		Received: 12/20/16 16:15		Matrix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual	
8015M DRO/ORO Organics		Analytical Method: EPA 8015B Modified Preparation Method: EPA 3535							
Diesel Range Organic (C10-C28)	ND	mg/L	0.50	1	12/27/16 11:20	01/04/17 14:09		H2	
Oil Range Organics (>C28-C40)	ND	mg/L	1.0	1	12/27/16 11:20	01/04/17 14:09		H2	
Surrogates									
n-Pentacosane (S)	41	%.	16-137	1	12/27/16 11:20	01/04/17 14:09	629-99-2		
o-Terphenyl (S)	51	%.	10-121	1	12/27/16 11:20	01/04/17 14:09	84-15-1		
8021 GCV BTEX, MTBE, GRO		Analytical Method: EPA 8015/8021							
Gasoline Range Organics	ND	ug/L	50.0	1		12/29/16 04:45			
Surrogates									
4-Bromofluorobenzene (S)	93	%.	44-148	1		12/29/16 04:45	460-00-4		
6020 MET ICPMS		Analytical Method: EPA 6020 Preparation Method: EPA 3010							
Arsenic	0.0018	mg/L	0.0010	1	12/27/16 07:44	01/03/17 14:23	7440-38-2		
Chromium	0.0032	mg/L	0.0010	1	12/27/16 07:44	01/03/17 14:23	7440-47-3		
Lead	ND	mg/L	0.0010	1	12/27/16 07:44	01/03/17 14:23	7439-92-1		
Vanadium	0.0079	mg/L	0.0050	1	12/27/16 07:44	01/03/17 14:23	7440-62-2		
6020 MET ICPMS, Dissolved (LF)		Analytical Method: EPA 6020 Preparation Method: EPA 3005A							
Arsenic, Dissolved	ND	ug/L	1.0	1	12/30/16 06:50	01/03/17 16:40	7440-38-2		
Chromium, Dissolved	ND	ug/L	1.0	1	12/30/16 06:50	01/03/17 16:40	7440-47-3		
Lead, Dissolved	ND	ug/L	1.0	1	12/30/16 06:50	01/03/17 16:40	7439-92-1		
Vanadium, Dissolved	ND	ug/L	5.0	1	12/30/16 06:50	01/03/17 16:40	7440-62-2		
7470 Mercury		Analytical Method: EPA 7470 Preparation Method: EPA 7470							
Mercury	9.5	ug/L	0.20	1	12/29/16 09:57	12/29/16 17:32	7439-97-6		
7470 Mercury, Dissolved (LF)		Analytical Method: EPA 7470 Preparation Method: EPA 7470							
Mercury, Dissolved	1.5	ug/L	0.20	1	12/29/16 11:58	12/29/16 19:06	7439-97-6		
8270 MSSV PAH by SIM SEP		Analytical Method: EPA 8270 by SIM Preparation Method: EPA 3510							
Acenaphthene	ND	ug/L	0.10	1	12/24/16 11:23	12/30/16 21:32	83-32-9		
Acenaphthylene	ND	ug/L	0.10	1	12/24/16 11:23	12/30/16 21:32	208-96-8		
Anthracene	ND	ug/L	0.10	1	12/24/16 11:23	12/30/16 21:32	120-12-7		
Benzo(a)anthracene	ND	ug/L	0.10	1	12/24/16 11:23	12/30/16 21:32	56-55-3		

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ANALYTICAL RESULTS

Project: PUMA TERMIANL MW-SAMPLING

Pace Project No.: 2047713

Sample: MW-P124	Lab ID: 2047713006	Collected: 12/19/16 15:45	Received: 12/20/16 16:15	Matrix: Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8270 MSSV PAH by SIM SEP		Analytical Method: EPA 8270 by SIM Preparation Method: EPA 3510						
Benzo(a)pyrene	ND	ug/L	0.10	1	12/24/16 11:23	12/30/16 21:32	50-32-8	
Benzo(b)fluoranthene	ND	ug/L	0.10	1	12/24/16 11:23	12/30/16 21:32	205-99-2	
Benzo(g,h,i)perylene	ND	ug/L	0.10	1	12/24/16 11:23	12/30/16 21:32	191-24-2	
Benzo(k)fluoranthene	ND	ug/L	0.10	1	12/24/16 11:23	12/30/16 21:32	207-08-9	
Chrysene	ND	ug/L	0.10	1	12/24/16 11:23	12/30/16 21:32	218-01-9	
Dibenz(a,h)anthracene	ND	ug/L	0.10	1	12/24/16 11:23	12/30/16 21:32	53-70-3	
Fluoranthene	ND	ug/L	0.10	1	12/24/16 11:23	12/30/16 21:32	206-44-0	
Fluorene	ND	ug/L	0.10	1	12/24/16 11:23	12/30/16 21:32	86-73-7	
Indeno(1,2,3-cd)pyrene	ND	ug/L	0.10	1	12/24/16 11:23	12/30/16 21:32	193-39-5	
2-Methylnaphthalene	ND	ug/L	0.10	1	12/24/16 11:23	12/30/16 21:32	91-57-6	
Naphthalene	ND	ug/L	0.10	1	12/24/16 11:23	12/30/16 21:32	91-20-3	
Phenanthrene	ND	ug/L	0.10	1	12/24/16 11:23	12/30/16 21:32	85-01-8	
Pyrene	ND	ug/L	0.10	1	12/24/16 11:23	12/30/16 21:32	129-00-0	
Surrogates								
2-Fluorobiphenyl (S)	86	%.	25-150	1	12/24/16 11:23	12/30/16 21:32	321-60-8	
Terphenyl-d14 (S)	90	%.	25-150	1	12/24/16 11:23	12/30/16 21:32	1718-51-0	
8260 MSV Low Level		Analytical Method: EPA 5030B/8260						
Acetone	12.0	ug/L	4.0	1		12/27/16 13:28	67-64-1	
Benzene	ND	ug/L	0.50	1		12/27/16 13:28	71-43-2	
Bromodichloromethane	ND	ug/L	0.50	1		12/27/16 13:28	75-27-4	
Bromoform	ND	ug/L	0.50	1		12/27/16 13:28	75-25-2	
Bromomethane	ND	ug/L	0.50	1		12/27/16 13:28	74-83-9	
2-Butanone (MEK)	ND	ug/L	2.0	1		12/27/16 13:28	78-93-3	
Carbon disulfide	ND	ug/L	1.0	1		12/27/16 13:28	75-15-0	L3
Carbon tetrachloride	ND	ug/L	0.50	1		12/27/16 13:28	56-23-5	
Chlorobenzene	ND	ug/L	0.50	1		12/27/16 13:28	108-90-7	
Chloroethane	ND	ug/L	0.50	1		12/27/16 13:28	75-00-3	
Chloroform	ND	ug/L	0.50	1		12/27/16 13:28	67-66-3	
Chloromethane	ND	ug/L	0.50	1		12/27/16 13:28	74-87-3	
1,2-Dibromo-3-chloropropane	ND	ug/L	0.20	1		12/27/16 13:28	96-12-8	
Dibromochloromethane	ND	ug/L	0.50	1		12/27/16 13:28	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	1		12/27/16 13:28	106-93-4	
Dichlorodifluoromethane	ND	ug/L	1.0	1		12/27/16 13:28	75-71-8	
1,1-Dichloroethane	ND	ug/L	0.50	1		12/27/16 13:28	75-34-3	
1,2-Dichloroethane	ND	ug/L	0.50	1		12/27/16 13:28	107-06-2	
1,1-Dichloroethene	ND	ug/L	0.50	1		12/27/16 13:28	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	1		12/27/16 13:28	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	0.50	1		12/27/16 13:28	156-60-5	
1,2-Dichloropropane	ND	ug/L	0.50	1		12/27/16 13:28	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	0.50	1		12/27/16 13:28	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	0.50	1		12/27/16 13:28	10061-02-6	
Ethylbenzene	ND	ug/L	0.50	1		12/27/16 13:28	100-41-4	
2-Hexanone	ND	ug/L	1.0	1		12/27/16 13:28	591-78-6	
Isopropylbenzene (Cumene)	ND	ug/L	1.0	1		12/27/16 13:28	98-82-8	
Methyl acetate	ND	ug/L	2.0	1		12/27/16 13:28	79-20-9	
Methylene Chloride	ND	ug/L	0.50	1		12/27/16 13:28	75-09-2	

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ANALYTICAL RESULTS

Project: PUMA TERMIANL MW-SAMPLING

Sample Project No.: 2047713

Sample: MW-P124		Lab ID: 2047713006		Collected: 12/19/16 15:45		Received: 12/20/16 16:15		Matrix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual	
8260 MSV Low Level		Analytical Method: EPA 5030B/8260							
4-Methyl-2-pentanone (MIBK)	ND	ug/L	1.0	1		12/27/16 13:28	108-10-1		
Methyl-tert-butyl ether	ND	ug/L	0.50	1		12/27/16 13:28	1634-04-4		
Styrene	ND	ug/L	1.0	1		12/27/16 13:28	100-42-5		
1,1,2,2-Tetrachloroethane	ND	ug/L	0.50	1		12/27/16 13:28	79-34-5		
Tetrachloroethene	ND	ug/L	0.50	1		12/27/16 13:28	127-18-4		
Toluene	ND	ug/L	0.50	1		12/27/16 13:28	108-88-3		
1,1,1-Trichloroethane	ND	ug/L	0.50	1		12/27/16 13:28	71-55-6		
1,1,2-Trichloroethane	ND	ug/L	0.50	1		12/27/16 13:28	79-00-5		
Trichloroethene	ND	ug/L	0.50	1		12/27/16 13:28	79-01-6		
Trichlorofluoromethane	ND	ug/L	0.50	1		12/27/16 13:28	75-69-4		
Vinyl chloride	ND	ug/L	0.50	1		12/27/16 13:28	75-01-4		
m&p-Xylene	ND	ug/L	2.0	1		12/27/16 13:28	179601-23-1		
o-Xylene	ND	ug/L	1.0	1		12/27/16 13:28	95-47-6		
Surrogates									
Dibromofluoromethane (S)	115	%.	72-126	1		12/27/16 13:28	1868-53-7		
4-Bromofluorobenzene (S)	99	%.	68-124	1		12/27/16 13:28	460-00-4		
Toluene-d8 (S)	101	%.	79-119	1		12/27/16 13:28	2037-26-5		

Sample: MW-P121		Lab ID: 2047713007		Collected: 12/19/16 16:27		Received: 12/20/16 16:15		Matrix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual	
8015M DRO/ORO Organics		Analytical Method: EPA 8015B Modified Preparation Method: EPA 3535							
Diesel Range Organic (C10-C28)	ND	mg/L	0.50	1	12/27/16 11:20	01/04/17 14:37		H2	
Oil Range Organics (>C28-C40)	ND	mg/L	1.0	1	12/27/16 11:20	01/04/17 14:37		H2	
Surrogates									
n-Pentacosane (S)	42	%.	16-137	1	12/27/16 11:20	01/04/17 14:37	629-99-2		
o-Terphenyl (S)	41	%.	10-121	1	12/27/16 11:20	01/04/17 14:37	84-15-1		
8021 GCV BTEX, MTBE, GRO		Analytical Method: EPA 8015/8021							
Gasoline Range Organics	ND	ug/L	50.0	1		12/29/16 05:12			
Surrogates									
4-Bromofluorobenzene (S)	92	%.	44-148	1		12/29/16 05:12	460-00-4		
6020 MET ICPMS		Analytical Method: EPA 6020 Preparation Method: EPA 3010							
Arsenic	0.0034	mg/L	0.0010	1	12/27/16 07:44	01/03/17 14:34	7440-38-2		
Chromium	0.058	mg/L	0.0010	1	12/27/16 07:44	01/03/17 14:34	7440-47-3		
Lead	0.012	mg/L	0.0010	1	12/27/16 07:44	01/03/17 14:34	7439-92-1		
Vanadium	0.12	mg/L	0.0050	1	12/27/16 07:44	01/03/17 14:34	7440-62-2		
6020 MET ICPMS, Dissolved (LF)		Analytical Method: EPA 6020 Preparation Method: EPA 3005A							
Arsenic, Dissolved	ND	ug/L	1.0	1	12/30/16 06:50	01/03/17 16:44	7440-38-2		
Chromium, Dissolved	1.1	ug/L	1.0	1	12/30/16 06:50	01/03/17 16:44	7440-47-3		
Lead, Dissolved	ND	ug/L	1.0	1	12/30/16 06:50	01/03/17 16:44	7439-92-1		
Vanadium, Dissolved	ND	ug/L	5.0	1	12/30/16 06:50	01/03/17 16:44	7440-62-2		

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ANALYTICAL RESULTS

Project: PUMA TERMIANL MW-SAMPLING

Pace Project No.: 2047713

Sample: MW-P121	Lab ID: 2047713007	Collected: 12/19/16 16:27	Received: 12/20/16 16:15	Matrix: Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
7470 Mercury								
Analytical Method: EPA 7470 Preparation Method: EPA 7470								
Mercury	0.62	ug/L	0.20	1	12/29/16 09:57	12/29/16 17:34	7439-97-6	
7470 Mercury, Dissolved (LF)								
Analytical Method: EPA 7470 Preparation Method: EPA 7470								
Mercury, Dissolved	ND	ug/L	0.20	1	12/29/16 11:58	12/29/16 19:08	7439-97-6	
8270 MSSV PAH by SIM SEP								
Analytical Method: EPA 8270 by SIM Preparation Method: EPA 3510								
Acenaphthene	ND	ug/L	0.10	1	12/24/16 11:23	12/30/16 21:52	83-32-9	
Acenaphthylene	ND	ug/L	0.10	1	12/24/16 11:23	12/30/16 21:52	208-96-8	
Anthracene	ND	ug/L	0.10	1	12/24/16 11:23	12/30/16 21:52	120-12-7	
Benzo(a)anthracene	ND	ug/L	0.10	1	12/24/16 11:23	12/30/16 21:52	56-55-3	
Benzo(a)pyrene	ND	ug/L	0.10	1	12/24/16 11:23	12/30/16 21:52	50-32-8	
Benzo(b)fluoranthene	ND	ug/L	0.10	1	12/24/16 11:23	12/30/16 21:52	205-99-2	
Benzo(g,h,i)perylene	ND	ug/L	0.10	1	12/24/16 11:23	12/30/16 21:52	191-24-2	
Benzo(k)fluoranthene	ND	ug/L	0.10	1	12/24/16 11:23	12/30/16 21:52	207-08-9	
Chrysene	ND	ug/L	0.10	1	12/24/16 11:23	12/30/16 21:52	218-01-9	
Dibenz(a,h)anthracene	ND	ug/L	0.10	1	12/24/16 11:23	12/30/16 21:52	53-70-3	
Fluoranthene	ND	ug/L	0.10	1	12/24/16 11:23	12/30/16 21:52	206-44-0	
Fluorene	ND	ug/L	0.10	1	12/24/16 11:23	12/30/16 21:52	86-73-7	
Indeno(1,2,3-cd)pyrene	ND	ug/L	0.10	1	12/24/16 11:23	12/30/16 21:52	193-39-5	
2-Methylnaphthalene	ND	ug/L	0.10	1	12/24/16 11:23	12/30/16 21:52	91-57-6	
Naphthalene	ND	ug/L	0.10	1	12/24/16 11:23	12/30/16 21:52	91-20-3	
Phenanthrene	ND	ug/L	0.10	1	12/24/16 11:23	12/30/16 21:52	85-01-8	
Pyrene	ND	ug/L	0.10	1	12/24/16 11:23	12/30/16 21:52	129-00-0	
Surrogates								
2-Fluorobiphenyl (S)	57	%	25-150	1	12/24/16 11:23	12/30/16 21:52	321-60-8	
Terphenyl-d14 (S)	69	%	25-150	1	12/24/16 11:23	12/30/16 21:52	1718-51-0	
8260 MSV Low Level								
Analytical Method: EPA 5030B/8260								
Acetone	11.8	ug/L	4.0	1		12/27/16 13:46	67-64-1	
Benzene	ND	ug/L	0.50	1		12/27/16 13:46	71-43-2	
Bromodichloromethane	ND	ug/L	0.50	1		12/27/16 13:46	75-27-4	
Bromoform	ND	ug/L	0.50	1		12/27/16 13:46	75-25-2	
Bromomethane	ND	ug/L	0.50	1		12/27/16 13:46	74-83-9	
2-Butanone (MEK)	ND	ug/L	2.0	1		12/27/16 13:46	78-93-3	
Carbon disulfide	ND	ug/L	1.0	1		12/27/16 13:46	75-15-0	L3
Carbon tetrachloride	ND	ug/L	0.50	1		12/27/16 13:46	56-23-5	
Chlorobenzene	ND	ug/L	0.50	1		12/27/16 13:46	108-90-7	
Chloroethane	ND	ug/L	0.50	1		12/27/16 13:46	75-00-3	
Chloroform	ND	ug/L	0.50	1		12/27/16 13:46	67-66-3	
Chloromethane	ND	ug/L	0.50	1		12/27/16 13:46	74-87-3	
1,2-Dibromo-3-chloropropane	ND	ug/L	0.20	1		12/27/16 13:46	96-12-8	
Dibromochloromethane	ND	ug/L	0.50	1		12/27/16 13:46	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	1		12/27/16 13:46	106-93-4	
Dichlorodifluoromethane	ND	ug/L	1.0	1		12/27/16 13:46	75-71-8	
1,1-Dichloroethane	ND	ug/L	0.50	1		12/27/16 13:46	75-34-3	
1,2-Dichloroethane	ND	ug/L	0.50	1		12/27/16 13:46	107-06-2	

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ANALYTICAL RESULTS

Project: PUMA TERMIANL MW-SAMPLING

Pace Project No.: 2047713

Sample: MW-P121		Lab ID: 2047713007		Collected: 12/19/16 16:27	Received: 12/20/16 16:15	Matrix: Water		
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV Low Level		Analytical Method: EPA 5030B/8260						
1,1-Dichloroethene	ND	ug/L	0.50	1		12/27/16 13:46	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	1		12/27/16 13:46	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	0.50	1		12/27/16 13:46	156-60-5	
1,2-Dichloropropane	ND	ug/L	0.50	1		12/27/16 13:46	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	0.50	1		12/27/16 13:46	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	0.50	1		12/27/16 13:46	10061-02-6	
Ethylbenzene	ND	ug/L	0.50	1		12/27/16 13:46	100-41-4	
2-Hexanone	ND	ug/L	1.0	1		12/27/16 13:46	591-78-6	
Isopropylbenzene (Cumene)	ND	ug/L	1.0	1		12/27/16 13:46	98-82-8	
Methyl acetate	ND	ug/L	2.0	1		12/27/16 13:46	79-20-9	
Methylene Chloride	ND	ug/L	0.50	1		12/27/16 13:46	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	1.0	1		12/27/16 13:46	108-10-1	
Methyl-tert-butyl ether	ND	ug/L	0.50	1		12/27/16 13:46	1634-04-4	
Styrene	ND	ug/L	1.0	1		12/27/16 13:46	100-42-5	
1,1,2,2-Tetrachloroethane	ND	ug/L	0.50	1		12/27/16 13:46	79-34-5	
Tetrachloroethene	ND	ug/L	0.50	1		12/27/16 13:46	127-18-4	
Toluene	ND	ug/L	0.50	1		12/27/16 13:46	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	0.50	1		12/27/16 13:46	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	0.50	1		12/27/16 13:46	79-00-5	
Trichloroethene	1.7	ug/L	0.50	1		12/27/16 13:46	79-01-6	
Trichlorofluoromethane	ND	ug/L	0.50	1		12/27/16 13:46	75-69-4	
Vinyl chloride	ND	ug/L	0.50	1		12/27/16 13:46	75-01-4	
m&p-Xylene	ND	ug/L	2.0	1		12/27/16 13:46	179601-23-1	
o-Xylene	ND	ug/L	1.0	1		12/27/16 13:46	95-47-6	
Surrogates								
Dibromofluoromethane (S)	113	%	72-126	1		12/27/16 13:46	1868-53-7	
4-Bromofluorobenzene (S)	101	%	68-124	1		12/27/16 13:46	460-00-4	
Toluene-d8 (S)	102	%	79-119	1		12/27/16 13:46	2037-26-5	

Sample: FB-121916		Lab ID: 2047713008		Collected: 12/19/16 16:45	Received: 12/20/16 16:15	Matrix: Water		
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8021 GCV BTEX, MTBE, GRO		Analytical Method: EPA 8015/8021						
Gasoline Range Organics	ND	ug/L	50.0	1		12/29/16 05:38		
Surrogates								
4-Bromofluorobenzene (S)	93	%	44-148	1		12/29/16 05:38	460-00-4	
8260 MSV Low Level		Analytical Method: EPA 5030B/8260						
Acetone	78.0	ug/L	4.0	1		12/27/16 14:04	67-64-1	
Benzene	ND	ug/L	0.50	1		12/27/16 14:04	71-43-2	
Bromodichloromethane	ND	ug/L	0.50	1		12/27/16 14:04	75-27-4	
Bromoform	ND	ug/L	0.50	1		12/27/16 14:04	75-25-2	
Bromomethane	ND	ug/L	0.50	1		12/27/16 14:04	74-83-9	
2-Butanone (MEK)	ND	ug/L	2.0	1		12/27/16 14:04	78-93-3	
Carbon disulfide	ND	ug/L	1.0	1		12/27/16 14:04	75-15-0	L3

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ANALYTICAL RESULTS

Project: PUMA TERMIANL MW-SAMPLING
Pace Project No.: 2047713

Sample: FB-121916		Lab ID: 2047713008		Collected: 12/19/16 16:45	Received: 12/20/16 16:15	Matrix: Water		
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV Low Level		Analytical Method: EPA 5030B/8260						
Carbon tetrachloride	ND	ug/L	0.50	1		12/27/16 14:04	56-23-5	
Chlorobenzene	ND	ug/L	0.50	1		12/27/16 14:04	108-90-7	
Chloroethane	ND	ug/L	0.50	1		12/27/16 14:04	75-00-3	
Chloroform	ND	ug/L	0.50	1		12/27/16 14:04	67-66-3	
Chloromethane	ND	ug/L	0.50	1		12/27/16 14:04	74-87-3	
1,2-Dibromo-3-chloropropane	ND	ug/L	0.20	1		12/27/16 14:04	96-12-8	
Dibromochloromethane	ND	ug/L	0.50	1		12/27/16 14:04	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	1		12/27/16 14:04	106-93-4	
Dichlorodifluoromethane	ND	ug/L	1.0	1		12/27/16 14:04	75-71-8	
1,1-Dichloroethane	ND	ug/L	0.50	1		12/27/16 14:04	75-34-3	
1,2-Dichloroethane	ND	ug/L	0.50	1		12/27/16 14:04	107-06-2	
1,1-Dichloroethene	ND	ug/L	0.50	1		12/27/16 14:04	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	1		12/27/16 14:04	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	0.50	1		12/27/16 14:04	156-60-5	
1,2-Dichloropropane	ND	ug/L	0.50	1		12/27/16 14:04	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	0.50	1		12/27/16 14:04	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	0.50	1		12/27/16 14:04	10061-02-6	
Ethylbenzene	ND	ug/L	0.50	1		12/27/16 14:04	100-41-4	
2-Hexanone	ND	ug/L	1.0	1		12/27/16 14:04	591-78-6	
Isopropylbenzene (Cumene)	ND	ug/L	1.0	1		12/27/16 14:04	98-82-8	
Methyl acetate	ND	ug/L	2.0	1		12/27/16 14:04	79-20-9	
Methylene Chloride	ND	ug/L	0.50	1		12/27/16 14:04	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	1.0	1		12/27/16 14:04	108-10-1	
Methyl-tert-butyl ether	ND	ug/L	0.50	1		12/27/16 14:04	1634-04-4	
Styrene	ND	ug/L	1.0	1		12/27/16 14:04	100-42-5	
1,1,2,2-Tetrachloroethane	ND	ug/L	0.50	1		12/27/16 14:04	79-34-5	
Tetrachloroethene	ND	ug/L	0.50	1		12/27/16 14:04	127-18-4	
Toluene	ND	ug/L	0.50	1		12/27/16 14:04	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	0.50	1		12/27/16 14:04	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	0.50	1		12/27/16 14:04	79-00-5	
Trichloroethene	ND	ug/L	0.50	1		12/27/16 14:04	79-01-6	
Trichlorofluoromethane	ND	ug/L	0.50	1		12/27/16 14:04	75-69-4	
Vinyl chloride	ND	ug/L	0.50	1		12/27/16 14:04	75-01-4	
m&p-Xylene	ND	ug/L	2.0	1		12/27/16 14:04	179601-23-1	
o-Xylene	ND	ug/L	1.0	1		12/27/16 14:04	95-47-6	
Surrogates								
Dibromofluoromethane (S)	114	%	72-126	1		12/27/16 14:04	1868-53-7	
4-Bromofluorobenzene (S)	97	%	68-124	1		12/27/16 14:04	460-00-4	
Toluene-d8 (S)	101	%	79-119	1		12/27/16 14:04	2037-26-5	

Sample: TB-122016		Lab ID: 2047713009		Collected: 12/20/16 00:00	Received: 12/20/16 16:15	Matrix: Water		
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8021 GCV BTEX, MTBE, GRO		Analytical Method: EPA 8015/8021						
Gasoline Range Organics	ND	ug/L	50.0	1		12/29/16 06:04		

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: PUMA TERMIANL MW-SAMPLING

Pace Project No.: 2047713

Sample: TB-122016	Lab ID: 2047713009	Collected: 12/20/16 00:00	Received: 12/20/16 16:15	Matrix: Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8021 GCV BTEX, MTBE, GRO		Analytical Method: EPA 8015/8021						
Surrogates								
4-Bromofluorobenzene (S)	95	%	44-148	1		12/29/16 06:04	460-00-4	
8260 MSV Low Level		Analytical Method: EPA 5030B/8260						
Acetone	74.3	ug/L	4.0	1		12/27/16 14:22	67-64-1	
Benzene	ND	ug/L	0.50	1		12/27/16 14:22	71-43-2	
Bromodichloromethane	ND	ug/L	0.50	1		12/27/16 14:22	75-27-4	
Bromoform	ND	ug/L	0.50	1		12/27/16 14:22	75-25-2	
Bromomethane	ND	ug/L	0.50	1		12/27/16 14:22	74-83-9	
2-Butanone (MEK)	ND	ug/L	2.0	1		12/27/16 14:22	78-93-3	
Carbon disulfide	ND	ug/L	1.0	1		12/27/16 14:22	75-15-0	L3
Carbon tetrachloride	ND	ug/L	0.50	1		12/27/16 14:22	56-23-5	
Chlorobenzene	ND	ug/L	0.50	1		12/27/16 14:22	108-90-7	
Chloroethane	ND	ug/L	0.50	1		12/27/16 14:22	75-00-3	
Chloroform	ND	ug/L	0.50	1		12/27/16 14:22	67-66-3	
Chloromethane	0.75	ug/L	0.50	1		12/27/16 14:22	74-87-3	
1,2-Dibromo-3-chloropropane	ND	ug/L	0.20	1		12/27/16 14:22	96-12-8	
Dibromochloromethane	ND	ug/L	0.50	1		12/27/16 14:22	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	1		12/27/16 14:22	106-93-4	
Dichlorodifluoromethane	ND	ug/L	1.0	1		12/27/16 14:22	75-71-8	
1,1-Dichloroethane	ND	ug/L	0.50	1		12/27/16 14:22	75-34-3	
1,2-Dichloroethane	ND	ug/L	0.50	1		12/27/16 14:22	107-06-2	
1,1-Dichloroethene	ND	ug/L	0.50	1		12/27/16 14:22	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	1		12/27/16 14:22	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	0.50	1		12/27/16 14:22	156-60-5	
1,2-Dichloropropane	ND	ug/L	0.50	1		12/27/16 14:22	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	0.50	1		12/27/16 14:22	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	0.50	1		12/27/16 14:22	10061-02-6	
Ethylbenzene	ND	ug/L	0.50	1		12/27/16 14:22	100-41-4	
2-Hexanone	1.9	ug/L	1.0	1		12/27/16 14:22	591-78-6	
Isopropylbenzene (Cumene)	ND	ug/L	1.0	1		12/27/16 14:22	98-82-8	
Methyl acetate	ND	ug/L	2.0	1		12/27/16 14:22	79-20-9	
Methylene Chloride	ND	ug/L	0.50	1		12/27/16 14:22	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	1.0	1		12/27/16 14:22	108-10-1	
Methyl-tert-butyl ether	ND	ug/L	0.50	1		12/27/16 14:22	1634-04-4	
Styrene	ND	ug/L	1.0	1		12/27/16 14:22	100-42-5	
1,1,2,2-Tetrachloroethane	ND	ug/L	0.50	1		12/27/16 14:22	79-34-5	
Tetrachloroethene	ND	ug/L	0.50	1		12/27/16 14:22	127-18-4	
Toluene	ND	ug/L	0.50	1		12/27/16 14:22	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	0.50	1		12/27/16 14:22	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	0.50	1		12/27/16 14:22	79-00-5	
Trichloroethene	ND	ug/L	0.50	1		12/27/16 14:22	79-01-6	
Trichlorofluoromethane	ND	ug/L	0.50	1		12/27/16 14:22	75-69-4	
Vinyl chloride	ND	ug/L	0.50	1		12/27/16 14:22	75-01-4	
m&p-Xylene	ND	ug/L	2.0	1		12/27/16 14:22	179601-23-1	
o-Xylene	ND	ug/L	1.0	1		12/27/16 14:22	95-47-6	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: PUMA TERMIANL MW-SAMPLING
Pace Project No.: 2047713

Sample: TB-122016	Lab ID: 2047713009	Collected: 12/20/16 00:00	Received: 12/20/16 16:15	Matrix: Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV Low Level		Analytical Method: EPA 5030B/8260						
Surrogates								
Dibromofluoromethane (S)	114	%.	72-126	1		12/27/16 14:22	1868-53-7	
4-Bromofluorobenzene (S)	99	%.	68-124	1		12/27/16 14:22	460-00-4	
Toluene-d8 (S)	103	%.	79-119	1		12/27/16 14:22	2037-26-5	
Sample: EB-122016		Lab ID: 2047713010		Collected: 12/20/16 08:33	Received: 12/20/16 16:15	Matrix: Water		
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8015M DRO/ORO Organics		Analytical Method: EPA 8015B Modified Preparation Method: EPA 3535						
Diesel Range Organic (C10-C28)	ND	mg/L	0.50	1	12/27/16 11:20	01/04/17 15:05		
Oil Range Organics (>C28-C40)	ND	mg/L	1.0	1	12/27/16 11:20	01/04/17 15:05		
Surrogates								
n-Pentacosane (S)	40	%.	16-137	1	12/27/16 11:20	01/04/17 15:05	629-99-2	
o-Terphenyl (S)	48	%.	10-121	1	12/27/16 11:20	01/04/17 15:05	84-15-1	
8021 GCV BTEX, MTBE, GRO		Analytical Method: EPA 8015/8021						
Gasoline Range Organics	ND	ug/L	50.0	1		12/29/16 08:14		
Surrogates								
4-Bromofluorobenzene (S)	90	%.	44-148	1		12/29/16 08:14	460-00-4	
6020 MET ICPMS		Analytical Method: EPA 6020 Preparation Method: EPA 3010						
Arsenic	ND	mg/L	0.0010	1	12/27/16 07:44	01/03/17 14:38	7440-38-2	
Chromium	0.0021	mg/L	0.0010	1	12/27/16 07:44	01/03/17 14:38	7440-47-3	
Lead	ND	mg/L	0.0010	1	12/27/16 07:44	01/03/17 14:38	7439-92-1	
Vanadium	ND	mg/L	0.0050	1	12/27/16 07:44	01/03/17 14:38	7440-62-2	
6020 MET ICPMS, Dissolved (LF)		Analytical Method: EPA 6020 Preparation Method: EPA 3005A						
Arsenic, Dissolved	ND	ug/L	1.0	1	12/30/16 06:50	01/03/17 16:56	7440-38-2	
Chromium, Dissolved	ND	ug/L	1.0	1	12/30/16 06:50	01/03/17 16:56	7440-47-3	
Lead, Dissolved	ND	ug/L	1.0	1	12/30/16 06:50	01/03/17 16:56	7439-92-1	
Vanadium, Dissolved	ND	ug/L	5.0	1	12/30/16 06:50	01/03/17 16:56	7440-62-2	
7470 Mercury		Analytical Method: EPA 7470 Preparation Method: EPA 7470						
Mercury	ND	ug/L	0.20	1	12/29/16 09:57	12/29/16 17:36	7439-97-6	
7470 Mercury, Dissolved (LF)		Analytical Method: EPA 7470 Preparation Method: EPA 7470						
Mercury, Dissolved	ND	ug/L	0.20	1	12/29/16 11:58	12/29/16 19:10	7439-97-6	
8270 MSSV PAH by SIM SEP		Analytical Method: EPA 8270 by SIM Preparation Method: EPA 3510						
Acenaphthene	ND	ug/L	0.10	1	12/24/16 11:23	12/30/16 22:12	83-32-9	
Acenaphthylene	ND	ug/L	0.10	1	12/24/16 11:23	12/30/16 22:12	208-96-8	
Anthracene	ND	ug/L	0.10	1	12/24/16 11:23	12/30/16 22:12	120-12-7	
Benzo(a)anthracene	ND	ug/L	0.10	1	12/24/16 11:23	12/30/16 22:12	56-55-3	
Benzo(a)pyrene	ND	ug/L	0.10	1	12/24/16 11:23	12/30/16 22:12	50-32-8	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: PUMA TERMIANL MW-SAMPLING

Pace Project No.: 2047713

Sample: EB-122016 **Lab ID: 2047713010** Collected: 12/20/16 08:33 Received: 12/20/16 16:15 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
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8270 MSSV PAH by SIM SEP

Analytical Method: EPA 8270 by SIM Preparation Method: EPA 3510

Benzo(b)fluoranthene	ND	ug/L	0.10	1	12/24/16 11:23	12/30/16 22:12	205-99-2	
Benzo(g,h,i)perylene	ND	ug/L	0.10	1	12/24/16 11:23	12/30/16 22:12	191-24-2	
Benzo(k)fluoranthene	ND	ug/L	0.10	1	12/24/16 11:23	12/30/16 22:12	207-08-9	
Chrysene	ND	ug/L	0.10	1	12/24/16 11:23	12/30/16 22:12	218-01-9	
Dibenz(a,h)anthracene	ND	ug/L	0.10	1	12/24/16 11:23	12/30/16 22:12	53-70-3	
Fluoranthene	ND	ug/L	0.10	1	12/24/16 11:23	12/30/16 22:12	206-44-0	
Fluorene	ND	ug/L	0.10	1	12/24/16 11:23	12/30/16 22:12	86-73-7	
Indeno(1,2,3-cd)pyrene	ND	ug/L	0.10	1	12/24/16 11:23	12/30/16 22:12	193-39-5	
2-Methylnaphthalene	ND	ug/L	0.10	1	12/24/16 11:23	12/30/16 22:12	91-57-6	
Naphthalene	ND	ug/L	0.10	1	12/24/16 11:23	12/30/16 22:12	91-20-3	
Phenanthrene	ND	ug/L	0.10	1	12/24/16 11:23	12/30/16 22:12	85-01-8	
Pyrene	ND	ug/L	0.10	1	12/24/16 11:23	12/30/16 22:12	129-00-0	

Surrogates

2-Fluorobiphenyl (S)	74	%	25-150	1	12/24/16 11:23	12/30/16 22:12	321-60-8	
Terphenyl-d14 (S)	84	%	25-150	1	12/24/16 11:23	12/30/16 22:12	1718-51-0	

8260 MSV Low Level

Analytical Method: EPA 5030B/8260

Acetone	92.2	ug/L	4.0	1		12/27/16 14:40	67-64-1	
Benzene	ND	ug/L	0.50	1		12/27/16 14:40	71-43-2	
Bromodichloromethane	ND	ug/L	0.50	1		12/27/16 14:40	75-27-4	
Bromoform	ND	ug/L	0.50	1		12/27/16 14:40	75-25-2	
Bromomethane	ND	ug/L	0.50	1		12/27/16 14:40	74-83-9	
2-Butanone (MEK)	ND	ug/L	2.0	1		12/27/16 14:40	78-93-3	
Carbon disulfide	ND	ug/L	1.0	1		12/27/16 14:40	75-15-0	L3
Carbon tetrachloride	ND	ug/L	0.50	1		12/27/16 14:40	56-23-5	
Chlorobenzene	ND	ug/L	0.50	1		12/27/16 14:40	108-90-7	
Chloroethane	ND	ug/L	0.50	1		12/27/16 14:40	75-00-3	
Chloroform	ND	ug/L	0.50	1		12/27/16 14:40	67-66-3	
Chloromethane	1.2	ug/L	0.50	1		12/27/16 14:40	74-87-3	
1,2-Dibromo-3-chloropropane	ND	ug/L	0.20	1		12/27/16 14:40	96-12-8	
Dibromochloromethane	ND	ug/L	0.50	1		12/27/16 14:40	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	1		12/27/16 14:40	106-93-4	
Dichlorodifluoromethane	ND	ug/L	1.0	1		12/27/16 14:40	75-71-8	
1,1-Dichloroethane	ND	ug/L	0.50	1		12/27/16 14:40	75-34-3	
1,2-Dichloroethane	ND	ug/L	0.50	1		12/27/16 14:40	107-06-2	
1,1-Dichloroethene	ND	ug/L	0.50	1		12/27/16 14:40	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	1		12/27/16 14:40	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	0.50	1		12/27/16 14:40	156-60-5	
1,2-Dichloropropane	ND	ug/L	0.50	1		12/27/16 14:40	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	0.50	1		12/27/16 14:40	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	0.50	1		12/27/16 14:40	10061-02-6	
Ethylbenzene	ND	ug/L	0.50	1		12/27/16 14:40	100-41-4	
2-Hexanone	ND	ug/L	1.0	1		12/27/16 14:40	591-78-6	
Isopropylbenzene (Cumene)	ND	ug/L	1.0	1		12/27/16 14:40	98-82-8	
Methyl acetate	ND	ug/L	2.0	1		12/27/16 14:40	79-20-9	
Methylene Chloride	ND	ug/L	0.50	1		12/27/16 14:40	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	1.0	1		12/27/16 14:40	108-10-1	

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ANALYTICAL RESULTS

Project: PUMA TERMIANL MW-SAMPLING

Sample Project No.: 2047713

Sample: EB-122016		Lab ID: 2047713010		Collected: 12/20/16 08:33	Received: 12/20/16 16:15	Matrix: Water		
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV Low Level		Analytical Method: EPA 5030B/8260						
Methyl-tert-butyl ether	ND	ug/L	0.50	1		12/27/16 14:40	1634-04-4	
Styrene	ND	ug/L	1.0	1		12/27/16 14:40	100-42-5	
1,1,2,2-Tetrachloroethane	ND	ug/L	0.50	1		12/27/16 14:40	79-34-5	
Tetrachloroethene	ND	ug/L	0.50	1		12/27/16 14:40	127-18-4	
Toluene	ND	ug/L	0.50	1		12/27/16 14:40	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	0.50	1		12/27/16 14:40	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	0.50	1		12/27/16 14:40	79-00-5	
Trichloroethene	ND	ug/L	0.50	1		12/27/16 14:40	79-01-6	
Trichlorofluoromethane	ND	ug/L	0.50	1		12/27/16 14:40	75-69-4	
Vinyl chloride	ND	ug/L	0.50	1		12/27/16 14:40	75-01-4	
m&p-Xylene	ND	ug/L	2.0	1		12/27/16 14:40	179601-23-1	
o-Xylene	ND	ug/L	1.0	1		12/27/16 14:40	95-47-6	
Surrogates								
Dibromofluoromethane (S)	114	%	72-126	1		12/27/16 14:40	1868-53-7	
4-Bromofluorobenzene (S)	96	%	68-124	1		12/27/16 14:40	460-00-4	
Toluene-d8 (S)	100	%	79-119	1		12/27/16 14:40	2037-26-5	
Sample: MW-P119		Lab ID: 2047713011		Collected: 12/20/16 09:18	Received: 12/20/16 16:15	Matrix: Water		
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8015M DRO/ORO Organics		Analytical Method: EPA 8015B Modified Preparation Method: EPA 3535						
Diesel Range Organic (C10-C28)	ND	mg/L	0.50	1	12/27/16 11:20	01/04/17 15:34		
Oil Range Organics (>C28-C40)	ND	mg/L	1.0	1	12/27/16 11:20	01/04/17 15:34		
Surrogates								
n-Pentacosane (S)	54	%	16-137	1	12/27/16 11:20	01/04/17 15:34	629-99-2	
o-Terphenyl (S)	61	%	10-121	1	12/27/16 11:20	01/04/17 15:34	84-15-1	
8021 GCV BTEX, MTBE, GRO		Analytical Method: EPA 8015/8021						
Gasoline Range Organics	ND	ug/L	50.0	1		12/29/16 08:41		
Surrogates								
4-Bromofluorobenzene (S)	91	%	44-148	1		12/29/16 08:41	460-00-4	
6020 MET ICPMS		Analytical Method: EPA 6020 Preparation Method: EPA 3010						
Arsenic	ND	mg/L	0.0010	1	12/27/16 07:44	01/03/17 14:42	7440-38-2	
Chromium	ND	mg/L	0.0010	1	12/27/16 07:44	01/03/17 14:42	7440-47-3	
Lead	ND	mg/L	0.0010	1	12/27/16 07:44	01/03/17 14:42	7439-92-1	
Vanadium	ND	mg/L	0.0050	1	12/27/16 07:44	01/03/17 14:42	7440-62-2	
6020 MET ICPMS, Dissolved (LF)		Analytical Method: EPA 6020 Preparation Method: EPA 3005A						
Arsenic, Dissolved	ND	ug/L	1.0	1	12/30/16 06:50	01/03/17 17:00	7440-38-2	
Chromium, Dissolved	ND	ug/L	1.0	1	12/30/16 06:50	01/03/17 17:00	7440-47-3	
Lead, Dissolved	ND	ug/L	1.0	1	12/30/16 06:50	01/03/17 17:00	7439-92-1	
Vanadium, Dissolved	ND	ug/L	5.0	1	12/30/16 06:50	01/03/17 17:00	7440-62-2	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: PUMA TERMIANL MW-SAMPLING

Pace Project No.: 2047713

Sample: MW-P119	Lab ID: 2047713011	Collected: 12/20/16 09:18	Received: 12/20/16 16:15	Matrix: Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
7470 Mercury Analytical Method: EPA 7470 Preparation Method: EPA 7470								
Mercury	0.23	ug/L	0.20	1	12/29/16 09:57	12/29/16 17:42	7439-97-6	
7470 Mercury, Dissolved (LF) Analytical Method: EPA 7470 Preparation Method: EPA 7470								
Mercury, Dissolved	ND	ug/L	0.20	1	12/29/16 11:58	12/29/16 19:12	7439-97-6	
8270 MSSV PAH by SIM SEP Analytical Method: EPA 8270 by SIM Preparation Method: EPA 3510								
Acenaphthene	ND	ug/L	0.10	1	12/24/16 11:23	12/30/16 22:32	83-32-9	
Acenaphthylene	ND	ug/L	0.10	1	12/24/16 11:23	12/30/16 22:32	208-96-8	
Anthracene	ND	ug/L	0.10	1	12/24/16 11:23	12/30/16 22:32	120-12-7	
Benzo(a)anthracene	ND	ug/L	0.10	1	12/24/16 11:23	12/30/16 22:32	56-55-3	
Benzo(a)pyrene	ND	ug/L	0.10	1	12/24/16 11:23	12/30/16 22:32	50-32-8	
Benzo(b)fluoranthene	ND	ug/L	0.10	1	12/24/16 11:23	12/30/16 22:32	205-99-2	
Benzo(g,h,i)perylene	ND	ug/L	0.10	1	12/24/16 11:23	12/30/16 22:32	191-24-2	
Benzo(k)fluoranthene	ND	ug/L	0.10	1	12/24/16 11:23	12/30/16 22:32	207-08-9	
Chrysene	ND	ug/L	0.10	1	12/24/16 11:23	12/30/16 22:32	218-01-9	
Dibenz(a,h)anthracene	ND	ug/L	0.10	1	12/24/16 11:23	12/30/16 22:32	53-70-3	
Fluoranthene	ND	ug/L	0.10	1	12/24/16 11:23	12/30/16 22:32	206-44-0	
Fluorene	ND	ug/L	0.10	1	12/24/16 11:23	12/30/16 22:32	86-73-7	
Indeno(1,2,3-cd)pyrene	ND	ug/L	0.10	1	12/24/16 11:23	12/30/16 22:32	193-39-5	
2-Methylnaphthalene	ND	ug/L	0.10	1	12/24/16 11:23	12/30/16 22:32	91-57-6	
Naphthalene	ND	ug/L	0.10	1	12/24/16 11:23	12/30/16 22:32	91-20-3	
Phenanthrene	ND	ug/L	0.10	1	12/24/16 11:23	12/30/16 22:32	85-01-8	
Pyrene	ND	ug/L	0.10	1	12/24/16 11:23	12/30/16 22:32	129-00-0	
Surrogates								
2-Fluorobiphenyl (S)	48	%	25-150	1	12/24/16 11:23	12/30/16 22:32	321-60-8	
Terphenyl-d14 (S)	71	%	25-150	1	12/24/16 11:23	12/30/16 22:32	1718-51-0	
8260 MSV Low Level Analytical Method: EPA 5030B/8260								
Acetone	19.5	ug/L	4.0	1		12/27/16 14:58	67-64-1	
Benzene	ND	ug/L	0.50	1		12/27/16 14:58	71-43-2	
Bromodichloromethane	ND	ug/L	0.50	1		12/27/16 14:58	75-27-4	
Bromoform	ND	ug/L	0.50	1		12/27/16 14:58	75-25-2	
Bromomethane	ND	ug/L	0.50	1		12/27/16 14:58	74-83-9	
2-Butanone (MEK)	ND	ug/L	2.0	1		12/27/16 14:58	78-93-3	
Carbon disulfide	ND	ug/L	1.0	1		12/27/16 14:58	75-15-0	L3
Carbon tetrachloride	ND	ug/L	0.50	1		12/27/16 14:58	56-23-5	
Chlorobenzene	ND	ug/L	0.50	1		12/27/16 14:58	108-90-7	
Chloroethane	ND	ug/L	0.50	1		12/27/16 14:58	75-00-3	
Chloroform	ND	ug/L	0.50	1		12/27/16 14:58	67-66-3	
Chloromethane	0.65	ug/L	0.50	1		12/27/16 14:58	74-87-3	
1,2-Dibromo-3-chloropropane	0.20	ug/L	0.20	1		12/27/16 14:58	96-12-8	
Dibromochloromethane	ND	ug/L	0.50	1		12/27/16 14:58	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	1		12/27/16 14:58	106-93-4	
Dichlorodifluoromethane	ND	ug/L	1.0	1		12/27/16 14:58	75-71-8	
1,1-Dichloroethane	ND	ug/L	0.50	1		12/27/16 14:58	75-34-3	
1,2-Dichloroethane	ND	ug/L	0.50	1		12/27/16 14:58	107-06-2	

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ANALYTICAL RESULTS

Project: PUMA TERMIANL MW-SAMPLING

Pace Project No.: 2047713

Sample: MW-P119		Lab ID: 2047713011		Collected: 12/20/16 09:18	Received: 12/20/16 16:15	Matrix: Water		
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV Low Level		Analytical Method: EPA 5030B/8260						
1,1-Dichloroethene	ND	ug/L	0.50	1		12/27/16 14:58	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	1		12/27/16 14:58	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	0.50	1		12/27/16 14:58	156-60-5	
1,2-Dichloropropane	ND	ug/L	0.50	1		12/27/16 14:58	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	0.50	1		12/27/16 14:58	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	0.50	1		12/27/16 14:58	10061-02-6	
Ethylbenzene	ND	ug/L	0.50	1		12/27/16 14:58	100-41-4	
2-Hexanone	ND	ug/L	1.0	1		12/27/16 14:58	591-78-6	
Isopropylbenzene (Cumene)	ND	ug/L	1.0	1		12/27/16 14:58	98-82-8	
Methyl acetate	ND	ug/L	2.0	1		12/27/16 14:58	79-20-9	
Methylene Chloride	ND	ug/L	0.50	1		12/27/16 14:58	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	1.0	1		12/27/16 14:58	108-10-1	
Methyl-tert-butyl ether	ND	ug/L	0.50	1		12/27/16 14:58	1634-04-4	
Styrene	ND	ug/L	1.0	1		12/27/16 14:58	100-42-5	
1,1,2,2-Tetrachloroethane	ND	ug/L	0.50	1		12/27/16 14:58	79-34-5	
Tetrachloroethene	ND	ug/L	0.50	1		12/27/16 14:58	127-18-4	
Toluene	ND	ug/L	0.50	1		12/27/16 14:58	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	0.50	1		12/27/16 14:58	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	0.50	1		12/27/16 14:58	79-00-5	
Trichloroethene	7.4	ug/L	0.50	1		12/27/16 14:58	79-01-6	
Trichlorofluoromethane	ND	ug/L	0.50	1		12/27/16 14:58	75-69-4	
Vinyl chloride	ND	ug/L	0.50	1		12/27/16 14:58	75-01-4	
m&p-Xylene	ND	ug/L	2.0	1		12/27/16 14:58	179601-23-1	
o-Xylene	ND	ug/L	1.0	1		12/27/16 14:58	95-47-6	
Surrogates								
Dibromofluoromethane (S)	114	%	72-126	1		12/27/16 14:58	1868-53-7	
4-Bromofluorobenzene (S)	98	%	68-124	1		12/27/16 14:58	460-00-4	
Toluene-d8 (S)	102	%	79-119	1		12/27/16 14:58	2037-26-5	

Sample: MW-P118		Lab ID: 2047713012		Collected: 12/20/16 10:09	Received: 12/20/16 16:15	Matrix: Water		
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8015M DRO/ORO Organics		Analytical Method: EPA 8015B Modified Preparation Method: EPA 3535						
Diesel Range Organic (C10-C28)	ND	mg/L	0.50	1	12/27/16 11:20	01/04/17 16:02		
Oil Range Organics (>C28-C40)	ND	mg/L	1.0	1	12/27/16 11:20	01/04/17 16:02		
Surrogates								
n-Pentacosane (S)	43	%	16-137	1	12/27/16 11:20	01/04/17 16:02	629-99-2	
o-Terphenyl (S)	49	%	10-121	1	12/27/16 11:20	01/04/17 16:02	84-15-1	
8021 GCV BTEX, MTBE, GRO		Analytical Method: EPA 8015/8021						
Gasoline Range Organics	68.2	ug/L	50.0	1		12/29/16 09:07		
Surrogates								
4-Bromofluorobenzene (S)	92	%	44-148	1		12/29/16 09:07	460-00-4	

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ANALYTICAL RESULTS

Project: PUMA TERMIANL MW-SAMPLING

Project No.: 2047713

Sample: MW-P118	Lab ID: 2047713012	Collected: 12/20/16 10:09	Received: 12/20/16 16:15	Matrix: Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
6020 MET ICPMS Analytical Method: EPA 6020 Preparation Method: EPA 3010								
Arsenic	ND	mg/L	0.0010	1	12/27/16 07:44	01/03/17 14:46	7440-38-2	
Chromium	0.0011	mg/L	0.0010	1	12/27/16 07:44	01/03/17 14:46	7440-47-3	
Lead	ND	mg/L	0.0010	1	12/27/16 07:44	01/03/17 14:46	7439-92-1	
Vanadium	ND	mg/L	0.0050	1	12/27/16 07:44	01/03/17 14:46	7440-62-2	
6020 MET ICPMS, Dissolved (LF) Analytical Method: EPA 6020 Preparation Method: EPA 3005A								
Arsenic, Dissolved	ND	ug/L	1.0	1	12/30/16 06:50	01/03/17 18:42	7440-38-2	
Chromium, Dissolved	1.0	ug/L	1.0	1	12/30/16 06:50	01/03/17 18:42	7440-47-3	
Lead, Dissolved	ND	ug/L	1.0	1	12/30/16 06:50	01/03/17 18:42	7439-92-1	
Vanadium, Dissolved	ND	ug/L	5.0	1	12/30/16 06:50	01/03/17 18:42	7440-62-2	
7470 Mercury Analytical Method: EPA 7470 Preparation Method: EPA 7470								
Mercury	1.7	ug/L	0.20	1	12/29/16 09:57	12/29/16 17:44	7439-97-6	
7470 Mercury, Dissolved (LF) Analytical Method: EPA 7470 Preparation Method: EPA 7470								
Mercury, Dissolved	ND	ug/L	0.20	1	12/29/16 11:58	12/29/16 19:14	7439-97-6	
8270 MSSV PAH by SIM SEP Analytical Method: EPA 8270 by SIM Preparation Method: EPA 3510								
Acenaphthene	ND	ug/L	0.10	1	12/24/16 11:23	12/30/16 22:52	83-32-9	
Acenaphthylene	ND	ug/L	0.10	1	12/24/16 11:23	12/30/16 22:52	208-96-8	
Anthracene	ND	ug/L	0.10	1	12/24/16 11:23	12/30/16 22:52	120-12-7	
Benzo(a)anthracene	ND	ug/L	0.10	1	12/24/16 11:23	12/30/16 22:52	56-55-3	
Benzo(a)pyrene	ND	ug/L	0.10	1	12/24/16 11:23	12/30/16 22:52	50-32-8	
Benzo(b)fluoranthene	ND	ug/L	0.10	1	12/24/16 11:23	12/30/16 22:52	205-99-2	
Benzo(g,h,i)perylene	ND	ug/L	0.10	1	12/24/16 11:23	12/30/16 22:52	191-24-2	
Benzo(k)fluoranthene	ND	ug/L	0.10	1	12/24/16 11:23	12/30/16 22:52	207-08-9	
Chrysene	ND	ug/L	0.10	1	12/24/16 11:23	12/30/16 22:52	218-01-9	
Dibenz(a,h)anthracene	ND	ug/L	0.10	1	12/24/16 11:23	12/30/16 22:52	53-70-3	
Fluoranthene	ND	ug/L	0.10	1	12/24/16 11:23	12/30/16 22:52	206-44-0	
Fluorene	ND	ug/L	0.10	1	12/24/16 11:23	12/30/16 22:52	86-73-7	
Indeno(1,2,3-cd)pyrene	ND	ug/L	0.10	1	12/24/16 11:23	12/30/16 22:52	193-39-5	
2-Methylnaphthalene	ND	ug/L	0.10	1	12/24/16 11:23	12/30/16 22:52	91-57-6	
Naphthalene	ND	ug/L	0.10	1	12/24/16 11:23	12/30/16 22:52	91-20-3	
Phenanthrene	ND	ug/L	0.10	1	12/24/16 11:23	12/30/16 22:52	85-01-8	
Pyrene	ND	ug/L	0.10	1	12/24/16 11:23	12/30/16 22:52	129-00-0	
Surrogates								
2-Fluorobiphenyl (S)	73	%	25-150	1	12/24/16 11:23	12/30/16 22:52	321-60-8	
Terphenyl-d14 (S)	84	%	25-150	1	12/24/16 11:23	12/30/16 22:52	1718-51-0	
8260 MSV Low Level Analytical Method: EPA 5030B/8260								
Acetone	15.6	ug/L	4.0	1		12/27/16 15:16	67-64-1	
Benzene	ND	ug/L	0.50	1		12/27/16 15:16	71-43-2	
Bromodichloromethane	ND	ug/L	0.50	1		12/27/16 15:16	75-27-4	
Bromoform	ND	ug/L	0.50	1		12/27/16 15:16	75-25-2	
Bromomethane	ND	ug/L	0.50	1		12/27/16 15:16	74-83-9	
2-Butanone (MEK)	ND	ug/L	2.0	1		12/27/16 15:16	78-93-3	

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ANALYTICAL RESULTS

Project: PUMA TERMIANL MW-SAMPLING

Pace Project No.: 2047713

Sample: MW-P118	Lab ID: 2047713012	Collected: 12/20/16 10:09	Received: 12/20/16 16:15	Matrix: Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV Low Level	Analytical Method: EPA 5030B/8260							
Carbon disulfide	ND	ug/L	1.0	1		12/27/16 15:16	75-15-0	L3
Carbon tetrachloride	ND	ug/L	0.50	1		12/27/16 15:16	56-23-5	
Chlorobenzene	ND	ug/L	0.50	1		12/27/16 15:16	108-90-7	
Chloroethane	ND	ug/L	0.50	1		12/27/16 15:16	75-00-3	
Chloroform	0.56	ug/L	0.50	1		12/27/16 15:16	67-66-3	
Chloromethane	ND	ug/L	0.50	1		12/27/16 15:16	74-87-3	
1,2-Dibromo-3-chloropropane	ND	ug/L	0.20	1		12/27/16 15:16	96-12-8	
Dibromochloromethane	ND	ug/L	0.50	1		12/27/16 15:16	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	1		12/27/16 15:16	106-93-4	
Dichlorodifluoromethane	ND	ug/L	1.0	1		12/27/16 15:16	75-71-8	
1,1-Dichloroethane	ND	ug/L	0.50	1		12/27/16 15:16	75-34-3	
1,2-Dichloroethane	ND	ug/L	0.50	1		12/27/16 15:16	107-06-2	
1,1-Dichloroethene	ND	ug/L	0.50	1		12/27/16 15:16	75-35-4	
cis-1,2-Dichloroethene	8.0	ug/L	1.0	1		12/27/16 15:16	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	0.50	1		12/27/16 15:16	156-60-5	
1,2-Dichloropropane	ND	ug/L	0.50	1		12/27/16 15:16	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	0.50	1		12/27/16 15:16	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	0.50	1		12/27/16 15:16	10061-02-6	
Ethylbenzene	ND	ug/L	0.50	1		12/27/16 15:16	100-41-4	
2-Hexanone	ND	ug/L	1.0	1		12/27/16 15:16	591-78-6	
Isopropylbenzene (Cumene)	ND	ug/L	1.0	1		12/27/16 15:16	98-82-8	
Methyl acetate	ND	ug/L	2.0	1		12/27/16 15:16	79-20-9	
Methylene Chloride	ND	ug/L	0.50	1		12/27/16 15:16	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	1.0	1		12/27/16 15:16	108-10-1	
Methyl-tert-butyl ether	ND	ug/L	0.50	1		12/27/16 15:16	1634-04-4	
Styrene	ND	ug/L	1.0	1		12/27/16 15:16	100-42-5	
1,1,2,2-Tetrachloroethane	ND	ug/L	0.50	1		12/27/16 15:16	79-34-5	
Tetrachloroethene	ND	ug/L	0.50	1		12/27/16 15:16	127-18-4	
Toluene	ND	ug/L	0.50	1		12/27/16 15:16	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	0.50	1		12/27/16 15:16	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	0.50	1		12/27/16 15:16	79-00-5	
Trichloroethene	72.3	ug/L	0.50	1		12/27/16 15:16	79-01-6	
Trichlorofluoromethane	ND	ug/L	0.50	1		12/27/16 15:16	75-69-4	
Vinyl chloride	0.51	ug/L	0.50	1		12/27/16 15:16	75-01-4	
m&p-Xylene	ND	ug/L	2.0	1		12/27/16 15:16	179601-23-1	
o-Xylene	ND	ug/L	1.0	1		12/27/16 15:16	95-47-6	
Surrogates								
Dibromofluoromethane (S)	114	%	72-126	1		12/27/16 15:16	1868-53-7	
4-Bromofluorobenzene (S)	98	%	68-124	1		12/27/16 15:16	460-00-4	
Toluene-d8 (S)	98	%	79-119	1		12/27/16 15:16	2037-26-5	

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ANALYTICAL RESULTS

Project: PUMA TERMIANL MW-SAMPLING

Pace Project No.: 2047713

Sample: MW-83A	Lab ID: 2047713013	Collected: 12/20/16 11:13	Received: 12/20/16 16:15	Matrix: Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8015M DRO/ORO Organics								
Analytical Method: EPA 8015B Modified Preparation Method: EPA 3535								
Diesel Range Organic (C10-C28)	ND	mg/L	0.50	1	12/27/16 11:20	01/04/17 16:30		
Oil Range Organics (>C28-C40)	ND	mg/L	1.0	1	12/27/16 11:20	01/04/17 16:30		
Surrogates								
n-Pentacosane (S)	62	%	16-137	1	12/27/16 11:20	01/04/17 16:30	629-99-2	
o-Terphenyl (S)	57	%	10-121	1	12/27/16 11:20	01/04/17 16:30	84-15-1	
8021 GCV BTEX, MTBE, GRO								
Analytical Method: EPA 8015/8021								
Gasoline Range Organics	ND	ug/L	50.0	1		12/29/16 09:33		
Surrogates								
4-Bromofluorobenzene (S)	91	%	44-148	1		12/29/16 09:33	460-00-4	
6020 MET ICPMS								
Analytical Method: EPA 6020 Preparation Method: EPA 3010								
Arsenic	ND	mg/L	0.0010	1	12/27/16 07:44	01/03/17 14:50	7440-38-2	
Chromium	ND	mg/L	0.0010	1	12/27/16 07:44	01/03/17 14:50	7440-47-3	
Lead	ND	mg/L	0.0010	1	12/27/16 07:44	01/03/17 14:50	7439-92-1	
Vanadium	ND	mg/L	0.0050	1	12/27/16 07:44	01/03/17 14:50	7440-62-2	
6020 MET ICPMS, Dissolved (LF)								
Analytical Method: EPA 6020 Preparation Method: EPA 3005A								
Arsenic, Dissolved	ND	ug/L	1.0	1	12/30/16 06:50	01/03/17 18:46	7440-38-2	
Chromium, Dissolved	ND	ug/L	1.0	1	12/30/16 06:50	01/03/17 18:46	7440-47-3	
Lead, Dissolved	ND	ug/L	1.0	1	12/30/16 06:50	01/03/17 18:46	7439-92-1	
Vanadium, Dissolved	ND	ug/L	5.0	1	12/30/16 06:50	01/03/17 18:46	7440-62-2	
7470 Mercury								
Analytical Method: EPA 7470 Preparation Method: EPA 7470								
Mercury	ND	ug/L	0.20	1	12/29/16 09:57	12/29/16 17:46	7439-97-6	
7470 Mercury, Dissolved (LF)								
Analytical Method: EPA 7470 Preparation Method: EPA 7470								
Mercury, Dissolved	ND	ug/L	0.20	1	12/29/16 11:58	12/29/16 19:16	7439-97-6	
8270 MSSV PAH by SIM SEP								
Analytical Method: EPA 8270 by SIM Preparation Method: EPA 3510								
Acenaphthene	ND	ug/L	0.10	1	12/24/16 11:23	01/03/17 12:09	83-32-9	
Acenaphthylene	ND	ug/L	0.10	1	12/24/16 11:23	01/03/17 12:09	208-96-8	
Anthracene	ND	ug/L	0.10	1	12/24/16 11:23	01/03/17 12:09	120-12-7	
Benzo(a)anthracene	ND	ug/L	0.10	1	12/24/16 11:23	01/03/17 12:09	56-55-3	
Benzo(a)pyrene	ND	ug/L	0.10	1	12/24/16 11:23	01/03/17 12:09	50-32-8	
Benzo(b)fluoranthene	ND	ug/L	0.10	1	12/24/16 11:23	01/03/17 12:09	205-99-2	
Benzo(g,h,i)perylene	ND	ug/L	0.10	1	12/24/16 11:23	01/03/17 12:09	191-24-2	
Benzo(k)fluoranthene	ND	ug/L	0.10	1	12/24/16 11:23	01/03/17 12:09	207-08-9	
Chrysene	ND	ug/L	0.10	1	12/24/16 11:23	01/03/17 12:09	218-01-9	
Dibenz(a,h)anthracene	ND	ug/L	0.10	1	12/24/16 11:23	01/03/17 12:09	53-70-3	
Fluoranthene	ND	ug/L	0.10	1	12/24/16 11:23	01/03/17 12:09	206-44-0	
Fluorene	ND	ug/L	0.10	1	12/24/16 11:23	01/03/17 12:09	86-73-7	
Indeno(1,2,3-cd)pyrene	ND	ug/L	0.10	1	12/24/16 11:23	01/03/17 12:09	193-39-5	
2-Methylnaphthalene	ND	ug/L	0.10	1	12/24/16 11:23	01/03/17 12:09	91-57-6	
Naphthalene	ND	ug/L	0.10	1	12/24/16 11:23	01/03/17 12:09	91-20-3	
Phenanthrene	ND	ug/L	0.10	1	12/24/16 11:23	01/03/17 12:09	85-01-8	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: PUMA TERMIANL MW-SAMPLING

Pace Project No.: 2047713

Sample: MW-83A	Lab ID: 2047713013	Collected: 12/20/16 11:13	Received: 12/20/16 16:15	Matrix: Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8270 MSSV PAH by SIM SEP		Analytical Method: EPA 8270 by SIM Preparation Method: EPA 3510						
Pyrene	ND	ug/L	0.10	1	12/24/16 11:23	01/03/17 12:09	129-00-0	
Surrogates								
2-Fluorobiphenyl (S)	74	%.	25-150	1	12/24/16 11:23	01/03/17 12:09	321-60-8	
Terphenyl-d14 (S)	91	%.	25-150	1	12/24/16 11:23	01/03/17 12:09	1718-51-0	
8260 MSV Low Level		Analytical Method: EPA 5030B/8260						
Acetone	20.7	ug/L	4.0	1		12/27/16 15:33	67-64-1	
Benzene	ND	ug/L	0.50	1		12/27/16 15:33	71-43-2	
Bromodichloromethane	ND	ug/L	0.50	1		12/27/16 15:33	75-27-4	
Bromoform	ND	ug/L	0.50	1		12/27/16 15:33	75-25-2	
Bromomethane	ND	ug/L	0.50	1		12/27/16 15:33	74-83-9	
2-Butanone (MEK)	ND	ug/L	2.0	1		12/27/16 15:33	78-93-3	
Carbon disulfide	ND	ug/L	1.0	1		12/27/16 15:33	75-15-0	L3
Carbon tetrachloride	ND	ug/L	0.50	1		12/27/16 15:33	56-23-5	
Chlorobenzene	ND	ug/L	0.50	1		12/27/16 15:33	108-90-7	
Chloroethane	ND	ug/L	0.50	1		12/27/16 15:33	75-00-3	
Chloroform	ND	ug/L	0.50	1		12/27/16 15:33	67-66-3	
Chloromethane	ND	ug/L	0.50	1		12/27/16 15:33	74-87-3	
1,2-Dibromo-3-chloropropane	ND	ug/L	0.20	1		12/27/16 15:33	96-12-8	
Dibromochloromethane	ND	ug/L	0.50	1		12/27/16 15:33	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	1		12/27/16 15:33	106-93-4	
Dichlorodifluoromethane	ND	ug/L	1.0	1		12/27/16 15:33	75-71-8	
1,1-Dichloroethane	ND	ug/L	0.50	1		12/27/16 15:33	75-34-3	
1,2-Dichloroethane	ND	ug/L	0.50	1		12/27/16 15:33	107-06-2	
1,1-Dichloroethene	ND	ug/L	0.50	1		12/27/16 15:33	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	1		12/27/16 15:33	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	0.50	1		12/27/16 15:33	156-60-5	
1,2-Dichloropropane	ND	ug/L	0.50	1		12/27/16 15:33	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	0.50	1		12/27/16 15:33	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	0.50	1		12/27/16 15:33	10061-02-6	
Ethylbenzene	ND	ug/L	0.50	1		12/27/16 15:33	100-41-4	
2-Hexanone	ND	ug/L	1.0	1		12/27/16 15:33	591-78-6	
Isopropylbenzene (Cumene)	ND	ug/L	1.0	1		12/27/16 15:33	98-82-8	
Methyl acetate	ND	ug/L	2.0	1		12/27/16 15:33	79-20-9	
Methylene Chloride	ND	ug/L	0.50	1		12/27/16 15:33	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	1.0	1		12/27/16 15:33	108-10-1	
Methyl-tert-butyl ether	ND	ug/L	0.50	1		12/27/16 15:33	1634-04-4	
Styrene	ND	ug/L	1.0	1		12/27/16 15:33	100-42-5	
1,1,2,2-Tetrachloroethane	ND	ug/L	0.50	1		12/27/16 15:33	79-34-5	
Tetrachloroethene	ND	ug/L	0.50	1		12/27/16 15:33	127-18-4	
Toluene	ND	ug/L	0.50	1		12/27/16 15:33	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	0.50	1		12/27/16 15:33	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	0.50	1		12/27/16 15:33	79-00-5	
Trichloroethene	ND	ug/L	0.50	1		12/27/16 15:33	79-01-6	
Trichlorofluoromethane	ND	ug/L	0.50	1		12/27/16 15:33	75-69-4	
Vinyl chloride	ND	ug/L	0.50	1		12/27/16 15:33	75-01-4	
m&p-Xylene	ND	ug/L	2.0	1		12/27/16 15:33	179601-23-1	

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ANALYTICAL RESULTS

Project: PUMA TERMIANL MW-SAMPLING

Pace Project No.: 2047713

Sample: MW-83A	Lab ID: 2047713013	Collected: 12/20/16 11:13	Received: 12/20/16 16:15	Matrix: Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV Low Level								
Analytical Method: EPA 5030B/8260								
o-Xylene	ND	ug/L	1.0	1		12/27/16 15:33	95-47-6	
Surrogates								
Dibromofluoromethane (S)	117	%.	72-126	1		12/27/16 15:33	1868-53-7	
4-Bromofluorobenzene (S)	97	%.	68-124	1		12/27/16 15:33	460-00-4	
Toluene-d8 (S)	101	%.	79-119	1		12/27/16 15:33	2037-26-5	
Sample: MW-AD-01								
Lab ID: 2047713014 Collected: 12/20/16 13:12 Received: 12/20/16 16:15 Matrix: Water								
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8015M DRO/ORO Organics								
Analytical Method: EPA 8015B Modified Preparation Method: EPA 3535								
Diesel Range Organic (C10-C28)	ND	mg/L	0.50	1	12/27/16 11:20	01/04/17 16:58		
Oil Range Organics (>C28-C40)	ND	mg/L	1.0	1	12/27/16 11:20	01/04/17 16:58		
Surrogates								
n-Pentacosane (S)	52	%.	16-137	1	12/27/16 11:20	01/04/17 16:58	629-99-2	
o-Terphenyl (S)	54	%.	10-121	1	12/27/16 11:20	01/04/17 16:58	84-15-1	
8021 GCV BTEX, MTBE, GRO								
Analytical Method: EPA 8015/8021								
Gasoline Range Organics	ND	ug/L	50.0	1		12/29/16 09:59		
Surrogates								
4-Bromofluorobenzene (S)	94	%.	44-148	1		12/29/16 09:59	460-00-4	
6020 MET ICPMS								
Analytical Method: EPA 6020 Preparation Method: EPA 3010								
Arsenic	ND	mg/L	0.0010	1	12/27/16 07:44	01/03/17 14:54	7440-38-2	
Chromium	0.0011	mg/L	0.0010	1	12/27/16 07:44	01/03/17 14:54	7440-47-3	
Lead	ND	mg/L	0.0010	1	12/27/16 07:44	01/03/17 14:54	7439-92-1	
Vanadium	0.0062	mg/L	0.0050	1	12/27/16 07:44	01/03/17 14:54	7440-62-2	
6020 MET ICPMS, Dissolved (LF)								
Analytical Method: EPA 6020 Preparation Method: EPA 3005A								
Arsenic, Dissolved	ND	ug/L	1.0	1	12/30/16 06:50	01/03/17 18:50	7440-38-2	
Chromium, Dissolved	ND	ug/L	1.0	1	12/30/16 06:50	01/03/17 18:50	7440-47-3	
Lead, Dissolved	ND	ug/L	1.0	1	12/30/16 06:50	01/03/17 18:50	7439-92-1	
Vanadium, Dissolved	ND	ug/L	5.0	1	12/30/16 06:50	01/03/17 18:50	7440-62-2	
7470 Mercury								
Analytical Method: EPA 7470 Preparation Method: EPA 7470								
Mercury	ND	ug/L	0.20	1	12/29/16 09:57	12/29/16 17:48	7439-97-6	
7470 Mercury, Dissolved (LF)								
Analytical Method: EPA 7470 Preparation Method: EPA 7470								
Mercury, Dissolved	ND	ug/L	0.20	1	12/29/16 11:58	12/29/16 19:22	7439-97-6	
8270 MSSV PAH by SIM SEP								
Analytical Method: EPA 8270 by SIM Preparation Method: EPA 3510								
Benzo(a)pyrene	ND	ug/L	0.10	1	01/04/17 09:09	01/04/17 17:39	50-32-8	H2
Surrogates								
2-Fluorobiphenyl (S)	49	%.	25-150	1	12/27/16 12:16	12/30/16 18:52	321-60-8	
2-Fluorobiphenyl (S)	85	%.	25-150	1	01/04/17 09:09	01/04/17 17:39	321-60-8	

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ANALYTICAL RESULTS

Project: PUMA TERMIANL MW-SAMPLING

Pace Project No.: 2047713

Sample: MW-AD-01	Lab ID: 2047713014	Collected: 12/20/16 13:12	Received: 12/20/16 16:15	Matrix: Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8270 MSSV PAH by SIM SEP		Analytical Method: EPA 8270 by SIM Preparation Method: EPA 3510						
Surrogates								
Terphenyl-d14 (S)	56	%	25-150	1	12/27/16 12:16	12/30/16 18:52	1718-51-0	
Terphenyl-d14 (S)	88	%	25-150	1	01/04/17 09:09	01/04/17 17:39	1718-51-0	
8260 MSV Low Level		Analytical Method: EPA 5030B/8260						
Acetone	25.0	ug/L	4.0	1		12/27/16 15:51	67-64-1	
Benzene	ND	ug/L	0.50	1		12/27/16 15:51	71-43-2	
Bromodichloromethane	ND	ug/L	0.50	1		12/27/16 15:51	75-27-4	
Bromoform	ND	ug/L	0.50	1		12/27/16 15:51	75-25-2	
Bromomethane	ND	ug/L	0.50	1		12/27/16 15:51	74-83-9	
2-Butanone (MEK)	ND	ug/L	2.0	1		12/27/16 15:51	78-93-3	
Carbon disulfide	ND	ug/L	1.0	1		12/27/16 15:51	75-15-0	L3
Carbon tetrachloride	ND	ug/L	0.50	1		12/27/16 15:51	56-23-5	
Chlorobenzene	ND	ug/L	0.50	1		12/27/16 15:51	108-90-7	
Chloroethane	ND	ug/L	0.50	1		12/27/16 15:51	75-00-3	
Chloroform	ND	ug/L	0.50	1		12/27/16 15:51	67-66-3	
Chloromethane	ND	ug/L	0.50	1		12/27/16 15:51	74-87-3	
1,2-Dibromo-3-chloropropane	ND	ug/L	0.20	1		12/27/16 15:51	96-12-8	
Dibromochloromethane	ND	ug/L	0.50	1		12/27/16 15:51	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	1		12/27/16 15:51	106-93-4	
Dichlorodifluoromethane	ND	ug/L	1.0	1		12/27/16 15:51	75-71-8	
1,1-Dichloroethane	ND	ug/L	0.50	1		12/27/16 15:51	75-34-3	
1,2-Dichloroethane	ND	ug/L	0.50	1		12/27/16 15:51	107-06-2	
1,1-Dichloroethene	ND	ug/L	0.50	1		12/27/16 15:51	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	1		12/27/16 15:51	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	0.50	1		12/27/16 15:51	156-60-5	
1,2-Dichloropropane	ND	ug/L	0.50	1		12/27/16 15:51	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	0.50	1		12/27/16 15:51	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	0.50	1		12/27/16 15:51	10061-02-6	
Ethylbenzene	ND	ug/L	0.50	1		12/27/16 15:51	100-41-4	
2-Hexanone	ND	ug/L	1.0	1		12/27/16 15:51	591-78-6	
Isopropylbenzene (Cumene)	ND	ug/L	1.0	1		12/27/16 15:51	98-82-8	
Methyl acetate	ND	ug/L	2.0	1		12/27/16 15:51	79-20-9	
Methylene Chloride	ND	ug/L	0.50	1		12/27/16 15:51	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	1.0	1		12/27/16 15:51	108-10-1	
Methyl-tert-butyl ether	ND	ug/L	0.50	1		12/27/16 15:51	1634-04-4	
Styrene	ND	ug/L	1.0	1		12/27/16 15:51	100-42-5	
1,1,2,2-Tetrachloroethane	ND	ug/L	0.50	1		12/27/16 15:51	79-34-5	
Tetrachloroethene	ND	ug/L	0.50	1		12/27/16 15:51	127-18-4	
Toluene	ND	ug/L	0.50	1		12/27/16 15:51	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	0.50	1		12/27/16 15:51	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	0.50	1		12/27/16 15:51	79-00-5	
Trichloroethene	ND	ug/L	0.50	1		12/27/16 15:51	79-01-6	
Trichlorofluoromethane	ND	ug/L	0.50	1		12/27/16 15:51	75-69-4	
Vinyl chloride	ND	ug/L	0.50	1		12/27/16 15:51	75-01-4	
m&p-Xylene	ND	ug/L	2.0	1		12/27/16 15:51	179601-23-1	
o-Xylene	ND	ug/L	1.0	1		12/27/16 15:51	95-47-6	

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ANALYTICAL RESULTS

Project: PUMA TERMIANL MW-SAMPLING

Project No.: 2047713

Sample: MW-AD-01	Lab ID: 2047713014	Collected: 12/20/16 13:12	Received: 12/20/16 16:15	Matrix: Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV Low Level		Analytical Method: EPA 5030B/8260						
Surrogates								
Dibromofluoromethane (S)	114	%.	72-126	1		12/27/16 15:51	1868-53-7	
4-Bromofluorobenzene (S)	101	%.	68-124	1		12/27/16 15:51	460-00-4	
Toluene-d8 (S)	102	%.	79-119	1		12/27/16 15:51	2037-26-5	
Sample: MW-57A		Lab ID: 2047713015		Collected: 12/20/16 14:30	Received: 12/20/16 16:15	Matrix: Water		
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8015M DRO/ORO Organics		Analytical Method: EPA 8015B Modified Preparation Method: EPA 3535						
Diesel Range Organic (C10-C28)	0.55	mg/L	0.50	1	12/27/16 11:20	01/04/17 17:26		
Oil Range Organics (>C28-C40)	ND	mg/L	1.0	1	12/27/16 11:20	01/04/17 17:26		
Surrogates								
n-Pentacosane (S)	54	%.	16-137	1	12/27/16 11:20	01/04/17 17:26	629-99-2	
o-Terphenyl (S)	60	%.	10-121	1	12/27/16 11:20	01/04/17 17:26	84-15-1	
8021 GCV BTEX, MTBE, GRO		Analytical Method: EPA 8015/8021						
Gasoline Range Organics	71.5	ug/L	50.0	1		12/29/16 10:25		
Surrogates								
4-Bromofluorobenzene (S)	94	%.	44-148	1		12/29/16 10:25	460-00-4	
6020 MET ICPMS		Analytical Method: EPA 6020 Preparation Method: EPA 3010						
Arsenic	0.0031	mg/L	0.0010	1	12/27/16 07:44	01/03/17 14:58	7440-38-2	
Chromium	ND	mg/L	0.0010	1	12/27/16 07:44	01/03/17 14:58	7440-47-3	
Lead	ND	mg/L	0.0010	1	12/27/16 07:44	01/03/17 14:58	7439-92-1	
Vanadium	ND	mg/L	0.0050	1	12/27/16 07:44	01/03/17 14:58	7440-62-2	
6020 MET ICPMS, Dissolved (LF)		Analytical Method: EPA 6020 Preparation Method: EPA 3005A						
Arsenic, Dissolved	ND	ug/L	1.0	1	12/30/16 06:50	01/03/17 18:54	7440-38-2	
Chromium, Dissolved	ND	ug/L	1.0	1	12/30/16 06:50	01/03/17 18:54	7440-47-3	
Lead, Dissolved	ND	ug/L	1.0	1	12/30/16 06:50	01/03/17 18:54	7439-92-1	
Vanadium, Dissolved	ND	ug/L	5.0	1	12/30/16 06:50	01/03/17 18:54	7440-62-2	
7470 Mercury		Analytical Method: EPA 7470 Preparation Method: EPA 7470						
Mercury	ND	ug/L	0.20	1	12/29/16 09:57	12/29/16 17:51	7439-97-6	
7470 Mercury, Dissolved (LF)		Analytical Method: EPA 7470 Preparation Method: EPA 7470						
Mercury, Dissolved	ND	ug/L	0.20	1	12/29/16 11:58	12/29/16 19:24	7439-97-6	
8270 MSSV PAH by SIM SEP		Analytical Method: EPA 8270 by SIM Preparation Method: EPA 3510						
Benzo(a)pyrene	ND	ug/L	0.10	1	01/04/17 09:09	01/04/17 17:59	50-32-8	H2
Surrogates								
2-Fluorobiphenyl (S)	78	%.	25-150	1	12/27/16 12:16	12/30/16 19:12	321-60-8	
2-Fluorobiphenyl (S)	81	%.	25-150	1	01/04/17 09:09	01/04/17 17:59	321-60-8	
Terphenyl-d14 (S)	79	%.	25-150	1	01/04/17 09:09	01/04/17 17:59	1718-51-0	

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ANALYTICAL RESULTS

Project: PUMA TERMIANL MW-SAMPLING

Pace Project No.: 2047713

Sample: MW-57A	Lab ID: 2047713015	Collected: 12/20/16 14:30	Received: 12/20/16 16:15	Matrix: Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8270 MSSV PAH by SIM SEP		Analytical Method: EPA 8270 by SIM Preparation Method: EPA 3510						
Surrogates								
Terphenyl-d14 (S)	85	%	25-150	1	12/27/16 12:16	12/30/16 19:12	1718-51-0	
8260 MSV Low Level		Analytical Method: EPA 5030B/8260						
Acetone	19.1	ug/L	4.0	1		12/27/16 16:09	67-64-1	
Benzene	ND	ug/L	0.50	1		12/27/16 16:09	71-43-2	
Bromodichloromethane	ND	ug/L	0.50	1		12/27/16 16:09	75-27-4	
Bromoform	ND	ug/L	0.50	1		12/27/16 16:09	75-25-2	
Bromomethane	ND	ug/L	0.50	1		12/27/16 16:09	74-83-9	
2-Butanone (MEK)	ND	ug/L	2.0	1		12/27/16 16:09	78-93-3	
Carbon disulfide	ND	ug/L	1.0	1		12/27/16 16:09	75-15-0	L3
Carbon tetrachloride	ND	ug/L	0.50	1		12/27/16 16:09	56-23-5	
Chlorobenzene	ND	ug/L	0.50	1		12/27/16 16:09	108-90-7	
Chloroethane	ND	ug/L	0.50	1		12/27/16 16:09	75-00-3	
Chloroform	ND	ug/L	0.50	1		12/27/16 16:09	67-66-3	
Chloromethane	ND	ug/L	0.50	1		12/27/16 16:09	74-87-3	
1,2-Dibromo-3-chloropropane	ND	ug/L	0.20	1		12/27/16 16:09	96-12-8	
Dibromochloromethane	ND	ug/L	0.50	1		12/27/16 16:09	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	1		12/27/16 16:09	106-93-4	
Dichlorodifluoromethane	ND	ug/L	1.0	1		12/27/16 16:09	75-71-8	
1,1-Dichloroethane	ND	ug/L	0.50	1		12/27/16 16:09	75-34-3	
1,2-Dichloroethane	ND	ug/L	0.50	1		12/27/16 16:09	107-06-2	
1,1-Dichloroethene	ND	ug/L	0.50	1		12/27/16 16:09	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	1		12/27/16 16:09	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	0.50	1		12/27/16 16:09	156-60-5	
1,2-Dichloropropane	ND	ug/L	0.50	1		12/27/16 16:09	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	0.50	1		12/27/16 16:09	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	0.50	1		12/27/16 16:09	10061-02-6	
Ethylbenzene	ND	ug/L	0.50	1		12/27/16 16:09	100-41-4	
2-Hexanone	ND	ug/L	1.0	1		12/27/16 16:09	591-78-6	
Isopropylbenzene (Cumene)	ND	ug/L	1.0	1		12/27/16 16:09	98-82-8	
Methyl acetate	ND	ug/L	2.0	1		12/27/16 16:09	79-20-9	
Methylene Chloride	ND	ug/L	0.50	1		12/27/16 16:09	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	1.0	1		12/27/16 16:09	108-10-1	
Methyl-tert-butyl ether	7.9	ug/L	0.50	1		12/27/16 16:09	1634-04-4	
Styrene	ND	ug/L	1.0	1		12/27/16 16:09	100-42-5	
1,1,2,2-Tetrachloroethane	ND	ug/L	0.50	1		12/27/16 16:09	79-34-5	
Tetrachloroethene	ND	ug/L	0.50	1		12/27/16 16:09	127-18-4	
Toluene	ND	ug/L	0.50	1		12/27/16 16:09	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	0.50	1		12/27/16 16:09	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	0.50	1		12/27/16 16:09	79-00-5	
Trichloroethene	ND	ug/L	0.50	1		12/27/16 16:09	79-01-6	
Trichlorofluoromethane	ND	ug/L	0.50	1		12/27/16 16:09	75-69-4	
Vinyl chloride	ND	ug/L	0.50	1		12/27/16 16:09	75-01-4	
m&p-Xylene	ND	ug/L	2.0	1		12/27/16 16:09	179601-23-1	
o-Xylene	ND	ug/L	1.0	1		12/27/16 16:09	95-47-6	

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ANALYTICAL RESULTS

Project: PUMA TERMIANL MW-SAMPLING

Sample Project No.: 2047713

Sample: MW-57A	Lab ID: 2047713015	Collected: 12/20/16 14:30	Received: 12/20/16 16:15	Matrix: Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV Low Level		Analytical Method: EPA 5030B/8260						
Surrogates								
Dibromofluoromethane (S)	114	%.	72-126	1		12/27/16 16:09	1868-53-7	
4-Bromofluorobenzene (S)	96	%.	68-124	1		12/27/16 16:09	460-00-4	
Toluene-d8 (S)	101	%.	79-119	1		12/27/16 16:09	2037-26-5	
Sample: MW-AD-03		Lab ID: 2047713016		Collected: 12/20/16 15:16	Received: 12/20/16 16:15	Matrix: Water		
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8015M DRO/ORO Organics		Analytical Method: EPA 8015B Modified Preparation Method: EPA 3535						
Diesel Range Organic (C10-C28)	ND	mg/L	0.25	1	12/27/16 11:20	01/04/17 19:15		
Oil Range Organics (>C28-C40)	ND	mg/L	0.50	1	12/27/16 11:20	01/04/17 19:15		
Surrogates								
n-Pentacosane (S)	34	%.	16-137	1	12/27/16 11:20	01/04/17 19:15	629-99-2	
o-Terphenyl (S)	46	%.	10-121	1	12/27/16 11:20	01/04/17 19:15	84-15-1	
8021 GCV BTEX, MTBE, GRO		Analytical Method: EPA 8015/8021						
Gasoline Range Organics	ND	ug/L	50.0	1		12/29/16 10:51		
Surrogates								
4-Bromofluorobenzene (S)	91	%.	44-148	1		12/29/16 10:51	460-00-4	
6020 MET ICPMS		Analytical Method: EPA 6020 Preparation Method: EPA 3010						
Arsenic	ND	mg/L	0.0010	1	12/27/16 07:44	01/03/17 15:02	7440-38-2	
Chromium	ND	mg/L	0.0010	1	12/27/16 07:44	01/03/17 15:02	7440-47-3	
Lead	ND	mg/L	0.0010	1	12/27/16 07:44	01/03/17 15:02	7439-92-1	
Vanadium	ND	mg/L	0.0050	1	12/27/16 07:44	01/03/17 15:02	7440-62-2	
6020 MET ICPMS, Dissolved (LF)		Analytical Method: EPA 6020 Preparation Method: EPA 3005A						
Arsenic, Dissolved	ND	ug/L	1.0	1	12/30/16 06:50	01/03/17 18:58	7440-38-2	
Chromium, Dissolved	ND	ug/L	1.0	1	12/30/16 06:50	01/03/17 18:58	7440-47-3	
Lead, Dissolved	ND	ug/L	1.0	1	12/30/16 06:50	01/03/17 18:58	7439-92-1	
Vanadium, Dissolved	ND	ug/L	5.0	1	12/30/16 06:50	01/03/17 18:58	7440-62-2	
7470 Mercury		Analytical Method: EPA 7470 Preparation Method: EPA 7470						
Mercury	ND	ug/L	0.20	1	12/29/16 09:57	12/29/16 17:53	7439-97-6	
7470 Mercury, Dissolved (LF)		Analytical Method: EPA 7470 Preparation Method: EPA 7470						
Mercury, Dissolved	ND	ug/L	0.20	1	12/29/16 11:58	12/29/16 19:26	7439-97-6	
8270 MSSV PAH by SIM SEP		Analytical Method: EPA 8270 by SIM Preparation Method: EPA 3510						
Benzo(a)pyrene	ND	ug/L	0.10	1	01/04/17 09:09	01/04/17 18:19	50-32-8	H2
Surrogates								
2-Fluorobiphenyl (S)	79	%.	25-150	1	01/04/17 09:09	01/04/17 18:19	321-60-8	
2-Fluorobiphenyl (S)	43	%.	25-150	1	12/27/16 12:16	12/30/16 19:32	321-60-8	
Terphenyl-d14 (S)	87	%.	25-150	1	01/04/17 09:09	01/04/17 18:19	1718-51-0	

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ANALYTICAL RESULTS

Project: PUMA TERMIANL MW-SAMPLING

Pace Project No.: 2047713

Sample: MW-AD-03	Lab ID: 2047713016	Collected: 12/20/16 15:16	Received: 12/20/16 16:15	Matrix: Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8270 MSSV PAH by SIM SEP		Analytical Method: EPA 8270 by SIM Preparation Method: EPA 3510						
Surrogates								
Terphenyl-d14 (S)	49	%	25-150	1	12/27/16 12:16	12/30/16 19:32	1718-51-0	
8260 MSV Low Level		Analytical Method: EPA 5030B/8260						
Acetone	37.9	ug/L	4.0	1		12/27/16 16:27	67-64-1	
Benzene	ND	ug/L	0.50	1		12/27/16 16:27	71-43-2	
Bromodichloromethane	ND	ug/L	0.50	1		12/27/16 16:27	75-27-4	
Bromoform	ND	ug/L	0.50	1		12/27/16 16:27	75-25-2	
Bromomethane	ND	ug/L	0.50	1		12/27/16 16:27	74-83-9	
2-Butanone (MEK)	ND	ug/L	2.0	1		12/27/16 16:27	78-93-3	
Carbon disulfide	ND	ug/L	1.0	1		12/27/16 16:27	75-15-0	L3
Carbon tetrachloride	ND	ug/L	0.50	1		12/27/16 16:27	56-23-5	
Chlorobenzene	ND	ug/L	0.50	1		12/27/16 16:27	108-90-7	
Chloroethane	ND	ug/L	0.50	1		12/27/16 16:27	75-00-3	
Chloroform	ND	ug/L	0.50	1		12/27/16 16:27	67-66-3	
Chloromethane	ND	ug/L	0.50	1		12/27/16 16:27	74-87-3	
1,2-Dibromo-3-chloropropane	ND	ug/L	0.20	1		12/27/16 16:27	96-12-8	
Dibromochloromethane	ND	ug/L	0.50	1		12/27/16 16:27	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	1		12/27/16 16:27	106-93-4	
Dichlorodifluoromethane	ND	ug/L	1.0	1		12/27/16 16:27	75-71-8	
1,1-Dichloroethane	ND	ug/L	0.50	1		12/27/16 16:27	75-34-3	
1,2-Dichloroethane	ND	ug/L	0.50	1		12/27/16 16:27	107-06-2	
1,1-Dichloroethene	ND	ug/L	0.50	1		12/27/16 16:27	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	1		12/27/16 16:27	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	0.50	1		12/27/16 16:27	156-60-5	
1,2-Dichloropropane	ND	ug/L	0.50	1		12/27/16 16:27	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	0.50	1		12/27/16 16:27	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	0.50	1		12/27/16 16:27	10061-02-6	
Ethylbenzene	ND	ug/L	0.50	1		12/27/16 16:27	100-41-4	
2-Hexanone	ND	ug/L	1.0	1		12/27/16 16:27	591-78-6	
Isopropylbenzene (Cumene)	ND	ug/L	1.0	1		12/27/16 16:27	98-82-8	
Methyl acetate	ND	ug/L	2.0	1		12/27/16 16:27	79-20-9	
Methylene Chloride	ND	ug/L	0.50	1		12/27/16 16:27	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	1.0	1		12/27/16 16:27	108-10-1	
Methyl-tert-butyl ether	ND	ug/L	0.50	1		12/27/16 16:27	1634-04-4	
Styrene	ND	ug/L	1.0	1		12/27/16 16:27	100-42-5	
1,1,2,2-Tetrachloroethane	ND	ug/L	0.50	1		12/27/16 16:27	79-34-5	
Tetrachloroethene	ND	ug/L	0.50	1		12/27/16 16:27	127-18-4	
Toluene	ND	ug/L	0.50	1		12/27/16 16:27	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	0.50	1		12/27/16 16:27	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	0.50	1		12/27/16 16:27	79-00-5	
Trichloroethene	ND	ug/L	0.50	1		12/27/16 16:27	79-01-6	
Trichlorofluoromethane	ND	ug/L	0.50	1		12/27/16 16:27	75-69-4	
Vinyl chloride	ND	ug/L	0.50	1		12/27/16 16:27	75-01-4	
m&p-Xylene	ND	ug/L	2.0	1		12/27/16 16:27	179601-23-1	
o-Xylene	ND	ug/L	1.0	1		12/27/16 16:27	95-47-6	

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ANALYTICAL RESULTS

Project: PUMA TERMIANL MW-SAMPLING

Pace Project No.: 2047713

Sample: MW-AD-03	Lab ID: 2047713016	Collected: 12/20/16 15:16	Received: 12/20/16 16:15	Matrix: Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual

8260 MSV Low Level

Analytical Method: EPA 5030B/8260

Surrogates

Dibromofluoromethane (S)	111	%.	72-126	1		12/27/16 16:27	1868-53-7	
4-Bromofluorobenzene (S)	96	%.	68-124	1		12/27/16 16:27	460-00-4	
Toluene-d8 (S)	102	%.	79-119	1		12/27/16 16:27	2037-26-5	

Sample: FB-122016	Lab ID: 2047713017	Collected: 12/20/16 15:25	Received: 12/20/16 16:15	Matrix: Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual

8021 GCV BTEX, MTBE, GRO

Analytical Method: EPA 8015/8021

Gasoline Range Organics	ND	ug/L	50.0	1		12/29/16 11:43		
Surrogates								
4-Bromofluorobenzene (S)	94	%.	44-148	1		12/29/16 11:43	460-00-4	

8260 MSV Low Level

Analytical Method: EPA 5030B/8260

Acetone	16.0	ug/L	4.0	1		12/27/16 16:45	67-64-1	
Benzene	ND	ug/L	0.50	1		12/27/16 16:45	71-43-2	
Bromodichloromethane	ND	ug/L	0.50	1		12/27/16 16:45	75-27-4	
Bromoform	ND	ug/L	0.50	1		12/27/16 16:45	75-25-2	
Bromomethane	ND	ug/L	0.50	1		12/27/16 16:45	74-83-9	
2-Butanone (MEK)	ND	ug/L	2.0	1		12/27/16 16:45	78-93-3	
Carbon disulfide	ND	ug/L	1.0	1		12/27/16 16:45	75-15-0	L3
Carbon tetrachloride	ND	ug/L	0.50	1		12/27/16 16:45	56-23-5	
Chlorobenzene	ND	ug/L	0.50	1		12/27/16 16:45	108-90-7	
Chloroethane	ND	ug/L	0.50	1		12/27/16 16:45	75-00-3	
Chloroform	ND	ug/L	0.50	1		12/27/16 16:45	67-66-3	
Chloromethane	ND	ug/L	0.50	1		12/27/16 16:45	74-87-3	
1,2-Dibromo-3-chloropropane	ND	ug/L	0.20	1		12/27/16 16:45	96-12-8	
Dibromochloromethane	ND	ug/L	0.50	1		12/27/16 16:45	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	1		12/27/16 16:45	106-93-4	
Dichlorodifluoromethane	ND	ug/L	1.0	1		12/27/16 16:45	75-71-8	
1,1-Dichloroethane	ND	ug/L	0.50	1		12/27/16 16:45	75-34-3	
1,2-Dichloroethane	ND	ug/L	0.50	1		12/27/16 16:45	107-06-2	
1,1-Dichloroethene	ND	ug/L	0.50	1		12/27/16 16:45	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	1		12/27/16 16:45	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	0.50	1		12/27/16 16:45	156-60-5	
1,2-Dichloropropane	ND	ug/L	0.50	1		12/27/16 16:45	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	0.50	1		12/27/16 16:45	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	0.50	1		12/27/16 16:45	10061-02-6	
Ethylbenzene	ND	ug/L	0.50	1		12/27/16 16:45	100-41-4	
2-Hexanone	ND	ug/L	1.0	1		12/27/16 16:45	591-78-6	
Isopropylbenzene (Cumene)	ND	ug/L	1.0	1		12/27/16 16:45	98-82-8	
Methyl acetate	ND	ug/L	2.0	1		12/27/16 16:45	79-20-9	
Methylene Chloride	ND	ug/L	0.50	1		12/27/16 16:45	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	1.0	1		12/27/16 16:45	108-10-1	
Methyl-tert-butyl ether	ND	ug/L	0.50	1		12/27/16 16:45	1634-04-4	

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ANALYTICAL RESULTS

Project: PUMA TERMIANL MW-SAMPLING

Pace Project No.: 2047713

Sample: FB-122016		Lab ID: 2047713017		Collected: 12/20/16 15:25	Received: 12/20/16 16:15	Matrix: Water		
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV Low Level		Analytical Method: EPA 5030B/8260						
Styrene	ND	ug/L	1.0	1		12/27/16 16:45	100-42-5	
1,1,2,2-Tetrachloroethane	ND	ug/L	0.50	1		12/27/16 16:45	79-34-5	
Tetrachloroethene	ND	ug/L	0.50	1		12/27/16 16:45	127-18-4	
Toluene	ND	ug/L	0.50	1		12/27/16 16:45	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	0.50	1		12/27/16 16:45	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	0.50	1		12/27/16 16:45	79-00-5	
Trichloroethene	ND	ug/L	0.50	1		12/27/16 16:45	79-01-6	
Trichlorofluoromethane	ND	ug/L	0.50	1		12/27/16 16:45	75-69-4	
Vinyl chloride	ND	ug/L	0.50	1		12/27/16 16:45	75-01-4	
m&p-Xylene	ND	ug/L	2.0	1		12/27/16 16:45	179601-23-1	
o-Xylene	ND	ug/L	1.0	1		12/27/16 16:45	95-47-6	
Surrogates								
Dibromofluoromethane (S)	113	%.	72-126	1		12/27/16 16:45	1868-53-7	
4-Bromofluorobenzene (S)	97	%.	68-124	1		12/27/16 16:45	460-00-4	
Toluene-d8 (S)	101	%.	79-119	1		12/27/16 16:45	2037-26-5	

Sample: DUP001		Lab ID: 2047713018		Collected: 12/20/16 00:00	Received: 12/20/16 16:15	Matrix: Water		
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8015M DRO/ORO Organics		Analytical Method: EPA 8015B Modified Preparation Method: EPA 3535						
Diesel Range Organic (C10-C28)	ND	mg/L	0.50	1	12/27/16 11:20	01/04/17 17:54		
Oil Range Organics (>C28-C40)	ND	mg/L	1.0	1	12/27/16 11:20	01/04/17 17:54		
Surrogates								
n-Pentacosane (S)	54	%.	16-137	1	12/27/16 11:20	01/04/17 17:54	629-99-2	
o-Terphenyl (S)	55	%.	10-121	1	12/27/16 11:20	01/04/17 17:54	84-15-1	
8021 GCV BTEX, MTBE, GRO		Analytical Method: EPA 8015/8021						
Gasoline Range Organics	70.0	ug/L	50.0	1		12/29/16 11:17		
Surrogates								
4-Bromofluorobenzene (S)	94	%.	44-148	1		12/29/16 11:17	460-00-4	
6020 MET ICPMS		Analytical Method: EPA 6020 Preparation Method: EPA 3010						
Arsenic	0.0032	mg/L	0.0010	1	12/27/16 07:44	01/03/17 15:06	7440-38-2	
Chromium	ND	mg/L	0.0010	1	12/27/16 07:44	01/03/17 15:06	7440-47-3	
Lead	ND	mg/L	0.0010	1	12/27/16 07:44	01/03/17 15:06	7439-92-1	
Vanadium	ND	mg/L	0.0050	1	12/27/16 07:44	01/03/17 15:06	7440-62-2	
6020 MET ICPMS, Dissolved (LF)		Analytical Method: EPA 6020 Preparation Method: EPA 3005A						
Arsenic, Dissolved	ND	ug/L	1.0	1	12/30/16 06:50	01/03/17 19:02	7440-38-2	
Chromium, Dissolved	ND	ug/L	1.0	1	12/30/16 06:50	01/03/17 19:02	7440-47-3	
Lead, Dissolved	ND	ug/L	1.0	1	12/30/16 06:50	01/03/17 19:02	7439-92-1	
Vanadium, Dissolved	ND	ug/L	5.0	1	12/30/16 06:50	01/03/17 19:02	7440-62-2	

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ANALYTICAL RESULTS

Project: PUMA TERMIANL MW-SAMPLING

Sample Project No.: 2047713

Sample: DUP001	Lab ID: 2047713018	Collected: 12/20/16 00:00	Received: 12/20/16 16:15	Matrix: Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
7470 Mercury								
Analytical Method: EPA 7470 Preparation Method: EPA 7470								
Mercury	ND	ug/L	0.20	1	12/29/16 09:57	12/29/16 17:55	7439-97-6	
7470 Mercury, Dissolved (LF)								
Analytical Method: EPA 7470 Preparation Method: EPA 7470								
Mercury, Dissolved	ND	ug/L	0.20	1	12/29/16 11:58	12/29/16 19:28	7439-97-6	
8270 MSSV PAH by SIM SEP								
Analytical Method: EPA 8270 by SIM Preparation Method: EPA 3510								
Benzo(a)pyrene	ND	ug/L	0.10	1	01/04/17 09:09	01/04/17 18:39	50-32-8	H2
Surrogates								
2-Fluorobiphenyl (S)	65	%	25-150	1	12/27/16 12:16	12/30/16 19:52	321-60-8	
2-Fluorobiphenyl (S)	89	%	25-150	1	01/04/17 09:09	01/04/17 18:39	321-60-8	
Terphenyl-d14 (S)	82	%	25-150	1	01/04/17 09:09	01/04/17 18:39	1718-51-0	
Terphenyl-d14 (S)	77	%	25-150	1	12/27/16 12:16	12/30/16 19:52	1718-51-0	
8260 MSV Low Level								
Analytical Method: EPA 5030B/8260								
Acetone	15.5	ug/L	4.0	1		12/27/16 17:03	67-64-1	
Benzene	ND	ug/L	0.50	1		12/27/16 17:03	71-43-2	
Bromodichloromethane	ND	ug/L	0.50	1		12/27/16 17:03	75-27-4	
Bromoform	ND	ug/L	0.50	1		12/27/16 17:03	75-25-2	
Bromomethane	ND	ug/L	0.50	1		12/27/16 17:03	74-83-9	
2-Butanone (MEK)	ND	ug/L	2.0	1		12/27/16 17:03	78-93-3	
Carbon disulfide	ND	ug/L	1.0	1		12/27/16 17:03	75-15-0	L3
Carbon tetrachloride	ND	ug/L	0.50	1		12/27/16 17:03	56-23-5	
Chlorobenzene	ND	ug/L	0.50	1		12/27/16 17:03	108-90-7	
Chloroethane	ND	ug/L	0.50	1		12/27/16 17:03	75-00-3	
Chloroform	ND	ug/L	0.50	1		12/27/16 17:03	67-66-3	
Chloromethane	ND	ug/L	0.50	1		12/27/16 17:03	74-87-3	
1,2-Dibromo-3-chloropropane	ND	ug/L	0.20	1		12/27/16 17:03	96-12-8	
Dibromochloromethane	ND	ug/L	0.50	1		12/27/16 17:03	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	1		12/27/16 17:03	106-93-4	
Dichlorodifluoromethane	ND	ug/L	1.0	1		12/27/16 17:03	75-71-8	
1,1-Dichloroethane	ND	ug/L	0.50	1		12/27/16 17:03	75-34-3	
1,2-Dichloroethane	ND	ug/L	0.50	1		12/27/16 17:03	107-06-2	
1,1-Dichloroethene	ND	ug/L	0.50	1		12/27/16 17:03	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	1		12/27/16 17:03	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	0.50	1		12/27/16 17:03	156-60-5	
1,2-Dichloropropane	ND	ug/L	0.50	1		12/27/16 17:03	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	0.50	1		12/27/16 17:03	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	0.50	1		12/27/16 17:03	10061-02-6	
Ethylbenzene	ND	ug/L	0.50	1		12/27/16 17:03	100-41-4	
2-Hexanone	ND	ug/L	1.0	1		12/27/16 17:03	591-78-6	
Isopropylbenzene (Cumene)	ND	ug/L	1.0	1		12/27/16 17:03	98-82-8	
Methyl acetate	ND	ug/L	2.0	1		12/27/16 17:03	79-20-9	
Methylene Chloride	ND	ug/L	0.50	1		12/27/16 17:03	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	1.0	1		12/27/16 17:03	108-10-1	
Methyl-tert-butyl ether	8.4	ug/L	0.50	1		12/27/16 17:03	1634-04-4	
Styrene	ND	ug/L	1.0	1		12/27/16 17:03	100-42-5	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: PUMA TERMIANL MW-SAMPLING

Pace Project No.: 2047713

Sample: DUP001	Lab ID: 2047713018	Collected: 12/20/16 00:00	Received: 12/20/16 16:15	Matrix: Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV Low Level	Analytical Method: EPA 5030B/8260							
1,1,2,2-Tetrachloroethane	ND	ug/L	0.50	1		12/27/16 17:03	79-34-5	
Tetrachloroethene	ND	ug/L	0.50	1		12/27/16 17:03	127-18-4	
Toluene	ND	ug/L	0.50	1		12/27/16 17:03	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	0.50	1		12/27/16 17:03	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	0.50	1		12/27/16 17:03	79-00-5	
Trichloroethene	ND	ug/L	0.50	1		12/27/16 17:03	79-01-6	
Trichlorofluoromethane	ND	ug/L	0.50	1		12/27/16 17:03	75-69-4	
Vinyl chloride	ND	ug/L	0.50	1		12/27/16 17:03	75-01-4	
m&p-Xylene	ND	ug/L	2.0	1		12/27/16 17:03	179601-23-1	
o-Xylene	ND	ug/L	1.0	1		12/27/16 17:03	95-47-6	
Surrogates								
Dibromofluoromethane (S)	112	%.	72-126	1		12/27/16 17:03	1868-53-7	
4-Bromofluorobenzene (S)	98	%.	68-124	1		12/27/16 17:03	460-00-4	
Toluene-d8 (S)	101	%.	79-119	1		12/27/16 17:03	2037-26-5	

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QUALITY CONTROL DATA

Project: PUMA TERMIANL MW-SAMPLING
Pace Project No.: 2047713

QC Batch: 70949 Analysis Method: EPA 8015/8021
QC Batch Method: EPA 8015/8021 Analysis Description: 8021 W GCV BTEX, MTBE, GRO
Associated Lab Samples: 2047713001, 2047713002, 2047713003, 2047713004, 2047713005, 2047713006, 2047713007, 2047713008, 2047713009, 2047713010, 2047713011, 2047713012, 2047713013, 2047713014, 2047713015, 2047713016, 2047713017, 2047713018

METHOD BLANK: 296842 Matrix: Water
Associated Lab Samples: 2047713001, 2047713002, 2047713003, 2047713004, 2047713005, 2047713006, 2047713007, 2047713008, 2047713009, 2047713010, 2047713011, 2047713012, 2047713013, 2047713014, 2047713015, 2047713016, 2047713017, 2047713018

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Gasoline Range Organics	ug/L	ND	50.0	12/29/16 01:42	
4-Bromofluorobenzene (S)	%.	94	44-148	12/29/16 01:42	

LABORATORY CONTROL SAMPLE: 296843

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Gasoline Range Organics	ug/L	500	428	86	61-136	
4-Bromofluorobenzene (S)	%.			92	44-148	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 297507 297508

Parameter	Units	2047713003 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	Max RPD	RPD	Qual
Gasoline Range Organics	ug/L	ND	500	500	489	480	92	90	15-147	2	20	
4-Bromofluorobenzene (S)	%.						93	95	44-148			

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QUALITY CONTROL DATA

Project: PUMA TERMIANL MW-SAMPLING
Pace Project No.: 2047713

QC Batch: 71004 Analysis Method: EPA 7470
QC Batch Method: EPA 7470 Analysis Description: 7470 Mercury
Associated Lab Samples: 2047713002, 2047713003, 2047713004, 2047713005, 2047713006, 2047713007, 2047713010, 2047713011, 2047713012, 2047713013, 2047713014, 2047713015, 2047713016, 2047713018

METHOD BLANK: 297033 Matrix: Water
Associated Lab Samples: 2047713002, 2047713003, 2047713004, 2047713005, 2047713006, 2047713007, 2047713010, 2047713011, 2047713012, 2047713013, 2047713014, 2047713015, 2047713016, 2047713018

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Mercury	ug/L	ND	0.20	12/29/16 17:11	

LABORATORY CONTROL SAMPLE: 297034

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury	ug/L	1	1.1	106	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 297035 297036

Parameter	Units	2047713002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Mercury	ug/L	ND	1	1	1.0	1.0	101	101	75-125	0	20	

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QUALITY CONTROL DATA

Project: PUMA TERMIANL MW-SAMPLING
Pace Project No.: 2047713

QC Batch: 71108 Analysis Method: EPA 7470
QC Batch Method: EPA 7470 Analysis Description: 7470 Mercury Dissolved
Associated Lab Samples: 2047713002, 2047713003, 2047713004, 2047713005, 2047713006, 2047713007, 2047713010, 2047713011, 2047713012, 2047713013, 2047713014, 2047713015, 2047713016, 2047713018

METHOD BLANK: 297493 Matrix: Water
Associated Lab Samples: 2047713002, 2047713003, 2047713004, 2047713005, 2047713006, 2047713007, 2047713010, 2047713011, 2047713012, 2047713013, 2047713014, 2047713015, 2047713016, 2047713018

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Mercury, Dissolved	ug/L	ND	0.20	12/29/16 18:44	

LABORATORY CONTROL SAMPLE: 297494

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury, Dissolved	ug/L	1	1.1	110	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 297495 297496

Parameter	Units	2047713002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Mercury, Dissolved	ug/L	ND	1	1	1.1	1.1	109	110	75-125	1	20	

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QUALITY CONTROL DATA

Project: PUMA TERMIANL MW-SAMPLING
Pace Project No.: 2047713

QC Batch: 70838 Analysis Method: EPA 6020
QC Batch Method: EPA 3010 Analysis Description: 6020 MET
Associated Lab Samples: 2047713002, 2047713003, 2047713004, 2047713005, 2047713006, 2047713007, 2047713010, 2047713011, 2047713012, 2047713013, 2047713014, 2047713015, 2047713016, 2047713018

METHOD BLANK: 296461 Matrix: Water
Associated Lab Samples: 2047713002, 2047713003, 2047713004, 2047713005, 2047713006, 2047713007, 2047713010, 2047713011, 2047713012, 2047713013, 2047713014, 2047713015, 2047713016, 2047713018

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Arsenic	mg/L	ND	0.0010	01/03/17 17:51	
Chromium	mg/L	ND	0.0010	01/03/17 17:51	
Lead	mg/L	ND	0.0010	01/03/17 17:51	
Vanadium	mg/L	ND	0.0050	01/03/17 17:51	

LABORATORY CONTROL SAMPLE: 296462

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Arsenic	mg/L	.02	0.020	101	83-115	
Chromium	mg/L	.02	0.020	102	85-115	
Lead	mg/L	.02	0.020	99	84-115	
Vanadium	mg/L	.02	0.020	100	81-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 296463 296464

Parameter	Units	2047674013		296464		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result						
Arsenic	mg/L	1.3 ug/L	.02	.02	0.021	0.021	96	97	80-120	1	20
Chromium	mg/L	6.0 ug/L	.02	.02	0.026	0.026	101	98	80-120	2	20
Lead	mg/L	9.5 ug/L	.02	.02	0.027	0.027	86	87	80-120	0	20
Vanadium	mg/L	15.1 ug/L	.02	.02	0.035	0.035	97	97	80-120	0	20

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QUALITY CONTROL DATA

Project: PUMA TERMIANL MW-SAMPLING

Pace Project No.: 2047713

QC Batch: 71126

Analysis Method: EPA 6020

QC Batch Method: EPA 3005A

Analysis Description: 6020 MET Dissolved

Associated Lab Samples: 2047713002, 2047713003, 2047713004, 2047713005, 2047713006, 2047713007, 2047713010, 2047713011

METHOD BLANK: 297560

Matrix: Water

Associated Lab Samples: 2047713002, 2047713003, 2047713004, 2047713005, 2047713006, 2047713007, 2047713010, 2047713011

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Arsenic, Dissolved	ug/L	ND	1.0	01/03/17 17:55	
Chromium, Dissolved	ug/L	ND	1.0	01/03/17 17:55	
Lead, Dissolved	ug/L	ND	1.0	01/03/17 17:55	
Vanadium, Dissolved	ug/L	ND	5.0	01/03/17 17:55	

LABORATORY CONTROL SAMPLE: 297561

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Arsenic, Dissolved	ug/L	20	20.2	101	80-120	
Chromium, Dissolved	ug/L	20	20.0	100	80-120	
Lead, Dissolved	ug/L	20	19.4	97	80-120	
Vanadium, Dissolved	ug/L	20	20.3	101	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 297562 297563

Parameter	Units	2047806016		297563		MS % Rec	MSD % Rec	% Rec Limits	RPD	RPD	Qual
		MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result						
Arsenic, Dissolved	ug/L	ND	20	20	20.2	19.9	97	96	75-125	2	20
Chromium, Dissolved	ug/L	ND	20	20	19.1	19.6	95	98	75-125	3	20
Lead, Dissolved	ug/L	ND	20	20	20.4	20.2	102	101	75-125	1	20
Vanadium, Dissolved	ug/L	ND	20	20	20.0	19.8	97	96	75-125	1	20

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QUALITY CONTROL DATA

Project: PUMA TERMIANL MW-SAMPLING

Pace Project No.: 2047713

QC Batch: 71128 Analysis Method: EPA 6020
 QC Batch Method: EPA 3005A Analysis Description: 6020 MET Dissolved
 Associated Lab Samples: 2047713012, 2047713013, 2047713014, 2047713015, 2047713016, 2047713018

METHOD BLANK: 297566 Matrix: Water
 Associated Lab Samples: 2047713012, 2047713013, 2047713014, 2047713015, 2047713016, 2047713018

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Arsenic, Dissolved	ug/L	ND	1.0	01/03/17 13:16	
Chromium, Dissolved	ug/L	ND	1.0	01/03/17 13:16	
Lead, Dissolved	ug/L	ND	1.0	01/03/17 13:16	
Vanadium, Dissolved	ug/L	ND	5.0	01/03/17 13:16	

LABORATORY CONTROL SAMPLE: 297567

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Arsenic, Dissolved	ug/L	20	20.0	100	80-120	
Chromium, Dissolved	ug/L	20	19.9	100	80-120	
Lead, Dissolved	ug/L	20	19.4	97	80-120	
Vanadium, Dissolved	ug/L	20	20.4	102	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 297568 297569

Parameter	Units	2047939001		297568		297569		% Rec	% Rec	% Rec Limits	RPD	RPD	Qual
		Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec						
Arsenic, Dissolved	ug/L	1.5	20	20	18.0	17.9	82	82	75-125	0	20		
Chromium, Dissolved	ug/L	ND	20	20	17.7	17.6	88	87	75-125	1	20		
Lead, Dissolved	ug/L	ND	20	20	22.0	22.0	110	110	75-125	0	20		
Vanadium, Dissolved	ug/L	ND	20	20	20.3	20.0	98	97	75-125	1	20		

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QUALITY CONTROL DATA

Project: PUMA TERMIANL MW-SAMPLING
Pace Project No.: 2047713

QC Batch: 70852 Analysis Method: EPA 5030B/8260
QC Batch Method: EPA 5030B/8260 Analysis Description: 8260 MSV Low Level
Associated Lab Samples: 2047713001, 2047713002, 2047713003, 2047713004, 2047713005, 2047713006, 2047713007, 2047713008, 2047713009, 2047713010, 2047713011, 2047713012, 2047713013, 2047713014, 2047713015, 2047713016, 2047713017, 2047713018

METHOD BLANK: 296510 Matrix: Water
Associated Lab Samples: 2047713001, 2047713002, 2047713003, 2047713004, 2047713005, 2047713006, 2047713007, 2047713008, 2047713009, 2047713010, 2047713011, 2047713012, 2047713013, 2047713014, 2047713015, 2047713016, 2047713017, 2047713018

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
1,1,1-Trichloroethane	ug/L	ND	0.50	12/27/16 10:31	
1,1,2,2-Tetrachloroethane	ug/L	ND	0.50	12/27/16 10:31	
1,1,2-Trichloroethane	ug/L	ND	0.50	12/27/16 10:31	
1,1-Dichloroethane	ug/L	ND	0.50	12/27/16 10:31	
1,1-Dichloroethene	ug/L	ND	0.50	12/27/16 10:31	
1,2-Dibromo-3-chloropropane	ug/L	ND	0.20	12/27/16 10:31	
1,2-Dibromoethane (EDB)	ug/L	ND	1.0	12/27/16 10:31	
1,2-Dichloroethane	ug/L	ND	0.50	12/27/16 10:31	
1,2-Dichloropropane	ug/L	ND	0.50	12/27/16 10:31	
2-Butanone (MEK)	ug/L	ND	2.0	12/27/16 10:31	
2-Hexanone	ug/L	ND	1.0	12/27/16 10:31	
4-Methyl-2-pentanone (MIBK)	ug/L	ND	1.0	12/27/16 10:31	
Acetone	ug/L	ND	4.0	12/27/16 10:31	
Benzene	ug/L	ND	0.50	12/27/16 10:31	
Bromodichloromethane	ug/L	ND	0.50	12/27/16 10:31	
Bromoform	ug/L	ND	0.50	12/27/16 10:31	
Bromomethane	ug/L	ND	0.50	12/27/16 10:31	
Carbon disulfide	ug/L	ND	1.0	12/27/16 10:31	
Carbon tetrachloride	ug/L	ND	0.50	12/27/16 10:31	
Chlorobenzene	ug/L	ND	0.50	12/27/16 10:31	
Chloroethane	ug/L	ND	0.50	12/27/16 10:31	
Chloroform	ug/L	ND	0.50	12/27/16 10:31	
Chloromethane	ug/L	ND	0.50	12/27/16 10:31	
cis-1,2-Dichloroethene	ug/L	ND	1.0	12/27/16 10:31	
cis-1,3-Dichloropropene	ug/L	ND	0.50	12/27/16 10:31	
Dibromochloromethane	ug/L	ND	0.50	12/27/16 10:31	
Dichlorodifluoromethane	ug/L	ND	1.0	12/27/16 10:31	
Ethylbenzene	ug/L	ND	0.50	12/27/16 10:31	
Isopropylbenzene (Cumene)	ug/L	ND	1.0	12/27/16 10:31	
m&p-Xylene	ug/L	ND	2.0	12/27/16 10:31	
Methyl acetate	ug/L	ND	2.0	12/27/16 10:31	
Methyl-tert-butyl ether	ug/L	ND	0.50	12/27/16 10:31	
Methylene Chloride	ug/L	ND	0.50	12/27/16 10:31	
o-Xylene	ug/L	ND	1.0	12/27/16 10:31	
Styrene	ug/L	ND	1.0	12/27/16 10:31	
Tetrachloroethene	ug/L	ND	0.50	12/27/16 10:31	
Toluene	ug/L	ND	0.50	12/27/16 10:31	
trans-1,2-Dichloroethene	ug/L	ND	0.50	12/27/16 10:31	

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QUALITY CONTROL DATA

Project: PUMA TERMIANL MW-SAMPLING

Pace Project No.: 2047713

METHOD BLANK: 296510

Matrix: Water

Associated Lab Samples: 2047713001, 2047713002, 2047713003, 2047713004, 2047713005, 2047713006, 2047713007, 2047713008, 2047713009, 2047713010, 2047713011, 2047713012, 2047713013, 2047713014, 2047713015, 2047713016, 2047713017, 2047713018

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
trans-1,3-Dichloropropene	ug/L	ND	0.50	12/27/16 10:31	
Trichloroethene	ug/L	ND	0.50	12/27/16 10:31	
Trichlorofluoromethane	ug/L	ND	0.50	12/27/16 10:31	
Vinyl chloride	ug/L	ND	0.50	12/27/16 10:31	
4-Bromofluorobenzene (S)	%	98	68-124	12/27/16 10:31	
Dibromofluoromethane (S)	%	106	72-126	12/27/16 10:31	
Toluene-d8 (S)	%	98	79-119	12/27/16 10:31	

LABORATORY CONTROL SAMPLE: 296511

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,1,1-Trichloroethane	ug/L	50	55.9	112	62-131	
1,1,2,2-Tetrachloroethane	ug/L	50	47.8	96	15-179	
1,1,2-Trichloroethane	ug/L	50	46.2	92	58-144	
1,1-Dichloroethane	ug/L	50	53.4	107	63-129	
1,1-Dichloroethene	ug/L	50	53.6	107	51-139	
1,2-Dibromo-3-chloropropane	ug/L	50	49.3	99	21-160	
1,2-Dibromoethane (EDB)	ug/L	50	49.5	99	52-161	
1,2-Dichloroethane	ug/L	50	51.7	103	57-148	
1,2-Dichloropropane	ug/L	50	50.7	101	66-128	
2-Butanone (MEK)	ug/L	50	53.5	107	32-183	
2-Hexanone	ug/L	50	46.7	93	36-170	
4-Methyl-2-pentanone (MIBK)	ug/L	50	49.0	98	26-171	
Acetone	ug/L	50	53.1	106	22-165	
Benzene	ug/L	50	54.4	109	62-131	
Bromodichloromethane	ug/L	50	48.9	98	69-132	
Bromoform	ug/L	50	43.4	87	35-166	
Bromomethane	ug/L	50	44.4	89	34-158	
Carbon disulfide	ug/L	50	66.5	133	31-128 L0	
Carbon tetrachloride	ug/L	50	52.4	105	54-144	
Chlorobenzene	ug/L	50	50.3	101	70-127	
Chloroethane	ug/L	50	38.5	77	17-195	
Chloroform	ug/L	50	50.2	100	73-134	
Chloromethane	ug/L	50	55.3	111	17-153	
cis-1,2-Dichloroethene	ug/L	50	52.7	105	68-129	
cis-1,3-Dichloropropene	ug/L	50	51.5	103	72-138	
Dibromochloromethane	ug/L	50	46.0	92	49-146	
Dichlorodifluoromethane	ug/L	50	52.2	104	10-179	
Ethylbenzene	ug/L	50	48.7	97	66-126	
Isopropylbenzene (Cumene)	ug/L	50	48.9	98	51-138	
m&p-Xylene	ug/L	100	96.8	97	65-129	
Methyl acetate	ug/L	50	50.0	100	20-142	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: PUMA TERMIANL MW-SAMPLING

Pace Project No.: 2047713

LABORATORY CONTROL SAMPLE: 296511

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Methyl-tert-butyl ether	ug/L	50	49.4	99	37-166	
Methylene Chloride	ug/L	50	53.2	106	46-168	
o-Xylene	ug/L	50	47.1	94	65-124	
Styrene	ug/L	50	49.5	99	72-133	
Tetrachloroethene	ug/L	50	49.0	98	46-157	
Toluene	ug/L	50	51.6	103	69-126	
trans-1,2-Dichloroethene	ug/L	50	52.2	104	60-129	
trans-1,3-Dichloropropene	ug/L	50	52.1	104	59-149	
Trichloroethene	ug/L	50	52.8	106	67-132	
Trichlorofluoromethane	ug/L	50	56.6	113	39-171	
Vinyl chloride	ug/L	50	43.1	86	27-149	
4-Bromofluorobenzene (S)	%			102	68-124	
Dibromofluoromethane (S)	%			107	72-126	
Toluene-d8 (S)	%			102	79-119	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 296587 296588

Parameter	Units	MS		MSD		MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		2047713003 Result	Spike Conc.	Spike Conc.	MS Result								
1,1,1-Trichloroethane	ug/L	ND	50	50	64.4	57.3	129	115	54-137	12	20		
1,1,2,2-Tetrachloroethane	ug/L	ND	50	50	51.2	47.1	102	94	15-187	8	20		
1,1,2-Trichloroethane	ug/L	ND	50	50	51.8	47.7	104	95	59-148	8	20		
1,1-Dichloroethane	ug/L	ND	50	50	59.5	54.4	119	109	59-133	9	20		
1,1-Dichloroethene	ug/L	ND	50	50	62.9	58.2	126	116	44-146	8	20		
1,2-Dibromo-3-chloropropane	ug/L	ND	50	50	51.8	48.3	104	97	23-166	7	20		
1,2-Dibromoethane (EDB)	ug/L	ND	50	50	54.5	50.0	109	100	55-166	9	20		
1,2-Dichloroethane	ug/L	ND	50	50	56.1	52.7	112	105	56-154	6	20		
1,2-Dichloropropane	ug/L	ND	50	50	55.9	50.7	112	101	62-135	10	20		
2-Butanone (MEK)	ug/L	ND	50	50	59.5	55.0	119	110	20-205	8	20		
2-Hexanone	ug/L	ND	50	50	52.2	48.1	104	96	25-189	8	20		
4-Methyl-2-pentanone (MIBK)	ug/L	ND	50	50	52.5	49.7	105	99	23-184	5	20		
Acetone	ug/L	15.1	50	50	75.4	69.8	121	109	11-217	8	20		
Benzene	ug/L	ND	50	50	60.5	54.8	121	110	52-141	10	20		
Bromodichloromethane	ug/L	ND	50	50	53.6	48.4	107	97	70-134	10	20		
Bromoform	ug/L	ND	50	50	47.9	44.5	96	89	37-171	7	20		
Bromomethane	ug/L	ND	50	50	47.1	45.0	94	90	34-155	4	20		
Carbon disulfide	ug/L	ND	50	50	81.7	71.5	163	143	28-130	13	20	M0	
Carbon tetrachloride	ug/L	ND	50	50	61.6	55.3	123	111	48-146	11	20		
Chlorobenzene	ug/L	ND	50	50	55.4	50.8	111	102	67-129	9	20		
Chloroethane	ug/L	ND	50	50	44.3	40.4	89	81	12-192	9	20		
Chloroform	ug/L	ND	50	50	56.0	51.5	112	103	66-143	8	20		
Chloromethane	ug/L	ND	50	50	63.0	58.2	126	116	14-155	8	20		
cis-1,2-Dichloroethene	ug/L	ND	50	50	58.5	54.3	117	109	56-141	7	20		
cis-1,3-Dichloropropene	ug/L	ND	50	50	56.3	51.0	113	102	70-139	10	20		

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QUALITY CONTROL DATA

Project: PUMA TERMIANL MW-SAMPLING

Pace Project No.: 2047713

Parameter	Units	2047713003		296587		296588		% Rec	% Rec	Limits	RPD	Max RPD	Qual
		Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec						
Dibromochloromethane	ug/L	ND	50	50	50.3	47.4	101	95	50-150	6	20		
Dichlorodifluoromethane	ug/L	ND	50	50	62.7	57.2	125	114	10-173	9	20		
Ethylbenzene	ug/L	ND	50	50	54.3	50.4	109	101	57-135	8	20		
Isopropylbenzene (Cumene)	ug/L	ND	50	50	53.5	50.6	107	101	40-146	6	20		
m&p-Xylene	ug/L	ND	100	100	112	101	112	101	56-136	10	20		
Methyl acetate	ug/L	ND	50	50	54.9	51.6	110	103	10-142	6	20		
Methyl-tert-butyl ether	ug/L	ND	50	50	53.8	51.3	108	103	35-176	5	20		
Methylene Chloride	ug/L	ND	50	50	58.3	54.8	117	110	45-166	6	20		
o-Xylene	ug/L	ND	50	50	53.7	49.3	107	99	57-133	9	20		
Styrene	ug/L	ND	50	50	53.0	48.5	106	97	58-144	9	20		
Tetrachloroethene	ug/L	ND	50	50	57.4	53.1	115	106	48-143	8	20		
Toluene	ug/L	ND	50	50	57.2	51.8	114	104	59-136	10	20		
trans-1,2-Dichloroethene	ug/L	ND	50	50	60.8	55.6	122	111	57-132	9	20		
trans-1,3-Dichloropropene	ug/L	ND	50	50	56.7	52.4	113	105	59-154	8	20		
Trichloroethene	ug/L	ND	50	50	59.9	53.4	120	107	58-140	11	20		
Trichlorofluoromethane	ug/L	ND	50	50	67.3	62.1	135	124	24-175	8	20		
Vinyl chloride	ug/L	ND	50	50	51.2	46.4	102	93	21-150	10	20		
4-Bromofluorobenzene (S)	%						99	98	68-124				
Dibromofluoromethane (S)	%						108	107	72-126				
Toluene-d8 (S)	%						102	101	79-119				

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QUALITY CONTROL DATA

Project: PUMA TERMIANL MW-SAMPLING

Pace Project No.: 2047713

QC Batch: 70881 Analysis Method: EPA 8015B Modified
 QC Batch Method: EPA 3535 Analysis Description: EPA 8015 ORO
 Associated Lab Samples: 2047713002, 2047713003, 2047713004, 2047713005, 2047713006, 2047713007, 2047713010, 2047713011, 2047713012, 2047713013, 2047713014, 2047713015, 2047713016, 2047713018

METHOD BLANK: 296610 Matrix: Water
 Associated Lab Samples: 2047713002, 2047713003, 2047713004, 2047713005, 2047713006, 2047713007, 2047713010, 2047713011, 2047713012, 2047713013, 2047713014, 2047713015, 2047713016, 2047713018

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Diesel Range Organic (C10-C28)	mg/L	ND	0.25	01/04/17 11:20	
Oil Range Organics (>C28-C40)	mg/L	ND	0.50	01/04/17 11:20	
n-Pentacosane (S)	%	41	16-137	01/04/17 11:20	
o-Terphenyl (S)	%	49	10-121	01/04/17 11:20	

LABORATORY CONTROL SAMPLE: 296611

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Diesel Range Organic (C10-C28)	mg/L	.4	ND	24	10-115	
n-Pentacosane (S)	%			49	16-137	
o-Terphenyl (S)	%			58	10-121	

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QUALITY CONTROL DATA

Project: PUMA TERMIANL MW-SAMPLING

Pace Project No.: 2047713

QC Batch: 70811 Analysis Method: EPA 8270 by SIM
QC Batch Method: EPA 3510 Analysis Description: 8270 Water by SIM MSSV
Associated Lab Samples: 2047713002, 2047713003, 2047713004, 2047713005, 2047713006, 2047713007, 2047713010, 2047713011, 2047713012, 2047713013

METHOD BLANK: 296339 Matrix: Water
Associated Lab Samples: 2047713002, 2047713003, 2047713004, 2047713005, 2047713006, 2047713007, 2047713010, 2047713011, 2047713012, 2047713013

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
2-Methylnaphthalene	ug/L	ND	0.10	12/30/16 18:12	
Acenaphthene	ug/L	ND	0.10	12/30/16 18:12	
Acenaphthylene	ug/L	ND	0.10	12/30/16 18:12	
Anthracene	ug/L	ND	0.10	12/30/16 18:12	
Benzo(a)anthracene	ug/L	ND	0.10	12/30/16 18:12	
Benzo(a)pyrene	ug/L	ND	0.10	12/30/16 18:12	
Benzo(b)fluoranthene	ug/L	ND	0.10	12/30/16 18:12	
Benzo(g,h,i)perylene	ug/L	ND	0.10	12/30/16 18:12	
Benzo(k)fluoranthene	ug/L	ND	0.10	12/30/16 18:12	
Chrysene	ug/L	ND	0.10	12/30/16 18:12	
Dibenz(a,h)anthracene	ug/L	ND	0.10	12/30/16 18:12	
Fluoranthene	ug/L	ND	0.10	12/30/16 18:12	
Fluorene	ug/L	ND	0.10	12/30/16 18:12	
Indeno(1,2,3-cd)pyrene	ug/L	ND	0.10	12/30/16 18:12	
Naphthalene	ug/L	ND	0.10	12/30/16 18:12	
Phenanthrene	ug/L	ND	0.10	12/30/16 18:12	
Pyrene	ug/L	ND	0.10	12/30/16 18:12	
2-Fluorobiphenyl (S)	%	46	25-150	12/30/16 18:12	
Terphenyl-d14 (S)	%	61	25-150	12/30/16 18:12	

LABORATORY CONTROL SAMPLE: 296340

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
2-Methylnaphthalene	ug/L	4	2.4	59	35-150	
Acenaphthene	ug/L	4	2.7	67	35-150	
Acenaphthylene	ug/L	4	2.6	65	35-150	
Anthracene	ug/L	4	3.4	85	35-150	
Benzo(a)anthracene	ug/L	4	2.5	62	35-150	
Benzo(a)pyrene	ug/L	4	2.6	66	35-150	
Benzo(b)fluoranthene	ug/L	4	2.2	55	35-150	
Benzo(g,h,i)perylene	ug/L	4	2.7	68	35-150	
Benzo(k)fluoranthene	ug/L	4	2.9	72	35-150	
Chrysene	ug/L	4	3.0	76	35-150	
Dibenz(a,h)anthracene	ug/L	4	3.0	74	35-150	
Fluoranthene	ug/L	4	2.5	63	35-150	
Fluorene	ug/L	4	2.6	65	35-150	
Indeno(1,2,3-cd)pyrene	ug/L	4	2.9	72	35-150	
Naphthalene	ug/L	4	2.4	61	35-150	

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QUALITY CONTROL DATA

Project: PUMA TERMIANL MW-SAMPLING

Pace Project No.: 2047713

LABORATORY CONTROL SAMPLE: 296340

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Phenanthrene	ug/L	4	2.7	67	35-150	
Pyrene	ug/L	4	2.6	64	35-150	
2-Fluorobiphenyl (S)	%.			96	25-150	
Terphenyl-d14 (S)	%.			103	25-150	

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QUALITY CONTROL DATA

Project: PUMA TERMIANL MW-SAMPLING

Pace Project No.: 2047713

QC Batch: 70840 Analysis Method: EPA 8270 by SIM
 QC Batch Method: EPA 3510 Analysis Description: 8270 Water by SIM MSSV
 Associated Lab Samples: 2047713014, 2047713015, 2047713016, 2047713018

METHOD BLANK: 296469 Matrix: Water
 Associated Lab Samples: 2047713014, 2047713015, 2047713016, 2047713018

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
2-Fluorobiphenyl (S)	%.	50	25-150	12/30/16 17:33	
Terphenyl-d14 (S)	%.	56	25-150	12/30/16 17:33	

LABORATORY CONTROL SAMPLE: 296470

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
2-Fluorobiphenyl (S)	%.			52	25-150	
Terphenyl-d14 (S)	%.			59	25-150	

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QUALITY CONTROL DATA

Project: PUMA TERMIANL MW-SAMPLING

Pace Project No.: 2047713

QC Batch: 71324 Analysis Method: EPA 8270 by SIM
 QC Batch Method: EPA 3510 Analysis Description: 8270 Water by SIM MSSV
 Associated Lab Samples: 2047713014, 2047713015, 2047713016, 2047713018

METHOD BLANK: 298353 Matrix: Water
 Associated Lab Samples: 2047713014, 2047713015, 2047713016, 2047713018

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Benzo(a)pyrene	ug/L	ND	0.10	01/04/17 16:59	
2-Fluorobiphenyl (S)	%.	78	25-150	01/04/17 16:59	
Terphenyl-d14 (S)	%.	84	25-150	01/04/17 16:59	

LABORATORY CONTROL SAMPLE: 298354

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Benzo(a)pyrene	ug/L	4	3.3	82	35-150	
2-Fluorobiphenyl (S)	%.			103	25-150	
Terphenyl-d14 (S)	%.			103	25-150	

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QUALIFIERS

Project: PUMA TERMIANL MW-SAMPLING

Pace Project No.: 2047713

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The Nelac Institute

LABORATORIES

PASI-N Pace Analytical Services - New Orleans

BATCH QUALIFIERS

Batch: 71175

[M5] A matrix spike/matrix spike duplicate was not performed for this batch due to insufficient sample volume.

Batch: 71176

[M5] A matrix spike/matrix spike duplicate was not performed for this batch due to insufficient sample volume.

Batch: 71223

[M5] A matrix spike/matrix spike duplicate was not performed for this batch due to insufficient sample volume.

Batch: 71393

[M5] A matrix spike/matrix spike duplicate was not performed for this batch due to insufficient sample volume.

ANALYTE QUALIFIERS

H2 Extraction or preparation conducted outside EPA method holding time.

L0 Analyte recovery in the laboratory control sample (LCS) was outside QC limits.

L3 Analyte recovery in the laboratory control sample (LCS) exceeded QC limits. Analyte presence below reporting limits in associated samples.

M0 Matrix spike recovery and/or matrix spike duplicate recovery was outside laboratory control limits.

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: PUMA TERMIANL MW-SAMPLING

Pace Project No.: 2047713

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
2047713002	EB-121916	EPA 3535	70881	EPA 8015B Modified	71223
2047713003	MW-P120	EPA 3535	70881	EPA 8015B Modified	71223
2047713004	MW-P122	EPA 3535	70881	EPA 8015B Modified	71223
2047713005	MW-P123	EPA 3535	70881	EPA 8015B Modified	71223
2047713006	MW-P124	EPA 3535	70881	EPA 8015B Modified	71223
2047713007	MW-P121	EPA 3535	70881	EPA 8015B Modified	71223
2047713010	EB-122016	EPA 3535	70881	EPA 8015B Modified	71223
2047713011	MW-P119	EPA 3535	70881	EPA 8015B Modified	71223
2047713012	MW-P118	EPA 3535	70881	EPA 8015B Modified	71223
2047713013	MW-83A	EPA 3535	70881	EPA 8015B Modified	71223
2047713014	MW-AD-01	EPA 3535	70881	EPA 8015B Modified	71223
2047713015	MW-57A	EPA 3535	70881	EPA 8015B Modified	71223
2047713016	MW-AD-03	EPA 3535	70881	EPA 8015B Modified	71223
2047713018	DUP001	EPA 3535	70881	EPA 8015B Modified	71223
2047713001	TB-121916	EPA 8015/8021	70949		
2047713002	EB-121916	EPA 8015/8021	70949		
2047713003	MW-P120	EPA 8015/8021	70949		
2047713004	MW-P122	EPA 8015/8021	70949		
2047713005	MW-P123	EPA 8015/8021	70949		
2047713006	MW-P124	EPA 8015/8021	70949		
2047713007	MW-P121	EPA 8015/8021	70949		
2047713008	FB-121916	EPA 8015/8021	70949		
2047713009	TB-122016	EPA 8015/8021	70949		
2047713010	EB-122016	EPA 8015/8021	70949		
2047713011	MW-P119	EPA 8015/8021	70949		
2047713012	MW-P118	EPA 8015/8021	70949		
2047713013	MW-83A	EPA 8015/8021	70949		
2047713014	MW-AD-01	EPA 8015/8021	70949		
2047713015	MW-57A	EPA 8015/8021	70949		
2047713016	MW-AD-03	EPA 8015/8021	70949		
2047713017	FB-122016	EPA 8015/8021	70949		
2047713018	DUP001	EPA 8015/8021	70949		
2047713002	EB-121916	EPA 3010	70838	EPA 6020	70889
2047713003	MW-P120	EPA 3010	70838	EPA 6020	70889
2047713004	MW-P122	EPA 3010	70838	EPA 6020	70889
2047713005	MW-P123	EPA 3010	70838	EPA 6020	70889
2047713006	MW-P124	EPA 3010	70838	EPA 6020	70889
2047713007	MW-P121	EPA 3010	70838	EPA 6020	70889
2047713010	EB-122016	EPA 3010	70838	EPA 6020	70889
2047713011	MW-P119	EPA 3010	70838	EPA 6020	70889
2047713012	MW-P118	EPA 3010	70838	EPA 6020	70889
2047713013	MW-83A	EPA 3010	70838	EPA 6020	70889
2047713014	MW-AD-01	EPA 3010	70838	EPA 6020	70889
2047713015	MW-57A	EPA 3010	70838	EPA 6020	70889
2047713016	MW-AD-03	EPA 3010	70838	EPA 6020	70889
2047713018	DUP001	EPA 3010	70838	EPA 6020	70889
2047713002	EB-121916	EPA 3005A	71126	EPA 6020	71232

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: PUMA TERMIANL MW-SAMPLING

Pace Project No.: 2047713

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
2047713003	MW-P120	EPA 3005A	71126	EPA 6020	71232
2047713004	MW-P122	EPA 3005A	71126	EPA 6020	71232
2047713005	MW-P123	EPA 3005A	71126	EPA 6020	71232
2047713006	MW-P124	EPA 3005A	71126	EPA 6020	71232
2047713007	MW-P121	EPA 3005A	71126	EPA 6020	71232
2047713010	EB-122016	EPA 3005A	71126	EPA 6020	71232
2047713011	MW-P119	EPA 3005A	71126	EPA 6020	71232
2047713012	MW-P118	EPA 3005A	71128	EPA 6020	71233
2047713013	MW-83A	EPA 3005A	71128	EPA 6020	71233
2047713014	MW-AD-01	EPA 3005A	71128	EPA 6020	71233
2047713015	MW-57A	EPA 3005A	71128	EPA 6020	71233
2047713016	MW-AD-03	EPA 3005A	71128	EPA 6020	71233
2047713018	DUP001	EPA 3005A	71128	EPA 6020	71233
2047713002	EB-121916	EPA 7470	71004	EPA 7470	71141
2047713003	MW-P120	EPA 7470	71004	EPA 7470	71141
2047713004	MW-P122	EPA 7470	71004	EPA 7470	71141
2047713005	MW-P123	EPA 7470	71004	EPA 7470	71141
2047713006	MW-P124	EPA 7470	71004	EPA 7470	71141
2047713007	MW-P121	EPA 7470	71004	EPA 7470	71141
2047713010	EB-122016	EPA 7470	71004	EPA 7470	71141
2047713011	MW-P119	EPA 7470	71004	EPA 7470	71141
2047713012	MW-P118	EPA 7470	71004	EPA 7470	71141
2047713013	MW-83A	EPA 7470	71004	EPA 7470	71141
2047713014	MW-AD-01	EPA 7470	71004	EPA 7470	71141
2047713015	MW-57A	EPA 7470	71004	EPA 7470	71141
2047713016	MW-AD-03	EPA 7470	71004	EPA 7470	71141
2047713018	DUP001	EPA 7470	71004	EPA 7470	71141
2047713002	EB-121916	EPA 7470	71108	EPA 7470	71142
2047713003	MW-P120	EPA 7470	71108	EPA 7470	71142
2047713004	MW-P122	EPA 7470	71108	EPA 7470	71142
2047713005	MW-P123	EPA 7470	71108	EPA 7470	71142
2047713006	MW-P124	EPA 7470	71108	EPA 7470	71142
2047713007	MW-P121	EPA 7470	71108	EPA 7470	71142
2047713010	EB-122016	EPA 7470	71108	EPA 7470	71142
2047713011	MW-P119	EPA 7470	71108	EPA 7470	71142
2047713012	MW-P118	EPA 7470	71108	EPA 7470	71142
2047713013	MW-83A	EPA 7470	71108	EPA 7470	71142
2047713014	MW-AD-01	EPA 7470	71108	EPA 7470	71142
2047713015	MW-57A	EPA 7470	71108	EPA 7470	71142
2047713016	MW-AD-03	EPA 7470	71108	EPA 7470	71142
2047713018	DUP001	EPA 7470	71108	EPA 7470	71142
2047713002	EB-121916	EPA 3510	70811	EPA 8270 by SIM	71176
2047713003	MW-P120	EPA 3510	70811	EPA 8270 by SIM	71176
2047713004	MW-P122	EPA 3510	70811	EPA 8270 by SIM	71176
2047713005	MW-P123	EPA 3510	70811	EPA 8270 by SIM	71176
2047713006	MW-P124	EPA 3510	70811	EPA 8270 by SIM	71176
2047713007	MW-P121	EPA 3510	70811	EPA 8270 by SIM	71176

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: PUMA TERMIANL MW-SAMPLING

Pace Project No.: 2047713

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
2047713010	EB-122016	EPA 3510	70811	EPA 8270 by SIM	71176
2047713011	MW-P119	EPA 3510	70811	EPA 8270 by SIM	71176
2047713012	MW-P118	EPA 3510	70811	EPA 8270 by SIM	71176
2047713013	MW-83A	EPA 3510	70811	EPA 8270 by SIM	71176
2047713014	MW-AD-01	EPA 3510	70840	EPA 8270 by SIM	71175
2047713014	MW-AD-01	EPA 3510	71324	EPA 8270 by SIM	71393
2047713015	MW-57A	EPA 3510	70840	EPA 8270 by SIM	71175
2047713015	MW-57A	EPA 3510	71324	EPA 8270 by SIM	71393
2047713016	MW-AD-03	EPA 3510	70840	EPA 8270 by SIM	71175
2047713016	MW-AD-03	EPA 3510	71324	EPA 8270 by SIM	71393
2047713018	DUP001	EPA 3510	70840	EPA 8270 by SIM	71175
2047713018	DUP001	EPA 3510	71324	EPA 8270 by SIM	71393
2047713001	TB-121916	EPA 5030B/8260	70852		
2047713002	EB-121916	EPA 5030B/8260	70852		
2047713003	MW-P120	EPA 5030B/8260	70852		
2047713004	MW-P122	EPA 5030B/8260	70852		
2047713005	MW-P123	EPA 5030B/8260	70852		
2047713006	MW-P124	EPA 5030B/8260	70852		
2047713007	MW-P121	EPA 5030B/8260	70852		
2047713008	FB-121916	EPA 5030B/8260	70852		
2047713009	TB-122016	EPA 5030B/8260	70852		
2047713010	EB-122016	EPA 5030B/8260	70852		
2047713011	MW-P119	EPA 5030B/8260	70852		
2047713012	MW-P118	EPA 5030B/8260	70852		
2047713013	MW-83A	EPA 5030B/8260	70852		
2047713014	MW-AD-01	EPA 5030B/8260	70852		
2047713015	MW-57A	EPA 5030B/8260	70852		
2047713016	MW-AD-03	EPA 5030B/8260	70852		
2047713017	FB-122016	EPA 5030B/8260	70852		
2047713018	DUP001	EPA 5030B/8260	70852		

REPORT OF LABORATORY ANALYSIS

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Section A Required Client Information:		Section B Required Project Information:		Section C Invoice Information:	
Company: Arcadis		Report To: E Frair Calderon		Attention:	
Address: 401 City View Plaza 1 Suite		Copy To:		Company Name:	
401 Rd 165 Km 12 Umanabo PR				REGULATORY AGENCY	
Email To: E Frair Calderon@arcadis-us.com		Purchase Order No.:		Address:	
Phone: 809-977-4000		Project Name: Puma Terminal MW sampling		Pace Quote Reference:	
Fax: 809-977-8056		Project Number: E002.160SB		Pace Project Manager: Juan Redondo	
Requested Due Date/TAT:				Pace Profile #: 7252 # 1	
				Site Location: PR	
				STATE: PR	

ITEM #	Section D Required Client Information	Matrix Codes MATRIX / CODE	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMIP)	COLLECTED				SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives								Analysis Test ↓	Requested Analysis Filtered (Y/N)	Residual Chlorine (Y/N)							
					DATE	TIME	DATE	TIME			Unpreserved	H ₂ SO ₄	HNO ₃	HCl	NaOH	Na ₂ S ₂ O ₃	Methanol	Other										
1	TB-121916		WT	G			12/19/16	LAB	4																			
2	EB-121916		WT	G			12/19/16	0958	10	5	1	4																
3	MW-P120		WT	G			12/19/16	1110	10	5	1	4																
4	MW-P122		WT	G			12/19/16	1208	10	5	1	4																
5	MW-P123		WT	G			12/19/16	1421	10	5	1	4																
6	MW-P124		WT	G			12/19/16	1545	10	5	1	4																
7	MW-P121		WT	G			12/19/16	1627	10	5	1	4																
8	EB-121916		WT	G			12/19/16	1645	4																			
9	TB-122016		WT	G			12/20/16	LAB	4																			
10	EB-122016		WT	G			12/20/16	0833	10	5	1	4																
11	MW-P119		WT	G			12/20/16	0918	10	5	1	4																
12	MW-P118		WT	G			12/20/16	1009	10	5	1	4																

2047713
Pace Project No./ Lab I.D.

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS			
Level IV	Andri Colon / Arcadis	12/20/16	16:18	Juan Redondo / Pace	12/20/16	16:15	20	Y	N	Y
	Ma	12-21-16	17:10	Fed Exp			1.0			
	Fed Exp	12/23/16	10:00	Juan Redondo / Pace	12/23/16	10:00	0.3	Y	Y	Y
							3.7			

ORIGINAL

SAMPLER NAME AND SIGNATURE		Temp in °C	Received on ice (Y/N)	Custody Sealed Cooler (Y/N)	Samples Intact (Y/N)
PRINT Name of SAMPLER: Andri Colon	DATE Signed (MM/DD/YY): 12/20/16				
SIGNATURE of SAMPLER: Ma					

*Important Note: By signing this form you are accepting Pace's NET 30 day payment terms and agreeing to late charges of 1.5% per month for any invoices not paid within 30 days.

CHAIN-OF-CUSTODY / Analytical Request Document

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

Page: 2 of 2
2075146

Section A Required Client Information:		Section B Required Project Information:		Section C Invoice Information:	
Company: <u>Arcadis</u>		Report To: <u>Efrain Calderon</u>		Attention:	
Address: <u>48 city view plaza suite</u>		Copy To:		Company Name:	
<u>401 RA 165, Km 12 Caymbe PR</u>				REGULATORY AGENCY	
Email To: <u>Efrain Calderon @ arcadis-us.com</u>		Purchase Order No.:		Address:	
Phone: <u>(787) 377-4000</u> Fax: <u>(787) 377-4056</u>		Project Name: <u>Puma Terminal Mm Supply</u>		Pace Quote Reference:	
Requested Due Date/TAT:		Project Number: <u>E002-1605B</u>		Pace Project Manager: <u>Juan Bedendo</u>	
				Pace Profile #: <u>7252# 1</u>	
				Site Location: <u>PR</u>	
				STATE: <u>PR</u>	

ITEM #	Section D Required Client Information	Matrix Codes MATRIX / CODE	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED				SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives								Analysis Test ↓	Requested Analysis Filtered (Y/N)	Residual Chlorine (Y/N)	20477B Pace Project No./ Lab I.D.									
					COMPOSITE START		COMPOSITE END/GRAB				Unpreserved	H ₂ SO ₄	HNO ₃	HCl	NaOH	Na ₂ S ₂ O ₃	Methanol	Other													
					DATE	TIME	DATE	TIME																							
1	MW-83A		WT G	G			12/20/16	1113	10	5	1	4						X	X	X	X	X	X	X	X	X					
2	MW-AD-01		WT G	G			12/20/16	1312	10	5	1	4						X	X	X	X	X	X	X	X	X	X				
3	MW-57A		WT G	G			12/20/16	1430	10	5	1	4						X	X	X	X	X	X	X	X	X	X				
4	MW-AD-03		WT G	G			12/20/16	1516	10	5	1	4						X	X	X	X	X	X	X	X	X	X				
5	FB-122016		WT G	G			12/20/16	1525	10	5	1	4						X	X	X	X	X	X	X	X	X	X				
6	DUPool		WT G	G			12/20/16	/	10	5	1	4						X	X	X	X	X	X	X	X	X	X				
7																															
8																															
9																															
10																															
11																															
12																															

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS
Level IV	Andri Colon / Arcadis	12/20/16	16:15	[Signature] PACE	12/20/16	16:15	2° X N Y
	Fed Eo	12-23-16	10:20	[Signature] PACE	12-23-16	10:20	10° Y Y Y

ORIGINAL	SAMPLER NAME AND SIGNATURE		Temp in °C 6.7	Received on Ice (Y/N)	Custody Sealed Cooler (Y/N)	Samples Intact (Y/N)
	PRINT Name of SAMPLER: <u>Andri Colon</u>					
	SIGNATURE of SAMPLER: <u>[Signature]</u>					
		DATE Signed (MM/DD/YY):				

*Important Note: By signing this form you are accepting Pace's NET 30 day payment terms and agreeing to late charges of 1.5% per month for any invoices not paid within 30 days.

WO#: 2047713

PM: JAR1 Due Date: 01/05/17
CLIENT: 98-ARCADISPR



1000 Riverbend Blvd., Suite F
St. Rose, LA 70087

Sample Condition Upon

Project # _____

Courier: Pace Courier Hired Courier Fed X UPS DHL USPS Customer Other

Custody Seal on Cooler/Box Present: [see COC]

Custody Seals intact: Yes No

Thermometer Used: Therm Fisher IR 5
 Therm Fisher IR 6
 Therm Fisher IR 7

Type of Ice: Wet Blue None

Samples on ice: [see COC]

Cooler Temperature: [see COC]

Temp should be above freezing to 6°C

Date and Initials of person examining contents: 12-23-16 JMB

Temp must be measured from Temperature blank when present

Comments:

Temperature Blank Present?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	1
Chain of Custody Present:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	2
Chain of Custody Complete:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	3
Chain of Custody Relinquished:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	4
Sampler Name & Signature on COC:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	5
Samples Arrived within Hold Time:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	6
Sufficient Volume:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	7
Correct Containers Used:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	8
Filtered vol. Rec. for Diss. tests	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	9
Sample Labels match COC:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	10
All containers received within manufacture's precautionary and/or expiration dates.	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	11
All containers needing chemical preservation have been checked (except VOA, coliform, & O&G).	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	12
All containers preservation checked found to be in compliance with EPA recommendation.	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	13
		If No, was preservative added? <input type="checkbox"/> Yes <input type="checkbox"/> No If added record lot no.: HNO3 _____ H2SO4 _____
Headspace in VOA Vials (>6mm):	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	14
Trip Blank Present:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	15

Client Notification/ Resolution:

Person Contacted: _____ Date/Time: _____

Comments/ Resolution: _____

MU-83 A rec. 1 vial broken

January 16, 2017

Efrain Calderon
BBL Caribe Engineering P.S.C.
48 City View Plaza1, Suite 401
Road 16, Km. 1.2
Guaynabo, PR 00968

RE: Project: PUMA TERMINAL MW SAMPLING
Pace Project No.: 2047989

Dear Efrain Calderon:

Enclosed are the analytical results for sample(s) received by the laboratory on December 29, 2016. The results relate only to the samples included in this report. Results reported herein conform to the most current, applicable TNI/NELAC standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,



Juan Redondo
juan.redondo@pacelabs.com
Project Manager

Enclosures

cc: Sharon Colon
Abner Hernandez
Marianela Mercado-Burgos



REPORT OF LABORATORY ANALYSIS

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CERTIFICATIONS

Project: PUMA TERMINAL MW SAMPLING
Pace Project No.: 2047989

New Orleans Certification IDs

California Env. Lab Accreditation Program Branch:
11277CA
Florida Department of Health (NELAC): E87595
Illinois Environmental Protection Agency: 0025721
Kansas Department of Health and Environment (NELAC):
E-10266
Louisiana Dept. of Environmental Quality (NELAC/LELAP):
02006

Pennsylvania Dept. of Env Protection (NELAC): 68-04202
Texas Commission on Env. Quality (NELAC):
T104704405-09-TX
U.S. Dept. of Agriculture Foreign Soil Import: P330-10-
00119
Commonwealth of Virginia (TNI): 480246

REPORT OF LABORATORY ANALYSIS

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SAMPLE SUMMARY

Project: PUMA TERMINAL MW SAMPLING
Pace Project No.: 2047989

Lab ID	Sample ID	Matrix	Date Collected	Date Received
2047989001	TB-122916	Water	12/29/16 00:00	12/29/16 14:00
2047989002	EB-122916	Water	12/29/16 09:06	12/29/16 14:00
2047989003	MW-86A	Water	12/29/16 09:50	12/29/16 14:00
2047989004	MW-MP5A	Water	12/29/16 10:48	12/29/16 14:00
2047989005	MW-DP5	Water	12/29/16 11:37	12/29/16 14:00
2047989006	FB-122916	Water	12/29/16 11:42	12/29/16 14:00

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SAMPLE ANALYTE COUNT

Project: PUMA TERMINAL MW SAMPLING
Pace Project No.: 2047989

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
2047989001	TB-122916	EPA 8015/8021	MHM	2	PASI-N
		EPA 5030B/8260	RMP	45	PASI-N
2047989002	EB-122916	EPA 8015B Modified	SLF	4	PASI-N
		EPA 8015/8021	MHM	2	PASI-N
		EPA 6020	KJR	4	PASI-N
		EPA 6020	KJR	4	PASI-N
		EPA 7470	MHB1	1	PASI-N
		EPA 7470	MHB1	1	PASI-N
		EPA 8270 by SIM	GEJ	19	PASI-N
		EPA 5030B/8260	RMP	45	PASI-N
2047989003	MW-86A	EPA 8015B Modified	SLF	4	PASI-N
		EPA 8015/8021	MHM	2	PASI-N
		EPA 6020	KJR	4	PASI-N
		EPA 6020	KJR	4	PASI-N
		EPA 7470	MHB1	1	PASI-N
		EPA 7470	MHB1	1	PASI-N
		EPA 8270 by SIM	GEJ	19	PASI-N
		EPA 5030B/8260	RMP	45	PASI-N
2047989004	MW-MP5A	EPA 8015B Modified	SLF	4	PASI-N
		EPA 8015/8021	MHM	2	PASI-N
		EPA 6020	KJR	4	PASI-N
		EPA 6020	KJR	4	PASI-N
		EPA 7470	MHB1	1	PASI-N
		EPA 7470	MHB1	1	PASI-N
		EPA 8270 by SIM	GEJ	19	PASI-N
		EPA 5030B/8260	RMP	45	PASI-N
2047989005	MW-DP5	EPA 8015B Modified	SLF	4	PASI-N
		EPA 8015/8021	MHM	2	PASI-N
		EPA 6020	KJR	4	PASI-N
		EPA 6020	KJR	4	PASI-N
		EPA 7470	MHB1	1	PASI-N
		EPA 7470	MHB1	1	PASI-N
		EPA 8270 by SIM	GEJ	19	PASI-N
		EPA 5030B/8260	RMP	45	PASI-N
2047989006	FB-122916	EPA 8015/8021	MHM	2	PASI-N
		EPA 5030B/8260	RMP	45	PASI-N

REPORT OF LABORATORY ANALYSIS

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PROJECT NARRATIVE

Project: PUMA TERMINAL MW SAMPLING
Pace Project No.: 2047989

Method: EPA 8015B Modified
Description: 8015M DRO/ORO Organics
Client: BBL Caribe / Arcadis PR
Date: January 16, 2017

General Information:

4 samples were analyzed for EPA 8015B Modified. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:

The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:

The samples were prepared in accordance with EPA 3535 with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):

All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:

All criteria were within method requirements with any exceptions noted below.

Surrogates:

All surrogates were within QC limits with any exceptions noted below.

Method Blank:

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

REPORT OF LABORATORY ANALYSIS

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PROJECT NARRATIVE

Project: PUMA TERMINAL MW SAMPLING
Pace Project No.: 2047989

Method: EPA 8015/8021
Description: 8021 GCV BTEX, MTBE, GRO
Client: BBL Caribe / Arcadis PR
Date: January 16, 2017

General Information:

6 samples were analyzed for EPA 8015/8021. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:

The samples were analyzed within the method required hold times with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):

All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:

All criteria were within method requirements with any exceptions noted below.

Surrogates:

All surrogates were within QC limits with any exceptions noted below.

Method Blank:

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

REPORT OF LABORATORY ANALYSIS

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PROJECT NARRATIVE

Project: PUMA TERMINAL MW SAMPLING
Pace Project No.: 2047989

Method: EPA 6020
Description: 6020 MET ICPMS
Client: BBL Caribe / Arcadis PR
Date: January 16, 2017

General Information:

4 samples were analyzed for EPA 6020. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:

The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:

The samples were prepared in accordance with EPA 3010 with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):

All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:

All criteria were within method requirements with any exceptions noted below.

Internal Standards:

All internal standards were within QC limits with any exceptions noted below.

Method Blank:

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

REPORT OF LABORATORY ANALYSIS

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PROJECT NARRATIVE

Project: PUMA TERMINAL MW SAMPLING
Pace Project No.: 2047989

Method: EPA 6020
Description: 6020 MET ICPMS, Dissolved (LF)
Client: BBL Caribe / Arcadis PR
Date: January 16, 2017

General Information:

4 samples were analyzed for EPA 6020. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:

The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:

The samples were prepared in accordance with EPA 3005A with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):

All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:

All criteria were within method requirements with any exceptions noted below.

Internal Standards:

All internal standards were within QC limits with any exceptions noted below.

Method Blank:

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

REPORT OF LABORATORY ANALYSIS

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PROJECT NARRATIVE

Project: PUMA TERMINAL MW SAMPLING
Pace Project No.: 2047989

Method: EPA 7470
Description: 7470 Mercury
Client: BBL Caribe / Arcadis PR
Date: January 16, 2017

General Information:

4 samples were analyzed for EPA 7470. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:

The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:

The samples were prepared in accordance with EPA 7470 with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):

All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:

All criteria were within method requirements with any exceptions noted below.

Method Blank:

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

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PROJECT NARRATIVE

Project: PUMA TERMINAL MW SAMPLING
Pace Project No.: 2047989

Method: EPA 7470
Description: 7470 Mercury, Dissolved (LF)
Client: BBL Caribe / Arcadis PR
Date: January 16, 2017

General Information:

4 samples were analyzed for EPA 7470. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:

The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:

The samples were prepared in accordance with EPA 7470 with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):

All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:

All criteria were within method requirements with any exceptions noted below.

Method Blank:

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

REPORT OF LABORATORY ANALYSIS

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PROJECT NARRATIVE

Project: PUMA TERMINAL MW SAMPLING
Pace Project No.: 2047989

Method: EPA 8270 by SIM
Description: 8270 MSSV PAH by SIM SEP
Client: BBL Caribe / Arcadis PR
Date: January 16, 2017

General Information:

4 samples were analyzed for EPA 8270 by SIM. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:

The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:

The samples were prepared in accordance with EPA 3510 with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):

All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:

All criteria were within method requirements with any exceptions noted below.

Internal Standards:

All internal standards were within QC limits with any exceptions noted below.

Surrogates:

All surrogates were within QC limits with any exceptions noted below.

Method Blank:

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

QC Batch: 71324

A matrix spike/matrix spike duplicate was not performed due to insufficient sample volume.

Additional Comments:

REPORT OF LABORATORY ANALYSIS

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PROJECT NARRATIVE

Project: PUMA TERMINAL MW SAMPLING
Pace Project No.: 2047989

Method: EPA 5030B/8260
Description: 8260 MSV Low Level
Client: BBL Caribe / Arcadis PR
Date: January 16, 2017

General Information:

6 samples were analyzed for EPA 5030B/8260. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:

The samples were analyzed within the method required hold times with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):

All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:

All criteria were within method requirements with any exceptions noted below.

Internal Standards:

All internal standards were within QC limits with any exceptions noted below.

Surrogates:

All surrogates were within QC limits with any exceptions noted below.

Method Blank:

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

QC Batch: 71267

L0: Analyte recovery in the laboratory control sample (LCS) was outside QC limits.

- LCS (Lab ID: 298069)
 - Carbon disulfide
- LCS (Lab ID: 298395)
 - Carbon disulfide

Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

QC Batch: 71267

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 2047993001

M0: Matrix spike recovery and/or matrix spike duplicate recovery was outside laboratory control limits.

- MS (Lab ID: 298070)
 - Carbon disulfide
- MSD (Lab ID: 298071)
 - Carbon disulfide

Additional Comments:

REPORT OF LABORATORY ANALYSIS

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PROJECT NARRATIVE

Project: PUMA TERMINAL MW SAMPLING
Pace Project No.: 2047989

Method: EPA 5030B/8260
Description: 8260 MSV Low Level
Client: BBL Caribe / Arcadis PR
Date: January 16, 2017

Analyte Comments:

QC Batch: 71267

C9: Common Laboratory Contaminant.

- EB-122916 (Lab ID: 2047989002)
 - Acetone
- FB-122916 (Lab ID: 2047989006)
 - Acetone
- MW-86A (Lab ID: 2047989003)
 - Acetone
- MW-DP5 (Lab ID: 2047989005)
 - Acetone
- MW-MP5A (Lab ID: 2047989004)
 - Acetone

This data package has been reviewed for quality and completeness and is approved for release.

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

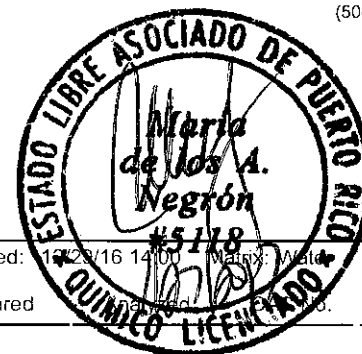
Project: PUMA TERMINAL MW SAMPLING
Pace Project No.: 2047989

Sample:	Lab ID:	Collected:	Received:	Matrix:				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
Sample: TB-122916	Lab ID: 2047989001	Collected: 12/29/16 00:00	Received: 12/29/16 14:00	Matrix: Water				
8021 GCV BTEX, MTBE, GRO Analytical Method: EPA 8015/8021								
Gasoline Range Organics	ND	ug/L	50.0	1		01/05/17 04:36		
Surrogates								
4-Bromofluorobenzene (S)	89	%	44-148	1		01/05/17 04:36	460-00-4	
8260 MSV Low Level Analytical Method: EPA 5030B/8260								
Acetone	142	ug/L	4.0	1		01/04/17 12:47	67-64-1	
Benzene	ND	ug/L	0.50	1		01/04/17 12:47	71-43-2	
Bromodichloromethane	ND	ug/L	0.50	1		01/04/17 12:47	75-27-4	
Bromoform	ND	ug/L	0.50	1		01/04/17 12:47	75-25-2	
Bromomethane	ND	ug/L	0.50	1		01/04/17 12:47	74-83-9	
2-Butanone (MEK)	ND	ug/L	2.0	1		01/04/17 12:47	78-93-3	
Carbon disulfide	ND	ug/L	1.0	1		01/04/17 12:47	75-15-0	L3
Carbon tetrachloride	ND	ug/L	0.50	1		01/04/17 12:47	56-23-5	
Chlorobenzene	ND	ug/L	0.50	1		01/04/17 12:47	108-90-7	
Chloroethane	ND	ug/L	0.50	1		01/04/17 12:47	75-00-3	
Chloroform	ND	ug/L	0.50	1		01/04/17 12:47	67-66-3	
Chloromethane	ND	ug/L	0.50	1		01/04/17 12:47	74-87-3	
1,2-Dibromo-3-chloropropane	ND	ug/L	0.20	1		01/04/17 12:47	96-12-8	
Dibromochloromethane	ND	ug/L	0.50	1		01/04/17 12:47	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	1		01/04/17 12:47	106-93-4	
Dichlorodifluoromethane	ND	ug/L	1.0	1		01/04/17 12:47	75-71-8	
1,1-Dichloroethane	ND	ug/L	0.50	1		01/04/17 12:47	75-34-3	
1,2-Dichloroethane	ND	ug/L	0.50	1		01/04/17 12:47	107-06-2	
1,1-Dichloroethene	ND	ug/L	0.50	1		01/04/17 12:47	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	1		01/04/17 12:47	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	0.50	1		01/04/17 12:47	156-60-5	
1,2-Dichloropropane	ND	ug/L	0.50	1		01/04/17 12:47	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	0.50	1		01/04/17 12:47	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	0.50	1		01/04/17 12:47	10061-02-6	
Ethylbenzene	ND	ug/L	0.50	1		01/04/17 12:47	100-41-4	
2-Hexanone	ND	ug/L	1.0	1		01/04/17 12:47	591-78-6	
Isopropylbenzene (Cumene)	ND	ug/L	1.0	1		01/04/17 12:47	98-82-8	
Methyl acetate	ND	ug/L	2.0	1		01/04/17 12:47	79-20-9	
Methylene Chloride	ND	ug/L	0.50	1		01/04/17 12:47	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	1.0	1		01/04/17 12:47	108-10-1	
Methyl-tert-butyl ether	ND	ug/L	0.50	1		01/04/17 12:47	1634-04-4	
Styrene	ND	ug/L	1.0	1		01/04/17 12:47	100-42-5	
1,1,2,2-Tetrachloroethane	ND	ug/L	0.50	1		01/04/17 12:47	79-34-5	
Tetrachloroethene	ND	ug/L	0.50	1		01/04/17 12:47	127-18-4	
Toluene	ND	ug/L	0.50	1		01/04/17 12:47	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	0.50	1		01/04/17 12:47	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	0.50	1		01/04/17 12:47	79-00-5	
Trichloroethene	ND	ug/L	0.50	1		01/04/17 12:47	79-01-6	
Trichlorofluoromethane	ND	ug/L	0.50	1		01/04/17 12:47	75-69-4	
Vinyl chloride	ND	ug/L	0.50	1		01/04/17 12:47	75-01-4	
m&p-Xylene	ND	ug/L	2.0	1		01/04/17 12:47	179601-23-1	
o-Xylene	ND	ug/L	1.0	1		01/04/17 12:47	95-47-6	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS



Project: PUMA TERMINAL MW SAMPLING
Pace Project No.: 2047989

Sample: TB-122916 Lab ID: 2047989001 Collected: 12/29/16 00:00 Received: 12/29/16 14:00 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analized	CAS No.	Qual
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8260 MSV Low Level Analytical Method: EPA 5030B/8260

Surrogates

Dibromofluoromethane (S)	102	%	72-126	1	01/04/17 12:47	1868-53-7		
4-Bromofluorobenzene (S)	99	%	68-124	1	01/04/17 12:47	460-00-4		
Toluene-d8 (S)	98	%	79-119	1	01/04/17 12:47	2037-26-5		

Sample: EB-122916 Lab ID: 2047989002 Collected: 12/29/16 09:06 Received: 12/29/16 14:00 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analized	CAS No.	Qual
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8015M DRO/ORO Organics Analytical Method: EPA 8015B Modified Preparation Method: EPA 3535

Diesel Range Organic (C10-C28)	ND	mg/L	0.50	1	01/04/17 08:39	01/10/17 18:21		
Oil Range Organics (>C28-C40)	ND	mg/L	1.0	1	01/04/17 08:39	01/10/17 18:21		

Surrogates

n-Pentacosane (S)	36	%	16-137	1	01/04/17 08:39	01/10/17 18:21	629-99-2	
o-Terphenyl (S)	41	%	10-121	1	01/04/17 08:39	01/10/17 18:21	84-15-1	

8021 GCV BTEX, MTBE, GRO Analytical Method: EPA 8015/8021

Gasoline Range Organics	ND	ug/L	50.0	1	01/05/17 05:03			
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Surrogates

4-Bromofluorobenzene (S)	90	%	44-148	1	01/05/17 05:03	460-00-4		
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6020 MET ICPMS Analytical Method: EPA 6020 Preparation Method: EPA 3010

Arsenic	ND	mg/L	0.0010	1	12/30/16 16:10	01/06/17 13:47	7440-38-2	
Chromium	ND	mg/L	0.0010	1	12/30/16 16:10	01/06/17 13:47	7440-47-3	
Lead	ND	mg/L	0.0010	1	12/30/16 16:10	01/06/17 13:47	7439-92-1	
Vanadium	ND	mg/L	0.0050	1	12/30/16 16:10	01/06/17 13:47	7440-62-2	

6020 MET ICPMS, Dissolved (LF) Analytical Method: EPA 6020 Preparation Method: EPA 3005A

Arsenic, Dissolved	ND	ug/L	1.0	1	12/30/16 18:15	01/06/17 15:41	7440-38-2	
Chromium, Dissolved	ND	ug/L	1.0	1	12/30/16 18:15	01/06/17 15:41	7440-47-3	
Lead, Dissolved	ND	ug/L	1.0	1	12/30/16 18:15	01/06/17 15:41	7439-92-1	
Vanadium, Dissolved	ND	ug/L	5.0	1	12/30/16 18:15	01/06/17 15:41	7440-62-2	

7470 Mercury Analytical Method: EPA 7470 Preparation Method: EPA 7470

Mercury	ND	ug/L	0.20	1	12/30/16 17:49	01/03/17 13:33	7439-97-6	
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7470 Mercury, Dissolved (LF) Analytical Method: EPA 7470 Preparation Method: EPA 7470

Mercury, Dissolved	ND	ug/L	0.20	1	12/30/16 17:49	01/03/17 12:50	7439-97-6	
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8270 MSSV PAH by SIM SEP Analytical Method: EPA 8270 by SIM Preparation Method: EPA 3510

Acenaphthene	ND	ug/L	0.10	1	01/04/17 09:09	01/05/17 00:38	83-32-9	
Acenaphthylene	ND	ug/L	0.10	1	01/04/17 09:09	01/05/17 00:38	208-96-8	
Anthracene	ND	ug/L	0.10	1	01/04/17 09:09	01/05/17 00:38	120-12-7	
Benzo(a)anthracene	ND	ug/L	0.10	1	01/04/17 09:09	01/05/17 00:38	56-55-3	
Benzo(a)pyrene	ND	ug/L	0.10	1	01/04/17 09:09	01/05/17 00:38	50-32-8	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS



Project: PUMA TERMINAL MW SAMPLING

Pace Project No.: 2047989

Sample: EB-122916 Lab ID: 2047989002 Collected: 12/29/16 09:06 Received: 01/16/17 09:09
 Parameters Results Units Report Limit DF Prepared Analytical Method CAS No. Qual

8270 MSSV PAH by SIM SEP

Analytical Method: EPA 8270 by SIM Preparation Method: EPA 3510

Parameters	Results	Units	Report Limit	DF	Prepared	Analytical Method	CAS No.	Qual
Benzo(b)fluoranthene	ND	ug/L	0.10	1	01/04/17 09:09	01/05/17 00:38	205-99-2	
Benzo(g,h,i)perylene	ND	ug/L	0.10	1	01/04/17 09:09	01/05/17 00:38	191-24-2	
Benzo(k)fluoranthene	ND	ug/L	0.10	1	01/04/17 09:09	01/05/17 00:38	207-08-9	
Chrysene	ND	ug/L	0.10	1	01/04/17 09:09	01/05/17 00:38	218-01-9	
Dibenz(a,h)anthracene	ND	ug/L	0.10	1	01/04/17 09:09	01/05/17 00:38	53-70-3	
Fluoranthene	ND	ug/L	0.10	1	01/04/17 09:09	01/05/17 00:38	206-44-0	
Fluorene	ND	ug/L	0.10	1	01/04/17 09:09	01/05/17 00:38	86-73-7	
Indeno(1,2,3-cd)pyrene	ND	ug/L	0.10	1	01/04/17 09:09	01/05/17 00:38	193-39-5	
2-Methylnaphthalene	ND	ug/L	0.10	1	01/04/17 09:09	01/05/17 00:38	91-57-6	
Naphthalene	ND	ug/L	0.10	1	01/04/17 09:09	01/05/17 00:38	91-20-3	
Phenanthrene	ND	ug/L	0.10	1	01/04/17 09:09	01/05/17 00:38	85-01-8	
Pyrene	ND	ug/L	0.10	1	01/04/17 09:09	01/05/17 00:38	129-00-0	
Surrogates								
2-Fluorobiphenyl (S)	78	%	25-150	1	01/04/17 09:09	01/05/17 00:38	321-60-8	
Terphenyl-d14 (S)	76	%	25-150	1	01/04/17 09:09	01/05/17 00:38	1718-51-0	

8260 MSV Low Level

Analytical Method: EPA 5030B/8260

Parameters	Results	Units	Report Limit	DF	Prepared	Analytical Method	CAS No.	Qual
Acetone	30.6	ug/L	4.0	1	01/03/17 16:06	01/03/17 16:06	67-64-1	C9
Benzene	ND	ug/L	0.50	1	01/03/17 16:06	01/03/17 16:06	71-43-2	
Bromodichloromethane	ND	ug/L	0.50	1	01/03/17 16:06	01/03/17 16:06	75-27-4	
Bromoform	ND	ug/L	0.50	1	01/03/17 16:06	01/03/17 16:06	75-25-2	
Bromomethane	ND	ug/L	0.50	1	01/03/17 16:06	01/03/17 16:06	74-83-9	
2-Butanone (MEK)	ND	ug/L	2.0	1	01/03/17 16:06	01/03/17 16:06	78-93-3	
Carbon disulfide	ND	ug/L	1.0	1	01/03/17 16:06	01/03/17 16:06	75-15-0	L3
Carbon tetrachloride	ND	ug/L	0.50	1	01/03/17 16:06	01/03/17 16:06	56-23-5	
Chlorobenzene	ND	ug/L	0.50	1	01/03/17 16:06	01/03/17 16:06	108-90-7	
Chloroethane	ND	ug/L	0.50	1	01/03/17 16:06	01/03/17 16:06	75-00-3	
Chloroform	ND	ug/L	0.50	1	01/03/17 16:06	01/03/17 16:06	67-66-3	
Chloromethane	0.64	ug/L	0.50	1	01/03/17 16:06	01/03/17 16:06	74-87-3	
1,2-Dibromo-3-chloropropane	ND	ug/L	0.20	1	01/03/17 16:06	01/03/17 16:06	96-12-8	
Dibromochloromethane	ND	ug/L	0.50	1	01/03/17 16:06	01/03/17 16:06	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	1	01/03/17 16:06	01/03/17 16:06	106-93-4	
Dichlorodifluoromethane	ND	ug/L	1.0	1	01/03/17 16:06	01/03/17 16:06	75-71-8	
1,1-Dichloroethane	ND	ug/L	0.50	1	01/03/17 16:06	01/03/17 16:06	75-34-3	
1,2-Dichloroethane	ND	ug/L	0.50	1	01/03/17 16:06	01/03/17 16:06	107-06-2	
1,1-Dichloroethene	ND	ug/L	0.50	1	01/03/17 16:06	01/03/17 16:06	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	1	01/03/17 16:06	01/03/17 16:06	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	0.50	1	01/03/17 16:06	01/03/17 16:06	156-60-5	
1,2-Dichloropropane	ND	ug/L	0.50	1	01/03/17 16:06	01/03/17 16:06	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	0.50	1	01/03/17 16:06	01/03/17 16:06	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	0.50	1	01/03/17 16:06	01/03/17 16:06	10061-02-6	
Ethylbenzene	ND	ug/L	0.50	1	01/03/17 16:06	01/03/17 16:06	100-41-4	
2-Hexanone	ND	ug/L	1.0	1	01/03/17 16:06	01/03/17 16:06	591-78-6	
Isopropylbenzene (Cumene)	ND	ug/L	1.0	1	01/03/17 16:06	01/03/17 16:06	98-82-8	
Methyl acetate	ND	ug/L	2.0	1	01/03/17 16:06	01/03/17 16:06	79-20-9	
Methylene Chloride	ND	ug/L	0.50	1	01/03/17 16:06	01/03/17 16:06	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	1.0	1	01/03/17 16:06	01/03/17 16:06	108-10-1	

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ANALYTICAL RESULTS



Project: PUMA TERMINAL MW SAMPLING
Pace Project No.: 2047989

Sample: EB-122916 Lab ID: 2047989002 Collected: 12/29/16 09:06 Received: 12/29/16 14:00 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV Low Level		Analytical Method: EPA 5030B/8260						
Methyl-tert-butyl ether	ND	ug/L	0.50	1		01/03/17 16:06	1634-04-4	
Styrene	ND	ug/L	1.0	1		01/03/17 16:06	100-42-5	
1,1,2,2-Tetrachloroethane	ND	ug/L	0.50	1		01/03/17 16:06	79-34-5	
Tetrachloroethene	ND	ug/L	0.50	1		01/03/17 16:06	127-18-4	
Toluene	ND	ug/L	0.50	1		01/03/17 16:06	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	0.50	1		01/03/17 16:06	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	0.50	1		01/03/17 16:06	79-00-5	
Trichloroethene	ND	ug/L	0.50	1		01/03/17 16:06	79-01-6	
Trichlorofluoromethane	ND	ug/L	0.50	1		01/03/17 16:06	75-69-4	
Vinyl chloride	ND	ug/L	0.50	1		01/03/17 16:06	75-01-4	
m&p-Xylene	ND	ug/L	2.0	1		01/03/17 16:06	179601-23-1	
o-Xylene	ND	ug/L	1.0	1		01/03/17 16:06	95-47-6	
Surrogates								
Dibromofluoromethane (S)	114	%	72-126	1		01/03/17 16:06	1868-53-7	
4-Bromofluorobenzene (S)	100	%	68-124	1		01/03/17 16:06	460-00-4	
Toluene-d8 (S)	100	%	79-119	1		01/03/17 16:06	2037-26-5	

Sample: MW-86A Lab ID: 2047989003 Collected: 12/29/16 09:50 Received: 12/29/16 14:00 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8015M DRO/ORO Organics		Analytical Method: EPA 8015B Modified Preparation Method: EPA 3535						
Diesel Range Organic (C10-C28)	ND	mg/L	0.50	1	01/04/17 08:39	01/10/17 18:49		
Oil Range Organics (>C28-C40)	ND	mg/L	1.0	1	01/04/17 08:39	01/10/17 18:49		
Surrogates								
n-Pentacosane (S)	49	%	16-137	1	01/04/17 08:39	01/10/17 18:49	629-99-2	
o-Terphenyl (S)	57	%	10-121	1	01/04/17 08:39	01/10/17 18:49	84-15-1	
8021 GCV BTEX, MTBE, GRO		Analytical Method: EPA 8015/8021						
Gasoline Range Organics	ND	ug/L	50.0	1		01/05/17 05:28		
Surrogates								
4-Bromofluorobenzene (S)	89	%	44-148	1		01/05/17 05:28	460-00-4	
6020 MET ICPMS		Analytical Method: EPA 6020 Preparation Method: EPA 3010						
Arsenic	ND	mg/L	0.0010	1	12/30/16 16:10	01/06/17 13:51	7440-38-2	
Chromium	ND	mg/L	0.0010	1	12/30/16 16:10	01/06/17 13:51	7440-47-3	
Lead	ND	mg/L	0.0010	1	12/30/16 16:10	01/06/17 13:51	7439-92-1	
Vanadium	ND	mg/L	0.0050	1	12/30/16 16:10	01/06/17 13:51	7440-62-2	
6020 MET ICPMS, Dissolved (LF)		Analytical Method: EPA 6020 Preparation Method: EPA 3005A						
Arsenic, Dissolved	ND	ug/L	1.0	1	12/30/16 18:15	01/06/17 15:45	7440-38-2	
Chromium, Dissolved	ND	ug/L	1.0	1	12/30/16 18:15	01/06/17 15:45	7440-47-3	
Lead, Dissolved	ND	ug/L	1.0	1	12/30/16 18:15	01/06/17 15:45	7439-92-1	
Vanadium, Dissolved	ND	ug/L	5.0	1	12/30/16 18:15	01/06/17 15:45	7440-62-2	

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ANALYTICAL RESULTS

Project: PUMA TERMINAL MW SAMPLING
Pace Project No.: 2047989



Sample: MW-86A Lab ID: 2047989003 Collected: 12/29/16 09:50 Received: 12/29/16 14:00 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Preparation Method	CAS No.	Qual
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7470 Mercury Analytical Method: EPA 7470 Preparation Method: EPA 7470
Mercury ND ug/L 0.20 1 12/30/16 17:49 01/03/17 13:35 7439-97-6

7470 Mercury, Dissolved (LF) Analytical Method: EPA 7470 Preparation Method: EPA 7470
Mercury, Dissolved ND ug/L 0.20 1 12/30/16 17:49 01/03/17 12:52 7439-97-6

8270 MSSV PAH by SIM SEP Analytical Method: EPA 8270 by SIM Preparation Method: EPA 3510

Acenaphthene	ND	ug/L	0.10	1	01/04/17 09:09	01/05/17 00:58	83-32-9
Acenaphthylene	ND	ug/L	0.10	1	01/04/17 09:09	01/05/17 00:58	208-96-8
Anthracene	ND	ug/L	0.10	1	01/04/17 09:09	01/05/17 00:58	120-12-7
Benzo(a)anthracene	ND	ug/L	0.10	1	01/04/17 09:09	01/05/17 00:58	56-55-3
Benzo(a)pyrene	ND	ug/L	0.10	1	01/04/17 09:09	01/05/17 00:58	50-32-8
Benzo(b)fluoranthene	ND	ug/L	0.10	1	01/04/17 09:09	01/05/17 00:58	205-99-2
Benzo(g,h,i)perylene	ND	ug/L	0.10	1	01/04/17 09:09	01/05/17 00:58	191-24-2
Benzo(k)fluoranthene	ND	ug/L	0.10	1	01/04/17 09:09	01/05/17 00:58	207-08-9
Chrysene	ND	ug/L	0.10	1	01/04/17 09:09	01/05/17 00:58	218-01-9
Dibenz(a,h)anthracene	ND	ug/L	0.10	1	01/04/17 09:09	01/05/17 00:58	53-70-3
Fluoranthene	ND	ug/L	0.10	1	01/04/17 09:09	01/05/17 00:58	206-44-0
Fluorene	ND	ug/L	0.10	1	01/04/17 09:09	01/05/17 00:58	86-73-7
Indeno(1,2,3-cd)pyrene	ND	ug/L	0.10	1	01/04/17 09:09	01/05/17 00:58	193-39-5
2-Methylnaphthalene	ND	ug/L	0.10	1	01/04/17 09:09	01/05/17 00:58	91-57-6
Naphthalene	ND	ug/L	0.10	1	01/04/17 09:09	01/05/17 00:58	91-20-3
Phenanthrene	ND	ug/L	0.10	1	01/04/17 09:09	01/05/17 00:58	85-01-8
Pyrene	0.13	ug/L	0.10	1	01/04/17 09:09	01/05/17 00:58	129-00-0
Surrogates							
2-Fluorobiphenyl (S)	77	%	25-150	1	01/04/17 09:09	01/05/17 00:58	321-60-8
Terphenyl-d14 (S)	74	%	25-150	1	01/04/17 09:09	01/05/17 00:58	1718-51-0

8260 MSV Low Level Analytical Method: EPA 5030B/8260

Acetone	16.8	ug/L	4.0	1		01/03/17 16:24	67-64-1	C9
Benzene	ND	ug/L	0.50	1		01/03/17 16:24	71-43-2	
Bromodichloromethane	ND	ug/L	0.50	1		01/03/17 16:24	75-27-4	
Bromoform	ND	ug/L	0.50	1		01/03/17 16:24	75-25-2	
Bromomethane	ND	ug/L	0.50	1		01/03/17 16:24	74-83-9	
2-Butanone (MEK)	ND	ug/L	2.0	1		01/03/17 16:24	78-93-3	
Carbon disulfide	ND	ug/L	1.0	1		01/03/17 16:24	75-15-0	L3
Carbon tetrachloride	ND	ug/L	0.50	1		01/03/17 16:24	56-23-5	
Chlorobenzene	ND	ug/L	0.50	1		01/03/17 16:24	108-90-7	
Chloroethane	ND	ug/L	0.50	1		01/03/17 16:24	75-00-3	
Chloroform	ND	ug/L	0.50	1		01/03/17 16:24	67-66-3	
Chloromethane	ND	ug/L	0.50	1		01/03/17 16:24	74-87-3	
1,2-Dibromo-3-chloropropane	ND	ug/L	0.20	1		01/03/17 16:24	96-12-8	
Dibromochloromethane	ND	ug/L	0.50	1		01/03/17 16:24	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	1		01/03/17 16:24	106-93-4	
Dichlorodifluoromethane	ND	ug/L	1.0	1		01/03/17 16:24	75-71-8	
1,1-Dichloroethane	ND	ug/L	0.50	1		01/03/17 16:24	75-34-3	
1,2-Dichloroethane	ND	ug/L	0.50	1		01/03/17 16:24	107-06-2	

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ANALYTICAL RESULTS



Project: PUMA TERMINAL MW SAMPLING
Pace Project No.: 2047989

Sample: MW-86A Lab ID: 2047989003 Collected: 12/29/16 09:50 Received: 12/29/16 10:00 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
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8260 MSV Low Level

Analytical Method: EPA 5030B/8260

1,1-Dichloroethene	ND	ug/L	0.50	1		01/03/17 16:24	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	1		01/03/17 16:24	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	0.50	1		01/03/17 16:24	156-60-5	
1,2-Dichloropropane	ND	ug/L	0.50	1		01/03/17 16:24	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	0.50	1		01/03/17 16:24	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	0.50	1		01/03/17 16:24	10061-02-6	
Ethylbenzene	ND	ug/L	0.50	1		01/03/17 16:24	100-41-4	
2-Hexanone	ND	ug/L	1.0	1		01/03/17 16:24	591-78-6	
Isopropylbenzene (Cumene)	ND	ug/L	1.0	1		01/03/17 16:24	98-82-8	
Methyl acetate	ND	ug/L	2.0	1		01/03/17 16:24	79-20-9	
Methylene Chloride	ND	ug/L	0.50	1		01/03/17 16:24	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	1.0	1		01/03/17 16:24	108-10-1	
Methyl-tert-butyl ether	1.1	ug/L	0.50	1		01/03/17 16:24	1634-04-4	
Styrene	ND	ug/L	1.0	1		01/03/17 16:24	100-42-5	
1,1,2,2-Tetrachloroethane	ND	ug/L	0.50	1		01/03/17 16:24	79-34-5	
Tetrachloroethene	ND	ug/L	0.50	1		01/03/17 16:24	127-18-4	
Toluene	ND	ug/L	0.50	1		01/03/17 16:24	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	0.50	1		01/03/17 16:24	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	0.50	1		01/03/17 16:24	79-00-5	
Trichloroethene	ND	ug/L	0.50	1		01/03/17 16:24	79-01-6	
Trichlorofluoromethane	ND	ug/L	0.50	1		01/03/17 16:24	75-69-4	
Vinyl chloride	ND	ug/L	0.50	1		01/03/17 16:24	75-01-4	
m&p-Xylene	ND	ug/L	2.0	1		01/03/17 16:24	179601-23-1	
o-Xylene	ND	ug/L	1.0	1		01/03/17 16:24	95-47-6	
Surrogates								
Dibromofluoromethane (S)	116	%	72-126	1		01/03/17 16:24	1868-53-7	
4-Bromofluorobenzene (S)	95	%	68-124	1		01/03/17 16:24	460-00-4	
Toluene-d8 (S)	103	%	79-119	1		01/03/17 16:24	2037-26-5	

Sample: MW-MP5A Lab ID: 2047989004 Collected: 12/29/16 10:48 Received: 12/29/16 14:00 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
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8015M DRO/ORO Organics

Analytical Method: EPA 8015B Modified Preparation Method: EPA 3535

Diesel Range Organic (C10-C28)	ND	mg/L	0.50	1	01/04/17 08:39	01/10/17 19:17		
Oil Range Organics (>C28-C40)	ND	mg/L	1.0	1	01/04/17 08:39	01/10/17 19:17		
Surrogates								
n-Pentacosane (S)	33	%	16-137	1	01/04/17 08:39	01/10/17 19:17	629-99-2	
o-Terphenyl (S)	42	%	10-121	1	01/04/17 08:39	01/10/17 19:17	84-15-1	

8021 GCV BTEX, MTBE, GRO

Analytical Method: EPA 8015/8021

Gasoline Range Organics	ND	ug/L	50.0	1		01/05/17 05:55		
Surrogates								
4-Bromofluorobenzene (S)	86	%	44-148	1		01/05/17 05:55	460-00-4	

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ANALYTICAL RESULTS



Project: PUMA TERMINAL MW SAMPLING
Pace Project No.: 2047989

Sample:	Lab ID:	Collected:	Prepared:	Mix:			
MW-MP5A	2047989004	12/29/16 10:48	12/29/16 12:00	Water			
Parameters	Results	Units	Report Limit	DF	Preparation	CAS No.	Qual
6020 MET ICPMS							
Analytical Method: EPA 6020 Preparation Method: EPA 3010							
Arsenic	0.0070	mg/L	0.0010	1	12/30/16 16:10 01/06/17 13:55	7440-38-2	
Chromium	ND	mg/L	0.0010	1	12/30/16 16:10 01/06/17 13:55	7440-47-3	
Lead	ND	mg/L	0.0010	1	12/30/16 16:10 01/06/17 13:55	7439-92-1	
Vanadium	ND	mg/L	0.0050	1	12/30/16 16:10 01/06/17 13:55	7440-62-2	
6020 MET ICPMS, Dissolved (LF)							
Analytical Method: EPA 6020 Preparation Method: EPA 3005A							
Arsenic, Dissolved	5.2	ug/L	1.0	1	12/30/16 18:15 01/06/17 15:49	7440-38-2	
Chromium, Dissolved	ND	ug/L	1.0	1	12/30/16 18:15 01/06/17 15:49	7440-47-3	
Lead, Dissolved	ND	ug/L	1.0	1	12/30/16 18:15 01/06/17 15:49	7439-92-1	
Vanadium, Dissolved	ND	ug/L	5.0	1	12/30/16 18:15 01/06/17 15:49	7440-62-2	
7470 Mercury							
Analytical Method: EPA 7470 Preparation Method: EPA 7470							
Mercury	ND	ug/L	0.20	1	12/30/16 17:49 01/03/17 13:37	7439-97-6	
7470 Mercury, Dissolved (LF)							
Analytical Method: EPA 7470 Preparation Method: EPA 7470							
Mercury, Dissolved	ND	ug/L	0.20	1	12/30/16 17:49 01/03/17 12:58	7439-97-6	
8270 MSSV PAH by SIM SEP							
Analytical Method: EPA 8270 by SIM Preparation Method: EPA 3510							
Acenaphthene	ND	ug/L	0.10	1	01/04/17 09:09 01/05/17 01:17	83-32-9	
Acenaphthylene	ND	ug/L	0.10	1	01/04/17 09:09 01/05/17 01:17	208-96-8	
Anthracene	ND	ug/L	0.10	1	01/04/17 09:09 01/05/17 01:17	120-12-7	
Benzo(a)anthracene	ND	ug/L	0.10	1	01/04/17 09:09 01/05/17 01:17	56-55-3	
Benzo(a)pyrene	ND	ug/L	0.10	1	01/04/17 09:09 01/05/17 01:17	50-32-8	
Benzo(b)fluoranthene	ND	ug/L	0.10	1	01/04/17 09:09 01/05/17 01:17	205-99-2	
Benzo(g,h,i)perylene	ND	ug/L	0.10	1	01/04/17 09:09 01/05/17 01:17	191-24-2	
Benzo(k)fluoranthene	ND	ug/L	0.10	1	01/04/17 09:09 01/05/17 01:17	207-08-9	
Chrysene	ND	ug/L	0.10	1	01/04/17 09:09 01/05/17 01:17	218-01-9	
Dibenz(a,h)anthracene	ND	ug/L	0.10	1	01/04/17 09:09 01/05/17 01:17	53-70-3	
Fluoranthene	ND	ug/L	0.10	1	01/04/17 09:09 01/05/17 01:17	206-44-0	
Fluorene	ND	ug/L	0.10	1	01/04/17 09:09 01/05/17 01:17	86-73-7	
Indeno(1,2,3-cd)pyrene	ND	ug/L	0.10	1	01/04/17 09:09 01/05/17 01:17	193-39-5	
2-Methylnaphthalene	ND	ug/L	0.10	1	01/04/17 09:09 01/05/17 01:17	91-57-6	
Naphthalene	ND	ug/L	0.10	1	01/04/17 09:09 01/05/17 01:17	91-20-3	
Phenanthrene	ND	ug/L	0.10	1	01/04/17 09:09 01/05/17 01:17	85-01-8	
Pyrene	ND	ug/L	0.10	1	01/04/17 09:09 01/05/17 01:17	129-00-0	
Surrogates							
2-Fluorobiphenyl (S)	82	%	25-150	1	01/04/17 09:09 01/05/17 01:17	321-60-8	
Terphenyl-d14 (S)	79	%	25-150	1	01/04/17 09:09 01/05/17 01:17	1718-51-0	
8260 MSV Low Level							
Analytical Method: EPA 5030B/8260							
Acelone	7.9	ug/L	4.0	1	01/03/17 16:42	67-64-1	C9
Benzene	ND	ug/L	0.50	1	01/03/17 16:42	71-43-2	
Bromodichloromethane	ND	ug/L	0.50	1	01/03/17 16:42	75-27-4	
Bromoform	ND	ug/L	0.50	1	01/03/17 16:42	75-25-2	
Bromomethane	ND	ug/L	0.50	1	01/03/17 16:42	74-83-9	
2-Butanone (MEK)	ND	ug/L	2.0	1	01/03/17 16:42	78-93-3	

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ANALYTICAL RESULTS



Project: PUMA TERMINAL MW SAMPLING
Pace Project No.: 2047989

Sample: MW-MP5A Lab ID: 2047989004 Collected: 12/29/16 11:48 Receiver: 01/03/17 14:00 Matrix: Water

Parameters	Results	Units	Report Limit	DF	DF	DF	DF	CAS No.	Qual
8260 MSV Low Level									
Analytical Method: EPA 5030B/8260									
Carbon disulfide	ND	ug/L	1.0	1				01/03/17 16:42 75-15-0	L3
Carbon tetrachloride	ND	ug/L	0.50	1				01/03/17 16:42 56-23-5	
Chlorobenzene	ND	ug/L	0.50	1				01/03/17 16:42 108-90-7	
Chloroethane	ND	ug/L	0.50	1				01/03/17 16:42 75-00-3	
Chloroform	ND	ug/L	0.50	1				01/03/17 16:42 67-66-3	
Chloromethane	ND	ug/L	0.50	1				01/03/17 16:42 74-87-3	
1,2-Dibromo-3-chloropropane	ND	ug/L	0.20	1				01/03/17 16:42 96-12-8	
Dibromochloromethane	ND	ug/L	0.50	1				01/03/17 16:42 124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	1				01/03/17 16:42 106-93-4	
Dichlorodifluoromethane	ND	ug/L	1.0	1				01/03/17 16:42 75-71-8	
1,1-Dichloroethane	ND	ug/L	0.50	1				01/03/17 16:42 75-34-3	
1,2-Dichloroethane	ND	ug/L	0.50	1				01/03/17 16:42 107-06-2	
1,1-Dichloroethene	ND	ug/L	0.50	1				01/03/17 16:42 75-35-4	
cis-1,2-Dichloroethene	1.0	ug/L	1.0	1				01/03/17 16:42 156-59-2	
trans-1,2-Dichloroethene	0.90	ug/L	0.50	1				01/03/17 16:42 156-60-5	
1,2-Dichloropropane	ND	ug/L	0.50	1				01/03/17 16:42 78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	0.50	1				01/03/17 16:42 10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	0.50	1				01/03/17 16:42 10061-02-6	
Ethylbenzene	ND	ug/L	0.50	1				01/03/17 16:42 100-41-4	
2-Hexanone	ND	ug/L	1.0	1				01/03/17 16:42 591-78-6	
Isopropylbenzene (Cumene)	ND	ug/L	1.0	1				01/03/17 16:42 98-82-8	
Methyl acetate	ND	ug/L	2.0	1				01/03/17 16:42 79-20-9	
Methylene Chloride	ND	ug/L	0.50	1				01/03/17 16:42 75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	1.0	1				01/03/17 16:42 108-10-1	
Methyl-tert-butyl ether	2.5	ug/L	0.50	1				01/03/17 16:42 1634-04-4	
Styrene	ND	ug/L	1.0	1				01/03/17 16:42 100-42-5	
1,1,2,2-Tetrachloroethane	ND	ug/L	0.50	1				01/03/17 16:42 79-34-5	
Tetrachloroethene	ND	ug/L	0.50	1				01/03/17 16:42 127-18-4	
Toluene	ND	ug/L	0.50	1				01/03/17 16:42 108-88-3	
1,1,1-Trichloroethane	ND	ug/L	0.50	1				01/03/17 16:42 71-55-6	
1,1,2-Trichloroethane	ND	ug/L	0.50	1				01/03/17 16:42 79-00-5	
Trichloroethene	0.64	ug/L	0.50	1				01/03/17 16:42 79-01-6	
Trichlorofluoromethane	ND	ug/L	0.50	1				01/03/17 16:42 75-69-4	
Vinyl chloride	ND	ug/L	0.50	1				01/03/17 16:42 75-01-4	
m&p-Xylene	ND	ug/L	2.0	1				01/03/17 16:42 179601-23-1	
o-Xylene	ND	ug/L	1.0	1				01/03/17 16:42 95-47-6	
Surrogates									
Dibromofluoromethane (S)	116	%	72-126	1				01/03/17 16:42 1868-53-7	
4-Bromofluorobenzene (S)	100	%	68-124	1				01/03/17 16:42 460-00-4	
Toluene-d8 (S)	102	%	79-119	1				01/03/17 16:42 2037-26-5	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: PUMA TERMINAL MW SAMPLING
Pace Project No.: 2047989



Sample: MW-DP5	Lab ID: 2047989005	Collected: 12/29/16 11:37	Received: 12/29/16 11:00	Matrix: Water				
Parameters	Results	Units	Report Limit	DF	Prep	Analysis	CAS No.	Qual

8015M DRO/ORO Organics

Analytical Method: EPA 8015B Modified Preparation Method: EPA 3535

Diesel Range Organic (C10-C28)	ND	mg/L	0.50	1	01/04/17 08:39	01/10/17 19:44		
Oil Range Organics (>C28-C40)	ND	mg/L	1.0	1	01/04/17 08:39	01/10/17 19:44		
Surrogates								
n-Pentacosane (S)	33	%	16-137	1	01/04/17 08:39	01/10/17 19:44	629-99-2	
o-Terphenyl (S)	39	%	10-121	1	01/04/17 08:39	01/10/17 19:44	84-15-1	

8021 GCV BTEX, MTBE, GRO

Analytical Method: EPA 8015/8021

Gasoline Range Organics	ND	ug/L	50.0	1		01/05/17 06:22		
Surrogates								
4-Bromofluorobenzene (S)	87	%	44-148	1		01/05/17 06:22	460-00-4	

6020 MET ICPMS

Analytical Method: EPA 6020 Preparation Method: EPA 3010

Arsenic	ND	mg/L	0.0010	1	12/30/16 16:10	01/06/17 14:07	7440-38-2	
Chromium	ND	mg/L	0.0010	1	12/30/16 16:10	01/06/17 14:07	7440-47-3	
Lead	ND	mg/L	0.0010	1	12/30/16 16:10	01/06/17 14:07	7439-92-1	
Vanadium	ND	mg/L	0.0050	1	12/30/16 16:10	01/06/17 14:07	7440-62-2	

6020 MET ICPMS, Dissolved (LF)

Analytical Method: EPA 6020 Preparation Method: EPA 3005A

Arsenic, Dissolved	ND	ug/L	1.0	1	12/30/16 18:15	01/06/17 15:53	7440-38-2	
Chromium, Dissolved	ND	ug/L	1.0	1	12/30/16 18:15	01/06/17 15:53	7440-47-3	
Lead, Dissolved	ND	ug/L	1.0	1	12/30/16 18:15	01/06/17 15:53	7439-92-1	
Vanadium, Dissolved	ND	ug/L	5.0	1	12/30/16 18:15	01/06/17 15:53	7440-62-2	

7470 Mercury

Analytical Method: EPA 7470 Preparation Method: EPA 7470

Mercury	ND	ug/L	0.20	1	12/30/16 17:49	01/03/17 13:39	7439-97-6	
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7470 Mercury, Dissolved (LF)

Analytical Method: EPA 7470 Preparation Method: EPA 7470

Mercury, Dissolved	ND	ug/L	0.20	1	12/30/16 17:49	01/03/17 13:00	7439-97-6	
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8270 MSSV PAH by SIM SEP

Analytical Method: EPA 8270 by SIM Preparation Method: EPA 3510

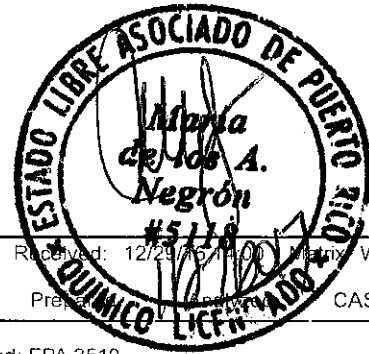
Acenaphthene	ND	ug/L	0.10	1	01/04/17 09:09	01/05/17 01:37	83-32-9	
Acenaphthylene	ND	ug/L	0.10	1	01/04/17 09:09	01/05/17 01:37	208-96-8	
Anthracene	ND	ug/L	0.10	1	01/04/17 09:09	01/05/17 01:37	120-12-7	
Benzo(a)anthracene	ND	ug/L	0.10	1	01/04/17 09:09	01/05/17 01:37	56-55-3	
Benzo(a)pyrene	ND	ug/L	0.10	1	01/04/17 09:09	01/05/17 01:37	50-32-8	
Benzo(b)fluoranthene	ND	ug/L	0.10	1	01/04/17 09:09	01/05/17 01:37	205-99-2	
Benzo(g,h,i)perylene	ND	ug/L	0.10	1	01/04/17 09:09	01/05/17 01:37	191-24-2	
Benzo(k)fluoranthene	ND	ug/L	0.10	1	01/04/17 09:09	01/05/17 01:37	207-08-9	
Chrysene	ND	ug/L	0.10	1	01/04/17 09:09	01/05/17 01:37	218-01-9	
Dibenz(a,h)anthracene	ND	ug/L	0.10	1	01/04/17 09:09	01/05/17 01:37	53-70-3	
Fluoranthene	ND	ug/L	0.10	1	01/04/17 09:09	01/05/17 01:37	206-44-0	
Fluorene	ND	ug/L	0.10	1	01/04/17 09:09	01/05/17 01:37	86-73-7	
Indeno(1,2,3-cd)pyrene	ND	ug/L	0.10	1	01/04/17 09:09	01/05/17 01:37	193-39-5	
2-Methylnaphthalene	ND	ug/L	0.10	1	01/04/17 09:09	01/05/17 01:37	91-57-6	
Naphthalene	ND	ug/L	0.10	1	01/04/17 09:09	01/05/17 01:37	91-20-3	
Phenanthrene	ND	ug/L	0.10	1	01/04/17 09:09	01/05/17 01:37	85-01-8	

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ANALYTICAL RESULTS

Project: PUMA TERMINAL MW SAMPLING
Pace Project No.: 2047989



Sample: MW-DP5 Lab ID: 2047989005 Collected: 12/29/16 11:37 Received: 12/29/16 11:00 Matrix: Water
Parameters Results Units Report Limit DF Pre CAS No. Qual

Parameters	Results	Units	Report Limit	DF	Pre	CAS No.	Qual
8270 MSSV PAH by SIM SEP Analytical Method: EPA 8270 by SIM Preparation Method: EPA 3510							
Pyrene	ND	ug/L	0.10	1	01/04/17 09:09	01/05/17 01:37	129-00-0
Surrogates							
2-Fluorobiphenyl (S)	75	%	25-150	1	01/04/17 09:09	01/05/17 01:37	321-60-8
Terphenyl-d14 (S)	71	%	25-150	1	01/04/17 09:09	01/05/17 01:37	1718-51-0
8260 MSV Low Level Analytical Method: EPA 5030B/8260							
Acetone	12.0	ug/L	4.0	1		01/03/17 16:59	67-64-1 C9
Benzene	ND	ug/L	0.50	1		01/03/17 16:59	71-43-2
Bromodichloromethane	ND	ug/L	0.50	1		01/03/17 16:59	75-27-4
Bromoform	ND	ug/L	0.50	1		01/03/17 16:59	75-25-2
Bromomethane	ND	ug/L	0.50	1		01/03/17 16:59	74-83-9
2-Butanone (MEK)	ND	ug/L	2.0	1		01/03/17 16:59	78-93-3
Carbon disulfide	ND	ug/L	1.0	1		01/03/17 16:59	75-15-0 L3
Carbon tetrachloride	ND	ug/L	0.50	1		01/03/17 16:59	56-23-5
Chlorobenzene	ND	ug/L	0.50	1		01/03/17 16:59	108-90-7
Chloroethane	ND	ug/L	0.50	1		01/03/17 16:59	75-00-3
Chloroform	ND	ug/L	0.50	1		01/03/17 16:59	67-66-3
Chloromethane	ND	ug/L	0.50	1		01/03/17 16:59	74-87-3
1,2-Dibromo-3-chloropropane	ND	ug/L	0.20	1		01/03/17 16:59	96-12-8
Dibromochloromethane	ND	ug/L	0.50	1		01/03/17 16:59	124-48-1
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	1		01/03/17 16:59	106-93-4
Dichlorodifluoromethane	ND	ug/L	1.0	1		01/03/17 16:59	75-71-8
1,1-Dichloroethane	ND	ug/L	0.50	1		01/03/17 16:59	75-34-3
1,2-Dichloroethane	ND	ug/L	0.50	1		01/03/17 16:59	107-06-2
1,1-Dichloroethene	ND	ug/L	0.50	1		01/03/17 16:59	75-35-4
cis-1,2-Dichloroethene	ND	ug/L	1.0	1		01/03/17 16:59	156-59-2
trans-1,2-Dichloroethene	ND	ug/L	0.50	1		01/03/17 16:59	156-60-5
1,2-Dichloropropane	ND	ug/L	0.50	1		01/03/17 16:59	78-87-5
cis-1,3-Dichloropropene	ND	ug/L	0.50	1		01/03/17 16:59	10061-01-5
trans-1,3-Dichloropropene	ND	ug/L	0.50	1		01/03/17 16:59	10061-02-6
Ethylbenzene	ND	ug/L	0.50	1		01/03/17 16:59	100-41-4
2-Hexanone	ND	ug/L	1.0	1		01/03/17 16:59	591-78-6
Isopropylbenzene (Cumene)	ND	ug/L	1.0	1		01/03/17 16:59	98-82-8
Methyl acetate	ND	ug/L	2.0	1		01/03/17 16:59	79-20-9
Methylene Chloride	ND	ug/L	0.50	1		01/03/17 16:59	75-09-2
4-Methyl-2-pentanone (MIBK)	ND	ug/L	1.0	1		01/03/17 16:59	108-10-1
Methyl-tert-butyl ether	ND	ug/L	0.50	1		01/03/17 16:59	1634-04-4
Styrene	ND	ug/L	1.0	1		01/03/17 16:59	100-42-5
1,1,2,2-Tetrachloroethane	ND	ug/L	0.50	1		01/03/17 16:59	79-34-5
Tetrachloroethene	ND	ug/L	0.50	1		01/03/17 16:59	127-18-4
Toluene	ND	ug/L	0.50	1		01/03/17 16:59	108-88-3
1,1,1-Trichloroethane	ND	ug/L	0.50	1		01/03/17 16:59	71-55-6
1,1,2-Trichloroethane	ND	ug/L	0.50	1		01/03/17 16:59	79-00-5
Trichloroethene	ND	ug/L	0.50	1		01/03/17 16:59	79-01-6
Trichlorofluoromethane	ND	ug/L	0.50	1		01/03/17 16:59	75-69-4
Vinyl chloride	ND	ug/L	0.50	1		01/03/17 16:59	75-01-4
m&p-Xylene	ND	ug/L	2.0	1		01/03/17 16:59	179601-23-1

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ANALYTICAL RESULTS



Project: PUMA TERMINAL MW SAMPLING
Pace Project No.: 2047989

Sample:	Lab ID:	Collected:	Received:	Matrix:				
MW-DP5	2047989005	12/29/16 11:37	12/29/16 14:00	Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV Low Level		Analytical Method: EPA 5030B/8260						
o-Xylene	ND	ug/L	1.0	1	01/03/17 16:59		95-47-6	
Surrogates								
Dibromofluoromethane (S)	113	%.	72-126	1	01/03/17 16:59		1868-53-7	
4-Bromofluorobenzene (S)	96	%.	68-124	1	01/03/17 16:59		460-00-4	
Toluene-d8 (S)	102	%.	79-119	1	01/03/17 16:59		2037-26-5	

Sample:	Lab ID:	Collected:	Received:	Matrix:				
FB-122916	2047989006	12/29/16 11:42	12/29/16 14:00	Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8021 GCV BTEX, MTBE, GRO		Analytical Method: EPA 8015/8021						
Gasoline Range Organics	ND	ug/L	50.0	1	01/05/17 06:49			
Surrogates								
4-Bromofluorobenzene (S)	89	%.	44-148	1	01/05/17 06:49		460-00-4	

Sample:	Lab ID:	Collected:	Received:	Matrix:				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV Low Level		Analytical Method: EPA 5030B/8260						
Acetone	27.3	ug/L	4.0	1	01/03/17 17:17		67-64-1	C9
Benzene	ND	ug/L	0.50	1	01/03/17 17:17		71-43-2	
Bromodichloromethane	ND	ug/L	0.50	1	01/03/17 17:17		75-27-4	
Bromoform	ND	ug/L	0.50	1	01/03/17 17:17		75-25-2	
Bromomethane	ND	ug/L	0.50	1	01/03/17 17:17		74-83-9	
2-Butanone (MEK)	ND	ug/L	2.0	1	01/03/17 17:17		78-93-3	
Carbon disulfide	ND	ug/L	1.0	1	01/03/17 17:17		75-15-0	L3
Carbon tetrachloride	ND	ug/L	0.50	1	01/03/17 17:17		56-23-5	
Chlorobenzene	ND	ug/L	0.50	1	01/03/17 17:17		108-90-7	
Chloroethane	ND	ug/L	0.50	1	01/03/17 17:17		75-00-3	
Chloroform	ND	ug/L	0.50	1	01/03/17 17:17		67-66-3	
Chloromethane	ND	ug/L	0.50	1	01/03/17 17:17		74-87-3	
1,2-Dibromo-3-chloropropane	ND	ug/L	0.20	1	01/03/17 17:17		96-12-8	
Dibromochloromethane	ND	ug/L	0.50	1	01/03/17 17:17		124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	1	01/03/17 17:17		106-93-4	
Dichlorodifluoromethane	ND	ug/L	1.0	1	01/03/17 17:17		75-71-8	
1,1-Dichloroethane	ND	ug/L	0.50	1	01/03/17 17:17		75-34-3	
1,2-Dichloroethane	ND	ug/L	0.50	1	01/03/17 17:17		107-06-2	
1,1-Dichloroethene	ND	ug/L	0.50	1	01/03/17 17:17		75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	1	01/03/17 17:17		156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	0.50	1	01/03/17 17:17		156-60-5	
1,2-Dichloropropane	ND	ug/L	0.50	1	01/03/17 17:17		78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	0.50	1	01/03/17 17:17		10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	0.50	1	01/03/17 17:17		10061-02-6	
Ethylbenzene	ND	ug/L	0.50	1	01/03/17 17:17		100-41-4	
2-Hexanone	ND	ug/L	1.0	1	01/03/17 17:17		591-78-6	
Isopropylbenzene (Cumene)	ND	ug/L	1.0	1	01/03/17 17:17		98-82-8	
Methyl acetate	ND	ug/L	2.0	1	01/03/17 17:17		79-20-9	
Methylene Chloride	ND	ug/L	0.50	1	01/03/17 17:17		75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	1.0	1	01/03/17 17:17		108-10-1	

REPORT OF LABORATORY ANALYSIS

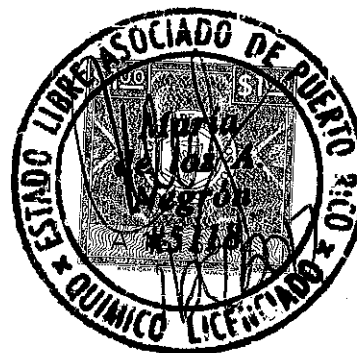
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ANALYTICAL RESULTS

Project: PUMA TERMINAL MW SAMPLING
Pace Project No.: 2047989

Sample: FB-122916 Lab ID: 2047989006 Collected: 12/29/16 11:42 Received: 12/29/16 14:00 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV Low Level		Analytical Method: EPA 5030B/8260						
Methyl-tert-butyl ether	ND	ug/L	0.50	1		01/03/17 17:17	1634-04-4	
Styrene	ND	ug/L	1.0	1		01/03/17 17:17	100-42-5	
1,1,2,2-Tetrachloroethane	ND	ug/L	0.50	1		01/03/17 17:17	79-34-5	
Tetrachloroethene	ND	ug/L	0.50	1		01/03/17 17:17	127-18-4	
Toluene	ND	ug/L	0.50	1		01/03/17 17:17	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	0.50	1		01/03/17 17:17	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	0.50	1		01/03/17 17:17	79-00-5	
Trichloroethene	ND	ug/L	0.50	1		01/03/17 17:17	79-01-6	
Trichlorofluoromethane	ND	ug/L	0.50	1		01/03/17 17:17	75-69-4	
Vinyl chloride	ND	ug/L	0.50	1		01/03/17 17:17	75-01-4	
m&p-Xylene	ND	ug/L	2.0	1		01/03/17 17:17	179601-23-1	
o-Xylene	ND	ug/L	1.0	1		01/03/17 17:17	95-47-6	
Surrogates								
Dibromofluoromethane (S)	116	%.	72-126	1		01/03/17 17:17	1868-53-7	
4-Bromofluorobenzene (S)	98	%.	68-124	1		01/03/17 17:17	460-00-4	
Toluene-d8 (S)	103	%.	79-119	1		01/03/17 17:17	2037-26-5	



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QUALITY CONTROL DATA

Project: PUMA TERMINAL MW SAMPLING

Pace Project No.: 2047989

QC Batch: 71377

Analysis Method: EPA 8015/8021

QC Batch Method: EPA 8015/8021

Analysis Description: 8021 W GCV BTEX , MTBE, GRO

Associated Lab Samples: 2047989001, 2047989002, 2047989003, 2047989004, 2047989005, 2047989006

METHOD BLANK: 298565

Matrix: Water

Associated Lab Samples: 2047989001, 2047989002, 2047989003, 2047989004, 2047989005, 2047989006

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Gasoline Range Organics	ug/L	ND	50.0	01/05/17 03:16	
4-Bromofluorobenzene (S)	%	89	44-148	01/05/17 03:16	

METHOD BLANK: 298931

Matrix: Water

Associated Lab Samples: 2047989001, 2047989002, 2047989003, 2047989004, 2047989005, 2047989006

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Gasoline Range Organics	ug/L	ND	50.0	01/05/17 20:19	
4-Bromofluorobenzene (S)	%	89	44-148	01/05/17 20:19	

METHOD BLANK: 299195

Matrix: Water

Associated Lab Samples: 2047989001, 2047989002, 2047989003, 2047989004, 2047989005, 2047989006

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Gasoline Range Organics	ug/L	ND	50.0	01/06/17 12:25	
4-Bromofluorobenzene (S)	%	90	44-148	01/06/17 12:25	

LABORATORY CONTROL SAMPLE: 298566

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Gasoline Range Organics	ug/L	500	454	91	61-136	
4-Bromofluorobenzene (S)	%			89	44-148	
4-Bromofluorobenzene (S)	%			90	44-148	

LABORATORY CONTROL SAMPLE: 298932

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Gasoline Range Organics	ug/L	500	467	93	61-136	
4-Bromofluorobenzene (S)	%			91	44-148	
4-Bromofluorobenzene (S)	%			92	44-148	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

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QUALITY CONTROL DATA

Project: PUMA TERMINAL MW SAMPLING
Pace Project No.: 2047989

LABORATORY CONTROL SAMPLE: 299196

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Gasoline Range Organics	ug/L	500	472	94	61-136	
4-Bromofluorobenzene (S)	%			90	44-148	
4-Bromofluorobenzene (S)	%			90	44-148	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 298856 298857

Parameter	Units	2047989003		298857		MS % Rec	MSD % Rec	% Rec Limits	Max RPD	Qual	
		2047989003 Result	MS Spike Conc.	MSD Spike Conc.	MS Result						MSD Result
Gasoline Range Organics	ug/L	ND	500	500	560	555	104	103	15-147	1	20
4-Bromofluorobenzene (S)	%						93	93	44-148		
4-Bromofluorobenzene (S)	%						93	94	44-148		
4-Bromofluorobenzene (S)	%						95	93	44-148		
4-Bromofluorobenzene (S)	%						95	94	44-148		

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

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QUALITY CONTROL DATA

Project: PUMA TERMINAL MW SAMPLING
Pace Project No.: 2047989

QC Batch: 71210 Analysis Method: EPA 7470
QC Batch Method: EPA 7470 Analysis Description: 7470 Mercury
Associated Lab Samples: 2047989002, 2047989003, 2047989004, 2047989005

METHOD BLANK: 297858 Matrix: Water
Associated Lab Samples: 2047989002, 2047989003, 2047989004, 2047989005

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Mercury	ug/L	ND	0.20	01/03/17 13:02	

LABORATORY CONTROL SAMPLE: 297859

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury	ug/L	1	1.0	101	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 297860 297861

Parameter	Units	2047949001 Result	MS	MSD	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	Max RPD	Qual
			Spike Conc.	Spike Conc.							
Mercury	ug/L	ND	1	1	1.0	1.0	100	100	75-125	0	20

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: PUMA TERMINAL MW SAMPLING
Pace Project No.: 2047989

QC Batch: 71229 Analysis Method: EPA 7470
QC Batch Method: EPA 7470 Analysis Description: 7470 Mercury Dissolved
Associated Lab Samples: 2047989002, 2047989003, 2047989004, 2047989005

METHOD BLANK: 297980 Matrix: Water
Associated Lab Samples: 2047989002, 2047989003, 2047989004, 2047989005

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Mercury, Dissolved	ug/L	ND	0.20	01/03/17 12:08	

LABORATORY CONTROL SAMPLE: 297981

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury, Dissolved	ug/L	1	1.1	106	80-120	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: PUMA TERMINAL MW SAMPLING
Pace Project No.: 2047989

QC Batch: 71212 Analysis Method: EPA 6020
QC Batch Method: EPA 3010 Analysis Description: 6020 MET
Associated Lab Samples: 2047989002, 2047989003, 2047989004, 2047989005

METHOD BLANK: 297866 Matrix: Water
Associated Lab Samples: 2047989002, 2047989003, 2047989004, 2047989005

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Arsenic	mg/L	ND	0.0010	01/06/17 10:19	
Chromium	mg/L	ND	0.0010	01/06/17 10:19	
Lead	mg/L	ND	0.0010	01/06/17 10:19	
Vanadium	mg/L	ND	0.0050	01/06/17 10:19	

LABORATORY CONTROL SAMPLE: 297867

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Arsenic	mg/L	.02	0.020	100	83-115	
Chromium	mg/L	.02	0.020	99	85-115	
Lead	mg/L	.02	0.019	96	84-115	
Vanadium	mg/L	.02	0.019	97	81-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 297868 297869

Parameter	Units	2047967004		297868		297869		% Rec	% Rec	% Rec Limits	Max RPD	Qual
		MS Result	MSD Spike Conc.	MS Result	MSD Spike Conc.	MS Result	MSD Result					
Arsenic	mg/L	ND	.02	0.018	.02	0.019	88	91	80-120	3	20	
Chromium	mg/L	0.024	.02	0.042	.02	0.044	91	100	80-120	4	20	
Lead	mg/L	ND	.02	0.020	.02	0.021	100	103	80-120	3	20	
Vanadium	mg/L	ND	.02	0.020	.02	0.021	95	100	80-120	5	20	

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QUALITY CONTROL DATA

Project: PUMA TERMINAL MW SAMPLING
Pace Project No.: 2047989

QC Batch: 71231 Analysis Method: EPA 6020
QC Batch Method: EPA 3005A Analysis Description: 6020 MET Dissolved
Associated Lab Samples: 2047989002, 2047989003, 2047989004, 2047989005

METHOD BLANK: 297988 Matrix: Water
Associated Lab Samples: 2047989002, 2047989003, 2047989004, 2047989005

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Arsenic, Dissolved	ug/L	ND	1.0	01/06/17 10:26	
Chromium, Dissolved	ug/L	ND	1.0	01/06/17 10:26	
Lead, Dissolved	ug/L	ND	1.0	01/06/17 10:26	
Vanadium, Dissolved	ug/L	ND	5.0	01/06/17 10:26	

LABORATORY CONTROL SAMPLE: 297989

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Arsenic, Dissolved	ug/L	20	19.8	99	80-120	
Chromium, Dissolved	ug/L	20	19.7	98	80-120	
Lead, Dissolved	ug/L	20	19.0	95	80-120	
Vanadium, Dissolved	ug/L	20	19.5	97	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 299026 299027

Parameter	Units	MS		MSD		MS % Rec	MSD % Rec	% Rec Limits	Max RPD	Qual	
		2047967002 Result	Spike Conc.	Spike Conc.	MS Result						MSD Result
Arsenic, Dissolved	ug/L	ND	20	20	19.2	19.1	96	95	75-125	1	20
Chromium, Dissolved	ug/L	ND	20	20	19.2	19.2	95	96	75-125	0	20
Lead, Dissolved	ug/L	ND	20	20	18.8	18.9	94	95	75-125	1	20
Vanadium, Dissolved	ug/L	ND	20	20	20.6	20.8	92	93	75-125	1	20

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QUALITY CONTROL DATA

Project: PUMA TERMINAL MW SAMPLING
Pace Project No.: 2047989

QC Batch: 71267 Analysis Method: EPA 5030B/8260
QC Batch Method: EPA 5030B/8260 Analysis Description: 8260 MSV Low Level
Associated Lab Samples: 2047989001, 2047989002, 2047989003, 2047989004, 2047989005, 2047989006

METHOD BLANK: 298068 Matrix: Water
Associated Lab Samples: 2047989001, 2047989002, 2047989003, 2047989004, 2047989005, 2047989006

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
1,1,1-Trichloroethane	ug/L	ND	0.50	01/03/17 10:46	
1,1,2,2-Tetrachloroethane	ug/L	ND	0.50	01/03/17 10:46	
1,1,2-Trichloroethane	ug/L	ND	0.50	01/03/17 10:46	
1,1-Dichloroethane	ug/L	ND	0.50	01/03/17 10:46	
1,1-Dichloroethene	ug/L	ND	0.50	01/03/17 10:46	
1,2-Dibromo-3-chloropropane	ug/L	ND	0.20	01/03/17 10:46	
1,2-Dibromoethane (EDB)	ug/L	ND	1.0	01/03/17 10:46	
1,2-Dichloroethane	ug/L	ND	0.50	01/03/17 10:46	
1,2-Dichloropropane	ug/L	ND	0.50	01/03/17 10:46	
2-Butanone (MEK)	ug/L	ND	2.0	01/03/17 10:46	
2-Hexanone	ug/L	ND	1.0	01/03/17 10:46	
4-Methyl-2-pentanone (MIBK)	ug/L	ND	1.0	01/03/17 10:46	
Acetone	ug/L	ND	4.0	01/03/17 10:46	
Benzene	ug/L	ND	0.50	01/03/17 10:46	
Bromodichloromethane	ug/L	ND	0.50	01/03/17 10:46	
Bromoform	ug/L	ND	0.50	01/03/17 10:46	
Bromomethane	ug/L	ND	0.50	01/03/17 10:46	
Carbon disulfide	ug/L	ND	1.0	01/03/17 10:46	
Carbon tetrachloride	ug/L	ND	0.50	01/03/17 10:46	
Chlorobenzene	ug/L	ND	0.50	01/03/17 10:46	
Chloroethane	ug/L	ND	0.50	01/03/17 10:46	
Chloroform	ug/L	ND	0.50	01/03/17 10:46	
Chloromethane	ug/L	ND	0.50	01/03/17 10:46	
cis-1,2-Dichloroethene	ug/L	ND	1.0	01/03/17 10:46	
cis-1,3-Dichloropropene	ug/L	ND	0.50	01/03/17 10:46	
Dibromochloromethane	ug/L	ND	0.50	01/03/17 10:46	
Dichlorodifluoromethane	ug/L	ND	1.0	01/03/17 10:46	
Ethylbenzene	ug/L	ND	0.50	01/03/17 10:46	
Isopropylbenzene (Cumene)	ug/L	ND	1.0	01/03/17 10:46	
m&p-Xylene	ug/L	ND	2.0	01/03/17 10:46	
Methyl acetate	ug/L	ND	2.0	01/03/17 10:46	
Methyl-tert-butyl ether	ug/L	ND	0.50	01/03/17 10:46	
Methylene Chloride	ug/L	ND	0.50	01/03/17 10:46	
o-Xylene	ug/L	ND	1.0	01/03/17 10:46	
Styrene	ug/L	ND	1.0	01/03/17 10:46	
Tetrachloroethene	ug/L	ND	0.50	01/03/17 10:46	
Toluene	ug/L	ND	0.50	01/03/17 10:46	
trans-1,2-Dichloroethene	ug/L	ND	0.50	01/03/17 10:46	
trans-1,3-Dichloropropene	ug/L	ND	0.50	01/03/17 10:46	
Trichloroethene	ug/L	ND	0.50	01/03/17 10:46	
Trichlorofluoromethane	ug/L	ND	0.50	01/03/17 10:46	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: PUMA TERMINAL MW SAMPLING
Pace Project No.: 2047989

METHOD BLANK: 298068 Matrix: Water
Associated Lab Samples: 2047989001, 2047989002, 2047989003, 2047989004, 2047989005, 2047989006

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Vinyl chloride	ug/L	ND	0.50	01/03/17 10:46	
4-Bromofluorobenzene (S)	%	98	68-124	01/03/17 10:46	
Dibromofluoromethane (S)	%	102	72-126	01/03/17 10:46	
Toluene-d8 (S)	%	100	79-119	01/03/17 10:46	

METHOD BLANK: 298394 Matrix: Water
Associated Lab Samples: 2047989001, 2047989002, 2047989003, 2047989004, 2047989005, 2047989006

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
1,1,1-Trichloroethane	ug/L	ND	0.50	01/04/17 10:25	
1,1,2,2-Tetrachloroethane	ug/L	ND	0.50	01/04/17 10:25	
1,1,2-Trichloroethane	ug/L	ND	0.50	01/04/17 10:25	
1,1-Dichloroethane	ug/L	ND	0.50	01/04/17 10:25	
1,1-Dichloroethene	ug/L	ND	0.50	01/04/17 10:25	
1,2-Dibromo-3-chloropropane	ug/L	ND	0.20	01/04/17 10:25	
1,2-Dibromoethane (EDB)	ug/L	ND	1.0	01/04/17 10:25	
1,2-Dichloroethane	ug/L	ND	0.50	01/04/17 10:25	
1,2-Dichloropropane	ug/L	ND	0.50	01/04/17 10:25	
2-Butanone (MEK)	ug/L	ND	2.0	01/04/17 10:25	
2-Hexanone	ug/L	ND	1.0	01/04/17 10:25	
4-Methyl-2-pentanone (MIBK)	ug/L	ND	1.0	01/04/17 10:25	
Acetone	ug/L	ND	4.0	01/04/17 10:25	
Benzene	ug/L	ND	0.50	01/04/17 10:25	
Bromodichloromethane	ug/L	ND	0.50	01/04/17 10:25	
Bromoform	ug/L	ND	0.50	01/04/17 10:25	
Bromomethane	ug/L	ND	0.50	01/04/17 10:25	
Carbon disulfide	ug/L	ND	1.0	01/04/17 10:25	
Carbon tetrachloride	ug/L	ND	0.50	01/04/17 10:25	
Chlorobenzene	ug/L	ND	0.50	01/04/17 10:25	
Chloroethane	ug/L	ND	0.50	01/04/17 10:25	
Chloroform	ug/L	ND	0.50	01/04/17 10:25	
Chloromethane	ug/L	ND	0.50	01/04/17 10:25	
cis-1,2-Dichloroethene	ug/L	ND	1.0	01/04/17 10:25	
cis-1,3-Dichloropropene	ug/L	ND	0.50	01/04/17 10:25	
Dibromochloromethane	ug/L	ND	0.50	01/04/17 10:25	
Dichlorodifluoromethane	ug/L	ND	1.0	01/04/17 10:25	
Ethylbenzene	ug/L	ND	0.50	01/04/17 10:25	
Isopropylbenzene (Cumene)	ug/L	ND	1.0	01/04/17 10:25	
m&p-Xylene	ug/L	ND	2.0	01/04/17 10:25	
Methyl acetate	ug/L	ND	2.0	01/04/17 10:25	
Methyl-tert-butyl ether	ug/L	ND	0.50	01/04/17 10:25	
Methylene Chloride	ug/L	ND	0.50	01/04/17 10:25	
o-Xylene	ug/L	ND	1.0	01/04/17 10:25	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: PUMA TERMINAL MW SAMPLING
Pace Project No.: 2047989

METHOD BLANK: 298394 Matrix: Water
Associated Lab Samples: 2047989001, 2047989002, 2047989003, 2047989004, 2047989005, 2047989006

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Styrene	ug/L	ND	1.0	01/04/17 10:25	
Tetrachloroethane	ug/L	ND	0.50	01/04/17 10:25	
Toluene	ug/L	ND	0.50	01/04/17 10:25	
trans-1,2-Dichloroethene	ug/L	ND	0.50	01/04/17 10:25	
trans-1,3-Dichloropropene	ug/L	ND	0.50	01/04/17 10:25	
Trichloroethene	ug/L	ND	0.50	01/04/17 10:25	
Trichlorofluoromethane	ug/L	ND	0.50	01/04/17 10:25	
Vinyl chloride	ug/L	ND	0.50	01/04/17 10:25	
4-Bromofluorobenzene (S)	%	98	68-124	01/04/17 10:25	
Dibromofluoromethane (S)	%	102	72-126	01/04/17 10:25	
Toluene-d8 (S)	%	100	79-119	01/04/17 10:25	

LABORATORY CONTROL SAMPLE: 298069

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,1,1-Trichloroethane	ug/L	50	56.2	112	62-131	
1,1,2,2-Tetrachloroethane	ug/L	50	45.9	92	15-179	
1,1,2-Trichloroethane	ug/L	50	47.0	94	58-144	
1,1-Dichloroethane	ug/L	50	55.0	110	63-129	
1,1-Dichloroethene	ug/L	50	54.7	109	51-139	
1,2-Dibromo-3-chloropropane	ug/L	50	46.0	92	21-160	
1,2-Dibromoethane (EDB)	ug/L	50	48.6	97	52-161	
1,2-Dichloroethane	ug/L	50	49.5	99	57-148	
1,2-Dichloropropane	ug/L	50	50.7	101	66-128	
2-Butanone (MEK)	ug/L	50	53.6	107	32-183	
2-Hexanone	ug/L	50	45.0	90	36-170	
4-Methyl-2-pentanone (MIBK)	ug/L	50	46.1	92	26-171	
Acetone	ug/L	50	51.2	102	22-165	
Benzene	ug/L	50	54.3	109	62-131	
Bromodichloromethane	ug/L	50	47.3	95	69-132	
Bromoform	ug/L	50	41.3	83	35-166	
Bromomethane	ug/L	50	45.5	91	34-158	
Carbon disulfide	ug/L	50	68.3	137	31-128 L0	
Carbon tetrachloride	ug/L	50	51.8	104	54-144	
Chlorobenzene	ug/L	50	48.5	97	70-127	
Chloroethane	ug/L	50	40.1	80	17-195	
Chloroform	ug/L	50	51.3	103	73-134	
Chloromethane	ug/L	50	58.8	118	17-153	
cis-1,2-Dichloroethene	ug/L	50	53.3	107	68-129	
cis-1,3-Dichloropropene	ug/L	50	50.8	102	72-138	
Dibromochloromethane	ug/L	50	43.8	88	49-146	
Dichlorodifluoromethane	ug/L	50	55.1	110	10-179	
Ethylbenzene	ug/L	50	47.2	94	66-126	
Isopropylbenzene (Cumene)	ug/L	50	47.9	96	51-138	

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QUALITY CONTROL DATA

Project: PUMA TERMINAL MW SAMPLING
Pace Project No.: 2047989

LABORATORY CONTROL SAMPLE: 298069

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
m&p-Xylene	ug/L	100	94.3	94	65-129	
Methyl acetate	ug/L	50	52.1	104	20-142	
Methyl-tert-butyl ether	ug/L	50	50.4	101	37-166	
Methylene Chloride	ug/L	50	53.9	108	46-168	
o-Xylene	ug/L	50	46.7	93	65-124	
Styrene	ug/L	50	48.1	96	72-133	
Tetrachloroethene	ug/L	50	47.8	96	46-157	
Toluene	ug/L	50	51.4	103	69-126	
trans-1,2-Dichloroethene	ug/L	50	54.0	108	60-129	
trans-1,3-Dichloropropene	ug/L	50	50.2	100	59-149	
Trichloroethene	ug/L	50	52.7	105	67-132	
Trichlorofluoromethane	ug/L	50	57.3	115	39-171	
Vinyl chloride	ug/L	50	44.9	90	27-149	
4-Bromofluorobenzene (S)	%			99	68-124	
Dibromofluoromethane (S)	%			109	72-126	
Toluene-d8 (S)	%			102	79-119	

LABORATORY CONTROL SAMPLE: 298395

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,1,1-Trichloroethane	ug/L	50	53.9	108	62-131	
1,1,2,2-Tetrachloroethane	ug/L	50	51.8	104	15-179	
1,1,2-Trichloroethane	ug/L	50	46.9	94	58-144	
1,1-Dichloroethane	ug/L	50	54.0	108	63-129	
1,1-Dichloroethene	ug/L	50	53.6	107	51-139	
1,2-Dibromo-3-chloropropane	ug/L	50	49.0	98	21-160	
1,2-Dibromoethane (EDB)	ug/L	50	50.2	100	52-161	
1,2-Dichloroethane	ug/L	50	50.9	102	57-148	
1,2-Dichloropropane	ug/L	50	51.6	103	66-128	
2-Butanone (MEK)	ug/L	50	53.2	106	32-183	
2-Hexanone	ug/L	50	46.3	93	36-170	
4-Methyl-2-pentanone (MIBK)	ug/L	50	49.9	100	26-171	
Acefone	ug/L	50	51.6	103	22-165	
Benzene	ug/L	50	54.6	109	62-131	
Bromodichloromethane	ug/L	50	47.8	96	69-132	
Bromoform	ug/L	50	44.3	89	35-166	
Bromomethane	ug/L	50	45.3	91	34-158	
Carbon disulfide	ug/L	50	67.4	135	31-128 LO	
Carbon tetrachloride	ug/L	50	51.7	103	54-144	
Chlorobenzene	ug/L	50	51.2	102	70-127	
Chloroethane	ug/L	50	38.2	76	17-195	
Chloroform	ug/L	50	50.0	100	73-134	
Chloromethane	ug/L	50	59.1	118	17-153	
cis-1,2-Dichloroethene	ug/L	50	52.1	104	68-129	
cis-1,3-Dichloropropene	ug/L	50	52.2	104	72-138	

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QUALITY CONTROL DATA

Project: PUMA TERMINAL MW SAMPLING
Pace Project No.: 2047989

LABORATORY CONTROL SAMPLE: 298395

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Dibromochloromethane	ug/L	50	47.1	94	49-146	
Dichlorodifluoromethane	ug/L	50	54.4	109	10-179	
Ethylbenzene	ug/L	50	50.1	100	66-126	
Isopropylbenzene (Cumene)	ug/L	50	51.6	103	51-138	
m&p-Xylene	ug/L	100	100	100	65-129	
Methyl acetate	ug/L	50	50.3	101	20-142	
Methyl-tert-butyl ether	ug/L	50	48.7	97	37-166	
Methylene Chloride	ug/L	50	52.8	106	46-168	
o-Xylene	ug/L	50	48.7	97	65-124	
Styrene	ug/L	50	50.6	101	72-133	
Tetrachloroethene	ug/L	50	50.6	101	46-157	
Toluene	ug/L	50	52.2	104	69-126	
trans-1,2-Dichloroethene	ug/L	50	53.0	106	60-129	
trans-1,3-Dichloropropene	ug/L	50	52.3	105	59-149	
Trichloroethene	ug/L	50	52.4	105	67-132	
Trichlorofluoromethane	ug/L	50	54.3	109	39-171	
Vinyl chloride	ug/L	50	43.9	88	27-149	
4-Bromofluorobenzene (S)	%			98	68-124	
Dibromofluoromethane (S)	%			104	72-126	
Toluene-d8 (S)	%			101	79-119	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 298070 298071

Parameter	Units	MS		MSD		MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	Max RPD	Qual
		2047993001 Result	Spike Conc.	Spike Conc.	MS Result							
1,1,1-Trichloroethane	ug/L	ND	50	50	66.6	61.9	133	124	54-137	7	20	
1,1,2,2-Tetrachloroethane	ug/L	ND	50	50	53.3	49.7	107	99	15-187	7	20	
1,1,2-Trichloroethane	ug/L	ND	50	50	53.2	50.5	106	101	59-148	5	20	
1,1-Dichloroethane	ug/L	ND	50	50	64.1	60.8	128	122	59-133	5	20	
1,1-Dichloroethene	ug/L	ND	50	50	64.9	63.5	130	127	44-146	2	20	
1,2-Dibromo-3-chloropropane	ug/L	ND	50	50	53.1	49.1	106	98	23-166	8	20	
1,2-Dibromoethane (EDB)	ug/L	ND	50	50	56.0	53.7	112	107	55-166	4	20	
1,2-Dichloroethane	ug/L	ND	50	50	57.3	55.0	115	110	56-154	4	20	
1,2-Dichloropropane	ug/L	ND	50	50	58.6	56.7	117	113	62-135	3	20	
2-Butanone (MEK)	ug/L	ND	50	50	63.4	59.2	127	118	20-205	7	20	
2-Hexanone	ug/L	ND	50	50	52.4	50.3	105	101	25-189	4	20	
4-Methyl-2-pentanone (MIBK)	ug/L	ND	50	50	52.6	49.9	105	100	23-184	5	20	
Acetone	ug/L	36.2	50	50	75.8	73.3	79	74	11-217	3	20	
Benzene	ug/L	ND	50	50	61.8	60.1	124	120	52-141	3	20	
Bromodichloromethane	ug/L	ND	50	50	54.7	52.4	109	105	70-134	4	20	
Bromoform	ug/L	ND	50	50	46.8	44.7	94	89	37-171	5	20	
Bromomethane	ug/L	ND	50	50	55.4	46.7	111	93	34-155	17	20	
Carbon disulfide	ug/L	ND	50	50	87.9	77.9	175	155	28-130	12	20	M0
Carbon tetrachloride	ug/L	ND	50	50	62.8	59.2	126	118	48-146	6	20	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: PUMA TERMINAL MW SAMPLING
Pace Project No.: 2047989

Parameter	Units	298070		298071		MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	Max RPD	Qual
		2047993001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result							
Chlorobenzene	ug/L	ND	50	50	55.4	53.8	111	108	67-129	3	20	
Chloroethane	ug/L	ND	50	50	50.5	44.1	101	88	12-192	14	20	
Chloroform	ug/L	ND	50	50	59.4	56.5	119	113	66-143	5	20	
Chloromethane	ug/L	0.54	50	50	67.1	62.4	133	124	14-155	7	20	
cis-1,2-Dichloroethene	ug/L	ND	50	50	61.7	58.6	123	117	56-141	5	20	
cis-1,3-Dichloropropene	ug/L	ND	50	50	57.9	54.9	116	110	70-139	5	20	
Dibromochloromethane	ug/L	ND	50	50	49.7	47.2	99	94	50-150	5	20	
Dichlorodifluoromethane	ug/L	ND	50	50	66.1	63.6	132	127	10-173	4	20	
Ethylbenzene	ug/L	ND	50	50	53.8	52.5	108	105	57-135	2	20	
Isopropylbenzene (Cumene)	ug/L	ND	50	50	55.9	55.7	111	110	40-146	0	20	
m&p-Xylene	ug/L	ND	100	100	109	105	109	105	56-136	4	20	
Methyl acetate	ug/L	ND	50	50	57.2	54.7	114	109	10-142	4	20	
Methyl-tert-butyl ether	ug/L	ND	50	50	58.5	55.0	117	110	35-176	6	20	
Methylene Chloride	ug/L	ND	50	50	61.9	57.7	124	115	45-166	7	20	
o-Xylene	ug/L	ND	50	50	53.2	51.4	106	103	57-133	4	20	
Styrene	ug/L	ND	50	50	54.3	52.0	109	104	58-144	4	20	
Tetrachloroethene	ug/L	ND	50	50	55.4	54.7	111	109	48-143	1	20	
Toluene	ug/L	ND	50	50	58.8	57.1	118	114	59-136	3	20	
trans-1,2-Dichloroethene	ug/L	ND	50	50	65.1	61.6	130	123	57-132	6	20	
trans-1,3-Dichloropropene	ug/L	ND	50	50	57.8	56.5	116	113	59-154	2	20	
Trichloroethene	ug/L	ND	50	50	62.0	59.2	124	118	58-140	5	20	
Trichlorofluoromethane	ug/L	ND	50	50	69.6	65.5	139	131	24-175	6	20	
Vinyl chloride	ug/L	ND	50	50	53.9	50.2	108	100	21-150	7	20	
4-Bromofluorobenzene (S)	%						100	99	68-124			
Dibromofluoromethane (S)	%						110	109	72-126			
Toluene-d8 (S)	%						102	102	79-119			

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: PUMA TERMINAL MW SAMPLING
Pace Project No.: 2047989

QC Batch: 71320 Analysis Method: EPA 8015B Modified
QC Batch Method: EPA 3535 Analysis Description: EPA 8015 ORO
Associated Lab Samples: 2047989002, 2047989003, 2047989004, 2047989005

METHOD BLANK: 298333 Matrix: Water
Associated Lab Samples: 2047989002, 2047989003, 2047989004, 2047989005

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Diesel Range Organic (C10-C28)	mg/L	ND	0.25	01/10/17 15:33	
Oil Range Organics (>C28-C40)	mg/L	ND	0.50	01/10/17 15:33	
n-Pentacosane (S)	%	28	16-137	01/10/17 15:33	
o-Terphenyl (S)	%	35	10-121	01/10/17 15:33	

LABORATORY CONTROL SAMPLE: 298334

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Diesel Range Organic (C10-C28)	mg/L	.4	.15J	37	10-115	
n-Pentacosane (S)	%			38	16-137	
o-Terphenyl (S)	%			44	10-121	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 298335 298336

Parameter	Units	MS		MSD		MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	Max RPD	Qual
		2047753015 Result	Spike Conc.	Spike Conc.	Conc.							
Diesel Range Organic (C10-C28)	mg/L	ND	.4	.4	.24J	0.34	47	71	10-122	20		
n-Pentacosane (S)	%							55	82	16-137		
o-Terphenyl (S)	%							58	83	10-121		

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: PUMA TERMINAL MW SAMPLING
Pace Project No.: 2047989

QC Batch: 71324 Analysis Method: EPA 8270 by SIM
QC Batch Method: EPA 3510 Analysis Description: 8270 Water by SIM MSSV
Associated Lab Samples: 2047989002, 2047989003, 2047989004, 2047989005

METHOD BLANK: 298353 Matrix: Water
Associated Lab Samples: 2047989002, 2047989003, 2047989004, 2047989005

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
2-Methylnaphthalene	ug/L	ND	0.10	01/04/17 16:59	
Acenaphthene	ug/L	ND	0.10	01/04/17 16:59	
Acenaphthylene	ug/L	ND	0.10	01/04/17 16:59	
Anthracene	ug/L	ND	0.10	01/04/17 16:59	
Benzo(a)anthracene	ug/L	ND	0.10	01/04/17 16:59	
Benzo(a)pyrene	ug/L	ND	0.10	01/04/17 16:59	
Benzo(b)fluoranthene	ug/L	ND	0.10	01/04/17 16:59	
Benzo(g,h,i)perylene	ug/L	ND	0.10	01/04/17 16:59	
Benzo(k)fluoranthene	ug/L	ND	0.10	01/04/17 16:59	
Chrysene	ug/L	ND	0.10	01/04/17 16:59	
Dibenz(a,h)anthracene	ug/L	ND	0.10	01/04/17 16:59	
Fluoranthene	ug/L	ND	0.10	01/04/17 16:59	
Fluorene	ug/L	ND	0.10	01/04/17 16:59	
Indeno(1,2,3-cd)pyrene	ug/L	ND	0.10	01/04/17 16:59	
Naphthalene	ug/L	ND	0.10	01/04/17 16:59	
Phenanthrene	ug/L	ND	0.10	01/04/17 16:59	
Pyrene	ug/L	ND	0.10	01/04/17 16:59	
2-Fluorobiphenyl (S)	%	78	25-150	01/04/17 16:59	
Terphenyl-d14 (S)	%	84	25-150	01/04/17 16:59	

LABORATORY CONTROL SAMPLE: 298354

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
2-Methylnaphthalene	ug/L	4	3.3	84	35-150	
Acenaphthene	ug/L	4	3.5	89	35-150	
Acenaphthylene	ug/L	4	3.4	85	35-150	
Anthracene	ug/L	4	4.1	103	35-150	
Benzo(a)anthracene	ug/L	4	3.6	89	35-150	
Benzo(a)pyrene	ug/L	4	3.3	82	35-150	
Benzo(b)fluoranthene	ug/L	4	3.3	83	35-150	
Benzo(g,h,i)perylene	ug/L	4	3.9	97	35-150	
Benzo(k)fluoranthene	ug/L	4	3.4	84	35-150	
Chrysene	ug/L	4	3.3	83	35-150	
Dibenz(a,h)anthracene	ug/L	4	4.3	107	35-150	
Fluoranthene	ug/L	4	3.1	79	35-150	
Fluorene	ug/L	4	3.4	85	35-150	
Indeno(1,2,3-cd)pyrene	ug/L	4	4.1	102	35-150	
Naphthalene	ug/L	4	3.2	80	35-150	
Phenanthrene	ug/L	4	3.6	90	35-150	
Pyrene	ug/L	4	3.2	80	35-150	

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QUALITY CONTROL DATA

Project: PUMA TERMINAL MW SAMPLING
Pace Project No.: 2047989

LABORATORY CONTROL SAMPLE: 298354

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
2-Fluorobiphenyl (S)	%.			103	25-150	
Terphenyl-d14 (S)	%.			103	25-150	

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REPORT OF LABORATORY ANALYSIS

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QUALIFIERS

Project: PUMA TERMINAL MW SAMPLING
Pace Project No.: 2047989

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.
ND - Not Detected at or above adjusted reporting limit.
J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.
MDL - Adjusted Method Detection Limit.
PQL - Practical Quantitation Limit.
RL - Reporting Limit.
S - Surrogate
1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.
Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.
LCS(D) - Laboratory Control Sample (Duplicate)
MS(D) - Matrix Spike (Duplicate)
DUP - Sample Duplicate
RPD - Relative Percent Difference
NC - Not Calculable.
SG - Silica Gel - Clean-Up
U - Indicates the compound was analyzed for, but not detected.
N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.
Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.
TNI - The Nelac Institute

LABORATORIES

PASI-N Pace Analytical Services - New Orleans

BATCH QUALIFIERS

Batch: 71393

[M5] A matrix spike/matrix spike duplicate was not performed for this batch due to insufficient sample volume.

ANALYTE QUALIFIERS

C9 Common Laboratory Contaminant.
L0 Analyte recovery in the laboratory control sample (LCS) was outside QC limits.
L3 Analyte recovery in the laboratory control sample (LCS) exceeded QC limits. Analyte presence below reporting limits in associated samples.
M0 Matrix spike recovery and/or matrix spike duplicate recovery was outside laboratory control limits.

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: PUMA TERMINAL MW SAMPLING
Pace Project No.: 2047989

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
2047989002	EB-122916	EPA 3535	71320	EPA 8015B Modified	71622
2047989003	MW-86A	EPA 3535	71320	EPA 8015B Modified	71622
2047989004	MW-MP5A	EPA 3535	71320	EPA 8015B Modified	71622
2047989005	MW-DP5	EPA 3535	71320	EPA 8015B Modified	71622
2047989001	TB-122916	EPA 8015/8021	71377		
2047989002	EB-122916	EPA 8015/8021	71377		
2047989003	MW-86A	EPA 8015/8021	71377		
2047989004	MW-MP5A	EPA 8015/8021	71377		
2047989005	MW-DP5	EPA 8015/8021	71377		
2047989006	FB-122916	EPA 8015/8021	71377		
2047989002	EB-122916	EPA 3010	71212	EPA 6020	71238
2047989003	MW-86A	EPA 3010	71212	EPA 6020	71238
2047989004	MW-MP5A	EPA 3010	71212	EPA 6020	71238
2047989005	MW-DP5	EPA 3010	71212	EPA 6020	71238
2047989002	EB-122916	EPA 3005A	71231	EPA 6020	71239
2047989003	MW-86A	EPA 3005A	71231	EPA 6020	71239
2047989004	MW-MP5A	EPA 3005A	71231	EPA 6020	71239
2047989005	MW-DP5	EPA 3005A	71231	EPA 6020	71239
2047989002	EB-122916	EPA 7470	71210	EPA 7470	71243
2047989003	MW-86A	EPA 7470	71210	EPA 7470	71243
2047989004	MW-MP5A	EPA 7470	71210	EPA 7470	71243
2047989005	MW-DP5	EPA 7470	71210	EPA 7470	71243
2047989002	EB-122916	EPA 7470	71229	EPA 7470	71242
2047989003	MW-86A	EPA 7470	71229	EPA 7470	71242
2047989004	MW-MP5A	EPA 7470	71229	EPA 7470	71242
2047989005	MW-DP5	EPA 7470	71229	EPA 7470	71242
2047989002	EB-122916	EPA 3510	71324	EPA 8270 by SIM	71393
2047989003	MW-86A	EPA 3510	71324	EPA 8270 by SIM	71393
2047989004	MW-MP5A	EPA 3510	71324	EPA 8270 by SIM	71393
2047989005	MW-DP5	EPA 3510	71324	EPA 8270 by SIM	71393
2047989001	TB-122916	EPA 5030B/8260	71267		
2047989002	EB-122916	EPA 5030B/8260	71267		
2047989003	MW-86A	EPA 5030B/8260	71267		
2047989004	MW-MP5A	EPA 5030B/8260	71267		
2047989005	MW-DP5	EPA 5030B/8260	71267		
2047989006	FB-122916	EPA 5030B/8260	71267		

REPORT OF LABORATORY ANALYSIS

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WO#: 2047989

CHAIN-OF-CUSTODY / Analytical Request Document

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.



2047989

Page: 1 of 1
2075256

Section A
Required Client Information:

Company: Arcadis
Address: 48 City View Plaza
Suite 401 Rd 165 Km 1.2 Guaymas
Email To: Efraim Calderon@arcadis-us.com
Phone: (520) 777-4000 Fax: (520) 777-4006
Requested Due Date/TAT: 5 days

Section C
Invoice Information:

Report To: Efraim Calderon
Copy To:
Attention:
Company Name:
Address:
Purchase Order No.:
Project Name: Plaza Terminal new sampling
Project Number: B002-1005A
Invoice Reference:
Pace Project Manager: Juan Pedraza
Pace Profile #:

REGULATORY AGENCY
 NPDES GROUND WATER DRINKING WATER
 UST RCRA OTHER _____
Site Location: P.R.
STATE: P.R.

ITEM #	SAMPLE ID (A-Z, 0-9 / -)	Sample IDs MUST BE UNIQUE	Matrix Codes MATRIX / CODE		MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMPI)	COLLECTED				SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives								Analysis Test ↓	Requested Analysis Filtered (Y/N)	Residual Chlorine (Y/N)	Pace Project No./ Lab I.D.																		
			Drinking Water	DW			Water	WT	Waste Water	WW			Product	P	Oil	OL	Wipe	WP	Air	AR					Tissue	TS	Other	OT	Unpreserved	H ₂ SO ₄	HNO ₃	HCl	NaOH	Na ₂ S ₂ O ₃	Methanol	Other	VOCS 5/16	UVC 5/16	PB 5/16	5-VOCS 5/16	Metals / Mercury	Dissolved Metals
			DATE	TIME			DATE	TIME	COMPOSITE START	COMPOSITE END/GRAB																																
1	TR-122916		WT	G								4														X	X	X	X	X	X	X										
2	EB-122916		WT	G								10														X	X	X	X	X	X	X										
3	MW-86A		WT	G								10														X	X	X	X	X	X	X										
4	MW-MDSA		WT	G								10														X	X	X	X	X	X	X										
5	MW-DPS		WT	G								10														X	X	X	X	X	X	X										
6	FB-122916		WT	G								4														X	X															

2047989

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ORIGINAL

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS			
Level IV	Arcadis / Arcadis	12/29/16	1400	Pedraza - Arcadis Fed Exp	12/29/16	1400	4	Y	N	Y
	Fed Exp	12-30-16	0840	J.A. - Pace	12-30-16	0840	1.2 27	Y	Y	Y
SAMPLER NAME AND SIGNATURE							Temp in °C	Received on Ice (Y/N)	Custody Sealed Cooler (Y/N)	Samples Intact (Y/N)
PRINT Name of SAMPLER: Arcadis										
SIGNATURE of SAMPLER: [Signature]										
DATE Signed (MM/DD/YY): 12/29/16										

*Important Note: By signing this form you are accepting Pace's NET 30 day payment terms and agreeing to late charges of 1.5% per month for any invoices not paid within 30 days.



Urb. Jardines de Guaynabo
Calle Marginal, Bldg A-10
Guaynabo, PR 00968

Sample Condition Upon Receipt

WO#: 2047989

PM: JAR1

Due Date: 01/13/17

CLIENT: 98-ARCADISPR

Project #

Courier: Pace Courier Hired Courier Fed X UPS DHL USPS Customer Other

Custody Seal on Cooler/Box Present: [see COC]

Custody Seals intact: Yes No

Thermometer Used:

- Therm Fisher IR 4
- Therm Fisher IR 6
- Therm Fisher IR 7

Type of Ice:

Wet Blue None

Samples on ice: [see COC]

Cooler Temperature: [see COC]

Temp should be above freezing to 6°C

Date and Initials of person examining contents: 11-19-16

Temp must be measured from Temperature blank when present

Comments:

Temperature Blank Present?"	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	1
Chain of Custody Present:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	2
Chain of Custody Complete:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	3
Chain of Custody Relinquished:	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	4
Sampler Name & Signature on COC:	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	5
Samples Arrived within Hold Time:	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	6
Sufficient Volume:	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	7
Correct Containers Used:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	8
Filtered vol. Rec. for Diss. tests	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	9
Sample Labels match COC:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	10
All containers received within manufacture's precautionary and/or expiration dates.	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	11
All containers needing chemical preservation have been checked (except VOA, coliform, & O&G).	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	12
All containers preservation checked found to be in compliance with EPA recommendation.	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	13
Headspace in VOA Vials (>6mm):	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	14
Trip Blank Present:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	15

Client Notification/ Resolution:

Person Contacted: _____

Date/Time: _____

Comments/ Resolution: _____



1000 Riverbend Blvd., Suite F
St. Rose, LA 70087

Sample Condition Upon Receipt

Project #: **20**

Courier: Pace Courier Hired Courier Fed X UPS DHL USPS Customer Other

Custody Seal on Cooler/Box Present: [see COC]

Custody Seals intact: Yes No

Thermometer Used: Therm Fisher IR 5
 Therm Fisher IR 6
 Therm Fisher IR 7

Type of Ice: Wet Blue None

Samples on ice: [see COC]

Cooler Temperature: [see COC]

Temp should be above freezing to 6°C

Date and Initials of person examining contents: 12-30-16 tmb

Temp must be measured from Temperature blank when present

Comments:

Temperature Blank Present?"	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	1	
Chain of Custody Present:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	2	
Chain of Custody Complete:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	3	
Chain of Custody Relinquished:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	4	
Sampler Name & Signature on COC:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	5	
Samples Arrived within Hold Time:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	6	
Sufficient Volume:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	7	
Correct Containers Used:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	8	
Filtered vol. Rec. for Diss. tests	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	9	
Sample Labels match COC:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	10	
All containers received within manufacture's precautionary and/or expiration dates.	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	11	
All containers needing chemical preservation have been checked (except VOA, coliform, & O&G).	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	12	
All containers preservation checked found to be in compliance with EPA recommendation.	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	13	If No, was preservative added? <input type="checkbox"/> Yes <input type="checkbox"/> No If added record lot no.: HNO3 _____ H2SO4 _____
Headspace in VOA Vials (>6mm):	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	14	
Trip Blank Present:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	15	

Client Notification/ Resolution:

Person Contacted: _____

Date/Time: _____

Comments/ Resolution: _____

January 18, 2017

Efrain Calderon
BBL Caribe Engineering P.S.C.
48 City View Plaza1, Suite 401
Road 16, Km. 1.2
Guaynabo, PR 00968

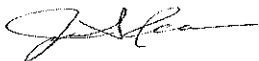
RE: Project: PUMA TERMINAL MW-SAMPLING
Pace Project No.: 2048198

Dear Efrain Calderon:

Enclosed are the analytical results for sample(s) received by the laboratory on January 04, 2017. The results relate only to the samples included in this report. Results reported herein conform to the most current, applicable TNI/NELAC standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,



Juan Redondo
juan.redondo@pacelabs.com
Project Manager

Enclosures

cc: Sharon Colon
Abner Hernandez
Marianela Mercado-Burgos



REPORT OF LABORATORY ANALYSIS

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CERTIFICATIONS

Project: PUMA TERMINAL MW-SAMPLING
Pace Project No.: 2048198

New Orleans Certification IDs

California Env. Lab Accreditation Program Branch:
11277CA
Florida Department of Health (NELAC): E87595
Illinois Environmental Protection Agency: 0025721
Kansas Department of Health and Environment (NELAC):
E-10266
Louisiana Dept. of Environmental Quality (NELAC/LELAP):
02006

Pennsylvania Dept. of Env Protection (NELAC): 68-04202
Texas Commission on Env. Quality (NELAC):
T104704405-09-TX
U.S. Dept. of Agriculture Foreign Soil Import: P330-10-
00119
Commonwealth of Virginia (TNI): 480246

REPORT OF LABORATORY ANALYSIS

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SAMPLE SUMMARY

Project: PUMA TERMINAL MW-SAMPLING
Pace Project No.: 2048198

Lab ID	Sample ID	Matrix	Date Collected	Date Received
2048198001	TB-010317	Water	01/03/17 00:00	01/04/17 15:08
2048198002	EB-010317	Water	01/03/17 08:48	01/04/17 15:08
2048198003	MW-B9	Water	01/03/17 09:35	01/04/17 15:08
2048198004	MW-EB103	Water	01/03/17 10:27	01/04/17 15:08
2048198005	MW-EB104	Water	01/03/17 11:26	01/04/17 15:08
2048198006	MW-EB105	Water	01/03/17 13:45	01/04/17 15:08
2048198007	DUP004	Water	01/03/17 00:00	01/04/17 15:08
2048198008	MW-EB106	Water	01/03/17 14:28	01/04/17 15:08
2048198009	MW-EB107	Water	01/03/17 15:11	01/04/17 15:08
2048198010	MW-EB108	Water	01/03/17 16:01	01/04/17 15:08
2048198011	FB-010317	Water	01/03/17 16:10	01/04/17 15:08
2048198012	TB-010417	Water	01/04/17 00:00	01/04/17 15:08
2048198013	EB-010417	Water	01/04/17 08:58	01/04/17 15:08
2048198014	MW-DP1	Water	01/04/17 09:36	01/04/17 15:08
2048198015	MW-MP2	Water	01/04/17 10:25	01/04/17 15:08
2048198016	MW-MP3	Water	01/04/17 11:46	01/04/17 15:08
2048198017	MW-MP8	Water	01/04/17 13:33	01/04/17 15:08
2048198018	TB-010417-2	Water	01/04/17 00:00	01/04/17 15:08
2048198019	MW-NDP	Water	01/04/17 14:22	01/04/17 15:08
2048198020	FB-010417	Water	01/04/17 14:30	01/04/17 15:08

REPORT OF LABORATORY ANALYSIS

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SAMPLE ANALYTE COUNT

Project: PUMA TERMINAL MW-SAMPLING
Pace Project No.: 2048198

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
2048198001	TB-010317	EPA 8015/8021	MHM	2	PASI-N
		EPA 5030B/8260	RMP	45	PASI-N
2048198002	EB-010317	EPA 8015B Modified	SLF	4	PASI-N
		EPA 8015/8021	MHM	2	PASI-N
		EPA 6020	KJR	4	PASI-N
		EPA 6020	KJR	4	PASI-N
		EPA 7470	MHB1	1	PASI-N
		EPA 7470	MHB1	1	PASI-N
		EPA 8270 by SIM	GEJ	19	PASI-N
2048198003	MW-B9	EPA 5030B/8260	RMP	45	PASI-N
		EPA 8015B Modified	SLF	4	PASI-N
		EPA 8015/8021	MHM	2	PASI-N
		EPA 6020	KJR	4	PASI-N
		EPA 6020	KJR	4	PASI-N
		EPA 7470	MHB1	1	PASI-N
		EPA 7470	MHB1	1	PASI-N
2048198004	MW-EB103	EPA 8270 by SIM	GEJ	19	PASI-N
		EPA 5030B/8260	RMP	45	PASI-N
		EPA 8015B Modified	SLF	4	PASI-N
		EPA 8015/8021	MHM	2	PASI-N
		EPA 6020	KJR	4	PASI-N
		EPA 6020	KJR	4	PASI-N
		EPA 7470	MHB1	1	PASI-N
2048198005	MW-EB104	EPA 7470	MHB1	1	PASI-N
		EPA 7470	MHB1	1	PASI-N
		EPA 8270 by SIM	GEJ	19	PASI-N
		EPA 5030B/8260	RMP	45	PASI-N
		EPA 8015B Modified	SLF	4	PASI-N
		EPA 8015/8021	MHM	2	PASI-N
		EPA 6020	KJR	4	PASI-N
2048198006	MW-EB105	EPA 6020	KJR	4	PASI-N
		EPA 6020	KJR	4	PASI-N
		EPA 7470	MHB1	1	PASI-N
		EPA 7470	MHB1	1	PASI-N
		EPA 8270 by SIM	GEJ	19	PASI-N
		EPA 5030B/8260	RMP	45	PASI-N
2048198006	MW-EB105	EPA 8015B Modified	SLF	4	PASI-N
		EPA 8015/8021	MHM	2	PASI-N
		EPA 6020	KJR	4	PASI-N

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SAMPLE ANALYTE COUNT

Project: PUMA TERMINAL MW-SAMPLING
Pace Project No.: 2048198

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
2048198007	DUP004	EPA 6020	KJR	4	PASI-N
		EPA 7470	MHB1	1	PASI-N
		EPA 7470	MHB1	1	PASI-N
		EPA 8270 by SIM	GEJ	19	PASI-N
		EPA 5030B/8260	RMP	45	PASI-N
		EPA 8015B Modified	SLF	4	PASI-N
		EPA 8015/8021	MHM	2	PASI-N
		EPA 6020	KJR	4	PASI-N
		EPA 6020	KJR	4	PASI-N
		EPA 7470	MHB1	1	PASI-N
2048198008	MW-EB106	EPA 7470	MHB1	1	PASI-N
		EPA 7470	MHB1	1	PASI-N
		EPA 8270 by SIM	GEJ	19	PASI-N
		EPA 5030B/8260	RMP	45	PASI-N
		EPA 8015B Modified	SLF	4	PASI-N
		EPA 8015/8021	MHM	2	PASI-N
		EPA 6020	KJR	4	PASI-N
		EPA 6020	KJR	4	PASI-N
		EPA 7470	MHB1	1	PASI-N
		EPA 7470	MHB1	1	PASI-N
2048198009	MW-EB107	EPA 8270 by SIM	GEJ	19	PASI-N
		EPA 5030B/8260	RMP	45	PASI-N
		EPA 8015B Modified	SLF	4	PASI-N
		EPA 8015/8021	MHM	2	PASI-N
		EPA 6020	KJR	4	PASI-N
		EPA 6020	KJR	4	PASI-N
		EPA 7470	MHB1	1	PASI-N
		EPA 7470	MHB1	1	PASI-N
		EPA 8270 by SIM	GEJ	19	PASI-N
		EPA 5030B/8260	RMP	45	PASI-N
2048198010	MW-EB108	EPA 8015B Modified	SLF	4	PASI-N
		EPA 8015/8021	MHM	2	PASI-N
		EPA 6020	KJR	4	PASI-N
		EPA 6020	KJR	4	PASI-N
		EPA 7470	MHB1	1	PASI-N
		EPA 7470	MHB1	1	PASI-N
		EPA 8270 by SIM	GEJ	19	PASI-N
		EPA 5030B/8260	RMP	45	PASI-N

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SAMPLE ANALYTE COUNT

Project: PUMA TERMINAL MW-SAMPLING
Pace Project No.: 2048198

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
2048198011	FB-010317	EPA 8015/8021	MHM	2	PASI-N
		EPA 5030B/8260	RMP	45	PASI-N
2048198012	TB-010417	EPA 8015/8021	MHM	2	PASI-N
		EPA 5030B/8260	RMP	45	PASI-N
2048198013	EB-010417	EPA 8015B Modified	SLF	4	PASI-N
		EPA 8015/8021	MHM	2	PASI-N
		EPA 6020	KJR	4	PASI-N
		EPA 6020	KJR	4	PASI-N
		EPA 7470	MHB1	1	PASI-N
		EPA 7470	MHB1	1	PASI-N
		EPA 8270 by SIM	GEJ	19	PASI-N
		EPA 5030B/8260	RMP	45	PASI-N
2048198014	MW-DP1	EPA 8015B Modified	SLF	4	PASI-N
		EPA 8015/8021	MHM	2	PASI-N
		EPA 6020	KJR	4	PASI-N
		EPA 6020	KJR	4	PASI-N
		EPA 7470	MHB1	1	PASI-N
		EPA 7470	MHB1	1	PASI-N
		EPA 8270 by SIM	GEJ	19	PASI-N
		EPA 5030B/8260	RMP	45	PASI-N
2048198015	MW-MP2	EPA 8015B Modified	SLF	4	PASI-N
		EPA 8015/8021	MHM	2	PASI-N
		EPA 6020	KJR	4	PASI-N
		EPA 6020	KJR	4	PASI-N
		EPA 7470	MHB1	1	PASI-N
		EPA 7470	MHB1	1	PASI-N
		EPA 8270 by SIM	GEJ	19	PASI-N
		EPA 5030B/8260	RMP	45	PASI-N
2048198016	MW-MP3	EPA 8015B Modified	SLF	4	PASI-N
		EPA 8015/8021	MHM	2	PASI-N
		EPA 6020	KJR	4	PASI-N
		EPA 6020	KJR	4	PASI-N
		EPA 7470	MHB1	1	PASI-N
		EPA 7470	MHB1	1	PASI-N
		EPA 8270 by SIM	GEJ	19	PASI-N
		EPA 5030B/8260	RMP	45	PASI-N
2048198017	MW-MP8	EPA 8015B Modified	SLF	4	PASI-N

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SAMPLE ANALYTE COUNT

Project: PUMA TERMINAL MW-SAMPLING
Pace Project No.: 2048198

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
		EPA 8015/8021	MHM	2	PASI-N
		EPA 6020	KJR	4	PASI-N
		EPA 6020	KJR	4	PASI-N
		EPA 7470	MHB1	1	PASI-N
		EPA 7470	MHB1	1	PASI-N
		EPA 8270 by SIM	GEJ	19	PASI-N
		EPA 5030B/8260	RMP	45	PASI-N
2048198018	TB-010417-2	EPA 8015/8021	MHM	2	PASI-N
		EPA 5030B/8260	RMP	45	PASI-N
2048198019	MW-NDP	EPA 8015B Modified	SLF	4	PASI-N
		EPA 8015/8021	MHM	2	PASI-N
		EPA 6020	KJR	4	PASI-N
		EPA 6020	KJR	4	PASI-N
		EPA 7470	MHB1	1	PASI-N
		EPA 7470	MHB1	1	PASI-N
		EPA 8270 by SIM	GEJ	19	PASI-N
		EPA 5030B/8260	RMP	45	PASI-N
2048198020	FB-010417	EPA 8015/8021	MHM	2	PASI-N
		EPA 5030B/8260	RMP	45	PASI-N

REPORT OF LABORATORY ANALYSIS

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PROJECT NARRATIVE

Project: PUMA TERMINAL MW-SAMPLING
Pace Project No.: 2048198

Method: EPA 8015B Modified
Description: 8015M DRO/ORO Organics
Client: BBL Caribe / Arcadis PR
Date: January 18, 2017

General Information:

15 samples were analyzed for EPA 8015B Modified. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:

The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:

The samples were prepared in accordance with EPA 3535 with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):

All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:

All criteria were within method requirements with any exceptions noted below.

Surrogates:

All surrogates were within QC limits with any exceptions noted below.

Method Blank:

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

REPORT OF LABORATORY ANALYSIS

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PROJECT NARRATIVE

Project: PUMA TERMINAL MW-SAMPLING
Pace Project No.: 2048198

Method: EPA 8015/8021
Description: 8021 GCV BTEX, MTBE, GRO
Client: BBL Caribe / Arcadis PR
Date: January 18, 2017

General Information:

20 samples were analyzed for EPA 8015/8021. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:

The samples were analyzed within the method required hold times with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):

All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:

All criteria were within method requirements with any exceptions noted below.

Surrogates:

All surrogates were within QC limits with any exceptions noted below.

Method Blank:

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

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PROJECT NARRATIVE

Project: PUMA TERMINAL MW-SAMPLING
Pace Project No.: 2048198

Method: EPA 6020
Description: 6020 MET ICPMS
Client: BBL Caribe / Arcadis PR
Date: January 18, 2017

General Information:

15 samples were analyzed for EPA 6020. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:

The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:

The samples were prepared in accordance with EPA 3010 with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):

All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:

All criteria were within method requirements with any exceptions noted below.

Internal Standards:

All internal standards were within QC limits with any exceptions noted below.

Method Blank:

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

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PROJECT NARRATIVE

Project: PUMA TERMINAL MW-SAMPLING
Pace Project No.: 2048198

Method: EPA 6020
Description: 6020 MET ICPMS, Dissolved (LF)
Client: BBL Caribe / Arcadis PR
Date: January 18, 2017

General Information:

15 samples were analyzed for EPA 6020. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:

The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:

The samples were prepared in accordance with EPA 3005A with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):

All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:

All criteria were within method requirements with any exceptions noted below.

Internal Standards:

All internal standards were within QC limits with any exceptions noted below.

Method Blank:

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

REPORT OF LABORATORY ANALYSIS

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PROJECT NARRATIVE

Project: PUMA TERMINAL MW-SAMPLING
Pace Project No.: 2048198

Method: EPA 7470
Description: 7470 Mercury
Client: BBL Caribe / Arcadis PR
Date: January 18, 2017

General Information:

15 samples were analyzed for EPA 7470. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:

The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:

The samples were prepared in accordance with EPA 7470 with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):

All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:

All criteria were within method requirements with any exceptions noted below.

Method Blank:

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

QC Batch: 71616

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 2048198006

M1: Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

- MS (Lab ID: 299682)
 - Mercury
- MSD (Lab ID: 299683)
 - Mercury

Additional Comments:

REPORT OF LABORATORY ANALYSIS

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PROJECT NARRATIVE

Project: PUMA TERMINAL MW-SAMPLING
Pace Project No.: 2048198

Method: EPA 7470
Description: 7470 Mercury, Dissolved (LF)
Client: BBL Caribe / Arcadis PR
Date: January 18, 2017

General Information:

15 samples were analyzed for EPA 7470. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:

The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:

The samples were prepared in accordance with EPA 7470 with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):

All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:

All criteria were within method requirements with any exceptions noted below.

Method Blank:

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

QC Batch: 71675

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 2048198006

M1: Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

- MS (Lab ID: 299990)
 - Mercury, Dissolved
- MSD (Lab ID: 299991)
 - Mercury, Dissolved

Additional Comments:

REPORT OF LABORATORY ANALYSIS

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PROJECT NARRATIVE

Project: PUMA TERMINAL MW-SAMPLING
Pace Project No.: 2048198

Method: EPA 8270 by SIM
Description: 8270 MSSV PAH by SIM SEP
Client: BBL Caribe / Arcadis PR
Date: January 18, 2017

General Information:

15 samples were analyzed for EPA 8270 by SIM. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:

The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:

The samples were prepared in accordance with EPA 3510 with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):

All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:

All criteria were within method requirements with any exceptions noted below.

Internal Standards:

All internal standards were within QC limits with any exceptions noted below.

Surrogates:

All surrogates were within QC limits with any exceptions noted below.

Method Blank:

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

QC Batch: 71484

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 2048198006

R1: RPD value was outside control limits.

- MSD (Lab ID: 299017)
 - 2-Methylnaphthalene
 - Acenaphthene
 - Acenaphthylene
 - Anthracene
 - Benzo(a)anthracene
 - Benzo(a)pyrene
 - Benzo(b)fluoranthene
 - Benzo(k)fluoranthene
 - Chrysene

REPORT OF LABORATORY ANALYSIS

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PROJECT NARRATIVE

Project: PUMA TERMINAL MW-SAMPLING
Pace Project No.: 2048198

Method: EPA 8270 by SIM
Description: 8270 MSSV PAH by SIM SEP
Client: BBL Caribe / Arcadis PR
Date: January 18, 2017

QC Batch: 71484

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 2048198006

R1: RPD value was outside control limits.

- Fluoranthene
- Fluorene
- Naphthalene
- Phenanthrene
- Pyrene

QC Batch: 71561

A matrix spike/matrix spike duplicate was not performed due to insufficient sample volume.

Additional Comments:

REPORT OF LABORATORY ANALYSIS

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PROJECT NARRATIVE

Project: PUMA TERMINAL MW-SAMPLING
Pace Project No.: 2048198

Method: EPA 5030B/8260
Description: 8260 MSV Low Level
Client: BBL Caribe / Arcadis PR
Date: January 18, 2017

General Information:

20 samples were analyzed for EPA 5030B/8260. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:

The samples were analyzed within the method required hold times with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):

All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:

All criteria were within method requirements with any exceptions noted below.

Internal Standards:

All internal standards were within QC limits with any exceptions noted below.

Surrogates:

All surrogates were within QC limits with any exceptions noted below.

Method Blank:

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

QC Batch: 71490

L0: Analyte recovery in the laboratory control sample (LCS) was outside QC limits.

- LCS (Lab ID: 299029)
- Carbon disulfide

Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

QC Batch: 71490

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 2048198006

M0: Matrix spike recovery and/or matrix spike duplicate recovery was outside laboratory control limits.

- MS (Lab ID: 299030)
- Carbon disulfide
- MSD (Lab ID: 299031)
- Carbon disulfide

Additional Comments:

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PROJECT NARRATIVE

Project: PUMA TERMINAL MW-SAMPLING
Pace Project No.: 2048198

Method: EPA 5030B/8260
Description: 8260 MSV Low Level
Client: BBL Caribe / Arcadis PR
Date: January 18, 2017

Analyte Comments:

QC Batch: 71490

C9: Common Laboratory Contaminant.

- DUP004 (Lab ID: 2048198007)
 - Acetone
- EB-010317 (Lab ID: 2048198002)
 - Acetone
- EB-010417 (Lab ID: 2048198013)
 - Acetone
- FB-010317 (Lab ID: 2048198011)
 - Acetone
- FB-010417 (Lab ID: 2048198020)
 - Acetone
- MW-B9 (Lab ID: 2048198003)
 - Acetone
- MW-DP1 (Lab ID: 2048198014)
 - Acetone
- MW-EB103 (Lab ID: 2048198004)
 - Acetone
- MW-EB104 (Lab ID: 2048198005)
 - Acetone
- MW-EB105 (Lab ID: 2048198006)
 - Acetone
- MW-EB106 (Lab ID: 2048198008)
 - Acetone
- MW-EB108 (Lab ID: 2048198010)
 - Acetone
- MW-MP2 (Lab ID: 2048198015)
 - Acetone
- MW-MP3 (Lab ID: 2048198016)
 - Acetone
- MW-MP8 (Lab ID: 2048198017)
 - Acetone
- MW-NDP (Lab ID: 2048198019)
 - Acetone

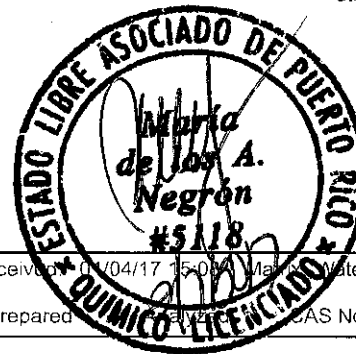
This data package has been reviewed for quality and completeness and is approved for release.

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ANALYTICAL RESULTS

Project: PUMA TERMINAL MW-SAMPLING
Pace Project No.: 2048198



Sample: TB-010317 Lab ID: 2048198001 Collected: 01/03/17 00:00 Received: 01/04/17 15:00 Matrix: Water
Parameters Results Units Report Limit DF Prepared CAS No. Qual

Parameters	Results	Units	Report Limit	DF	Prepared	CAS No.	Qual
8021 GCV BTEX, MTBE, GRO	Analytical Method: EPA 8015/8021						
Gasoline Range Organics	ND	ug/L	50.0	1	01/06/17 20:48		
Surrogates							
4-Bromofluorobenzene (S)	89	%	44-148	1	01/06/17 20:48	460-00-4	
8260 MSV Low Level	Analytical Method: EPA 5030B/8260						
Acetone	171	ug/L	4.0	1	01/06/17 11:42	67-64-1	
Benzene	ND	ug/L	0.50	1	01/06/17 11:42	71-43-2	
Bromodichloromethane	ND	ug/L	0.50	1	01/06/17 11:42	75-27-4	
Bromoform	ND	ug/L	0.50	1	01/06/17 11:42	75-25-2	
Bromomethane	ND	ug/L	0.50	1	01/06/17 11:42	74-83-9	
2-Butanone (MEK)	ND	ug/L	2.0	1	01/06/17 11:42	78-93-3	
Carbon disulfide	ND	ug/L	1.0	1	01/06/17 11:42	75-15-0	L3
Carbon tetrachloride	ND	ug/L	0.50	1	01/06/17 11:42	56-23-5	
Chlorobenzene	ND	ug/L	0.50	1	01/06/17 11:42	108-90-7	
Chloroethane	ND	ug/L	0.50	1	01/06/17 11:42	75-00-3	
Chloroform	ND	ug/L	0.50	1	01/06/17 11:42	67-66-3	
Chloromethane	ND	ug/L	0.50	1	01/06/17 11:42	74-87-3	
1,2-Dibromo-3-chloropropane	ND	ug/L	0.20	1	01/06/17 11:42	96-12-8	
Dibromochloromethane	ND	ug/L	0.50	1	01/06/17 11:42	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	1	01/06/17 11:42	106-93-4	
Dichlorodifluoromethane	ND	ug/L	1.0	1	01/06/17 11:42	75-71-8	
1,1-Dichloroethane	ND	ug/L	0.50	1	01/06/17 11:42	75-34-3	
1,2-Dichloroethane	ND	ug/L	0.50	1	01/06/17 11:42	107-06-2	
1,1-Dichloroethene	ND	ug/L	0.50	1	01/06/17 11:42	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	1	01/06/17 11:42	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	0.50	1	01/06/17 11:42	156-60-5	
1,2-Dichloropropane	ND	ug/L	0.50	1	01/06/17 11:42	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	0.50	1	01/06/17 11:42	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	0.50	1	01/06/17 11:42	10061-02-6	
Ethylbenzene	ND	ug/L	0.50	1	01/06/17 11:42	100-41-4	
2-Hexanone	ND	ug/L	1.0	1	01/06/17 11:42	591-78-6	
Isopropylbenzene (Cumene)	ND	ug/L	1.0	1	01/06/17 11:42	98-82-8	
Methyl acetate	ND	ug/L	2.0	1	01/06/17 11:42	79-20-9	
Methylene Chloride	ND	ug/L	0.50	1	01/06/17 11:42	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	1.0	1	01/06/17 11:42	108-10-1	
Methyl-terf-butyl ether	ND	ug/L	0.50	1	01/06/17 11:42	1634-04-4	
Styrene	ND	ug/L	1.0	1	01/06/17 11:42	100-42-5	
1,1,1,2-Tetrachloroethane	ND	ug/L	0.50	1	01/06/17 11:42	79-34-5	
Tetrachloroethene	ND	ug/L	0.50	1	01/06/17 11:42	127-18-4	
Toluene	ND	ug/L	0.50	1	01/06/17 11:42	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	0.50	1	01/06/17 11:42	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	0.50	1	01/06/17 11:42	79-00-5	
Trichloroethene	ND	ug/L	0.50	1	01/06/17 11:42	79-01-6	
Trichlorofluoromethane	ND	ug/L	0.50	1	01/06/17 11:42	75-69-4	
Vinyl chloride	ND	ug/L	0.50	1	01/06/17 11:42	75-01-4	
m&p-Xylene	ND	ug/L	2.0	1	01/06/17 11:42	179601-23-1	
o-Xylene	ND	ug/L	1.0	1	01/06/17 11:42	95-47-6	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS



Project: PUMA TERMINAL MW-SAMPLING
Pace Project No.: 2048198

Sample: TB-010317 Lab ID: 2048198001 Collected: 01/03/17 00:00 Received: 01/04/17 15:18 Matrix: Water
Parameters Results Units Report Limit DF Prepared Analyzed CAS No. Qual

8260 MSV Low Level Analytical Method: EPA 5030B/8260

Surrogates

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
Dibromofluoromethane (S)	106	%	72-126	1	01/06/17 11:42	01/06/17 11:42	1868-53-7	
4-Bromofluorobenzene (S)	96	%	68-124	1	01/06/17 11:42	01/06/17 11:42	460-00-4	
Toluene-d8 (S)	99	%	79-119	1	01/06/17 11:42	01/06/17 11:42	2037-26-5	

Sample: EB-010317 Lab ID: 2048198002 Collected: 01/03/17 08:48 Received: 01/04/17 15:08 Matrix: Water
Parameters Results Units Report Limit DF Prepared Analyzed CAS No. Qual

8015M DRO/ORO Organics Analytical Method: EPA 8015B Modified Preparation Method: EPA 3535

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
Diesel Range Organic (C10-C28)	ND	mg/L	0.25	1	01/06/17 07:40	01/11/17 17:27		
Oil Range Organics (>C28-C40)	ND	mg/L	0.50	1	01/06/17 07:40	01/11/17 17:27		
Surrogates								
n-Pentacosane (S)	49	%	16-137	1	01/06/17 07:40	01/11/17 17:27	629-99-2	
o-Terphenyl (S)	50	%	10-121	1	01/06/17 07:40	01/11/17 17:27	84-15-1	

8021 GCV BTEX, MTBE, GRO Analytical Method: EPA 8015/8021

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
Gasoline Range Organics	ND	ug/L	50.0	1		01/06/17 18:08		
Surrogates								
4-Bromofluorobenzene (S)	90	%	44-148	1		01/06/17 18:08	460-00-4	

6020 MET ICPMS Analytical Method: EPA 6020 Preparation Method: EPA 3010

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
Arsenic	ND	mg/L	0.0010	1	01/09/17 15:32	01/13/17 21:52	7440-38-2	
Chromium	ND	mg/L	0.0010	1	01/09/17 15:32	01/13/17 21:52	7440-47-3	
Lead	ND	mg/L	0.0010	1	01/09/17 15:32	01/13/17 21:52	7439-92-1	
Vanadium	ND	mg/L	0.0050	1	01/09/17 15:32	01/13/17 21:52	7440-62-2	

6020 MET ICPMS, Dissolved (LF) Analytical Method: EPA 6020 Preparation Method: EPA 3005A

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
Arsenic, Dissolved	ND	ug/L	1.0	1	01/10/17 11:44	01/13/17 23:22	7440-38-2	
Chromium, Dissolved	ND	ug/L	1.0	1	01/10/17 11:44	01/13/17 23:22	7440-47-3	
Lead, Dissolved	ND	ug/L	1.0	1	01/10/17 11:44	01/13/17 23:22	7439-92-1	
Vanadium, Dissolved	ND	ug/L	5.0	1	01/10/17 11:44	01/13/17 23:22	7440-62-2	

7470 Mercury Analytical Method: EPA 7470 Preparation Method: EPA 7470

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
Mercury	ND	ug/L	0.20	1	01/09/17 15:19	01/09/17 20:17	7439-97-6	

7470 Mercury, Dissolved (LF) Analytical Method: EPA 7470 Preparation Method: EPA 7470

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
Mercury, Dissolved	ND	ug/L	0.20	1	01/10/17 12:30	01/10/17 17:03	7439-97-6	

8270 MSSV PAH by SIM SEP Analytical Method: EPA 8270 by SIM Preparation Method: EPA 3510

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
Acenaphthene	ND	ug/L	0.10	1	01/06/17 09:20	01/09/17 20:40	83-32-9	
Acenaphthylene	ND	ug/L	0.10	1	01/06/17 09:20	01/09/17 20:40	208-96-8	
Anthracene	ND	ug/L	0.10	1	01/06/17 09:20	01/09/17 20:40	120-12-7	
Benzo(a)anthracene	ND	ug/L	0.10	1	01/06/17 09:20	01/09/17 20:40	56-55-3	
Benzo(a)pyrene	ND	ug/L	0.10	1	01/06/17 09:20	01/09/17 20:40	50-32-8	

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ANALYTICAL RESULTS



Project: PUMA TERMINAL MW-SAMPLING
Pace Project No.: 2048198

Sample: EB-010317 Lab ID: 2048198002 Collected: 01/03/17 08:48 Received: 01/11/17 14:08
Parameters Results Units Report Limit DF Prepared Analyzed CAS No. Qual

8270 MSSV PAH by SIM SEP

Analytical Method: EPA 8270 by SIM Preparation Method: EPA 3510

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
Benzo(b)fluoranthene	ND	ug/L	0.10	1	01/06/17 09:20	01/09/17 20:40	205-99-2	
Benzo(g,h,i)perylene	ND	ug/L	0.10	1	01/06/17 09:20	01/09/17 20:40	191-24-2	
Benzo(k)fluoranthene	ND	ug/L	0.10	1	01/06/17 09:20	01/09/17 20:40	207-08-9	
Chrysene	ND	ug/L	0.10	1	01/06/17 09:20	01/09/17 20:40	218-01-9	
Dibenz(a,h)anthracene	ND	ug/L	0.10	1	01/06/17 09:20	01/09/17 20:40	53-70-3	
Fluoranthene	ND	ug/L	0.10	1	01/06/17 09:20	01/09/17 20:40	206-44-0	
Fluorene	ND	ug/L	0.10	1	01/06/17 09:20	01/09/17 20:40	86-73-7	
Indeno(1,2,3-cd)pyrene	ND	ug/L	0.10	1	01/06/17 09:20	01/09/17 20:40	193-39-5	
2-Methylnaphthalene	ND	ug/L	0.10	1	01/06/17 09:20	01/09/17 20:40	91-57-6	
Naphthalene	ND	ug/L	0.10	1	01/06/17 09:20	01/09/17 20:40	91-20-3	
Phenanthrene	ND	ug/L	0.10	1	01/06/17 09:20	01/09/17 20:40	85-01-8	
Pyrene	ND	ug/L	0.10	1	01/06/17 09:20	01/09/17 20:40	129-00-0	
Surrogates								
2-Fluorobiphenyl (S)	84	%	25-150	1	01/06/17 09:20	01/09/17 20:40	321-60-8	
Terphenyl-d14 (S)	84	%	25-150	1	01/06/17 09:20	01/09/17 20:40	1718-51-0	

8260 MSV Low Level

Analytical Method: EPA 5030B/8260

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
Acetone	12.1	ug/L	4.0	1	01/06/17 11:59	01/06/17 11:59	67-64-1	C9
Benzene	ND	ug/L	0.50	1	01/06/17 11:59	01/06/17 11:59	71-43-2	
Bromodichloromethane	ND	ug/L	0.50	1	01/06/17 11:59	01/06/17 11:59	75-27-4	
Bromoform	ND	ug/L	0.50	1	01/06/17 11:59	01/06/17 11:59	75-25-2	
Bromomethane	ND	ug/L	0.50	1	01/06/17 11:59	01/06/17 11:59	74-83-9	
2-Butanone (MEK)	ND	ug/L	2.0	1	01/06/17 11:59	01/06/17 11:59	78-93-3	
Carbon disulfide	ND	ug/L	1.0	1	01/06/17 11:59	01/06/17 11:59	75-15-0	L3
Carbon tetrachloride	ND	ug/L	0.50	1	01/06/17 11:59	01/06/17 11:59	56-23-5	
Chlorobenzene	ND	ug/L	0.50	1	01/06/17 11:59	01/06/17 11:59	108-90-7	
Chloroethane	ND	ug/L	0.50	1	01/06/17 11:59	01/06/17 11:59	75-00-3	
Chloroform	ND	ug/L	0.50	1	01/06/17 11:59	01/06/17 11:59	67-66-3	
Chloromethane	ND	ug/L	0.50	1	01/06/17 11:59	01/06/17 11:59	74-87-3	
1,2-Dibromo-3-chloropropane	ND	ug/L	0.20	1	01/06/17 11:59	01/06/17 11:59	96-12-8	
Dibromochloromethane	ND	ug/L	0.50	1	01/06/17 11:59	01/06/17 11:59	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	1	01/06/17 11:59	01/06/17 11:59	106-93-4	
Dichlorodifluoromethane	ND	ug/L	1.0	1	01/06/17 11:59	01/06/17 11:59	75-71-8	
1,1-Dichloroethane	ND	ug/L	0.50	1	01/06/17 11:59	01/06/17 11:59	75-34-3	
1,2-Dichloroethane	ND	ug/L	0.50	1	01/06/17 11:59	01/06/17 11:59	107-06-2	
1,1-Dichloroethene	ND	ug/L	0.50	1	01/06/17 11:59	01/06/17 11:59	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	1	01/06/17 11:59	01/06/17 11:59	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	0.50	1	01/06/17 11:59	01/06/17 11:59	156-60-5	
1,2-Dichloropropane	ND	ug/L	0.50	1	01/06/17 11:59	01/06/17 11:59	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	0.50	1	01/06/17 11:59	01/06/17 11:59	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	0.50	1	01/06/17 11:59	01/06/17 11:59	10061-02-6	
Ethylbenzene	ND	ug/L	0.50	1	01/06/17 11:59	01/06/17 11:59	100-41-4	
2-Hexanone	ND	ug/L	1.0	1	01/06/17 11:59	01/06/17 11:59	591-78-6	
Isopropylbenzene (Cumene)	ND	ug/L	1.0	1	01/06/17 11:59	01/06/17 11:59	98-82-8	
Methyl acetate	ND	ug/L	2.0	1	01/06/17 11:59	01/06/17 11:59	79-20-9	
Methylene Chloride	ND	ug/L	0.50	1	01/06/17 11:59	01/06/17 11:59	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	1.0	1	01/06/17 11:59	01/06/17 11:59	108-10-1	

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ANALYTICAL RESULTS



Project: PUMA TERMINAL MW-SAMPLING
Pace Project No.: 2048198

Sample: EB-010317 Lab ID: 2048198002 Collected: 01/03/17 08:48 Received: 01/04/17 17:03 Matrix: Water
Parameters Results Units Report Limit DF Prepared Analyzed CAS No. Qual

8260 MSV Low Level Analytical Method: EPA 5030B/8260

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
Methyl-tert-butyl ether	ND	ug/L	0.50	1	01/06/17 11:59	01/06/17 11:59	1634-04-4	
Styrene	ND	ug/L	1.0	1	01/06/17 11:59	01/06/17 11:59	100-42-5	
1,1,2,2-Tetrachloroethane	ND	ug/L	0.50	1	01/06/17 11:59	01/06/17 11:59	79-34-5	
Tetrachloroethene	ND	ug/L	0.50	1	01/06/17 11:59	01/06/17 11:59	127-18-4	
Toluene	ND	ug/L	0.50	1	01/06/17 11:59	01/06/17 11:59	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	0.50	1	01/06/17 11:59	01/06/17 11:59	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	0.50	1	01/06/17 11:59	01/06/17 11:59	79-00-5	
Trichloroethene	ND	ug/L	0.50	1	01/06/17 11:59	01/06/17 11:59	79-01-6	
Trichlorofluoromethane	ND	ug/L	0.50	1	01/06/17 11:59	01/06/17 11:59	75-69-4	
Vinyl chloride	ND	ug/L	0.50	1	01/06/17 11:59	01/06/17 11:59	75-01-4	
m&p-Xylene	ND	ug/L	2.0	1	01/06/17 11:59	01/06/17 11:59	179601-23-1	
o-Xylene	ND	ug/L	1.0	1	01/06/17 11:59	01/06/17 11:59	95-47-6	
Surrogates								
Dibromofluoromethane (S)	107	%	72-126	1	01/06/17 11:59	01/06/17 11:59	1868-53-7	
4-Bromofluorobenzene (S)	98	%	68-124	1	01/06/17 11:59	01/06/17 11:59	460-00-4	
Toluene-d8 (S)	99	%	79-119	1	01/06/17 11:59	01/06/17 11:59	2037-26-5	

Sample: MW-B9 Lab ID: 2048198003 Collected: 01/03/17 09:35 Received: 01/04/17 15:08 Matrix: Water
Parameters Results Units Report Limit DF Prepared Analyzed CAS No. Qual

8015M DRO/ORO Organics Analytical Method: EPA 8015B Modified Preparation Method: EPA 3535

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
Diesel Range Organic (C10-C28)	ND	mg/L	0.25	1	01/06/17 07:40	01/11/17 17:55		
Oil Range Organics (>C28-C40)	ND	mg/L	0.50	1	01/06/17 07:40	01/11/17 17:55		
Surrogates								
n-Pentacosane (S)	49	%	16-137	1	01/06/17 07:40	01/11/17 17:55	629-99-2	
o-Terphenyl (S)	59	%	10-121	1	01/06/17 07:40	01/11/17 17:55	84-15-1	

8021 GCV BTEX, MTBE, GRO Analytical Method: EPA 8015/8021

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
Gasoline Range Organics	ND	ug/L	50.0	1	01/06/17 18:34			
Surrogates								
4-Bromofluorobenzene (S)	93	%	44-148	1	01/06/17 18:34		460-00-4	

6020 MET ICPMS Analytical Method: EPA 6020 Preparation Method: EPA 3010

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
Arsenic	0.0032	mg/L	0.0010	1	01/09/17 15:32	01/13/17 21:56	7440-38-2	
Chromium	ND	mg/L	0.0010	1	01/09/17 15:32	01/13/17 21:56	7440-47-3	
Lead	ND	mg/L	0.0010	1	01/09/17 15:32	01/13/17 21:56	7439-92-1	
Vanadium	ND	mg/L	0.0050	1	01/09/17 15:32	01/13/17 21:56	7440-62-2	

6020 MET ICPMS, Dissolved (LF) Analytical Method: EPA 6020 Preparation Method: EPA 3005A

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
Arsenic, Dissolved	ND	ug/L	1.0	1	01/10/17 11:44	01/13/17 23:26	7440-38-2	
Chromium, Dissolved	ND	ug/L	1.0	1	01/10/17 11:44	01/13/17 23:26	7440-47-3	
Lead, Dissolved	ND	ug/L	1.0	1	01/10/17 11:44	01/13/17 23:26	7439-92-1	
Vanadium, Dissolved	ND	ug/L	5.0	1	01/10/17 11:44	01/13/17 23:26	7440-62-2	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS



Project: PUMA TERMINAL MW-SAMPLING
Pace Project No.: 2048198

Sample:	Lab ID:	Collected:	Received:	Prepared:	Water	
Parameters	Results	Units	Report Limit	DF	CAS No.	Qual
7470 Mercury Analytical Method: EPA 7470 Preparation Method: EPA 7470						
Mercury	ND	ug/L	0.20	1	01/09/17 15:19 01/09/17 20:19	7439-97-6
7470 Mercury, Dissolved (LF) Analytical Method: EPA 7470 Preparation Method: EPA 7470						
Mercury, Dissolved	ND	ug/L	0.20	1	01/10/17 12:30 01/10/17 17:10	7439-97-6
8270 MSSV PAH by SIM SEP Analytical Method: EPA 8270 by SIM Preparation Method: EPA 3510						
Acenaphthene	ND	ug/L	0.10	1	01/06/17 09:20 01/09/17 21:00	83-32-9
Acenaphthylene	ND	ug/L	0.10	1	01/06/17 09:20 01/09/17 21:00	208-96-8
Anthracene	ND	ug/L	0.10	1	01/06/17 09:20 01/09/17 21:00	120-12-7
Benzo(a)anthracene	ND	ug/L	0.10	1	01/06/17 09:20 01/09/17 21:00	56-55-3
Benzo(a)pyrene	ND	ug/L	0.10	1	01/06/17 09:20 01/09/17 21:00	50-32-8
Benzo(b)fluoranthene	ND	ug/L	0.10	1	01/06/17 09:20 01/09/17 21:00	205-99-2
Benzo(g,h,i)perylene	ND	ug/L	0.10	1	01/06/17 09:20 01/09/17 21:00	191-24-2
Benzo(k)fluoranthene	ND	ug/L	0.10	1	01/06/17 09:20 01/09/17 21:00	207-08-9
Chrysene	ND	ug/L	0.10	1	01/06/17 09:20 01/09/17 21:00	218-01-9
Dibenz(a,h)anthracene	ND	ug/L	0.10	1	01/06/17 09:20 01/09/17 21:00	53-70-3
Fluoranthene	ND	ug/L	0.10	1	01/06/17 09:20 01/09/17 21:00	206-44-0
Fluorene	ND	ug/L	0.10	1	01/06/17 09:20 01/09/17 21:00	86-73-7
Indeno(1,2,3-cd)pyrene	ND	ug/L	0.10	1	01/06/17 09:20 01/09/17 21:00	193-39-5
2-Methylnaphthalene	ND	ug/L	0.10	1	01/06/17 09:20 01/09/17 21:00	91-57-6
Naphthalene	ND	ug/L	0.10	1	01/06/17 09:20 01/09/17 21:00	91-20-3
Phenanthrene	ND	ug/L	0.10	1	01/06/17 09:20 01/09/17 21:00	85-01-8
Pyrene	ND	ug/L	0.10	1	01/06/17 09:20 01/09/17 21:00	129-00-0
Surrogates						
2-Fluorobiphenyl (S)	94	%	25-150	1	01/06/17 09:20 01/09/17 21:00	321-60-8
Terphenyl-d14 (S)	88	%	25-150	1	01/06/17 09:20 01/09/17 21:00	1718-51-0
8260 MSV Low Level Analytical Method: EPA 5030B/8260						
Acetone	5.3	ug/L	4.0	1	01/06/17 12:17	67-64-1 C9
Benzene	ND	ug/L	0.50	1	01/06/17 12:17	71-43-2
Bromodichloromethane	ND	ug/L	0.50	1	01/06/17 12:17	75-27-4
Bromoform	ND	ug/L	0.50	1	01/06/17 12:17	75-25-2
Bromomethane	ND	ug/L	0.50	1	01/06/17 12:17	74-83-9
2-Butanone (MEK)	ND	ug/L	2.0	1	01/06/17 12:17	78-93-3
Carbon disulfide	ND	ug/L	1.0	1	01/06/17 12:17	75-15-0 L3
Carbon tetrachloride	ND	ug/L	0.50	1	01/06/17 12:17	56-23-5
Chlorobenzene	ND	ug/L	0.50	1	01/06/17 12:17	108-90-7
Chloroethane	ND	ug/L	0.50	1	01/06/17 12:17	75-00-3
Chloroform	ND	ug/L	0.50	1	01/06/17 12:17	67-66-3
Chloromethane	ND	ug/L	0.50	1	01/06/17 12:17	74-87-3
1,2-Dibromo-3-chloropropane	ND	ug/L	0.20	1	01/06/17 12:17	96-12-8
Dibromochloromethane	ND	ug/L	0.50	1	01/06/17 12:17	124-48-1
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	1	01/06/17 12:17	106-93-4
Dichlorodifluoromethane	ND	ug/L	1.0	1	01/06/17 12:17	75-71-8
1,1-Dichloroethane	ND	ug/L	0.50	1	01/06/17 12:17	75-34-3
1,2-Dichloroethane	ND	ug/L	0.50	1	01/06/17 12:17	107-06-2

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ANALYTICAL RESULTS



Project: PUMA TERMINAL MW-SAMPLING

Pace Project No.: 2048198

Sample: MW-B9	Lab ID: 2048198003	Collected: 01/03/17 09:35	Received: 01/04/17 15:08	Matrix: Water
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Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV Low Level		Analytical Method: EPA 5030B/8260						
1,1-Dichloroethene	ND	ug/L	0.50	1	01/06/17 12:17	75-35-4		
cis-1,2-Dichloroethene	ND	ug/L	1.0	1	01/06/17 12:17	156-59-2		
trans-1,2-Dichloroethene	ND	ug/L	0.50	1	01/06/17 12:17	156-60-5		
1,2-Dichloropropane	ND	ug/L	0.50	1	01/06/17 12:17	78-87-5		
cis-1,3-Dichloropropene	ND	ug/L	0.50	1	01/06/17 12:17	10061-01-5		
trans-1,3-Dichloropropene	ND	ug/L	0.50	1	01/06/17 12:17	10061-02-6		
Ethylbenzene	ND	ug/L	0.50	1	01/06/17 12:17	100-41-4		
2-Hexanone	ND	ug/L	1.0	1	01/06/17 12:17	591-78-6		
Isopropylbenzene (Cumene)	ND	ug/L	1.0	1	01/06/17 12:17	98-82-8		
Methyl acetate	ND	ug/L	2.0	1	01/06/17 12:17	79-20-9		
Methylene Chloride	ND	ug/L	0.50	1	01/06/17 12:17	75-09-2		
4-Methyl-2-pentanone (MIBK)	ND	ug/L	1.0	1	01/06/17 12:17	108-10-1		
Methyl-tert-butyl ether	ND	ug/L	0.50	1	01/06/17 12:17	1634-04-4		
Styrene	ND	ug/L	1.0	1	01/06/17 12:17	100-42-5		
1,1,2,2-Tetrachloroethane	ND	ug/L	0.50	1	01/06/17 12:17	79-34-5		
Tetrachloroethene	ND	ug/L	0.50	1	01/06/17 12:17	127-18-4		
Toluene	ND	ug/L	0.50	1	01/06/17 12:17	108-88-3		
1,1,1-Trichloroethane	ND	ug/L	0.50	1	01/06/17 12:17	71-55-6		
1,1,2-Trichloroethane	ND	ug/L	0.50	1	01/06/17 12:17	79-00-5		
Trichloroethene	ND	ug/L	0.50	1	01/06/17 12:17	79-01-6		
Trichlorofluoromethane	ND	ug/L	0.50	1	01/06/17 12:17	75-69-4		
Vinyl chloride	ND	ug/L	0.50	1	01/06/17 12:17	75-01-4		
m&p-Xylene	ND	ug/L	2.0	1	01/06/17 12:17	179601-23-1		
o-Xylene	ND	ug/L	1.0	1	01/06/17 12:17	95-47-6		
Surrogates								
Dibromofluoromethane (S)	105	%.	72-126	1	01/06/17 12:17	1868-53-7		
4-Bromofluorobenzene (S)	96	%.	68-124	1	01/06/17 12:17	460-00-4		
Toluene-d8 (S)	100	%.	79-119	1	01/06/17 12:17	2037-26-5		

Sample: MW-EB103	Lab ID: 2048198004	Collected: 01/03/17 10:27	Received: 01/04/17 15:08	Matrix: Water
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Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8015M DRO/ORO Organics		Analytical Method: EPA 8015B Modified Preparation Method: EPA 3535						
Diesel Range Organic (C10-C28)	ND	mg/L	0.25	1	01/06/17 07:40	01/11/17 18:23		
Oil Range Organics (>C28-C40)	ND	mg/L	0.50	1	01/06/17 07:40	01/11/17 18:23		
Surrogates								
n-Pentacosane (S)	59	%.	16-137	1	01/06/17 07:40	01/11/17 18:23	629-99-2	
o-Terphenyl (S)	49	%.	10-121	1	01/06/17 07:40	01/11/17 18:23	84-15-1	
8021 GCV BTEX, MTBE, GRO		Analytical Method: EPA 8015/8021						
Gasoline Range Organics	71.2	ug/L	50.0	1		01/06/17 19:01		
Surrogates								
4-Bromofluorobenzene (S)	88	%.	44-148	1		01/06/17 19:01	460-00-4	

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ANALYTICAL RESULTS



Project: PUMA TERMINAL MW-SAMPLING
Pace Project No.: 2048198

Sample:	Lab ID:	Collected:	Received:	Matrix:			
MW-EB103	2048198004	01/03/17 10:27	01/04/17 15:32	Water			
Parameters	Results	Units	Report Limit	DF	Preparation	CAS No.	Qual
6020 MET ICPMS							
Analytical Method: EPA 6020 Preparation Method: EPA 3010							
Arsenic	ND	mg/L	0.0010	1	01/09/17 15:32	01/13/17 22:08	7440-38-2
Chromium	ND	mg/L	0.0010	1	01/09/17 15:32	01/13/17 22:08	7440-47-3
Lead	ND	mg/L	0.0010	1	01/09/17 15:32	01/13/17 22:08	7439-92-1
Vanadium	ND	mg/L	0.0050	1	01/09/17 15:32	01/13/17 22:08	7440-62-2
6020 MET ICPMS, Dissolved (LF)							
Analytical Method: EPA 6020 Preparation Method: EPA 3005A							
Arsenic, Dissolved	ND	ug/L	1.0	1	01/10/17 11:44	01/13/17 23:30	7440-38-2
Chromium, Dissolved	ND	ug/L	1.0	1	01/10/17 11:44	01/13/17 23:30	7440-47-3
Lead, Dissolved	ND	ug/L	1.0	1	01/10/17 11:44	01/13/17 23:30	7439-92-1
Vanadium, Dissolved	ND	ug/L	5.0	1	01/10/17 11:44	01/13/17 23:30	7440-62-2
7470 Mercury							
Analytical Method: EPA 7470 Preparation Method: EPA 7470							
Mercury	ND	ug/L	0.20	1	01/09/17 15:19	01/09/17 20:26	7439-97-6
7470 Mercury, Dissolved (LF)							
Analytical Method: EPA 7470 Preparation Method: EPA 7470							
Mercury, Dissolved	ND	ug/L	0.20	1	01/10/17 12:30	01/10/17 17:19	7439-97-6
8270 MSSV PAH by SIM SEP							
Analytical Method: EPA 8270 by SIM Preparation Method: EPA 3510							
Acenaphthene	ND	ug/L	0.10	1	01/06/17 09:20	01/09/17 21:20	83-32-9
Acenaphthylene	ND	ug/L	0.10	1	01/06/17 09:20	01/09/17 21:20	208-96-8
Anthracene	ND	ug/L	0.10	1	01/06/17 09:20	01/09/17 21:20	120-12-7
Benzo(a)anthracene	ND	ug/L	0.10	1	01/06/17 09:20	01/09/17 21:20	56-55-3
Benzo(a)pyrene	ND	ug/L	0.10	1	01/06/17 09:20	01/09/17 21:20	50-32-8
Benzo(b)fluoranthene	ND	ug/L	0.10	1	01/06/17 09:20	01/09/17 21:20	205-99-2
Benzo(g,h,i)perylene	ND	ug/L	0.10	1	01/06/17 09:20	01/09/17 21:20	191-24-2
Benzo(k)fluoranthene	ND	ug/L	0.10	1	01/06/17 09:20	01/09/17 21:20	207-08-9
Chrysene	ND	ug/L	0.10	1	01/06/17 09:20	01/09/17 21:20	218-01-9
Dibenz(a,h)anthracene	ND	ug/L	0.10	1	01/06/17 09:20	01/09/17 21:20	53-70-3
Fluoranthene	ND	ug/L	0.10	1	01/06/17 09:20	01/09/17 21:20	206-44-0
Fluorene	ND	ug/L	0.10	1	01/06/17 09:20	01/09/17 21:20	86-73-7
Indeno(1,2,3-cd)pyrene	ND	ug/L	0.10	1	01/06/17 09:20	01/09/17 21:20	193-39-5
2-Methylnaphthalene	ND	ug/L	0.10	1	01/06/17 09:20	01/09/17 21:20	91-57-6
Naphthalene	ND	ug/L	0.10	1	01/06/17 09:20	01/09/17 21:20	91-20-3
Phenanthrene	ND	ug/L	0.10	1	01/06/17 09:20	01/09/17 21:20	85-01-8
Pyrene	ND	ug/L	0.10	1	01/06/17 09:20	01/09/17 21:20	129-00-0
Surrogates							
2-Fluorobiphenyl (S)	86	%	25-150	1	01/06/17 09:20	01/09/17 21:20	321-60-8
Terphenyl-d14 (S)	80	%	25-150	1	01/06/17 09:20	01/09/17 21:20	1718-51-0
8260 MSV Low Level							
Analytical Method: EPA 5030B/8260							
Acetone	15.6	ug/L	4.0	1	01/06/17 12:34	67-64-1	C9
Benzene	ND	ug/L	0.50	1	01/06/17 12:34	71-43-2	
Bromodichloromethane	ND	ug/L	0.50	1	01/06/17 12:34	75-27-4	
Bromoform	ND	ug/L	0.50	1	01/06/17 12:34	75-25-2	
Bromomethane	ND	ug/L	0.50	1	01/06/17 12:34	74-83-9	
2-Butanone (MEK)	ND	ug/L	2.0	1	01/06/17 12:34	78-93-3	

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ANALYTICAL RESULTS

Project: PUMA TERMINAL MW-SAMPLING
Pace Project No.: 2048198



Sample: MW-EB103	Lab ID: 2048198004	Collected: 01/03/17 10:27	Received: 01/04/17 15:11	Matrix: Water			
Parameters	Results	Units	Report Limit	DF	Preparation	CAS No.	Qual

8260 MSV Low Level

Analytical Method: EPA 5030B/8260

Carbon disulfide	ND	ug/L	1.0	1	01/06/17 12:34	75-15-0	L3
Carbon tetrachloride	ND	ug/L	0.50	1	01/06/17 12:34	56-23-5	
Chlorobenzene	ND	ug/L	0.50	1	01/06/17 12:34	108-90-7	
Chloroethane	ND	ug/L	0.50	1	01/06/17 12:34	75-00-3	
Chloroform	ND	ug/L	0.50	1	01/06/17 12:34	67-66-3	
Chloromethane	ND	ug/L	0.50	1	01/06/17 12:34	74-87-3	
1,2-Dibromo-3-chloropropane	ND	ug/L	0.20	1	01/06/17 12:34	96-12-8	
Dibromochloromethane	ND	ug/L	0.50	1	01/06/17 12:34	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	1	01/06/17 12:34	106-93-4	
Dichlorodifluoromethane	ND	ug/L	1.0	1	01/06/17 12:34	75-71-8	
1,1-Dichloroethane	ND	ug/L	0.50	1	01/06/17 12:34	75-34-3	
1,2-Dichloroethane	ND	ug/L	0.50	1	01/06/17 12:34	107-06-2	
1,1-Dichloroethene	ND	ug/L	0.50	1	01/06/17 12:34	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	1	01/06/17 12:34	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	0.50	1	01/06/17 12:34	156-60-5	
1,2-Dichloropropane	ND	ug/L	0.50	1	01/06/17 12:34	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	0.50	1	01/06/17 12:34	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	0.50	1	01/06/17 12:34	10061-02-6	
Ethylbenzene	ND	ug/L	0.50	1	01/06/17 12:34	100-41-4	
2-Hexanone	ND	ug/L	1.0	1	01/06/17 12:34	591-78-6	
Isopropylbenzene (Cumene)	ND	ug/L	1.0	1	01/06/17 12:34	98-82-8	
Methyl acetate	ND	ug/L	2.0	1	01/06/17 12:34	79-20-9	
Methylene Chloride	ND	ug/L	0.50	1	01/06/17 12:34	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	1.0	1	01/06/17 12:34	108-10-1	
Methyl-tert-butyl ether	45.3	ug/L	0.50	1	01/06/17 12:34	1634-04-4	
Styrene	ND	ug/L	1.0	1	01/06/17 12:34	100-42-5	
1,1,2,2-Tetrachloroethane	ND	ug/L	0.50	1	01/06/17 12:34	79-34-5	
Tetrachloroethene	ND	ug/L	0.50	1	01/06/17 12:34	127-18-4	
Toluene	ND	ug/L	0.50	1	01/06/17 12:34	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	0.50	1	01/06/17 12:34	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	0.50	1	01/06/17 12:34	79-00-5	
Trichloroethene	ND	ug/L	0.50	1	01/06/17 12:34	79-01-6	
Trichlorofluoromethane	ND	ug/L	0.50	1	01/06/17 12:34	75-69-4	
Vinyl chloride	ND	ug/L	0.50	1	01/06/17 12:34	75-01-4	
m&p-Xylene	ND	ug/L	2.0	1	01/06/17 12:34	179601-23-1	
o-Xylene	ND	ug/L	1.0	1	01/06/17 12:34	95-47-6	
Surrogates							
Dibromofluoromethane (S)	109	%	72-126	1	01/06/17 12:34	1868-53-7	
4-Bromofluorobenzene (S)	97	%	68-124	1	01/06/17 12:34	460-00-4	
Toluene-d8 (S)	101	%	79-119	1	01/06/17 12:34	2037-26-5	

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ANALYTICAL RESULTS

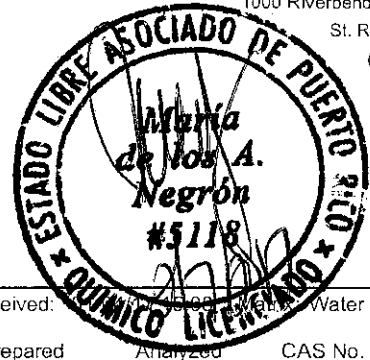


Project: PUMA TERMINAL MW-SAMPLING
Pace Project No.: 2048198

Sample:	Lab ID:	Collected:	Receiving:	Matrix:	Preparation:	CAS No.	Qual
Parameters	Results	Units	Report Limit	DF	Preparation	CAS No.	Qual
8015M DRO/ORO Organics							
Analytical Method: EPA 8015B Modified Preparation Method: EPA 3535							
Diesel Range Organic (C10-C28)	ND	mg/L	0.25	1	01/06/17 07:40	01/11/17 18:51	
Oil Range Organics (>C28-C40)	ND	mg/L	0.50	1	01/06/17 07:40	01/11/17 18:51	
Surrogates							
n-Pentacosane (S)	47	%	16-137	1	01/06/17 07:40	01/11/17 18:51	629-99-2
o-Terphenyl (S)	55	%	10-121	1	01/06/17 07:40	01/11/17 18:51	84-15-1
8021 GCV BTEX, MTBE, GRO							
Analytical Method: EPA 8015/8021							
Gasoline Range Organics	88.4	ug/L	50.0	1		01/06/17 19:28	
Surrogates							
4-Bromofluorobenzene (S)	92	%	44-148	1		01/06/17 19:28	460-00-4
6020 MET ICPMS							
Analytical Method: EPA 6020 Preparation Method: EPA 3010							
Arsenic	ND	mg/L	0.0010	1	01/09/17 15:32	01/13/17 22:11	7440-38-2
Chromium	0.0017	mg/L	0.0010	1	01/09/17 15:32	01/13/17 22:11	7440-47-3
Lead	ND	mg/L	0.0010	1	01/09/17 15:32	01/13/17 22:11	7439-92-1
Vanadium	ND	mg/L	0.0050	1	01/09/17 15:32	01/13/17 22:11	7440-62-2
6020 MET ICPMS, Dissolved (LF)							
Analytical Method: EPA 6020 Preparation Method: EPA 3005A							
Arsenic, Dissolved	ND	ug/L	1.0	1	01/10/17 11:44	01/13/17 23:42	7440-38-2
Chromium, Dissolved	ND	ug/L	1.0	1	01/10/17 11:44	01/13/17 23:42	7440-47-3
Lead, Dissolved	ND	ug/L	1.0	1	01/10/17 11:44	01/13/17 23:42	7439-92-1
Vanadium, Dissolved	ND	ug/L	5.0	1	01/10/17 11:44	01/13/17 23:42	7440-62-2
7470 Mercury							
Analytical Method: EPA 7470 Preparation Method: EPA 7470							
Mercury	ND	ug/L	0.20	1	01/09/17 15:19	01/09/17 20:28	7439-97-6
7470 Mercury, Dissolved (LF)							
Analytical Method: EPA 7470 Preparation Method: EPA 7470							
Mercury, Dissolved	ND	ug/L	0.20	1	01/10/17 12:30	01/10/17 17:24	7439-97-6
8270 MSSV PAH by SIM SEP							
Analytical Method: EPA 8270 by SIM Preparation Method: EPA 3510							
Acenaphthene	ND	ug/L	0.10	1	01/06/17 09:20	01/09/17 21:39	83-32-9
Acenaphthylene	ND	ug/L	0.10	1	01/06/17 09:20	01/09/17 21:39	208-96-8
Anthracene	ND	ug/L	0.10	1	01/06/17 09:20	01/09/17 21:39	120-12-7
Benzo(a)anthracene	ND	ug/L	0.10	1	01/06/17 09:20	01/09/17 21:39	56-55-3
Benzo(a)pyrene	ND	ug/L	0.10	1	01/06/17 09:20	01/09/17 21:39	50-32-8
Benzo(b)fluoranthene	ND	ug/L	0.10	1	01/06/17 09:20	01/09/17 21:39	205-99-2
Benzo(g,h,i)perylene	ND	ug/L	0.10	1	01/06/17 09:20	01/09/17 21:39	191-24-2
Benzo(k)fluoranthene	ND	ug/L	0.10	1	01/06/17 09:20	01/09/17 21:39	207-08-9
Chrysene	ND	ug/L	0.10	1	01/06/17 09:20	01/09/17 21:39	218-01-9
Dibenz(a,h)anthracene	ND	ug/L	0.10	1	01/06/17 09:20	01/09/17 21:39	53-70-3
Fluoranthene	ND	ug/L	0.10	1	01/06/17 09:20	01/09/17 21:39	206-44-0
Fluorene	ND	ug/L	0.10	1	01/06/17 09:20	01/09/17 21:39	86-73-7
Indeno(1,2,3-cd)pyrene	ND	ug/L	0.10	1	01/06/17 09:20	01/09/17 21:39	193-39-5
2-Methylnaphthalene	ND	ug/L	0.10	1	01/06/17 09:20	01/09/17 21:39	91-57-6
Naphthalene	ND	ug/L	0.10	1	01/06/17 09:20	01/09/17 21:39	91-20-3
Phenanthrene	ND	ug/L	0.10	1	01/06/17 09:20	01/09/17 21:39	85-01-8

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ANALYTICAL RESULTS

Project: PUMA TERMINAL MW-SAMPLING
Pace Project No.: 2048198

Sample: MW-EB104 Lab ID: 2048198005 Collected: 01/03/17 11:26 Received: 01/06/17 09:20 Water
Parameters Results Units Report Limit DF Prepared Analyzed CAS No. Qual

8270 MSSV PAH by SIM SEP

Analytical Method: EPA 8270 by SIM Preparation Method: EPA 3510

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
Pyrene	ND	ug/L	0.10	1	01/06/17 09:20	01/09/17 21:39	129-00-0	
Surrogates								
2-Fluorobiphenyl (S)	78	%	25-150	1	01/06/17 09:20	01/09/17 21:39	321-60-8	
Terphenyl-d14 (S)	79	%	25-150	1	01/06/17 09:20	01/09/17 21:39	1718-51-0	

8260 MSV Low Level

Analytical Method: EPA 5030B/8260

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
Acetone	6.2	ug/L	4.0	1	01/06/17 12:52	01/06/17 12:52	67-64-1	C9
Benzene	ND	ug/L	0.50	1	01/06/17 12:52	01/06/17 12:52	71-43-2	
Bromodichloromethane	ND	ug/L	0.50	1	01/06/17 12:52	01/06/17 12:52	75-27-4	
Bromoform	ND	ug/L	0.50	1	01/06/17 12:52	01/06/17 12:52	75-25-2	
Bromomethane	ND	ug/L	0.50	1	01/06/17 12:52	01/06/17 12:52	74-83-9	
2-Butanone (MEK)	ND	ug/L	2.0	1	01/06/17 12:52	01/06/17 12:52	78-93-3	
Carbon disulfide	ND	ug/L	1.0	1	01/06/17 12:52	01/06/17 12:52	75-15-0	L3
Carbon tetrachloride	ND	ug/L	0.50	1	01/06/17 12:52	01/06/17 12:52	56-23-5	
Chlorobenzene	ND	ug/L	0.50	1	01/06/17 12:52	01/06/17 12:52	108-90-7	
Chloroethane	ND	ug/L	0.50	1	01/06/17 12:52	01/06/17 12:52	75-00-3	
Chloroform	ND	ug/L	0.50	1	01/06/17 12:52	01/06/17 12:52	67-66-3	
Chloromethane	ND	ug/L	0.50	1	01/06/17 12:52	01/06/17 12:52	74-87-3	
1,2-Dibromo-3-chloropropane	ND	ug/L	0.20	1	01/06/17 12:52	01/06/17 12:52	96-12-8	
Dibromochloromethane	ND	ug/L	0.50	1	01/06/17 12:52	01/06/17 12:52	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	1	01/06/17 12:52	01/06/17 12:52	106-93-4	
Dichlorodifluoromethane	ND	ug/L	1.0	1	01/06/17 12:52	01/06/17 12:52	75-71-8	
1,1-Dichloroethane	ND	ug/L	0.50	1	01/06/17 12:52	01/06/17 12:52	75-34-3	
1,2-Dichloroethane	ND	ug/L	0.50	1	01/06/17 12:52	01/06/17 12:52	107-06-2	
1,1-Dichloroethene	ND	ug/L	0.50	1	01/06/17 12:52	01/06/17 12:52	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	1	01/06/17 12:52	01/06/17 12:52	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	0.50	1	01/06/17 12:52	01/06/17 12:52	156-60-5	
1,2-Dichloropropane	ND	ug/L	0.50	1	01/06/17 12:52	01/06/17 12:52	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	0.50	1	01/06/17 12:52	01/06/17 12:52	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	0.50	1	01/06/17 12:52	01/06/17 12:52	10061-02-6	
Ethylbenzene	ND	ug/L	0.50	1	01/06/17 12:52	01/06/17 12:52	100-41-4	
2-Hexanone	ND	ug/L	1.0	1	01/06/17 12:52	01/06/17 12:52	591-78-6	
Isopropylbenzene (Cumene)	ND	ug/L	1.0	1	01/06/17 12:52	01/06/17 12:52	98-82-8	
Methyl acetate	ND	ug/L	2.0	1	01/06/17 12:52	01/06/17 12:52	79-20-9	
Methylene Chloride	ND	ug/L	0.50	1	01/06/17 12:52	01/06/17 12:52	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	1.0	1	01/06/17 12:52	01/06/17 12:52	108-10-1	
Methyl-tert-butyl ether	61.2	ug/L	0.50	1	01/06/17 12:52	01/06/17 12:52	1634-04-4	
Styrene	ND	ug/L	1.0	1	01/06/17 12:52	01/06/17 12:52	100-42-5	
1,1,2,2-Tetrachloroethane	ND	ug/L	0.50	1	01/06/17 12:52	01/06/17 12:52	79-34-5	
Tetrachloroethene	ND	ug/L	0.50	1	01/06/17 12:52	01/06/17 12:52	127-18-4	
Toluene	ND	ug/L	0.50	1	01/06/17 12:52	01/06/17 12:52	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	0.50	1	01/06/17 12:52	01/06/17 12:52	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	0.50	1	01/06/17 12:52	01/06/17 12:52	79-00-5	
Trichloroethene	ND	ug/L	0.50	1	01/06/17 12:52	01/06/17 12:52	79-01-6	
Trichlorofluoromethane	ND	ug/L	0.50	1	01/06/17 12:52	01/06/17 12:52	75-69-4	
Vinyl chloride	ND	ug/L	0.50	1	01/06/17 12:52	01/06/17 12:52	75-01-4	
m&p-Xylene	ND	ug/L	2.0	1	01/06/17 12:52	01/06/17 12:52	179601-23-1	

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ANALYTICAL RESULTS

Project: PUMA TERMINAL MW-SAMPLING
Pace Project No.: 2048198



Sample: MW-EB104 Lab ID: 2048198005 Collected: 01/03/17 11:26 Received: 01/04/17 10:08 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV Low Level		Analytical Method: EPA 5030B/8260						
o-Xylene	ND	ug/L	1.0	1	01/06/17 12:52	01/11/17 19:19	95-47-6	
Surrogates								
Dibromofluoromethane (S)	108	%	72-126	1	01/06/17 12:52	01/11/17 19:19	1868-53-7	
4-Bromofluorobenzene (S)	99	%	68-124	1	01/06/17 12:52	01/11/17 19:19	460-00-4	
Toluene-d8 (S)	99	%	79-119	1	01/06/17 12:52	01/11/17 19:19	2037-26-5	

Sample: MW-EB105 Lab ID: 2048198006 Collected: 01/03/17 13:45 Received: 01/04/17 15:08 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8015M DRO/ORO Organics		Analytical Method: EPA 8015B Modified Preparation Method: EPA 3535						
Diesel Range Organic (C10-C28)	ND	mg/L	0.25	1	01/06/17 07:40	01/11/17 19:19		
Oil Range Organics (>C28-C40)	ND	mg/L	0.50	1	01/06/17 07:40	01/11/17 19:19		
Surrogates								
n-Pentacosane (S)	48	%	16-137	1	01/06/17 07:40	01/11/17 19:19	629-99-2	
o-Terphenyl (S)	64	%	10-121	1	01/06/17 07:40	01/11/17 19:19	84-15-1	
8021 GCV BTEX, MTBE, GRO		Analytical Method: EPA 8015/8021						
Gasoline Range Organics	ND	ug/L	50.0	1	01/06/17 19:54			
Surrogates								
4-Bromofluorobenzene (S)	91	%	44-148	1	01/06/17 19:54		460-00-4	
6020 MET ICPMS		Analytical Method: EPA 6020 Preparation Method: EPA 3010						
Arsenic	0.0052	mg/L	0.0010	1	01/09/17 15:32	01/13/17 21:36	7440-38-2	
Chromium	ND	mg/L	0.0010	1	01/09/17 15:32	01/13/17 21:36	7440-47-3	
Lead	ND	mg/L	0.0010	1	01/09/17 15:32	01/13/17 21:36	7439-92-1	
Vanadium	ND	mg/L	0.0050	1	01/09/17 15:32	01/13/17 21:36	7440-62-2	
6020 MET ICPMS, Dissolved (LF)		Analytical Method: EPA 6020 Preparation Method: EPA 3005A						
Arsenic, Dissolved	1.6	ug/L	1.0	1	01/10/17 11:44	01/13/17 20:21	7440-38-2	
Chromium, Dissolved	ND	ug/L	1.0	1	01/10/17 11:44	01/13/17 20:21	7440-47-3	
Lead, Dissolved	ND	ug/L	1.0	1	01/10/17 11:44	01/13/17 20:21	7439-92-1	
Vanadium, Dissolved	ND	ug/L	5.0	1	01/10/17 11:44	01/13/17 20:21	7440-62-2	
7470 Mercury		Analytical Method: EPA 7470 Preparation Method: EPA 7470						
Mercury	ND	ug/L	0.20	1	01/09/17 15:19	01/09/17 20:11	7439-97-6	M1
7470 Mercury, Dissolved (LF)		Analytical Method: EPA 7470 Preparation Method: EPA 7470						
Mercury, Dissolved	ND	ug/L	0.20	1	01/10/17 12:30	01/10/17 16:55	7439-97-6	M1
8270 MSSV PAH by SIM SEP		Analytical Method: EPA 8270 by SIM Preparation Method: EPA 3510						
Acenaphthene	0.27	ug/L	0.10	1	01/06/17 09:20	01/09/17 21:59	83-32-9	R1
Acenaphthylene	ND	ug/L	0.10	1	01/06/17 09:20	01/09/17 21:59	208-96-8	R1
Anthracene	0.11	ug/L	0.10	1	01/06/17 09:20	01/09/17 21:59	120-12-7	R1
Benzo(a)anthracene	ND	ug/L	0.10	1	01/06/17 09:20	01/09/17 21:59	56-55-3	R1

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ANALYTICAL RESULTS



Project: PUMA TERMINAL MW-SAMPLING
Pace Project No.: 2048198

Sample: MW-EB105 Lab ID: 2048198006 Collected: 01/03/17 13:45 Received: 01/04/17 15:08
Parameters Results Units Report Limit DF Prepared: [blank] Analyzed: [blank] CAS No. Qual

8270 MSSV PAH by SIM SEP Analytical Method: EPA 8270 by SIM Preparation Method: EPA 3510

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
Benzo(a)pyrene	ND	ug/L	0.10	1	01/06/17 09:20	01/09/17 21:59	50-32-8	R1
Benzo(b)fluoranthene	ND	ug/L	0.10	1	01/06/17 09:20	01/09/17 21:59	205-99-2	R1
Benzo(g,h,i)perylene	ND	ug/L	0.10	1	01/06/17 09:20	01/09/17 21:59	191-24-2	
Benzo(k)fluoranthene	ND	ug/L	0.10	1	01/06/17 09:20	01/09/17 21:59	207-08-9	R1
Chrysene	ND	ug/L	0.10	1	01/06/17 09:20	01/09/17 21:59	218-01-9	R1
Dibenz(a,h)anthracene	ND	ug/L	0.10	1	01/06/17 09:20	01/09/17 21:59	53-70-3	
Fluoranthene	ND	ug/L	0.10	1	01/06/17 09:20	01/09/17 21:59	206-44-0	R1
Fluorene	ND	ug/L	0.10	1	01/06/17 09:20	01/09/17 21:59	86-73-7	R1
Indeno(1,2,3-cd)pyrene	ND	ug/L	0.10	1	01/06/17 09:20	01/09/17 21:59	193-39-5	
2-Methylnaphthalene	ND	ug/L	0.10	1	01/06/17 09:20	01/09/17 21:59	91-57-6	R1
Naphthalene	ND	ug/L	0.10	1	01/06/17 09:20	01/09/17 21:59	91-20-3	R1
Phenanthrene	0.26	ug/L	0.10	1	01/06/17 09:20	01/09/17 21:59	85-01-8	R1
Pyrene	ND	ug/L	0.10	1	01/06/17 09:20	01/09/17 21:59	129-00-0	R1
Surrogates								
2-Fluorobiphenyl (S)	97	%	25-150	1	01/06/17 09:20	01/09/17 21:59	321-60-8	
Terphenyl-d14 (S)	99	%	25-150	1	01/06/17 09:20	01/09/17 21:59	1718-51-0	

8260 MSV Low Level Analytical Method: EPA 5030B/8260

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
Acetone	39.4	ug/L	4.0	1		01/06/17 11:24	67-64-1	C9
Benzene	ND	ug/L	0.50	1		01/06/17 11:24	71-43-2	
Bromodichloromethane	ND	ug/L	0.50	1		01/06/17 11:24	75-27-4	
Bromoform	ND	ug/L	0.50	1		01/06/17 11:24	75-25-2	
Bromomethane	ND	ug/L	0.50	1		01/06/17 11:24	74-83-9	
2-Butanone (MEK)	ND	ug/L	2.0	1		01/06/17 11:24	78-93-3	
Carbon disulfide	ND	ug/L	1.0	1		01/06/17 11:24	75-15-0	L1,M0
Carbon tetrachloride	ND	ug/L	0.50	1		01/06/17 11:24	56-23-5	
Chlorobenzene	ND	ug/L	0.50	1		01/06/17 11:24	108-90-7	
Chloroethane	ND	ug/L	0.50	1		01/06/17 11:24	75-00-3	
Chloroform	ND	ug/L	0.50	1		01/06/17 11:24	67-66-3	
Chloromethane	ND	ug/L	0.50	1		01/06/17 11:24	74-87-3	
1,2-Dibromo-3-chloropropane	ND	ug/L	0.20	1		01/06/17 11:24	96-12-8	
Dibromochloromethane	ND	ug/L	0.50	1		01/06/17 11:24	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	1		01/06/17 11:24	106-93-4	
Dichlorodifluoromethane	ND	ug/L	1.0	1		01/06/17 11:24	75-71-8	
1,1-Dichloroethane	ND	ug/L	0.50	1		01/06/17 11:24	75-34-3	
1,2-Dichloroethane	ND	ug/L	0.50	1		01/06/17 11:24	107-06-2	
1,1-Dichloroethene	ND	ug/L	0.50	1		01/06/17 11:24	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	1		01/06/17 11:24	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	0.50	1		01/06/17 11:24	156-60-5	
1,2-Dichloropropane	ND	ug/L	0.50	1		01/06/17 11:24	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	0.50	1		01/06/17 11:24	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	0.50	1		01/06/17 11:24	10061-02-6	
Ethylbenzene	ND	ug/L	0.50	1		01/06/17 11:24	100-41-4	
2-Hexanone	ND	ug/L	1.0	1		01/06/17 11:24	591-78-6	
isopropylbenzene (Cumene)	ND	ug/L	1.0	1		01/06/17 11:24	98-82-8	
Methyl acetate	ND	ug/L	2.0	1		01/06/17 11:24	79-20-9	
Methylene Chloride	ND	ug/L	0.50	1		01/06/17 11:24	75-09-2	

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ANALYTICAL RESULTS



Project: PUMA TERMINAL MW-SAMPLING

Pace Project No.: 2048198

Sample: MW-EB105 Lab ID: 2048198006 Collected: 01/03/17 13:45 Received: 01/06/17 15:08 Matrix: Water
Prepared: [Signature] CAS No. [Blank] Qual [Blank]

8260 MSV Low Level

Analytical Method: EPA 5030B/8260

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
4-Methyl-2-pentanone (MIBK)	ND	ug/L	1.0	1	01/06/17 11:24	01/06/17 11:24	108-10-1	
Methyl-tert-butyl ether	8.2	ug/L	0.50	1	01/06/17 11:24	01/06/17 11:24	1634-04-4	
Styrene	ND	ug/L	1.0	1	01/06/17 11:24	01/06/17 11:24	100-42-5	
1,1,2,2-Tetrachloroethane	ND	ug/L	0.50	1	01/06/17 11:24	01/06/17 11:24	79-34-5	
Tetrachloroethene	ND	ug/L	0.50	1	01/06/17 11:24	01/06/17 11:24	127-18-4	
Toluene	ND	ug/L	0.50	1	01/06/17 11:24	01/06/17 11:24	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	0.50	1	01/06/17 11:24	01/06/17 11:24	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	0.50	1	01/06/17 11:24	01/06/17 11:24	79-00-5	
Trichloroethene	ND	ug/L	0.50	1	01/06/17 11:24	01/06/17 11:24	79-01-6	
Trichlorofluoromethane	ND	ug/L	0.50	1	01/06/17 11:24	01/06/17 11:24	75-69-4	
Vinyl chloride	ND	ug/L	0.50	1	01/06/17 11:24	01/06/17 11:24	75-01-4	
m&p-Xylene	ND	ug/L	2.0	1	01/06/17 11:24	01/06/17 11:24	179601-23-1	
o-Xylene	ND	ug/L	1.0	1	01/06/17 11:24	01/06/17 11:24	95-47-6	
Surrogates								
Dibromofluoromethane (S)	106	%.	72-126	1	01/06/17 11:24	01/06/17 11:24	1868-53-7	
4-Bromofluorobenzene (S)	97	%.	68-124	1	01/06/17 11:24	01/06/17 11:24	460-00-4	
Toluene-d8 (S)	100	%.	79-119	1	01/06/17 11:24	01/06/17 11:24	2037-26-5	

Sample: DUP004

Lab ID: 2048198007 Collected: 01/03/17 00:00 Received: 01/04/17 15:08 Matrix: Water

Parameters Results Units Report Limit DF Prepared Analyzed CAS No. Qual

8015M DRO/ORO Organics

Analytical Method: EPA 8015B Modified Preparation Method: EPA 3535

Diesel Range Organic (C10-C28)	0.25	mg/L	0.25	1	01/06/17 07:40	01/11/17 20:42		
Oil Range Organics (>C28-C40)	ND	mg/L	0.50	1	01/06/17 07:40	01/11/17 20:42		
Surrogates								
n-Pentacosane (S)	71	%.	16-137	1	01/06/17 07:40	01/11/17 20:42	629-99-2	
o-Terphenyl (S)	82	%.	10-121	1	01/06/17 07:40	01/11/17 20:42	84-15-1	

8021 GCV BTEX, MTBE, GRO

Analytical Method: EPA 8015/8021

Gasoline Range Organics	ND	ug/L	50.0	1	01/06/17 20:21			
Surrogates								
4-Bromofluorobenzene (S)	88	%.	44-148	1	01/06/17 20:21	01/06/17 20:21	460-00-4	

6020 MET ICPMS

Analytical Method: EPA 6020 Preparation Method: EPA 3010

Arsenic	0.0052	mg/L	0.0010	1	01/09/17 15:32	01/13/17 22:15	7440-38-2	
Chromium	0.0010	mg/L	0.0010	1	01/09/17 15:32	01/13/17 22:15	7440-47-3	
Lead	ND	mg/L	0.0010	1	01/09/17 15:32	01/13/17 22:15	7439-92-1	
Vanadium	ND	mg/L	0.0050	1	01/09/17 15:32	01/13/17 22:15	7440-62-2	

6020 MET ICPMS, Dissolved (LF)

Analytical Method: EPA 6020 Preparation Method: EPA 3005A

Arsenic, Dissolved	1.5	ug/L	1.0	1	01/10/17 11:44	01/13/17 23:46	7440-38-2	
Chromium, Dissolved	ND	ug/L	1.0	1	01/10/17 11:44	01/13/17 23:46	7440-47-3	
Lead, Dissolved	ND	ug/L	1.0	1	01/10/17 11:44	01/13/17 23:46	7439-92-1	
Vanadium, Dissolved	ND	ug/L	5.0	1	01/10/17 11:44	01/13/17 23:46	7440-62-2	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

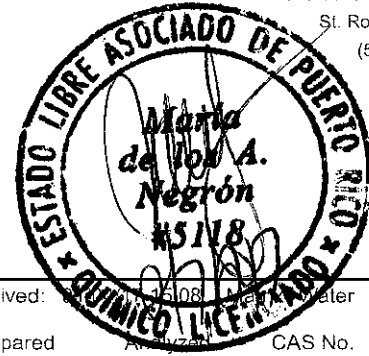


Project: PUMA TERMINAL MW-SAMPLING
Pace Project No.: 2048198

Sample:	Lab ID:	Collected:	Received:	Prepared:	Analysis No.	Qual	
Parameters	Results	Units	Report Limit	DF	Prepared	Analysis No.	Qual
7470 Mercury	Analytical Method: EPA 7470 Preparation Method: EPA 7470						
Mercury	ND	ug/L	0.20	1	01/09/17 15:19	01/09/17 20:30 7439-97-6	
7470 Mercury, Dissolved (LF)	Analytical Method: EPA 7470 Preparation Method: EPA 7470						
Mercury, Dissolved	ND	ug/L	0.20	1	01/10/17 12:30	01/10/17 17:26 7439-97-6	
8270 MSSV PAH by SIM SEP	Analytical Method: EPA 8270 by SIM Preparation Method: EPA 3510						
Acenaphthene	0.13	ug/L	0.10	1	01/06/17 09:20	01/10/17 13:20 83-32-9	
Acenaphthylene	ND	ug/L	0.10	1	01/06/17 09:20	01/10/17 13:20 208-96-8	
Anthracene	ND	ug/L	0.10	1	01/06/17 09:20	01/10/17 13:20 120-12-7	
Benzo(a)anthracene	ND	ug/L	0.10	1	01/06/17 09:20	01/10/17 13:20 56-55-3	
Benzo(a)pyrene	ND	ug/L	0.10	1	01/06/17 09:20	01/10/17 13:20 50-32-8	
Benzo(b)fluoranthene	ND	ug/L	0.10	1	01/06/17 09:20	01/10/17 13:20 205-99-2	
Benzo(g,h,i)perylene	ND	ug/L	0.10	1	01/06/17 09:20	01/10/17 13:20 191-24-2	
Benzo(k)fluoranthene	ND	ug/L	0.10	1	01/06/17 09:20	01/10/17 13:20 207-08-9	
Chrysene	ND	ug/L	0.10	1	01/06/17 09:20	01/10/17 13:20 218-01-9	
Dibenz(a,h)anthracene	ND	ug/L	0.10	1	01/06/17 09:20	01/10/17 13:20 53-70-3	
Fluoranthene	ND	ug/L	0.10	1	01/06/17 09:20	01/10/17 13:20 206-44-0	
Fluorene	ND	ug/L	0.10	1	01/06/17 09:20	01/10/17 13:20 86-73-7	
Indeno(1,2,3-cd)pyrene	ND	ug/L	0.10	1	01/06/17 09:20	01/10/17 13:20 193-39-5	
2-Methylnaphthalene	ND	ug/L	0.10	1	01/06/17 09:20	01/10/17 13:20 91-57-6	
Naphthalene	ND	ug/L	0.10	1	01/06/17 09:20	01/10/17 13:20 91-20-3	
Phenanthrene	ND	ug/L	0.10	1	01/06/17 09:20	01/10/17 13:20 85-01-8	
Pyrene	ND	ug/L	0.10	1	01/06/17 09:20	01/10/17 13:20 129-00-0	
Surrogates							
2-Fluorobiphenyl (S)	80	%	25-150	1	01/06/17 09:20	01/10/17 13:20 321-60-8	
Terphenyl-d14 (S)	81	%	25-150	1	01/06/17 09:20	01/10/17 13:20 1718-51-0	
8260 MSV Low Level	Analytical Method: EPA 5030B/8260						
Acetone	11.3	ug/L	4.0	1	01/06/17 13:10	67-64-1	C9
Benzene	ND	ug/L	0.50	1	01/06/17 13:10	71-43-2	
Bromodichloromethane	ND	ug/L	0.50	1	01/06/17 13:10	75-27-4	
Bromoform	ND	ug/L	0.50	1	01/06/17 13:10	75-25-2	
Bromomethane	ND	ug/L	0.50	1	01/06/17 13:10	74-83-9	
2-Butanone (MEK)	ND	ug/L	2.0	1	01/06/17 13:10	78-93-3	
Carbon disulfide	ND	ug/L	1.0	1	01/06/17 13:10	75-15-0	L3
Carbon tetrachloride	ND	ug/L	0.50	1	01/06/17 13:10	56-23-5	
Chlorobenzene	ND	ug/L	0.50	1	01/06/17 13:10	108-90-7	
Chloroethane	ND	ug/L	0.50	1	01/06/17 13:10	75-00-3	
Chloroform	ND	ug/L	0.50	1	01/06/17 13:10	67-66-3	
Chloromethane	ND	ug/L	0.50	1	01/06/17 13:10	74-87-3	
1,2-Dibromo-3-chloropropane	ND	ug/L	0.20	1	01/06/17 13:10	96-12-8	
Dibromochloromethane	ND	ug/L	0.50	1	01/06/17 13:10	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	1	01/06/17 13:10	106-93-4	
Dichlorodifluoromethane	ND	ug/L	1.0	1	01/06/17 13:10	75-71-8	
1,1-Dichloroethane	ND	ug/L	0.50	1	01/06/17 13:10	75-34-3	
1,2-Dichloroethane	ND	ug/L	0.50	1	01/06/17 13:10	107-06-2	

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ANALYTICAL RESULTS

Project: PUMA TERMINAL MW-SAMPLING

Pace Project No.: 2048198

Sample: **DUP004** Lab ID: **2048198007** Collected: 01/03/17 00:00 Received: 01/08/17 13:10 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analized	CAS No.	Qual
8260 MSV Low Level		Analytical Method: EPA 5030B/8260						
1,1-Dichloroethene	ND	ug/L	0.50	1	01/06/17 13:10	01/06/17 13:10	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	1	01/06/17 13:10	01/06/17 13:10	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	0.50	1	01/06/17 13:10	01/06/17 13:10	156-60-5	
1,2-Dichloropropane	ND	ug/L	0.50	1	01/06/17 13:10	01/06/17 13:10	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	0.50	1	01/06/17 13:10	01/06/17 13:10	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	0.50	1	01/06/17 13:10	01/06/17 13:10	10061-02-6	
Ethylbenzene	ND	ug/L	0.50	1	01/06/17 13:10	01/06/17 13:10	100-41-4	
2-Hexanone	ND	ug/L	1.0	1	01/06/17 13:10	01/06/17 13:10	591-78-6	
Isopropylbenzene (Cumene)	ND	ug/L	1.0	1	01/06/17 13:10	01/06/17 13:10	98-82-8	
Methyl acetate	ND	ug/L	2.0	1	01/06/17 13:10	01/06/17 13:10	79-20-9	
Methylene Chloride	ND	ug/L	0.50	1	01/06/17 13:10	01/06/17 13:10	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	1.0	1	01/06/17 13:10	01/06/17 13:10	108-10-1	
Methyl-tert-butyl ether	8.9	ug/L	0.50	1	01/06/17 13:10	01/06/17 13:10	1634-04-4	
Styrene	ND	ug/L	1.0	1	01/06/17 13:10	01/06/17 13:10	100-42-5	
1,1,2,2-Tetrachloroethane	ND	ug/L	0.50	1	01/06/17 13:10	01/06/17 13:10	79-34-5	
Tetrachloroethene	ND	ug/L	0.50	1	01/06/17 13:10	01/06/17 13:10	127-18-4	
Toluene	ND	ug/L	0.50	1	01/06/17 13:10	01/06/17 13:10	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	0.50	1	01/06/17 13:10	01/06/17 13:10	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	0.50	1	01/06/17 13:10	01/06/17 13:10	79-00-5	
Trichloroethene	ND	ug/L	0.50	1	01/06/17 13:10	01/06/17 13:10	79-01-6	
Trichlorofluoromethane	ND	ug/L	0.50	1	01/06/17 13:10	01/06/17 13:10	75-69-4	
Vinyl chloride	ND	ug/L	0.50	1	01/06/17 13:10	01/06/17 13:10	75-01-4	
m&p-Xylene	ND	ug/L	2.0	1	01/06/17 13:10	01/06/17 13:10	179601-23-1	
o-Xylene	ND	ug/L	1.0	1	01/06/17 13:10	01/06/17 13:10	95-47-6	
Surrogates								
Dibromofluoromethane (S)	108	%	72-126	1	01/06/17 13:10	01/06/17 13:10	1868-53-7	
4-Bromofluorobenzene (S)	97	%	68-124	1	01/06/17 13:10	01/06/17 13:10	460-00-4	
Toluene-d8 (S)	100	%	79-119	1	01/06/17 13:10	01/06/17 13:10	2037-26-5	

Sample: **MW-EB106** Lab ID: **2048198008** Collected: 01/03/17 14:28 Received: 01/04/17 15:08 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analized	CAS No.	Qual
8015M DRO/ORO Organics		Analytical Method: EPA 8015B Modified Preparation Method: EPA 3535						
Diesel Range Organic (C10-C28)	0.26	mg/L	0.25	1	01/06/17 07:40	01/11/17 22:06		
Oil Range Organics (>C28-C40)	ND	mg/L	0.50	1	01/06/17 07:40	01/11/17 22:06		
Surrogates								
n-Pentacosane (S)	50	%	16-137	1	01/06/17 07:40	01/11/17 22:06	629-99-2	
o-Terphenyl (S)	66	%	10-121	1	01/06/17 07:40	01/11/17 22:06	84-15-1	
8021 GCV BTEX, MTBE, GRO		Analytical Method: EPA 8015/8021						
Gasoline Range Organics	ND	ug/L	50.0	1		01/12/17 18:34		
Surrogates								
4-Bromofluorobenzene (S)	86	%	44-148	1		01/12/17 18:34	460-00-4	

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ANALYTICAL RESULTS

Project: PUMA TERMINAL MW-SAMPLING

Pace Project No.: 2048198

Sample:	Lab ID:	Collected:	Received:	Matrix:	Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
MW-EB106	2048198008	01/03/17 14:28	01/09/17 15:32	Water									
6020 MET ICPMS					Analytical Method: EPA 6020 Preparation Method: EPA 3010								
Arsenic	0.0014	mg/L	0.0010	1	01/09/17 15:32	01/13/17 22:19	7440-38-2						
Chromium	ND	mg/L	0.0010	1	01/09/17 15:32	01/13/17 22:19	7440-47-3						
Lead	ND	mg/L	0.0010	1	01/09/17 15:32	01/13/17 22:19	7439-92-1						
Vanadium	ND	mg/L	0.0050	1	01/09/17 15:32	01/13/17 22:19	7440-62-2						
6020 MET ICPMS, Dissolved (LF)					Analytical Method: EPA 6020 Preparation Method: EPA 3005A								
Arsenic, Dissolved	ND	ug/L	1.0	1	01/10/17 11:44	01/13/17 23:50	7440-38-2						
Chromium, Dissolved	30.6	ug/L	1.0	1	01/10/17 11:44	01/13/17 23:50	7440-47-3						
Lead, Dissolved	ND	ug/L	1.0	1	01/10/17 11:44	01/13/17 23:50	7439-92-1						
Vanadium, Dissolved	ND	ug/L	5.0	1	01/10/17 11:44	01/13/17 23:50	7440-62-2						
7470 Mercury					Analytical Method: EPA 7470 Preparation Method: EPA 7470								
Mercury	ND	ug/L	0.20	1	01/09/17 15:19	01/09/17 20:32	7439-97-6						
7470 Mercury, Dissolved (LF)					Analytical Method: EPA 7470 Preparation Method: EPA 7470								
Mercury, Dissolved	ND	ug/L	0.20	1	01/10/17 12:30	01/10/17 17:28	7439-97-6						
8270 MSSV PAH by SIM SEP					Analytical Method: EPA 8270 by SIM Preparation Method: EPA 3510								
Acenaphthene	ND	ug/L	0.10	1	01/06/17 09:20	01/10/17 13:40	83-32-9						
Acenaphthylene	ND	ug/L	0.10	1	01/06/17 09:20	01/10/17 13:40	208-96-8						
Anthracene	ND	ug/L	0.10	1	01/06/17 09:20	01/10/17 13:40	120-12-7						
Benzo(a)anthracene	ND	ug/L	0.10	1	01/06/17 09:20	01/10/17 13:40	56-55-3						
Benzo(a)pyrene	ND	ug/L	0.10	1	01/06/17 09:20	01/10/17 13:40	50-32-8						
Benzo(b)fluoranthene	ND	ug/L	0.10	1	01/06/17 09:20	01/10/17 13:40	205-99-2						
Benzo(g,h,i)perylene	ND	ug/L	0.10	1	01/06/17 09:20	01/10/17 13:40	191-24-2						
Benzo(k)fluoranthene	ND	ug/L	0.10	1	01/06/17 09:20	01/10/17 13:40	207-08-9						
Chrysene	ND	ug/L	0.10	1	01/06/17 09:20	01/10/17 13:40	218-01-9						
Dibenz(a,h)anthracene	ND	ug/L	0.10	1	01/06/17 09:20	01/10/17 13:40	53-70-3						
Fluoranthene	ND	ug/L	0.10	1	01/06/17 09:20	01/10/17 13:40	206-44-0						
Fluorene	ND	ug/L	0.10	1	01/06/17 09:20	01/10/17 13:40	86-73-7						
Indeno(1,2,3-cd)pyrene	ND	ug/L	0.10	1	01/06/17 09:20	01/10/17 13:40	193-39-5						
2-Methylnaphthalene	ND	ug/L	0.10	1	01/06/17 09:20	01/10/17 13:40	91-57-6						
Naphthalene	ND	ug/L	0.10	1	01/06/17 09:20	01/10/17 13:40	91-20-3						
Phenanthrene	ND	ug/L	0.10	1	01/06/17 09:20	01/10/17 13:40	85-01-8						
Pyrene	ND	ug/L	0.10	1	01/06/17 09:20	01/10/17 13:40	129-00-0						
Surrogates													
2-Fluorobiphenyl (S)	99	%	25-150	1	01/06/17 09:20	01/10/17 13:40	321-60-8						
Terphenyl-d14 (S)	100	%	25-150	1	01/06/17 09:20	01/10/17 13:40	1718-51-0						
8260 MSV Low Level					Analytical Method: EPA 5030B/8260								
Acetone	16.4	ug/L	4.0	1		01/06/17 13:28	67-64-1	C9					
Benzene	ND	ug/L	0.50	1		01/06/17 13:28	71-43-2						
Bromodichloromethane	ND	ug/L	0.50	1		01/06/17 13:28	75-27-4						
Bromoform	ND	ug/L	0.50	1		01/06/17 13:28	75-25-2						
Bromomethane	ND	ug/L	0.50	1		01/06/17 13:28	74-83-9						
2-Butanone (MEK)	ND	ug/L	2.0	1		01/06/17 13:28	78-93-3						

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ANALYTICAL RESULTS



Project: PUMA TERMINAL MW-SAMPLING
Pace Project No.: 2048198

Sample: MW-EB106 Lab ID: 2048198008 Collected: 01/03/17 14:28 Received: 01/06/17 13:28 Water
Parameters Results Units Report Limit DF Prepared CAS No. Qual

8260 MSV Low Level

Analytical Method: EPA 5030B/8260

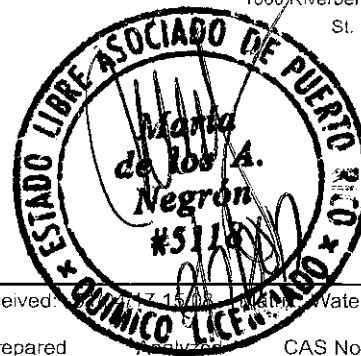
Parameters	Results	Units	Report Limit	DF	Prepared	CAS No.	Qual
Carbon disulfide	ND	ug/L	1.0	1	01/06/17 13:28	75-15-0	L3
Carbon tetrachloride	ND	ug/L	0.50	1	01/06/17 13:28	56-23-5	
Chlorobenzene	ND	ug/L	0.50	1	01/06/17 13:28	108-90-7	
Chloroethane	ND	ug/L	0.50	1	01/06/17 13:28	75-00-3	
Chloroform	ND	ug/L	0.50	1	01/06/17 13:28	67-66-3	
Chloromethane	ND	ug/L	0.50	1	01/06/17 13:28	74-87-3	
1,2-Dibromo-3-chloropropane	ND	ug/L	0.20	1	01/06/17 13:28	96-12-8	
Dibromochloromethane	ND	ug/L	0.50	1	01/06/17 13:28	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	1	01/06/17 13:28	106-93-4	
Dichlorodifluoromethane	ND	ug/L	1.0	1	01/06/17 13:28	75-71-8	
1,1-Dichloroethane	ND	ug/L	0.50	1	01/06/17 13:28	75-34-3	
1,2-Dichloroethane	ND	ug/L	0.50	1	01/06/17 13:28	107-06-2	
1,1-Dichloroethene	ND	ug/L	0.50	1	01/06/17 13:28	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	1	01/06/17 13:28	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	0.50	1	01/06/17 13:28	156-60-5	
1,2-Dichloropropane	ND	ug/L	0.50	1	01/06/17 13:28	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	0.50	1	01/06/17 13:28	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	0.50	1	01/06/17 13:28	10061-02-6	
Ethylbenzene	ND	ug/L	0.50	1	01/06/17 13:28	100-41-4	
2-Hexanone	ND	ug/L	1.0	1	01/06/17 13:28	591-78-6	
Isopropylbenzene (Cumene)	ND	ug/L	1.0	1	01/06/17 13:28	98-82-8	
Methyl acetate	ND	ug/L	2.0	1	01/06/17 13:28	79-20-9	
Methylene Chloride	ND	ug/L	0.50	1	01/06/17 13:28	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	1.0	1	01/06/17 13:28	108-10-1	
Methyl-tert-butyl ether	4.3	ug/L	0.50	1	01/06/17 13:28	1634-04-4	
Styrene	ND	ug/L	1.0	1	01/06/17 13:28	100-42-5	
1,1,2,2-Tetrachloroethane	ND	ug/L	0.50	1	01/06/17 13:28	79-34-5	
Tetrachloroethene	ND	ug/L	0.50	1	01/06/17 13:28	127-18-4	
Toluene	ND	ug/L	0.50	1	01/06/17 13:28	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	0.50	1	01/06/17 13:28	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	0.50	1	01/06/17 13:28	79-00-5	
Trichloroethene	ND	ug/L	0.50	1	01/06/17 13:28	79-01-6	
Trichlorofluoromethane	ND	ug/L	0.50	1	01/06/17 13:28	75-69-4	
Vinyl chloride	ND	ug/L	0.50	1	01/06/17 13:28	75-01-4	
m&p-Xylene	ND	ug/L	2.0	1	01/06/17 13:28	179601-23-1	
o-Xylene	ND	ug/L	1.0	1	01/06/17 13:28	95-47-6	
Surrogates							
Dibromofluoromethane (S)	107	%.	72-126	1	01/06/17 13:28	1868-53-7	
4-Bromofluorobenzene (S)	97	%.	68-124	1	01/06/17 13:28	460-00-4	
Toluene-d8 (S)	99	%.	79-119	1	01/06/17 13:28	2037-26-5	

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ANALYTICAL RESULTS

Project: PUMA TERMINAL MW-SAMPLING
Pace Project No.: 2048198



Sample:	Lab ID:	Collected:	Received:	Prepared:	CAS No.	Qual	
MW-EB107	2048198009	01/03/17 15:11	01/10/17 15:32	01/10/17 15:32	7440-38-2	Water	
Parameters	Results	Units	Report Limit	DF	Prepared	CAS No.	Qual
8015M DRO/ORO Organics							
Analytical Method: EPA 8015B Modified		Preparation Method: EPA 3535					
Diesel Range Organic (C10-C28)	ND	mg/L	0.25	1	01/06/17 07:40 01/11/17 22:34		
Oil Range Organics (>C28-C40)	ND	mg/L	0.50	1	01/06/17 07:40 01/11/17 22:34		
Surrogates							
n-Pentacosane (S)	48	%	16-137	1	01/06/17 07:40 01/11/17 22:34	629-99-2	
o-Terphenyl (S)	51	%	10-121	1	01/06/17 07:40 01/11/17 22:34	84-15-1	
8021 GCV BTEX, MTBE, GRO							
Analytical Method: EPA 8015/8021							
Gasoline Range Organics	ND	ug/L	50.0	1	01/12/17 21:11		
Surrogates							
4-Bromofluorobenzene (S)	85	%	44-148	1	01/12/17 21:11	460-00-4	
6020 MET ICPMS							
Analytical Method: EPA 6020		Preparation Method: EPA 3010					
Arsenic	ND	mg/L	0.0010	1	01/09/17 15:32 01/13/17 22:23	7440-38-2	
Chromium	0.0013	mg/L	0.0010	1	01/09/17 15:32 01/13/17 22:23	7440-47-3	
Lead	ND	mg/L	0.0010	1	01/09/17 15:32 01/13/17 22:23	7439-92-1	
Vanadium	ND	mg/L	0.0050	1	01/09/17 15:32 01/13/17 22:23	7440-62-2	
6020 MET ICPMS, Dissolved (LF)							
Analytical Method: EPA 6020		Preparation Method: EPA 3005A					
Arsenic, Dissolved	ND	ug/L	1.0	1	01/10/17 11:44 01/13/17 23:54	7440-38-2	
Chromium, Dissolved	ND	ug/L	1.0	1	01/10/17 11:44 01/13/17 23:54	7440-47-3	
Lead, Dissolved	ND	ug/L	1.0	1	01/10/17 11:44 01/13/17 23:54	7439-92-1	
Vanadium, Dissolved	ND	ug/L	5.0	1	01/10/17 11:44 01/13/17 23:54	7440-62-2	
7470 Mercury							
Analytical Method: EPA 7470		Preparation Method: EPA 7470					
Mercury	ND	ug/L	0.20	1	01/09/17 15:19 01/09/17 20:34	7439-97-6	
7470 Mercury, Dissolved (LF)							
Analytical Method: EPA 7470		Preparation Method: EPA 7470					
Mercury, Dissolved	ND	ug/L	0.20	1	01/10/17 12:30 01/10/17 17:30	7439-97-6	
8270 MSSV PAH by SIM SEP							
Analytical Method: EPA 8270 by SIM		Preparation Method: EPA 3510					
Acenaphthene	ND	ug/L	0.10	1	01/06/17 09:20 01/10/17 14:00	83-32-9	
Acenaphthylene	ND	ug/L	0.10	1	01/06/17 09:20 01/10/17 14:00	208-96-8	
Anthracene	ND	ug/L	0.10	1	01/06/17 09:20 01/10/17 14:00	120-12-7	
Benzo(a)anthracene	ND	ug/L	0.10	1	01/06/17 09:20 01/10/17 14:00	56-55-3	
Benzo(a)pyrene	ND	ug/L	0.10	1	01/06/17 09:20 01/10/17 14:00	50-32-8	
Benzo(b)fluoranthene	ND	ug/L	0.10	1	01/06/17 09:20 01/10/17 14:00	205-99-2	
Benzo(g,h,i)perylene	ND	ug/L	0.10	1	01/06/17 09:20 01/10/17 14:00	191-24-2	
Benzo(k)fluoranthene	ND	ug/L	0.10	1	01/06/17 09:20 01/10/17 14:00	207-08-9	
Chrysene	ND	ug/L	0.10	1	01/06/17 09:20 01/10/17 14:00	218-01-9	
Dibenz(a,h)anthracene	ND	ug/L	0.10	1	01/06/17 09:20 01/10/17 14:00	53-70-3	
Fluoranthene	ND	ug/L	0.10	1	01/06/17 09:20 01/10/17 14:00	206-44-0	
Fluorene	ND	ug/L	0.10	1	01/06/17 09:20 01/10/17 14:00	86-73-7	
Indeno(1,2,3-cd)pyrene	ND	ug/L	0.10	1	01/06/17 09:20 01/10/17 14:00	193-39-5	
2-Methylnaphthalene	ND	ug/L	0.10	1	01/06/17 09:20 01/10/17 14:00	91-57-6	
Naphthalene	ND	ug/L	0.10	1	01/06/17 09:20 01/10/17 14:00	91-20-3	
Phenanthrene	ND	ug/L	0.10	1	01/06/17 09:20 01/10/17 14:00	85-01-8	

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ANALYTICAL RESULTS



Project: PUMA TERMINAL MW-SAMPLING
Pace Project No.: 2048198

Sample: MW-EB107	Lab ID: 2048198009	Collected: 01/03/17 15:11	Received: 01/04/17 15:00	Matrix: Water			
Parameters	Results	Units	Report Limit	DF	Prepared	Analysis No.	Qual

8270 MSSV PAH by SIM SEP

Analytical Method: EPA 8270 by SIM Preparation Method: EPA 3510

Pyrene	ND	ug/L	0.10	1	01/06/17 09:20	01/10/17 14:00	129-00-0
Surrogates							
2-Fluorobiphenyl (S)	99	%	25-150	1	01/06/17 09:20	01/10/17 14:00	321-60-8
Terphenyl-d14 (S)	100	%	25-150	1	01/06/17 09:20	01/10/17 14:00	1718-51-0

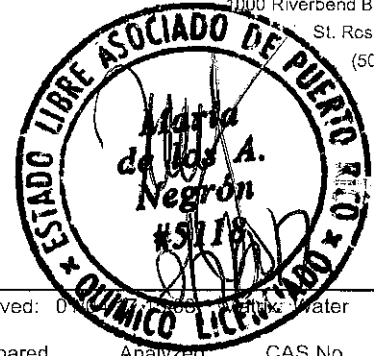
8260 MSV Low Level

Analytical Method: EPA 5030B/8260

Acetone	ND	ug/L	4.0	1	01/06/17 13:46	67-64-1	
Benzene	ND	ug/L	0.50	1	01/06/17 13:46	71-43-2	
Bromodichloromethane	ND	ug/L	0.50	1	01/06/17 13:46	75-27-4	
Bromoform	ND	ug/L	0.50	1	01/06/17 13:46	75-25-2	
Bromomethane	ND	ug/L	0.50	1	01/06/17 13:46	74-83-9	
2-Butanone (MEK)	ND	ug/L	2.0	1	01/06/17 13:46	78-93-3	
Carbon disulfide	ND	ug/L	1.0	1	01/06/17 13:46	75-15-0	L3
Carbon tetrachloride	ND	ug/L	0.50	1	01/06/17 13:46	56-23-5	
Chlorobenzene	ND	ug/L	0.50	1	01/06/17 13:46	108-90-7	
Chloroethane	ND	ug/L	0.50	1	01/06/17 13:46	75-00-3	
Chloroform	ND	ug/L	0.50	1	01/06/17 13:46	67-66-3	
Chloromethane	ND	ug/L	0.50	1	01/06/17 13:46	74-87-3	
1,2-Dibromo-3-chloropropane	ND	ug/L	0.20	1	01/06/17 13:46	96-12-8	
Dibromochloromethane	ND	ug/L	0.50	1	01/06/17 13:46	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	1	01/06/17 13:46	106-93-4	
Dichlorodifluoromethane	ND	ug/L	1.0	1	01/06/17 13:46	75-71-8	
1,1-Dichloroethane	ND	ug/L	0.50	1	01/06/17 13:46	75-34-3	
1,2-Dichloroethane	0.61	ug/L	0.50	1	01/06/17 13:46	107-06-2	
1,1-Dichloroethene	ND	ug/L	0.50	1	01/06/17 13:46	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	1	01/06/17 13:46	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	0.50	1	01/06/17 13:46	156-60-5	
1,2-Dichloropropane	ND	ug/L	0.50	1	01/06/17 13:46	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	0.50	1	01/06/17 13:46	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	0.50	1	01/06/17 13:46	10061-02-6	
Ethylbenzene	ND	ug/L	0.50	1	01/06/17 13:46	100-41-4	
2-Hexanone	ND	ug/L	1.0	1	01/06/17 13:46	591-78-6	
Isopropylbenzene (Cumene)	ND	ug/L	1.0	1	01/06/17 13:46	98-82-8	
Methyl acetate	ND	ug/L	2.0	1	01/06/17 13:46	79-20-9	
Methylene Chloride	ND	ug/L	0.50	1	01/06/17 13:46	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	1.0	1	01/06/17 13:46	108-10-1	
Methyl-tert-butyl ether	1.6	ug/L	0.50	1	01/06/17 13:46	1634-04-4	
Styrene	ND	ug/L	1.0	1	01/06/17 13:46	100-42-5	
1,1,2,2-Tetrachloroethane	ND	ug/L	0.50	1	01/06/17 13:46	79-34-5	
Tetrachloroethene	ND	ug/L	0.50	1	01/06/17 13:46	127-18-4	
Toluene	ND	ug/L	0.50	1	01/06/17 13:46	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	0.50	1	01/06/17 13:46	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	0.50	1	01/06/17 13:46	79-00-5	
Trichloroethene	ND	ug/L	0.50	1	01/06/17 13:46	79-01-6	
Trichlorofluoromethane	ND	ug/L	0.50	1	01/06/17 13:46	75-69-4	
Vinyl chloride	ND	ug/L	0.50	1	01/06/17 13:46	75-01-4	
m&p-Xylene	ND	ug/L	2.0	1	01/06/17 13:46	179601-23-1	

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ANALYTICAL RESULTS

Project: PUMA TERMINAL MW-SAMPLING
Pace Project No.: 2048198

Sample:	Lab ID:	Collected:	Received:	Matrix:				
Sample: MW-EB107	Lab ID: 2048198009	Collected: 01/03/17 15:11	Received: 01/06/17 13:46	Matrix: Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV Low Level Analytical Method: EPA 5030B/8260								
o-Xylene	ND	ug/L	1.0	1		01/06/17 13:46	95-47-6	
Surrogates								
Dibromofluoromethane (S)	109	%	72-126	1		01/06/17 13:46	1868-53-7	
4-Bromofluorobenzene (S)	97	%	68-124	1		01/06/17 13:46	460-00-4	
Toluene-d8 (S)	100	%	79-119	1		01/06/17 13:46	2037-26-5	
Sample: MW-EB108 Lab ID: 2048198010 Collected: 01/03/17 16:01 Received: 01/04/17 15:08 Matrix: Water								
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8015M DRO/ORO Organics Analytical Method: EPA 8015B Modified Preparation Method: EPA 3535								
Diesel Range Organic (C10-C28)	ND	mg/L	0.25	1	01/06/17 07:40	01/11/17 23:02		
Oil Range Organics (>C28-C40)	ND	mg/L	0.50	1	01/06/17 07:40	01/11/17 23:02		
Surrogates								
n-Pentacosane (S)	51	%	16-137	1	01/06/17 07:40	01/11/17 23:02	629-99-2	
o-Terphenyl (S)	55	%	10-121	1	01/06/17 07:40	01/11/17 23:02	84-15-1	
8021 GCV BTEX, MTBE, GRO Analytical Method: EPA 8015/8021								
Gasoline Range Organics	ND	ug/L	50.0	1		01/12/17 21:37		
Surrogates								
4-Bromofluorobenzene (S)	86	%	44-148	1		01/12/17 21:37	460-00-4	
6020 MET ICPMS Analytical Method: EPA 6020 Preparation Method: EPA 3010								
Arsenic	ND	mg/L	0.0010	1	01/09/17 15:32	01/13/17 22:27	7440-38-2	
Chromium	ND	mg/L	0.0010	1	01/09/17 15:32	01/13/17 22:27	7440-47-3	
Lead	ND	mg/L	0.0010	1	01/09/17 15:32	01/13/17 22:27	7439-92-1	
Vanadium	ND	mg/L	0.0050	1	01/09/17 15:32	01/13/17 22:27	7440-62-2	
6020 MET ICPMS, Dissolved (LF) Analytical Method: EPA 6020 Preparation Method: EPA 3005A								
Arsenic, Dissolved	ND	ug/L	1.0	1	01/10/17 11:44	01/13/17 23:58	7440-38-2	
Chromium, Dissolved	ND	ug/L	1.0	1	01/10/17 11:44	01/13/17 23:58	7440-47-3	
Lead, Dissolved	ND	ug/L	1.0	1	01/10/17 11:44	01/13/17 23:58	7439-92-1	
Vanadium, Dissolved	ND	ug/L	5.0	1	01/10/17 11:44	01/13/17 23:58	7440-62-2	
7470 Mercury Analytical Method: EPA 7470 Preparation Method: EPA 7470								
Mercury	ND	ug/L	0.20	1	01/09/17 15:19	01/09/17 20:36	7439-97-6	
7470 Mercury, Dissolved (LF) Analytical Method: EPA 7470 Preparation Method: EPA 7470								
Mercury, Dissolved	ND	ug/L	0.20	1	01/10/17 12:30	01/10/17 17:32	7439-97-6	
8270 MSSV PAH by SIM SEP Analytical Method: EPA 8270 by SIM Preparation Method: EPA 3510								
Acenaphthene	ND	ug/L	0.10	1	01/06/17 09:20	01/10/17 14:20	83-32-9	
Acenaphthylene	ND	ug/L	0.10	1	01/06/17 09:20	01/10/17 14:20	208-96-8	
Anthracene	ND	ug/L	0.10	1	01/06/17 09:20	01/10/17 14:20	120-12-7	
Benzo(a)anthracene	ND	ug/L	0.10	1	01/06/17 09:20	01/10/17 14:20	56-55-3	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: PUMA TERMINAL MW-SAMPLING
Pace Project No.: 2048198



Sample: MW-EB108 Lab ID: 2048198010 Collected: 01/03/17 16:01 Received: 01/04/17 14:08 Method: Water
Parameters Results Units Report Limit DF Preparation Date Time CAS No. Qual

8270 MSSV PAH by SIM SEP

Analytical Method: EPA 8270 by SIM Preparation Method: EPA 3510

Parameters	Results	Units	Report Limit	DF	Preparation Date	Time	CAS No.	Qual
Benzo(a)pyrene	ND	ug/L	0.10	1	01/06/17 09:20	01/10/17 14:20	50-32-8	
Benzo(b)fluoranthene	ND	ug/L	0.10	1	01/06/17 09:20	01/10/17 14:20	205-99-2	
Benzo(g,h,i)perylene	ND	ug/L	0.10	1	01/06/17 09:20	01/10/17 14:20	191-24-2	
Benzo(k)fluoranthene	ND	ug/L	0.10	1	01/06/17 09:20	01/10/17 14:20	207-08-9	
Chrysene	ND	ug/L	0.10	1	01/06/17 09:20	01/10/17 14:20	218-01-9	
Dibenz(a,h)anthracene	ND	ug/L	0.10	1	01/06/17 09:20	01/10/17 14:20	53-70-3	
Fluoranthene	ND	ug/L	0.10	1	01/06/17 09:20	01/10/17 14:20	206-44-0	
Fluorene	ND	ug/L	0.10	1	01/06/17 09:20	01/10/17 14:20	86-73-7	
Indeno(1,2,3-cd)pyrene	ND	ug/L	0.10	1	01/06/17 09:20	01/10/17 14:20	193-39-5	
2-Methylnaphthalene	ND	ug/L	0.10	1	01/06/17 09:20	01/10/17 14:20	91-57-6	
Naphthalene	ND	ug/L	0.10	1	01/06/17 09:20	01/10/17 14:20	91-20-3	
Phenanthrene	ND	ug/L	0.10	1	01/06/17 09:20	01/10/17 14:20	85-01-8	
Pyrene	ND	ug/L	0.10	1	01/06/17 09:20	01/10/17 14:20	129-00-0	
Surrogates								
2-Fluorobiphenyl (S)	100	%.	25-150	1	01/06/17 09:20	01/10/17 14:20	321-60-8	
Terphenyl-d14 (S)	102	%.	25-150	1	01/06/17 09:20	01/10/17 14:20	1718-51-0	

8260 MSV Low Level

Analytical Method: EPA 5030B/8260

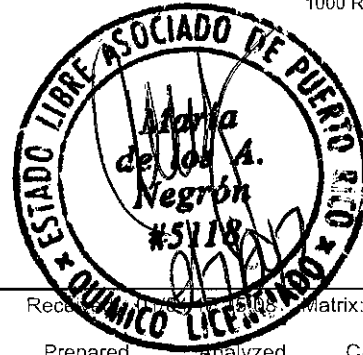
Parameters	Results	Units	Report Limit	DF	Preparation Date	Time	CAS No.	Qual
Acetone	5.9	ug/L	4.0	1	01/06/17 14:03	01/10/17 14:03	67-64-1	C9
Benzene	ND	ug/L	0.50	1	01/06/17 14:03	01/10/17 14:03	71-43-2	
Bromodichloromethane	ND	ug/L	0.50	1	01/06/17 14:03	01/10/17 14:03	75-27-4	
Bromoform	ND	ug/L	0.50	1	01/06/17 14:03	01/10/17 14:03	75-25-2	
Bromomethane	ND	ug/L	0.50	1	01/06/17 14:03	01/10/17 14:03	74-83-9	
2-Butanone (MEK)	ND	ug/L	2.0	1	01/06/17 14:03	01/10/17 14:03	78-93-3	
Carbon disulfide	ND	ug/L	1.0	1	01/06/17 14:03	01/10/17 14:03	75-15-0	L3
Carbon tetrachloride	ND	ug/L	0.50	1	01/06/17 14:03	01/10/17 14:03	56-23-5	
Chlorobenzene	ND	ug/L	0.50	1	01/06/17 14:03	01/10/17 14:03	108-90-7	
Chloroethane	ND	ug/L	0.50	1	01/06/17 14:03	01/10/17 14:03	75-00-3	
Chloroform	ND	ug/L	0.50	1	01/06/17 14:03	01/10/17 14:03	67-66-3	
Chloromethane	ND	ug/L	0.50	1	01/06/17 14:03	01/10/17 14:03	74-87-3	
1,2-Dibromo-3-chloropropane	ND	ug/L	0.20	1	01/06/17 14:03	01/10/17 14:03	96-12-8	
Dibromochloromethane	ND	ug/L	0.50	1	01/06/17 14:03	01/10/17 14:03	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	1	01/06/17 14:03	01/10/17 14:03	106-93-4	
Dichlorodifluoromethane	ND	ug/L	1.0	1	01/06/17 14:03	01/10/17 14:03	75-71-8	
1,1-Dichloroethane	ND	ug/L	0.50	1	01/06/17 14:03	01/10/17 14:03	75-34-3	
1,2-Dichloroethane	ND	ug/L	0.50	1	01/06/17 14:03	01/10/17 14:03	107-06-2	
1,1-Dichloroethene	ND	ug/L	0.50	1	01/06/17 14:03	01/10/17 14:03	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	1	01/06/17 14:03	01/10/17 14:03	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	0.50	1	01/06/17 14:03	01/10/17 14:03	156-60-5	
1,2-Dichloropropane	ND	ug/L	0.50	1	01/06/17 14:03	01/10/17 14:03	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	0.50	1	01/06/17 14:03	01/10/17 14:03	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	0.50	1	01/06/17 14:03	01/10/17 14:03	10061-02-6	
Ethylbenzene	ND	ug/L	0.50	1	01/06/17 14:03	01/10/17 14:03	100-41-4	
2-Hexanone	ND	ug/L	1.0	1	01/06/17 14:03	01/10/17 14:03	591-78-6	
Isopropylbenzene (Cumene)	ND	ug/L	1.0	1	01/06/17 14:03	01/10/17 14:03	98-82-8	
Methyl acetate	ND	ug/L	2.0	1	01/06/17 14:03	01/10/17 14:03	79-20-9	
Methylene Chloride	ND	ug/L	0.50	1	01/06/17 14:03	01/10/17 14:03	75-09-2	

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ANALYTICAL RESULTS

Project: PUMA TERMINAL MW-SAMPLING
Pace Project No.: 2048198



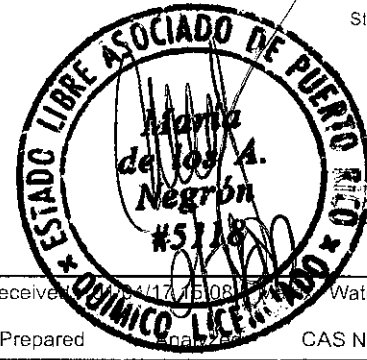
Sample: MW-EB108	Lab ID: 2048198010	Collected: 01/03/17 16:01	Received: 01/04/17 15:08	Matrix: Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV Low Level		Analytical Method: EPA 5030B/8260						
4-Methyl-2-pentanone (MIBK)	ND	ug/L	1.0	1		01/06/17 14:03	108-10-1	
Methyl-tert-butyl ether	ND	ug/L	0.50	1		01/06/17 14:03	1634-04-4	
Styrene	ND	ug/L	1.0	1		01/06/17 14:03	100-42-5	
1,1,2,2-Tetrachloroethane	ND	ug/L	0.50	1		01/06/17 14:03	79-34-5	
Tetrachloroethene	ND	ug/L	0.50	1		01/06/17 14:03	127-18-4	
Toluene	ND	ug/L	0.50	1		01/06/17 14:03	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	0.50	1		01/06/17 14:03	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	0.50	1		01/06/17 14:03	79-00-5	
Trichloroethene	ND	ug/L	0.50	1		01/06/17 14:03	79-01-6	
Trichlorofluoromethane	ND	ug/L	0.50	1		01/06/17 14:03	75-69-4	
Vinyl chloride	ND	ug/L	0.50	1		01/06/17 14:03	75-01-4	
m&p-Xylene	ND	ug/L	2.0	1		01/06/17 14:03	179601-23-1	
o-Xylene	ND	ug/L	1.0	1		01/06/17 14:03	95-47-6	
Surrogates								
Dibromofluoromethane (S)	107	%	72-126	1		01/06/17 14:03	1868-53-7	
4-Bromofluorobenzene (S)	97	%	68-124	1		01/06/17 14:03	460-00-4	
Toluene-d8 (S)	101	%	79-119	1		01/06/17 14:03	2037-26-5	

Sample: FB-010317	Lab ID: 2048198011	Collected: 01/03/17 16:10	Received: 01/04/17 15:08	Matrix: Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8021 GCV BTEX, MTBE, GRO		Analytical Method: EPA 8015/8021						
Gasoline Range Organics	ND	ug/L	50.0	1		01/12/17 19:00		
Surrogates								
4-Bromofluorobenzene (S)	86	%	44-148	1		01/12/17 19:00	460-00-4	
8260 MSV Low Level		Analytical Method: EPA 5030B/8260						
Acetone	12.8	ug/L	4.0	1		01/06/17 14:21	67-64-1	C9
Benzene	ND	ug/L	0.50	1		01/06/17 14:21	71-43-2	
Bromodichloromethane	ND	ug/L	0.50	1		01/06/17 14:21	75-27-4	
Bromoform	ND	ug/L	0.50	1		01/06/17 14:21	75-25-2	
Bromomethane	ND	ug/L	0.50	1		01/06/17 14:21	74-83-9	
2-Butanone (MEK)	ND	ug/L	2.0	1		01/06/17 14:21	78-93-3	
Carbon disulfide	ND	ug/L	1.0	1		01/06/17 14:21	75-15-0	L3
Carbon tetrachloride	ND	ug/L	0.50	1		01/06/17 14:21	56-23-5	
Chlorobenzene	ND	ug/L	0.50	1		01/06/17 14:21	108-90-7	
Chloroethane	ND	ug/L	0.50	1		01/06/17 14:21	75-00-3	
Chloroform	ND	ug/L	0.50	1		01/06/17 14:21	67-66-3	
Chloromethane	ND	ug/L	0.50	1		01/06/17 14:21	74-87-3	
1,2-Dibromo-3-chloropropane	ND	ug/L	0.20	1		01/06/17 14:21	96-12-8	
Dibromochloromethane	ND	ug/L	0.50	1		01/06/17 14:21	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	1		01/06/17 14:21	106-93-4	
Dichlorodifluoromethane	ND	ug/L	1.0	1		01/06/17 14:21	75-71-8	
1,1-Dichloroethane	ND	ug/L	0.50	1		01/06/17 14:21	75-34-3	
1,2-Dichloroethane	ND	ug/L	0.50	1		01/06/17 14:21	107-06-2	

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ANALYTICAL RESULTS



Project: PUMA TERMINAL MW-SAMPLING
Pace Project No.: 2048198

Sample: FB-010317 Lab ID: 2048198011 Collected: 01/03/17 16:10 Received: 01/17/17 15:08 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV Low Level		Analytical Method: EPA 5030B/8260						
1,1-Dichloroethene	ND	ug/L	0.50	1		01/06/17 14:21	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	1		01/06/17 14:21	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	0.50	1		01/06/17 14:21	156-60-5	
1,2-Dichloropropane	ND	ug/L	0.50	1		01/06/17 14:21	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	0.50	1		01/06/17 14:21	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	0.50	1		01/06/17 14:21	10061-02-6	
Ethylbenzene	ND	ug/L	0.50	1		01/06/17 14:21	100-41-4	
2-Hexanone	ND	ug/L	1.0	1		01/06/17 14:21	591-78-6	
Isopropylbenzene (Cumene)	ND	ug/L	1.0	1		01/06/17 14:21	98-82-8	
Methyl acetate	ND	ug/L	2.0	1		01/06/17 14:21	79-20-9	
Methylene Chloride	ND	ug/L	0.50	1		01/06/17 14:21	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	1.0	1		01/06/17 14:21	108-10-1	
Methyl-tert-butyl ether	ND	ug/L	0.50	1		01/06/17 14:21	1634-04-4	
Styrene	ND	ug/L	1.0	1		01/06/17 14:21	100-42-5	
1,1,2,2-Tetrachloroethane	ND	ug/L	0.50	1		01/06/17 14:21	79-34-5	
Tetrachloroethene	ND	ug/L	0.50	1		01/06/17 14:21	127-18-4	
Toluene	ND	ug/L	0.50	1		01/06/17 14:21	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	0.50	1		01/06/17 14:21	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	0.50	1		01/06/17 14:21	79-00-5	
Trichloroethene	ND	ug/L	0.50	1		01/06/17 14:21	79-01-6	
Trichlorofluoromethane	ND	ug/L	0.50	1		01/06/17 14:21	75-69-4	
Vinyl chloride	ND	ug/L	0.50	1		01/06/17 14:21	75-01-4	
m&p-Xylene	ND	ug/L	2.0	1		01/06/17 14:21	179601-23-1	
o-Xylene	ND	ug/L	1.0	1		01/06/17 14:21	95-47-6	
Surrogates								
Dibromofluoromethane (S)	105	%.	72-126	1		01/06/17 14:21	1868-53-7	
4-Bromofluorobenzene (S)	98	%.	68-124	1		01/06/17 14:21	460-00-4	
Toluene-d8 (S)	100	%.	79-119	1		01/06/17 14:21	2037-26-5	

Sample: TB-010417 Lab ID: 2048198012 Collected: 01/04/17 00:00 Received: 01/04/17 15:08 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8021 GCV BTEX, MTBE, GRO		Analytical Method: EPA 8015/8021						
Gasoline Range Organics	ND	ug/L	50.0	1		01/12/17 22:03		
Surrogates								
4-Bromofluorobenzene (S)	87	%.	44-148	1		01/12/17 22:03	460-00-4	
8260 MSV Low Level		Analytical Method: EPA 5030B/8260						
Acetone	169	ug/L	4.0	1		01/06/17 14:39	67-64-1	
Benzene	ND	ug/L	0.50	1		01/06/17 14:39	71-43-2	
Bromodichloromethane	ND	ug/L	0.50	1		01/06/17 14:39	75-27-4	
Bromoform	ND	ug/L	0.50	1		01/06/17 14:39	75-25-2	
Bromomethane	ND	ug/L	0.50	1		01/06/17 14:39	74-83-9	
2-Butanone (MEK)	ND	ug/L	2.0	1		01/06/17 14:39	78-93-3	
Carbon disulfide	ND	ug/L	1.0	1		01/06/17 14:39	75-15-0	L3

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ANALYTICAL RESULTS

Project: PUMA TERMINAL MW-SAMPLING
Pace Project No.: 2048198

Sample:	Lab ID:	Collected:	Received:	Matrix:				
Sample: TB-010417	Lab ID: 2048198012	Collected: 01/04/17 00:00	Received: 01/04/17 15:08	Matrix: Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV Low Level		Analytical Method: EPA 5030B/8260						
Carbon tetrachloride	ND	ug/L	0.50	1		01/06/17 14:39	56-23-5	
Chlorobenzene	ND	ug/L	0.50	1		01/06/17 14:39	108-90-7	
Chloroethane	ND	ug/L	0.50	1		01/06/17 14:39	75-00-3	
Chloroform	ND	ug/L	0.50	1		01/06/17 14:39	67-66-3	
Chloromethane	ND	ug/L	0.50	1		01/06/17 14:39	74-87-3	
1,2-Dibromo-3-chloropropane	ND	ug/L	0.20	1		01/06/17 14:39	96-12-8	
Dibromochloromethane	ND	ug/L	0.50	1		01/06/17 14:39	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	1		01/06/17 14:39	106-93-4	
Dichlorodifluoromethane	ND	ug/L	1.0	1		01/06/17 14:39	75-71-8	
1,1-Dichloroethane	ND	ug/L	0.50	1		01/06/17 14:39	75-34-3	
1,2-Dichloroethane	ND	ug/L	0.50	1		01/06/17 14:39	107-06-2	
1,1-Dichloroethene	ND	ug/L	0.50	1		01/06/17 14:39	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	1		01/06/17 14:39	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	0.50	1		01/06/17 14:39	156-60-5	
1,2-Dichloropropane	ND	ug/L	0.50	1		01/06/17 14:39	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	0.50	1		01/06/17 14:39	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	0.50	1		01/06/17 14:39	10061-02-6	
Ethylbenzene	ND	ug/L	0.50	1		01/06/17 14:39	100-41-4	
2-Hexanone	ND	ug/L	1.0	1		01/06/17 14:39	591-78-6	
Isopropylbenzene (Cumene)	ND	ug/L	1.0	1		01/06/17 14:39	98-82-8	
Methyl acetate	ND	ug/L	2.0	1		01/06/17 14:39	79-20-9	
Methylene Chloride	ND	ug/L	0.50	1		01/06/17 14:39	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	1.0	1		01/06/17 14:39	108-10-1	
Methyl-tert-butyl ether	ND	ug/L	0.50	1		01/06/17 14:39	1634-04-4	
Styrene	ND	ug/L	1.0	1		01/06/17 14:39	100-42-5	
1,1,2,2-Tetrachloroethane	ND	ug/L	0.50	1		01/06/17 14:39	79-34-5	
Tetrachloroethene	ND	ug/L	0.50	1		01/06/17 14:39	127-18-4	
Toluene	ND	ug/L	0.50	1		01/06/17 14:39	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	0.50	1		01/06/17 14:39	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	0.50	1		01/06/17 14:39	79-00-5	
Trichloroethene	ND	ug/L	0.50	1		01/06/17 14:39	79-01-6	
Trichlorofluoromethane	ND	ug/L	0.50	1		01/06/17 14:39	75-69-4	
Vinyl chloride	ND	ug/L	0.50	1		01/06/17 14:39	75-01-4	
m&p-Xylene	ND	ug/L	2.0	1		01/06/17 14:39	179601-23-1	
o-Xylene	ND	ug/L	1.0	1		01/06/17 14:39	95-47-6	
Surrogates								
Dibromofluoromethane (S)	108	%	72-126	1		01/06/17 14:39	1868-53-7	
4-Bromofluorobenzene (S)	98	%	68-124	1		01/06/17 14:39	460-00-4	
Toluene-d8 (S)	101	%	79-119	1		01/06/17 14:39	2037-26-5	

Sample:	Lab ID:	Collected:	Received:	Matrix:				
Sample: EB-010417	Lab ID: 2048198013	Collected: 01/04/17 08:58	Received: 01/04/17 15:08	Matrix: Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8015M DRO/ORO Organics		Analytical Method: EPA 8015B Modified Preparation Method: EPA 3535						
Diesel Range Organic (C10-C28)	ND	mg/L	0.25	1	01/06/17 07:40	01/11/17 23:30		

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: PUMA TERMINAL MW-SAMPLING
Pace Project No.: 2048198

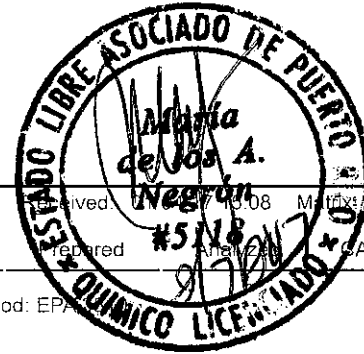


Sample:	Lab ID:	Collected:	Received:	Prepared:	Matrix:	CAS No.	Qual
EB-010417	2048198013	01/04/17 08:58	01/04/17 15:33	01/09/17 15:32	Water		
Parameters	Results	Units	Report Limit	DF	Preparation	CAS No.	Qual
8015M DRO/ORO Organics							
Analytical Method: EPA 8015B Modified Preparation Method: EPA 3535							
Oil Range Organics (>C28-C40)	ND	mg/L	0.50	1	01/06/17 07:40	01/11/17 23:30	
Surrogates							
n-Pentacosane (S)	48	%	16-137	1	01/06/17 07:40	01/11/17 23:30	629-99-2
o-Terphenyl (S)	50	%	10-121	1	01/06/17 07:40	01/11/17 23:30	84-15-1
8021 GCV BTEX, MTBE, GRO							
Analytical Method: EPA 8015/8021							
Gasoline Range Organics	ND	ug/L	50.0	1		01/12/17 22:29	
Surrogates							
4-Bromofluorobenzene (S)	89	%	44-148	1		01/12/17 22:29	460-00-4
6020 MET ICPMS							
Analytical Method: EPA 6020 Preparation Method: EPA 3010							
Arsenic	ND	mg/L	0.0010	1	01/09/17 15:32	01/13/17 22:31	7440-38-2
Chromium	ND	mg/L	0.0010	1	01/09/17 15:32	01/13/17 22:31	7440-47-3
Lead	ND	mg/L	0.0010	1	01/09/17 15:32	01/13/17 22:31	7439-92-1
Vanadium	ND	mg/L	0.0050	1	01/09/17 15:32	01/13/17 22:31	7440-62-2
6020 MET ICPMS, Dissolved (LF)							
Analytical Method: EPA 6020 Preparation Method: EPA 3005A							
Arsenic, Dissolved	ND	ug/L	1.0	1	01/10/17 11:44	01/14/17 00:01	7440-38-2
Chromium, Dissolved	ND	ug/L	1.0	1	01/10/17 11:44	01/14/17 00:01	7440-47-3
Lead, Dissolved	ND	ug/L	1.0	1	01/10/17 11:44	01/14/17 00:01	7439-92-1
Vanadium, Dissolved	ND	ug/L	5.0	1	01/10/17 11:44	01/14/17 00:01	7440-62-2
7470 Mercury							
Analytical Method: EPA 7470 Preparation Method: EPA 7470							
Mercury	ND	ug/L	0.20	1	01/09/17 15:19	01/09/17 20:38	7439-97-6
7470 Mercury, Dissolved (LF)							
Analytical Method: EPA 7470 Preparation Method: EPA 7470							
Mercury, Dissolved	ND	ug/L	0.20	1	01/10/17 12:30	01/10/17 17:34	7439-97-6
8270 MSSV PAH by SIM SEP							
Analytical Method: EPA 8270 by SIM Preparation Method: EPA 3510							
Acenaphthene	ND	ug/L	0.10	1	01/07/17 13:27	01/10/17 17:59	83-32-9
Acenaphthylene	ND	ug/L	0.10	1	01/07/17 13:27	01/10/17 17:59	208-96-8
Anthracene	ND	ug/L	0.10	1	01/07/17 13:27	01/10/17 17:59	120-12-7
Benzo(a)anthracene	ND	ug/L	0.10	1	01/07/17 13:27	01/10/17 17:59	56-55-3
Benzo(a)pyrene	ND	ug/L	0.10	1	01/07/17 13:27	01/10/17 17:59	50-32-8
Benzo(b)fluoranthene	ND	ug/L	0.10	1	01/07/17 13:27	01/10/17 17:59	205-99-2
Benzo(g,h,i)perylene	ND	ug/L	0.10	1	01/07/17 13:27	01/10/17 17:59	191-24-2
Benzo(k)fluoranthene	ND	ug/L	0.10	1	01/07/17 13:27	01/10/17 17:59	207-08-9
Chrysene	ND	ug/L	0.10	1	01/07/17 13:27	01/10/17 17:59	218-01-9
Dibenz(a,h)anthracene	ND	ug/L	0.10	1	01/07/17 13:27	01/10/17 17:59	53-70-3
Fluoranthene	ND	ug/L	0.10	1	01/07/17 13:27	01/10/17 17:59	206-44-0
Fluorene	ND	ug/L	0.10	1	01/07/17 13:27	01/10/17 17:59	86-73-7
Indeno(1,2,3-cd)pyrene	ND	ug/L	0.10	1	01/07/17 13:27	01/10/17 17:59	193-39-5
2-Methylnaphthalene	ND	ug/L	0.10	1	01/07/17 13:27	01/10/17 17:59	91-57-6
Naphthalene	ND	ug/L	0.10	1	01/07/17 13:27	01/10/17 17:59	91-20-3
Phenanthrene	ND	ug/L	0.10	1	01/07/17 13:27	01/10/17 17:59	85-01-8
Pyrene	ND	ug/L	0.10	1	01/07/17 13:27	01/10/17 17:59	129-00-0

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ANALYTICAL RESULTS



Project: PUMA TERMINAL MW-SAMPLING
Pace Project No.: 2048198

Sample: EB-010417	Lab ID: 2048198013	Collected: 01/04/17 08:58	Received: 01/10/17 13:08	Matrix: Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual

8270 MSSV PAH by SIM SEP

Analytical Method: EPA 8270 by SIM Preparation Method: EPA 8270

Surrogates

2-Fluorobiphenyl (S)	104	%	25-150	1	01/07/17 13:27	01/10/17 17:59	321-60-8	
Terphenyl-d14 (S)	103	%	25-150	1	01/07/17 13:27	01/10/17 17:59	1718-51-0	

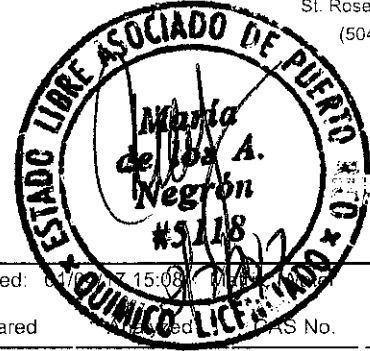
8260 MSV Low Level

Analytical Method: EPA 5030B/8260

Acetone	18.0	ug/L	4.0	1	01/06/17 14:56	67-64-1	C9
Benzene	ND	ug/L	0.50	1	01/06/17 14:56	71-43-2	
Bromodichloromethane	ND	ug/L	0.50	1	01/06/17 14:56	75-27-4	
Bromoform	ND	ug/L	0.50	1	01/06/17 14:56	75-25-2	
Bromomethane	ND	ug/L	0.50	1	01/06/17 14:56	74-83-9	
2-Butanone (MEK)	ND	ug/L	2.0	1	01/06/17 14:56	78-93-3	
Carbon disulfide	ND	ug/L	1.0	1	01/06/17 14:56	75-15-0	L3
Carbon tetrachloride	ND	ug/L	0.50	1	01/06/17 14:56	56-23-5	
Chlorobenzene	ND	ug/L	0.50	1	01/06/17 14:56	108-90-7	
Chloroethane	ND	ug/L	0.50	1	01/06/17 14:56	75-00-3	
Chloroform	ND	ug/L	0.50	1	01/06/17 14:56	67-66-3	
Chloromethane	ND	ug/L	0.50	1	01/06/17 14:56	74-87-3	
1,2-Dibromo-3-chloropropane	ND	ug/L	0.20	1	01/06/17 14:56	96-12-8	
Dibromochloromethane	ND	ug/L	0.50	1	01/06/17 14:56	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	1	01/06/17 14:56	106-93-4	
Dichlorodifluoromethane	ND	ug/L	1.0	1	01/06/17 14:56	75-71-8	
1,1-Dichloroethane	ND	ug/L	0.50	1	01/06/17 14:56	75-34-3	
1,2-Dichloroethane	ND	ug/L	0.50	1	01/06/17 14:56	107-06-2	
1,1-Dichloroethene	ND	ug/L	0.50	1	01/06/17 14:56	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	1	01/06/17 14:56	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	0.50	1	01/06/17 14:56	156-60-5	
1,2-Dichloropropane	ND	ug/L	0.50	1	01/06/17 14:56	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	0.50	1	01/06/17 14:56	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	0.50	1	01/06/17 14:56	10061-02-6	
Ethylbenzene	ND	ug/L	0.50	1	01/06/17 14:56	100-41-4	
2-Hexanone	ND	ug/L	1.0	1	01/06/17 14:56	591-78-6	
Isopropylbenzene (Cumene)	ND	ug/L	1.0	1	01/06/17 14:56	98-82-8	
Methyl acetate	ND	ug/L	2.0	1	01/06/17 14:56	79-20-9	
Methylene Chloride	ND	ug/L	0.50	1	01/06/17 14:56	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	1.0	1	01/06/17 14:56	108-10-1	
Methyl-tert-butyl ether	ND	ug/L	0.50	1	01/06/17 14:56	1634-04-4	
Styrene	ND	ug/L	1.0	1	01/06/17 14:56	100-42-5	
1,1,2,2-Tetrachloroethane	ND	ug/L	0.50	1	01/06/17 14:56	79-34-5	
Tetrachloroethene	ND	ug/L	0.50	1	01/06/17 14:56	127-18-4	
Toluene	ND	ug/L	0.50	1	01/06/17 14:56	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	0.50	1	01/06/17 14:56	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	0.50	1	01/06/17 14:56	79-00-5	
Trichloroethene	ND	ug/L	0.50	1	01/06/17 14:56	79-01-6	
Trichlorofluoromethane	ND	ug/L	0.50	1	01/06/17 14:56	75-69-4	
Vinyl chloride	ND	ug/L	0.50	1	01/06/17 14:56	75-01-4	
m&p-Xylene	ND	ug/L	2.0	1	01/06/17 14:56	179601-23-1	
o-Xylene	ND	ug/L	1.0	1	01/06/17 14:56	95-47-6	

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ANALYTICAL RESULTS

Project: PUMA TERMINAL MW-SAMPLING
Pace Project No.: 2048198

Sample: EB-010417 Lab ID: 2048198013 Collected: 01/04/17 08:58 Received: 01/06/17 15:08
Parameters Results Units Report Limit DF Prepared Analyzed CAS No. Qual

8260 MSV Low Level Analytical Method: EPA 5030B/8260

Surrogates

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
Dibromofluoromethane (S)	108	%	72-126	1	01/06/17 14:56	01/11/17 23:58	1868-53-7	
4-Bromofluorobenzene (S)	98	%	68-124	1	01/06/17 14:56	01/11/17 23:58	460-00-4	
Toluene-d8 (S)	101	%	79-119	1	01/06/17 14:56	01/11/17 23:58	2037-26-5	

Sample: MW-DP1 Lab ID: 2048198014 Collected: 01/04/17 09:36 Received: 01/04/17 15:08 Matrix: Water
Parameters Results Units Report Limit DF Prepared Analyzed CAS No. Qual

8015M DRO/ORO Organics Analytical Method: EPA 8015B Modified Preparation Method: EPA 3535

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
Diesel Range Organic (C10-C28)	ND	mg/L	0.25	1	01/06/17 07:40	01/11/17 23:58		
Oil Range Organics (>C28-C40)	ND	mg/L	0.50	1	01/06/17 07:40	01/11/17 23:58		
Surrogates								
n-Pentacosane (S)	41	%	16-137	1	01/06/17 07:40	01/11/17 23:58	629-99-2	
o-Terphenyl (S)	53	%	10-121	1	01/06/17 07:40	01/11/17 23:58	84-15-1	

8021 GCV BTEX, MTBE, GRO Analytical Method: EPA 8015/8021

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
Gasoline Range Organics	ND	ug/L	50.0	1	01/12/17 22:56	01/12/17 22:56		
Surrogates								
4-Bromofluorobenzene (S)	87	%	44-148	1	01/12/17 22:56	01/12/17 22:56	460-00-4	

6020 MET ICPMS Analytical Method: EPA 6020 Preparation Method: EPA 3010

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
Arsenic	ND	mg/L	0.0010	1	01/09/17 15:32	01/13/17 22:35	7440-38-2	
Chromium	0.0013	mg/L	0.0010	1	01/09/17 15:32	01/13/17 22:35	7440-47-3	
Lead	ND	mg/L	0.0010	1	01/09/17 15:32	01/13/17 22:35	7439-92-1	
Vanadium	ND	mg/L	0.0050	1	01/09/17 15:32	01/13/17 22:35	7440-62-2	

6020 MET ICPMS, Dissolved (LF) Analytical Method: EPA 6020 Preparation Method: EPA 3005A

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
Arsenic, Dissolved	ND	ug/L	1.0	1	01/10/17 11:44	01/14/17 00:05	7440-38-2	
Chromium, Dissolved	ND	ug/L	1.0	1	01/10/17 11:44	01/14/17 00:05	7440-47-3	
Lead, Dissolved	ND	ug/L	1.0	1	01/10/17 11:44	01/14/17 00:05	7439-92-1	
Vanadium, Dissolved	ND	ug/L	5.0	1	01/10/17 11:44	01/14/17 00:05	7440-62-2	

7470 Mercury Analytical Method: EPA 7470 Preparation Method: EPA 7470

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
Mercury	ND	ug/L	0.20	1	01/09/17 15:19	01/09/17 20:40	7439-97-6	

7470 Mercury, Dissolved (LF) Analytical Method: EPA 7470 Preparation Method: EPA 7470

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
Mercury, Dissolved	ND	ug/L	0.20	1	01/10/17 12:30	01/10/17 17:36	7439-97-6	

8270 MSSV PAH by SIM SEP Analytical Method: EPA 8270 by SIM Preparation Method: EPA 3510

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
Acenaphthene	ND	ug/L	0.10	1	01/07/17 13:27	01/10/17 18:19	83-32-9	
Acenaphthylene	ND	ug/L	0.10	1	01/07/17 13:27	01/10/17 18:19	208-96-8	
Anthracene	ND	ug/L	0.10	1	01/07/17 13:27	01/10/17 18:19	120-12-7	
Benzo(a)anthracene	ND	ug/L	0.10	1	01/07/17 13:27	01/10/17 18:19	56-55-3	
Benzo(a)pyrene	ND	ug/L	0.10	1	01/07/17 13:27	01/10/17 18:19	50-32-8	

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ANALYTICAL RESULTS

Project: PUMA TERMINAL MW-SAMPLING
Pace Project No.: 2048198



Sample: MW-DP1 Lab ID: 2048198014 Collected: 01/04/17 09:36 Received: 01/04/17 15:01 Matrix: Water
Parameters Results Units Report Limit DF Prepared Analyzed No. Qual

8270 MSSV PAH by SIM SEP

Analytical Method: EPA 8270 by SIM Preparation Method: EPA 3510

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	No.	Qual
Benzo(b)fluoranthene	ND	ug/L	0.10	1	01/07/17 13:27	01/10/17 18:19	205-99-2	
Benzo(g,h,i)perylene	ND	ug/L	0.10	1	01/07/17 13:27	01/10/17 18:19	191-24-2	
Benzo(k)fluoranthene	ND	ug/L	0.10	1	01/07/17 13:27	01/10/17 18:19	207-08-9	
Chrysene	ND	ug/L	0.10	1	01/07/17 13:27	01/10/17 18:19	218-01-9	
Dibenz(a,h)anthracene	ND	ug/L	0.10	1	01/07/17 13:27	01/10/17 18:19	53-70-3	
Fluoranthene	ND	ug/L	0.10	1	01/07/17 13:27	01/10/17 18:19	206-44-0	
Fluorene	ND	ug/L	0.10	1	01/07/17 13:27	01/10/17 18:19	86-73-7	
Indeno(1,2,3-cd)pyrene	ND	ug/L	0.10	1	01/07/17 13:27	01/10/17 18:19	193-39-5	
2-Methylnaphthalene	ND	ug/L	0.10	1	01/07/17 13:27	01/10/17 18:19	91-57-6	
Naphthalene	ND	ug/L	0.10	1	01/07/17 13:27	01/10/17 18:19	91-20-3	
Phenanthrene	ND	ug/L	0.10	1	01/07/17 13:27	01/10/17 18:19	85-01-8	
Pyrene	ND	ug/L	0.10	1	01/07/17 13:27	01/10/17 18:19	129-00-0	
Surrogates								
2-Fluorobiphenyl (S)	95	%	25-150	1	01/07/17 13:27	01/10/17 18:19	321-60-8	
Terphenyl-d14 (S)	94	%	25-150	1	01/07/17 13:27	01/10/17 18:19	1718-51-0	

8260 MSV Low Level

Analytical Method: EPA 5030B/8260

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	No.	Qual
Acetone	8.2	ug/L	4.0	1		01/06/17 15:14	67-64-1	C9
Benzene	ND	ug/L	0.50	1		01/06/17 15:14	71-43-2	
Bromodichloromethane	ND	ug/L	0.50	1		01/06/17 15:14	75-27-4	
Bromoform	ND	ug/L	0.50	1		01/06/17 15:14	75-25-2	
Bromomethane	ND	ug/L	0.50	1		01/06/17 15:14	74-83-9	
2-Butanone (MEK)	ND	ug/L	2.0	1		01/06/17 15:14	78-93-3	
Carbon disulfide	ND	ug/L	1.0	1		01/06/17 15:14	75-15-0	L3
Carbon tetrachloride	ND	ug/L	0.50	1		01/06/17 15:14	56-23-5	
Chlorobenzene	ND	ug/L	0.50	1		01/06/17 15:14	108-90-7	
Chloroethane	ND	ug/L	0.50	1		01/06/17 15:14	75-00-3	
Chloroform	ND	ug/L	0.50	1		01/06/17 15:14	67-66-3	
Chloromethane	ND	ug/L	0.50	1		01/06/17 15:14	74-87-3	
1,2-Dibromo-3-chloropropane	ND	ug/L	0.20	1		01/06/17 15:14	96-12-8	
Dibromochloromethane	ND	ug/L	0.50	1		01/06/17 15:14	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	1		01/06/17 15:14	106-93-4	
Dichlorodifluoromethane	ND	ug/L	1.0	1		01/06/17 15:14	75-71-8	
1,1-Dichloroethane	ND	ug/L	0.50	1		01/06/17 15:14	75-34-3	
1,2-Dichloroethane	ND	ug/L	0.50	1		01/06/17 15:14	107-06-2	
1,1-Dichloroethene	ND	ug/L	0.50	1		01/06/17 15:14	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	1		01/06/17 15:14	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	0.50	1		01/06/17 15:14	156-60-5	
1,2-Dichloropropane	ND	ug/L	0.50	1		01/06/17 15:14	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	0.50	1		01/06/17 15:14	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	0.50	1		01/06/17 15:14	10061-02-6	
Ethylbenzene	ND	ug/L	0.50	1		01/06/17 15:14	100-41-4	
2-Hexanone	ND	ug/L	1.0	1		01/06/17 15:14	591-78-6	
Isopropylbenzene (Cumene)	ND	ug/L	1.0	1		01/06/17 15:14	98-82-8	
Methyl acetate	ND	ug/L	2.0	1		01/06/17 15:14	79-20-9	
Methylene Chloride	ND	ug/L	0.50	1		01/06/17 15:14	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	1.0	1		01/06/17 15:14	108-10-1	

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ANALYTICAL RESULTS

Project: PUMA TERMINAL MW-SAMPLING

Pace Project No.: 2048198

Sample:	Lab ID:	Collected:	Received:	Matrix:				
MW-DP1	2048198014	01/04/17 09:36	01/04/17 09:36	Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV Low Level								
Analytical Method: EPA 5030B/8260								
Methyl-tert-butyl ether	ND	ug/L	0.50	1		01/06/17 15:14	1634-04-4	
Styrene	ND	ug/L	1.0	1		01/06/17 15:14	100-42-5	
1,1,2,2-Tetrachloroethane	ND	ug/L	0.50	1		01/06/17 15:14	79-34-5	
Tetrachloroethene	ND	ug/L	0.50	1		01/06/17 15:14	127-18-4	
Toluene	ND	ug/L	0.50	1		01/06/17 15:14	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	0.50	1		01/06/17 15:14	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	0.50	1		01/06/17 15:14	79-00-5	
Trichloroethene	ND	ug/L	0.50	1		01/06/17 15:14	79-01-6	
Trichlorofluoromethane	ND	ug/L	0.50	1		01/06/17 15:14	75-69-4	
Vinyl chloride	ND	ug/L	0.50	1		01/06/17 15:14	75-01-4	
m&p-Xylene	ND	ug/L	2.0	1		01/06/17 15:14	179601-23-1	
o-Xylene	ND	ug/L	1.0	1		01/06/17 15:14	95-47-6	
Surrogates								
Dibromofluoromethane (S)	107	%	72-126	1		01/06/17 15:14	1868-53-7	
4-Bromofluorobenzene (S)	98	%	68-124	1		01/06/17 15:14	460-00-4	
Toluene-d8 (S)	99	%	79-119	1		01/06/17 15:14	2037-26-5	

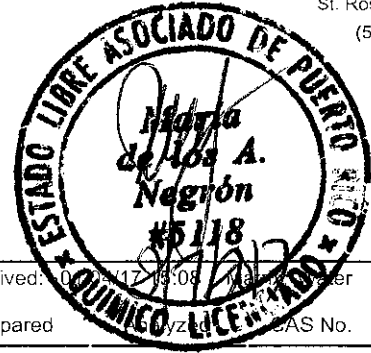
Sample:	Lab ID:	Collected:	Received:	Matrix:				
MW-MP2	2048198015	01/04/17 10:25	01/04/17 15:08	Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8015M DRO/ORO Organics								
Analytical Method: EPA 8015B Modified Preparation Method: EPA 3535								
Diesel Range Organic (C10-C28)	ND	mg/L	0.25	1	01/06/17 07:40	01/12/17 01:21		
Oil Range Organics (>C28-C40)	ND	mg/L	0.50	1	01/06/17 07:40	01/12/17 01:21		
Surrogates								
n-Pentacosane (S)	24	%	16-137	1	01/06/17 07:40	01/12/17 01:21	629-99-2	
o-Terphenyl (S)	43	%	10-121	1	01/06/17 07:40	01/12/17 01:21	84-15-1	
8021 GCV BTEX, MTBE, GRO								
Analytical Method: EPA 8015/8021								
Gasoline Range Organics	ND	ug/L	50.0	1		01/12/17 23:22		
Surrogates								
4-Bromofluorobenzene (S)	89	%	44-148	1		01/12/17 23:22	460-00-4	
6020 MET ICPMS								
Analytical Method: EPA 6020 Preparation Method: EPA 3010								
Arsenic	ND	mg/L	0.0010	1	01/09/17 15:32	01/13/17 22:39	7440-38-2	
Chromium	0.0013	mg/L	0.0010	1	01/09/17 15:32	01/13/17 22:39	7440-47-3	
Lead	ND	mg/L	0.0010	1	01/09/17 15:32	01/13/17 22:39	7439-92-1	
Vanadium	0.012	mg/L	0.0050	1	01/09/17 15:32	01/13/17 22:39	7440-62-2	
6020 MET ICPMS, Dissolved (LF)								
Analytical Method: EPA 6020 Preparation Method: EPA 3005A								
Arsenic, Dissolved	ND	ug/L	1.0	1	01/10/17 11:44	01/14/17 00:09	7440-38-2	
Chromium, Dissolved	ND	ug/L	1.0	1	01/10/17 11:44	01/14/17 00:09	7440-47-3	
Lead, Dissolved	ND	ug/L	1.0	1	01/10/17 11:44	01/14/17 00:09	7439-92-1	
Vanadium, Dissolved	10.8	ug/L	5.0	1	01/10/17 11:44	01/14/17 00:09	7440-62-2	

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ANALYTICAL RESULTS

Project: PUMA TERMINAL MW-SAMPLING
Pace Project No.: 2048198



Sample: MW-MP2 Lab ID: 2048198015 Collected: 01/04/17 10:25 Received: 01/17/17 13:08
Parameters Results Units Report Limit DF Prepared Analytical Method: EPA 7470 Preparation Method: EPA 7470 CAS No. Qual

Parameters	Results	Units	Report Limit	DF	Prepared	Analytical Method: EPA 7470 Preparation Method: EPA 7470	CAS No.	Qual
7470 Mercury	Analytical Method: EPA 7470 Preparation Method: EPA 7470							
Mercury	ND	ug/L	0.20	1	01/09/17 15:19	01/09/17 20:42	7439-97-6	
7470 Mercury, Dissolved (LF)	Analytical Method: EPA 7470 Preparation Method: EPA 7470							
Mercury, Dissolved	ND	ug/L	0.20	1	01/10/17 12:30	01/10/17 17:38	7439-97-6	
8270 MSSV PAH by SIM SEP	Analytical Method: EPA 8270 by SIM Preparation Method: EPA 3510							
Acenaphthene	ND	ug/L	0.10	1	01/07/17 13:27	01/10/17 18:39	83-32-9	
Acenaphthylene	ND	ug/L	0.10	1	01/07/17 13:27	01/10/17 18:39	208-96-8	
Anthracene	ND	ug/L	0.10	1	01/07/17 13:27	01/10/17 18:39	120-12-7	
Benzo(a)anthracene	ND	ug/L	0.10	1	01/07/17 13:27	01/10/17 18:39	56-55-3	
Benzo(a)pyrene	ND	ug/L	0.10	1	01/07/17 13:27	01/10/17 18:39	50-32-8	
Benzo(b)fluoranthene	ND	ug/L	0.10	1	01/07/17 13:27	01/10/17 18:39	205-99-2	
Benzo(g,h,i)perylene	ND	ug/L	0.10	1	01/07/17 13:27	01/10/17 18:39	191-24-2	
Benzo(k)fluoranthene	ND	ug/L	0.10	1	01/07/17 13:27	01/10/17 18:39	207-08-9	
Chrysene	ND	ug/L	0.10	1	01/07/17 13:27	01/10/17 18:39	218-01-9	
Dibenz(a,h)anthracene	ND	ug/L	0.10	1	01/07/17 13:27	01/10/17 18:39	53-70-3	
Fluoranthene	ND	ug/L	0.10	1	01/07/17 13:27	01/10/17 18:39	206-44-0	
Fluorene	ND	ug/L	0.10	1	01/07/17 13:27	01/10/17 18:39	86-73-7	
Indeno(1,2,3-cd)pyrene	ND	ug/L	0.10	1	01/07/17 13:27	01/10/17 18:39	193-39-5	
2-Methylnaphthalene	ND	ug/L	0.10	1	01/07/17 13:27	01/10/17 18:39	91-57-6	
Naphthalene	ND	ug/L	0.10	1	01/07/17 13:27	01/10/17 18:39	91-20-3	
Phenanthrene	ND	ug/L	0.10	1	01/07/17 13:27	01/10/17 18:39	85-01-8	
Pyrene	ND	ug/L	0.10	1	01/07/17 13:27	01/10/17 18:39	129-00-0	
Surrogates								
2-Fluorobiphenyl (S)	88	%	25-150	1	01/07/17 13:27	01/10/17 18:39	321-60-8	
Terphenyl-d14 (S)	90	%	25-150	1	01/07/17 13:27	01/10/17 18:39	1718-51-0	
8260 MSV Low Level	Analytical Method: EPA 5030B/8260							
Acetone	9.4	ug/L	4.0	1		01/06/17 15:32	67-64-1	C9
Benzene	ND	ug/L	0.50	1		01/06/17 15:32	71-43-2	
Bromodichloromethane	ND	ug/L	0.50	1		01/06/17 15:32	75-27-4	
Bromoform	ND	ug/L	0.50	1		01/06/17 15:32	75-25-2	
Bromomethane	ND	ug/L	0.50	1		01/06/17 15:32	74-83-9	
2-Butanone (MEK)	ND	ug/L	2.0	1		01/06/17 15:32	78-93-3	
Carbon disulfide	ND	ug/L	1.0	1		01/06/17 15:32	75-15-0	L3
Carbon tetrachloride	ND	ug/L	0.50	1		01/06/17 15:32	56-23-5	
Chlorobenzene	ND	ug/L	0.50	1		01/06/17 15:32	108-90-7	
Chloroethane	ND	ug/L	0.50	1		01/06/17 15:32	75-00-3	
Chloroform	ND	ug/L	0.50	1		01/06/17 15:32	67-66-3	
Chloromethane	ND	ug/L	0.50	1		01/06/17 15:32	74-87-3	
1,2-Dibromo-3-chloropropane	ND	ug/L	0.20	1		01/06/17 15:32	96-12-8	
Dibromochloromethane	ND	ug/L	0.50	1		01/06/17 15:32	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	1		01/06/17 15:32	106-93-4	
Dichlorodifluoromethane	ND	ug/L	1.0	1		01/06/17 15:32	75-71-8	
1,1-Dichloroethane	ND	ug/L	0.50	1		01/06/17 15:32	75-34-3	
1,2-Dichloroethane	ND	ug/L	0.50	1		01/06/17 15:32	107-06-2	

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ANALYTICAL RESULTS

Project: PUMA TERMINAL MW-SAMPLING
Pace Project No.: 2048198

Sample: MW-MP2 Lab ID: 2048198015 Collected: 01/04/17 10:25 Received: 01/04/17 15:08 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV Low Level		Analytical Method: EPA 5030B/8260						
1,1-Dichloroethene	ND	ug/L	0.50	1		01/06/17 15:32	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	1		01/06/17 15:32	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	0.50	1		01/06/17 15:32	156-60-5	
1,2-Dichloropropane	ND	ug/L	0.50	1		01/06/17 15:32	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	0.50	1		01/06/17 15:32	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	0.50	1		01/06/17 15:32	10061-02-6	
Ethylbenzene	ND	ug/L	0.50	1		01/06/17 15:32	100-41-4	
2-Hexanone	ND	ug/L	1.0	1		01/06/17 15:32	591-78-6	
Isopropylbenzene (Cumene)	ND	ug/L	1.0	1		01/06/17 15:32	98-82-8	
Methyl acetate	ND	ug/L	2.0	1		01/06/17 15:32	79-20-9	
Methylene Chloride	ND	ug/L	0.50	1		01/06/17 15:32	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	1.0	1		01/06/17 15:32	108-10-1	
Methyl-tert-butyl ether	ND	ug/L	0.50	1		01/06/17 15:32	1634-04-4	
Styrene	ND	ug/L	1.0	1		01/06/17 15:32	100-42-5	
1,1,2,2-Tetrachloroethane	ND	ug/L	0.50	1		01/06/17 15:32	79-34-5	
Tetrachloroethene	ND	ug/L	0.50	1		01/06/17 15:32	127-18-4	
Toluene	ND	ug/L	0.50	1		01/06/17 15:32	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	0.50	1		01/06/17 15:32	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	0.50	1		01/06/17 15:32	79-00-5	
Trichloroethene	ND	ug/L	0.50	1		01/06/17 15:32	79-01-6	
Trichlorofluoromethane	ND	ug/L	0.50	1		01/06/17 15:32	75-69-4	
Vinyl chloride	ND	ug/L	0.50	1		01/06/17 15:32	75-01-4	
m&p-Xylene	ND	ug/L	2.0	1		01/06/17 15:32	179601-23-1	
o-Xylene	ND	ug/L	1.0	1		01/06/17 15:32	95-47-6	
Surrogates								
Dibromofluoromethane (S)	108	%	72-126	1		01/06/17 15:32	1868-53-7	
4-Bromofluorobenzene (S)	97	%	68-124	1		01/06/17 15:32	460-00-4	
Toluene-d8 (S)	100	%	79-119	1		01/06/17 15:32	2037-26-5	

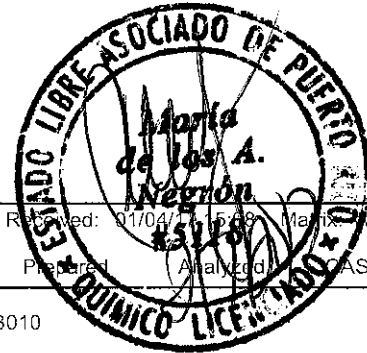
Sample: MW-MP3 Lab ID: 2048198016 Collected: 01/04/17 11:46 Received: 01/04/17 15:08 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8015M DRO/ORO Organics		Analytical Method: EPA 8015B Modified Preparation Method: EPA 3535						
Diesel Range Organic (C10-C28)	ND	mg/L	0.25	1	01/06/17 07:40	01/12/17 01:49		
Oil Range Organics (>C28-C40)	ND	mg/L	0.50	1	01/06/17 07:40	01/12/17 01:49		
Surrogates								
n-Pentacosane (S)	21	%	16-137	1	01/06/17 07:40	01/12/17 01:49	629-99-2	
o-Terphenyl (S)	36	%	10-121	1	01/06/17 07:40	01/12/17 01:49	84-15-1	
8021 GCV BTEX, MTBE, GRO		Analytical Method: EPA 8015/8021						
Gasoline Range Organics	ND	ug/L	50.0	1		01/12/17 23:49		
Surrogates								
4-Bromofluorobenzene (S)	88	%	44-148	1		01/12/17 23:49	460-00-4	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS



Project: PUMA TERMINAL MW-SAMPLING
Pace Project No.: 2048198

Sample: MW-MP3 Lab ID: 2048198016 Collected: 01/04/17 11:46 Reported: 01/04/17 16:48 Matrix: Water
Parameters Results Units Report Limit DF Prepared Analyzed CAS No. Qual

6020 MET ICPMS

Analytical Method: EPA 6020 Preparation Method: EPA 3010

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
Arsenic	0.0096	mg/L	0.0010	1	01/09/17 15:32	01/13/17 22:43	7440-38-2	
Chromium	0.0036	mg/L	0.0010	1	01/09/17 15:32	01/13/17 22:43	7440-47-3	
Lead	0.022	mg/L	0.0010	1	01/09/17 15:32	01/13/17 22:43	7439-92-1	
Vanadium	0.010	mg/L	0.0050	1	01/09/17 15:32	01/13/17 22:43	7440-62-2	

6020 MET ICPMS, Dissolved (LF)

Analytical Method: EPA 6020 Preparation Method: EPA 3005A

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
Arsenic, Dissolved	ND	ug/L	1.0	1	01/10/17 11:44	01/14/17 00:13	7440-38-2	
Chromium, Dissolved	ND	ug/L	1.0	1	01/10/17 11:44	01/14/17 00:13	7440-47-3	
Lead, Dissolved	ND	ug/L	1.0	1	01/10/17 11:44	01/14/17 00:13	7439-92-1	
Vanadium, Dissolved	ND	ug/L	5.0	1	01/10/17 11:44	01/14/17 00:13	7440-62-2	

7470 Mercury

Analytical Method: EPA 7470 Preparation Method: EPA 7470

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
Mercury	ND	ug/L	0.20	1	01/09/17 15:19	01/09/17 20:44	7439-97-6	

7470 Mercury, Dissolved (LF)

Analytical Method: EPA 7470 Preparation Method: EPA 7470

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
Mercury, Dissolved	ND	ug/L	0.20	1	01/10/17 12:30	01/10/17 17:45	7439-97-6	

8270 MSSV PAH by SIM SEP

Analytical Method: EPA 8270 by SIM Preparation Method: EPA 3510

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
Acenaphthene	ND	ug/L	0.10	1	01/07/17 13:27	01/11/17 13:32	83-32-9	
Acenaphthylene	ND	ug/L	0.10	1	01/07/17 13:27	01/11/17 13:32	208-96-8	
Anthracene	ND	ug/L	0.10	1	01/07/17 13:27	01/11/17 13:32	120-12-7	
Benzo(a)anthracene	ND	ug/L	0.10	1	01/07/17 13:27	01/11/17 13:32	56-55-3	
Benzo(a)pyrene	ND	ug/L	0.10	1	01/07/17 13:27	01/11/17 13:32	50-32-8	
Benzo(b)fluoranthene	ND	ug/L	0.10	1	01/07/17 13:27	01/11/17 13:32	205-99-2	
Benzo(g,h,i)perylene	ND	ug/L	0.10	1	01/07/17 13:27	01/11/17 13:32	191-24-2	
Benzo(k)fluoranthene	ND	ug/L	0.10	1	01/07/17 13:27	01/11/17 13:32	207-08-9	
Chrysene	ND	ug/L	0.10	1	01/07/17 13:27	01/11/17 13:32	218-01-9	
Dibenz(a,h)anthracene	ND	ug/L	0.10	1	01/07/17 13:27	01/11/17 13:32	53-70-3	
Fluoranthene	ND	ug/L	0.10	1	01/07/17 13:27	01/11/17 13:32	206-44-0	
Fluorene	ND	ug/L	0.10	1	01/07/17 13:27	01/11/17 13:32	86-73-7	
Indeno(1,2,3-cd)pyrene	ND	ug/L	0.10	1	01/07/17 13:27	01/11/17 13:32	193-39-5	
2-Methylnaphthalene	ND	ug/L	0.10	1	01/07/17 13:27	01/11/17 13:32	91-57-6	
Naphthalene	ND	ug/L	0.10	1	01/07/17 13:27	01/11/17 13:32	91-20-3	
Phenanthrene	ND	ug/L	0.10	1	01/07/17 13:27	01/11/17 13:32	85-01-8	
Pyrene	ND	ug/L	0.10	1	01/07/17 13:27	01/11/17 13:32	129-00-0	
Surrogates								
2-Fluorobiphenyl (S)	90	%	25-150	1	01/07/17 13:27	01/11/17 13:32	321-60-8	
Terphenyl-d14 (S)	82	%	25-150	1	01/07/17 13:27	01/11/17 13:32	1718-51-0	

8260 MSV Low Level

Analytical Method: EPA 5030B/8260

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
Acelone	4.9	ug/L	4.0	1		01/06/17 15:50	67-64-1	C9
Benzene	ND	ug/L	0.50	1		01/06/17 15:50	71-43-2	
Bromodichloromethane	ND	ug/L	0.50	1		01/06/17 15:50	75-27-4	
Bromoform	ND	ug/L	0.50	1		01/06/17 15:50	75-25-2	
Bromomethane	ND	ug/L	0.50	1		01/06/17 15:50	74-83-9	
2-Butanone (MEK)	ND	ug/L	2.0	1		01/06/17 15:50	78-93-3	

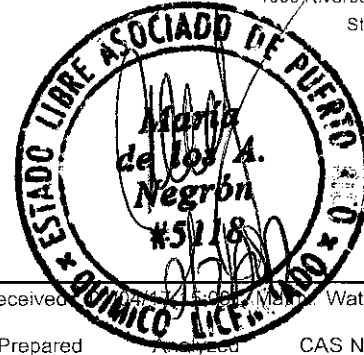
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ANALYTICAL RESULTS

Project: PUMA TERMINAL MW-SAMPLING

Pace Project No.: 2048198



Sample: MW-MP3	Lab ID: 2048198016	Collected: 01/04/17 11:46	Received: 01/06/17 15:50	Matrix: Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Reviewed	CAS No.	Qual

8260 MSV Low Level

Analytical Method: EPA 5030B/8260

Carbon disulfide	ND	ug/L	1.0	1	01/06/17 15:50	75-15-0	L3
Carbon tetrachloride	ND	ug/L	0.50	1	01/06/17 15:50	56-23-5	
Chlorobenzene	ND	ug/L	0.50	1	01/06/17 15:50	108-90-7	
Chloroethane	ND	ug/L	0.50	1	01/06/17 15:50	75-00-3	
Chloroform	ND	ug/L	0.50	1	01/06/17 15:50	67-66-3	
Chloromethane	ND	ug/L	0.50	1	01/06/17 15:50	74-87-3	
1,2-Dibromo-3-chloropropane	ND	ug/L	0.20	1	01/06/17 15:50	96-12-8	
Dibromochloromethane	ND	ug/L	0.50	1	01/06/17 15:50	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	1	01/06/17 15:50	106-93-4	
Dichlorodifluoromethane	ND	ug/L	1.0	1	01/06/17 15:50	75-71-8	
1,1-Dichloroethane	ND	ug/L	0.50	1	01/06/17 15:50	75-34-3	
1,2-Dichloroethane	ND	ug/L	0.50	1	01/06/17 15:50	107-06-2	
1,1-Dichloroethene	ND	ug/L	0.50	1	01/06/17 15:50	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	1	01/06/17 15:50	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	0.50	1	01/06/17 15:50	156-60-5	
1,2-Dichloropropane	ND	ug/L	0.50	1	01/06/17 15:50	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	0.50	1	01/06/17 15:50	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	0.50	1	01/06/17 15:50	10061-02-6	
Ethylbenzene	ND	ug/L	0.50	1	01/06/17 15:50	100-41-4	
2-Hexanone	ND	ug/L	1.0	1	01/06/17 15:50	591-78-6	
Isopropylbenzene (Cumene)	ND	ug/L	1.0	1	01/06/17 15:50	98-82-8	
Methyl acetate	ND	ug/L	2.0	1	01/06/17 15:50	79-20-9	
Methylene Chloride	ND	ug/L	0.50	1	01/06/17 15:50	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	1.0	1	01/06/17 15:50	108-10-1	
Methyl-terf-butyl ether	ND	ug/L	0.50	1	01/06/17 15:50	1634-04-4	
Styrene	ND	ug/L	1.0	1	01/06/17 15:50	100-42-5	
1,1,2,2-Tetrachloroethane	ND	ug/L	0.50	1	01/06/17 15:50	79-34-5	
Tetrachloroethene	ND	ug/L	0.50	1	01/06/17 15:50	127-18-4	
Toluene	ND	ug/L	0.50	1	01/06/17 15:50	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	0.50	1	01/06/17 15:50	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	0.50	1	01/06/17 15:50	79-00-5	
Trichloroethene	ND	ug/L	0.50	1	01/06/17 15:50	79-01-6	
Trichlorofluoromethane	ND	ug/L	0.50	1	01/06/17 15:50	75-69-4	
Vinyl chloride	ND	ug/L	0.50	1	01/06/17 15:50	75-01-4	
m&p-Xylene	ND	ug/L	2.0	1	01/06/17 15:50	179601-23-1	
o-Xylene	ND	ug/L	1.0	1	01/06/17 15:50	95-47-6	
Surrogates							
Dibromofluoromethane (S)	108	%.	72-126	1	01/06/17 15:50	1868-53-7	
4-Bromofluorobenzene (S)	98	%.	68-124	1	01/06/17 15:50	460-00-4	
Toluene-d8 (S)	100	%.	79-119	1	01/06/17 15:50	2037-26-5	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS



Project: PUMA TERMINAL MW-SAMPLING
Pace Project No.: 2048198

Sample:	Lab ID:	Collected:	Received:	Matrix:	Prepared:	CAS No.	Qual
Parameters	Results	Units	Report Limit	DF	Prepared	CAS No.	Qual
Sample: MW-MP8	Lab ID: 2048198017	Collected: 01/04/17 13:33	Received: 01/04/17 15:00				Water
8015M DRO/ORO Organics Analytical Method: EPA 8015B Modified Preparation Method: EPA 3535							
Diesel Range Organic (C10-C28)	ND	mg/L	0.25	1	01/06/17 07:40	01/12/17 00:26	
Oil Range Organics (>C28-C40)	ND	mg/L	0.50	1	01/06/17 07:40	01/12/17 00:26	
Surrogates							
n-Pentacosane (S)	60	%	16-137	1	01/06/17 07:40	01/12/17 00:26	629-99-2
o-Terphenyl (S)	58	%	10-121	1	01/06/17 07:40	01/12/17 00:26	84-15-1
8021 GCV BTEX, MTBE, GRO Analytical Method: EPA 8015/8021							
Gasoline Range Organics	ND	ug/L	50.0	1		01/13/17 00:16	
Surrogates							
4-Bromofluorobenzene (S)	88	%	44-148	1		01/13/17 00:16	460-00-4
6020 MET ICPMS Analytical Method: EPA 6020 Preparation Method: EPA 3010							
Arsenic	0.0019	mg/L	0.0010	1	01/09/17 15:32	01/13/17 22:55	7440-38-2
Chromium	ND	mg/L	0.0010	1	01/09/17 15:32	01/13/17 22:55	7440-47-3
Lead	ND	mg/L	0.0010	1	01/09/17 15:32	01/13/17 22:55	7439-92-1
Vanadium	ND	mg/L	0.0050	1	01/09/17 15:32	01/13/17 22:55	7440-62-2
6020 MET ICPMS, Dissolved (LF) Analytical Method: EPA 6020 Preparation Method: EPA 3005A							
Arsenic, Dissolved	1.3	ug/L	1.0	1	01/10/17 11:44	01/14/17 00:17	7440-38-2
Chromium, Dissolved	ND	ug/L	1.0	1	01/10/17 11:44	01/14/17 00:17	7440-47-3
Lead, Dissolved	ND	ug/L	1.0	1	01/10/17 11:44	01/14/17 00:17	7439-92-1
Vanadium, Dissolved	ND	ug/L	5.0	1	01/10/17 11:44	01/14/17 00:17	7440-62-2
7470 Mercury Analytical Method: EPA 7470 Preparation Method: EPA 7470							
Mercury	ND	ug/L	0.20	1	01/09/17 15:19	01/09/17 20:50	7439-97-6
7470 Mercury, Dissolved (LF) Analytical Method: EPA 7470 Preparation Method: EPA 7470							
Mercury, Dissolved	ND	ug/L	0.20	1	01/10/17 12:30	01/10/17 17:47	7439-97-6
8270 MSSV PAH by SIM SEP Analytical Method: EPA 8270 by SIM Preparation Method: EPA 3510							
Acenaphthene	ND	ug/L	0.10	1	01/07/17 13:27	01/10/17 18:59	83-32-9
Acenaphthylene	ND	ug/L	0.10	1	01/07/17 13:27	01/10/17 18:59	208-96-8
Anthracene	ND	ug/L	0.10	1	01/07/17 13:27	01/10/17 18:59	120-12-7
Benzo(a)anthracene	ND	ug/L	0.10	1	01/07/17 13:27	01/10/17 18:59	56-55-3
Benzo(a)pyrene	ND	ug/L	0.10	1	01/07/17 13:27	01/10/17 18:59	50-32-8
Benzo(b)fluoranthene	ND	ug/L	0.10	1	01/07/17 13:27	01/10/17 18:59	205-99-2
Benzo(g,h,i)perylene	ND	ug/L	0.10	1	01/07/17 13:27	01/10/17 18:59	191-24-2
Benzo(k)fluoranthene	ND	ug/L	0.10	1	01/07/17 13:27	01/10/17 18:59	207-08-9
Chrysene	ND	ug/L	0.10	1	01/07/17 13:27	01/10/17 18:59	218-01-9
Dibenz(a,h)anthracene	ND	ug/L	0.10	1	01/07/17 13:27	01/10/17 18:59	53-70-3
Fluoranthene	ND	ug/L	0.10	1	01/07/17 13:27	01/10/17 18:59	206-44-0
Fluorene	ND	ug/L	0.10	1	01/07/17 13:27	01/10/17 18:59	86-73-7
indeno(1,2,3-cd)pyrene	ND	ug/L	0.10	1	01/07/17 13:27	01/10/17 18:59	193-39-5
2-Methylnaphthalene	ND	ug/L	0.10	1	01/07/17 13:27	01/10/17 18:59	91-57-6
Naphthalene	ND	ug/L	0.10	1	01/07/17 13:27	01/10/17 18:59	91-20-3
Phenanthrene	ND	ug/L	0.10	1	01/07/17 13:27	01/10/17 18:59	85-01-8

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ANALYTICAL RESULTS

Project: PUMA TERMINAL MW-SAMPLING

Pace Project No.: 2048198

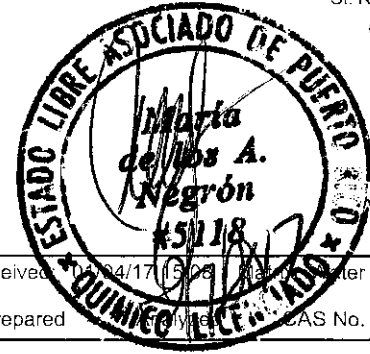
Sample: MW-MP8 Lab ID: 2048198017 Collected: 01/04/17 13:33 Received: 01/07/17 13:27 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8270 MSSV PAH by SIM SEP		Analytical Method: EPA 8270 by SIM Preparation Method: EPA 3510						
Pyrene	ND	ug/L	0.10	1	01/07/17 13:27	01/10/17 18:59	129-00-0	
Surrogates								
2-Fluorobiphenyl (S)	79	%	25-150	1	01/07/17 13:27	01/10/17 18:59	321-60-8	
Terphenyl-d14 (S)	85	%	25-150	1	01/07/17 13:27	01/10/17 18:59	1718-51-0	
8260 MSV Low Level		Analytical Method: EPA 5030B/8260						
Acetone	8.3	ug/L	4.0	1		01/06/17 16:07	67-64-1	C9
Benzene	ND	ug/L	0.50	1		01/06/17 16:07	71-43-2	
Bromodichloromethane	ND	ug/L	0.50	1		01/06/17 16:07	75-27-4	
Bromoform	ND	ug/L	0.50	1		01/06/17 16:07	75-25-2	
Bromomethane	ND	ug/L	0.50	1		01/06/17 16:07	74-83-9	
2-Butanone (MEK)	ND	ug/L	2.0	1		01/06/17 16:07	78-93-3	
Carbon disulfide	ND	ug/L	1.0	1		01/06/17 16:07	75-15-0	L3
Carbon tetrachloride	ND	ug/L	0.50	1		01/06/17 16:07	56-23-5	
Chlorobenzene	ND	ug/L	0.50	1		01/06/17 16:07	108-90-7	
Chloroethane	ND	ug/L	0.50	1		01/06/17 16:07	75-00-3	
Chloroform	ND	ug/L	0.50	1		01/06/17 16:07	67-66-3	
Chloromethane	ND	ug/L	0.50	1		01/06/17 16:07	74-87-3	
1,2-Dibromo-3-chloropropane	ND	ug/L	0.20	1		01/06/17 16:07	96-12-8	
Dibromochloromethane	ND	ug/L	0.50	1		01/06/17 16:07	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	1		01/06/17 16:07	106-93-4	
Dichlorodifluoromethane	ND	ug/L	1.0	1		01/06/17 16:07	75-71-8	
1,1-Dichloroethane	ND	ug/L	0.50	1		01/06/17 16:07	75-34-3	
1,2-Dichloroethane	ND	ug/L	0.50	1		01/06/17 16:07	107-06-2	
1,1-Dichloroethene	ND	ug/L	0.50	1		01/06/17 16:07	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	1		01/06/17 16:07	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	0.50	1		01/06/17 16:07	156-60-5	
1,2-Dichloropropane	ND	ug/L	0.50	1		01/06/17 16:07	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	0.50	1		01/06/17 16:07	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	0.50	1		01/06/17 16:07	10061-02-6	
Ethylbenzene	ND	ug/L	0.50	1		01/06/17 16:07	100-41-4	
2-Hexanone	ND	ug/L	1.0	1		01/06/17 16:07	591-78-6	
Isopropylbenzene (Cumene)	ND	ug/L	1.0	1		01/06/17 16:07	98-82-8	
Methyl acetate	ND	ug/L	2.0	1		01/06/17 16:07	79-20-9	
Methylene Chloride	ND	ug/L	0.50	1		01/06/17 16:07	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	1.0	1		01/06/17 16:07	108-10-1	
Methyl-tert-butyl ether	ND	ug/L	0.50	1		01/06/17 16:07	1634-04-4	
Styrene	ND	ug/L	1.0	1		01/06/17 16:07	100-42-5	
1,1,2,2-Tetrachloroethane	ND	ug/L	0.50	1		01/06/17 16:07	79-34-5	
Tetrachloroethene	ND	ug/L	0.50	1		01/06/17 16:07	127-18-4	
Toluene	ND	ug/L	0.50	1		01/06/17 16:07	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	0.50	1		01/06/17 16:07	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	0.50	1		01/06/17 16:07	79-00-5	
Trichloroethene	ND	ug/L	0.50	1		01/06/17 16:07	79-01-6	
Trichlorofluoromethane	ND	ug/L	0.50	1		01/06/17 16:07	75-69-4	
Vinyl chloride	ND	ug/L	0.50	1		01/06/17 16:07	75-01-4	
m&p-Xylene	ND	ug/L	2.0	1		01/06/17 16:07	179601-23-1	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS



Project: PUMA TERMINAL MW-SAMPLING
Pace Project No.: 2048198

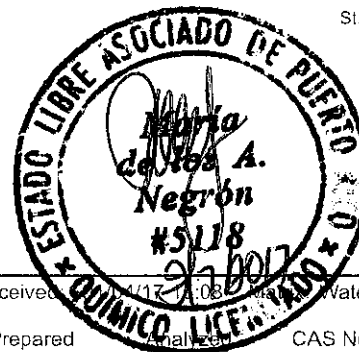
Sample:	Lab ID:	Collected:	Received:	Matrix:				
MW-MP8	2048198017	01/04/17 13:33	01/04/17 15:08	Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV Low Level Analytical Method: EPA 5030B/8260								
o-Xylene	ND	ug/L	1.0	1	01/06/17 16:07	95-47-6		
Surrogates								
Dibromofluoromethane (S)	107	%	72-126	1	01/06/17 16:07	1868-53-7		
4-Bromofluorobenzene (S)	98	%	68-124	1	01/06/17 16:07	460-00-4		
Toluene-d8 (S)	101	%	79-119	1	01/06/17 16:07	2037-26-5		

Sample:	Lab ID:	Collected:	Received:	Matrix:				
TB-010417-2	2048198018	01/04/17 00:00	01/04/17 15:08	Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8021 GCV BTEX, MTBE, GRO Analytical Method: EPA 8015/8021								
Gasoline Range Organics	ND	ug/L	50.0	1	01/13/17 00:44			
Surrogates								
4-Bromofluorobenzene (S)	87	%	44-148	1	01/13/17 00:44	460-00-4		
8260 MSV Low Level Analytical Method: EPA 5030B/8260								
Acetone	180	ug/L	4.0	1	01/06/17 16:25	67-64-1		
Benzene	ND	ug/L	0.50	1	01/06/17 16:25	71-43-2		
Bromodichloromethane	ND	ug/L	0.50	1	01/06/17 16:25	75-27-4		
Bromoform	ND	ug/L	0.50	1	01/06/17 16:25	75-25-2		
Bromomethane	ND	ug/L	0.50	1	01/06/17 16:25	74-83-9		
2-Butanone (MEK)	ND	ug/L	2.0	1	01/06/17 16:25	78-93-3		
Carbon disulfide	ND	ug/L	1.0	1	01/06/17 16:25	75-15-0		L3
Carbon tetrachloride	ND	ug/L	0.50	1	01/06/17 16:25	56-23-5		
Chlorobenzene	ND	ug/L	0.50	1	01/06/17 16:25	108-90-7		
Chloroethane	ND	ug/L	0.50	1	01/06/17 16:25	75-00-3		
Chloroform	ND	ug/L	0.50	1	01/06/17 16:25	67-66-3		
Chloromethane	ND	ug/L	0.50	1	01/06/17 16:25	74-87-3		
1,2-Dibromo-3-chloropropane	ND	ug/L	0.20	1	01/06/17 16:25	96-12-8		
Dibromochloromethane	ND	ug/L	0.50	1	01/06/17 16:25	124-48-1		
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	1	01/06/17 16:25	106-93-4		
Dichlorodifluoromethane	ND	ug/L	1.0	1	01/06/17 16:25	75-71-8		
1,1-Dichloroethane	ND	ug/L	0.50	1	01/06/17 16:25	75-34-3		
1,2-Dichloroethane	ND	ug/L	0.50	1	01/06/17 16:25	107-06-2		
1,1-Dichloroethene	ND	ug/L	0.50	1	01/06/17 16:25	75-35-4		
cis-1,2-Dichloroethene	ND	ug/L	1.0	1	01/06/17 16:25	156-59-2		
trans-1,2-Dichloroethene	ND	ug/L	0.50	1	01/06/17 16:25	156-60-5		
1,2-Dichloropropane	ND	ug/L	0.50	1	01/06/17 16:25	78-87-5		
cis-1,3-Dichloropropene	ND	ug/L	0.50	1	01/06/17 16:25	10061-01-5		
trans-1,3-Dichloropropene	ND	ug/L	0.50	1	01/06/17 16:25	10061-02-6		
Ethylbenzene	ND	ug/L	0.50	1	01/06/17 16:25	100-41-4		
2-Hexanone	ND	ug/L	1.0	1	01/06/17 16:25	591-78-6		
Isopropylbenzene (Cumene)	ND	ug/L	1.0	1	01/06/17 16:25	98-82-8		
Methyl acetate	ND	ug/L	2.0	1	01/06/17 16:25	79-20-9		
Methylene Chloride	ND	ug/L	0.50	1	01/06/17 16:25	75-09-2		
4-Methyl-2-pentanone (MIBK)	ND	ug/L	1.0	1	01/06/17 16:25	108-10-1		

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS



Project: PUMA TERMINAL MW-SAMPLING
Pace Project No.: 2048198

Sample: TB-010417-2 Lab ID: 2048198018 Collected: 01/04/17 00:00 Received: 01/06/17 16:25 Matrix: Water
Parameters Results Units Report Limit DF Prepared Analyzed CAS No. Qual

8260 MSV Low Level Analytical Method: EPA 5030B/8260

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
Methyl-tert-butyl ether	ND	ug/L	0.50	1	01/06/17 16:25	01/06/17 16:25	1634-04-4	
Styrene	ND	ug/L	1.0	1	01/06/17 16:25	01/06/17 16:25	100-42-5	
1,1,2,2-Tetrachloroethane	ND	ug/L	0.50	1	01/06/17 16:25	01/06/17 16:25	79-34-5	
Tetrachloroethene	ND	ug/L	0.50	1	01/06/17 16:25	01/06/17 16:25	127-18-4	
Toluene	ND	ug/L	0.50	1	01/06/17 16:25	01/06/17 16:25	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	0.50	1	01/06/17 16:25	01/06/17 16:25	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	0.50	1	01/06/17 16:25	01/06/17 16:25	79-00-5	
Trichloroethene	ND	ug/L	0.50	1	01/06/17 16:25	01/06/17 16:25	79-01-6	
Trichlorofluoromethane	ND	ug/L	0.50	1	01/06/17 16:25	01/06/17 16:25	75-69-4	
Vinyl chloride	ND	ug/L	0.50	1	01/06/17 16:25	01/06/17 16:25	75-01-4	
m&p-Xylene	ND	ug/L	2.0	1	01/06/17 16:25	01/06/17 16:25	179601-23-1	
o-Xylene	ND	ug/L	1.0	1	01/06/17 16:25	01/06/17 16:25	95-47-6	
Surrogates								
Dibromofluoromethane (S)	106	%.	72-126	1	01/06/17 16:25	01/06/17 16:25	1868-53-7	
4-Bromofluorobenzene (S)	97	%.	68-124	1	01/06/17 16:25	01/06/17 16:25	460-00-4	
Toluene-d8 (S)	100	%.	79-119	1	01/06/17 16:25	01/06/17 16:25	2037-26-5	

Sample: MW-NDP Lab ID: 2048198019 Collected: 01/04/17 14:22 Received: 01/04/17 15:08 Matrix: Water
Parameters Results Units Report Limit DF Prepared Analyzed CAS No. Qual

8015M DRO/ORO Organics Analytical Method: EPA 8015B Modified Preparation Method: EPA 3535

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
Diesel Range Organic (C10-C28)	ND	mg/L	0.25	1	01/06/17 07:40	01/12/17 00:53		
Oil Range Organics (>C28-C40)	ND	mg/L	0.50	1	01/06/17 07:40	01/12/17 00:53		
Surrogates								
n-Pentacosane (S)	38	%.	16-137	1	01/06/17 07:40	01/12/17 00:53	629-99-2	
o-Terphenyl (S)	55	%.	10-121	1	01/06/17 07:40	01/12/17 00:53	84-15-1	

8021 GCV BTEX, MTBE, GRO Analytical Method: EPA 8015/8021

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
Gasoline Range Organics	ND	ug/L	50.0	1	01/13/17 01:11	01/13/17 01:11		
Surrogates								
4-Bromofluorobenzene (S)	89	%.	44-148	1	01/13/17 01:11	01/13/17 01:11	460-00-4	

6020 MET ICPMS Analytical Method: EPA 6020 Preparation Method: EPA 3010

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
Arsenic	ND	mg/L	0.0010	1	01/09/17 15:32	01/13/17 22:59	7440-38-2	
Chromium	ND	mg/L	0.0010	1	01/09/17 15:32	01/13/17 22:59	7440-47-3	
Lead	ND	mg/L	0.0010	1	01/09/17 15:32	01/13/17 22:59	7439-92-1	
Vanadium	ND	mg/L	0.0050	1	01/09/17 15:32	01/13/17 22:59	7440-62-2	

6020 MET ICPMS, Dissolved (LF) Analytical Method: EPA 6020 Preparation Method: EPA 3005A

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
Arsenic, Dissolved	ND	ug/L	1.0	1	01/10/17 11:44	01/14/17 00:29	7440-38-2	
Chromium, Dissolved	ND	ug/L	1.0	1	01/10/17 11:44	01/14/17 00:29	7440-47-3	
Lead, Dissolved	ND	ug/L	1.0	1	01/10/17 11:44	01/14/17 00:29	7439-92-1	
Vanadium, Dissolved	ND	ug/L	5.0	1	01/10/17 11:44	01/14/17 00:29	7440-62-2	

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ANALYTICAL RESULTS



Project: PUMA TERMINAL MW-SAMPLING
Pace Project No.: 2048198

Sample:	Lab ID:	Collected:	Received:	Matrix:				
MW-NDP	2048198019	01/04/17 14:22	01/04/17 15:19	Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
7470 Mercury Analytical Method: EPA 7470 Preparation Method: EPA 7470								
Mercury	ND	ug/L	0.20	1	01/09/17 15:19	01/09/17 20:52	7439-97-6	
7470 Mercury, Dissolved (LF) Analytical Method: EPA 7470 Preparation Method: EPA 7470								
Mercury, Dissolved	ND	ug/L	0.20	1	01/10/17 12:30	01/10/17 17:49	7439-97-6	
8270 MSSV PAH by SIM SEP Analytical Method: EPA 8270 by SIM Preparation Method: EPA 3510								
Acenaphthene	ND	ug/L	0.10	1	01/07/17 13:27	01/10/17 19:19	83-32-9	
Acenaphthylene	ND	ug/L	0.10	1	01/07/17 13:27	01/10/17 19:19	208-96-8	
Anthracene	ND	ug/L	0.10	1	01/07/17 13:27	01/10/17 19:19	120-12-7	
Benzo(a)anthracene	ND	ug/L	0.10	1	01/07/17 13:27	01/10/17 19:19	56-55-3	
Benzo(a)pyrene	ND	ug/L	0.10	1	01/07/17 13:27	01/10/17 19:19	50-32-8	
Benzo(b)fluoranthene	ND	ug/L	0.10	1	01/07/17 13:27	01/10/17 19:19	205-99-2	
Benzo(g,h,i)perylene	ND	ug/L	0.10	1	01/07/17 13:27	01/10/17 19:19	191-24-2	
Benzo(k)fluoranthene	ND	ug/L	0.10	1	01/07/17 13:27	01/10/17 19:19	207-08-9	
Chrysene	ND	ug/L	0.10	1	01/07/17 13:27	01/10/17 19:19	218-01-9	
Dibenz(a,h)anthracene	ND	ug/L	0.10	1	01/07/17 13:27	01/10/17 19:19	53-70-3	
Fluoranthene	ND	ug/L	0.10	1	01/07/17 13:27	01/10/17 19:19	206-44-0	
Fluorene	ND	ug/L	0.10	1	01/07/17 13:27	01/10/17 19:19	86-73-7	
Indeno(1,2,3-cd)pyrene	ND	ug/L	0.10	1	01/07/17 13:27	01/10/17 19:19	193-39-5	
2-Methylnaphthalene	ND	ug/L	0.10	1	01/07/17 13:27	01/10/17 19:19	91-57-6	
Naphthalene	ND	ug/L	0.10	1	01/07/17 13:27	01/10/17 19:19	91-20-3	
Phenanthrene	ND	ug/L	0.10	1	01/07/17 13:27	01/10/17 19:19	85-01-8	
Pyrene	ND	ug/L	0.10	1	01/07/17 13:27	01/10/17 19:19	129-00-0	
Surrogates								
2-Fluorobiphenyl (S)	77	%	25-150	1	01/07/17 13:27	01/10/17 19:19	321-60-8	
Terphenyl-d14 (S)	78	%	25-150	1	01/07/17 13:27	01/10/17 19:19	1718-51-0	
8260 MSV Low Level Analytical Method: EPA 5030B/8260								
Acetone	15.5	ug/L	4.0	1		01/06/17 16:43	67-64-1	C9
Benzene	ND	ug/L	0.50	1		01/06/17 16:43	71-43-2	
Bromodichloromethane	ND	ug/L	0.50	1		01/06/17 16:43	75-27-4	
Bromoform	ND	ug/L	0.50	1		01/06/17 16:43	75-25-2	
Bromomethane	ND	ug/L	0.50	1		01/06/17 16:43	74-83-9	
2-Butanone (MEK)	ND	ug/L	2.0	1		01/06/17 16:43	78-93-3	
Carbon disulfide	ND	ug/L	1.0	1		01/06/17 16:43	75-15-0	L3
Carbon tetrachloride	ND	ug/L	0.50	1		01/06/17 16:43	56-23-5	
Chlorobenzene	ND	ug/L	0.50	1		01/06/17 16:43	108-90-7	
Chloroethane	ND	ug/L	0.50	1		01/06/17 16:43	75-00-3	
Chloroform	ND	ug/L	0.50	1		01/06/17 16:43	67-66-3	
Chloromethane	ND	ug/L	0.50	1		01/06/17 16:43	74-87-3	
1,2-Dibromo-3-chloropropane	ND	ug/L	0.20	1		01/06/17 16:43	96-12-8	
Dibromochloromethane	ND	ug/L	0.50	1		01/06/17 16:43	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	1		01/06/17 16:43	106-93-4	
Dichlorodifluoromethane	ND	ug/L	1.0	1		01/06/17 16:43	75-71-8	
1,1-Dichloroethane	ND	ug/L	0.50	1		01/06/17 16:43	75-34-3	
1,2-Dichloroethane	ND	ug/L	0.50	1		01/06/17 16:43	107-06-2	

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ANALYTICAL RESULTS



Project: PUMA TERMINAL MW-SAMPLING

Pace Project No.: 2048198

Sample: MW-NDP Lab ID: 2048198019 Collected: 01/04/17 14:22 Received: 01/04/17 14:30 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV Low Level		Analytical Method: EPA 5030B/8260						
1,1-Dichloroethene	ND	ug/L	0.50	1		01/06/17 16:43	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	1		01/06/17 16:43	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	0.50	1		01/06/17 16:43	156-60-5	
1,2-Dichloropropane	ND	ug/L	0.50	1		01/06/17 16:43	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	0.50	1		01/06/17 16:43	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	0.50	1		01/06/17 16:43	10061-02-6	
Ethylbenzene	ND	ug/L	0.50	1		01/06/17 16:43	100-41-4	
2-Hexanone	ND	ug/L	1.0	1		01/06/17 16:43	591-78-6	
Isopropylbenzene (Cumene)	ND	ug/L	1.0	1		01/06/17 16:43	98-82-8	
Methyl acetate	ND	ug/L	2.0	1		01/06/17 16:43	79-20-9	
Methylene Chloride	ND	ug/L	0.50	1		01/06/17 16:43	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	1.0	1		01/06/17 16:43	108-10-1	
Methyl-tert-butyl ether	2.5	ug/L	0.50	1		01/06/17 16:43	1634-04-4	
Styrene	ND	ug/L	1.0	1		01/06/17 16:43	100-42-5	
1,1,2,2-Tetrachloroethane	ND	ug/L	0.50	1		01/06/17 16:43	79-34-5	
Tetrachloroethene	ND	ug/L	0.50	1		01/06/17 16:43	127-18-4	
Toluene	ND	ug/L	0.50	1		01/06/17 16:43	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	0.50	1		01/06/17 16:43	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	0.50	1		01/06/17 16:43	79-00-5	
Trichloroethene	ND	ug/L	0.50	1		01/06/17 16:43	79-01-6	
Trichlorofluoromethane	ND	ug/L	0.50	1		01/06/17 16:43	75-69-4	
Vinyl chloride	ND	ug/L	0.50	1		01/06/17 16:43	75-01-4	
m&p-Xylene	ND	ug/L	2.0	1		01/06/17 16:43	179601-23-1	
o-Xylene	ND	ug/L	1.0	1		01/06/17 16:43	95-47-6	
Surrogates								
Dibromofluoromethane (S)	106	%	72-126	1		01/06/17 16:43	1868-53-7	
4-Bromofluorobenzene (S)	97	%	68-124	1		01/06/17 16:43	460-00-4	
Toluene-d8 (S)	102	%	79-119	1		01/06/17 16:43	2037-26-5	

Sample: FB-010417 Lab ID: 2048198020 Collected: 01/04/17 14:30 Received: 01/04/17 15:08 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8021 GCV BTEX, MTBE, GRO		Analytical Method: EPA 8015/8021						
Gasoline Range Organics	ND	ug/L	50.0	1		01/13/17 01:38		
Surrogates								
4-Bromofluorobenzene (S)	88	%	44-148	1		01/13/17 01:38	460-00-4	
8260 MSV Low Level		Analytical Method: EPA 5030B/8260						
Acetone	17.3	ug/L	4.0	1		01/06/17 17:01	67-64-1	C9
Benzene	ND	ug/L	0.50	1		01/06/17 17:01	71-43-2	
Bromodichloromethane	ND	ug/L	0.50	1		01/06/17 17:01	75-27-4	
Bromoform	ND	ug/L	0.50	1		01/06/17 17:01	75-25-2	
Bromomethane	ND	ug/L	0.50	1		01/06/17 17:01	74-83-9	
2-Butanone (MEK)	ND	ug/L	2.0	1		01/06/17 17:01	78-93-3	
Carbon disulfide	ND	ug/L	1.0	1		01/06/17 17:01	75-15-0	L3

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ANALYTICAL RESULTS

Project: PUMA TERMINAL MW-SAMPLING
Pace Project No.: 2048198

Sample: FB-010417	Lab ID: 2048198020	Collected: 01/04/17 14:30	Received: 01/04/17 15:08	Matrix: Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV Low Level		Analytical Method: EPA 5030B/8260						
Carbon tetrachloride	ND	ug/L	0.50	1		01/06/17 17:01	56-23-5	
Chlorobenzene	ND	ug/L	0.50	1		01/06/17 17:01	108-90-7	
Chloroethane	ND	ug/L	0.50	1		01/06/17 17:01	75-00-3	
Chloroform	ND	ug/L	0.50	1		01/06/17 17:01	67-66-3	
Chloromethane	ND	ug/L	0.50	1		01/06/17 17:01	74-87-3	
1,2-Dibromo-3-chloropropane	ND	ug/L	0.20	1		01/06/17 17:01	96-12-8	
Dibromochloromethane	ND	ug/L	0.50	1		01/06/17 17:01	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	1		01/06/17 17:01	106-93-4	
Dichlorodifluoromethane	ND	ug/L	1.0	1		01/06/17 17:01	75-71-8	
1,1-Dichloroethane	ND	ug/L	0.50	1		01/06/17 17:01	75-34-3	
1,2-Dichloroethane	ND	ug/L	0.50	1		01/06/17 17:01	107-06-2	
1,1-Dichloroethene	ND	ug/L	0.50	1		01/06/17 17:01	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	1		01/06/17 17:01	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	0.50	1		01/06/17 17:01	156-60-5	
1,2-Dichloropropane	ND	ug/L	0.50	1		01/06/17 17:01	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	0.50	1		01/06/17 17:01	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	0.50	1		01/06/17 17:01	10061-02-6	
Ethylbenzene	ND	ug/L	0.50	1		01/06/17 17:01	100-41-4	
2-Hexanone	ND	ug/L	1.0	1		01/06/17 17:01	591-78-6	
Isopropylbenzene (Cumene)	ND	ug/L	1.0	1		01/06/17 17:01	98-82-8	
Methyl acetate	ND	ug/L	2.0	1		01/06/17 17:01	79-20-9	
Methylene Chloride	ND	ug/L	0.50	1		01/06/17 17:01	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	1.0	1		01/06/17 17:01	108-10-1	
Methyl-tert-butyl ether	ND	ug/L	0.50	1		01/06/17 17:01	1634-04-4	
Styrene	ND	ug/L	1.0	1		01/06/17 17:01	100-42-5	
1,1,2,2-Tetrachloroethane	ND	ug/L	0.50	1		01/06/17 17:01	79-34-5	
Tetrachloroethene	ND	ug/L	0.50	1		01/06/17 17:01	127-18-4	
Toluene	ND	ug/L	0.50	1		01/06/17 17:01	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	0.50	1		01/06/17 17:01	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	0.50	1		01/06/17 17:01	79-00-5	
Trichloroethene	ND	ug/L	0.50	1		01/06/17 17:01	79-01-6	
Trichlorofluoromethane	ND	ug/L	0.50	1		01/06/17 17:01	75-69-4	
Vinyl chloride	ND	ug/L	0.50	1		01/06/17 17:01	75-01-4	
m&p-Xylene	ND	ug/L	2.0	1		01/06/17 17:01	179601-23-1	
o-Xylene	ND	ug/L	1.0	1		01/06/17 17:01	95-47-6	
Surrogates								
Dibromofluoromethane (S)	104	%.	72-126	1		01/06/17 17:01	1868-53-7	
4-Bromofluorobenzene (S)	97	%.	68-124	1		01/06/17 17:01	460-00-4	
Toluene-d8 (S)	100	%.	79-119	1		01/06/17 17:01	2037-26-5	

REPORT OF LABORATORY ANALYSIS

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Date: 01/18/2017 12:36 PM



QUALITY CONTROL DATA

Project: PUMA TERMINAL MW-SAMPLING
Pace Project No.: 2048198

QC Batch: 71479 Analysis Method: EPA 8015/8021
QC Batch Method: EPA 8015/8021 Analysis Description: 8021 W GCV BTEX , MTBE, GRO
Associated Lab Samples: 2048198001, 2048198002, 2048198003, 2048198004, 2048198005, 2048198006, 2048198007, 2048198008, 2048198009, 2048198010, 2048198011, 2048198012, 2048198013, 2048198014, 2048198015, 2048198016, 2048198017, 2048198018, 2048198019, 2048198020

METHOD BLANK: 298998 Matrix: Water
Associated Lab Samples: 2048198001, 2048198002, 2048198003, 2048198004, 2048198005, 2048198006, 2048198007, 2048198008, 2048198009, 2048198010, 2048198011, 2048198012, 2048198013, 2048198014, 2048198015, 2048198016, 2048198017, 2048198018, 2048198019, 2048198020

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Gasoline Range Organics	ug/L	ND	50.0	01/06/17 17:15	
4-Bromofluorobenzene (S)	%	86	44-148	01/06/17 17:15	

METHOD BLANK: 301228 Matrix: Water
Associated Lab Samples: 2048198001, 2048198002, 2048198003, 2048198004, 2048198005, 2048198006, 2048198007, 2048198008, 2048198009, 2048198010, 2048198011, 2048198012, 2048198013, 2048198014, 2048198015, 2048198016, 2048198017, 2048198018, 2048198019, 2048198020

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Gasoline Range Organics	ug/L	ND	50.0	01/12/17 16:49	
4-Bromofluorobenzene (S)	%	87	44-148	01/12/17 16:49	

LABORATORY CONTROL SAMPLE: 298999

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Gasoline Range Organics	ug/L	500	440	88	61-136	
4-Bromofluorobenzene (S)	%			91	44-148	

LABORATORY CONTROL SAMPLE: 301229

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Gasoline Range Organics	ug/L	500	436	87	61-136	
4-Bromofluorobenzene (S)	%			93	44-148	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 299000 299001

Parameter	Units	2048198006 Result	MS		MSD		MS % Rec	MSD % Rec	% Rec Limits	Max RPD	Qual
			Spike Conc.	MS Result	MSD Result						
Gasoline Range Organics	ug/L	ND	500	432	430	79	79	15-147	1	20	
4-Bromofluorobenzene (S)	%					90	91	44-148			

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QUALITY CONTROL DATA

Project: PUMA TERMINAL MW-SAMPLING
Pace Project No.: 2048198

QC Batch: 71616 Analysis Method: EPA 7470
QC Batch Method: EPA 7470 Analysis Description: 7470 Mercury
Associated Lab Samples: 2048198002, 2048198003, 2048198004, 2048198005, 2048198006, 2048198007, 2048198008, 2048198009, 2048198010, 2048198013, 2048198014, 2048198015, 2048198016, 2048198017, 2048198019

METHOD BLANK: 299680 Matrix: Water
Associated Lab Samples: 2048198002, 2048198003, 2048198004, 2048198005, 2048198006, 2048198007, 2048198008, 2048198009, 2048198010, 2048198013, 2048198014, 2048198015, 2048198016, 2048198017, 2048198019

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Mercury	ug/L	ND	0.20	01/09/17 20:07	

LABORATORY CONTROL SAMPLE: 299681

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury	ug/L	1	1.0	105	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 299682 299683

Parameter	Units	2048198006 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	Max RPD	Qual
Mercury	ug/L	ND	1	1	0.63	0.63	63	63	75-125	0 20	M1

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QUALITY CONTROL DATA

Project: PUMA TERMINAL MW-SAMPLING
Pace Project No.: 2048198

QC Batch: 71675 Analysis Method: EPA 7470
QC Batch Method: EPA 7470 Analysis Description: 7470 Mercury Dissolved
Associated Lab Samples: 2048198002, 2048198003, 2048198004, 2048198005, 2048198006, 2048198007, 2048198008, 2048198009, 2048198010, 2048198013, 2048198014, 2048198015, 2048198016, 2048198017, 2048198019

METHOD BLANK: 299988 Matrix: Water
Associated Lab Samples: 2048198002, 2048198003, 2048198004, 2048198005, 2048198006, 2048198007, 2048198008, 2048198009, 2048198010, 2048198013, 2048198014, 2048198015, 2048198016, 2048198017, 2048198019

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Mercury, Dissolved	ug/L	ND	0.20	01/10/17 16:51	

LABORATORY CONTROL SAMPLE: 299989

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury, Dissolved	ug/L	1	1.1	108	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 299990 299991

Parameter	Units	2048198006 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	Max RPD	RPD	Qual
Mercury, Dissolved	ug/L	ND	1	1	0.73	0.70	70	67	75-125	4	20	M1

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QUALITY CONTROL DATA

Project: PUMA TERMINAL MW-SAMPLING
Pace Project No.: 2048198

QC Batch: 71620 Analysis Method: EPA 6020
QC Batch Method: EPA 3010 Analysis Description: 6020 MET
Associated Lab Samples: 2048198002, 2048198003, 2048198004, 2048198005, 2048198006, 2048198007, 2048198008, 2048198009, 2048198010, 2048198013, 2048198014, 2048198015, 2048198016, 2048198017, 2048198019

METHOD BLANK: 299696 Matrix: Water
Associated Lab Samples: 2048198002, 2048198003, 2048198004, 2048198005, 2048198006, 2048198007, 2048198008, 2048198009, 2048198010, 2048198013, 2048198014, 2048198015, 2048198016, 2048198017, 2048198019

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Arsenic	mg/L	ND	0.0010	01/13/17 19:07	
Chromium	mg/L	ND	0.0010	01/13/17 19:07	
Lead	mg/L	ND	0.0010	01/13/17 19:07	
Vanadium	mg/L	ND	0.0050	01/13/17 19:07	

LABORATORY CONTROL SAMPLE: 299697

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Arsenic	mg/L	.02	0.020	102	83-115	
Chromium	mg/L	.02	0.020	100	85-115	
Lead	mg/L	.02	0.019	97	84-115	
Vanadium	mg/L	.02	0.020	100	81-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 299698 299699

Parameter	Units	2048198006 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	Max RPD	Qual
Arsenic	mg/L	0.0052	.02	.02	0.024	0.024	94	93	80-120	1	20
Chromium	mg/L	ND	.02	.02	0.020	0.020	95	93	80-120	1	20
Lead	mg/L	ND	.02	.02	0.021	0.021	105	104	80-120	1	20
Vanadium	mg/L	ND	.02	.02	0.018	0.017	88	85	80-120	3	20

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QUALITY CONTROL DATA

Project: PUMA TERMINAL MW-SAMPLING

Pace Project No.: 2048198

QC Batch: 71681

Analysis Method: EPA 6020

QC Batch Method: EPA 3005A

Analysis Description: 6020 MET Dissolved

Associated Lab Samples: 2048198002, 2048198003, 2048198004, 2048198005, 2048198006, 2048198007, 2048198008, 2048198009, 2048198010, 2048198013, 2048198014, 2048198015, 2048198016, 2048198017, 2048198019

METHOD BLANK: 300004

Matrix: Water

Associated Lab Samples: 2048198002, 2048198003, 2048198004, 2048198005, 2048198006, 2048198007, 2048198008, 2048198009, 2048198010, 2048198013, 2048198014, 2048198015, 2048198016, 2048198017, 2048198019

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Arsenic, Dissolved	ug/L	ND	1.0	01/13/17 19:22	
Chromium, Dissolved	ug/L	ND	1.0	01/13/17 19:22	
Lead, Dissolved	ug/L	ND	1.0	01/13/17 19:22	
Vanadium, Dissolved	ug/L	ND	5.0	01/13/17 19:22	

LABORATORY CONTROL SAMPLE: 300005

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Arsenic, Dissolved	ug/L	20	20.3	102	80-120	
Chromium, Dissolved	ug/L	20	19.9	100	80-120	
Lead, Dissolved	ug/L	20	19.3	96	80-120	
Vanadium, Dissolved	ug/L	20	20.2	101	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 300006

300007

Parameter	Units	MS		MSD		MS % Rec	MSD % Rec	% Rec Limits	Max RPD	Qual	
		2048198006 Result	Spike Conc.	Spike Conc.	Result						Result
Arsenic, Dissolved	ug/L	1.6	20	20	20.7	20.5	96	95	75-125	1	20
Chromium, Dissolved	ug/L	ND	20	20	18.7	18.6	93	93	75-125	0	20
Lead, Dissolved	ug/L	ND	20	20	20.7	20.8	104	104	75-125	0	20
Vanadium, Dissolved	ug/L	ND	20	20	17.3	17.3	87	87	75-125	0	20

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QUALITY CONTROL DATA

Project: PUMA TERMINAL MW-SAMPLING
Pace Project No.: 2048198

QC Batch: 71490 Analysis Method: EPA 5030B/8260
QC Batch Method: EPA 5030B/8260 Analysis Description: 8260 MSV Low Level
Associated Lab Samples: 2048198001, 2048198002, 2048198003, 2048198004, 2048198005, 2048198006, 2048198007, 2048198008, 2048198009, 2048198010, 2048198011, 2048198012, 2048198013, 2048198014, 2048198015, 2048198016, 2048198017, 2048198018, 2048198019, 2048198020

METHOD BLANK: 299028 Matrix: Water
Associated Lab Samples: 2048198001, 2048198002, 2048198003, 2048198004, 2048198005, 2048198006, 2048198007, 2048198008, 2048198009, 2048198010, 2048198011, 2048198012, 2048198013, 2048198014, 2048198015, 2048198016, 2048198017, 2048198018, 2048198019, 2048198020

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
1,1,1-Trichloroethane	ug/L	ND	0.50	01/06/17 09:55	
1,1,2,2-Tetrachloroethane	ug/L	ND	0.50	01/06/17 09:55	
1,1,2-Trichloroethane	ug/L	ND	0.50	01/06/17 09:55	
1,1-Dichloroethane	ug/L	ND	0.50	01/06/17 09:55	
1,1-Dichloroethene	ug/L	ND	0.50	01/06/17 09:55	
1,2-Dibromo-3-chloropropane	ug/L	ND	0.20	01/06/17 09:55	
1,2-Dibromoethane (EDB)	ug/L	ND	1.0	01/06/17 09:55	
1,2-Dichloroethane	ug/L	ND	0.50	01/06/17 09:55	
1,2-Dichloropropane	ug/L	ND	0.50	01/06/17 09:55	
2-Butanone (MEK)	ug/L	ND	2.0	01/06/17 09:55	
2-Hexanone	ug/L	ND	1.0	01/06/17 09:55	
4-Methyl-2-pentanone (MIBK)	ug/L	ND	1.0	01/06/17 09:55	
Acetone	ug/L	ND	4.0	01/06/17 09:55	
Benzene	ug/L	ND	0.50	01/06/17 09:55	
Bromodichloromethane	ug/L	ND	0.50	01/06/17 09:55	
Bromoform	ug/L	ND	0.50	01/06/17 09:55	
Bromomethane	ug/L	ND	0.50	01/06/17 09:55	
Carbon disulfide	ug/L	ND	1.0	01/06/17 09:55	
Carbon tetrachloride	ug/L	ND	0.50	01/06/17 09:55	
Chlorobenzene	ug/L	ND	0.50	01/06/17 09:55	
Chloroethane	ug/L	ND	0.50	01/06/17 09:55	
Chloroform	ug/L	ND	0.50	01/06/17 09:55	
Chloromethane	ug/L	ND	0.50	01/06/17 09:55	
cis-1,2-Dichloroethene	ug/L	ND	1.0	01/06/17 09:55	
cis-1,3-Dichloropropene	ug/L	ND	0.50	01/06/17 09:55	
Dibromochloromethane	ug/L	ND	0.50	01/06/17 09:55	
Dichlorodifluoromethane	ug/L	ND	1.0	01/06/17 09:55	
Ethylbenzene	ug/L	ND	0.50	01/06/17 09:55	
Isopropylbenzene (Cumene)	ug/L	ND	1.0	01/06/17 09:55	
m&p-Xylene	ug/L	ND	2.0	01/06/17 09:55	
Methyl acetate	ug/L	ND	2.0	01/06/17 09:55	
Methyl-tert-butyl ether	ug/L	ND	0.50	01/06/17 09:55	
Methylene Chloride	ug/L	ND	0.50	01/06/17 09:55	
o-Xylene	ug/L	ND	1.0	01/06/17 09:55	
Styrene	ug/L	ND	1.0	01/06/17 09:55	
Tetrachloroethene	ug/L	ND	0.50	01/06/17 09:55	
Toluene	ug/L	ND	0.50	01/06/17 09:55	
trans-1,2-Dichloroethene	ug/L	ND	0.50	01/06/17 09:55	

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QUALITY CONTROL DATA

Project: PUMA TERMINAL MW-SAMPLING

Pace Project No.: 2048198

METHOD BLANK: 299028

Matrix: Water

Associated Lab Samples: 2048198001, 2048198002, 2048198003, 2048198004, 2048198005, 2048198006, 2048198007, 2048198008, 2048198009, 2048198010, 2048198011, 2048198012, 2048198013, 2048198014, 2048198015, 2048198016, 2048198017, 2048198018, 2048198019, 2048198020

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
trans-1,3-Dichloropropene	ug/L	ND	0.50	01/06/17 09:55	
Trichloroethene	ug/L	ND	0.50	01/06/17 09:55	
Trichlorofluoromethane	ug/L	ND	0.50	01/06/17 09:55	
Vinyl chloride	ug/L	ND	0.50	01/06/17 09:55	
4-Bromofluorobenzene (S)	%	99	68-124	01/06/17 09:55	
Dibromofluoromethane (S)	%	102	72-126	01/06/17 09:55	
Toluene-d8 (S)	%	100	79-119	01/06/17 09:55	

LABORATORY CONTROL SAMPLE: 299029

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,1,1-Trichloroethane	ug/L	50	53.5	107	62-131	
1,1,2,2-Tetrachloroethane	ug/L	50	47.7	95	15-179	
1,1,2-Trichloroethane	ug/L	50	45.1	90	58-144	
1,1-Dichloroethane	ug/L	50	54.4	109	63-129	
1,1-Dichloroethene	ug/L	50	53.0	106	51-139	
1,2-Dibromo-3-chloropropane	ug/L	50	43.8	88	21-160	
1,2-Dibromoethane (EDB)	ug/L	50	46.7	93	52-161	
1,2-Dichloroethane	ug/L	50	46.5	93	57-148	
1,2-Dichloropropane	ug/L	50	49.8	100	66-128	
2-Butanone (MEK)	ug/L	50	50.1	100	32-183	
2-Hexanone	ug/L	50	44.5	89	36-170	
4-Methyl-2-pentanone (MIBK)	ug/L	50	45.0	90	26-171	
Acetone	ug/L	50	51.5	103	22-165	
Benzene	ug/L	50	52.1	104	62-131	
Bromodichloromethane	ug/L	50	44.3	89	69-132	
Bromoform	ug/L	50	40.1	80	35-166	
Bromomethane	ug/L	50	44.9	90	34-158	
Carbon disulfide	ug/L	50	65.9	132	31-128 L0	
Carbon tetrachloride	ug/L	50	48.9	98	54-144	
Chlorobenzene	ug/L	50	48.0	96	70-127	
Chloroethane	ug/L	50	40.5	81	17-195	
Chloroform	ug/L	50	48.4	97	73-134	
Chloromethane	ug/L	50	53.3	107	17-153	
cis-1,2-Dichloroethene	ug/L	50	53.3	107	68-129	
cis-1,3-Dichloropropene	ug/L	50	49.0	98	72-138	
Dibromochloromethane	ug/L	50	43.6	87	49-146	
Dichlorodifluoromethane	ug/L	50	50.0	100	10-179	
Ethylbenzene	ug/L	50	47.2	94	66-126	
Isopropylbenzene (Cumene)	ug/L	50	49.1	98	51-138	
m&p-Xylene	ug/L	100	95.7	96	65-129	
Methyl acetate	ug/L	50	50.4	101	20-142	

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QUALITY CONTROL DATA

Project: PUMA TERMINAL MW-SAMPLING
Pace Project No.: 2048198

LABORATORY CONTROL SAMPLE: 299029

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Methyl-tert-butyl ether	ug/L	50	48.2	96	37-166	
Methylene Chloride	ug/L	50	53.5	107	46-168	
o-Xylene	ug/L	50	47.3	95	65-124	
Styrene	ug/L	50	47.7	95	72-133	
Tetrachloroethene	ug/L	50	48.5	97	46-157	
Toluene	ug/L	50	49.8	100	69-126	
trans-1,2-Dichloroethene	ug/L	50	54.0	108	60-129	
trans-1,3-Dichloropropene	ug/L	50	46.9	94	59-149	
Trichloroethene	ug/L	50	50.8	102	67-132	
Trichlorofluoromethane	ug/L	50	52.2	104	39-171	
Vinyl chloride	ug/L	50	42.2	84	27-149	
4-Bromofluorobenzene (S)	%			99	68-124	
Dibromofluoromethane (S)	%			108	72-126	
Toluene-d8 (S)	%			100	79-119	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 299030 299031

Parameter	Units	MS		MSD		MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	Max RPD	Qual
		2048198006 Result	Spike Conc.	Spike Conc.	MS Result							
1,1,1-Trichloroethane	ug/L	ND	50	50	61.6	54.6	123	109	54-137	12	20	
1,1,2,2-Tetrachloroethane	ug/L	ND	50	50	53.8	47.9	108	96	15-187	12	20	
1,1,2-Trichloroethane	ug/L	ND	50	50	48.7	44.3	97	89	59-148	10	20	
1,1-Dichloroethane	ug/L	ND	50	50	59.8	53.7	120	107	59-133	11	20	
1,1-Dichloroethene	ug/L	ND	50	50	62.2	53.2	124	106	44-146	15	20	
1,2-Dibromo-3-chloropropane	ug/L	ND	50	50	50.0	46.0	100	92	23-166	8	20	
1,2-Dibromoethane (EDB)	ug/L	ND	50	50	51.4	46.4	103	93	55-166	10	20	
1,2-Dichloroethane	ug/L	ND	50	50	50.9	45.9	102	92	56-154	10	20	
1,2-Dichloropropane	ug/L	ND	50	50	56.3	49.8	113	100	62-135	12	20	
2-Butanone (MEK)	ug/L	ND	50	50	54.6	51.2	109	102	20-205	6	20	
2-Hexanone	ug/L	ND	50	50	47.0	45.0	94	90	25-189	4	20	
4-Methyl-2-pentanone (MIBK)	ug/L	ND	50	50	49.5	47.0	99	94	23-184	5	20	
Acetone	ug/L	39.4	50	50	65.5	59.7	52	41	11-217	9	20	
Benzene	ug/L	ND	50	50	60.1	53.0	120	106	52-141	12	20	
Bromodichloromethane	ug/L	ND	50	50	49.9	44.7	100	89	70-134	11	20	
Bromoform	ug/L	ND	50	50	44.1	40.9	88	82	37-171	8	20	
Bromomethane	ug/L	ND	50	50	50.0	46.8	100	94	34-155	7	20	
Carbon disulfide	ug/L	ND	50	50	81.5	68.4	163	136	28-130	18	20	MO
Carbon tetrachloride	ug/L	ND	50	50	56.5	49.9	113	100	48-146	12	20	
Chlorobenzene	ug/L	ND	50	50	55.2	49.6	110	99	67-129	11	20	
Chloroethane	ug/L	ND	50	50	47.0	41.6	94	83	12-192	12	20	
Chloroform	ug/L	ND	50	50	54.2	47.7	108	95	66-143	13	20	
Chloromethane	ug/L	ND	50	50	60.3	54.3	121	109	14-155	11	20	
cis-1,2-Dichloroethene	ug/L	ND	50	50	58.8	51.7	118	103	56-141	13	20	
cis-1,3-Dichloropropene	ug/L	ND	50	50	53.8	48.4	108	97	70-139	11	20	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: PUMA TERMINAL MW-SAMPLING
Pace Project No.: 2048198

Parameter	Units	MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 299030		299031		MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	Max RPD	RPD	Qual
		2048198006 Result	MS Spike Conc.	MSD Spike Conc.									
Dibromochloromethane	ug/L	ND	50	50	47.7	43.4	95	87	50-150	9	20		
Dichlorodifluoromethane	ug/L	ND	50	50	58.1	51.6	116	103	10-173	12	20		
Ethylbenzene	ug/L	ND	50	50	53.4	48.8	107	98	57-135	9	20		
Isopropylbenzene (Cumene)	ug/L	ND	50	50	56.5	52.1	113	104	40-146	8	20		
m&p-Xylene	ug/L	ND	100	100	109	98.4	109	98	56-136	10	20		
Methyl acetate	ug/L	ND	50	50	51.9	47.9	104	96	10-142	8	20		
Methyl-tert-butyl ether	ug/L	8.2	50	50	62.0	56.3	108	96	35-176	10	20		
Methylene Chloride	ug/L	ND	50	50	57.9	53.1	116	106	45-166	9	20		
o-Xylene	ug/L	ND	50	50	52.8	47.7	106	95	57-133	10	20		
Styrene	ug/L	ND	50	50	54.1	48.6	108	97	58-144	11	20		
Tetrachloroethene	ug/L	ND	50	50	56.5	51.3	113	103	48-143	10	20		
Toluene	ug/L	ND	50	50	56.8	50.2	114	100	59-136	12	20		
trans-1,2-Dichloroethene	ug/L	ND	50	50	62.1	53.8	124	108	57-132	14	20		
trans-1,3-Dichloropropene	ug/L	ND	50	50	53.5	48.0	107	96	59-154	11	20		
Trichloroethene	ug/L	ND	50	50	58.3	51.9	117	104	58-140	12	20		
Trichlorofluoromethane	ug/L	ND	50	50	62.3	55.7	125	111	24-175	11	20		
Vinyl chloride	ug/L	ND	50	50	49.5	43.0	99	86	21-150	14	20		
4-Bromofluorobenzene (S)	%.						101	98	68-124				
Dibromofluoromethane (S)	%.						107	106	72-126				
Toluene-d8 (S)	%.						102	101	79-119				

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: PUMA TERMINAL MW-SAMPLING
Pace Project No.: 2048198

QC Batch: 71486 Analysis Method: EPA 8015B Modified
QC Batch Method: EPA 3535 Analysis Description: EPA 8015 ORO
Associated Lab Samples: 2048198002, 2048198003, 2048198004, 2048198005, 2048198006, 2048198007, 2048198008, 2048198009, 2048198010, 2048198013, 2048198014, 2048198015, 2048198016, 2048198017, 2048198019

METHOD BLANK: 299020 Matrix: Water
Associated Lab Samples: 2048198002, 2048198003, 2048198004, 2048198005, 2048198006, 2048198007, 2048198008, 2048198009, 2048198010, 2048198013, 2048198014, 2048198015, 2048198016, 2048198017, 2048198019

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Diesel Range Organic (C10-C28)	mg/L	ND	0.25	01/11/17 16:31	
Oil Range Organics (>C28-C40)	mg/L	ND	0.50	01/11/17 16:31	
n-Pentacosane (S)	%	38	16-137	01/11/17 16:31	
o-Terphenyl (S)	%	56	10-121	01/11/17 16:31	

LABORATORY CONTROL SAMPLE: 299021

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Diesel Range Organic (C10-C28)	mg/L	.4	.21J	54	10-115	
n-Pentacosane (S)	%			47	16-137	
o-Terphenyl (S)	%			66	10-121	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 299024 299025

Parameter	Units	2048198006 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	Max RPD	Qual
Diesel Range Organic (C10-C28)	mg/L	ND	.4	.4	0.47	0.57	70	93	10-122	18	20
n-Pentacosane (S)	%						64	71	16-137		
o-Terphenyl (S)	%						73	81	10-121		

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QUALITY CONTROL DATA

Project: PUMA TERMINAL MW-SAMPLING
Pace Project No.: 2048198

QC Batch: 71484 Analysis Method: EPA 8270 by SIM
QC Batch Method: EPA 3510 Analysis Description: 8270 Water by SIM MSSV
Associated Lab Samples: 2048198002, 2048198003, 2048198004, 2048198005, 2048198006, 2048198007, 2048198008, 2048198009, 2048198010

METHOD BLANK: 299014 Matrix: Water
Associated Lab Samples: 2048198002, 2048198003, 2048198004, 2048198005, 2048198006, 2048198007, 2048198008, 2048198009, 2048198010

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
2-Methylnaphthalene	ug/L	ND	0.10	01/09/17 12:22	
Acenaphthene	ug/L	ND	0.10	01/09/17 12:22	
Acenaphthylene	ug/L	ND	0.10	01/09/17 12:22	
Anthracene	ug/L	ND	0.10	01/09/17 12:22	
Benzo(a)anthracene	ug/L	ND	0.10	01/09/17 12:22	
Benzo(a)pyrene	ug/L	ND	0.10	01/09/17 12:22	
Benzo(b)fluoranthene	ug/L	ND	0.10	01/09/17 12:22	
Benzo(g,h,i)perylene	ug/L	ND	0.10	01/09/17 12:22	
Benzo(k)fluoranthene	ug/L	ND	0.10	01/09/17 12:22	
Chrysene	ug/L	ND	0.10	01/09/17 12:22	
Dibenz(a,h)anthracene	ug/L	ND	0.10	01/09/17 12:22	
Fluoranthene	ug/L	ND	0.10	01/09/17 12:22	
Fluorene	ug/L	ND	0.10	01/09/17 12:22	
Indeno(1,2,3-cd)pyrene	ug/L	ND	0.10	01/09/17 12:22	
Naphthalene	ug/L	ND	0.10	01/09/17 12:22	
Phenanthrene	ug/L	ND	0.10	01/09/17 12:22	
Pyrene	ug/L	ND	0.10	01/09/17 12:22	
2-Fluorobiphenyl (S)	%	70	25-150	01/09/17 12:22	
Terphenyl-d14 (S)	%	73	25-150	01/09/17 12:22	

LABORATORY CONTROL SAMPLE: 299015

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
2-Methylnaphthalene	ug/L	4	2.7	68	35-150	
Acenaphthene	ug/L	4	2.9	72	35-150	
Acenaphthylene	ug/L	4	2.8	71	35-150	
Anthracene	ug/L	4	3.6	89	35-150	
Benzo(a)anthracene	ug/L	4	3.1	79	35-150	
Benzo(a)pyrene	ug/L	4	2.9	72	35-150	
Benzo(b)fluoranthene	ug/L	4	2.9	74	35-150	
Benzo(g,h,i)perylene	ug/L	4	3.2	81	35-150	
Benzo(k)fluoranthene	ug/L	4	2.9	72	35-150	
Chrysene	ug/L	4	2.9	72	35-150	
Dibenz(a,h)anthracene	ug/L	4	3.6	90	35-150	
Fluoranthene	ug/L	4	2.9	72	35-150	
Fluorene	ug/L	4	2.8	71	35-150	
Indeno(1,2,3-cd)pyrene	ug/L	4	3.4	86	35-150	
Naphthalene	ug/L	4	2.5	62	35-150	

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QUALITY CONTROL DATA

Project: PUMA TERMINAL MW-SAMPLING
Pace Project No.: 2048198

LABORATORY CONTROL SAMPLE: 299015

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Phenanthrene	ug/L	4	3.1	78	35-150	
Pyrene	ug/L	4	2.8	69	35-150	
2-Fluorobiphenyl (S)	%			73	25-150	
Terphenyl-d14 (S)	%			77	25-150	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 299016 299017

Parameter	Units	299016		299017		MS % Rec	MSD % Rec	% Rec Limits	Max			
		2048198006 Result	MS Spike Conc.	MSD Spike Conc.	MS Result				MSD Result	RPD	RPD	Qual
2-Methylnaphthalene	ug/L	ND	4	4	3.4	2.7	84	66	35-150	24	20	R1
Acenaphthene	ug/L	0.27	4	4	3.5	2.9	82	65	35-150	21	20	R1
Acenaphthylene	ug/L	ND	4	4	3.4	2.7	84	66	35-150	23	20	R1
Anthracene	ug/L	0.11	4	4	4.0	3.1	97	75	35-150	24	20	R1
Benzo(a)anthracene	ug/L	ND	4	4	3.6	2.8	89	71	35-150	22	20	R1
Benzo(a)pyrene	ug/L	ND	4	4	3.2	2.5	79	62	35-150	24	20	R1
Benzo(b)fluoranthene	ug/L	ND	4	4	3.1	2.5	78	64	35-150	21	20	R1
Benzo(g,h,i)perylene	ug/L	ND	4	4	3.6	3.0	90	74	35-150	20	20	
Benzo(k)fluoranthene	ug/L	ND	4	4	3.1	2.5	79	61	35-150	25	20	R1
Chrysene	ug/L	ND	4	4	3.2	2.5	80	63	35-150	24	20	R1
Dibenz(a,h)anthracene	ug/L	ND	4	4	3.8	3.1	95	79	35-150	18	20	
Fluoranthene	ug/L	ND	4	4	3.2	2.6	80	64	35-150	22	20	R1
Fluorene	ug/L	ND	4	4	3.4	2.7	84	67	35-150	23	20	R1
Indeno(1,2,3-cd)pyrene	ug/L	ND	4	4	3.7	3.1	92	76	35-150	19	20	
Naphthalene	ug/L	ND	4	4	3.0	2.4	74	58	35-150	24	20	R1
Phenanthrene	ug/L	0.26	4	4	3.6	2.8	83	65	35-150	22	20	R1
Pyrene	ug/L	ND	4	4	3.2	2.4	79	61	35-150	26	20	R1
2-Fluorobiphenyl (S)	%						83	70	25-150		20	
Terphenyl-d14 (S)	%						84	68	25-150		20	

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: PUMA TERMINAL MW-SAMPLING
Pace Project No.: 2048198

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
2048198002	EB-010317	EPA 3535	71486	EPA 8015B Modified	71841
2048198003	MW-B9	EPA 3535	71486	EPA 8015B Modified	71841
2048198004	MW-EB103	EPA 3535	71486	EPA 8015B Modified	71841
2048198005	MW-EB104	EPA 3535	71486	EPA 8015B Modified	71841
2048198006	MW-EB105	EPA 3535	71486	EPA 8015B Modified	71841
2048198007	DUP004	EPA 3535	71486	EPA 8015B Modified	71841
2048198008	MW-EB106	EPA 3535	71486	EPA 8015B Modified	71841
2048198009	MW-EB107	EPA 3535	71486	EPA 8015B Modified	71841
2048198010	MW-EB108	EPA 3535	71486	EPA 8015B Modified	71841
2048198013	EB-010417	EPA 3535	71486	EPA 8015B Modified	71841
2048198014	MW-DP1	EPA 3535	71486	EPA 8015B Modified	71841
2048198015	MW-MP2	EPA 3535	71486	EPA 8015B Modified	71841
2048198016	MW-MP3	EPA 3535	71486	EPA 8015B Modified	71841
2048198017	MW-MP8	EPA 3535	71486	EPA 8015B Modified	71841
2048198019	MW-NDP	EPA 3535	71486	EPA 8015B Modified	71841
2048198001	TB-010317	EPA 8015/8021	71479		
2048198002	EB-010317	EPA 8015/8021	71479		
2048198003	MW-B9	EPA 8015/8021	71479		
2048198004	MW-EB103	EPA 8015/8021	71479		
2048198005	MW-EB104	EPA 8015/8021	71479		
2048198006	MW-EB105	EPA 8015/8021	71479		
2048198007	DUP004	EPA 8015/8021	71479		
2048198008	MW-EB106	EPA 8015/8021	71479		
2048198009	MW-EB107	EPA 8015/8021	71479		
2048198010	MW-EB108	EPA 8015/8021	71479		
2048198011	FB-010317	EPA 8015/8021	71479		
2048198012	TB-010417	EPA 8015/8021	71479		
2048198013	EB-010417	EPA 8015/8021	71479		
2048198014	MW-DP1	EPA 8015/8021	71479		
2048198015	MW-MP2	EPA 8015/8021	71479		
2048198016	MW-MP3	EPA 8015/8021	71479		
2048198017	MW-MP8	EPA 8015/8021	71479		
2048198018	TB-010417-2	EPA 8015/8021	71479		
2048198019	MW-NDP	EPA 8015/8021	71479		
2048198020	FB-010417	EPA 8015/8021	71479		
2048198002	EB-010317	EPA 3010	71620	EPA 6020	71657
2048198003	MW-B9	EPA 3010	71620	EPA 6020	71657
2048198004	MW-EB103	EPA 3010	71620	EPA 6020	71657
2048198005	MW-EB104	EPA 3010	71620	EPA 6020	71657
2048198006	MW-EB105	EPA 3010	71620	EPA 6020	71657
2048198007	DUP004	EPA 3010	71620	EPA 6020	71657
2048198008	MW-EB106	EPA 3010	71620	EPA 6020	71657
2048198009	MW-EB107	EPA 3010	71620	EPA 6020	71657
2048198010	MW-EB108	EPA 3010	71620	EPA 6020	71657
2048198013	EB-010417	EPA 3010	71620	EPA 6020	71657
2048198014	MW-DP1	EPA 3010	71620	EPA 6020	71657
2048198015	MW-MP2	EPA 3010	71620	EPA 6020	71657
2048198016	MW-MP3	EPA 3010	71620	EPA 6020	71657

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: PUMA TERMINAL MW-SAMPLING
Pace Project No.: 2048198

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
2048198017	MW-MP8	EPA 3010	71620	EPA 6020	71657
2048198019	MW-NDP	EPA 3010	71620	EPA 6020	71657
2048198002	EB-010317	EPA 3005A	71681	EPA 6020	71750
2048198003	MW-B9	EPA 3005A	71681	EPA 6020	71750
2048198004	MW-EB103	EPA 3005A	71681	EPA 6020	71750
2048198005	MW-EB104	EPA 3005A	71681	EPA 6020	71750
2048198006	MW-EB105	EPA 3005A	71681	EPA 6020	71750
2048198007	DUP004	EPA 3005A	71681	EPA 6020	71750
2048198008	MW-EB106	EPA 3005A	71681	EPA 6020	71750
2048198009	MW-EB107	EPA 3005A	71681	EPA 6020	71750
2048198010	MW-EB108	EPA 3005A	71681	EPA 6020	71750
2048198013	EB-010417	EPA 3005A	71681	EPA 6020	71750
2048198014	MW-DP1	EPA 3005A	71681	EPA 6020	71750
2048198015	MW-MP2	EPA 3005A	71681	EPA 6020	71750
2048198016	MW-MP3	EPA 3005A	71681	EPA 6020	71750
2048198017	MW-MP8	EPA 3005A	71681	EPA 6020	71750
2048198019	MW-NDP	EPA 3005A	71681	EPA 6020	71750
2048198002	EB-010317	EPA 7470	71616	EPA 7470	71655
2048198003	MW-B9	EPA 7470	71616	EPA 7470	71655
2048198004	MW-EB103	EPA 7470	71616	EPA 7470	71655
2048198005	MW-EB104	EPA 7470	71616	EPA 7470	71655
2048198006	MW-EB105	EPA 7470	71616	EPA 7470	71655
2048198007	DUP004	EPA 7470	71616	EPA 7470	71655
2048198008	MW-EB106	EPA 7470	71616	EPA 7470	71655
2048198009	MW-EB107	EPA 7470	71616	EPA 7470	71655
2048198010	MW-EB108	EPA 7470	71616	EPA 7470	71655
2048198013	EB-010417	EPA 7470	71616	EPA 7470	71655
2048198014	MW-DP1	EPA 7470	71616	EPA 7470	71655
2048198015	MW-MP2	EPA 7470	71616	EPA 7470	71655
2048198016	MW-MP3	EPA 7470	71616	EPA 7470	71655
2048198017	MW-MP8	EPA 7470	71616	EPA 7470	71655
2048198019	MW-NDP	EPA 7470	71616	EPA 7470	71655
2048198002	EB-010317	EPA 7470	71675	EPA 7470	71752
2048198003	MW-B9	EPA 7470	71675	EPA 7470	71752
2048198004	MW-EB103	EPA 7470	71675	EPA 7470	71752
2048198005	MW-EB104	EPA 7470	71675	EPA 7470	71752
2048198006	MW-EB105	EPA 7470	71675	EPA 7470	71752
2048198007	DUP004	EPA 7470	71675	EPA 7470	71752
2048198008	MW-EB106	EPA 7470	71675	EPA 7470	71752
2048198009	MW-EB107	EPA 7470	71675	EPA 7470	71752
2048198010	MW-EB108	EPA 7470	71675	EPA 7470	71752
2048198013	EB-010417	EPA 7470	71675	EPA 7470	71752
2048198014	MW-DP1	EPA 7470	71675	EPA 7470	71752
2048198015	MW-MP2	EPA 7470	71675	EPA 7470	71752
2048198016	MW-MP3	EPA 7470	71675	EPA 7470	71752
2048198017	MW-MP8	EPA 7470	71675	EPA 7470	71752
2048198019	MW-NDP	EPA 7470	71675	EPA 7470	71752

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: PUMA TERMINAL MW-SAMPLING
Pace Project No.: 2048198

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
2048198002	EB-010317	EPA 3510	71484	EPA 8270 by SIM	71596
2048198003	MW-B9	EPA 3510	71484	EPA 8270 by SIM	71596
2048198004	MW-EB103	EPA 3510	71484	EPA 8270 by SIM	71596
2048198005	MW-EB104	EPA 3510	71484	EPA 8270 by SIM	71596
2048198006	MW-EB105	EPA 3510	71484	EPA 8270 by SIM	71596
2048198007	DUP004	EPA 3510	71484	EPA 8270 by SIM	71596
2048198008	MW-EB106	EPA 3510	71484	EPA 8270 by SIM	71596
2048198009	MW-EB107	EPA 3510	71484	EPA 8270 by SIM	71596
2048198010	MW-EB108	EPA 3510	71484	EPA 8270 by SIM	71596
2048198013	EB-010417	EPA 3510	71561	EPA 8270 by SIM	71719
2048198014	MW-DP1	EPA 3510	71561	EPA 8270 by SIM	71719
2048198015	MW-MP2	EPA 3510	71561	EPA 8270 by SIM	71719
2048198016	MW-MP3	EPA 3510	71561	EPA 8270 by SIM	71719
2048198017	MW-MP8	EPA 3510	71561	EPA 8270 by SIM	71719
2048198019	MW-NDP	EPA 3510	71561	EPA 8270 by SIM	71719
2048198001	TB-010317	EPA 5030B/8260	71490		
2048198002	EB-010317	EPA 5030B/8260	71490		
2048198003	MW-B9	EPA 5030B/8260	71490		
2048198004	MW-EB103	EPA 5030B/8260	71490		
2048198005	MW-EB104	EPA 5030B/8260	71490		
2048198006	MW-EB105	EPA 5030B/8260	71490		
2048198007	DUP004	EPA 5030B/8260	71490		
2048198008	MW-EB106	EPA 5030B/8260	71490		
2048198009	MW-EB107	EPA 5030B/8260	71490		
2048198010	MW-EB108	EPA 5030B/8260	71490		
2048198011	FB-010317	EPA 5030B/8260	71490		
2048198012	TB-010417	EPA 5030B/8260	71490		
2048198013	EB-010417	EPA 5030B/8260	71490		
2048198014	MW-DP1	EPA 5030B/8260	71490		
2048198015	MW-MP2	EPA 5030B/8260	71490		
2048198016	MW-MP3	EPA 5030B/8260	71490		
2048198017	MW-MP8	EPA 5030B/8260	71490		
2048198018	TB-010417-2	EPA 5030B/8260	71490		
2048198019	MW-NDP	EPA 5030B/8260	71490		
2048198020	FB-010417	EPA 5030B/8260	71490		

REPORT OF LABORATORY ANALYSIS

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CHAIN-OF-CUSTODY / Analytical Request Document
The Chain-of-Custody is a LEGAL DOCUMENT

WO#: 2048198



1 of 2
2075139

Section A Required Client Information:		Section B Required Project Information:		Section C Invoice Information: 2048198	
Company: <u>Arceas</u>		Report To: <u>E. Fran Caldero</u>		Attention:	
Address: <u>48217 via Playa suite 401</u>		Copy To:		Company Name:	
<u>83165 km 1.2 carretera</u>		Purchase Order No.:		REGULATORY AGENCY	
Email To: <u>Efrancaldero@arceas.com</u>		Project Name: <u>Planeta Terminal env. sampling</u>		<input type="checkbox"/> NPDES <input type="checkbox"/> GROUND WATER <input type="checkbox"/> DRINKING WATER <input type="checkbox"/> UST <input type="checkbox"/> RCRA <input type="checkbox"/> OTHER	
Phone: <u>952-977-4000</u> Fax: <u>952-977-3055</u>		Project Number: <u>ED02-1605B</u>		Site Location	
Requested Due Date/TAT: <u>Standard</u>				STATE: <u>P.R.</u>	

ITEM #	SAMPLE ID (A-Z, 0-9, -) Sample IDs MUST BE UNIQUE	Matrix Codes MATRIX / CODE	Drinking Water DW Water WT Waste Water WW Product P Soil/Solid SL Oil OL Wipe WP Air AR Tissue TS Other OT	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED				SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives										Analysis Test: ↓	Residual Chlorine (Y/N)	Pace Project No. / Lab I.D.									
						COMPOSITE START		COMPOSITE END/GRAB				Unpreserved	H ₂ SO ₄	HNO ₃	HCl	NaOH	Na ₂ S ₂ O ₃	Methanol	Other	Voc's 6260	6-80 4015				PAH's 4015	3-wax's 4220	Metals / mercury	Disinfectants					
						DATE	TIME	DATE	TIME																								
1	TB-010311			M	G			01/03/17	LAB	4																							
2	EB-010311			M	G			01/03/17	0843	10																							
3	MV-B9			M	G			01/03/17	0935	10																							
4	MV-EB103			M	G			01/03/17	1027	10																							
5	MV-EB104			M	G			01/03/17	1126	10																							
6	MV-EB105			M	G			01/03/17	1345	10																							
7	MV-EB105 (MS)			M	G			01/03/17	1345	10																							
8	MV-EB105 (MSD)			M	G			01/03/17	1345	10																							
9	DUP004			M	G			01/03/17	/	10																							
10	MV-EB106			M	G			01/03/17	1428	10																							
11	MV-EB107			M	G			01/03/17	1511	10																							
12	MV-EB108			M	G			01/03/17	1601	10																							

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS		
Level III	Arceas	01/04/17	1508	[Signature]	14-17	15:00	0.7		
	[Signature]	1-4-17	1800	Fed Exp			0.5		
	Fed Exp	1-5-17	0910	[Signature]	1-5-17	0910	1.1	4	4
							1.0		

ORIGINAL	SAMPLER NAME AND SIGNATURE		Temp in °C	Received on Ice (Y/N)	Custody Sealed Cooler (Y/N)	Samples Intact (Y/N)
	PRINT Name of SAMPLER: <u>Arceas</u>					
	SIGNATURE of SAMPLER: <u>[Signature]</u>					
		DATE Signed (MM/DD/YY): <u>02/04/17</u>				

*Important Note: By signing this form you are accepting Pace's NET 30 day payment terms and agreeing to late charges of 1.5% per month for any invoices not paid within 30 days.



CHAIN-OF-CUSTODY / Analytical Request Document

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

Page: 2 of 2
2075140

Section A Required Client Information:		Section B Required Project Information:		Section C Invoice Information:	
Company: <u>Arcaids</u>		Report To: <u>Edwin Calderon</u>		Attention:	
Address: <u>45 city view plaza suite 401</u>		Copy To:		Company Name:	
<u>Rd 165 Km 1/2 parramiro P.R.</u>		Purchase Order No.:		REGULATORY AGENCY	
Email To: <u>Edwin.Calderon@arcaids.us.com</u>		Project Name: <u>Puma Terminal MW Sampling</u>		<input type="checkbox"/> NPDES <input type="checkbox"/> GROUND WATER <input type="checkbox"/> DRINKING WATER <input type="checkbox"/> UST <input type="checkbox"/> RCRA <input type="checkbox"/> OTHER	
Phone: <u>787-777-4000</u> Fax: <u>787-777-4046</u>		Project Number: <u>E002.1605B</u>		Site Location: <u>P.R.</u>	
Requested Due Date/TAT: <u>Standard</u>		Pace Profile #:		STATE: <u>P.R.</u>	

ITEM #	Section D Required Client Information SAMPLE ID (A-Z, 0-9 / -) Sample IDs MUST BE UNIQUE	Matrix Codes MATRIX / CODE Drinking Water DW Water WT Waste Water WW Product P Soil/Solid SL Oil OL Wipe WP Air AR Tissue TS Other OT	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED				SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives								↓ Analysis Test ↓	Requested Analysis: Filtered (Y/N)	Residual Chlorine (Y/N)	Pace Project No./ Lab I.D.					
					COMPOSITE START	COMPOSITE END/GRAB					Unpreserved	H ₂ SO ₄	HNO ₃	HCl	NaOH	Na ₂ S ₂ O ₈	Methanol	Other									
1	FB-010317	WT	G		01/04/17	1610		1																			
2	TB-010417	WT	G		01/04/17	LAB		4																			
3	FB-010417	WT	G		01/04/17	0958		10	5		1	4															
4	MW-DP1	WT	G		01/04/17	0936		10	5		1	4															
5	MW-MP2	WT	G		01/04/17	1025		10	5		1	4															
6	MW-MP3	WT	G		01/04/17	1146		10	5		1	4															
7	MW-MP8	M	G		01/04/17	1333		10	5		1	4															
8	TB-010417-2	WT	G		01/04/17	LAB		4																			
9	MW-MP9	WT	G		01/04/17	1422		10	5		1	4															
10	FB-010417	WT	G		01/04/17	1430		4																			

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS
Level III	Andrew Calderon Arcaids	01/04/17	1508	[Signature] Pace	01/04/17	15:00	
	[Signature] Fed EO	01/14/17	1710	Fed EO			
	[Signature] Fed EO	01/17/17	0910	[Signature] Pace	01/17/17	0910	Y Y Y

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ORIGINAL

SAMPLER NAME AND SIGNATURE		Temp in °C	Received on Ice (Y/N)	Custody Sealed Cooler (Y/N)	Samples Intact (Y/N)
PRINT Name of SAMPLER: <u>Andrew Calderon</u>					
SIGNATURE of SAMPLER: <u>[Signature]</u>	DATE Signed (MM/DD/YY): <u>01/04/17</u>				

*Important Note: By signing this form you are accepting Pace's NET 30 day payment terms and agreeing to late charges of 1.5% per month for any invoices not paid within 30 days.

WO#: 2048198



Sample Condition

PM: JAR1

Due Date: 01/18/17

CLIENT: 98-ARCADISPR

1000 Riverbend Blvd., Suite F
St. Rose, LA 70087

Courier: Pace Courier Hired Courier Fed X UPS DHL USPS Customer Other

Custody Seal on Cooler/Box Present: [see COC]

Custody Seals intact: Yes No

Thermometer Used: Therm Fisher IR 5
 Therm Fisher IR 6
 Therm Fisher IR 7

Type of Ice: Wet Blue None

Samples on ice: [see COC]

Cooler Temperature: [see COC]

Temp should be above freezing to 6°C

Date and Initials of person examining contents: 1-5-17 JMB

Temp must be measured from Temperature blank when present

Comments:

Temperature Blank Present?"	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	1	
Chain of Custody Present:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	2	
Chain of Custody Complete:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	3	
Chain of Custody Relinquished:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	4	
Sampler Name & Signature on COC:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	5	
Samples Arrived within Hold Time:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	6	
Sufficient Volume:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	7	
Correct Containers Used:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	8	
Filtered vol. Rec. for Diss. tests	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	9	
Sample Labels match COC:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	10	
All containers received within manufacture's precautionary and/or expiration dates.	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	11	
All containers needing chemical preservation have been checked (except VOA, coliform, & O&G).	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	12	
All containers preservation checked found to be in compliance with EPA recommendation.	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	13	If No, was preservative added? <input type="checkbox"/> Yes <input type="checkbox"/> No If added record lot no.: HNO3 _____ H2SO4 _____
Headspace in VOA Vials (>6mm):	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	14	
Trip Blank Present:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	15	

Client Notification/ Resolution:

Person Contacted: _____

Date/Time: _____

Comments/ Resolution: _____

January 18, 2017

Efrain Calderon
BBL Caribe Engineering P.S.C.
48 City View Plaza1, Suite 401
Road 16, Km. 1.2
Guaynabo, PR 00968

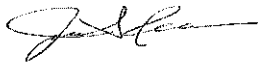
RE: Project: PUMA TERMINAL MW SAMPLING
Pace Project No.: 2048222

Dear Efrain Calderon:

Enclosed are the analytical results for sample(s) received by the laboratory on January 05, 2017. The results relate only to the samples included in this report. Results reported herein conform to the most current, applicable TNI/NELAC standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,



Juan Redondo
juan.redondo@pacelabs.com
Project Manager

Enclosures

cc: Sharon Colon
Abner Hernandez
Marianela Mercado-Burgos



REPORT OF LABORATORY ANALYSIS

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CERTIFICATIONS

Project: PUMA TERMINAL MW SAMPLING
Pace Project No.: 2048222

New Orleans Certification IDs

California Env. Lab Accreditation Program Branch:
11277CA
Florida Department of Health (NELAC): E87595
Illinois Environmental Protection Agency: 0025721
Kansas Department of Health and Environment (NELAC):
E-10266
Louisiana Dept. of Environmental Quality (NELAC/LELAP):
02006

Pennsylvania Dept. of Env Protection (NELAC): 68-04202
Texas Commission on Env. Quality (NELAC):
T104704405-09-TX
U.S. Dept. of Agriculture Foreign Soil Import: P330-10-
00119
Commonwealth of Virginia (TNI): 480246

REPORT OF LABORATORY ANALYSIS

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SAMPLE SUMMARY

Project: PUMA TERMINAL MW SAMPLING
Pace Project No.: 2048222

Lab ID	Sample ID	Matrix	Date Collected	Date Received
2048222001	TB-010517	Water	01/05/17 00:00	01/05/17 12:50
2048222002	EB-010517	Water	01/05/17 08:46	01/05/17 12:50
2048222003	MW-48A	Water	01/05/17 09:42	01/05/17 12:50
2048222004	MW-109A	Water	01/05/17 11:05	01/05/17 12:50
2048222005	DUP005	Water	01/05/17 00:00	01/05/17 12:50
2048222006	MW-M14	Water	01/05/17 11:34	01/05/17 12:50
2048222007	FB-010517	Water	01/05/17 11:38	01/05/17 12:50

REPORT OF LABORATORY ANALYSIS

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SAMPLE ANALYTE COUNT

Project: PUMA TERMINAL MW SAMPLING
Pace Project No.: 2048222

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
2048222001	TB-010517	EPA 8015/8021	MHM	2	PASI-N
		EPA 5030B/8260	RMP	45	PASI-N
2048222002	EB-010517	EPA 8015B Modified	SLF	4	PASI-N
		EPA 8015/8021	MHM	2	PASI-N
		EPA 6020	KJR	4	PASI-N
		EPA 6020	KJR	4	PASI-N
		EPA 7470	MHB1	1	PASI-N
		EPA 7470	MHB1	1	PASI-N
		EPA 8270 by SIM	GEJ	19	PASI-N
		EPA 5030B/8260	RMP	45	PASI-N
2048222003	MW-48A	EPA 8015B Modified	SLF	4	PASI-N
		EPA 8015/8021	MHM	2	PASI-N
		EPA 6020	KJR	4	PASI-N
		EPA 6020	KJR	4	PASI-N
		EPA 7470	MHB1	1	PASI-N
		EPA 7470	MHB1	1	PASI-N
		EPA 8270 by SIM	GEJ	19	PASI-N
		EPA 5030B/8260	RMP	45	PASI-N
2048222004	MW-109A	EPA 8015B Modified	SLF	4	PASI-N
		EPA 8015/8021	MHM	2	PASI-N
		EPA 6020	KJR	4	PASI-N
		EPA 6020	KJR	4	PASI-N
		EPA 7470	MHB1	1	PASI-N
		EPA 7470	MHB1	1	PASI-N
		EPA 8270 by SIM	GEJ	19	PASI-N
		EPA 5030B/8260	RMP	45	PASI-N
2048222005	DUP005	EPA 8015B Modified	SLF	4	PASI-N
		EPA 8015/8021	MHM	2	PASI-N
		EPA 6020	KJR	4	PASI-N
		EPA 6020	KJR	4	PASI-N
		EPA 7470	MHB1	1	PASI-N
		EPA 7470	MHB1	1	PASI-N
		EPA 8270 by SIM	GEJ	19	PASI-N
		EPA 5030B/8260	RMP	45	PASI-N
2048222006	MW-M14	EPA 8015B Modified	SLF	4	PASI-N
		EPA 8015/8021	MHM	2	PASI-N
		EPA 6020	KJR	4	PASI-N

REPORT OF LABORATORY ANALYSIS

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SAMPLE ANALYTE COUNT

Project: PUMA TERMINAL MW SAMPLING
Pace Project No.: 2048222

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
		EPA 6020	KJR	4	PASI-N
		EPA 7470	MHB1	1	PASI-N
		EPA 7470	MHB1	1	PASI-N
		EPA 8270 by SIM	GEJ	19	PASI-N
		EPA 5030B/8260	RMP	45	PASI-N
2048222007	FB-010517	EPA 8015/8021	MHM	2	PASI-N
		EPA 5030B/8260	RMP	45	PASI-N

REPORT OF LABORATORY ANALYSIS

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PROJECT NARRATIVE

Project: PUMA TERMINAL MW SAMPLING
Pace Project No.: 2048222

Method: EPA 8015B Modified
Description: 8015M DRO/ORO Organics
Client: BBL Caribe / Arcadis PR
Date: January 18, 2017

General Information:

5 samples were analyzed for EPA 8015B Modified. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:

The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:

The samples were prepared in accordance with EPA 3535 with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):

All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:

All criteria were within method requirements with any exceptions noted below.

Surrogates:

All surrogates were within QC limits with any exceptions noted below.

Method Blank:

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

QC Batch: 71577

A matrix spike/matrix spike duplicate was not performed due to insufficient sample volume.

Additional Comments:

REPORT OF LABORATORY ANALYSIS

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PROJECT NARRATIVE

Project: PUMA TERMINAL MW SAMPLING
Pace Project No.: 2048222

Method: EPA 8015/8021
Description: 8021 GCV BTEX, MTBE, GRO
Client: BBL Caribe / Arcadis PR
Date: January 18, 2017

General Information:

7 samples were analyzed for EPA 8015/8021. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:

The samples were analyzed within the method required hold times with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):

All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:

All criteria were within method requirements with any exceptions noted below.

Surrogates:

All surrogates were within QC limits with any exceptions noted below.

Method Blank:

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

REPORT OF LABORATORY ANALYSIS

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PROJECT NARRATIVE

Project: PUMA TERMINAL MW SAMPLING
Pace Project No.: 2048222

Method: EPA 6020
Description: 6020 MET ICPMS
Client: BBL Caribe / Arcadis PR
Date: January 18, 2017

General Information:

5 samples were analyzed for EPA 6020. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:

The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:

The samples were prepared in accordance with EPA 3010 with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):

All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:

All criteria were within method requirements with any exceptions noted below.

Internal Standards:

All internal standards were within QC limits with any exceptions noted below.

Method Blank:

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

QC Batch: 71617

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 2047753015

M1: Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

- MS (Lab ID: 299686)
 - Arsenic
- MSD (Lab ID: 299687)
 - Arsenic

Additional Comments:

REPORT OF LABORATORY ANALYSIS

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PROJECT NARRATIVE

Project: PUMA TERMINAL MW SAMPLING
Pace Project No.: 2048222

Method: EPA 6020
Description: 6020 MET ICPMS, Dissolved (LF)
Client: BBL Caribe / Arcadis PR
Date: January 18, 2017

General Information:

5 samples were analyzed for EPA 6020. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:

The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:

The samples were prepared in accordance with EPA 3005A with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):

All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:

All criteria were within method requirements with any exceptions noted below.

Internal Standards:

All internal standards were within QC limits with any exceptions noted below.

Method Blank:

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

QC Batch: 71683

L0: Analyte recovery in the laboratory control sample (LCS) was outside QC limits.

- LCS (Lab ID: 300011)
- Vanadium, Dissolved

Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

Batch Comments:

- Insufficient sample volume to perform MS/MSD analysis.
- QC Batch: 71749

REPORT OF LABORATORY ANALYSIS

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PROJECT NARRATIVE

Project: PUMA TERMINAL MW SAMPLING
Pace Project No.: 2048222

Method: EPA 7470
Description: 7470 Mercury
Client: BBL Caribe / Arcadis PR
Date: January 18, 2017

General Information:

5 samples were analyzed for EPA 7470. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:

The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:

The samples were prepared in accordance with EPA 7470 with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):

All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:

All criteria were within method requirements with any exceptions noted below.

Method Blank:

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

REPORT OF LABORATORY ANALYSIS

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PROJECT NARRATIVE

Project: PUMA TERMINAL MW SAMPLING
Pace Project No.: 2048222

Method: EPA 7470
Description: 7470 Mercury, Dissolved (LF)
Client: BBL Caribe / Arcadis PR
Date: January 18, 2017

General Information:

5 samples were analyzed for EPA 7470. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:

The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:

The samples were prepared in accordance with EPA 7470 with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):

All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:

All criteria were within method requirements with any exceptions noted below.

Method Blank:

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

REPORT OF LABORATORY ANALYSIS

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PROJECT NARRATIVE

Project: PUMA TERMINAL MW SAMPLING
Pace Project No.: 2048222

Method: EPA 8270 by SIM
Description: 8270 MSSV PAH by SIM SEP
Client: BBL Caribe / Arcadis PR
Date: January 18, 2017

General Information:

5 samples were analyzed for EPA 8270 by SIM. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:

The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:

The samples were prepared in accordance with EPA 3510 with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):

All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:

All criteria were within method requirements with any exceptions noted below.

Internal Standards:

All internal standards were within QC limits with any exceptions noted below.

Surrogates:

All surrogates were within QC limits with any exceptions noted below.

Method Blank:

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

QC Batch: 71665

A matrix spike/matrix spike duplicate was not performed due to insufficient sample volume.

Additional Comments:

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PROJECT NARRATIVE

Project: PUMA TERMINAL MW SAMPLING
Pace Project No.: 2048222

Method: EPA 5030B/8260
Description: 8260 MSV Low Level
Client: BBL Caribe / Arcadis PR
Date: January 18, 2017

General Information:

7 samples were analyzed for EPA 5030B/8260. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:

The samples were analyzed within the method required hold times with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):

All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:

All criteria were within method requirements with any exceptions noted below.

Internal Standards:

All internal standards were within QC limits with any exceptions noted below.

Surrogates:

All surrogates were within QC limits with any exceptions noted below.

Method Blank:

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

QC Batch: 71630

L0: Analyte recovery in the laboratory control sample (LCS) was outside QC limits.

- LCS (Lab ID: 299870)
- Carbon disulfide

Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

QC Batch: 71630

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 2048288001

M0: Matrix spike recovery and/or matrix spike duplicate recovery was outside laboratory control limits.

- MS (Lab ID: 299871)
- Carbon disulfide
- MSD (Lab ID: 299872)
- Carbon disulfide

R1: RPD value was outside control limits.

- MSD (Lab ID: 299872)
- Carbon disulfide

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PROJECT NARRATIVE

Project: PUMA TERMINAL MW SAMPLING
Pace Project No.: 2048222

Method: EPA 5030B/8260
Description: 8260 MSV Low Level
Client: BBL Caribe / Arcadis PR
Date: January 18, 2017

Additional Comments:

Analyte Comments:

QC Batch: 71630

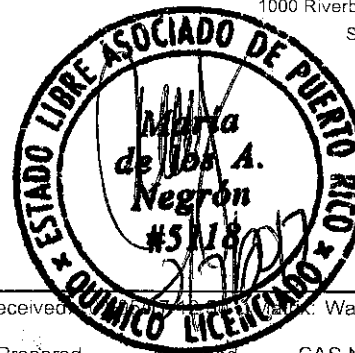
C9: Common Laboratory Contaminant.

- DUP005 (Lab ID: 2048222005)
 - Acetone
- EB-010517 (Lab ID: 2048222002)
 - Acetone
- FB-010517 (Lab ID: 2048222007)
 - Acetone
- MW-109A (Lab ID: 2048222004)
 - Acetone
- MW-48A (Lab ID: 2048222003)
 - Acetone
- MW-M14 (Lab ID: 2048222006)
 - Acetone

This data package has been reviewed for quality and completeness and is approved for release.

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ANALYTICAL RESULTS

Project: PUMA TERMINAL MW SAMPLING
Pace Project No.: 2048222

Sample: TB-010517 Lab ID: 2048222001 Collected: 01/05/17 00:00 Received: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8021 GCV BTEX, MTBE, GRO		Analytical Method: EPA 8015/8021						
Gasoline Range Organics	ND	ug/L	50.0	1		01/12/17 15:30		
Surrogates								
4-Bromofluorobenzene (S)	87	%	44-148	1		01/12/17 15:30	460-00-4	
8260 MSV Low Level		Analytical Method: EPA 5030B/8260						
Acetone	182	ug/L	4.0	1		01/10/17 12:16	67-64-1	
Benzene	ND	ug/L	0.50	1		01/10/17 12:16	71-43-2	
Bromodichloromethane	ND	ug/L	0.50	1		01/10/17 12:16	75-27-4	
Bromoform	ND	ug/L	0.50	1		01/10/17 12:16	75-25-2	
Bromomethane	ND	ug/L	0.50	1		01/10/17 12:16	74-83-9	
2-Butanone (MEK)	ND	ug/L	2.0	1		01/10/17 12:16	78-93-3	
Carbon disulfide	ND	ug/L	1.0	1		01/10/17 12:16	75-15-0	L3
Carbon tetrachloride	ND	ug/L	0.50	1		01/10/17 12:16	56-23-5	
Chlorobenzene	ND	ug/L	0.50	1		01/10/17 12:16	108-90-7	
Chloroethane	ND	ug/L	0.50	1		01/10/17 12:16	75-00-3	
Chloroform	ND	ug/L	0.50	1		01/10/17 12:16	67-66-3	
Chloromethane	ND	ug/L	0.50	1		01/10/17 12:16	74-87-3	
1,2-Dibromo-3-chloropropane	ND	ug/L	0.20	1		01/10/17 12:16	96-12-8	
Dibromochloromethane	ND	ug/L	0.50	1		01/10/17 12:16	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	1		01/10/17 12:16	106-93-4	
Dichlorodifluoromethane	ND	ug/L	1.0	1		01/10/17 12:16	75-71-8	
1,1-Dichloroethane	ND	ug/L	0.50	1		01/10/17 12:16	75-34-3	
1,2-Dichloroethane	ND	ug/L	0.50	1		01/10/17 12:16	107-06-2	
1,1-Dichloroethene	ND	ug/L	0.50	1		01/10/17 12:16	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	1		01/10/17 12:16	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	0.50	1		01/10/17 12:16	156-60-5	
1,2-Dichloropropane	ND	ug/L	0.50	1		01/10/17 12:16	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	0.50	1		01/10/17 12:16	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	0.50	1		01/10/17 12:16	10061-02-6	
Ethylbenzene	ND	ug/L	0.50	1		01/10/17 12:16	100-41-4	
2-Hexanone	ND	ug/L	1.0	1		01/10/17 12:16	591-78-6	
Isopropylbenzene (Cumene)	ND	ug/L	1.0	1		01/10/17 12:16	98-82-8	
Methyl acetate	ND	ug/L	2.0	1		01/10/17 12:16	79-20-9	
Methylene Chloride	ND	ug/L	0.50	1		01/10/17 12:16	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	1.0	1		01/10/17 12:16	108-10-1	
Methyl-tert-butyl ether	ND	ug/L	0.50	1		01/10/17 12:16	1634-04-4	
Styrene	ND	ug/L	1.0	1		01/10/17 12:16	100-42-5	
1,1,2,2-Tetrachloroethane	ND	ug/L	0.50	1		01/10/17 12:16	79-34-5	
Tetrachloroethene	ND	ug/L	0.50	1		01/10/17 12:16	127-18-4	
Toluene	ND	ug/L	0.50	1		01/10/17 12:16	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	0.50	1		01/10/17 12:16	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	0.50	1		01/10/17 12:16	79-00-5	
Trichloroethene	ND	ug/L	0.50	1		01/10/17 12:16	79-01-6	
Trichlorofluoromethane	ND	ug/L	0.50	1		01/10/17 12:16	75-69-4	
Vinyl chloride	ND	ug/L	0.50	1		01/10/17 12:16	75-01-4	
m&p-Xylene	ND	ug/L	2.0	1		01/10/17 12:16	179601-23-1	
o-Xylene	ND	ug/L	1.0	1		01/10/17 12:16	95-47-6	

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ANALYTICAL RESULTS



Project: PUMA TERMINAL MW SAMPLING
Pace Project No.: 2048222

Sample: TB-010517 Lab ID: 2048222001 Collected: 01/05/17 00:00 Received: 01/05/17 00:00 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
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8260 MSV Low Level Analytical Method: EPA 5030B/8260

Surrogates

Dibromofluoromethane (S)	113	%	72-126	1		01/10/17 12:16	1868-53-7	
4-Bromofluorobenzene (S)	99	%	68-124	1		01/10/17 12:16	460-00-4	
Toluene-d8 (S)	99	%	79-119	1		01/10/17 12:16	2037-26-5	

Sample: EB-010517 Lab ID: 2048222002 Collected: 01/05/17 08:46 Received: 01/05/17 12:50 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
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8015M DRO/ORO Organics Analytical Method: EPA 8015B Modified Preparation Method: EPA 3535

Diesel Range Organic (C10-C28)	ND	mg/L	0.50	1	01/09/17 07:20	01/09/17 19:03		
Oil Range Organics (>C28-C40)	ND	mg/L	1.0	1	01/09/17 07:20	01/09/17 19:03		
Surrogates								
n-Pentacosane (S)	60	%	16-137	1	01/09/17 07:20	01/09/17 19:03	629-99-2	
o-Terphenyl (S)	64	%	10-121	1	01/09/17 07:20	01/09/17 19:03	84-15-1	

8021 GCV BTEX, MTBE, GRO Analytical Method: EPA 8015/8021

Gasoline Range Organics	ND	ug/L	50.0	1		01/12/17 15:57		
Surrogates								
4-Bromofluorobenzene (S)	92	%	44-148	1		01/12/17 15:57	460-00-4	

6020 MET ICPMS Analytical Method: EPA 6020 Preparation Method: EPA 3010

Arsenic	ND	mg/L	0.0010	1	01/09/17 15:32	01/13/17 20:57	7440-38-2	
Chromium	ND	mg/L	0.0010	1	01/09/17 15:32	01/13/17 20:57	7440-47-3	
Lead	ND	mg/L	0.0010	1	01/09/17 15:32	01/13/17 20:57	7439-92-1	
Vanadium	ND	mg/L	0.0050	1	01/09/17 15:32	01/13/17 20:57	7440-62-2	

6020 MET ICPMS, Dissolved (LF) Analytical Method: EPA 6020 Preparation Method: EPA 3005A

Arsenic, Dissolved	ND	ug/L	1.0	1	01/10/17 11:44	01/13/17 23:03	7440-38-2	
Chromium, Dissolved	ND	ug/L	1.0	1	01/10/17 11:44	01/13/17 23:03	7440-47-3	
Lead, Dissolved	ND	ug/L	1.0	1	01/10/17 11:44	01/13/17 23:03	7439-92-1	
Vanadium, Dissolved	ND	ug/L	5.0	1	01/10/17 11:44	01/13/17 23:03	7440-62-2	L3

7470 Mercury Analytical Method: EPA 7470 Preparation Method: EPA 7470

Mercury	ND	ug/L	0.20	1	01/09/17 15:19	01/09/17 19:51	7439-97-6	
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7470 Mercury, Dissolved (LF) Analytical Method: EPA 7470 Preparation Method: EPA 7470

Mercury, Dissolved	ND	ug/L	0.20	1	01/10/17 12:30	01/10/17 18:01	7439-97-6	
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8270 MSSV PAH by SIM SEP Analytical Method: EPA 8270 by SIM Preparation Method: EPA 3510

Acenaphthene	ND	ug/L	0.10	1	01/10/17 09:46	01/10/17 20:58	83-32-9	
Acenaphthylene	ND	ug/L	0.10	1	01/10/17 09:46	01/10/17 20:58	208-96-8	
Anthracene	ND	ug/L	0.10	1	01/10/17 09:46	01/10/17 20:58	120-12-7	
Benzo(a)anthracene	ND	ug/L	0.10	1	01/10/17 09:46	01/10/17 20:58	56-55-3	
Benzo(a)pyrene	ND	ug/L	0.10	1	01/10/17 09:46	01/10/17 20:58	50-32-8	

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ANALYTICAL RESULTS



Project: PUMA TERMINAL MW SAMPLING
Pace Project No.: 2048222

Sample: EB-010517	Lab ID: 2048222002	Collected: 01/05/17 08:46	Received: 01/10/17 09:46	Prepared: 01/10/17 20:58	Water	
Parameters	Results	Units	Report Limit	DF	CAS No.	Qual

8270 MSSV PAH by SIM SEP

Analytical Method: EPA 8270 by SIM Preparation Method: EPA 3510

Benzo(b)fluoranthene	ND	ug/L	0.10	1	01/10/17 09:46	01/10/17 20:58	205-99-2	
Benzo(g,h,i)perylene	ND	ug/L	0.10	1	01/10/17 09:46	01/10/17 20:58	191-24-2	
Benzo(k)fluoranthene	ND	ug/L	0.10	1	01/10/17 09:46	01/10/17 20:58	207-08-9	
Chrysene	ND	ug/L	0.10	1	01/10/17 09:46	01/10/17 20:58	218-01-9	
Dibenz(a,h)anthracene	ND	ug/L	0.10	1	01/10/17 09:46	01/10/17 20:58	53-70-3	
Fluoranthene	ND	ug/L	0.10	1	01/10/17 09:46	01/10/17 20:58	208-44-0	
Fluorene	ND	ug/L	0.10	1	01/10/17 09:46	01/10/17 20:58	86-73-7	
Indeno(1,2,3-cd)pyrene	ND	ug/L	0.10	1	01/10/17 09:46	01/10/17 20:58	193-39-5	
2-Methylnaphthalene	ND	ug/L	0.10	1	01/10/17 09:46	01/10/17 20:58	91-57-6	
Naphthalene	ND	ug/L	0.10	1	01/10/17 09:46	01/10/17 20:58	91-20-3	
Phenanthrene	ND	ug/L	0.10	1	01/10/17 09:46	01/10/17 20:58	85-01-8	
Pyrene	ND	ug/L	0.10	1	01/10/17 09:46	01/10/17 20:58	129-00-0	
Surrogates								
2-Fluorobiphenyl (S)	86	%	25-150	1	01/10/17 09:46	01/10/17 20:58	321-60-8	
Terphenyl-d14 (S)	79	%	25-150	1	01/10/17 09:46	01/10/17 20:58	1718-51-0	

8260 MSV Low Level

Analytical Method: EPA 5030B/8260

Acelone	14.6	ug/L	4.0	1	01/10/17 12:34	67-64-1		C9
Benzene	ND	ug/L	0.50	1	01/10/17 12:34	71-43-2		
Bromodichloromethane	0.61	ug/L	0.50	1	01/10/17 12:34	75-27-4		
Bromoform	ND	ug/L	0.50	1	01/10/17 12:34	75-25-2		
Bromomethane	ND	ug/L	0.50	1	01/10/17 12:34	74-83-9		
2-Butanone (MEK)	ND	ug/L	2.0	1	01/10/17 12:34	78-93-3		
Carbon disulfide	ND	ug/L	1.0	1	01/10/17 12:34	75-15-0		L3
Carbon tetrachloride	ND	ug/L	0.50	1	01/10/17 12:34	56-23-5		
Chlorobenzene	ND	ug/L	0.50	1	01/10/17 12:34	108-90-7		
Chloroethane	ND	ug/L	0.50	1	01/10/17 12:34	75-00-3		
Chloroform	3.1	ug/L	0.50	1	01/10/17 12:34	67-66-3		
Chloromethane	ND	ug/L	0.50	1	01/10/17 12:34	74-87-3		
1,2-Dibromo-3-chloropropane	ND	ug/L	0.20	1	01/10/17 12:34	96-12-8		
Dibromochloromethane	ND	ug/L	0.50	1	01/10/17 12:34	124-48-1		
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	1	01/10/17 12:34	106-93-4		
Dichlorodifluoromethane	ND	ug/L	1.0	1	01/10/17 12:34	75-71-8		
1,1-Dichloroethane	ND	ug/L	0.50	1	01/10/17 12:34	75-34-3		
1,2-Dichloroethane	ND	ug/L	0.50	1	01/10/17 12:34	107-06-2		
1,1-Dichloroethene	ND	ug/L	0.50	1	01/10/17 12:34	75-35-4		
cis-1,2-Dichloroethene	ND	ug/L	1.0	1	01/10/17 12:34	156-59-2		
trans-1,2-Dichloroethene	ND	ug/L	0.50	1	01/10/17 12:34	156-60-5		
1,2-Dichloropropane	ND	ug/L	0.50	1	01/10/17 12:34	78-87-5		
cis-1,3-Dichloropropene	ND	ug/L	0.50	1	01/10/17 12:34	10061-01-5		
trans-1,3-Dichloropropene	ND	ug/L	0.50	1	01/10/17 12:34	10061-02-6		
Ethylbenzene	ND	ug/L	0.50	1	01/10/17 12:34	100-41-4		
2-Hexanone	ND	ug/L	1.0	1	01/10/17 12:34	591-78-6		
Isopropylbenzene (Cumene)	ND	ug/L	1.0	1	01/10/17 12:34	98-82-8		
Methyl acetate	ND	ug/L	2.0	1	01/10/17 12:34	79-20-9		
Methylene Chloride	ND	ug/L	0.50	1	01/10/17 12:34	75-09-2		
4-Methyl-2-pentanone (MIBK)	ND	ug/L	1.0	1	01/10/17 12:34	108-10-1		

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ANALYTICAL RESULTS

Project: PUMA TERMINAL MW SAMPLING
Pace Project No.: 2048222



Sample: EB-010517 Lab ID: 2048222002 Collected: 01/05/17 08:46 Received: 01/10/17 12:34 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV Low Level		Analytical Method: EPA 5030B/8260						
Methyl-tert-butyl ether	ND	ug/L	0.50	1	01/10/17 12:34	1634-04-4		
Styrene	ND	ug/L	1.0	1	01/10/17 12:34	100-42-5		
1,1,2,2-Tetrachloroethane	ND	ug/L	0.50	1	01/10/17 12:34	79-34-5		
Tetrachloroethene	ND	ug/L	0.50	1	01/10/17 12:34	127-18-4		
Toluene	ND	ug/L	0.50	1	01/10/17 12:34	108-88-3		
1,1,1-Trichloroethane	ND	ug/L	0.50	1	01/10/17 12:34	71-55-6		
1,1,2-Trichloroethane	ND	ug/L	0.50	1	01/10/17 12:34	79-00-5		
Trichloroethene	ND	ug/L	0.50	1	01/10/17 12:34	79-01-6		
Trichlorofluoromethane	ND	ug/L	0.50	1	01/10/17 12:34	75-69-4		
Vinyl chloride	ND	ug/L	0.50	1	01/10/17 12:34	75-01-4		
m&p-Xylene	ND	ug/L	2.0	1	01/10/17 12:34	179601-23-1		
o-Xylene	ND	ug/L	1.0	1	01/10/17 12:34	95-47-6		
Surrogates								
Dibromofluoromethane (S)	110	%.	72-126	1	01/10/17 12:34	1868-53-7		
4-Bromofluorobenzene (S)	95	%.	68-124	1	01/10/17 12:34	460-00-4		
Toluene-d8 (S)	101	%.	79-119	1	01/10/17 12:34	2037-26-5		

Sample: MW-48A Lab ID: 2048222003 Collected: 01/05/17 09:42 Received: 01/05/17 12:50 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8015M DRO/ORO Organics		Analytical Method: EPA 8015B Modified Preparation Method: EPA 3535						
Diesel Range Organic (C10-C28)	ND	mg/L	0.50	1	01/09/17 07:20	01/09/17 19:31		
Oil Range Organics (>C28-C40)	ND	mg/L	1.0	1	01/09/17 07:20	01/09/17 19:31		
Surrogates								
n-Pentacosane (S)	73	%.	16-137	1	01/09/17 07:20	01/09/17 19:31	629-99-2	
o-Terphenyl (S)	69	%.	10-121	1	01/09/17 07:20	01/09/17 19:31	84-15-1	
8021 GCV BTEX, MTBE, GRO		Analytical Method: EPA 8015/8021						
Gasoline Range Organics	ND	ug/L	50.0	1		01/12/17 12:01		
Surrogates								
4-Bromofluorobenzene (S)	90	%.	44-148	1		01/12/17 12:01	460-00-4	
6020 MET ICPMS		Analytical Method: EPA 6020 Preparation Method: EPA 3010						
Arsenic	ND	mg/L	0.0010	1	01/09/17 15:32	01/13/17 21:01	7440-38-2	
Chromium	ND	mg/L	0.0010	1	01/09/17 15:32	01/13/17 21:01	7440-47-3	
Lead	0.0031	mg/L	0.0010	1	01/09/17 15:32	01/13/17 21:01	7439-92-1	
Vanadium	ND	mg/L	0.0050	1	01/09/17 15:32	01/13/17 21:01	7440-62-2	
6020 MET ICPMS, Dissolved (LF)		Analytical Method: EPA 6020 Preparation Method: EPA 3005A						
Arsenic, Dissolved	ND	ug/L	1.0	1	01/10/17 11:44	01/13/17 23:06	7440-38-2	
Chromium, Dissolved	ND	ug/L	1.0	1	01/10/17 11:44	01/13/17 23:06	7440-47-3	
Lead, Dissolved	ND	ug/L	1.0	1	01/10/17 11:44	01/13/17 23:06	7439-92-1	
Vanadium, Dissolved	ND	ug/L	5.0	1	01/10/17 11:44	01/13/17 23:06	7440-62-2	L3

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ANALYTICAL RESULTS



Project: PUMA TERMINAL MW SAMPLING
Pace Project No.: 2048222

Sample: MW-48A Lab ID: 2048222003 Collected: 01/05/17 09:42 Received: 01/05/17 13:50 Analyte: Water

Parameters	Results	Units	Report Limit	DF	Prepared	AS No.	Qual
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7470 Mercury Analytical Method: EPA 7470 Preparation Method: EPA 7470
Mercury ND ug/L 0.20 1 01/09/17 15:19 01/09/17 19:14 7439-97-6

7470 Mercury, Dissolved (LF) Analytical Method: EPA 7470 Preparation Method: EPA 7470
Mercury, Dissolved ND ug/L 0.20 1 01/10/17 12:30 01/10/17 18:03 7439-97-6

8270 MSSV PAH by SIM SEP Analytical Method: EPA 8270 by SIM Preparation Method: EPA 3510

Acenaphthene	ND	ug/L	0.10	1	01/10/17 09:46	01/10/17 21:18	83-32-9
Acenaphthylene	ND	ug/L	0.10	1	01/10/17 09:46	01/10/17 21:18	208-96-8
Anthracene	ND	ug/L	0.10	1	01/10/17 09:46	01/10/17 21:18	120-12-7
Benzo(a)anthracene	ND	ug/L	0.10	1	01/10/17 09:46	01/10/17 21:18	56-55-3
Benzo(a)pyrene	ND	ug/L	0.10	1	01/10/17 09:46	01/10/17 21:18	50-32-8
Benzo(b)fluoranthene	ND	ug/L	0.10	1	01/10/17 09:46	01/10/17 21:18	205-99-2
Benzo(g,h,i)perylene	ND	ug/L	0.10	1	01/10/17 09:46	01/10/17 21:18	191-24-2
Benzo(k)fluoranthene	ND	ug/L	0.10	1	01/10/17 09:46	01/10/17 21:18	207-08-9
Chrysene	ND	ug/L	0.10	1	01/10/17 09:46	01/10/17 21:18	218-01-9
Dibenz(a,h)anthracene	ND	ug/L	0.10	1	01/10/17 09:46	01/10/17 21:18	53-70-3
Fluoranthene	ND	ug/L	0.10	1	01/10/17 09:46	01/10/17 21:18	206-44-0
Fluorene	ND	ug/L	0.10	1	01/10/17 09:46	01/10/17 21:18	86-73-7
Indeno(1,2,3-cd)pyrene	ND	ug/L	0.10	1	01/10/17 09:46	01/10/17 21:18	193-39-5
2-Methylnaphthalene	ND	ug/L	0.10	1	01/10/17 09:46	01/10/17 21:18	91-57-6
Naphthalene	ND	ug/L	0.10	1	01/10/17 09:46	01/10/17 21:18	91-20-3
Phenanthrene	ND	ug/L	0.10	1	01/10/17 09:46	01/10/17 21:18	85-01-8
Pyrene	ND	ug/L	0.10	1	01/10/17 09:46	01/10/17 21:18	129-00-0
Surrogates							
2-Fluorobiphenyl (S)	80	%	25-150	1	01/10/17 09:46	01/10/17 21:18	321-60-8
Terphenyl-d14 (S)	78	%	25-150	1	01/10/17 09:46	01/10/17 21:18	1718-51-0

8260 MSV Low Level Analytical Method: EPA 5030B/8260

Acetone	33.0	ug/L	4.0	1		01/10/17 12:52	67-64-1	C9
Benzene	ND	ug/L	0.50	1		01/10/17 12:52	71-43-2	
Bromodichloromethane	ND	ug/L	0.50	1		01/10/17 12:52	75-27-4	
Bromoform	ND	ug/L	0.50	1		01/10/17 12:52	75-25-2	
Bromomethane	ND	ug/L	0.50	1		01/10/17 12:52	74-83-9	
2-Butanone (MEK)	ND	ug/L	2.0	1		01/10/17 12:52	78-93-3	
Carbon disulfide	ND	ug/L	1.0	1		01/10/17 12:52	75-15-0	L3
Carbon tetrachloride	ND	ug/L	0.50	1		01/10/17 12:52	56-23-5	
Chlorobenzene	ND	ug/L	0.50	1		01/10/17 12:52	108-90-7	
Chloroethane	ND	ug/L	0.50	1		01/10/17 12:52	75-00-3	
Chloroform	ND	ug/L	0.50	1		01/10/17 12:52	67-66-3	
Chloromethane	ND	ug/L	0.50	1		01/10/17 12:52	74-87-3	
1,2-Dibromo-3-chloropropane	ND	ug/L	0.20	1		01/10/17 12:52	96-12-8	
Dibromochloromethane	ND	ug/L	0.50	1		01/10/17 12:52	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	1		01/10/17 12:52	106-93-4	
Dichlorodifluoromethane	ND	ug/L	1.0	1		01/10/17 12:52	75-71-8	
1,1-Dichloroethane	ND	ug/L	0.50	1		01/10/17 12:52	75-34-3	
1,2-Dichloroethane	ND	ug/L	0.50	1		01/10/17 12:52	107-06-2	

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ANALYTICAL RESULTS

Project: PUMA TERMINAL MW SAMPLING
Pace Project No.: 2048222

Sample: MW-48A Lab ID: 2048222003 Collected: 01/05/17 09:42 Received: 01/10/17 12:52 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	CAS No.	Qual
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8260 MSV Low Level		Analytical Method: EPA 5030B/8260					
1,1-Dichloroethene	ND	ug/L	0.50	1	01/10/17 12:52	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	1	01/10/17 12:52	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	0.50	1	01/10/17 12:52	156-60-5	
1,2-Dichloropropane	ND	ug/L	0.50	1	01/10/17 12:52	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	0.50	1	01/10/17 12:52	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	0.50	1	01/10/17 12:52	10061-02-6	
Ethylbenzene	ND	ug/L	0.50	1	01/10/17 12:52	100-41-4	
2-Hexanone	ND	ug/L	1.0	1	01/10/17 12:52	591-78-6	
Isopropylbenzene (Cumene)	ND	ug/L	1.0	1	01/10/17 12:52	98-82-8	
Methyl acetate	ND	ug/L	2.0	1	01/10/17 12:52	79-20-9	
Methylene Chloride	ND	ug/L	0.50	1	01/10/17 12:52	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	1.0	1	01/10/17 12:52	108-10-1	
Methyl-tert-butyl ether	ND	ug/L	0.50	1	01/10/17 12:52	1634-04-4	
Styrene	ND	ug/L	1.0	1	01/10/17 12:52	100-42-5	
1,1,1,2-Tetrachloroethane	ND	ug/L	0.50	1	01/10/17 12:52	79-34-5	
Tetrachloroethene	ND	ug/L	0.50	1	01/10/17 12:52	127-18-4	
Toluene	ND	ug/L	0.50	1	01/10/17 12:52	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	0.50	1	01/10/17 12:52	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	0.50	1	01/10/17 12:52	79-00-5	
Trichloroethene	ND	ug/L	0.50	1	01/10/17 12:52	79-01-6	
Trichlorofluoromethane	ND	ug/L	0.50	1	01/10/17 12:52	75-69-4	
Vinyl chloride	ND	ug/L	0.50	1	01/10/17 12:52	75-01-4	
m&p-Xylene	ND	ug/L	2.0	1	01/10/17 12:52	179601-23-1	
o-Xylene	ND	ug/L	1.0	1	01/10/17 12:52	95-47-6	
Surrogates							
Dibromofluoromethane (S)	115	%	72-126	1	01/10/17 12:52	1868-53-7	
4-Bromofluorobenzene (S)	97	%	68-124	1	01/10/17 12:52	460-00-4	
Toluene-d8 (S)	102	%	79-119	1	01/10/17 12:52	2037-26-5	

Sample: MW-109A Lab ID: 2048222004 Collected: 01/05/17 11:05 Received: 01/05/17 12:50 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
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8015M DRO/ORD Organics		Analytical Method: EPA 8015B Modified Preparation Method: EPA 3535						
Diesel Range Organic (C10-C28)	ND	mg/L	0.50	1	01/09/17 07:20	01/09/17 19:59		
Oil Range Organics (>C28-C40)	ND	mg/L	1.0	1	01/09/17 07:20	01/09/17 19:59		
Surrogates								
n-Pentacosane (S)	59	%	16-137	1	01/09/17 07:20	01/09/17 19:59	629-99-2	
o-Terphenyl (S)	63	%	10-121	1	01/09/17 07:20	01/09/17 19:59	84-15-1	
8021 GCV BTEX, MTBE, GRO								
Gasoline Range Organics	ND	ug/L	50.0	1		01/12/17 12:27		
Surrogates								
4-Bromofluorobenzene (S)	91	%	44-148	1		01/12/17 12:27	460-00-4	

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ANALYTICAL RESULTS



Project: PUMA TERMINAL MW SAMPLING
Pace Project No.: 2048222

Sample: MW-109A Lab ID: 2048222004 Collected: 01/05/17 11:05 Received: 01/05/17 12:50 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prep	Time	CAS No.	Qual
6020 MET ICPMS		Analytical Method: EPA 6020 Preparation Method: EPA 3010						
Arsenic	ND	mg/L	0.0010	1	01/09/17 15:32	01/13/17 21:05	7440-38-2	
Chromium	ND	mg/L	0.0010	1	01/09/17 15:32	01/13/17 21:05	7440-47-3	
Lead	ND	mg/L	0.0010	1	01/09/17 15:32	01/13/17 21:05	7439-92-1	
Vanadium	ND	mg/L	0.0050	1	01/09/17 15:32	01/13/17 21:05	7440-62-2	
6020 MET ICPMS, Dissolved (LF)		Analytical Method: EPA 6020 Preparation Method: EPA 3005A						
Arsenic, Dissolved	ND	ug/L	1.0	1	01/10/17 11:44	01/13/17 23:10	7440-38-2	
Chromium, Dissolved	ND	ug/L	1.0	1	01/10/17 11:44	01/13/17 23:10	7440-47-3	
Lead, Dissolved	ND	ug/L	1.0	1	01/10/17 11:44	01/13/17 23:10	7439-92-1	
Vanadium, Dissolved	ND	ug/L	5.0	1	01/10/17 11:44	01/13/17 23:10	7440-62-2	L3
7470 Mercury		Analytical Method: EPA 7470 Preparation Method: EPA 7470						
Mercury	ND	ug/L	0.20	1	01/09/17 15:19	01/09/17 19:53	7439-97-6	
7470 Mercury, Dissolved (LF)		Analytical Method: EPA 7470 Preparation Method: EPA 7470						
Mercury, Dissolved	ND	ug/L	0.20	1	01/10/17 12:30	01/10/17 18:09	7439-97-6	
8270 MSSV PAH by SIM SEP		Analytical Method: EPA 8270 by SIM Preparation Method: EPA 3510						
Acenaphthene	ND	ug/L	0.10	1	01/10/17 09:46	01/10/17 21:38	83-32-9	
Acenaphthylene	ND	ug/L	0.10	1	01/10/17 09:46	01/10/17 21:38	208-96-8	
Anthracene	ND	ug/L	0.10	1	01/10/17 09:46	01/10/17 21:38	120-12-7	
Benzo(a)anthracene	ND	ug/L	0.10	1	01/10/17 09:46	01/10/17 21:38	56-55-3	
Benzo(a)pyrene	ND	ug/L	0.10	1	01/10/17 09:46	01/10/17 21:38	50-32-8	
Benzo(b)fluoranthene	ND	ug/L	0.10	1	01/10/17 09:46	01/10/17 21:38	205-99-2	
Benzo(g,h,i)perylene	ND	ug/L	0.10	1	01/10/17 09:46	01/10/17 21:38	191-24-2	
Benzo(k)fluoranthene	ND	ug/L	0.10	1	01/10/17 09:46	01/10/17 21:38	207-08-9	
Chrysene	ND	ug/L	0.10	1	01/10/17 09:46	01/10/17 21:38	218-01-9	
Dibenz(a,h)anthracene	ND	ug/L	0.10	1	01/10/17 09:46	01/10/17 21:38	53-70-3	
Fluoranthene	ND	ug/L	0.10	1	01/10/17 09:46	01/10/17 21:38	206-44-0	
Fluorene	ND	ug/L	0.10	1	01/10/17 09:46	01/10/17 21:38	86-73-7	
Indeno(1,2,3-cd)pyrene	ND	ug/L	0.10	1	01/10/17 09:46	01/10/17 21:38	193-39-5	
2-Methylnaphthalene	ND	ug/L	0.10	1	01/10/17 09:46	01/10/17 21:38	91-57-6	
Naphthalene	ND	ug/L	0.10	1	01/10/17 09:46	01/10/17 21:38	91-20-3	
Phenanthrene	ND	ug/L	0.10	1	01/10/17 09:46	01/10/17 21:38	85-01-8	
Pyrene	ND	ug/L	0.10	1	01/10/17 09:46	01/10/17 21:38	129-00-0	
Surrogates								
2-Fluorobiphenyl (S)	97	%	25-150	1	01/10/17 09:46	01/10/17 21:38	321-60-8	
Terphenyl-d14 (S)	85	%	25-150	1	01/10/17 09:46	01/10/17 21:38	1718-51-0	
8260 MSV Low Level		Analytical Method: EPA 5030B/8260						
Acetone	6.3	ug/L	4.0	1		01/10/17 13:10	67-64-1	C9
Benzene	ND	ug/L	0.50	1		01/10/17 13:10	71-43-2	
Bromodichloromethane	ND	ug/L	0.50	1		01/10/17 13:10	75-27-4	
Bromoform	ND	ug/L	0.50	1		01/10/17 13:10	75-25-2	
Bromomethane	ND	ug/L	0.50	1		01/10/17 13:10	74-83-9	
2-Butanone (MEK)	ND	ug/L	2.0	1		01/10/17 13:10	78-93-3	

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ANALYTICAL RESULTS



Project: PUMA TERMINAL MW SAMPLING
Pace Project No.: 2048222

Sample: MW-109A Lab ID: 2048222004 Collected: 01/05/17 11:05 Received: 01/10/17 13:10 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prep	CAS No.	Qual
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8260 MSV Low Level		Analytical Method: EPA 5030B/8260					
Carbon disulfide	ND	ug/L	1.0	1	01/10/17 13:10	75-15-0	L3
Carbon tetrachloride	ND	ug/L	0.50	1	01/10/17 13:10	56-23-5	
Chlorobenzene	ND	ug/L	0.50	1	01/10/17 13:10	108-90-7	
Chloroethane	ND	ug/L	0.50	1	01/10/17 13:10	75-00-3	
Chloroform	ND	ug/L	0.50	1	01/10/17 13:10	67-66-3	
Chloromethane	ND	ug/L	0.50	1	01/10/17 13:10	74-87-3	
1,2-Dibromo-3-chloropropane	ND	ug/L	0.20	1	01/10/17 13:10	96-12-8	
Dibromochloromethane	ND	ug/L	0.50	1	01/10/17 13:10	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	1	01/10/17 13:10	106-93-4	
Dichlorodifluoromethane	ND	ug/L	1.0	1	01/10/17 13:10	75-71-8	
1,1-Dichloroethane	ND	ug/L	0.50	1	01/10/17 13:10	75-34-3	
1,2-Dichloroethane	ND	ug/L	0.50	1	01/10/17 13:10	107-06-2	
1,1-Dichloroethene	ND	ug/L	0.50	1	01/10/17 13:10	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	1	01/10/17 13:10	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	0.50	1	01/10/17 13:10	156-60-5	
1,2-Dichloropropane	ND	ug/L	0.50	1	01/10/17 13:10	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	0.50	1	01/10/17 13:10	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	0.50	1	01/10/17 13:10	10061-02-6	
Ethylbenzene	ND	ug/L	0.50	1	01/10/17 13:10	100-41-4	
2-Hexanone	ND	ug/L	1.0	1	01/10/17 13:10	591-78-6	
isopropylbenzene (Cumene)	ND	ug/L	1.0	1	01/10/17 13:10	98-82-8	
Methyl acetate	ND	ug/L	2.0	1	01/10/17 13:10	79-20-9	
Methylene Chloride	ND	ug/L	0.50	1	01/10/17 13:10	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	1.0	1	01/10/17 13:10	108-10-1	
Methyl-tert-butyl ether	ND	ug/L	0.50	1	01/10/17 13:10	1634-04-4	
Styrene	ND	ug/L	1.0	1	01/10/17 13:10	100-42-5	
1,1,2,2-Tetrachloroethane	ND	ug/L	0.50	1	01/10/17 13:10	79-34-5	
Tetrachloroethene	ND	ug/L	0.50	1	01/10/17 13:10	127-18-4	
Toluene	ND	ug/L	0.50	1	01/10/17 13:10	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	0.50	1	01/10/17 13:10	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	0.50	1	01/10/17 13:10	79-00-5	
Trichloroethene	ND	ug/L	0.50	1	01/10/17 13:10	79-01-6	
Trichlorofluoromethane	ND	ug/L	0.50	1	01/10/17 13:10	75-69-4	
Vinyl chloride	ND	ug/L	0.50	1	01/10/17 13:10	75-01-4	
m&p-Xylene	ND	ug/L	2.0	1	01/10/17 13:10	179601-23-1	
o-Xylene	ND	ug/L	1.0	1	01/10/17 13:10	95-47-6	
Surrogates							
Dibromofluoromethane (S)	114	%	72-126	1	01/10/17 13:10	1868-53-7	
4-Bromofluorobenzene (S)	96	%	68-124	1	01/10/17 13:10	460-00-4	
Toluene-d8 (S)	99	%	79-119	1	01/10/17 13:10	2037-26-5	

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ANALYTICAL RESULTS

Project: PUMA TERMINAL MW SAMPLING
Pace Project No.: 2048222

Sample: DUP005	Lab ID: 2048222005	Collected: 01/05/17 00:00	Received: 01/10/17 12:30	Matrix: Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual

8015M DRO/ORO Organics		Analytical Method: EPA 8015B Modified Preparation Method: EPA 3535						
Diesel Range Organic (C10-C28)	ND	mg/L	0.50	1	01/09/17 07:20	01/09/17 20:26		
Oil Range Organics (>C28-C40)	ND	mg/L	1.0	1	01/09/17 07:20	01/09/17 20:26		
Surrogates								
n-Pentacosane (S)	60	%	16-137	1	01/09/17 07:20	01/09/17 20:26	629-99-2	
o-Terphenyl (S)	64	%	10-121	1	01/09/17 07:20	01/09/17 20:26	84-15-1	
8021 GCV BTEX, MTBE, GRO		Analytical Method: EPA 8015/8021						
Gasoline Range Organics	ND	ug/L	50.0	1		01/12/17 12:53		
Surrogates								
4-Bromofluorobenzene (S)	86	%	44-148	1		01/12/17 12:53	460-00-4	
6020 MET ICPMS		Analytical Method: EPA 6020 Preparation Method: EPA 3010						
Arsenic	ND	mg/L	0.0010	1	01/09/17 15:32	01/13/17 21:08	7440-38-2	
Chromium	ND	mg/L	0.0010	1	01/09/17 15:32	01/13/17 21:08	7440-47-3	
Lead	ND	mg/L	0.0010	1	01/09/17 15:32	01/13/17 21:08	7439-92-1	
Vanadium	ND	mg/L	0.0050	1	01/09/17 15:32	01/13/17 21:08	7440-62-2	
6020 MET ICPMS, Dissolved (LF)		Analytical Method: EPA 6020 Preparation Method: EPA 3005A						
Arsenic, Dissolved	ND	ug/L	1.0	1	01/10/17 11:44	01/13/17 23:14	7440-38-2	
Chromium, Dissolved	ND	ug/L	1.0	1	01/10/17 11:44	01/13/17 23:14	7440-47-3	
Lead, Dissolved	ND	ug/L	1.0	1	01/10/17 11:44	01/13/17 23:14	7439-92-1	
Vanadium, Dissolved	ND	ug/L	5.0	1	01/10/17 11:44	01/13/17 23:14	7440-62-2	L3
7470 Mercury		Analytical Method: EPA 7470 Preparation Method: EPA 7470						
Mercury	ND	ug/L	0.20	1	01/09/17 15:19	01/09/17 19:55	7439-97-6	
7470 Mercury, Dissolved (LF)		Analytical Method: EPA 7470 Preparation Method: EPA 7470						
Mercury, Dissolved	ND	ug/L	0.20	1	01/10/17 12:30	01/10/17 18:11	7439-97-6	
8270 MSSV PAH by SIM SEP		Analytical Method: EPA 8270 by SIM Preparation Method: EPA 3510						
Acenaphthene	ND	ug/L	0.10	1	01/10/17 09:46	01/10/17 21:58	83-32-9	
Acenaphthylene	ND	ug/L	0.10	1	01/10/17 09:46	01/10/17 21:58	208-96-8	
Anthracene	ND	ug/L	0.10	1	01/10/17 09:46	01/10/17 21:58	120-12-7	
Benzo(a)anthracene	ND	ug/L	0.10	1	01/10/17 09:46	01/10/17 21:58	56-55-3	
Benzo(a)pyrene	ND	ug/L	0.10	1	01/10/17 09:46	01/10/17 21:58	50-32-8	
Benzo(b)fluoranthene	ND	ug/L	0.10	1	01/10/17 09:46	01/10/17 21:58	205-99-2	
Benzo(g,h,i)perylene	ND	ug/L	0.10	1	01/10/17 09:46	01/10/17 21:58	191-24-2	
Benzo(k)fluoranthene	ND	ug/L	0.10	1	01/10/17 09:46	01/10/17 21:58	207-08-9	
Chrysene	ND	ug/L	0.10	1	01/10/17 09:46	01/10/17 21:58	218-01-9	
Dibenz(a,h)anthracene	ND	ug/L	0.10	1	01/10/17 09:46	01/10/17 21:58	53-70-3	
Fluoranthene	ND	ug/L	0.10	1	01/10/17 09:46	01/10/17 21:58	206-44-0	
Fluorene	ND	ug/L	0.10	1	01/10/17 09:46	01/10/17 21:58	86-73-7	
Indeno(1,2,3-cd)pyrene	ND	ug/L	0.10	1	01/10/17 09:46	01/10/17 21:58	193-39-5	
2-Methylnaphthalene	ND	ug/L	0.10	1	01/10/17 09:46	01/10/17 21:58	91-57-6	
Naphthalene	ND	ug/L	0.10	1	01/10/17 09:46	01/10/17 21:58	91-20-3	
Phenanthrene	ND	ug/L	0.10	1	01/10/17 09:46	01/10/17 21:58	85-01-8	

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ANALYTICAL RESULTS



Project: PUMA TERMINAL MW SAMPLING
Pace Project No.: 2048222

Sample: DUP005 Lab ID: 2048222005 Collected: 01/05/17 00:00 Prepared: 01/05/17 12:44 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prep	CAS No.	Qual
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8270 MSSV PAH by SIM SEP

Analytical Method: EPA 8270 by SIM Preparation Method: EPA 3510

Pyrene	ND	ug/L	0.10	1	01/10/17 09:46	01/10/17 21:58	129-00-0
Surrogates							
2-Fluorobiphenyl (S)	92	%	25-150	1	01/10/17 09:46	01/10/17 21:58	321-60-8
Terphenyl-d14 (S)	89	%	25-150	1	01/10/17 09:46	01/10/17 21:58	1718-51-0

8260 MSV Low Level

Analytical Method: EPA 5030B/8260

Acetone	20.0	ug/L	4.0	1		01/10/17 13:28	67-64-1	C9
Benzene	ND	ug/L	0.50	1		01/10/17 13:28	71-43-2	
Bromodichloromethane	ND	ug/L	0.50	1		01/10/17 13:28	75-27-4	
Bromoform	ND	ug/L	0.50	1		01/10/17 13:28	75-25-2	
Bromomethane	ND	ug/L	0.50	1		01/10/17 13:28	74-83-9	
2-Butanone (MEK)	ND	ug/L	2.0	1		01/10/17 13:28	78-93-3	
Carbon disulfide	ND	ug/L	1.0	1		01/10/17 13:28	75-15-0	L3
Carbon tetrachloride	ND	ug/L	0.50	1		01/10/17 13:28	56-23-5	
Chlorobenzene	ND	ug/L	0.50	1		01/10/17 13:28	108-90-7	
Chloroethane	ND	ug/L	0.50	1		01/10/17 13:28	75-00-3	
Chloroform	ND	ug/L	0.50	1		01/10/17 13:28	67-66-3	
Chloromethane	ND	ug/L	0.50	1		01/10/17 13:28	74-87-3	
1,2-Dibromo-3-chloropropane	ND	ug/L	0.20	1		01/10/17 13:28	96-12-8	
Dibromochloromethane	ND	ug/L	0.50	1		01/10/17 13:28	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	1		01/10/17 13:28	106-93-4	
Dichlorodifluoromethane	ND	ug/L	1.0	1		01/10/17 13:28	75-71-8	
1,1-Dichloroethane	ND	ug/L	0.50	1		01/10/17 13:28	75-34-3	
1,2-Dichloroethane	ND	ug/L	0.50	1		01/10/17 13:28	107-06-2	
1,1-Dichloroethene	ND	ug/L	0.50	1		01/10/17 13:28	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	1		01/10/17 13:28	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	0.50	1		01/10/17 13:28	156-60-5	
1,2-Dichloropropane	ND	ug/L	0.50	1		01/10/17 13:28	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	0.50	1		01/10/17 13:28	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	0.50	1		01/10/17 13:28	10061-02-6	
Ethylbenzene	ND	ug/L	0.50	1		01/10/17 13:28	100-41-4	
2-Hexanone	ND	ug/L	1.0	1		01/10/17 13:28	591-78-6	
Isopropylbenzene (Cumene)	ND	ug/L	1.0	1		01/10/17 13:28	98-82-8	
Methyl acetate	ND	ug/L	2.0	1		01/10/17 13:28	79-20-9	
Methylene Chloride	ND	ug/L	0.50	1		01/10/17 13:28	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	1.0	1		01/10/17 13:28	108-10-1	
Methyl-tert-butyl ether	ND	ug/L	0.50	1		01/10/17 13:28	1634-04-4	
Styrene	ND	ug/L	1.0	1		01/10/17 13:28	100-42-5	
1,1,2,2-Tetrachloroethane	ND	ug/L	0.50	1		01/10/17 13:28	79-34-5	
Tetrachloroethene	ND	ug/L	0.50	1		01/10/17 13:28	127-18-4	
Toluene	ND	ug/L	0.50	1		01/10/17 13:28	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	0.50	1		01/10/17 13:28	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	0.50	1		01/10/17 13:28	79-00-5	
Trichloroethene	ND	ug/L	0.50	1		01/10/17 13:28	79-01-6	
Trichlorofluoromethane	ND	ug/L	0.50	1		01/10/17 13:28	75-69-4	
Vinyl chloride	ND	ug/L	0.50	1		01/10/17 13:28	75-01-4	
m&p-Xylene	ND	ug/L	2.0	1		01/10/17 13:28	179601-23-1	

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ANALYTICAL RESULTS



Project: PUMA TERMINAL MW SAMPLING
Pace Project No.: 2048222

Sample: DUP005 Lab ID: 2048222005 Collected: 01/05/17 00:00 Received: 01/05/17 12:50 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV Low Level Analytical Method: EPA 5030B/8260								
o-Xylene	ND	ug/L	1.0	1	01/10/17 13:28	01/10/17 13:28	95-47-6	
Surrogates								
Dibromofluoromethane (S)	112	%	72-126	1	01/10/17 13:28	01/10/17 13:28	1868-53-7	
4-Bromofluorobenzene (S)	95	%	68-124	1	01/10/17 13:28	01/10/17 13:28	460-00-4	
Toluene-d8 (S)	101	%	79-119	1	01/10/17 13:28	01/10/17 13:28	2037-26-5	

Sample: MW-M14 Lab ID: 2048222006 Collected: 01/05/17 11:34 Received: 01/05/17 12:50 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8015M DRO/ORO Organics Analytical Method: EPA 8015B Modified Preparation Method: EPA 3535								
Diesel Range Organic (C10-C28)	ND	mg/L	0.50	1	01/09/17 07:20	01/09/17 20:54		
Oil Range Organics (>C28-C40)	ND	mg/L	1.0	1	01/09/17 07:20	01/09/17 20:54		
Surrogates								
n-Pentacosane (S)	63	%	16-137	1	01/09/17 07:20	01/09/17 20:54	629-99-2	
o-Terphenyl (S)	65	%	10-121	1	01/09/17 07:20	01/09/17 20:54	84-15-1	
8021 GCV BTEX, MTBE, GRO Analytical Method: EPA 8015/8021								
Gasoline Range Organics	ND	ug/L	50.0	1	01/12/17 13:20	01/12/17 13:20		
Surrogates								
4-Bromofluorobenzene (S)	90	%	44-148	1	01/12/17 13:20	01/12/17 13:20	460-00-4	
6020 MET ICPMS Analytical Method: EPA 6020 Preparation Method: EPA 3010								
Arsenic	ND	mg/L	0.0010	1	01/09/17 15:32	01/13/17 21:20	7440-38-2	
Chromium	ND	mg/L	0.0010	1	01/09/17 15:32	01/13/17 21:20	7440-47-3	
Lead	ND	mg/L	0.0010	1	01/09/17 15:32	01/13/17 21:20	7439-92-1	
Vanadium	ND	mg/L	0.0050	1	01/09/17 15:32	01/13/17 21:20	7440-62-2	
6020 MET ICPMS, Dissolved (LF) Analytical Method: EPA 6020 Preparation Method: EPA 3005A								
Arsenic, Dissolved	ND	ug/L	1.0	1	01/10/17 11:44	01/13/17 23:18	7440-38-2	
Chromium, Dissolved	ND	ug/L	1.0	1	01/10/17 11:44	01/13/17 23:18	7440-47-3	
Lead, Dissolved	ND	ug/L	1.0	1	01/10/17 11:44	01/13/17 23:18	7439-92-1	
Vanadium, Dissolved	ND	ug/L	5.0	1	01/10/17 11:44	01/13/17 23:18	7440-62-2	L3
7470 Mercury Analytical Method: EPA 7470 Preparation Method: EPA 7470								
Mercury	ND	ug/L	0.20	1	01/09/17 15:19	01/09/17 20:01	7439-97-6	
7470 Mercury, Dissolved (LF) Analytical Method: EPA 7470 Preparation Method: EPA 7470								
Mercury, Dissolved	ND	ug/L	0.20	1	01/10/17 12:30	01/10/17 18:13	7439-97-6	
8270 MSSV PAH by SIM SEP Analytical Method: EPA 8270 by SIM Preparation Method: EPA 3510								
Acenaphthene	ND	ug/L	0.10	1	01/10/17 09:46	01/10/17 22:18	83-32-9	
Acenaphthylene	ND	ug/L	0.10	1	01/10/17 09:46	01/10/17 22:18	208-96-8	
Anthracene	ND	ug/L	0.10	1	01/10/17 09:46	01/10/17 22:18	120-12-7	
Benzo(a)anthracene	ND	ug/L	0.10	1	01/10/17 09:46	01/10/17 22:18	56-55-3	

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ANALYTICAL RESULTS

Project: PUMA TERMINAL MW SAMPLING
Pace Project No.: 2048222



Sample: MW-M14 Lab ID: 2048222006 Collected: 01/05/17 11:34 Received: 01/10/17 09:46 Matrix: Water

Parameters	Results	Units	Report Limit	DF	CAS No.	Qual
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8270 MSSV PAH by SIM SEP

Analytical Method: EPA 8270 by SIM Preparation Method: EPA 3510

Benzo(a)pyrene	ND	ug/L	0.10	1	01/10/17 09:46	01/10/17 22:18	50-32-8
Benzo(b)fluoranthene	ND	ug/L	0.10	1	01/10/17 09:46	01/10/17 22:18	205-99-2
Benzo(g,h,i)perylene	ND	ug/L	0.10	1	01/10/17 09:46	01/10/17 22:18	191-24-2
Benzo(k)fluoranthene	ND	ug/L	0.10	1	01/10/17 09:46	01/10/17 22:18	207-08-9
Chrysene	ND	ug/L	0.10	1	01/10/17 09:46	01/10/17 22:18	218-01-9
Dibenz(a,h)anthracene	ND	ug/L	0.10	1	01/10/17 09:46	01/10/17 22:18	53-70-3
Fluoranthene	ND	ug/L	0.10	1	01/10/17 09:46	01/10/17 22:18	206-44-0
Fluorene	ND	ug/L	0.10	1	01/10/17 09:46	01/10/17 22:18	86-73-7
Indeno(1,2,3-cd)pyrene	ND	ug/L	0.10	1	01/10/17 09:46	01/10/17 22:18	193-39-5
2-Methylnaphthalene	ND	ug/L	0.10	1	01/10/17 09:46	01/10/17 22:18	91-57-6
Naphthalene	ND	ug/L	0.10	1	01/10/17 09:46	01/10/17 22:18	91-20-3
Phenanthrene	ND	ug/L	0.10	1	01/10/17 09:46	01/10/17 22:18	85-01-8
Pyrene	ND	ug/L	0.10	1	01/10/17 09:46	01/10/17 22:18	129-00-0

Surrogates

2-Fluorobiphenyl (S)	86	%	25-150	1	01/10/17 09:46	01/10/17 22:18	321-60-8
Terphenyl-d14 (S)	79	%	25-150	1	01/10/17 09:46	01/10/17 22:18	1718-51-0

8260 MSV Low Level

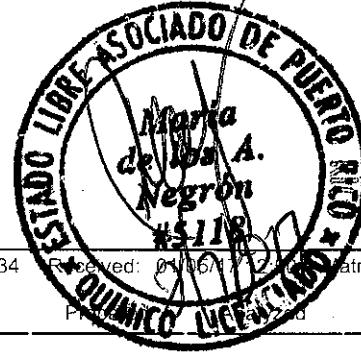
Analytical Method: EPA 5030B/8260

Acetone	5.0	ug/L	4.0	1	01/10/17 13:46	67-64-1	C9
Benzene	ND	ug/L	0.50	1	01/10/17 13:46	71-43-2	
Bromodichloromethane	ND	ug/L	0.50	1	01/10/17 13:46	75-27-4	
Bromoform	ND	ug/L	0.50	1	01/10/17 13:46	75-25-2	
Bromomethane	ND	ug/L	0.50	1	01/10/17 13:46	74-83-9	
2-Butanone (MEK)	ND	ug/L	2.0	1	01/10/17 13:46	78-93-3	
Carbon disulfide	ND	ug/L	1.0	1	01/10/17 13:46	75-15-0	L3
Carbon tetrachloride	ND	ug/L	0.50	1	01/10/17 13:46	56-23-5	
Chlorobenzene	ND	ug/L	0.50	1	01/10/17 13:46	108-90-7	
Chloroethane	ND	ug/L	0.50	1	01/10/17 13:46	75-00-3	
Chloroform	ND	ug/L	0.50	1	01/10/17 13:46	67-66-3	
Chloromethane	ND	ug/L	0.50	1	01/10/17 13:46	74-87-3	
1,2-Dibromo-3-chloropropane	ND	ug/L	0.20	1	01/10/17 13:46	96-12-8	
Dibromochloromethane	ND	ug/L	0.50	1	01/10/17 13:46	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	1	01/10/17 13:46	106-93-4	
Dichlorodifluoromethane	ND	ug/L	1.0	1	01/10/17 13:46	75-71-8	
1,1-Dichloroethane	ND	ug/L	0.50	1	01/10/17 13:46	75-34-3	
1,2-Dichloroethane	ND	ug/L	0.50	1	01/10/17 13:46	107-06-2	
1,1-Dichloroethene	ND	ug/L	0.50	1	01/10/17 13:46	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	1	01/10/17 13:46	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	0.50	1	01/10/17 13:46	156-60-5	
1,2-Dichloropropane	ND	ug/L	0.50	1	01/10/17 13:46	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	0.50	1	01/10/17 13:46	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	0.50	1	01/10/17 13:46	10061-02-6	
Ethylbenzene	ND	ug/L	0.50	1	01/10/17 13:46	100-41-4	
2-Hexanone	ND	ug/L	1.0	1	01/10/17 13:46	591-78-6	
Isopropylbenzene (Cumene)	ND	ug/L	1.0	1	01/10/17 13:46	98-82-8	
Methyl acetate	ND	ug/L	2.0	1	01/10/17 13:46	79-20-9	
Methylene Chloride	ND	ug/L	0.50	1	01/10/17 13:46	75-09-2	

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ANALYTICAL RESULTS



Project: PUMA TERMINAL MW SAMPLING
Pace Project No.: 2048222

Sample:	Lab ID:	Collected:	Received:	Matrix:				
MW-M14	2048222006	01/05/17 11:34	01/05/17 12:50	Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV Low Level Analytical Method: EPA 5030B/8260								
4-Methyl-2-pentanone (MIBK)	ND	ug/L	1.0	1		01/10/17 13:46	108-10-1	
Methyl-tert-butyl ether	1.9	ug/L	0.50	1		01/10/17 13:46	1634-04-4	
Styrene	ND	ug/L	1.0	1		01/10/17 13:46	100-42-5	
1,1,2,2-Tetrachloroethane	ND	ug/L	0.50	1		01/10/17 13:46	79-34-5	
Tetrachloroethene	ND	ug/L	0.50	1		01/10/17 13:46	127-18-4	
Toluene	ND	ug/L	0.50	1		01/10/17 13:46	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	0.50	1		01/10/17 13:46	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	0.50	1		01/10/17 13:46	79-00-5	
Trichloroethene	ND	ug/L	0.50	1		01/10/17 13:46	79-01-6	
Trichlorofluoromethane	ND	ug/L	0.50	1		01/10/17 13:46	75-69-4	
Vinyl chloride	ND	ug/L	0.50	1		01/10/17 13:46	75-01-4	
m&p-Xylene	ND	ug/L	2.0	1		01/10/17 13:46	179601-23-1	
o-Xylene	ND	ug/L	1.0	1		01/10/17 13:46	95-47-6	
Surrogates								
Dibromofluoromethane (S)	114	%	72-126	1		01/10/17 13:46	1868-53-7	
4-Bromofluorobenzene (S)	97	%	68-124	1		01/10/17 13:46	460-00-4	
Toluene-d8 (S)	101	%	79-119	1		01/10/17 13:46	2037-26-5	

Sample:	Lab ID:	Collected:	Received:	Matrix:				
FB-010517	2048222007	01/05/17 11:38	01/05/17 12:50	Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8021 GCV BTEX, MTBE, GRO Analytical Method: EPA 8015/8021								
Gasoline Range Organics	ND	ug/L	50.0	1		01/12/17 13:46		
Surrogates								
4-Bromofluorobenzene (S)	89	%	44-148	1		01/12/17 13:46	460-00-4	
8260 MSV Low Level Analytical Method: EPA 5030B/8260								
Acetone	18.5	ug/L	4.0	1		01/10/17 14:03	67-64-1	C9
Benzene	ND	ug/L	0.50	1		01/10/17 14:03	71-43-2	
Bromodichloromethane	ND	ug/L	0.50	1		01/10/17 14:03	75-27-4	
Bromoform	ND	ug/L	0.50	1		01/10/17 14:03	75-25-2	
Bromomethane	ND	ug/L	0.50	1		01/10/17 14:03	74-83-9	
2-Butanone (MEK)	ND	ug/L	2.0	1		01/10/17 14:03	78-93-3	
Carbon disulfide	ND	ug/L	1.0	1		01/10/17 14:03	75-15-0	L3
Carbon tetrachloride	ND	ug/L	0.50	1		01/10/17 14:03	56-23-5	
Chlorobenzene	ND	ug/L	0.50	1		01/10/17 14:03	108-90-7	
Chloroethane	ND	ug/L	0.50	1		01/10/17 14:03	75-00-3	
Chloroform	ND	ug/L	0.50	1		01/10/17 14:03	67-66-3	
Chloromethane	ND	ug/L	0.50	1		01/10/17 14:03	74-87-3	
1,2-Dibromo-3-chloropropane	ND	ug/L	0.20	1		01/10/17 14:03	96-12-8	
Dibromochloromethane	ND	ug/L	0.50	1		01/10/17 14:03	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	1		01/10/17 14:03	106-93-4	
Dichlorodifluoromethane	ND	ug/L	1.0	1		01/10/17 14:03	75-71-8	
1,1-Dichloroethane	ND	ug/L	0.50	1		01/10/17 14:03	75-34-3	
1,2-Dichloroethane	ND	ug/L	0.50	1		01/10/17 14:03	107-06-2	

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ANALYTICAL RESULTS

Project: PUMA TERMINAL MW SAMPLING
Pace Project No.: 2048222

Sample: FB-010517 Lab ID: 2048222007 Collected: 01/05/17 11:38 Received: 01/05/17 12:50 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV Low Level		Analytical Method: EPA 5030B/8260						
1,1-Dichloroethene	ND	ug/L	0.50	1		01/10/17 14:03	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	1		01/10/17 14:03	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	0.50	1		01/10/17 14:03	156-60-5	
1,2-Dichloropropane	ND	ug/L	0.50	1		01/10/17 14:03	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	0.50	1		01/10/17 14:03	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	0.50	1		01/10/17 14:03	10061-02-6	
Ethylbenzene	ND	ug/L	0.50	1		01/10/17 14:03	100-41-4	
2-Hexanone	ND	ug/L	1.0	1		01/10/17 14:03	591-78-6	
Isopropylbenzene (Cumene)	ND	ug/L	1.0	1		01/10/17 14:03	98-82-8	
Methyl acetate	ND	ug/L	2.0	1		01/10/17 14:03	79-20-9	
Methylene Chloride	ND	ug/L	0.50	1		01/10/17 14:03	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	1.0	1		01/10/17 14:03	108-10-1	
Methyl-tert-butyl ether	ND	ug/L	0.50	1		01/10/17 14:03	1634-04-4	
Styrene	ND	ug/L	1.0	1		01/10/17 14:03	100-42-5	
1,1,2,2-Tetrachloroethane	ND	ug/L	0.50	1		01/10/17 14:03	79-34-5	
Tetrachloroethene	ND	ug/L	0.50	1		01/10/17 14:03	127-18-4	
Toluene	ND	ug/L	0.50	1		01/10/17 14:03	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	0.50	1		01/10/17 14:03	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	0.50	1		01/10/17 14:03	79-00-5	
Trichloroethene	ND	ug/L	0.50	1		01/10/17 14:03	79-01-6	
Trichlorofluoromethane	ND	ug/L	0.50	1		01/10/17 14:03	75-69-4	
Vinyl chloride	ND	ug/L	0.50	1		01/10/17 14:03	75-01-4	
m&p-Xylene	ND	ug/L	2.0	1		01/10/17 14:03	179601-23-1	
o-Xylene	ND	ug/L	1.0	1		01/10/17 14:03	95-47-6	
Surrogates								
Dibromofluoromethane (S)	114	%.	72-126	1		01/10/17 14:03	1868-53-7	
4-Bromofluorobenzene (S)	96	%.	68-124	1		01/10/17 14:03	460-00-4	
Toluene-d8 (S)	101	%.	79-119	1		01/10/17 14:03	2037-26-5	



REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: PUMA TERMINAL MW SAMPLING
Pace Project No.: 2048222

QC Batch: 71889 Analysis Method: EPA 8015/8021
QC Batch Method: EPA 8015/8021 Analysis Description: 8021 W GCV BTEX, MTBE, GRO
Associated Lab Samples: 2048222001, 2048222002, 2048222003, 2048222004, 2048222005, 2048222006, 2048222007

METHOD BLANK: 301021 Matrix: Water
Associated Lab Samples: 2048222001, 2048222002, 2048222003, 2048222004, 2048222005, 2048222006, 2048222007

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Gasoline Range Organics	ug/L	ND	50.0	01/12/17 10:39	
4-Bromofluorobenzene (S)	%	85	44-148	01/12/17 10:39	

LABORATORY CONTROL SAMPLE: 301022

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Gasoline Range Organics	ug/L	500	430	86	61-136	
4-Bromofluorobenzene (S)	%			90	44-148	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 301348 301349

Parameter	Units	2048222003 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	Max RPD	Qual
Gasoline Range Organics	ug/L	ND	500	500	492	476	93	90	15-147	3	20
4-Bromofluorobenzene (S)	%						92	92	44-148		

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QUALITY CONTROL DATA

Project: PUMA TERMINAL MW SAMPLING
Pace Project No.: 2048222

QC Batch: 71614 Analysis Method: EPA 7470
QC Batch Method: EPA 7470 Analysis Description: 7470 Mercury
Associated Lab Samples: 2048222002, 2048222003, 2048222004, 2048222005, 2048222006

METHOD BLANK: 299676 Matrix: Water
Associated Lab Samples: 2048222002, 2048222003, 2048222004, 2048222005, 2048222006

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Mercury	ug/L	ND	0.20	01/09/17 19:05	

LABORATORY CONTROL SAMPLE: 299677

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury	ug/L	1	1.0	103	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 299678 299679

Parameter	Units	2048222003		299679		MS % Rec	MSD % Rec	% Rec Limits	Max RPD	Qual
		Result	MS Spike Conc.	MSD Spike Conc.	MS Result					
Mercury	ug/L	ND	1	1	1.0	1.0	102	101	75-125	1 20

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QUALITY CONTROL DATA

Project: PUMA TERMINAL MW SAMPLING
Pace Project No.: 2048222

QC Batch: 71676 Analysis Method: EPA 7470
QC Batch Method: EPA 7470 Analysis Description: 7470 Mercury Dissolved
Associated Lab Samples: 2048222002, 2048222003, 2048222004, 2048222005, 2048222006

METHOD BLANK: 299994 Matrix: Water
Associated Lab Samples: 2048222002, 2048222003, 2048222004, 2048222005, 2048222006

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Mercury, Dissolved	ug/L	ND	0.20	01/10/17 17:57	

LABORATORY CONTROL SAMPLE: 299995

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury, Dissolved	ug/L	1	1.0	102	80-120	

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QUALITY CONTROL DATA

Project: PUMA TERMINAL MW SAMPLING
Pace Project No.: 2048222

QC Batch: 71617 Analysis Method: EPA 6020
QC Batch Method: EPA 3010 Analysis Description: 6020 MET
Associated Lab Samples: 2048222002, 2048222003, 2048222004, 2048222005, 2048222006

METHOD BLANK: 299684 Matrix: Water
Associated Lab Samples: 2048222002, 2048222003, 2048222004, 2048222005, 2048222006

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Arsenic	mg/L	ND	0.0010	01/13/17 18:59	
Chromium	mg/L	ND	0.0010	01/13/17 18:59	
Lead	mg/L	ND	0.0010	01/13/17 18:59	
Vanadium	mg/L	ND	0.0050	01/13/17 18:59	

LABORATORY CONTROL SAMPLE: 299685

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Arsenic	mg/L	.02	0.020	102	83-115	
Chromium	mg/L	.02	0.020	99	85-115	
Lead	mg/L	.02	0.019	96	84-115	
Vanadium	mg/L	.02	0.020	98	81-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 299686 299687

Parameter	Units	2047753015 Result	MS		MSD		MS % Rec	MSD % Rec	% Rec Limits	Max RPD	Qual
			Spike Conc.	MS Result	Spike Conc.	MSD Result					
Arsenic	mg/L	11.2 ug/L	.02	0.023	.02	0.022	61	55	80-120	5	20 M1
Chromium	mg/L	ND	.02	0.017	.02	0.017	82	83	80-120	1	20
Lead	mg/L	ND	.02	0.023	.02	0.023	112	112	80-120	1	20
Vanadium	mg/L	ND	.02	0.018	.02	0.017	84	83	80-120	1	20

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QUALITY CONTROL DATA

Project: PUMA TERMINAL MW SAMPLING
Pace Project No.: 2048222

QC Batch: 71683 Analysis Method: EPA 6020
QC Batch Method: EPA 3005A Analysis Description: 6020 MET Dissolved
Associated Lab Samples: 2048222002, 2048222003, 2048222004, 2048222005, 2048222006

METHOD BLANK: 300010 Matrix: Water
Associated Lab Samples: 2048222002, 2048222003, 2048222004, 2048222005, 2048222006

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Arsenic, Dissolved	ug/L	ND	1.0	01/13/17 19:15	
Chromium, Dissolved	ug/L	ND	1.0	01/13/17 19:15	
Lead, Dissolved	ug/L	ND	1.0	01/13/17 19:15	
Vanadium, Dissolved	ug/L	ND	5.0	01/13/17 19:15	

LABORATORY CONTROL SAMPLE: 300011

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Arsenic, Dissolved	ug/L	20	18.7	94	80-120	
Chromium, Dissolved	ug/L	20	20.4	102	80-120	
Lead, Dissolved	ug/L	20	20.2	101	80-120	
Vanadium, Dissolved	ug/L	20	24.5	123	80-120 L0	

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QUALITY CONTROL DATA

Project: PUMA TERMINAL MW SAMPLING
Pace Project No.: 2048222

QC Batch: 71630 Analysis Method: EPA 5030B/8260
QC Batch Method: EPA 5030B/8260 Analysis Description: 8260 MSV Low Level
Associated Lab Samples: 2048222001, 2048222002, 2048222003, 2048222004, 2048222005, 2048222006, 2048222007

METHOD BLANK: 299869 Matrix: Water
Associated Lab Samples: 2048222001, 2048222002, 2048222003, 2048222004, 2048222005, 2048222006, 2048222007

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
1,1,1-Trichloroethane	ug/L	ND	0.50	01/10/17 09:55	
1,1,2,2-Tetrachloroethane	ug/L	ND	0.50	01/10/17 09:55	
1,1,2-Trichloroethane	ug/L	ND	0.50	01/10/17 09:55	
1,1-Dichloroethane	ug/L	ND	0.50	01/10/17 09:55	
1,1-Dichloroethene	ug/L	ND	0.50	01/10/17 09:55	
1,2-Dibromo-3-chloropropane	ug/L	ND	0.20	01/10/17 09:55	
1,2-Dibromoethane (EDB)	ug/L	ND	1.0	01/10/17 09:55	
1,2-Dichloroethane	ug/L	ND	0.50	01/10/17 09:55	
1,2-Dichloropropane	ug/L	ND	0.50	01/10/17 09:55	
2-Butanone (MEK)	ug/L	ND	2.0	01/10/17 09:55	
2-Hexanone	ug/L	ND	1.0	01/10/17 09:55	
4-Methyl-2-pentanone (MIBK)	ug/L	ND	1.0	01/10/17 09:55	
Acetone	ug/L	ND	4.0	01/10/17 09:55	
Benzene	ug/L	ND	0.50	01/10/17 09:55	
Bromodichloromethane	ug/L	ND	0.50	01/10/17 09:55	
Bromoform	ug/L	ND	0.50	01/10/17 09:55	
Bromomethane	ug/L	ND	0.50	01/10/17 09:55	
Carbon disulfide	ug/L	ND	1.0	01/10/17 09:55	
Carbon tetrachloride	ug/L	ND	0.50	01/10/17 09:55	
Chlorobenzene	ug/L	ND	0.50	01/10/17 09:55	
Chloroethane	ug/L	ND	0.50	01/10/17 09:55	
Chloroform	ug/L	ND	0.50	01/10/17 09:55	
Chloromethane	ug/L	ND	0.50	01/10/17 09:55	
cis-1,2-Dichloroethene	ug/L	ND	1.0	01/10/17 09:55	
cis-1,3-Dichloropropene	ug/L	ND	0.50	01/10/17 09:55	
Dibromochloromethane	ug/L	ND	0.50	01/10/17 09:55	
Dichlorodifluoromethane	ug/L	ND	1.0	01/10/17 09:55	
Ethylbenzene	ug/L	ND	0.50	01/10/17 09:55	
Isopropylbenzene (Cumene)	ug/L	ND	1.0	01/10/17 09:55	
m&p-Xylene	ug/L	ND	2.0	01/10/17 09:55	
Methyl acetate	ug/L	ND	2.0	01/10/17 09:55	
Methyl-tert-butyl ether	ug/L	ND	0.50	01/10/17 09:55	
Methylene Chloride	ug/L	ND	0.50	01/10/17 09:55	
o-Xylene	ug/L	ND	1.0	01/10/17 09:55	
Styrene	ug/L	ND	1.0	01/10/17 09:55	
Tetrachloroethene	ug/L	ND	0.50	01/10/17 09:55	
Toluene	ug/L	ND	0.50	01/10/17 09:55	
trans-1,2-Dichloroethene	ug/L	ND	0.50	01/10/17 09:55	
trans-1,3-Dichloropropene	ug/L	ND	0.50	01/10/17 09:55	
Trichloroethene	ug/L	ND	0.50	01/10/17 09:55	
Trichlorofluoromethane	ug/L	ND	0.50	01/10/17 09:55	

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QUALITY CONTROL DATA

Project: PUMA TERMINAL MW SAMPLING
Pace Project No.: 2048222

METHOD BLANK: 299869 Matrix: Water
Associated Lab Samples: 2048222001, 2048222002, 2048222003, 2048222004, 2048222005, 2048222006, 2048222007

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Vinyl chloride	ug/L	ND	0.50	01/10/17 09:55	
4-Bromofluorobenzene (S)	%	96	68-124	01/10/17 09:55	
Dibromofluoromethane (S)	%	107	72-126	01/10/17 09:55	
Toluene-d8 (S)	%	102	79-119	01/10/17 09:55	

LABORATORY CONTROL SAMPLE: 299870

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,1,1-Trichloroethane	ug/L	50	54.9	110	62-131	
1,1,1,2-Tetrachloroethane	ug/L	50	49.4	99	15-179	
1,1,2-Trichloroethane	ug/L	50	46.8	94	58-144	
1,1-Dichloroethane	ug/L	50	56.2	112	63-129	
1,1-Dichloroethene	ug/L	50	56.0	112	51-139	
1,2-Dibromo-3-chloropropane	ug/L	50	48.0	96	21-160	
1,2-Dibromoethane (EDB)	ug/L	50	48.9	98	52-161	
1,2-Dichloroethane	ug/L	50	50.4	101	57-148	
1,2-Dichloropropane	ug/L	50	53.0	106	66-128	
2-Butanone (MEK)	ug/L	50	54.6	109	32-183	
2-Hexanone	ug/L	50	46.6	93	36-170	
4-Methyl-2-pentanone (MIBK)	ug/L	50	48.8	98	26-171	
Acetone	ug/L	50	54.0	108	22-165	
Benzene	ug/L	50	55.9	112	62-131	
Bromodichloromethane	ug/L	50	47.6	95	69-132	
Bromoform	ug/L	50	42.9	86	35-166	
Bromomethane	ug/L	50	47.6	95	34-158	
Carbon disulfide	ug/L	50	74.4	149	31-128 LO	
Carbon tetrachloride	ug/L	50	51.2	102	54-144	
Chlorobenzene	ug/L	50	50.2	100	70-127	
Chloroethane	ug/L	50	39.3	79	17-195	
Chloroform	ug/L	50	51.3	103	73-134	
Chloromethane	ug/L	50	60.3	121	17-153	
cis-1,2-Dichloroethene	ug/L	50	53.7	107	68-129	
cis-1,3-Dichloropropene	ug/L	50	51.6	103	72-138	
Dibromochloromethane	ug/L	50	45.6	91	49-146	
Dichlorodifluoromethane	ug/L	50	51.3	103	10-179	
Ethylbenzene	ug/L	50	49.1	98	66-126	
Isopropylbenzene (Cumene)	ug/L	50	49.5	99	51-138	
m&p-Xylene	ug/L	100	101	101	65-129	
Methyl acetate	ug/L	50	51.3	103	20-142	
Methyl-tert-butyl ether	ug/L	50	50.2	100	37-166	
Methylene Chloride	ug/L	50	55.2	110	46-168	
o-Xylene	ug/L	50	48.1	96	65-124	
Styrene	ug/L	50	49.3	99	72-133	
Tetrachloroethene	ug/L	50	49.0	98	46-157	

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QUALITY CONTROL DATA

Project: PUMA TERMINAL MW SAMPLING
Pace Project No.: 2048222

LABORATORY CONTROL SAMPLE: 299870

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Toluene	ug/L	50	52.3	105	69-126	
trans-1,2-Dichloroethene	ug/L	50	53.7	107	60-129	
trans-1,3-Dichloropropene	ug/L	50	51.0	102	59-149	
Trichloroethene	ug/L	50	52.2	104	67-132	
Trichlorofluoromethane	ug/L	50	55.1	110	39-171	
Vinyl chloride	ug/L	50	44.5	89	27-149	
4-Bromofluorobenzene (S)	%			97	68-124	
Dibromofluoromethane (S)	%			109	72-126	
Toluene-d8 (S)	%			102	79-119	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 299871 299872

Parameter	Units	MS		MSD		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual	
		2048288001 Result	Spike Conc.	Spike Conc.	Result							Result
1,1,1-Trichloroethane	ug/L	ND	50	50	64.9	56.6	130	113	54-137	14	20	
1,1,2,2-Tetrachloroethane	ug/L	ND	50	50	57.0	53.7	114	107	15-187	6	20	
1,1,2-Trichloroethane	ug/L	ND	50	50	53.0	48.4	106	97	59-148	9	20	
1,1-Dichloroethane	ug/L	ND	50	50	64.1	55.4	128	111	59-133	15	20	
1,1-Dichloroethene	ug/L	ND	50	50	64.8	55.6	130	111	44-146	15	20	
1,2-Dibromo-3-chloropropane	ug/L	ND	50	50	54.6	51.8	109	104	23-166	5	20	
1,2-Dibromoethane (EDB)	ug/L	ND	50	50	54.8	49.6	110	99	55-166	10	20	
1,2-Dichloroethane	ug/L	ND	50	50	56.3	50.6	113	101	56-154	11	20	
1,2-Dichloropropane	ug/L	ND	50	50	58.4	51.6	117	103	62-135	12	20	
2-Butanone (MEK)	ug/L	ND	50	50	67.3	59.2	135	118	20-205	13	20	
2-Hexanone	ug/L	ND	50	50	56.8	52.6	114	105	25-189	8	20	
4-Methyl-2-pentanone (MIBK)	ug/L	ND	50	50	58.4	53.7	117	107	23-184	8	20	
Acetone	ug/L	0.0078 mg/L	50	50	66.7	63.4	118	111	11-217	5	20	
Benzene	ug/L	ND	50	50	62.0	54.0	124	108	52-141	14	20	
Bromodichloromethane	ug/L	ND	50	50	53.5	47.2	107	94	70-134	12	20	
Bromoform	ug/L	ND	50	50	48.0	43.0	96	86	37-171	11	20	
Bromomethane	ug/L	ND	50	50	50.7	45.9	101	92	34-155	10	20	
Carbon disulfide	ug/L	ND	50	50	91.4	73.6	183	147	28-130	22	20	M0, R1
Carbon tetrachloride	ug/L	ND	50	50	56.6	48.4	113	97	48-146	16	20	
Chlorobenzene	ug/L	ND	50	50	56.2	49.1	112	98	67-129	13	20	
Chloroethane	ug/L	ND	50	50	54.8	48.0	110	96	12-192	13	20	
Chloroform	ug/L	ND	50	50	58.1	50.9	116	102	66-143	13	20	
Chloromethane	ug/L	ND	50	50	53.4	45.2	107	90	14-155	17	20	
cis-1,2-Dichloroethene	ug/L	ND	50	50	61.2	53.2	122	106	56-141	14	20	
cis-1,3-Dichloropropene	ug/L	ND	50	50	56.9	49.5	114	99	70-139	14	20	
Dibromochloromethane	ug/L	ND	50	50	50.4	44.9	101	90	50-150	12	20	
Dichlorodifluoromethane	ug/L	ND	50	50	60.8	52.0	122	104	10-173	16	20	
Ethylbenzene	ug/L	ND	50	50	55.3	48.7	111	97	57-135	13	20	
Isopropylbenzene (Cumene)	ug/L	ND	50	50	55.6	52.7	111	105	40-146	5	20	

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QUALITY CONTROL DATA

Project: PUMA TERMINAL MW SAMPLING
Pace Project No.: 2048222

QC Batch: 71577 Analysis Method: EPA 8015B Modified
QC Batch Method: EPA 3535 Analysis Description: EPA 8015 ORO
Associated Lab Samples: 2048222002, 2048222003, 2048222004, 2048222005, 2048222006

METHOD BLANK: 299594 Matrix: Water
Associated Lab Samples: 2048222002, 2048222003, 2048222004, 2048222005, 2048222006

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Diesel Range Organic (C10-C28)	mg/L	ND	0.25	01/09/17 15:11	
Oil Range Organics (>C28-C40)	mg/L	ND	0.50	01/09/17 15:11	
n-Pentacosane (S)	%	49	16-137	01/09/17 15:11	
o-Terphenyl (S)	%	58	10-121	01/09/17 15:11	

LABORATORY CONTROL SAMPLE: 299595

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Diesel Range Organic (C10-C28)	mg/L	.4	0.29	73	10-115	
n-Pentacosane (S)	%			55	16-137	
o-Terphenyl (S)	%			68	10-121	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: PUMA TERMINAL MW SAMPLING
Pace Project No.: 2048222

QC Batch: 71665 Analysis Method: EPA 8270 by SIM
QC Batch Method: EPA 3510 Analysis Description: 8270 Water by SIM MSSV
Associated Lab Samples: 2048222002, 2048222003, 2048222004, 2048222005, 2048222006

METHOD BLANK: 299959 Matrix: Water
Associated Lab Samples: 2048222002, 2048222003, 2048222004, 2048222005, 2048222006

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
2-Methylnaphthalene	ug/L	ND	0.10	01/10/17 15:39	
Acenaphthene	ug/L	ND	0.10	01/10/17 15:39	
Acenaphthylene	ug/L	ND	0.10	01/10/17 15:39	
Anthracene	ug/L	ND	0.10	01/10/17 15:39	
Benzo(a)anthracene	ug/L	ND	0.10	01/10/17 15:39	
Benzo(a)pyrene	ug/L	ND	0.10	01/10/17 15:39	
Benzo(b)fluoranthene	ug/L	ND	0.10	01/10/17 15:39	
Benzo(g,h,i)perylene	ug/L	ND	0.10	01/10/17 15:39	
Benzo(k)fluoranthene	ug/L	ND	0.10	01/10/17 15:39	
Chrysene	ug/L	ND	0.10	01/10/17 15:39	
Dibenz(a,h)anthracene	ug/L	ND	0.10	01/10/17 15:39	
Fluoranthene	ug/L	ND	0.10	01/10/17 15:39	
Fluorene	ug/L	ND	0.10	01/10/17 15:39	
Indeno(1,2,3-cd)pyrene	ug/L	ND	0.10	01/10/17 15:39	
Naphthalene	ug/L	ND	0.10	01/10/17 15:39	
Phenanthrene	ug/L	ND	0.10	01/10/17 15:39	
Pyrene	ug/L	ND	0.10	01/10/17 15:39	
2-Fluorobiphenyl (S)	%	82	25-150	01/10/17 15:39	
Terphenyl-d14 (S)	%	86	25-150	01/10/17 15:39	

LABORATORY CONTROL SAMPLE: 299960

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
2-Methylnaphthalene	ug/L	4	3.7	92	35-150	
Acenaphthene	ug/L	4	3.7	91	35-150	
Acenaphthylene	ug/L	4	3.6	91	35-150	
Anthracene	ug/L	4	4.4	111	35-150	
Benzo(a)anthracene	ug/L	4	3.8	95	35-150	
Benzo(a)pyrene	ug/L	4	3.5	88	35-150	
Benzo(b)fluoranthene	ug/L	4	3.5	88	35-150	
Benzo(g,h,i)perylene	ug/L	4	4.3	107	35-150	
Benzo(k)fluoranthene	ug/L	4	3.5	88	35-150	
Chrysene	ug/L	4	3.5	89	35-150	
Dibenz(a,h)anthracene	ug/L	4	4.7	117	35-150	
Fluoranthene	ug/L	4	3.5	86	35-150	
Fluorene	ug/L	4	3.5	89	35-150	
Indeno(1,2,3-cd)pyrene	ug/L	4	4.5	112	35-150	
Naphthalene	ug/L	4	3.4	84	35-150	
Phenanthrene	ug/L	4	3.9	97	35-150	
Pyrene	ug/L	4	3.4	85	35-150	

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QUALITY CONTROL DATA

Project: PUMA TERMINAL MW SAMPLING
Pace Project No.: 2048222

LABORATORY CONTROL SAMPLE: 299960

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
2-Fluorobiphenyl (S)	%.			117	25-150	
Terphenyl-d14 (S)	%.			114	25-150	

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REPORT OF LABORATORY ANALYSIS

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QUALIFIERS

Project: PUMA TERMINAL MW SAMPLING
Pace Project No.: 2048222

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.
ND - Not Detected at or above adjusted reporting limit.
J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.
MDL - Adjusted Method Detection Limit.
PQL - Practical Quantitation Limit.
RL - Reporting Limit.
S - Surrogate
1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.
Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.
LCS(D) - Laboratory Control Sample (Duplicate)
MS(D) - Matrix Spike (Duplicate)
DUP - Sample Duplicate
RPD - Relative Percent Difference
NC - Not Calculable.
SG - Silica Gel - Clean-Up
U - Indicates the compound was analyzed for, but not detected.
N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.
Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.
TNI - The Nelac Institute

LABORATORIES

PASI-N Pace Analytical Services - New Orleans

BATCH QUALIFIERS

Batch: 71629

[M5] A matrix spike/matrix spike duplicate was not performed for this batch due to insufficient sample volume.

Batch: 71745

[M5] A matrix spike/matrix spike duplicate was not performed for this batch due to insufficient sample volume.

Batch: 71749

[1] Insufficient sample volume to perform MS/MSD analysis.

ANALYTE QUALIFIERS

C9 Common Laboratory Contaminant.
L0 Analyte recovery in the laboratory control sample (LCS) was outside QC limits.
L3 Analyte recovery in the laboratory control sample (LCS) exceeded QC limits. Analyte presence below reporting limits in associated samples.
M0 Matrix spike recovery and/or matrix spike duplicate recovery was outside laboratory control limits.
M1 Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.
R1 RPD value was outside control limits.

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: PUMA TERMINAL MW SAMPLING
Pace Project No.: 2048222

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
2048222002	EB-010517	EPA 3535	71577	EPA 8015B Modified	71629
2048222003	MW-48A	EPA 3535	71577	EPA 8015B Modified	71629
2048222004	MW-109A	EPA 3535	71577	EPA 8015B Modified	71629
2048222005	DUP005	EPA 3535	71577	EPA 8015B Modified	71629
2048222006	MW-M14	EPA 3535	71577	EPA 8015B Modified	71629
2048222001	TB-010517	EPA 8015/8021	71889		
2048222002	EB-010517	EPA 8015/8021	71889		
2048222003	MW-48A	EPA 8015/8021	71889		
2048222004	MW-109A	EPA 8015/8021	71889		
2048222005	DUP005	EPA 8015/8021	71889		
2048222006	MW-M14	EPA 8015/8021	71889		
2048222007	FB-010517	EPA 8015/8021	71889		
2048222002	EB-010517	EPA 3010	71617	EPA 6020	71656
2048222003	MW-48A	EPA 3010	71617	EPA 6020	71656
2048222004	MW-109A	EPA 3010	71617	EPA 6020	71656
2048222005	DUP005	EPA 3010	71617	EPA 6020	71656
2048222006	MW-M14	EPA 3010	71617	EPA 6020	71656
2048222002	EB-010517	EPA 3005A	71683	EPA 6020	71749
2048222003	MW-48A	EPA 3005A	71683	EPA 6020	71749
2048222004	MW-109A	EPA 3005A	71683	EPA 6020	71749
2048222005	DUP005	EPA 3005A	71683	EPA 6020	71749
2048222006	MW-M14	EPA 3005A	71683	EPA 6020	71749
2048222002	EB-010517	EPA 7470	71614	EPA 7470	71654
2048222003	MW-48A	EPA 7470	71614	EPA 7470	71654
2048222004	MW-109A	EPA 7470	71614	EPA 7470	71654
2048222005	DUP005	EPA 7470	71614	EPA 7470	71654
2048222006	MW-M14	EPA 7470	71614	EPA 7470	71654
2048222002	EB-010517	EPA 7470	71676	EPA 7470	71753
2048222003	MW-48A	EPA 7470	71676	EPA 7470	71753
2048222004	MW-109A	EPA 7470	71676	EPA 7470	71753
2048222005	DUP005	EPA 7470	71676	EPA 7470	71753
2048222006	MW-M14	EPA 7470	71676	EPA 7470	71753
2048222002	EB-010517	EPA 3510	71665	EPA 8270 by SIM	71745
2048222003	MW-48A	EPA 3510	71665	EPA 8270 by SIM	71745
2048222004	MW-109A	EPA 3510	71665	EPA 8270 by SIM	71745
2048222005	DUP005	EPA 3510	71665	EPA 8270 by SIM	71745
2048222006	MW-M14	EPA 3510	71665	EPA 8270 by SIM	71745
2048222001	TB-010517	EPA 5030B/8260	71630		
2048222002	EB-010517	EPA 5030B/8260	71630		
2048222003	MW-48A	EPA 5030B/8260	71630		
2048222004	MW-109A	EPA 5030B/8260	71630		
2048222005	DUP005	EPA 5030B/8260	71630		
2048222006	MW-M14	EPA 5030B/8260	71630		
2048222007	FB-010517	EPA 5030B/8260	71630		

REPORT OF LABORATORY ANALYSIS

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WO#: 2048222

CHAIN-OF-CUSTODY / Analytical Request Document

Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.



Section A Required Client Information: 2048222

Section C Invoice Information:

Page: 1 of 1 2075274

Company: Arcadis, Report To: Efraim Calderon, Attention: ... REGULATORY AGENCY: NPDES, GROUND WATER, DRINKING WATER, UST, RCRA, OTHER. Site Location: PR, STATE: PR.

Table with columns: ITEM #, SAMPLE ID, MATRIX CODES, COLLECTED (DATE, TIME), PRESERVATIVES, ANALYSIS TESTS, and Residual Chlorine (Y/N). Includes handwritten entries for samples TB-010517, EB-010517, MW-48A, MW-109A, DUPOOS, MW-MR4, FB-010517.

Table with columns: ADDITIONAL COMMENTS, RELINQUISHED BY / AFFILIATION, DATE, TIME, ACCEPTED BY / AFFILIATION, DATE, TIME, SAMPLE CONDITIONS. Includes handwritten signatures and dates.

ORIGINAL SAMPLER NAME AND SIGNATURE: PRINT Name of SAMPLER: Andri Colon, SIGNATURE of SAMPLER: [Signature], DATE Signed: 01/05/17

Important Note: By signing this form you are accepting Pace's NET 30 day payment terms and agreeing to late charges of 1.5% per month for any invoices not paid within 30 days.



Sample Condition Upon Receipt

WO#: 2048222

Urb. Jardines de Guaynabo
Calle Mrgina: Bldg A-10
Guaynabo, PR 00969

PM: JAR1

Due Date: 01/19/17

Project #:

CLIENT: 98-ARCADISPR

Courier: Pace Courier Hired Courier Fed X UPS DHL USPS Customer Other

Custody Seal on Cooler/Box Present: [see COC]

Custody Seals intact: Yes No

Thermometer Used: Therm Fisher IR 4 Therm Fisher IR 6 Therm Fisher IR 7

Type of Ice: Wet Blue None

Samples on ice: [see COC]

Cooler Temperature: [see COC]

Temp should be above freezing to 6°C

Date and initials of person examining contents: 1-5-17 [Signature]

Temp must be measured from Temperature blank when present Comments:

Table with 3 columns: Question, Yes/No/N/A checkboxes, and Numbered Comments (1-15).

Client Notification/ Resolution:

Person Contacted: Date/Time:

Comments/ Resolution:



Sample Condition Upon Receipt

1000 Riverbend Blvd., Suite F
St Rose, LA 70087

Project #: **20**

Courier: Pace Courier Hired Courier Fed X UPS DHL USPS Customer Other

Custody Seal on Cooler/Box Present: [see COC]

Custody Seals intact: Yes No

Thermometer Used: Therm Fisher IR 5
 Therm Fisher IR 6
 Therm Fisher IR 7

Type of Ice: Wet Blue None

Samples on ice: [see COC]

Cooler Temperature: [see COC]

Temp should be above freezing to 6°C

Date and Initials of person examining contents: 1-6-17 CMB

Temp must be measured from Temperature blank when present

Comments:

Temperature Blank Present??	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	1
Chain of Custody Present:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	2
Chain of Custody Complete:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	3
Chain of Custody Relinquished:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	4
Sampler Name & Signature on COC:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	5
Samples Arrived within Hold Time:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	6
Sufficient Volume:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	7
Correct Containers Used:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	8
Filtered vol. Rec. for Diss. tests	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	9
Sample Labels match COC:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	10
All containers received within manufacture's precautionary and/or expiration dates.	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	11
All containers needing chemical preservation have been checked (except VOA, coliform, & O&G).	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	12
All containers preservation checked found to be in compliance with EPA recommendation.	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	13
Headspace in VOA Vials (>6mm):	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	14
Trip Blank Present:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	15

Client Notification/ Resolution:

Person Contacted: _____ Date/Time: _____

Comments/ Resolution: _____

February 15, 2017

Efrain Calderon
BBL Caribe Engineering P.S.C.
48 City View Plaza1, Suite 401
Road 16, Km. 1.2
Guaynabo, PR 00968

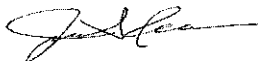
RE: Project: PUMA TERMINAL MS SAMPLING
Pace Project No.: 2048681

Dear Efrain Calderon:

Enclosed are the analytical results for sample(s) received by the laboratory on January 12, 2017. The results relate only to the samples included in this report. Results reported herein conform to the most current, applicable TNI/NELAC standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,



Juan Redondo
juan.redondo@pacelabs.com
Project Manager

Enclosures

cc: Sharon Colon
Abner Hernandez
Marianela Mercado-Burgos



REPORT OF LABORATORY ANALYSIS

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CERTIFICATIONS

Project: PUMA TERMINAL MS SAMPLING
Pace Project No.: 2048681

New Orleans Certification IDs

California Env. Lab Accreditation Program Branch:
11277CA
Florida Department of Health (NELAC): E87595
Illinois Environmental Protection Agency: 0025721
Kansas Department of Health and Environment (NELAC):
E-10266
Louisiana Dept. of Environmental Quality (NELAC/LELAP):
02006

Pennsylvania Dept. of Env Protection (NELAC): 68-04202
Texas Commission on Env. Quality (NELAC):
T104704405-09-TX
U.S. Dept. of Agriculture Foreign Soil Import: P330-10-
00119
Commonwealth of Virginia (TNI): 480246

REPORT OF LABORATORY ANALYSIS

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SAMPLE SUMMARY

Project: PUMA TERMINAL MS SAMPLING
Pace Project No.: 2048681

Lab ID	Sample ID	Matrix	Date Collected	Date Received
2048681001	TB-011217	Water	01/12/17 00:00	01/12/17 15:48
2048681002	EB-011217	Water	01/12/17 08:20	01/12/17 15:48
2048681003	MW-76B2	Water	01/12/17 09:41	01/12/17 15:48
2048681004	MW-76A	Water	01/12/17 10:35	01/12/17 15:48
2048681005	MW-13A	Water	01/12/17 12:45	01/12/17 15:48
2048681006	MW-13B2	Water	01/12/17 13:46	01/12/17 15:48
2048681007	MW-37A	Water	01/12/17 14:38	01/12/17 15:48
2048681008	FB-011217	Water	01/12/17 14:48	01/12/17 15:48

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SAMPLE ANALYTE COUNT

Project: PUMA TERMINAL MS SAMPLING
Pace Project No.: 2048681

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
2048681001	TB-011217	EPA 8015/8021	MHM	2	PASI-N
		EPA 5030B/8260	RMP	45	PASI-N
2048681002	EB-011217	EPA 8015B Modified	SLF	4	PASI-N
		EPA 8015/8021	MHM	2	PASI-N
		EPA 6020	KJR	4	PASI-N
		EPA 6020	KJR	4	PASI-N
		EPA 7470	MHB1	1	PASI-N
		EPA 7470	MHB1	1	PASI-N
		EPA 8270 by SIM	GEJ	19	PASI-N
		EPA 5030B/8260	RMP	45	PASI-N
2048681003	MW-76B2	EPA 8015B Modified	SLF	4	PASI-N
		EPA 8015/8021	MHM	2	PASI-N
		EPA 6020	KJR	4	PASI-N
		EPA 6020	KJR	4	PASI-N
		EPA 7470	MHB1	1	PASI-N
		EPA 7470	MHB1	1	PASI-N
		EPA 8270 by SIM	GEJ	19	PASI-N
		EPA 5030B/8260	RMP	45	PASI-N
2048681004	MW-76A	EPA 8015B Modified	SLF	4	PASI-N
		EPA 8015/8021	MHM	2	PASI-N
		EPA 6020	KJR	4	PASI-N
		EPA 6020	KJR	4	PASI-N
		EPA 7470	MHB1	1	PASI-N
		EPA 7470	MHB1	1	PASI-N
		EPA 8270 by SIM	GEJ	19	PASI-N
		EPA 5030B/8260	RMP	45	PASI-N
2048681005	MW-13A	EPA 8015B Modified	SLF	4	PASI-N
		EPA 8015/8021	MHM	2	PASI-N
		EPA 6020	KJR	4	PASI-N
		EPA 6020	KJR	4	PASI-N
		EPA 7470	MHB1	1	PASI-N
		EPA 7470	MHB1	1	PASI-N
		EPA 8270 by SIM	GEJ	19	PASI-N
		EPA 5030B/8260	RMP	45	PASI-N
2048681006	MW-13B2	EPA 8015B Modified	SLF	4	PASI-N
		EPA 8015/8021	MHM	2	PASI-N
		EPA 6020	KJR	4	PASI-N

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SAMPLE ANALYTE COUNT

Project: PUMA TERMINAL MS SAMPLING
Pace Project No.: 2048681

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
		EPA 6020	KJR	4	PASI-N
		EPA 7470	MHB1	1	PASI-N
		EPA 7470	MHB1	1	PASI-N
		EPA 8270 by SIM	GEJ	19	PASI-N
		EPA 5030B/8260	RMP	45	PASI-N
2048681007	MW-37A	EPA 8015B Modified	SLF	4	PASI-N
		EPA 8015/8021	MHM	2	PASI-N
		EPA 6020	KJR	4	PASI-N
		EPA 6020	KJR	4	PASI-N
		EPA 7470	MHB1	1	PASI-N
		EPA 7470	MHB1	1	PASI-N
		EPA 8270 by SIM	GEJ	19	PASI-N
		EPA 5030B/8260	RMP	45	PASI-N
2048681008	FB-011217	EPA 8015/8021	MHM	2	PASI-N
		EPA 5030B/8260	RMP	45	PASI-N

REPORT OF LABORATORY ANALYSIS

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PROJECT NARRATIVE

Project: PUMA TERMINAL MS SAMPLING
Pace Project No.: 2048681

Method: EPA 8015B Modified
Description: 8015M DRO/ORO Organics
Client: BBL Caribe / Arcadis PR
Date: February 15, 2017

General Information:

6 samples were analyzed for EPA 8015B Modified. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:

The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:

The samples were prepared in accordance with EPA 3535 with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):

All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:

All criteria were within method requirements with any exceptions noted below.

Surrogates:

All surrogates were within QC limits with any exceptions noted below.

Method Blank:

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

QC Batch: 72198

A matrix spike/matrix spike duplicate was not performed due to insufficient sample volume.

Additional Comments:

REPORT OF LABORATORY ANALYSIS

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PROJECT NARRATIVE

Project: PUMA TERMINAL MS SAMPLING
Pace Project No.: 2048681

Method: EPA 8015/8021
Description: 8021 GCV BTEX, MTBE, GRO
Client: BBL Caribe / Arcadis PR
Date: February 15, 2017

General Information:

8 samples were analyzed for EPA 8015/8021. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:

The samples were analyzed within the method required hold times with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):

All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:

All criteria were within method requirements with any exceptions noted below.

Surrogates:

All surrogates were within QC limits with any exceptions noted below.

Method Blank:

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

REPORT OF LABORATORY ANALYSIS

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PROJECT NARRATIVE

Project: PUMA TERMINAL MS SAMPLING
Pace Project No.: 2048681

Method: EPA 6020
Description: 6020 MET ICPMS
Client: BBL Caribe / Arcadis PR
Date: February 15, 2017

General Information:

6 samples were analyzed for EPA 6020. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:

The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:

The samples were prepared in accordance with EPA 3010 with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):

All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:

All criteria were within method requirements with any exceptions noted below.

Internal Standards:

All internal standards were within QC limits with any exceptions noted below.

Method Blank:

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

REPORT OF LABORATORY ANALYSIS

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PROJECT NARRATIVE

Project: PUMA TERMINAL MS SAMPLING
Pace Project No.: 2048681

Method: EPA 6020
Description: 6020 MET ICPMS, Dissolved (LF)
Client: BBL Caribe / Arcadis PR
Date: February 15, 2017

General Information:

6 samples were analyzed for EPA 6020. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:

The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:

The samples were prepared in accordance with EPA 3005A with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):

All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:

All criteria were within method requirements with any exceptions noted below.

Internal Standards:

All internal standards were within QC limits with any exceptions noted below.

Method Blank:

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

Batch Comments:

- Insufficient sample volume to perform MS/MSD analyses.
- QC Batch: 72356

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PROJECT NARRATIVE

Project: PUMA TERMINAL MS SAMPLING
Pace Project No.: 2048681

Method: EPA 7470
Description: 7470 Mercury
Client: BBL Caribe / Arcadis PR
Date: February 15, 2017

General Information:

6 samples were analyzed for EPA 7470. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:

The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:

The samples were prepared in accordance with EPA 7470 with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):

All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:

All criteria were within method requirements with any exceptions noted below.

Method Blank:

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

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PROJECT NARRATIVE

Project: PUMA TERMINAL MS SAMPLING
Pace Project No.: 2048681

Method: EPA 7470
Description: 7470 Mercury, Dissolved (LF)
Client: BBL Caribe / Arcadis PR
Date: February 15, 2017

General Information:

6 samples were analyzed for EPA 7470. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:

The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:

The samples were prepared in accordance with EPA 7470 with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):

All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:

All criteria were within method requirements with any exceptions noted below.

Method Blank:

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

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PROJECT NARRATIVE

Project: PUMA TERMINAL MS SAMPLING
Pace Project No.: 2048681

Method: EPA 8270 by SIM
Description: 8270 MSSV PAH by SIM SEP
Client: BBL Caribe / Arcadis PR
Date: February 15, 2017

General Information:

6 samples were analyzed for EPA 8270 by SIM. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:

The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:

The samples were prepared in accordance with EPA 3510 with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):

All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:

All criteria were within method requirements with any exceptions noted below.

Internal Standards:

All internal standards were within QC limits with any exceptions noted below.

Surrogates:

All surrogates were within QC limits with any exceptions noted below.

Method Blank:

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

QC Batch: 72204

A matrix spike/matrix spike duplicate was not performed due to insufficient sample volume.

Additional Comments:

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PROJECT NARRATIVE

Project: PUMA TERMINAL MS SAMPLING
Pace Project No.: 2048681

Method: EPA 5030B/8260
Description: 8260 MSV Low Level
Client: BBL Caribe / Arcadis PR
Date: February 15, 2017

General Information:

8 samples were analyzed for EPA 5030B/8260. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:

The samples were analyzed within the method required hold times with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):

All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:

All criteria were within method requirements with any exceptions noted below.

Internal Standards:

All internal standards were within QC limits with any exceptions noted below.

Surrogates:

All surrogates were within QC limits with any exceptions noted below.

Method Blank:

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

QC Batch: 72210

L0: Analyte recovery in the laboratory control sample (LCS) was outside QC limits.

- LCS (Lab ID: 302518)
- Carbon disulfide

Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

QC Batch: 72210

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 2048748001

M0: Matrix spike recovery and/or matrix spike duplicate recovery was outside laboratory control limits.

- MS (Lab ID: 302519)
 - Carbon disulfide
- MSD (Lab ID: 302520)
 - Carbon disulfide

R1: RPD value was outside control limits.

- MSD (Lab ID: 302520)
 - Bromomethane
 - Carbon disulfide

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PROJECT NARRATIVE

Project: PUMA TERMINAL MS SAMPLING
Pace Project No.: 2048681

Method: EPA 5030B/8260
Description: 8260 MSV Low Level
Client: BBL Caribe / Arcadis PR
Date: February 15, 2017

QC Batch: 72210

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 2048748001

R1: RPD value was outside control limits.

- Chloroethane

Additional Comments:

Analyte Comments:

QC Batch: 72210

C9: Common Laboratory Contaminant.

- EB-011217 (Lab ID: 2048681002)
 - Acetone
- FB-011217 (Lab ID: 2048681008)
 - Acetone
- MW-13A (Lab ID: 2048681005)
 - Acetone
- MW-13B2 (Lab ID: 2048681006)
 - Acetone
- MW-76A (Lab ID: 2048681004)
 - Acetone
- MW-76B2 (Lab ID: 2048681003)
 - Acetone
- TB-011217 (Lab ID: 2048681001)
 - Acetone

This data package has been reviewed for quality and completeness and is approved for release.

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: PUMA TERMINAL MS SAMPLING
Pace Project No.: 2048681

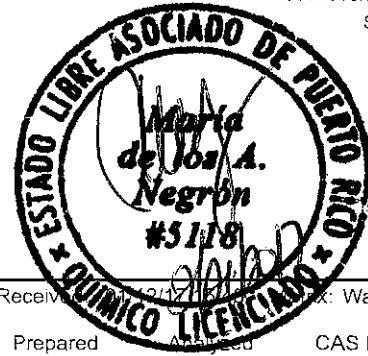
Sample: TB-011217 Lab ID: 2048681001 Collected: 01/12/17 00:00 Received: 01/18/17 00:00 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8021 GCV BTEX, MTBE, GRO		Analytical Method: EPA 8015/8021						
Gasoline Range Organics	ND	ug/L	50.0	1		01/18/17 21:00		
Surrogates								
4-Bromofluorobenzene (S)	98	%	44-148	1		01/18/17 21:00	460-00-4	
8260 MSV Low Level		Analytical Method: EPA 5030B/8260						
Acetone	22.2	ug/L	4.0	1		01/17/17 15:50	67-64-1	C9
Benzene	ND	ug/L	0.50	1		01/17/17 15:50	71-43-2	
Bromodichloromethane	0.67	ug/L	0.50	1		01/17/17 15:50	75-27-4	
Bromoform	ND	ug/L	0.50	1		01/17/17 15:50	75-25-2	
Bromomethane	ND	ug/L	0.50	1		01/17/17 15:50	74-83-9	
2-Butanone (MEK)	ND	ug/L	2.0	1		01/17/17 15:50	78-93-3	
Carbon disulfide	ND	ug/L	1.0	1		01/17/17 15:50	75-15-0	L3
Carbon tetrachloride	ND	ug/L	0.50	1		01/17/17 15:50	56-23-5	
Chlorobenzene	ND	ug/L	0.50	1		01/17/17 15:50	108-90-7	
Chloroethane	ND	ug/L	0.50	1		01/17/17 15:50	75-00-3	
Chloroform	3.4	ug/L	0.50	1		01/17/17 15:50	67-66-3	
Chloromethane	ND	ug/L	0.50	1		01/17/17 15:50	74-87-3	
1,2-Dibromo-3-chloropropane	ND	ug/L	0.20	1		01/17/17 15:50	96-12-8	
Dibromochloromethane	ND	ug/L	0.50	1		01/17/17 15:50	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	1		01/17/17 15:50	106-93-4	
Dichlorodifluoromethane	ND	ug/L	1.0	1		01/17/17 15:50	75-71-8	
1,1-Dichloroethane	ND	ug/L	0.50	1		01/17/17 15:50	75-34-3	
1,2-Dichloroethane	ND	ug/L	0.50	1		01/17/17 15:50	107-06-2	
1,1-Dichloroethene	ND	ug/L	0.50	1		01/17/17 15:50	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	1		01/17/17 15:50	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	0.50	1		01/17/17 15:50	156-60-5	
1,2-Dichloropropane	ND	ug/L	0.50	1		01/17/17 15:50	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	0.50	1		01/17/17 15:50	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	0.50	1		01/17/17 15:50	10061-02-6	
Ethylbenzene	ND	ug/L	0.50	1		01/17/17 15:50	100-41-4	
2-Hexanone	ND	ug/L	1.0	1		01/17/17 15:50	591-78-6	
Isopropylbenzene (Cumene)	ND	ug/L	1.0	1		01/17/17 15:50	98-82-8	
Methyl acetate	ND	ug/L	2.0	1		01/17/17 15:50	79-20-9	
Methylene Chloride	ND	ug/L	0.50	1		01/17/17 15:50	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	1.0	1		01/17/17 15:50	108-10-1	
Methyl-ter-butyl ether	ND	ug/L	0.50	1		01/17/17 15:50	1634-04-4	
Styrene	ND	ug/L	1.0	1		01/17/17 15:50	100-42-5	
1,1,2,2-Tetrachloroethane	ND	ug/L	0.50	1		01/17/17 15:50	79-34-5	
Tetrachloroethene	ND	ug/L	0.50	1		01/17/17 15:50	127-18-4	
Toluene	ND	ug/L	0.50	1		01/17/17 15:50	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	0.50	1		01/17/17 15:50	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	0.50	1		01/17/17 15:50	79-00-5	
Trichloroethene	ND	ug/L	0.50	1		01/17/17 15:50	79-01-6	
Trichlorofluoromethane	ND	ug/L	0.50	1		01/17/17 15:50	75-69-4	
Vinyl chloride	ND	ug/L	0.50	1		01/17/17 15:50	75-01-4	
m&p-Xylene	ND	ug/L	2.0	1		01/17/17 15:50	179601-23-1	
o-Xylene	ND	ug/L	1.0	1		01/17/17 15:50	95-47-6	

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ANALYTICAL RESULTS



Project: PUMA TERMINAL MS SAMPLING
Pace Project No.: 2048681

Sample: TB-011217	Lab ID: 2048681001	Collected: 01/12/17 00:00	Received: 01/17/17 15:50	Matrix: Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analized	CAS No.	Qual

8260 MSV Low Level Analytical Method: EPA 5030B/8260

Surrogates

Dibromofluoromethane (S)	107	%.	72-126	1	01/17/17 15:50	1868-53-7
4-Bromofluorobenzene (S)	95	%.	68-124	1	01/17/17 15:50	460-00-4
Toluene-d8 (S)	99	%.	79-119	1	01/17/17 15:50	2037-26-5

Sample: EB-011217 Lab ID: 2048681002 Collected: 01/12/17 08:20 Received: 01/12/17 15:48 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analized	CAS No.	Qual
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8015M DRO/ORO Organics Analytical Method: EPA 8015B Modified Preparation Method: EPA 3535

Diesel Range Organic (C10-C28)	ND	mg/L	0.50	1	01/17/17 09:23	01/18/17 16:35	
Oil Range Organics (>C28-C40)	ND	mg/L	1.0	1	01/17/17 09:23	01/18/17 16:35	
Surrogates							
n-Pentacosane (S)	57	%.	16-137	1	01/17/17 09:23	01/18/17 16:35	629-99-2
o-Terphenyl (S)	58	%.	10-121	1	01/17/17 09:23	01/18/17 16:35	84-15-1

8021 GCV BTEX, MTBE, GRO Analytical Method: EPA 8015/8021

Gasoline Range Organics	ND	ug/L	50.0	1	01/18/17 21:27	
Surrogates						
4-Bromofluorobenzene (S)	97	%.	44-148	1	01/18/17 21:27	460-00-4

6020 MET ICPMS Analytical Method: EPA 6020 Preparation Method: EPA 3010

Arsenic	ND	mg/L	0.0010	1	01/17/17 06:56	02/11/17 14:03	7440-38-2
Chromium	ND	mg/L	0.0010	1	01/17/17 06:56	02/11/17 14:03	7440-47-3
Lead	ND	mg/L	0.0010	1	01/17/17 06:56	02/11/17 14:03	7439-92-1
Vanadium	ND	mg/L	0.0050	1	01/17/17 06:56	02/11/17 14:03	7440-62-2

6020 MET ICPMS, Dissolved (LF) Analytical Method: EPA 6020 Preparation Method: EPA 3005A

Arsenic, Dissolved	ND	ug/L	1.0	1	01/18/17 10:15	02/11/17 13:28	7440-38-2
Chromium, Dissolved	ND	ug/L	1.0	1	01/18/17 10:15	02/11/17 13:28	7440-47-3
Lead, Dissolved	ND	ug/L	1.0	1	01/18/17 10:15	02/11/17 13:28	7439-92-1
Vanadium, Dissolved	ND	ug/L	5.0	1	01/18/17 10:15	02/11/17 13:28	7440-62-2

7470 Mercury Analytical Method: EPA 7470 Preparation Method: EPA 7470

Mercury	ND	ug/L	0.20	1	01/18/17 10:01	01/19/17 11:06	7439-97-6
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7470 Mercury, Dissolved (LF) Analytical Method: EPA 7470 Preparation Method: EPA 7470

Mercury, Dissolved	ND	ug/L	0.20	1	01/18/17 10:15	01/19/17 12:15	7439-97-6
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8270 MSSV PAH by SIM SEP Analytical Method: EPA 8270 by SIM Preparation Method: EPA 3510

Acenaphthene	ND	ug/L	0.10	1	01/17/17 10:16	01/17/17 20:35	83-32-9
Acenaphthylene	ND	ug/L	0.10	1	01/17/17 10:16	01/17/17 20:35	208-96-8
Anthracene	ND	ug/L	0.10	1	01/17/17 10:16	01/17/17 20:35	120-12-7
Benzo(a)anthracene	ND	ug/L	0.10	1	01/17/17 10:16	01/17/17 20:35	56-55-3
Benzo(a)pyrene	ND	ug/L	0.10	1	01/17/17 10:16	01/17/17 20:35	50-32-8

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS



Project: PUMA TERMINAL MS SAMPLING
Pace Project No.: 2048681

Sample: EB-011217 Lab ID: 2048681002 Collected: 01/12/17 08:20 Received: 01/12/17 17:18 Water

Parameters	Results	Units	Report Limit	DF	Prepared	CAS No.	Qual
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8270 MSSV PAH by SIM SEP

Analytical Method: EPA 8270 by SIM Preparation Method: EPA 3510

Benzo(b)fluoranthene	ND	ug/L	0.10	1	01/17/17 10:16	01/17/17 20:35	205-99-2
Benzo(g,h,i)perylene	ND	ug/L	0.10	1	01/17/17 10:16	01/17/17 20:35	191-24-2
Benzo(k)fluoranthene	ND	ug/L	0.10	1	01/17/17 10:16	01/17/17 20:35	207-08-9
Chrysene	ND	ug/L	0.10	1	01/17/17 10:16	01/17/17 20:35	218-01-9
Dibenz(a,h)anthracene	ND	ug/L	0.10	1	01/17/17 10:16	01/17/17 20:35	53-70-3
Fluoranthene	ND	ug/L	0.10	1	01/17/17 10:16	01/17/17 20:35	206-44-0
Fluorene	ND	ug/L	0.10	1	01/17/17 10:16	01/17/17 20:35	86-73-7
Indeno(1,2,3-cd)pyrene	ND	ug/L	0.10	1	01/17/17 10:16	01/17/17 20:35	193-39-5
2-Methylnaphthalene	ND	ug/L	0.10	1	01/17/17 10:16	01/17/17 20:35	91-57-6
Naphthalene	ND	ug/L	0.10	1	01/17/17 10:16	01/17/17 20:35	91-20-3
Phenanthrene	ND	ug/L	0.10	1	01/17/17 10:16	01/17/17 20:35	85-01-8
Pyrene	ND	ug/L	0.10	1	01/17/17 10:16	01/17/17 20:35	129-00-0
Surrogates							
2-Fluorobiphenyl (S)	76	%.	25-150	1	01/17/17 10:16	01/17/17 20:35	321-60-8
Terphenyl-d14 (S)	76	%.	25-150	1	01/17/17 10:16	01/17/17 20:35	1718-51-0

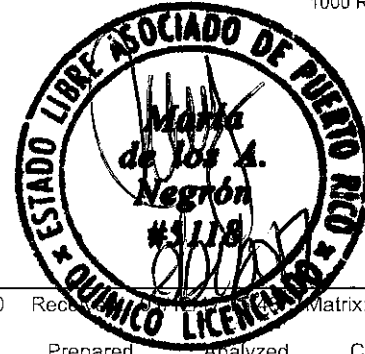
8260 MSV Low Level

Analytical Method: EPA 5030B/8260

Acetone	16.0	ug/L	4.0	1	01/17/17 16:08	67-64-1	C9
Benzene	ND	ug/L	0.50	1	01/17/17 16:08	71-43-2	
Bromodichloromethane	1.1	ug/L	0.50	1	01/17/17 16:08	75-27-4	
Bromoform	ND	ug/L	0.50	1	01/17/17 16:08	75-25-2	
Bromomethane	ND	ug/L	0.50	1	01/17/17 16:08	74-83-9	
2-Butanone (MEK)	ND	ug/L	2.0	1	01/17/17 16:08	78-93-3	
Carbon disulfide	ND	ug/L	1.0	1	01/17/17 16:08	75-15-0	L3
Carbon tetrachloride	ND	ug/L	0.50	1	01/17/17 16:08	56-23-5	
Chlorobenzene	ND	ug/L	0.50	1	01/17/17 16:08	108-90-7	
Chloroethane	ND	ug/L	0.50	1	01/17/17 16:08	75-00-3	
Chloroform	4.8	ug/L	0.50	1	01/17/17 16:08	67-66-3	
Chloromethane	ND	ug/L	0.50	1	01/17/17 16:08	74-87-3	
1,2-Dibromo-3-chloropropane	ND	ug/L	0.20	1	01/17/17 16:08	96-12-8	
Dibromochloromethane	ND	ug/L	0.50	1	01/17/17 16:08	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	1	01/17/17 16:08	106-93-4	
Dichlorodifluoromethane	ND	ug/L	1.0	1	01/17/17 16:08	75-71-8	
1,1-Dichloroethane	ND	ug/L	0.50	1	01/17/17 16:08	75-34-3	
1,2-Dichloroethane	ND	ug/L	0.50	1	01/17/17 16:08	107-06-2	
1,1-Dichloroethene	ND	ug/L	0.50	1	01/17/17 16:08	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	1	01/17/17 16:08	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	0.50	1	01/17/17 16:08	156-60-5	
1,2-Dichloropropane	ND	ug/L	0.50	1	01/17/17 16:08	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	0.50	1	01/17/17 16:08	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	0.50	1	01/17/17 16:08	10061-02-6	
Ethylbenzene	ND	ug/L	0.50	1	01/17/17 16:08	100-41-4	
2-Hexanone	ND	ug/L	1.0	1	01/17/17 16:08	591-78-6	
Isopropylbenzene (Cumene)	ND	ug/L	1.0	1	01/17/17 16:08	98-82-8	
Methyl acetate	ND	ug/L	2.0	1	01/17/17 16:08	79-20-9	
Methylene Chloride	ND	ug/L	0.50	1	01/17/17 16:08	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	1.0	1	01/17/17 16:08	108-10-1	

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ANALYTICAL RESULTS

Project: PUMA TERMINAL MS SAMPLING
Pace Project No.: 2048681

Sample: EB-011217 **Lab ID:** 2048681002 Collected: 01/12/17 08:20 Received: 01/12/17 15:48 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV Low Level		Analytical Method: EPA 5030B/8260						
Methyl-tert-butyl ether	ND	ug/L	0.50	1	01/17/17 16:08	01/17/17 16:08	1634-04-4	
Styrene	ND	ug/L	1.0	1	01/17/17 16:08	01/17/17 16:08	100-42-5	
1,1,2,2-Tetrachloroethane	ND	ug/L	0.50	1	01/17/17 16:08	01/17/17 16:08	79-34-5	
Tetrachloroethene	ND	ug/L	0.50	1	01/17/17 16:08	01/17/17 16:08	127-18-4	
Toluene	ND	ug/L	0.50	1	01/17/17 16:08	01/17/17 16:08	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	0.50	1	01/17/17 16:08	01/17/17 16:08	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	0.50	1	01/17/17 16:08	01/17/17 16:08	79-00-5	
Trichloroethene	ND	ug/L	0.50	1	01/17/17 16:08	01/17/17 16:08	79-01-6	
Trichlorofluoromethane	ND	ug/L	0.50	1	01/17/17 16:08	01/17/17 16:08	75-69-4	
Vinyl chloride	ND	ug/L	0.50	1	01/17/17 16:08	01/17/17 16:08	75-01-4	
m&p-Xylene	ND	ug/L	2.0	1	01/17/17 16:08	01/17/17 16:08	179601-23-1	
o-Xylene	ND	ug/L	1.0	1	01/17/17 16:08	01/17/17 16:08	95-47-6	
Surrogates								
Dibromofluoromethane (S)	109	%.	72-126	1	01/17/17 16:08	01/17/17 16:08	1868-53-7	
4-Bromofluorobenzene (S)	96	%.	68-124	1	01/17/17 16:08	01/17/17 16:08	460-00-4	
Toluene-d8 (S)	100	%.	79-119	1	01/17/17 16:08	01/17/17 16:08	2037-26-5	

Sample: MW-76B2 **Lab ID:** 2048681003 Collected: 01/12/17 09:41 Received: 01/12/17 15:48 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8015M DRO/ORO Organics		Analytical Method: EPA 8015B Modified Preparation Method: EPA 3535						
Diesel Range Organic (C10-C28)	ND	mg/L	0.50	1	01/17/17 09:23	01/18/17 17:03		
Oil Range Organics (>C28-C40)	ND	mg/L	1.0	1	01/17/17 09:23	01/18/17 17:03		
Surrogates								
n-Pentacosane (S)	50	%.	16-137	1	01/17/17 09:23	01/18/17 17:03	629-99-2	
o-Terphenyl (S)	50	%.	10-121	1	01/17/17 09:23	01/18/17 17:03	84-15-1	
8021 GCV BTEX, MTBE, GRO		Analytical Method: EPA 8015/8021						
Gasoline Range Organics	ND	ug/L	50.0	1		01/18/17 23:42		
Surrogates								
4-Bromofluorobenzene (S)	98	%.	44-148	1		01/18/17 23:42	460-00-4	
6020 MET ICPMS		Analytical Method: EPA 6020 Preparation Method: EPA 3010						
Arsenic	ND	mg/L	0.0010	1	01/17/17 06:56	02/11/17 14:23	7440-38-2	
Chromium	ND	mg/L	0.0010	1	01/17/17 06:56	02/11/17 14:23	7440-47-3	
Lead	ND	mg/L	0.0010	1	01/17/17 06:56	02/11/17 14:23	7439-92-1	
Vanadium	ND	mg/L	0.0050	1	01/17/17 06:56	02/11/17 14:23	7440-62-2	
6020 MET ICPMS, Dissolved (LF)		Analytical Method: EPA 6020 Preparation Method: EPA 3005A						
Arsenic, Dissolved	ND	ug/L	1.0	1	01/18/17 10:15	02/11/17 13:32	7440-38-2	
Chromium, Dissolved	ND	ug/L	1.0	1	01/18/17 10:15	02/11/17 13:32	7440-47-3	
Lead, Dissolved	ND	ug/L	1.0	1	01/18/17 10:15	02/11/17 13:32	7439-92-1	
Vanadium, Dissolved	ND	ug/L	5.0	1	01/18/17 10:15	02/11/17 13:32	7440-62-2	

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ANALYTICAL RESULTS

Project: PUMA TERMINAL MS SAMPLING
Pace Project No.: 2048681

Sample: MW-76B2 Lab ID: 2048681003 Collected: 01/12/17 09:41 Received: 01/12/17 12:12 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
7470 Mercury Analytical Method: EPA 7470 Preparation Method: EPA 7470								
Mercury	ND	ug/L	0.20	1	01/18/17 10:01	01/19/17 11:13	7439-97-6	
7470 Mercury, Dissolved (LF) Analytical Method: EPA 7470 Preparation Method: EPA 7470								
Mercury, Dissolved	ND	ug/L	0.20	1	01/18/17 10:15	01/19/17 12:18	7439-97-6	
8270 MSSV PAH by SIM SEP Analytical Method: EPA 8270 by SIM Preparation Method: EPA 3510								
Acenaphthene	ND	ug/L	0.10	1	01/17/17 10:16	01/17/17 20:55	83-32-9	
Acenaphthylene	ND	ug/L	0.10	1	01/17/17 10:16	01/17/17 20:55	208-96-8	
Anthracene	ND	ug/L	0.10	1	01/17/17 10:16	01/17/17 20:55	120-12-7	
Benzo(a)anthracene	ND	ug/L	0.10	1	01/17/17 10:16	01/17/17 20:55	56-55-3	
Benzo(a)pyrene	ND	ug/L	0.10	1	01/17/17 10:16	01/17/17 20:55	50-32-8	
Benzo(b)fluoranthene	ND	ug/L	0.10	1	01/17/17 10:16	01/17/17 20:55	205-99-2	
Benzo(g,h,i)perylene	ND	ug/L	0.10	1	01/17/17 10:16	01/17/17 20:55	191-24-2	
Benzo(k)fluoranthene	ND	ug/L	0.10	1	01/17/17 10:16	01/17/17 20:55	207-08-9	
Chrysene	ND	ug/L	0.10	1	01/17/17 10:16	01/17/17 20:55	218-01-9	
Dibenz(a,h)anthracene	ND	ug/L	0.10	1	01/17/17 10:16	01/17/17 20:55	53-70-3	
Fluoranthene	ND	ug/L	0.10	1	01/17/17 10:16	01/17/17 20:55	206-44-0	
Fluorene	ND	ug/L	0.10	1	01/17/17 10:16	01/17/17 20:55	86-73-7	
Indeno(1,2,3-cd)pyrene	ND	ug/L	0.10	1	01/17/17 10:16	01/17/17 20:55	193-39-5	
2-Methylnaphthalene	ND	ug/L	0.10	1	01/17/17 10:16	01/17/17 20:55	91-57-6	
Naphthalene	ND	ug/L	0.10	1	01/17/17 10:16	01/17/17 20:55	91-20-3	
Phenanthrene	ND	ug/L	0.10	1	01/17/17 10:16	01/17/17 20:55	85-01-8	
Pyrene	ND	ug/L	0.10	1	01/17/17 10:16	01/17/17 20:55	129-00-0	
Surrogates								
2-Fluorobiphenyl (S)	86	%	25-150	1	01/17/17 10:16	01/17/17 20:55	321-60-8	
Terphenyl-d14 (S)	88	%	25-150	1	01/17/17 10:16	01/17/17 20:55	1718-51-0	
8260 MSV Low Level Analytical Method: EPA 5030B/8260								
Acetone	5.7	ug/L	4.0	1		01/17/17 16:26	67-64-1	C9
Benzene	ND	ug/L	0.50	1		01/17/17 16:26	71-43-2	
Bromodichloromethane	ND	ug/L	0.50	1		01/17/17 16:26	75-27-4	
Bromoform	ND	ug/L	0.50	1		01/17/17 16:26	75-25-2	
Bromomethane	ND	ug/L	0.50	1		01/17/17 16:26	74-83-9	
2-Butanone (MEK)	ND	ug/L	2.0	1		01/17/17 16:26	78-93-3	
Carbon disulfide	ND	ug/L	1.0	1		01/17/17 16:26	75-15-0	L3
Carbon tetrachloride	ND	ug/L	0.50	1		01/17/17 16:26	56-23-5	
Chlorobenzene	ND	ug/L	0.50	1		01/17/17 16:26	108-90-7	
Chloroethane	ND	ug/L	0.50	1		01/17/17 16:26	75-00-3	
Chloroform	ND	ug/L	0.50	1		01/17/17 16:26	67-66-3	
Chloromethane	ND	ug/L	0.50	1		01/17/17 16:26	74-87-3	
1,2-Dibromo-3-chloropropane	ND	ug/L	0.20	1		01/17/17 16:26	96-12-8	
Dibromochloromethane	ND	ug/L	0.50	1		01/17/17 16:26	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	1		01/17/17 16:26	106-93-4	
Dichlorodifluoromethane	ND	ug/L	1.0	1		01/17/17 16:26	75-71-8	
1,1-Dichloroethane	ND	ug/L	0.50	1		01/17/17 16:26	75-34-3	
1,2-Dichloroethane	ND	ug/L	0.50	1		01/17/17 16:26	107-06-2	

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ANALYTICAL RESULTS

Project: PUMA TERMINAL MS SAMPLING
Pace Project No.: 2048681

Sample: MW-76B2 Lab ID: 2048681003 Collected: 01/12/17 09:41 Received: 01/12/17 15:46 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV Low Level		Analytical Method: EPA 5030B/8260						
1,1-Dichloroethene	ND	ug/L	0.50	1		01/17/17 16:26	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	1		01/17/17 16:26	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	0.50	1		01/17/17 16:26	156-60-5	
1,2-Dichloropropane	ND	ug/L	0.50	1		01/17/17 16:26	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	0.50	1		01/17/17 16:26	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	0.50	1		01/17/17 16:26	10061-02-6	
Ethylbenzene	ND	ug/L	0.50	1		01/17/17 16:26	100-41-4	
2-Hexanone	ND	ug/L	1.0	1		01/17/17 16:26	591-78-6	
Isopropylbenzene (Cumene)	ND	ug/L	1.0	1		01/17/17 16:26	98-82-8	
Methyl acetate	ND	ug/L	2.0	1		01/17/17 16:26	79-20-9	
Methylene Chloride	ND	ug/L	0.50	1		01/17/17 16:26	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	1.0	1		01/17/17 16:26	108-10-1	
Methyl-tert-butyl ether	ND	ug/L	0.50	1		01/17/17 16:26	1634-04-4	
Styrene	ND	ug/L	1.0	1		01/17/17 16:26	100-42-5	
1,1,2,2-Tetrachloroethane	ND	ug/L	0.50	1		01/17/17 16:26	79-34-5	
Tetrachloroethene	ND	ug/L	0.50	1		01/17/17 16:26	127-18-4	
Toluene	ND	ug/L	0.50	1		01/17/17 16:26	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	0.50	1		01/17/17 16:26	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	0.50	1		01/17/17 16:26	79-00-5	
Trichloroethene	ND	ug/L	0.50	1		01/17/17 16:26	79-01-6	
Trichlorofluoromethane	ND	ug/L	0.50	1		01/17/17 16:26	75-69-4	
Vinyl chloride	ND	ug/L	0.50	1		01/17/17 16:26	75-01-4	
m&p-Xylene	ND	ug/L	2.0	1		01/17/17 16:26	179601-23-1	
o-Xylene	ND	ug/L	1.0	1		01/17/17 16:26	95-47-6	
Surrogates								
Dibromofluoromethane (S)	110	%	72-126	1		01/17/17 16:26	1868-53-7	
4-Bromofluorobenzene (S)	95	%	68-124	1		01/17/17 16:26	460-00-4	
Toluene-d8 (S)	101	%	79-119	1		01/17/17 16:26	2037-26-5	

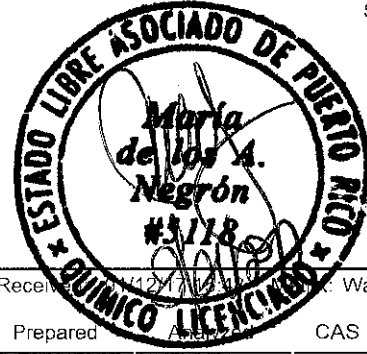
Sample: MW-76A Lab ID: 2048681004 Collected: 01/12/17 10:35 Received: 01/12/17 15:48 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8015M DRO/ORO Organics		Analytical Method: EPA 8015B Modified Preparation Method: EPA 3535						
Diesel Range Organic (C10-C28)	ND	mg/L	0.50	1	01/17/17 09:23	01/18/17 17:31		
Oil Range Organics (>C28-C40)	ND	mg/L	1.0	1	01/17/17 09:23	01/18/17 17:31		
Surrogates								
n-Pentacosane (S)	43	%	16-137	1	01/17/17 09:23	01/18/17 17:31	629-99-2	
o-Terphenyl (S)	45	%	10-121	1	01/17/17 09:23	01/18/17 17:31	84-15-1	
8021 GCV BTEX, MTBE, GRO		Analytical Method: EPA 8015/8021						
Gasoline Range Organics	ND	ug/L	50.0	1		01/19/17 00:09		
Surrogates								
4-Bromofluorobenzene (S)	98	%	44-148	1		01/19/17 00:09	460-00-4	

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ANALYTICAL RESULTS



Project: PUMA TERMINAL MS SAMPLING
Pace Project No.: 2048681

Sample: MW-76A Lab ID: 2048681004 Collected: 01/12/17 10:35 Received: 01/17/17 14:27 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	CAS No.	Qual
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6020 MET ICPMS

Analytical Method: EPA 6020 Preparation Method: EPA 3010

Arsenic	ND	mg/L	0.0010	1	01/17/17 06:56	02/11/17 14:27	7440-38-2
Chromium	ND	mg/L	0.0010	1	01/17/17 06:56	02/11/17 14:27	7440-47-3
Lead	ND	mg/L	0.0010	1	01/17/17 06:56	02/11/17 14:27	7439-92-1
Vanadium	0.0060	mg/L	0.0050	1	01/17/17 06:56	02/11/17 14:27	7440-62-2

6020 MET ICPMS, Dissolved (LF)

Analytical Method: EPA 6020 Preparation Method: EPA 3005A

Arsenic, Dissolved	ND	ug/L	1.0	1	01/18/17 10:15	02/11/17 13:36	7440-38-2
Chromium, Dissolved	ND	ug/L	1.0	1	01/18/17 10:15	02/11/17 13:36	7440-47-3
Lead, Dissolved	ND	ug/L	1.0	1	01/18/17 10:15	02/11/17 13:36	7439-92-1
Vanadium, Dissolved	5.8	ug/L	5.0	1	01/18/17 10:15	02/11/17 13:36	7440-62-2

7470 Mercury

Analytical Method: EPA 7470 Preparation Method: EPA 7470

Mercury	ND	ug/L	0.20	1	01/18/17 10:01	01/19/17 11:15	7439-97-6
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7470 Mercury, Dissolved (LF)

Analytical Method: EPA 7470 Preparation Method: EPA 7470

Mercury, Dissolved	ND	ug/L	0.20	1	01/18/17 10:15	01/19/17 12:20	7439-97-6
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8270 MSSV PAH by SIM SEP

Analytical Method: EPA 8270 by SIM Preparation Method: EPA 3510

Acenaphthene	ND	ug/L	0.10	1	01/17/17 10:16	01/17/17 21:15	83-32-9
Acenaphthylene	ND	ug/L	0.10	1	01/17/17 10:16	01/17/17 21:15	208-96-8
Anthracene	ND	ug/L	0.10	1	01/17/17 10:16	01/17/17 21:15	120-12-7
Benzo(a)anthracene	ND	ug/L	0.10	1	01/17/17 10:16	01/17/17 21:15	56-55-3
Benzo(a)pyrene	ND	ug/L	0.10	1	01/17/17 10:16	01/17/17 21:15	50-32-8
Benzo(b)fluoranthene	ND	ug/L	0.10	1	01/17/17 10:16	01/17/17 21:15	205-99-2
Benzo(g,h,i)perylene	ND	ug/L	0.10	1	01/17/17 10:16	01/17/17 21:15	191-24-2
Benzo(k)fluoranthene	ND	ug/L	0.10	1	01/17/17 10:16	01/17/17 21:15	207-08-9
Chrysene	ND	ug/L	0.10	1	01/17/17 10:16	01/17/17 21:15	218-01-9
Dibenz(a,h)anthracene	ND	ug/L	0.10	1	01/17/17 10:16	01/17/17 21:15	53-70-3
Fluoranthene	ND	ug/L	0.10	1	01/17/17 10:16	01/17/17 21:15	206-44-0
Fluorene	ND	ug/L	0.10	1	01/17/17 10:16	01/17/17 21:15	86-73-7
Indeno(1,2,3-cd)pyrene	ND	ug/L	0.10	1	01/17/17 10:16	01/17/17 21:15	193-39-5
2-Methylnaphthalene	ND	ug/L	0.10	1	01/17/17 10:16	01/17/17 21:15	91-57-6
Naphthalene	ND	ug/L	0.10	1	01/17/17 10:16	01/17/17 21:15	91-20-3
Phenanthrene	ND	ug/L	0.10	1	01/17/17 10:16	01/17/17 21:15	85-01-8
Pyrene	ND	ug/L	0.10	1	01/17/17 10:16	01/17/17 21:15	129-00-0
Surrogates							
2-Fluorobiphenyl (S)	65	%	25-150	1	01/17/17 10:16	01/17/17 21:15	321-60-8
Terphenyl-d14 (S)	68	%	25-150	1	01/17/17 10:16	01/17/17 21:15	1718-51-0

8260 MSV Low Level

Analytical Method: EPA 5030B/8260

Acetone	7.6	ug/L	4.0	1	01/17/17 16:44	67-64-1	C9
Benzene	ND	ug/L	0.50	1	01/17/17 16:44	71-43-2	
Bromodichloromethane	ND	ug/L	0.50	1	01/17/17 16:44	75-27-4	
Bromoform	ND	ug/L	0.50	1	01/17/17 16:44	75-25-2	
Bromomethane	ND	ug/L	0.50	1	01/17/17 16:44	74-83-9	
2-Butanone (MEK)	ND	ug/L	2.0	1	01/17/17 16:44	78-93-3	

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ANALYTICAL RESULTS

Project: PUMA TERMINAL MS SAMPLING
Pace Project No.: 2048681

Sample: MW-76A Lab ID: 2048681004 Collected: 01/12/17 10:35 Received: Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV Low Level		Analytical Method: EPA 5030B/8260						
Carbon disulfide	ND	ug/L	1.0	1	01/17/17 16:44	75-15-0		L3
Carbon tetrachloride	ND	ug/L	0.50	1	01/17/17 16:44	56-23-5		
Chlorobenzene	ND	ug/L	0.50	1	01/17/17 16:44	108-90-7		
Chloroethane	ND	ug/L	0.50	1	01/17/17 16:44	75-00-3		
Chloroform	ND	ug/L	0.50	1	01/17/17 16:44	67-66-3		
Chloromethane	ND	ug/L	0.50	1	01/17/17 16:44	74-87-3		
1,2-Dibromo-3-chloropropane	ND	ug/L	0.20	1	01/17/17 16:44	96-12-8		
Dibromochloromethane	ND	ug/L	0.50	1	01/17/17 16:44	124-48-1		
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	1	01/17/17 16:44	106-93-4		
Dichlorodifluoromethane	ND	ug/L	1.0	1	01/17/17 16:44	75-71-8		
1,1-Dichloroethane	ND	ug/L	0.50	1	01/17/17 16:44	75-34-3		
1,2-Dichloroethane	ND	ug/L	0.50	1	01/17/17 16:44	107-06-2		
1,1-Dichloroethene	ND	ug/L	0.50	1	01/17/17 16:44	75-35-4		
cis-1,2-Dichloroethene	ND	ug/L	1.0	1	01/17/17 16:44	156-59-2		
trans-1,2-Dichloroethene	ND	ug/L	0.50	1	01/17/17 16:44	156-60-5		
1,2-Dichloropropane	ND	ug/L	0.50	1	01/17/17 16:44	78-87-5		
cis-1,3-Dichloropropene	ND	ug/L	0.50	1	01/17/17 16:44	10061-01-5		
trans-1,3-Dichloropropene	ND	ug/L	0.50	1	01/17/17 16:44	10061-02-6		
Ethylbenzene	ND	ug/L	0.50	1	01/17/17 16:44	100-41-4		
2-Hexanone	ND	ug/L	1.0	1	01/17/17 16:44	591-78-6		
Isopropylbenzene (Cumene)	ND	ug/L	1.0	1	01/17/17 16:44	98-82-8		
Methyl acetate	ND	ug/L	2.0	1	01/17/17 16:44	79-20-9		
Methylene Chloride	ND	ug/L	0.50	1	01/17/17 16:44	75-09-2		
4-Methyl-2-pentanone (MIBK)	ND	ug/L	1.0	1	01/17/17 16:44	108-10-1		
Methyl-tert-butyl ether	ND	ug/L	0.50	1	01/17/17 16:44	1634-04-4		
Styrene	ND	ug/L	1.0	1	01/17/17 16:44	100-42-5		
1,1,1,2-Tetrachloroethane	ND	ug/L	0.50	1	01/17/17 16:44	79-34-5		
Tetrachloroethene	ND	ug/L	0.50	1	01/17/17 16:44	127-18-4		
Toluene	ND	ug/L	0.50	1	01/17/17 16:44	108-88-3		
1,1,1-Trichloroethane	ND	ug/L	0.50	1	01/17/17 16:44	71-55-6		
1,1,2-Trichloroethane	ND	ug/L	0.50	1	01/17/17 16:44	79-00-5		
Trichloroethene	ND	ug/L	0.50	1	01/17/17 16:44	79-01-6		
Trichlorofluoromethane	ND	ug/L	0.50	1	01/17/17 16:44	75-69-4		
Vinyl chloride	ND	ug/L	0.50	1	01/17/17 16:44	75-01-4		
m&p-Xylene	ND	ug/L	2.0	1	01/17/17 16:44	179601-23-1		
o-Xylene	ND	ug/L	1.0	1	01/17/17 16:44	95-47-6		
Surrogates								
Dibromofluoromethane (S)	108	%	72-126	1	01/17/17 16:44	1868-53-7		
4-Bromofluorobenzene (S)	97	%	68-124	1	01/17/17 16:44	460-00-4		
Toluene-d8 (S)	101	%	79-119	1	01/17/17 16:44	2037-26-5		

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: PUMA TERMINAL MS SAMPLING
Pace Project No.: 2048681



Sample: MW-13A **Lab ID:** 2048681005 **Collected:** 01/12/17 12:45 **Received:** 01/17/17 17:59 **Mix:** Water

Parameters	Results	Units	Report Limit	DF	Prepared	Received	CAS No.	Qual
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8015M DRO/ORO Organics		Analytical Method: EPA 8015B Modified Preparation Method: EPA 3535						
Diesel Range Organic (C10-C28)	ND	mg/L	0.50	1	01/17/17 09:23	01/18/17 17:59		
Oil Range Organics (>C28-C40)	ND	mg/L	1.0	1	01/17/17 09:23	01/18/17 17:59		
Surrogates								
n-Pentacosane (S)	57	%	16-137	1	01/17/17 09:23	01/18/17 17:59	629-99-2	
o-Terphenyl (S)	57	%	10-121	1	01/17/17 09:23	01/18/17 17:59	84-15-1	
8021 GCV BTEX, MTBE, GRO		Analytical Method: EPA 8015/8021						
Gasoline Range Organics	78.7	ug/L	50.0	1		01/19/17 00:36		
Surrogates								
4-Bromofluorobenzene (S)	97	%	44-148	1		01/19/17 00:36	460-00-4	
6020 MET ICPMS		Analytical Method: EPA 6020 Preparation Method: EPA 3010						
Arsenic	0.0057	mg/L	0.0010	1	01/17/17 06:56	02/11/17 14:31	7440-38-2	
Chromium	ND	mg/L	0.0010	1	01/17/17 06:56	02/11/17 14:31	7440-47-3	
Lead	ND	mg/L	0.0010	1	01/17/17 06:56	02/11/17 14:31	7439-92-1	
Vanadium	ND	mg/L	0.0050	1	01/17/17 06:56	02/11/17 14:31	7440-62-2	
6020 MET ICPMS, Dissolved (LF)		Analytical Method: EPA 6020 Preparation Method: EPA 3005A						
Arsenic, Dissolved	1.6	ug/L	1.0	1	01/18/17 10:15	02/11/17 13:40	7440-38-2	
Chromium, Dissolved	ND	ug/L	1.0	1	01/18/17 10:15	02/11/17 13:40	7440-47-3	
Lead, Dissolved	ND	ug/L	1.0	1	01/18/17 10:15	02/11/17 13:40	7439-92-1	
Vanadium, Dissolved	ND	ug/L	5.0	1	01/18/17 10:15	02/11/17 13:40	7440-62-2	
7470 Mercury		Analytical Method: EPA 7470 Preparation Method: EPA 7470						
Mercury	ND	ug/L	0.20	1	01/18/17 10:01	01/19/17 11:17	7439-97-6	
7470 Mercury, Dissolved (LF)		Analytical Method: EPA 7470 Preparation Method: EPA 7470						
Mercury, Dissolved	ND	ug/L	0.20	1	01/18/17 10:15	01/19/17 12:26	7439-97-6	
8270 MSSV PAH by SIM SEP		Analytical Method: EPA 8270 by SIM Preparation Method: EPA 3510						
Acenaphthene	ND	ug/L	0.10	1	01/17/17 10:16	01/17/17 21:35	83-32-9	
Acenaphthylene	ND	ug/L	0.10	1	01/17/17 10:16	01/17/17 21:35	208-96-8	
Anthracene	ND	ug/L	0.10	1	01/17/17 10:16	01/17/17 21:35	120-12-7	
Benzo(a)anthracene	ND	ug/L	0.10	1	01/17/17 10:16	01/17/17 21:35	56-55-3	
Benzo(a)pyrene	ND	ug/L	0.10	1	01/17/17 10:16	01/17/17 21:35	50-32-8	
Benzo(b)fluoranthene	ND	ug/L	0.10	1	01/17/17 10:16	01/17/17 21:35	205-99-2	
Benzo(g,h,i)perylene	ND	ug/L	0.10	1	01/17/17 10:16	01/17/17 21:35	191-24-2	
Benzo(k)fluoranthene	ND	ug/L	0.10	1	01/17/17 10:16	01/17/17 21:35	207-08-9	
Chrysene	ND	ug/L	0.10	1	01/17/17 10:16	01/17/17 21:35	218-01-9	
Dibenz(a,h)anthracene	ND	ug/L	0.10	1	01/17/17 10:16	01/17/17 21:35	53-70-3	
Fluoranthene	ND	ug/L	0.10	1	01/17/17 10:16	01/17/17 21:35	206-44-0	
Fluorene	ND	ug/L	0.10	1	01/17/17 10:16	01/17/17 21:35	86-73-7	
Indeno(1,2,3-cd)pyrene	ND	ug/L	0.10	1	01/17/17 10:16	01/17/17 21:35	193-39-5	
2-Methylnaphthalene	ND	ug/L	0.10	1	01/17/17 10:16	01/17/17 21:35	91-57-6	
Naphthalene	ND	ug/L	0.10	1	01/17/17 10:16	01/17/17 21:35	91-20-3	
Phenanthrene	ND	ug/L	0.10	1	01/17/17 10:16	01/17/17 21:35	85-01-8	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

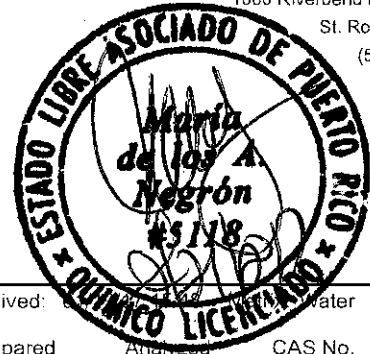
Project: PUMA TERMINAL MS SAMPLING
Pace Project No.: 2048681

Sample: MW-13A Lab ID: 2048681005 Collected: 01/12/17 12:45 Received: 01/17/17 17:01 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8270 MSSV PAH by SIM SEP		Analytical Method: EPA 8270 by SIM Preparation Method: EPA 3510						
Pyrene	ND	ug/L	0.10	1	01/17/17 10:16	01/17/17 21:35	129-00-0	
Surrogates								
2-Fluorobiphenyl (S)	78	%	25-150	1	01/17/17 10:16	01/17/17 21:35	321-60-8	
Terphenyl-d14 (S)	73	%	25-150	1	01/17/17 10:16	01/17/17 21:35	1718-51-0	
8260 MSV Low Level		Analytical Method: EPA 5030B/8260						
Acetone	12.2	ug/L	4.0	1		01/17/17 17:01	67-64-1	C9
Benzene	ND	ug/L	0.50	1		01/17/17 17:01	71-43-2	
Bromodichloromethane	ND	ug/L	0.50	1		01/17/17 17:01	75-27-4	
Bromoform	ND	ug/L	0.50	1		01/17/17 17:01	75-25-2	
Bromomethane	ND	ug/L	0.50	1		01/17/17 17:01	74-83-9	
2-Butanone (MEK)	ND	ug/L	2.0	1		01/17/17 17:01	78-93-3	
Carbon disulfide	ND	ug/L	1.0	1		01/17/17 17:01	75-15-0	L3
Carbon tetrachloride	ND	ug/L	0.50	1		01/17/17 17:01	56-23-5	
Chlorobenzene	ND	ug/L	0.50	1		01/17/17 17:01	108-90-7	
Chloroethane	ND	ug/L	0.50	1		01/17/17 17:01	75-00-3	
Chloroform	ND	ug/L	0.50	1		01/17/17 17:01	67-66-3	
Chloromethane	ND	ug/L	0.50	1		01/17/17 17:01	74-87-3	
1,2-Dibromo-3-chloropropane	ND	ug/L	0.20	1		01/17/17 17:01	96-12-8	
Dibromochloromethane	ND	ug/L	0.50	1		01/17/17 17:01	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	1		01/17/17 17:01	106-93-4	
Dichlorodifluoromethane	ND	ug/L	1.0	1		01/17/17 17:01	75-71-8	
1,1-Dichloroethane	ND	ug/L	0.50	1		01/17/17 17:01	75-34-3	
1,2-Dichloroethane	ND	ug/L	0.50	1		01/17/17 17:01	107-06-2	
1,1-Dichloroethene	ND	ug/L	0.50	1		01/17/17 17:01	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	1		01/17/17 17:01	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	0.50	1		01/17/17 17:01	156-60-5	
1,2-Dichloropropane	ND	ug/L	0.50	1		01/17/17 17:01	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	0.50	1		01/17/17 17:01	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	0.50	1		01/17/17 17:01	10061-02-6	
Ethylbenzene	ND	ug/L	0.50	1		01/17/17 17:01	100-41-4	
2-Hexanone	ND	ug/L	1.0	1		01/17/17 17:01	591-78-6	
Isopropylbenzene (Cumene)	ND	ug/L	1.0	1		01/17/17 17:01	98-82-8	
Methyl acetate	ND	ug/L	2.0	1		01/17/17 17:01	79-20-9	
Methylene Chloride	ND	ug/L	0.50	1		01/17/17 17:01	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	1.0	1		01/17/17 17:01	108-10-1	
Methyl-tert-butyl ether	1.9	ug/L	0.50	1		01/17/17 17:01	1634-04-4	
Styrene	ND	ug/L	1.0	1		01/17/17 17:01	100-42-5	
1,1,2,2-Tetrachloroethane	ND	ug/L	0.50	1		01/17/17 17:01	79-34-5	
Tetrachloroethene	ND	ug/L	0.50	1		01/17/17 17:01	127-18-4	
Toluene	ND	ug/L	0.50	1		01/17/17 17:01	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	0.50	1		01/17/17 17:01	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	0.50	1		01/17/17 17:01	79-00-5	
Trichloroethene	ND	ug/L	0.50	1		01/17/17 17:01	79-01-6	
Trichlorofluoromethane	ND	ug/L	0.50	1		01/17/17 17:01	75-69-4	
Vinyl chloride	ND	ug/L	0.50	1		01/17/17 17:01	75-01-4	
m&p-Xylene	ND	ug/L	2.0	1		01/17/17 17:01	179601-23-1	

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ANALYTICAL RESULTS

Project: PUMA TERMINAL MS SAMPLING
Pace Project No.: 2048681

Sample: MW-13A Lab ID: 2048681005 Collected: 01/12/17 12:45 Received: 01/17/17 17:01 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV Low Level		Analytical Method: EPA 5030B/8260						
o-Xylene	ND	ug/L	1.0	1	01/17/17 17:01	01/17/17 17:01	95-47-6	
Surrogates								
Dibromofluoromethane (S)	110	%	72-126	1	01/17/17 17:01	01/17/17 17:01	1868-53-7	
4-Bromofluorobenzene (S)	94	%	68-124	1	01/17/17 17:01	01/17/17 17:01	460-00-4	
Toluene-d8 (S)	99	%	79-119	1	01/17/17 17:01	01/17/17 17:01	2037-26-5	

Sample: MW-13B2 Lab ID: 2048681006 Collected: 01/12/17 13:46 Received: 01/12/17 15:48 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8015M DRO/ORO Organics		Analytical Method: EPA 8015B Modified Preparation Method: EPA 3535						
Diesel Range Organic (C10-C28)	ND	mg/L	0.50	1	01/17/17 09:23	01/18/17 18:27		
Oil Range Organics (>C28-C40)	ND	mg/L	1.0	1	01/17/17 09:23	01/18/17 18:27		
Surrogates								
n-Pentacosane (S)	52	%	16-137	1	01/17/17 09:23	01/18/17 18:27	629-99-2	
o-Terphenyl (S)	56	%	10-121	1	01/17/17 09:23	01/18/17 18:27	84-15-1	

8021 GCV BTEX, MTBE, GRO		Analytical Method: EPA 8015/8021						
Gasoline Range Organics	500	ug/L	50.0	1	01/19/17 01:03	01/19/17 01:03		
Surrogates								
4-Bromofluorobenzene (S)	104	%	44-148	1	01/19/17 01:03	01/19/17 01:03	460-00-4	

6020 MET ICPMS		Analytical Method: EPA 6020 Preparation Method: EPA 3010						
Arsenic	0.0049	mg/L	0.0010	1	01/17/17 06:56	02/11/17 14:35	7440-38-2	
Chromium	ND	mg/L	0.0010	1	01/17/17 06:56	02/11/17 14:35	7440-47-3	
Lead	ND	mg/L	0.0010	1	01/17/17 06:56	02/11/17 14:35	7439-92-1	
Vanadium	ND	mg/L	0.0050	1	01/17/17 06:56	02/11/17 14:35	7440-62-2	

6020 MET ICPMS, Dissolved (LF)		Analytical Method: EPA 6020 Preparation Method: EPA 3005A						
Arsenic, Dissolved	ND	ug/L	1.0	1	01/18/17 10:15	02/11/17 13:43	7440-38-2	
Chromium, Dissolved	ND	ug/L	1.0	1	01/18/17 10:15	02/11/17 13:43	7440-47-3	
Lead, Dissolved	ND	ug/L	1.0	1	01/18/17 10:15	02/11/17 13:43	7439-92-1	
Vanadium, Dissolved	ND	ug/L	5.0	1	01/18/17 10:15	02/11/17 13:43	7440-62-2	

7470 Mercury		Analytical Method: EPA 7470 Preparation Method: EPA 7470						
Mercury	ND	ug/L	0.20	1	01/18/17 10:01	01/19/17 11:20	7439-97-6	

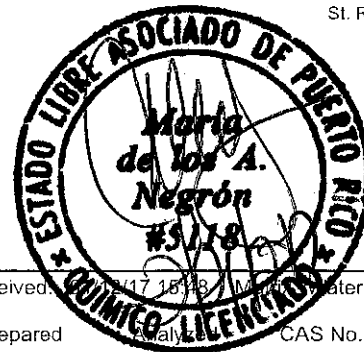
7470 Mercury, Dissolved (LF)		Analytical Method: EPA 7470 Preparation Method: EPA 7470						
Mercury, Dissolved	ND	ug/L	0.20	1	01/18/17 10:15	01/19/17 12:29	7439-97-6	

8270 MSSV PAH by SIM SEP		Analytical Method: EPA 8270 by SIM Preparation Method: EPA 3510						
Acenaphthene	0.16	ug/L	0.10	1	01/17/17 10:16	01/17/17 21:54	83-32-9	
Acenaphthylene	ND	ug/L	0.10	1	01/17/17 10:16	01/17/17 21:54	208-96-8	
Anthracene	ND	ug/L	0.10	1	01/17/17 10:16	01/17/17 21:54	120-12-7	
Benzo(a)anthracene	ND	ug/L	0.10	1	01/17/17 10:16	01/17/17 21:54	56-55-3	

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ANALYTICAL RESULTS



Project: PUMA TERMINAL MS SAMPLING
Pace Project No.: 2048681

Sample: MW-13B2 Lab ID: 2048681006 Collected: 01/12/17 13:46 Received: 01/17/17 10:16 Analyzed: 01/17/17 10:16 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
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8270 MSSV PAH by SIM SEP

Analytical Method: EPA 8270 by SIM Preparation Method: EPA 3510

Benzo(a)pyrene	ND	ug/L	0.10	1	01/17/17 10:16	01/17/17 21:54	50-32-8	
Benzo(b)fluoranthene	ND	ug/L	0.10	1	01/17/17 10:16	01/17/17 21:54	205-99-2	
Benzo(g,h,i)perylene	ND	ug/L	0.10	1	01/17/17 10:16	01/17/17 21:54	191-24-2	
Benzo(k)fluoranthene	ND	ug/L	0.10	1	01/17/17 10:16	01/17/17 21:54	207-08-9	
Chrysene	ND	ug/L	0.10	1	01/17/17 10:16	01/17/17 21:54	218-01-9	
Dibenz(a,h)anthracene	ND	ug/L	0.10	1	01/17/17 10:16	01/17/17 21:54	53-70-3	
Fluoranthene	ND	ug/L	0.10	1	01/17/17 10:16	01/17/17 21:54	206-44-0	
Fluorene	ND	ug/L	0.10	1	01/17/17 10:16	01/17/17 21:54	86-73-7	
Indeno(1,2,3-cd)pyrene	ND	ug/L	0.10	1	01/17/17 10:16	01/17/17 21:54	193-39-5	
2-Methylnaphthalene	ND	ug/L	0.10	1	01/17/17 10:16	01/17/17 21:54	91-57-6	
Naphthalene	0.24	ug/L	0.10	1	01/17/17 10:16	01/17/17 21:54	91-20-3	
Phenanthrene	ND	ug/L	0.10	1	01/17/17 10:16	01/17/17 21:54	85-01-8	
Pyrene	ND	ug/L	0.10	1	01/17/17 10:16	01/17/17 21:54	129-00-0	
Surrogates								
2-Fluorobiphenyl (S)	78	%	25-150	1	01/17/17 10:16	01/17/17 21:54	321-60-8	
Terphenyl-d14 (S)	81	%	25-150	1	01/17/17 10:16	01/17/17 21:54	1718-51-0	

8260 MSV Low Level

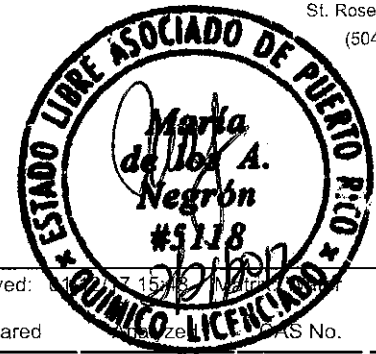
Analytical Method: EPA 5030B/8260

Acetone	10.3	ug/L	4.0	1	01/17/17 17:19	01/17/17 17:19	67-64-1	C9
Benzene	ND	ug/L	0.50	1	01/17/17 17:19	01/17/17 17:19	71-43-2	
Bromodichloromethane	ND	ug/L	0.50	1	01/17/17 17:19	01/17/17 17:19	75-27-4	
Bromoform	ND	ug/L	0.50	1	01/17/17 17:19	01/17/17 17:19	75-25-2	
Bromomethane	ND	ug/L	0.50	1	01/17/17 17:19	01/17/17 17:19	74-83-9	
2-Butanone (MEK)	ND	ug/L	2.0	1	01/17/17 17:19	01/17/17 17:19	78-93-3	
Carbon disulfide	ND	ug/L	1.0	1	01/17/17 17:19	01/17/17 17:19	75-15-0	L3
Carbon tetrachloride	ND	ug/L	0.50	1	01/17/17 17:19	01/17/17 17:19	56-23-5	
Chlorobenzene	ND	ug/L	0.50	1	01/17/17 17:19	01/17/17 17:19	108-90-7	
Chloroethane	ND	ug/L	0.50	1	01/17/17 17:19	01/17/17 17:19	75-00-3	
Chloroform	ND	ug/L	0.50	1	01/17/17 17:19	01/17/17 17:19	67-66-3	
Chloromethane	ND	ug/L	0.50	1	01/17/17 17:19	01/17/17 17:19	74-87-3	
1,2-Dibromo-3-chloropropane	ND	ug/L	0.20	1	01/17/17 17:19	01/17/17 17:19	96-12-8	
Dibromochloromethane	ND	ug/L	0.50	1	01/17/17 17:19	01/17/17 17:19	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	1	01/17/17 17:19	01/17/17 17:19	106-93-4	
Dichlorodifluoromethane	ND	ug/L	1.0	1	01/17/17 17:19	01/17/17 17:19	75-71-8	
1,1-Dichloroethane	ND	ug/L	0.50	1	01/17/17 17:19	01/17/17 17:19	75-34-3	
1,2-Dichloroethane	ND	ug/L	0.50	1	01/17/17 17:19	01/17/17 17:19	107-06-2	
1,1-Dichloroethene	ND	ug/L	0.50	1	01/17/17 17:19	01/17/17 17:19	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	1	01/17/17 17:19	01/17/17 17:19	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	0.50	1	01/17/17 17:19	01/17/17 17:19	156-60-5	
1,2-Dichloropropane	ND	ug/L	0.50	1	01/17/17 17:19	01/17/17 17:19	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	0.50	1	01/17/17 17:19	01/17/17 17:19	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	0.50	1	01/17/17 17:19	01/17/17 17:19	10061-02-6	
Ethylbenzene	ND	ug/L	0.50	1	01/17/17 17:19	01/17/17 17:19	100-41-4	
2-Hexanone	ND	ug/L	1.0	1	01/17/17 17:19	01/17/17 17:19	591-78-6	
Isopropylbenzene (Cumene)	ND	ug/L	1.0	1	01/17/17 17:19	01/17/17 17:19	98-82-8	
Methyl acetate	ND	ug/L	2.0	1	01/17/17 17:19	01/17/17 17:19	79-20-9	
Methylene Chloride	ND	ug/L	0.50	1	01/17/17 17:19	01/17/17 17:19	75-09-2	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS



Project: PUMA TERMINAL MS SAMPLING
Pace Project No.: 2048681

Sample: MW-13B2	Lab ID: 2048681006	Collected: 01/12/17 13:46	Received: 01/17/17 15:48	Matrix: Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV Low Level		Analytical Method: EPA 5030B/8260						
4-Methyl-2-pentanone (MIBK)	ND	ug/L	1.0	1	01/17/17 17:19	01/18/17 18:55	108-10-1	
Methyl-tert-butyl ether	14.5	ug/L	0.50	1	01/17/17 17:19	01/18/17 18:55	1634-04-4	
Styrene	ND	ug/L	1.0	1	01/17/17 17:19	01/18/17 18:55	100-42-5	
1,1,2,2-Tetrachloroethane	ND	ug/L	0.50	1	01/17/17 17:19	01/18/17 18:55	79-34-5	
Tetrachloroethene	ND	ug/L	0.50	1	01/17/17 17:19	01/18/17 18:55	127-18-4	
Toluene	ND	ug/L	0.50	1	01/17/17 17:19	01/18/17 18:55	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	0.50	1	01/17/17 17:19	01/18/17 18:55	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	0.50	1	01/17/17 17:19	01/18/17 18:55	79-00-5	
Trichloroethene	ND	ug/L	0.50	1	01/17/17 17:19	01/18/17 18:55	79-01-6	
Trichlorofluoromethane	ND	ug/L	0.50	1	01/17/17 17:19	01/18/17 18:55	75-69-4	
Vinyl chloride	ND	ug/L	0.50	1	01/17/17 17:19	01/18/17 18:55	75-01-4	
m&p-Xylene	ND	ug/L	2.0	1	01/17/17 17:19	01/18/17 18:55	179601-23-1	
o-Xylene	ND	ug/L	1.0	1	01/17/17 17:19	01/18/17 18:55	95-47-6	
Surrogates								
Dibromofluoromethane (S)	108	%.	72-126	1	01/17/17 17:19	01/18/17 18:55	1868-53-7	
4-Bromofluorobenzene (S)	100	%.	68-124	1	01/17/17 17:19	01/18/17 18:55	460-00-4	
Toluene-d8 (S)	99	%.	79-119	1	01/17/17 17:19	01/18/17 18:55	2037-26-5	

Sample: MW-37A	Lab ID: 2048681007	Collected: 01/12/17 14:38	Received: 01/12/17 15:48	Matrix: Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8015M DRO/ORO Organics		Analytical Method: EPA 8015B Modified Preparation Method: EPA 3535						
Diesel Range Organic (C10-C28)	0.94	mg/L	0.50	1	01/17/17 09:23	01/18/17 18:55		
Oil Range Organics (>C28-C40)	ND	mg/L	1.0	1	01/17/17 09:23	01/18/17 18:55		
Surrogates								
n-Pentacosane (S)	48	%.	16-137	1	01/17/17 09:23	01/18/17 18:55	629-99-2	
o-Terphenyl (S)	54	%.	10-121	1	01/17/17 09:23	01/18/17 18:55	84-15-1	
8021 GCV BTEX, MTBE, GRO		Analytical Method: EPA 8015/8021						
Gasoline Range Organics	1740	ug/L	50.0	1		01/19/17 01:30		
Surrogates								
4-Bromofluorobenzene (S)	112	%.	44-148	1		01/19/17 01:30	460-00-4	
6020 MET ICPMS		Analytical Method: EPA 6020 Preparation Method: EPA 3010						
Arsenic	0.0014	mg/L	0.0010	1	01/17/17 06:56	02/11/17 14:38	7440-38-2	
Chromium	ND	mg/L	0.0010	1	01/17/17 06:56	02/11/17 14:38	7440-47-3	
Lead	ND	mg/L	0.0010	1	01/17/17 06:56	02/11/17 14:38	7439-92-1	
Vanadium	ND	mg/L	0.0050	1	01/17/17 06:56	02/11/17 14:38	7440-62-2	
6020 MET ICPMS, Dissolved (LF)		Analytical Method: EPA 6020 Preparation Method: EPA 3005A						
Arsenic, Dissolved	ND	ug/L	1.0	1	01/18/17 10:15	02/11/17 13:16	7440-38-2	
Chromium, Dissolved	ND	ug/L	1.0	1	01/18/17 10:15	02/11/17 13:16	7440-47-3	
Lead, Dissolved	ND	ug/L	1.0	1	01/18/17 10:15	02/11/17 13:16	7439-92-1	
Vanadium, Dissolved	ND	ug/L	5.0	1	01/18/17 10:15	02/11/17 13:16	7440-62-2	

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ANALYTICAL RESULTS

Project: PUMA TERMINAL MS SAMPLING
Pace Project No.: 2048681

Sample: MW-37A Lab ID: 2048681007 Collected: 01/12/17 14:38 Received: 01/17/17 15:48
Prepared: [Signature]

Parameters	Results	Units	Report Limit	DF	Prepared	Analyst	QAS No.	Qual
7470 Mercury Analytical Method: EPA 7470 Preparation Method: EPA 7470								
Mercury	ND	ug/L	0.20	1	01/18/17 10:01	01/19/17 11:22	7439-97-6	
7470 Mercury, Dissolved (LF) Analytical Method: EPA 7470 Preparation Method: EPA 7470								
Mercury, Dissolved	ND	ug/L	0.20	1	01/18/17 10:15	01/19/17 12:31	7439-97-6	
8270 MSSV PAH by SIM SEP Analytical Method: EPA 8270 by SIM Preparation Method: EPA 3510								
Acenaphthene	0.53	ug/L	0.10	1	01/17/17 10:16	01/17/17 22:14	83-32-9	
Acenaphthylene	0.15	ug/L	0.10	1	01/17/17 10:16	01/17/17 22:14	208-96-8	
Anthracene	ND	ug/L	0.10	1	01/17/17 10:16	01/17/17 22:14	120-12-7	
Benzo(a)anthracene	ND	ug/L	0.10	1	01/17/17 10:16	01/17/17 22:14	56-55-3	
Benzo(a)pyrene	ND	ug/L	0.10	1	01/17/17 10:16	01/17/17 22:14	50-32-8	
Benzo(b)fluoranthene	ND	ug/L	0.10	1	01/17/17 10:16	01/17/17 22:14	205-99-2	
Benzo(g,h,i)perylene	ND	ug/L	0.10	1	01/17/17 10:16	01/17/17 22:14	191-24-2	
Benzo(k)fluoranthene	ND	ug/L	0.10	1	01/17/17 10:16	01/17/17 22:14	207-08-9	
Chrysene	ND	ug/L	0.10	1	01/17/17 10:16	01/17/17 22:14	218-01-9	
Dibenz(a,h)anthracene	ND	ug/L	0.10	1	01/17/17 10:16	01/17/17 22:14	53-70-3	
Fluoranthene	ND	ug/L	0.10	1	01/17/17 10:16	01/17/17 22:14	206-44-0	
Fluorene	0.45	ug/L	0.10	1	01/17/17 10:16	01/17/17 22:14	86-73-7	
Indeno(1,2,3-cd)pyrene	ND	ug/L	0.10	1	01/17/17 10:16	01/17/17 22:14	193-39-5	
2-Methylnaphthalene	33.9	ug/L	0.10	1	01/17/17 10:16	01/17/17 22:14	91-57-6	
Naphthalene	41.4	ug/L	1.0	10	01/17/17 10:16	01/18/17 10:53	91-20-3	
Phenanthrene	0.20	ug/L	0.10	1	01/17/17 10:16	01/17/17 22:14	85-01-8	
Pyrene	ND	ug/L	0.10	1	01/17/17 10:16	01/17/17 22:14	129-00-0	
Surrogates								
2-Fluorobiphenyl (S)	71	%	25-150	1	01/17/17 10:16	01/17/17 22:14	321-60-8	
2-Fluorobiphenyl (S)	48	%	25-150	10	01/17/17 10:16	01/18/17 10:53	321-60-8	
Terphenyl-d14 (S)	71	%	25-150	1	01/17/17 10:16	01/17/17 22:14	1718-51-0	
Terphenyl-d14 (S)	54	%	25-150	10	01/17/17 10:16	01/18/17 10:53	1718-51-0	
8260 MSV Low Level Analytical Method: EPA 5030B/8260								
Acetone	ND	ug/L	4.0	1	01/17/17 17:37	67-64-1		
Benzene	2.3	ug/L	0.50	1	01/17/17 17:37	71-43-2		
Bromodichloromethane	ND	ug/L	0.50	1	01/17/17 17:37	75-27-4		
Bromoform	ND	ug/L	0.50	1	01/17/17 17:37	75-25-2		
Bromomethane	ND	ug/L	0.50	1	01/17/17 17:37	74-83-9		
2-Butanone (MEK)	ND	ug/L	2.0	1	01/17/17 17:37	78-93-3		
Carbon disulfide	ND	ug/L	1.0	1	01/17/17 17:37	75-15-0		L3
Carbon tetrachloride	ND	ug/L	0.50	1	01/17/17 17:37	56-23-5		
Chlorobenzene	ND	ug/L	0.50	1	01/17/17 17:37	108-90-7		
Chloroethane	ND	ug/L	0.50	1	01/17/17 17:37	75-00-3		
Chloroform	ND	ug/L	0.50	1	01/17/17 17:37	67-66-3		
Chloromethane	ND	ug/L	0.50	1	01/17/17 17:37	74-87-3		
1,2-Dibromo-3-chloropropane	ND	ug/L	0.20	1	01/17/17 17:37	96-12-8		
Dibromochloromethane	ND	ug/L	0.50	1	01/17/17 17:37	124-48-1		
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	1	01/17/17 17:37	106-93-4		
Dichlorodifluoromethane	ND	ug/L	1.0	1	01/17/17 17:37	75-71-8		

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ANALYTICAL RESULTS

Project: PUMA TERMINAL MS SAMPLING

Pace Project No.: 2048681

Sample: MW-37A	Lab ID: 2048681007	Collected: 01/12/17 14:38	Received: 01/17/17 15:48	Matrix: Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV Low Level		Analytical Method: EPA 5030B/8260						
1,1-Dichloroethane	ND	ug/L	0.50	1		01/17/17 17:37	75-34-3	
1,2-Dichloroethane	ND	ug/L	0.50	1		01/17/17 17:37	107-06-2	
1,1-Dichloroethene	ND	ug/L	0.50	1		01/17/17 17:37	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	1		01/17/17 17:37	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	0.50	1		01/17/17 17:37	156-60-5	
1,2-Dichloropropane	ND	ug/L	0.50	1		01/17/17 17:37	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	0.50	1		01/17/17 17:37	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	0.50	1		01/17/17 17:37	10061-02-6	
Ethylbenzene	17.9	ug/L	0.50	1		01/17/17 17:37	100-41-4	
2-Hexanone	ND	ug/L	1.0	1		01/17/17 17:37	591-78-6	
Isopropylbenzene (Cumene)	7.9	ug/L	1.0	1		01/17/17 17:37	98-82-8	
Methyl acetate	ND	ug/L	2.0	1		01/17/17 17:37	79-20-9	
Methylene Chloride	0.54	ug/L	0.50	1		01/17/17 17:37	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	1.0	1		01/17/17 17:37	108-10-1	
Methyl-tert-butyl ether	1.2	ug/L	0.50	1		01/17/17 17:37	1634-04-4	
Styrene	ND	ug/L	1.0	1		01/17/17 17:37	100-42-5	
1,1,2,2-Tetrachloroethane	ND	ug/L	0.50	1		01/17/17 17:37	79-34-5	
Tetrachloroethene	ND	ug/L	0.50	1		01/17/17 17:37	127-18-4	
Toluene	0.69	ug/L	0.50	1		01/17/17 17:37	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	0.50	1		01/17/17 17:37	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	0.50	1		01/17/17 17:37	79-00-5	
Trichloroethene	ND	ug/L	0.50	1		01/17/17 17:37	79-01-6	
Trichlorofluoromethane	ND	ug/L	0.50	1		01/17/17 17:37	75-69-4	
Vinyl chloride	ND	ug/L	0.50	1		01/17/17 17:37	75-01-4	
m&p-Xylene	40.3	ug/L	2.0	1		01/17/17 17:37	179601-23-1	
o-Xylene	2.7	ug/L	1.0	1		01/17/17 17:37	95-47-6	
Surrogates								
Dibromofluoromethane (S)	108	%	72-126	1		01/17/17 17:37	1868-53-7	
4-Bromofluorobenzene (S)	97	%	68-124	1		01/17/17 17:37	460-00-4	
Toluene-d8 (S)	102	%	79-119	1		01/17/17 17:37	2037-26-5	

Sample: FB-011217	Lab ID: 2048681008	Collected: 01/12/17 14:48	Received: 01/12/17 15:48	Matrix: Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8021 GCV BTEX, MTBE, GRO		Analytical Method: EPA 8015/8021						
Gasoline Range Organics	ND	ug/L	50.0	1		01/19/17 01:57		
Surrogates								
4-Bromofluorobenzene (S)	98	%	44-148	1		01/19/17 01:57	460-00-4	
8260 MSV Low Level		Analytical Method: EPA 5030B/8260						
Acetone	11.8	ug/L	4.0	1		01/17/17 17:55	67-64-1	C9
Benzene	ND	ug/L	0.50	1		01/17/17 17:55	71-43-2	
Bromodichloromethane	1.2	ug/L	0.50	1		01/17/17 17:55	75-27-4	
Bromoform	ND	ug/L	0.50	1		01/17/17 17:55	75-25-2	
Bromomethane	ND	ug/L	0.50	1		01/17/17 17:55	74-83-9	

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ANALYTICAL RESULTS

Project: PUMA TERMINAL MS SAMPLING
Pace Project No.: 2048681

Sample: FB-011217 Lab ID: 2048681008 Collected: 01/12/17 14:48 Received: 01/12/17 15:48 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV Low Level		Analytical Method: EPA 5030B/8260						
2-Butanone (MEK)	ND	ug/L	2.0	1		01/17/17 17:55	78-93-3	
Carbon disulfide	ND	ug/L	1.0	1		01/17/17 17:55	75-15-0	L3
Carbon tetrachloride	ND	ug/L	0.50	1		01/17/17 17:55	56-23-5	
Chlorobenzene	ND	ug/L	0.50	1		01/17/17 17:55	108-90-7	
Chloroethane	ND	ug/L	0.50	1		01/17/17 17:55	75-00-3	
Chloroform	5.0	ug/L	0.50	1		01/17/17 17:55	67-66-3	
Chloromethane	ND	ug/L	0.50	1		01/17/17 17:55	74-87-3	
1,2-Dibromo-3-chloropropane	ND	ug/L	0.20	1		01/17/17 17:55	96-12-8	
Dibromochloromethane	ND	ug/L	0.50	1		01/17/17 17:55	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	1		01/17/17 17:55	106-93-4	
Dichlorodifluoromethane	ND	ug/L	1.0	1		01/17/17 17:55	75-71-8	
1,1-Dichloroethane	ND	ug/L	0.50	1		01/17/17 17:55	75-34-3	
1,2-Dichloroethane	ND	ug/L	0.50	1		01/17/17 17:55	107-06-2	
1,1-Dichloroethene	ND	ug/L	0.50	1		01/17/17 17:55	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	1		01/17/17 17:55	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	0.50	1		01/17/17 17:55	156-60-5	
1,2-Dichloropropane	ND	ug/L	0.50	1		01/17/17 17:55	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	0.50	1		01/17/17 17:55	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	0.50	1		01/17/17 17:55	10061-02-6	
Ethylbenzene	ND	ug/L	0.50	1		01/17/17 17:55	100-41-4	
2-Hexanone	ND	ug/L	1.0	1		01/17/17 17:55	591-78-6	
Isopropylbenzene (Cumene)	ND	ug/L	1.0	1		01/17/17 17:55	98-82-8	
Methyl acetate	ND	ug/L	2.0	1		01/17/17 17:55	79-20-9	
Methylene Chloride	ND	ug/L	0.50	1		01/17/17 17:55	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	1.0	1		01/17/17 17:55	108-10-1	
Methyl-tert-butyl ether	ND	ug/L	0.50	1		01/17/17 17:55	1634-04-4	
Styrene	ND	ug/L	1.0	1		01/17/17 17:55	100-42-5	
1,1,2,2-Tetrachloroethane	ND	ug/L	0.50	1		01/17/17 17:55	79-34-5	
Tetrachloroethene	ND	ug/L	0.50	1		01/17/17 17:55	127-18-4	
Toluene	ND	ug/L	0.50	1		01/17/17 17:55	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	0.50	1		01/17/17 17:55	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	0.50	1		01/17/17 17:55	79-00-5	
Trichloroethene	ND	ug/L	0.50	1		01/17/17 17:55	79-01-6	
Trichlorofluoromethane	ND	ug/L	0.50	1		01/17/17 17:55	75-69-4	
Vinyl chloride	ND	ug/L	0.50	1		01/17/17 17:55	75-01-4	
m&p-Xylene	ND	ug/L	2.0	1		01/17/17 17:55	179601-23-1	
o-Xylene	ND	ug/L	1.0	1		01/17/17 17:55	95-47-6	
Surrogates								
Dibromofluoromethane (S)	107	%	72-126	1		01/17/17 17:55	1868-53-7	
4-Bromofluorobenzene (S)	98	%	68-124	1		01/17/17 17:55	460-00-4	
Toluene-d8 (S)	101	%	79-119	1		01/17/17 17:55	2037-26-5	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: PUMA TERMINAL MS SAMPLING
Pace Project No.: 2048681

QC Batch: 72351 Analysis Method: EPA 8015/8021
QC Batch Method: EPA 8015/8021 Analysis Description: 8021 W GCV BTEX, MTBE, GRO
Associated Lab Samples: 2048681001, 2048681002, 2048681003, 2048681004, 2048681005, 2048681006, 2048681007, 2048681008

METHOD BLANK: 303024 Matrix: Water
Associated Lab Samples: 2048681001, 2048681002, 2048681003, 2048681004, 2048681005, 2048681006, 2048681007, 2048681008

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Gasoline Range Organics	ug/L	ND	50.0	01/18/17 18:45	
4-Bromofluorobenzene (S)	%.	99	44-148	01/18/17 18:45	

LABORATORY CONTROL SAMPLE: 303025

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Gasoline Range Organics	ug/L	500	464	93	61-136	
4-Bromofluorobenzene (S)	%.			99	44-148	
4-Bromofluorobenzene (S)	%.			100	44-148	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 303026 303027

Parameter	Units	MS		MSD		MS		MSD		% Rec Limits	Max RPD	Qual
		2048850001 Result	Spike Conc.	Spike Conc.	Result	Result	% Rec	% Rec				
Gasoline Range Organics	ug/L	25.4J	500	500	592	569	113	109	15-147	4	20	
4-Bromofluorobenzene (S)	%.						100	100	44-148			
4-Bromofluorobenzene (S)	%.						94	100	44-148			
4-Bromofluorobenzene (S)	%.						100	102	44-148			
4-Bromofluorobenzene (S)	%.						94	102	44-148			

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

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QUALITY CONTROL DATA

Project: PUMA TERMINAL MS SAMPLING
Pace Project No.: 2048681

QC Batch: 72219 Analysis Method: EPA 7470
QC Batch Method: EPA 7470 Analysis Description: 7470 Mercury
Associated Lab Samples: 2048681002, 2048681003, 2048681004, 2048681005, 2048681006, 2048681007

METHOD BLANK: 302543 Matrix: Water
Associated Lab Samples: 2048681002, 2048681003, 2048681004, 2048681005, 2048681006, 2048681007

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Mercury	ug/L	ND	0.20	01/19/17 10:57	

LABORATORY CONTROL SAMPLE: 302544

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury	ug/L	1	1.0	103	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 302545 302546

Parameter	Units	2048681002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Mercury	ug/L	ND	1	1	1.0	1.0	103	105	75-125	2	20	

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QUALITY CONTROL DATA

Project: PUMA TERMINAL MS SAMPLING
Pace Project No.: 2048681

QC Batch: 72220 Analysis Method: EPA 7470
QC Batch Method: EPA 7470 Analysis Description: 7470 Mercury Dissolved
Associated Lab Samples: 2048681002, 2048681003, 2048681004, 2048681005, 2048681006, 2048681007

METHOD BLANK: 302547 Matrix: Water
Associated Lab Samples: 2048681002, 2048681003, 2048681004, 2048681005, 2048681006, 2048681007

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Mercury, Dissolved	ug/L	ND	0.20	01/19/17 12:11	

LABORATORY CONTROL SAMPLE: 302548

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury, Dissolved	ug/L	1	1.1	110	80-120	

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REPORT OF LABORATORY ANALYSIS

QUALITY CONTROL DATA

Project: PUMA TERMINAL MS SAMPLING

Pace Project No.: 2048681

QC Batch: 72197 Analysis Method: EPA 6020
QC Batch Method: EPA 3010 Analysis Description: 6020 MET
Associated Lab Samples: 2048681002, 2048681003, 2048681004, 2048681005, 2048681006, 2048681007

METHOD BLANK: 302459 Matrix: Water
Associated Lab Samples: 2048681002, 2048681003, 2048681004, 2048681005, 2048681006, 2048681007

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Arsenic	mg/L	ND	0.0010	02/11/17 11:14	
Chromium	mg/L	ND	0.0010	02/11/17 11:14	
Lead	mg/L	ND	0.0010	02/11/17 11:14	
Vanadium	mg/L	ND	0.0050	02/11/17 11:14	

LABORATORY CONTROL SAMPLE: 302460

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Arsenic	mg/L	.02	0.020	101	83-115	
Chromium	mg/L	.02	0.020	102	85-115	
Lead	mg/L	.02	0.020	100	84-115	
Vanadium	mg/L	.02	0.019	93	81-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 302461 302462

Parameter	Units	2048748001 Result	MS		MSD		MS % Rec	MSD % Rec	% Rec Limits	Max RPD	Qual
			Spike Conc.	MS Result	Spike Conc.	MSD Result					
Arsenic	mg/L	0.00045J	.02	0.020	.02	0.021	98	100	80-120	2	20
Chromium	mg/L	0.0012	.02	0.021	.02	0.021	99	100	80-120	1	20
Lead	mg/L	0.00052J	.02	0.021	.02	0.021	102	104	80-120	3	20
Vanadium	mg/L	ND	.02	0.022	.02	0.021	108	107	80-120	1	20

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QUALITY CONTROL DATA

Project: PUMA TERMINAL MS SAMPLING
Pace Project No.: 2048681

QC Batch: 72224 Analysis Method: EPA 6020
QC Batch Method: EPA 3005A Analysis Description: 6020 MET Dissolved
Associated Lab Samples: 2048681002, 2048681003, 2048681004, 2048681005, 2048681006, 2048681007

METHOD BLANK: 302560 Matrix: Water
Associated Lab Samples: 2048681002, 2048681003, 2048681004, 2048681005, 2048681006, 2048681007

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Arsenic, Dissolved	ug/L	ND	1.0	02/11/17 11:07	
Chromium, Dissolved	ug/L	ND	1.0	02/11/17 11:07	
Lead, Dissolved	ug/L	ND	1.0	02/11/17 11:07	
Vanadium, Dissolved	ug/L	ND	5.0	02/11/17 11:07	

LABORATORY CONTROL SAMPLE: 302561

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Arsenic, Dissolved	ug/L	20	19.9	100	80-120	
Chromium, Dissolved	ug/L	20	21.3	107	80-120	
Lead, Dissolved	ug/L	20	19.6	98	80-120	
Vanadium, Dissolved	ug/L	20	17.2	86	80-120	

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QUALITY CONTROL DATA

Project: PUMA TERMINAL MS SAMPLING
Pace Project No.: 2048681

QC Batch: 72210 Analysis Method: EPA 5030B/8260
QC Batch Method: EPA 5030B/8260 Analysis Description: 8260 MSV Low Level
Associated Lab Samples: 2048681001, 2048681002, 2048681003, 2048681004, 2048681005, 2048681006, 2048681007, 2048681008

METHOD BLANK: 302517 Matrix: Water
Associated Lab Samples: 2048681001, 2048681002, 2048681003, 2048681004, 2048681005, 2048681006, 2048681007, 2048681008

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
1,1,1-Trichloroethane	ug/L	ND	0.50	01/17/17 10:33	
1,1,2,2-Tetrachloroethane	ug/L	ND	0.50	01/17/17 10:33	
1,1,2-Trichloroethane	ug/L	ND	0.50	01/17/17 10:33	
1,1-Dichloroethane	ug/L	ND	0.50	01/17/17 10:33	
1,1-Dichloroethene	ug/L	ND	0.50	01/17/17 10:33	
1,2-Dibromo-3-chloropropane	ug/L	ND	0.20	01/17/17 10:33	
1,2-Dibromoethane (EDB)	ug/L	ND	1.0	01/17/17 10:33	
1,2-Dichloroethane	ug/L	ND	0.50	01/17/17 10:33	
1,2-Dichloropropane	ug/L	ND	0.50	01/17/17 10:33	
2-Butanone (MEK)	ug/L	ND	2.0	01/17/17 10:33	
2-Hexanone	ug/L	ND	1.0	01/17/17 10:33	
4-Methyl-2-pentanone (MIBK)	ug/L	ND	1.0	01/17/17 10:33	
Acetone	ug/L	ND	4.0	01/17/17 10:33	
Benzene	ug/L	ND	0.50	01/17/17 10:33	
Bromodichloromethane	ug/L	ND	0.50	01/17/17 10:33	
Bromoform	ug/L	ND	0.50	01/17/17 10:33	
Bromomethane	ug/L	ND	0.50	01/17/17 10:33	
Carbon disulfide	ug/L	ND	1.0	01/17/17 10:33	
Carbon tetrachloride	ug/L	ND	0.50	01/17/17 10:33	
Chlorobenzene	ug/L	ND	0.50	01/17/17 10:33	
Chloroethane	ug/L	ND	0.50	01/17/17 10:33	
Chloroform	ug/L	ND	0.50	01/17/17 10:33	
Chloromethane	ug/L	ND	0.50	01/17/17 10:33	
cis-1,2-Dichloroethene	ug/L	ND	1.0	01/17/17 10:33	
cis-1,3-Dichloropropene	ug/L	ND	0.50	01/17/17 10:33	
Dibromochloromethane	ug/L	ND	0.50	01/17/17 10:33	
Dichlorodifluoromethane	ug/L	ND	1.0	01/17/17 10:33	
Ethylbenzene	ug/L	ND	0.50	01/17/17 10:33	
Isopropylbenzene (Cumene)	ug/L	ND	1.0	01/17/17 10:33	
m&p-Xylene	ug/L	ND	2.0	01/17/17 10:33	
Methyl acetate	ug/L	ND	2.0	01/17/17 10:33	
Methyl-tert-butyl ether	ug/L	ND	0.50	01/17/17 10:33	
Methylene Chloride	ug/L	ND	0.50	01/17/17 10:33	
o-Xylene	ug/L	ND	1.0	01/17/17 10:33	
Styrene	ug/L	ND	1.0	01/17/17 10:33	
Tetrachloroethene	ug/L	ND	0.50	01/17/17 10:33	
Toluene	ug/L	ND	0.50	01/17/17 10:33	
trans-1,2-Dichloroethene	ug/L	ND	0.50	01/17/17 10:33	
trans-1,3-Dichloropropene	ug/L	ND	0.50	01/17/17 10:33	
Trichloroethene	ug/L	ND	0.50	01/17/17 10:33	
Trichlorofluoromethane	ug/L	ND	0.50	01/17/17 10:33	

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QUALITY CONTROL DATA

Project: PUMA TERMINAL MS SAMPLING

Pace Project No.: 2048681

METHOD BLANK: 302517

Matrix: Water

Associated Lab Samples: 2048681001, 2048681002, 2048681003, 2048681004, 2048681005, 2048681006, 2048681007, 2048681008

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Vinyl chloride	ug/L	ND	0.50	01/17/17 10:33	
4-Bromofluorobenzene (S)	%	95	68-124	01/17/17 10:33	
Dibromofluoromethane (S)	%	106	72-126	01/17/17 10:33	
Toluene-d8 (S)	%	100	79-119	01/17/17 10:33	

LABORATORY CONTROL SAMPLE: 302518

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,1,1-Trichloroethane	ug/L	50	53.9	108	62-131	
1,1,2,2-Tetrachloroethane	ug/L	50	52.7	105	15-179	
1,1,2-Trichloroethane	ug/L	50	50.9	102	58-144	
1,1-Dichloroethane	ug/L	50	58.4	117	63-129	
1,1-Dichloroethene	ug/L	50	54.5	109	51-139	
1,2-Dibromo-3-chloropropane	ug/L	50	52.5	105	21-160	
1,2-Dibromoethane (EDB)	ug/L	50	49.5	99	52-161	
1,2-Dichloroethane	ug/L	50	53.9	108	57-148	
1,2-Dichloropropane	ug/L	50	56.9	114	66-128	
2-Butanone (MEK)	ug/L	50	59.8	120	32-183	
2-Hexanone	ug/L	50	51.8	104	36-170	
4-Methyl-2-pentanone (MIBK)	ug/L	50	53.0	106	26-171	
Acetone	ug/L	50	54.5	109	22-165	
Benzene	ug/L	50	54.4	109	62-131	
Bromodichloromethane	ug/L	50	55.4	111	69-132	
Bromoform	ug/L	50	47.5	95	35-166	
Bromomethane	ug/L	50	45.1	90	34-158	
Carbon disulfide	ug/L	50	74.0	148	31-128	L0
Carbon tetrachloride	ug/L	50	52.2	104	54-144	
Chlorobenzene	ug/L	50	52.8	106	70-127	
Chloroethane	ug/L	50	40.3	81	17-195	
Chloroform	ug/L	50	56.6	113	73-134	
Chloromethane	ug/L	50	61.8	124	17-153	
cis-1,2-Dichloroethene	ug/L	50	54.1	108	68-129	
cis-1,3-Dichloropropene	ug/L	50	55.1	110	72-138	
Dibromochloromethane	ug/L	50	51.5	103	49-146	
Dichlorodifluoromethane	ug/L	50	53.0	106	10-179	
Ethylbenzene	ug/L	50	50.5	101	66-126	
Isopropylbenzene (Cumene)	ug/L	50	49.7	99	51-138	
m&p-Xylene	ug/L	100	101	101	65-129	
Methyl acetate	ug/L	50	56.4	113	20-142	
Methyl-tert-butyl ether	ug/L	50	53.1	106	37-166	
Methylene Chloride	ug/L	50	57.7	115	46-168	
o-Xylene	ug/L	50	49.3	99	65-124	
Styrene	ug/L	50	51.1	102	72-133	
Tetrachloroethene	ug/L	50	51.1	102	46-157	

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QUALITY CONTROL DATA

Project: PUMA TERMINAL MS SAMPLING
Pace Project No.: 2048681

LABORATORY CONTROL SAMPLE: 302518

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Toluene	ug/L	50	53.3	107	69-126	
trans-1,2-Dichloroethene	ug/L	50	55.6	111	60-129	
trans-1,3-Dichloropropene	ug/L	50	54.0	108	59-149	
Trichloroethene	ug/L	50	54.5	109	67-132	
Trichlorofluoromethane	ug/L	50	54.4	109	39-171	
Vinyl chloride	ug/L	50	45.7	91	27-149	
4-Bromofluorobenzene (S)	%			97	68-124	
Dibromofluoromethane (S)	%			105	72-126	
Toluene-d8 (S)	%			101	79-119	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 302519 302520

Parameter	Units	MS		MSD		MS % Rec	MSD % Rec	% Rec Limits	Max RPD	Qual	
		2048748001 Result	Spike Conc.	Spike Conc.	MS Result						MSD Result
1,1,1-Trichloroethane	ug/L	ND	50	50	63.7	55.7	127	111	54-137	13	20
1,1,2,2-Tetrachloroethane	ug/L	ND	50	50	58.2	54.8	116	110	15-187	6	20
1,1,2-Trichloroethane	ug/L	ND	50	50	57.7	51.5	115	103	59-148	11	20
1,1-Dichloroethane	ug/L	ND	50	50	66.4	59.2	133	118	59-133	11	20
1,1-Dichloroethene	ug/L	ND	50	50	65.8	58.8	132	118	44-146	11	20
1,2-Dibromo-3-chloropropane	ug/L	ND	50	50	57.3	52.7	115	105	23-166	8	20
1,2-Dibromoethane (EDB)	ug/L	ND	50	50	54.8	51.1	110	102	55-166	7	20
1,2-Dichloroethane	ug/L	ND	50	50	59.4	53.0	119	106	56-154	11	20
1,2-Dichloropropane	ug/L	ND	50	50	61.4	55.6	123	111	62-135	10	20
2-Butanone (MEK)	ug/L	ND	50	50	64.9	58.8	130	118	20-205	10	20
2-Hexanone	ug/L	ND	50	50	54.7	52.9	109	106	25-189	3	20
4-Methyl-2-pentanone (MIBK)	ug/L	ND	50	50	57.9	54.1	116	108	23-184	7	20
Acetone	ug/L	0.0057 mg/L	50	50	63.1	56.4	115	101	11-217	11	20
Benzene	ug/L	ND	50	50	60.7	54.5	121	109	52-141	11	20
Bromodichloromethane	ug/L	ND	50	50	60.5	55.0	121	110	70-134	10	20
Bromoform	ug/L	ND	50	50	51.6	47.9	103	96	37-171	7	20
Bromomethane	ug/L	ND	50	50	52.5	39.2	105	78	34-155	29	20 R1
Carbon disulfide	ug/L	ND	50	50	93.4	75.3	187	151	28-130	21	20 M0, R1
Carbon tetrachloride	ug/L	ND	50	50	60.9	53.3	122	107	48-146	13	20
Chlorobenzene	ug/L	ND	50	50	59.5	53.4	119	107	67-129	11	20
Chloroethane	ug/L	ND	50	50	47.6	37.0	95	74	12-192	25	20 R1
Chloroform	ug/L	ND	50	50	63.7	57.1	127	114	66-143	11	20
Chloromethane	ug/L	ND	50	50	67.1	59.6	134	119	14-155	12	20
cis-1,2-Dichloroethene	ug/L	ND	50	50	61.2	56.3	122	113	56-141	8	20
cis-1,3-Dichloropropene	ug/L	ND	50	50	60.7	54.3	121	109	70-139	11	20
Dibromochloromethane	ug/L	ND	50	50	55.1	51.4	110	103	50-150	7	20
Dichlorodifluoromethane	ug/L	ND	50	50	55.6	48.6	111	97	10-173	14	20
Ethylbenzene	ug/L	ND	50	50	57.4	51.8	115	104	57-135	10	20
Isopropylbenzene (Cumene)	ug/L	ND	50	50	58.1	54.3	116	109	40-146	7	20

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QUALITY CONTROL DATA

Project: PUMA TERMINAL MS SAMPLING
Pace Project No.: 2048681

Parameter	Units	MATRIX SPIKE & MATRIX SPIKE DUPLICATE:								% Rec Limits	Max RPD	Qual
		2048748001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec				
m&p-Xylene	ug/L	ND	100	100	116	105	116	105	56-136	10	20	
Methyl acetate	ug/L	ND	50	50	57.5	58.6	115	117	10-142	2	20	
Methyl-tert-butyl ether	ug/L	ND	50	50	58.1	52.9	116	106	35-176	9	20	
Methylene Chloride	ug/L	ND	50	50	63.8	55.1	128	110	45-166	15	20	
o-Xylene	ug/L	ND	50	50	54.8	49.9	110	100	57-133	9	20	
Styrene	ug/L	ND	50	50	57.0	51.0	114	102	58-144	11	20	
Tetrachloroethene	ug/L	ND	50	50	60.2	54.5	120	109	48-143	10	20	
Toluene	ug/L	ND	50	50	58.8	53.8	118	108	59-136	9	20	
trans-1,2-Dichloroethene	ug/L	ND	50	50	64.5	57.7	129	115	57-132	11	20	
trans-1,3-Dichloropropene	ug/L	ND	50	50	60.8	55.1	122	110	59-154	10	20	
Trichloroethene	ug/L	ND	50	50	61.3	55.9	123	112	58-140	9	20	
Trichlorofluoromethane	ug/L	ND	50	50	67.6	57.1	135	114	24-175	17	20	
Vinyl chloride	ug/L	ND	50	50	51.7	44.1	103	88	21-150	16	20	
4-Bromofluorobenzene (S)	%						98	99	68-124			
Dibromofluoromethane (S)	%						108	107	72-126			
Toluene-d8 (S)	%						100	101	79-119			

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QUALITY CONTROL DATA

Project: PUMA TERMINAL MS SAMPLING
Pace Project No.: 2048681

QC Batch: 72198 Analysis Method: EPA 8015B Modified
QC Batch Method: EPA 3535 Analysis Description: EPA 8015 ORO
Associated Lab Samples: 2048681002, 2048681003, 2048681004, 2048681005, 2048681006, 2048681007

METHOD BLANK: 302463 Matrix: Water
Associated Lab Samples: 2048681002, 2048681003, 2048681004, 2048681005, 2048681006, 2048681007

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Diesel Range Organic (C10-C28)	mg/L	ND	0.25	01/18/17 15:39	
Oil Range Organics (>C28-C40)	mg/L	ND	0.50	01/18/17 15:39	
n-Pentacosane (S)	%	38	16-137	01/18/17 15:39	
o-Terphenyl (S)	%	47	10-121	01/18/17 15:39	

LABORATORY CONTROL SAMPLE: 302464

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Diesel Range Organic (C10-C28)	mg/L	.4	.21J	52	10-115	
n-Pentacosane (S)	%			51	16-137	
o-Terphenyl (S)	%			61	10-121	

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QUALITY CONTROL DATA

Project: PUMA TERMINAL MS SAMPLING
Pace Project No.: 2048681

QC Batch: 72204 Analysis Method: EPA 8270 by SIM
QC Batch Method: EPA 3510 Analysis Description: 8270 Water by SIM MSSV
Associated Lab Samples: 2048681002, 2048681003, 2048681004, 2048681005, 2048681006, 2048681007

METHOD BLANK: 302499 Matrix: Water
Associated Lab Samples: 2048681002, 2048681003, 2048681004, 2048681005, 2048681006, 2048681007

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
2-Methylnaphthalene	ug/L	ND	0.10	01/17/17 17:36	
Acenaphthene	ug/L	ND	0.10	01/17/17 17:36	
Acenaphthylene	ug/L	ND	0.10	01/17/17 17:36	
Anthracene	ug/L	ND	0.10	01/17/17 17:36	
Benzo(a)anthracene	ug/L	ND	0.10	01/17/17 17:36	
Benzo(a)pyrene	ug/L	ND	0.10	01/17/17 17:36	
Benzo(b)fluoranthene	ug/L	ND	0.10	01/17/17 17:36	
Benzo(g,h,i)perylene	ug/L	ND	0.10	01/17/17 17:36	
Benzo(k)fluoranthene	ug/L	ND	0.10	01/17/17 17:36	
Chrysene	ug/L	ND	0.10	01/17/17 17:36	
Dibenz(a,h)anthracene	ug/L	ND	0.10	01/17/17 17:36	
Fluoranthene	ug/L	ND	0.10	01/17/17 17:36	
Fluorene	ug/L	ND	0.10	01/17/17 17:36	
Indeno(1,2,3-cd)pyrene	ug/L	ND	0.10	01/17/17 17:36	
Naphthalene	ug/L	ND	0.10	01/17/17 17:36	
Phenanthrene	ug/L	ND	0.10	01/17/17 17:36	
Pyrene	ug/L	ND	0.10	01/17/17 17:36	
2-Fluorobiphenyl (S)	%	67	25-150	01/17/17 17:36	
Terphenyl-d14 (S)	%	72	25-150	01/17/17 17:36	

LABORATORY CONTROL SAMPLE: 302500

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
2-Methylnaphthalene	ug/L	4	3.6	90	35-150	
Acenaphthene	ug/L	4	3.6	91	35-150	
Acenaphthylene	ug/L	4	3.5	88	35-150	
Anthracene	ug/L	4	4.5	112	35-150	
Benzo(a)anthracene	ug/L	4	4.0	99	35-150	
Benzo(a)pyrene	ug/L	4	3.7	91	35-150	
Benzo(b)fluoranthene	ug/L	4	3.6	91	35-150	
Benzo(g,h,i)perylene	ug/L	4	4.1	102	35-150	
Benzo(k)fluoranthene	ug/L	4	3.7	93	35-150	
Chrysene	ug/L	4	3.7	93	35-150	
Dibenz(a,h)anthracene	ug/L	4	4.6	115	35-150	
Fluoranthene	ug/L	4	3.7	93	35-150	
Fluorene	ug/L	4	3.7	92	35-150	
Indeno(1,2,3-cd)pyrene	ug/L	4	4.4	110	35-150	
Naphthalene	ug/L	4	3.3	82	35-150	
Phenanthrene	ug/L	4	3.8	96	35-150	
Pyrene	ug/L	4	3.4	85	35-150	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: PUMA TERMINAL MS SAMPLING
Pace Project No.: 2048681

LABORATORY CONTROL SAMPLE: 302500

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
2-Fluorobiphenyl (S)	%.			101	25-150	
Terphenyl-d14 (S)	%.			108	25-150	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

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QUALIFIERS

Project: PUMA TERMINAL MS SAMPLING
Pace Project No.: 2048681

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.
ND - Not Detected at or above adjusted reporting limit.
J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.
MDL - Adjusted Method Detection Limit.
PQL - Practical Quantitation Limit.
RL - Reporting Limit.
S - Surrogate
1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.
Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.
LCS(D) - Laboratory Control Sample (Duplicate)
MS(D) - Matrix Spike (Duplicate)
DUP - Sample Duplicate
RPD - Relative Percent Difference
NC - Not Calculable.
SG - Silica Gel - Clean-Up
U - Indicates the compound was analyzed for, but not detected.
N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.
Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.
TNI - The Nelac Institute

LABORATORIES

PASI-N Pace Analytical Services - New Orleans

BATCH QUALIFIERS

Batch: 72289
[M5] A matrix spike/matrix spike duplicate was not performed for this batch due to insufficient sample volume.
Batch: 72350
[M5] A matrix spike/matrix spike duplicate was not performed for this batch due to insufficient sample volume.
Batch: 72356
[1] Insufficient sample volume to perform MS/MSD analyses.

ANALYTE QUALIFIERS

C9 Common Laboratory Contaminant.
L0 Analyte recovery in the laboratory control sample (LCS) was outside QC limits.
L3 Analyte recovery in the laboratory control sample (LCS) exceeded QC limits. Analyte presence below reporting limits in associated samples.
M0 Matrix spike recovery and/or matrix spike duplicate recovery was outside laboratory control limits.
R1 RPD value was outside control limits.

REPORT OF LABORATORY ANALYSIS

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: PUMA TERMINAL MS SAMPLING
Pace Project No.: 2048681

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
2048681002	EB-011217	EPA 3535	72198	EPA 8015B Modified	72350
2048681003	MW-76B2	EPA 3535	72198	EPA 8015B Modified	72350
2048681004	MW-76A	EPA 3535	72198	EPA 8015B Modified	72350
2048681005	MW-13A	EPA 3535	72198	EPA 8015B Modified	72350
2048681006	MW-13B2	EPA 3535	72198	EPA 8015B Modified	72350
2048681007	MW-37A	EPA 3535	72198	EPA 8015B Modified	72350
2048681001	TB-011217	EPA 8015/8021	72351		
2048681002	EB-011217	EPA 8015/8021	72351		
2048681003	MW-76B2	EPA 8015/8021	72351		
2048681004	MW-76A	EPA 8015/8021	72351		
2048681005	MW-13A	EPA 8015/8021	72351		
2048681006	MW-13B2	EPA 8015/8021	72351		
2048681007	MW-37A	EPA 8015/8021	72351		
2048681008	FB-011217	EPA 8015/8021	72351		
2048681002	EB-011217	EPA 3010	72197	EPA 6020	72202
2048681003	MW-76B2	EPA 3010	72197	EPA 6020	72202
2048681004	MW-76A	EPA 3010	72197	EPA 6020	72202
2048681005	MW-13A	EPA 3010	72197	EPA 6020	72202
2048681006	MW-13B2	EPA 3010	72197	EPA 6020	72202
2048681007	MW-37A	EPA 3010	72197	EPA 6020	72202
2048681002	EB-011217	EPA 3005A	72224	EPA 6020	72356
2048681003	MW-76B2	EPA 3005A	72224	EPA 6020	72356
2048681004	MW-76A	EPA 3005A	72224	EPA 6020	72356
2048681005	MW-13A	EPA 3005A	72224	EPA 6020	72356
2048681006	MW-13B2	EPA 3005A	72224	EPA 6020	72356
2048681007	MW-37A	EPA 3005A	72224	EPA 6020	72356
2048681002	EB-011217	EPA 7470	72219	EPA 7470	72363
2048681003	MW-76B2	EPA 7470	72219	EPA 7470	72363
2048681004	MW-76A	EPA 7470	72219	EPA 7470	72363
2048681005	MW-13A	EPA 7470	72219	EPA 7470	72363
2048681006	MW-13B2	EPA 7470	72219	EPA 7470	72363
2048681007	MW-37A	EPA 7470	72219	EPA 7470	72363
2048681002	EB-011217	EPA 7470	72220	EPA 7470	72355
2048681003	MW-76B2	EPA 7470	72220	EPA 7470	72355
2048681004	MW-76A	EPA 7470	72220	EPA 7470	72355
2048681005	MW-13A	EPA 7470	72220	EPA 7470	72355
2048681006	MW-13B2	EPA 7470	72220	EPA 7470	72355
2048681007	MW-37A	EPA 7470	72220	EPA 7470	72355
2048681002	EB-011217	EPA 3510	72204	EPA 8270 by SIM	72289
2048681003	MW-76B2	EPA 3510	72204	EPA 8270 by SIM	72289
2048681004	MW-76A	EPA 3510	72204	EPA 8270 by SIM	72289
2048681005	MW-13A	EPA 3510	72204	EPA 8270 by SIM	72289
2048681006	MW-13B2	EPA 3510	72204	EPA 8270 by SIM	72289
2048681007	MW-37A	EPA 3510	72204	EPA 8270 by SIM	72289
2048681001	TB-011217	EPA 5030B/8260	72210		

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: PUMA TERMINAL MS SAMPLING

Pace Project No.: 2048681

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
2048681002	EB-011217	EPA 5030B/8260	72210		
2048681003	MW-76B2	EPA 5030B/8260	72210		
2048681004	MW-76A	EPA 5030B/8260	72210		
2048681005	MW-13A	EPA 5030B/8260	72210		
2048681006	MW-13B2	EPA 5030B/8260	72210		
2048681007	MW-37A	EPA 5030B/8260	72210		
2048681008	FB-011217	EPA 5030B/8260	72210		

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CHAIN-OF-CUSTODY
The Chain-of-Custody is a LEGAL DOCU

WO#: 2048681



1 of 1

2075275

Section A Required Client Information:		Section B Required Project Information:		Section C Invoice Information:		REGULATORY AGENCY	
Company: <u>Arcaids</u>		Report To: <u>E. Fran Calderon</u>		Attention:		REGULATORY AGENCY	
Address: <u>45 Citrus Plaza suite</u>		Copy To:		Company Name:		<input type="checkbox"/> NPDES <input type="checkbox"/> GROUND WATER <input type="checkbox"/> DRINKING WATER	
<u>401 Rd 165 Km 12 Ummah P.R.</u>		Purchase Order No.:		Address:		<input type="checkbox"/> UST <input type="checkbox"/> RCRA <input type="checkbox"/> OTHER	
Email To: <u>E. Fran Calderon @ arcaids.com</u>		Project Name: <u>Puma Terminal Mtsmp</u>		Pace Quote Reference:		Site Location	
Phone: <u>787-193-4800</u> Fax: <u>787-193-5050</u>		Project Number: <u>E002-1605</u>		Pace Project Manager: <u>Juan Rendon</u>		STATE: <u>P.R.</u>	
Requested Due Date/TAT: <u>standard</u>				Pace Profile #:			

ITEM #	Section D Required Client Information	Matrix Codes MATRIX / CODE	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED				SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives								Analysis Test ↓	Requested Analysis Filtered (Y/N)	Residual Chlorine (Y/N)	Face Project No./ Lab I.D.								
					COMPOSITE START		COMPOSITE END/GRAB				Unpreserved	H ₂ SO ₄	HNO ₃	HCl	NaOH	Na ₂ S ₂ O ₃	Methanol	Other					VOLS	GRAB	DAG / GRAB	SVOUS	Metals / mercury	Dissolved Metals		
					DATE	TIME	DATE	TIME																						
1	TB-011219		WT G	G			01/12/19	1540	4																					
2	EB-011219		WT G	G			01/12/19	0820	10	S																				
3	MW-96B2		WT G	G			01/12/19	0941	10	G																				
4	MW-96A		WT G	G			01/12/19	1035	10	S																				
5	MW-13A		WT G	G			01/12/19	1245	10	S																				
6	MW-13B2		WT G	G			01/12/19	1346	10	S																				
7	MW-39A		WT G	G			01/12/19	1438	10	G																				
8	FB-011219		WT G	G			01/12/19	1448	4																					

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS
	<u>Andri Colon / Arcaids</u>	<u>01/12/19</u>	<u>1540</u>	<u>[Signature]</u>	<u>1-12-19</u>	<u>15:48</u>	
	<u>[Signature]</u>	<u>1-12-19</u>	<u>15:10</u>	<u>Fed Exp</u>			
	<u>Fed Exp</u>	<u>1-12-19</u>	<u>1030</u>	<u>[Signature]</u>	<u>1-13-19</u>	<u>1030</u>	<u>4.9</u> <u>1.0</u>

ORIGINAL	SAMPLER NAME AND SIGNATURE			Temp in °C	Received on ice (Y/N)	Custody Sealed Cooler (Y/N)	Samples Intact (Y/N)
	PRINT Name of SAMPLER: <u>Andri Colon</u>						
	SIGNATURE of SAMPLER: <u>[Signature]</u>						
			DATE Signed (MM/DD/YY): <u>01/12/19</u>				

*Important Note: By signing this form you are accepting Pace's NET 30 day payment terms and agreeing to late charges of 1.5% per month for any invoices not paid within 30 days.



1000 Riverbend Blvd., Suite F
St. Rose, LA 70087

Sample Condition Upon Receipt

WO#: 2048681

PM: JAR1 Due Date: 01/26/17
CLIENT: 98-ARCADISPR

Project #. _____

Courier: Pace Courier Hired Courier Fed X UPS DHL USPS Customer Other

Custody Seal on Cooler/Box Present: [see COC]

Custody Seals intact: Yes No

Thermometer Used: Therm Fisher IR 5
 Therm Fisher IR 6
 Therm Fisher IR 7

Type of Ice: Wet Blue None

Samples on ice: [see COC]

Cooler Temperature: [see COC]

Temp should be above freezing to 6°C

Date and Initials of person examining contents: 1-13-17 JMB

Temp must be measured from Temperature blank when present

Comments:

Temperature Blank Present?"	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	1	
Chain of Custody Present:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	2	
Chain of Custody Complete:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	3	
Chain of Custody Relinquished:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	4	
Sampler Name & Signature on COC:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	5	
Samples Arrived within Hold Time:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	6	
Sufficient Volume:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	7	
Correct Containers Used:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	8	
Filtered vol. Rec. for Diss. tests	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	9	
Sample Labels match COC:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	10	
All containers received within manufacture's precautionary and/or expiration dates.	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	11	
All containers needing chemical preservation have been checked (except VOA, coliform, & O&G).	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	12	
All containers preservation checked found to be in compliance with EPA recommendation.	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	13	If No, was preservative added? <input type="checkbox"/> Yes <input type="checkbox"/> No If added record lot no.: HNO3 _____ H2SO4 _____
Headspace in VOA Vials (>6mm):	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	14	
Trip Blank Present:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	15	

Client Notification/ Resolution:

Person Contacted: _____ Date/Time: _____

Comments/ Resolution: _____

February 14, 2017

Efrain Calderon
BBL Caribe Engineering P.S.C.
48 City View Plaza1, Suite 401
Road 16, Km. 1.2
Guaynabo, PR 00968

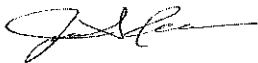
RE: Project: PUMA TERMINAL CW SAMPLING
Pace Project No.: 2048890

Dear Efrain Calderon:

Enclosed are the analytical results for sample(s) received by the laboratory on January 18, 2017. The results relate only to the samples included in this report. Results reported herein conform to the most current, applicable TNI/NELAC standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,



Juan Redondo
juan.redondo@pacelabs.com
Project Manager

Enclosures

cc: Sharon Colon
Abner Hernandez
Marianela Mercado-Burgos



REPORT OF LABORATORY ANALYSIS

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CERTIFICATIONS

Project: PUMA TERMINAL CW SAMPLING
Pace Project No.: 2048890

New Orleans Certification IDs

California Env. Lab Accreditation Program Branch:
11277CA

Florida Department of Health (NELAC): E87595

Illinois Environmental Protection Agency: 0025721

Kansas Department of Health and Environment (NELAC):
E-10266

Louisiana Dept. of Environmental Quality (NELAC/LELAP):
02006

Pennsylvania Dept. of Env Protection (NELAC): 68-04202

Texas Commission on Env. Quality (NELAC):

T104704405-09-TX

U.S. Dept. of Agriculture Foreign Soil Import: P330-10-
00119

Commonwealth of Virginia (TNI): 480246

REPORT OF LABORATORY ANALYSIS

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SAMPLE SUMMARY

Project: PUMA TERMINAL CW SAMPLING
Pace Project No.: 2048890

Lab ID	Sample ID	Matrix	Date Collected	Date Received
2048890001	TB-011717	Water	01/17/17 00:00	01/18/17 14:45
2048890002	EB-011717	Water	01/17/17 09:46	01/18/17 14:45
2048890003	MW-110AB	Water	01/17/17 10:49	01/18/17 14:45
2048890004	MW-110B2	Water	01/17/17 11:38	01/18/17 14:45
2048890005	MW-111A	Water	01/17/17 12:36	01/18/17 14:45
2048890006	MW-114A	Water	01/17/17 16:21	01/18/17 14:45
2048890007	DUP006	Water	01/17/17 00:00	01/18/17 14:45
2048890008	MW-75B2	Water	01/17/17 14:50	01/18/17 14:45
2048890009	FB-011717	Water	01/17/17 16:30	01/18/17 14:45
2048890010	MW-63A	Water	01/18/17 10:33	01/18/17 14:45

REPORT OF LABORATORY ANALYSIS

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SAMPLE ANALYTE COUNT

Project: PUMA TERMINAL CW SAMPLING
Pace Project No.: 2048890

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
2048890001	TB-011717	EPA 8015/8021	MHM	2	PASI-N
		EPA 5030B/8260	JRP	45	PASI-N
2048890002	EB-011717	EPA 8015B Modified	JN	4	PASI-N
		EPA 8015/8021	MHM	2	PASI-N
		EPA 6020	KJR	4	PASI-N
		EPA 6020	KJR	4	PASI-N
		EPA 7470	MHB1	1	PASI-N
		EPA 7470	MHB1	1	PASI-N
		EPA 8270 by SIM	GEJ	19	PASI-N
		EPA 5030B/8260	JRP	45	PASI-N
2048890003	MW-110AB	EPA 8015B Modified	JN	4	PASI-N
		EPA 8015/8021	MHM	2	PASI-N
		EPA 6020	KJR	4	PASI-N
		EPA 6020	KJR	4	PASI-N
		EPA 7470	MHB1	1	PASI-N
		EPA 7470	MHB1	1	PASI-N
		EPA 8270 by SIM	GEJ	19	PASI-N
		EPA 5030B/8260	JRP	45	PASI-N
2048890004	MW-110B2	EPA 8015B Modified	JN	4	PASI-N
		EPA 8015/8021	MHM	2	PASI-N
		EPA 6020	KJR	4	PASI-N
		EPA 6020	KJR	4	PASI-N
		EPA 7470	MHB1	1	PASI-N
		EPA 7470	MHB1	1	PASI-N
		EPA 8270 by SIM	GEJ	19	PASI-N
		EPA 5030B/8260	JRP	45	PASI-N
2048890005	MW-111A	EPA 8015B Modified	JN	4	PASI-N
		EPA 8015/8021	MHM	2	PASI-N
		EPA 6020	KJR	4	PASI-N
		EPA 6020	KJR	4	PASI-N
		EPA 7470	MHB1	1	PASI-N
		EPA 7470	MHB1	1	PASI-N
		EPA 8270 by SIM	GEJ	19	PASI-N
		EPA 5030B/8260	JRP	45	PASI-N
2048890006	MW-114A	EPA 8015B Modified	JN	4	PASI-N
		EPA 8015/8021	MHM	2	PASI-N
		EPA 6020	KJR	4	PASI-N

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SAMPLE ANALYTE COUNT

Project: PUMA TERMINAL CW SAMPLING
Pace Project No.: 2048890

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
2048890007	DUP006	EPA 6020	KJR	4	PASI-N
		EPA 7470	MHB1	1	PASI-N
		EPA 7470	MHB1	1	PASI-N
		EPA 8270 by SIM	GEJ	19	PASI-N
		EPA 5030B/8260	JRP	45	PASI-N
		EPA 8015B Modified	JN	4	PASI-N
		EPA 8015/8021	MHM	2	PASI-N
		EPA 6020	KJR	4	PASI-N
		EPA 6020	KJR	4	PASI-N
		EPA 7470	MHB1	1	PASI-N
2048890008	MW-75B2	EPA 7470	MHB1	1	PASI-N
		EPA 8270 by SIM	GEJ	19	PASI-N
		EPA 5030B/8260	JRP	45	PASI-N
		EPA 8015B Modified	JN	4	PASI-N
		EPA 8015/8021	MHM	2	PASI-N
		EPA 6020	KJR	4	PASI-N
		EPA 6020	KJR	4	PASI-N
		EPA 7470	MHB1	1	PASI-N
		EPA 7470	MHB1	1	PASI-N
		EPA 8270 by SIM	GEJ	19	PASI-N
2048890009	FB-011717	EPA 5030B/8260	JRP	45	PASI-N
		EPA 8015/8021	MHM	2	PASI-N
		EPA 5030B/8260	JRP	45	PASI-N
2048890010	MW-63A	EPA 8015B Modified	JN	4	PASI-N
		EPA 8015/8021	MHM	2	PASI-N
		EPA 6020	KJR	4	PASI-N
		EPA 6020	KJR	4	PASI-N
		EPA 7470	MHB1	1	PASI-N
		EPA 7470	MHB1	1	PASI-N
		EPA 8270 by SIM	GEJ	19	PASI-N
EPA 5030B/8260	JRP	45	PASI-N		

REPORT OF LABORATORY ANALYSIS

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PROJECT NARRATIVE

Project: PUMA TERMINAL CW SAMPLING
Pace Project No.: 2048890

Method: EPA 8015B Modified
Description: 8015M DRO/ORO Organics
Client: BBL Caribe / Arcadis PR
Date: February 14, 2017

General Information:

8 samples were analyzed for EPA 8015B Modified. All samples were received in acceptable condition with any exceptions noted below or on the chain-of-custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:

The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:

The samples were prepared in accordance with EPA 3535 with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):

All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:

All criteria were within method requirements with any exceptions noted below.

Surrogates:

All surrogates were within QC limits with any exceptions noted below.

Method Blank:

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

REPORT OF LABORATORY ANALYSIS

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PROJECT NARRATIVE

Project: PUMA TERMINAL CW SAMPLING
Pace Project No.: 2048890

Method: EPA 8015/8021
Description: 8021 GCV BTEX, MTBE, GRO
Client: BBL Caribe / Arcadis PR
Date: February 14, 2017

General Information:

10 samples were analyzed for EPA 8015/8021. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:

The samples were analyzed within the method required hold times with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):

All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:

All criteria were within method requirements with any exceptions noted below.

Surrogates:

All surrogates were within QC limits with any exceptions noted below.

Method Blank:

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

REPORT OF LABORATORY ANALYSIS

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PROJECT NARRATIVE

Project: PUMA TERMINAL CW SAMPLING
Pace Project No.: 2048890

Method: EPA 6020
Description: 6020 MET ICPMS
Client: BBL Caribe / Arcadis PR
Date: February 14, 2017

General Information:

8 samples were analyzed for EPA 6020. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:

The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:

The samples were prepared in accordance with EPA 3010 with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):

All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:

All criteria were within method requirements with any exceptions noted below.

Internal Standards:

All internal standards were within QC limits with any exceptions noted below.

Method Blank:

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

QC Batch: 72609

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 2048890008

M1: Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

- MS (Lab ID: 304155)
 - Chromium
 - Vanadium
- MSD (Lab ID: 304156)
 - Chromium
 - Vanadium

R1: RPD value was outside control limits.

- MSD (Lab ID: 304156)
 - Arsenic
 - Chromium
 - Lead
 - Vanadium

REPORT OF LABORATORY ANALYSIS

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PROJECT NARRATIVE

Project: PUMA TERMINAL CW SAMPLING
Pace Project No.: 2048890

Method: EPA 6020
Description: 6020 MET ICPMS
Client: BBL Caribe / Arcadis PR
Date: February 14, 2017

Additional Comments:

REPORT OF LABORATORY ANALYSIS

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PROJECT NARRATIVE

Project: PUMA TERMINAL CW SAMPLING
Pace Project No.: 2048890

Method: EPA 6020
Description: 6020 MET ICPMS, Dissolved (LF)
Client: BBL Caribe / Arcadis PR
Date: February 14, 2017

General Information:

8 samples were analyzed for EPA 6020. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:

The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:

The samples were prepared in accordance with EPA 3005A with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):

All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:

All criteria were within method requirements with any exceptions noted below.

Internal Standards:

All internal standards were within QC limits with any exceptions noted below.

Method Blank:

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

QC Batch: 72614

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 2048890008

M1: Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

- MS (Lab ID: 304167)
 - Vanadium, Dissolved
- MSD (Lab ID: 304168)
 - Vanadium, Dissolved

Additional Comments:

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PROJECT NARRATIVE

Project: PUMA TERMINAL CW SAMPLING

Pace Project No.: 2048890

Method: EPA 7470

Description: 7470 Mercury

Client: BBL Caribe / Arcadis PR

Date: February 14, 2017

General Information:

8 samples were analyzed for EPA 7470. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:

The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:

The samples were prepared in accordance with EPA 7470 with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):

All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:

All criteria were within method requirements with any exceptions noted below.

Method Blank:

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

REPORT OF LABORATORY ANALYSIS

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PROJECT NARRATIVE

Project: PUMA TERMINAL CW SAMPLING
Pace Project No.: 2048890

Method: EPA 7470
Description: 7470 Mercury, Dissolved (LF)
Client: BBL Caribe / Arcadis PR
Date: February 14, 2017

General Information:

8 samples were analyzed for EPA 7470. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:

The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:

The samples were prepared in accordance with EPA 7470 with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):

All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:

All criteria were within method requirements with any exceptions noted below.

Method Blank:

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

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PROJECT NARRATIVE

Project: PUMA TERMINAL CW SAMPLING
Pace Project No.: 2048890

Method: EPA 8270 by SIM
Description: 8270 MSSV PAH by SIM SEP
Client: BBL Caribe / Arcadis PR
Date: February 14, 2017

General Information:

8 samples were analyzed for EPA 8270 by SIM. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:

The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:

The samples were prepared in accordance with EPA 3510 with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):

All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:

All criteria were within method requirements with any exceptions noted below.

Internal Standards:

All internal standards were within QC limits with any exceptions noted below.

Surrogates:

All surrogates were within QC limits with any exceptions noted below.

Method Blank:

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

QC Batch: 72547

A matrix spike/matrix spike duplicate was not performed due to insufficient sample volume.

QC Batch: 72592

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 2048890008

M1: Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

- MS (Lab ID: 304108)
 - Anthracene
- MSD (Lab ID: 304109)
 - Anthracene

Additional Comments:

REPORT OF LABORATORY ANALYSIS

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PROJECT NARRATIVE

Project: PUMA TERMINAL CW SAMPLING
Pace Project No.: 2048890

Method: EPA 5030B/8260
Description: 8260 MSV Low Level
Client: BBL Caribe / Arcadis PR
Date: February 14, 2017

General Information:

10 samples were analyzed for EPA 5030B/8260. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:

The samples were analyzed within the method required hold times with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):

All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:

All criteria were within method requirements with any exceptions noted below.

Internal Standards:

All internal standards were within QC limits with any exceptions noted below.

Surrogates:

All surrogates were within QC limits with any exceptions noted below.

Method Blank:

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

QC Batch: 72436

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 2048890008

M1: Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

- MS (Lab ID: 303415)
 - Styrene
- MSD (Lab ID: 303416)
 - Styrene

Additional Comments:

Analyte Comments:

QC Batch: 72436

C9: Common Laboratory Contaminant.

- DUP006 (Lab ID: 2048890007)
 - Acetone

REPORT OF LABORATORY ANALYSIS

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PROJECT NARRATIVE

Project: PUMA TERMINAL CW SAMPLING
Pace Project No.: 2048890

Method: EPA 5030B/8260
Description: 8260 MSV Low Level
Client: BBL Caribe / Arcadis PR
Date: February 14, 2017

Analyte Comments:

QC Batch: 72436

C9: Common Laboratory Contaminant.

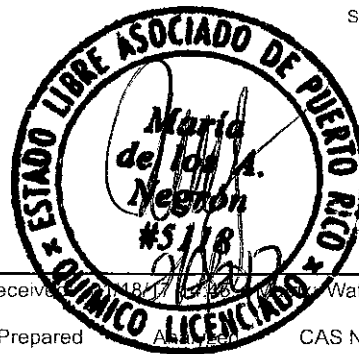
- EB-011717 (Lab ID: 2048890002)
 - Acetone
- FB-011717 (Lab ID: 2048890009)
 - Acetone
- MW-110AB (Lab ID: 2048890003)
 - Acetone
- MW-110B2 (Lab ID: 2048890004)
 - Acetone
- MW-114A (Lab ID: 2048890006)
 - Acetone
- MW-63A (Lab ID: 2048890010)
 - Acetone
- MW-75B2 (Lab ID: 2048890008)
 - Acetone
- TB-011717 (Lab ID: 2048890001)
 - Acetone

This data package has been reviewed for quality and completeness and is approved for release.

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS



Project: PUMA TERMINAL CW SAMPLING
Pace Project No.: 2048890

Sample: TB-011717 Lab ID: 2048890001 Collected: 01/17/17 00:00 Received: 01/18/17 12:30 Water
Parameters Results Units Report Limit DF Prepared Analyzed CAS No. Qual

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8021 GCV BTEX, MTBE, GRO		Analytical Method: EPA 8015/8021						
Gasoline Range Organics	ND	ug/L	50.0	1		01/20/17 06:05		
Surrogates								
4-Bromofluorobenzene (S)	94	%	44-148	1		01/20/17 06:05	460-00-4	
8260 MSV Low Level		Analytical Method: EPA 5030B/8260						
Acetone	19.6	ug/L	4.0	1		01/19/17 14:18	67-64-1	C9
Benzene	ND	ug/L	0.50	1		01/19/17 14:18	71-43-2	
Bromodichloromethane	0.56	ug/L	0.50	1		01/19/17 14:18	75-27-4	
Bromoform	ND	ug/L	0.50	1		01/19/17 14:18	75-25-2	
Bromomethane	ND	ug/L	0.50	1		01/19/17 14:18	74-83-9	
2-Butanone (MEK)	ND	ug/L	2.0	1		01/19/17 14:18	78-93-3	
Carbon disulfide	ND	ug/L	1.0	1		01/19/17 14:18	75-15-0	
Carbon tetrachloride	ND	ug/L	0.50	1		01/19/17 14:18	56-23-5	
Chlorobenzene	ND	ug/L	0.50	1		01/19/17 14:18	108-90-7	
Chloroethane	ND	ug/L	0.50	1		01/19/17 14:18	75-00-3	
Chloroform	2.5	ug/L	0.50	1		01/19/17 14:18	67-66-3	
Chloromethane	ND	ug/L	0.50	1		01/19/17 14:18	74-87-3	
1,2-Dibromo-3-chloropropane	ND	ug/L	0.20	1		01/19/17 14:18	96-12-8	
Dibromochloromethane	ND	ug/L	0.50	1		01/19/17 14:18	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	1		01/19/17 14:18	106-93-4	
Dichlorodifluoromethane	ND	ug/L	1.0	1		01/19/17 14:18	75-71-8	
1,1-Dichloroethane	ND	ug/L	0.50	1		01/19/17 14:18	75-34-3	
1,2-Dichloroethane	ND	ug/L	0.50	1		01/19/17 14:18	107-06-2	
1,1-Dichloroethene	ND	ug/L	0.50	1		01/19/17 14:18	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	1		01/19/17 14:18	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	0.50	1		01/19/17 14:18	156-60-5	
1,2-Dichloropropane	ND	ug/L	0.50	1		01/19/17 14:18	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	0.50	1		01/19/17 14:18	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	0.50	1		01/19/17 14:18	10061-02-6	
Ethylbenzene	ND	ug/L	0.50	1		01/19/17 14:18	100-41-4	
2-Hexanone	ND	ug/L	1.0	1		01/19/17 14:18	591-78-6	
Isopropylbenzene (Cumene)	ND	ug/L	1.0	1		01/19/17 14:18	98-82-8	
Methyl acetate	ND	ug/L	2.0	1		01/19/17 14:18	79-20-9	
Methylene Chloride	ND	ug/L	0.50	1		01/19/17 14:18	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	1.0	1		01/19/17 14:18	108-10-1	
Methyl-tert-butyl ether	ND	ug/L	0.50	1		01/19/17 14:18	1634-04-4	
Styrene	ND	ug/L	1.0	1		01/19/17 14:18	100-42-5	
1,1,2,2-Tetrachloroethane	ND	ug/L	0.50	1		01/19/17 14:18	79-34-5	
Tetrachloroethene	ND	ug/L	0.50	1		01/19/17 14:18	127-18-4	
Toluene	ND	ug/L	0.50	1		01/19/17 14:18	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	0.50	1		01/19/17 14:18	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	0.50	1		01/19/17 14:18	79-00-5	
Trichloroethene	ND	ug/L	0.50	1		01/19/17 14:18	79-01-6	
Trichlorofluoromethane	ND	ug/L	0.50	1		01/19/17 14:18	75-69-4	
Vinyl chloride	ND	ug/L	0.50	1		01/19/17 14:18	75-01-4	
m&p-Xylene	ND	ug/L	2.0	1		01/19/17 14:18	179601-23-1	
o-Xylene	ND	ug/L	1.0	1		01/19/17 14:18	95-47-6	

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ANALYTICAL RESULTS

Project: PUMA TERMINAL CW SAMPLING
Pace Project No.: 2048890



Sample: TB-011717	Lab ID: 2048890001	Collected: 01/17/17 00:00	Received: 01/18/17 14:45	Matrix: Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual

8260 MSV Low Level Analytical Method: EPA 5030B/8260

Surrogates

Dibromofluoromethane (S)	95	%.	72-126	1	01/19/17 14:18	1868-53-7		
4-Bromofluorobenzene (S)	100	%.	68-124	1	01/19/17 14:18	460-00-4		
Toluene-d8 (S)	108	%.	79-119	1	01/19/17 14:18	2037-26-5		

Sample: EB-011717 **Lab ID:** 2048890002 Collected: 01/17/17 09:46 Received: 01/18/17 14:45 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
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8015M DRO/ORO Organics Analytical Method: EPA 8015B Modified Preparation Method: EPA 3535

Diesel Range Organic (C10-C28)	ND	mg/L	0.50	1	01/19/17 13:07	01/29/17 18:57		
Oil Range Organics (>C28-C40)	ND	mg/L	1.0	1	01/19/17 13:07	01/29/17 18:57		

Surrogates

n-Pentacosane (S)	53	%.	16-137	1	01/19/17 13:07	01/29/17 18:57	629-99-2	
o-Terphenyl (S)	51	%.	10-121	1	01/19/17 13:07	01/29/17 18:57	84-15-1	

8021 GCV BTEX, MTBE, GRO Analytical Method: EPA 8015/8021

Gasoline Range Organics	ND	ug/L	50.0	1		01/20/17 08:17		
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Surrogates

4-Bromofluorobenzene (S)	93	%.	44-148	1		01/20/17 08:17	460-00-4	
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6020 MET ICPMS Analytical Method: EPA 6020 Preparation Method: EPA 3010

Arsenic	ND	mg/L	0.0010	1	01/24/17 08:30	02/12/17 16:05	7440-38-2	
Chromium	ND	mg/L	0.0010	1	01/24/17 08:30	02/12/17 16:05	7440-47-3	
Lead	ND	mg/L	0.0010	1	01/24/17 08:30	02/12/17 16:05	7439-92-1	
Vanadium	ND	mg/L	0.0050	1	01/24/17 08:30	02/12/17 16:05	7440-62-2	

6020 MET ICPMS, Dissolved (LF) Analytical Method: EPA 6020 Preparation Method: EPA 3005A

Arsenic, Dissolved	ND	ug/L	1.0	1	01/24/17 09:53	02/12/17 19:10	7440-38-2	
Chromium, Dissolved	ND	ug/L	1.0	1	01/24/17 09:53	02/12/17 19:10	7440-47-3	
Lead, Dissolved	ND	ug/L	1.0	1	01/24/17 09:53	02/12/17 19:10	7439-92-1	
Vanadium, Dissolved	ND	ug/L	5.0	1	01/24/17 09:53	02/12/17 19:10	7440-62-2	

7470 Mercury Analytical Method: EPA 7470 Preparation Method: EPA 7470

Mercury	ND	ug/L	0.20	1	01/24/17 08:59	01/24/17 18:21	7439-97-6	
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7470 Mercury, Dissolved (LF) Analytical Method: EPA 7470 Preparation Method: EPA 7470

Mercury, Dissolved	ND	ug/L	0.20	1	01/24/17 09:49	01/24/17 18:46	7439-97-6	
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8270 MSSV PAH by SIM SEP Analytical Method: EPA 8270 by SIM Preparation Method: EPA 3510

Acenaphthene	ND	ug/L	0.10	1	01/21/17 12:15	01/30/17 22:05	83-32-9	
Acenaphthylene	ND	ug/L	0.10	1	01/21/17 12:15	01/30/17 22:05	208-96-8	
Anthracene	ND	ug/L	0.10	1	01/21/17 12:15	01/30/17 22:05	120-12-7	
Benzo(a)anthracene	ND	ug/L	0.10	1	01/21/17 12:15	01/30/17 22:05	56-55-3	
Benzo(a)pyrene	ND	ug/L	0.10	1	01/21/17 12:15	01/30/17 22:05	50-32-8	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS



Project: PUMA TERMINAL CW SAMPLING
Pace Project No.: 2048890

Sample: EB-011717 Lab ID: 2048890002 Collected: 01/17/17 09:46 Received: 01/18/17 14:45 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	MS No.	Qual
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8270 MSSV PAH by SIM SEP

Analytical Method: EPA 8270 by SIM Preparation Method: EPA 3510

Benzo(b)fluoranthene	ND	ug/L	0.10	1	01/21/17 12:15	01/30/17 22:05	205-99-2	
Benzo(g,h,i)perylene	ND	ug/L	0.10	1	01/21/17 12:15	01/30/17 22:05	191-24-2	
Benzo(k)fluoranthene	ND	ug/L	0.10	1	01/21/17 12:15	01/30/17 22:05	207-08-9	
Chrysene	ND	ug/L	0.10	1	01/21/17 12:15	01/30/17 22:05	218-01-9	
Dibenz(a,h)anthracene	ND	ug/L	0.10	1	01/21/17 12:15	01/30/17 22:05	53-70-3	
Fluoranthene	ND	ug/L	0.10	1	01/21/17 12:15	01/30/17 22:05	206-44-0	
Fluorene	ND	ug/L	0.10	1	01/21/17 12:15	01/30/17 22:05	86-73-7	
Indeno(1,2,3-cd)pyrene	ND	ug/L	0.10	1	01/21/17 12:15	01/30/17 22:05	193-39-5	
2-Methylnaphthalene	ND	ug/L	0.10	1	01/21/17 12:15	01/30/17 22:05	91-57-6	
Naphthalene	ND	ug/L	0.10	1	01/21/17 12:15	01/30/17 22:05	91-20-3	
Phenanthrene	ND	ug/L	0.10	1	01/21/17 12:15	01/30/17 22:05	85-01-8	
Pyrene	ND	ug/L	0.10	1	01/21/17 12:15	01/30/17 22:05	129-00-0	
Surrogates								
2-Fluorobiphenyl (S)	123	%	25-150	1	01/21/17 12:15	01/30/17 22:05	321-60-8	
Terphenyl-d14 (S)	123	%	25-150	1	01/21/17 12:15	01/30/17 22:05	1718-51-0	

8260 MSV Low Level

Analytical Method: EPA 5030B/8260

Acetone	22.3	ug/L	4.0	1		01/19/17 14:37	67-64-1	C9
Benzene	ND	ug/L	0.50	1		01/19/17 14:37	71-43-2	
Bromodichloromethane	ND	ug/L	0.50	1		01/19/17 14:37	75-27-4	
Bromoform	ND	ug/L	0.50	1		01/19/17 14:37	75-25-2	
Bromomethane	ND	ug/L	0.50	1		01/19/17 14:37	74-83-9	
2-Butanone (MEK)	ND	ug/L	2.0	1		01/19/17 14:37	78-93-3	
Carbon disulfide	ND	ug/L	1.0	1		01/19/17 14:37	75-15-0	
Carbon tetrachloride	ND	ug/L	0.50	1		01/19/17 14:37	56-23-5	
Chlorobenzene	ND	ug/L	0.50	1		01/19/17 14:37	108-90-7	
Chloroethane	ND	ug/L	0.50	1		01/19/17 14:37	75-00-3	
Chloroform	2.1	ug/L	0.50	1		01/19/17 14:37	67-66-3	
Chloromethane	ND	ug/L	0.50	1		01/19/17 14:37	74-87-3	
1,2-Dibromo-3-chloropropane	ND	ug/L	0.20	1		01/19/17 14:37	96-12-8	
Dibromochloromethane	ND	ug/L	0.50	1		01/19/17 14:37	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	1		01/19/17 14:37	106-93-4	
Dichlorodifluoromethane	ND	ug/L	1.0	1		01/19/17 14:37	75-71-8	
1,1-Dichloroethane	ND	ug/L	0.50	1		01/19/17 14:37	75-34-3	
1,2-Dichloroethane	ND	ug/L	0.50	1		01/19/17 14:37	107-06-2	
1,1-Dichloroethene	ND	ug/L	0.50	1		01/19/17 14:37	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	1		01/19/17 14:37	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	0.50	1		01/19/17 14:37	156-60-5	
1,2-Dichloropropane	ND	ug/L	0.50	1		01/19/17 14:37	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	0.50	1		01/19/17 14:37	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	0.50	1		01/19/17 14:37	10061-02-6	
Ethylbenzene	ND	ug/L	0.50	1		01/19/17 14:37	100-41-4	
2-Hexanone	ND	ug/L	1.0	1		01/19/17 14:37	591-78-6	
Isopropylbenzene (Cumene)	ND	ug/L	1.0	1		01/19/17 14:37	98-82-8	
Methyl acetate	ND	ug/L	2.0	1		01/19/17 14:37	79-20-9	
Methylene Chloride	ND	ug/L	0.50	1		01/19/17 14:37	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	1.0	1		01/19/17 14:37	108-10-1	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS



Project: PUMA TERMINAL CW SAMPLING
Pace Project No.: 2048890

Sample: EB-011717		Lab ID: 2048890002		Collected: 01/17/17 09:46		Received: 01/18/17 14:45		Matrix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual	
8260 MSV Low Level									
Analytical Method: EPA 5030B/8260									
Methyl-tert-butyl ether	ND	ug/L	0.50	1		01/19/17 14:37	1634-04-4		
Styrene	ND	ug/L	1.0	1		01/19/17 14:37	100-42-5		
1,1,2,2-Tetrachloroethane	ND	ug/L	0.50	1		01/19/17 14:37	79-34-5		
Tetrachloroethene	ND	ug/L	0.50	1		01/19/17 14:37	127-18-4		
Toluene	ND	ug/L	0.50	1		01/19/17 14:37	108-88-3		
1,1,1-Trichloroethane	ND	ug/L	0.50	1		01/19/17 14:37	71-55-6		
1,1,2-Trichloroethane	ND	ug/L	0.50	1		01/19/17 14:37	79-00-5		
Trichloroethene	ND	ug/L	0.50	1		01/19/17 14:37	79-01-6		
Trichlorofluoromethane	ND	ug/L	0.50	1		01/19/17 14:37	75-69-4		
Vinyl chloride	ND	ug/L	0.50	1		01/19/17 14:37	75-01-4		
m&p-Xylene	ND	ug/L	2.0	1		01/19/17 14:37	179601-23-1		
o-Xylene	ND	ug/L	1.0	1		01/19/17 14:37	95-47-6		
Surrogates									
Dibromofluoromethane (S)	96	%	72-126	1		01/19/17 14:37	1868-53-7		
4-Bromofluorobenzene (S)	100	%	68-124	1		01/19/17 14:37	460-00-4		
Toluene-d8 (S)	106	%	79-119	1		01/19/17 14:37	2037-26-5		

Sample: MW-110AB		Lab ID: 2048890003		Collected: 01/17/17 10:49		Received: 01/18/17 14:45		Matrix: Water	
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual	
8015M DRO/ORO Organics									
Analytical Method: EPA 8015B Modified Preparation Method: EPA 3535									
Diesel Range Organic (C10-C28)	ND	mg/L	0.50	1	01/19/17 13:07	01/29/17 19:28			
Oil Range Organics (>C28-C40)	ND	mg/L	1.0	1	01/19/17 13:07	01/29/17 19:28			
Surrogates									
n-Pentacosane (S)	52	%	16-137	1	01/19/17 13:07	01/29/17 19:28	629-99-2		
o-Terphenyl (S)	55	%	10-121	1	01/19/17 13:07	01/29/17 19:28	84-15-1		
8021 GCV BTEX, MTBE, GRO									
Analytical Method: EPA 8015/8021									
Gasoline Range Organics	ND	ug/L	50.0	1		01/20/17 06:32			
Surrogates									
4-Bromofluorobenzene (S)	92	%	44-148	1		01/20/17 06:32	460-00-4		
6020 MET ICPMS									
Analytical Method: EPA 6020 Preparation Method: EPA 3010									
Arsenic	0.0012	mg/L	0.0010	1	01/24/17 08:30	02/12/17 16:09	7440-38-2		
Chromium	0.0015	mg/L	0.0010	1	01/24/17 08:30	02/12/17 16:09	7440-47-3		
Lead	ND	mg/L	0.0010	1	01/24/17 08:30	02/12/17 16:09	7439-92-1		
Vanadium	0.20	mg/L	0.0050	1	01/24/17 08:30	02/12/17 16:09	7440-62-2		
6020 MET ICPMS, Dissolved (LF)									
Analytical Method: EPA 6020 Preparation Method: EPA 3005A									
Arsenic, Dissolved	ND	ug/L	1.0	1	01/24/17 09:53	02/12/17 19:14	7440-38-2		
Chromium, Dissolved	ND	ug/L	1.0	1	01/24/17 09:53	02/12/17 19:14	7440-47-3		
Lead, Dissolved	ND	ug/L	1.0	1	01/24/17 09:53	02/12/17 19:14	7439-92-1		
Vanadium, Dissolved	134	ug/L	5.0	1	01/24/17 09:53	02/12/17 19:14	7440-62-2		

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ANALYTICAL RESULTS



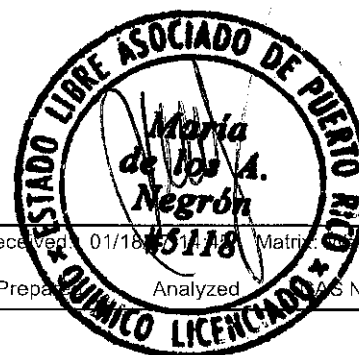
Project: PUMA TERMINAL CW SAMPLING
Pace Project No.: 2048890

Sample:	Lab ID:	Collected:	Received:	Matrix:	Prepared:	Analyzed:	LAB No.	Qual
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	LAB No.	Qual
7470 Mercury	Analytical Method: EPA 7470 Preparation Method: EPA 7470							
Mercury	ND	ug/L	0.20	1	01/24/17 08:59	01/24/17 18:23	7439-97-6	
7470 Mercury, Dissolved (LF)	Analytical Method: EPA 7470 Preparation Method: EPA 7470							
Mercury, Dissolved	ND	ug/L	0.20	1	01/24/17 09:49	01/24/17 18:48	7439-97-6	
8270 MSSV PAH by SIM SEP	Analytical Method: EPA 8270 by SIM Preparation Method: EPA 3510							
Acenaphthene	0.45	ug/L	0.10	1	01/21/17 12:15	01/30/17 22:25	83-32-9	
Acenaphthylene	ND	ug/L	0.10	1	01/21/17 12:15	01/30/17 22:25	208-96-8	
Anthracene	0.23	ug/L	0.10	1	01/21/17 12:15	01/30/17 22:25	120-12-7	
Benzo(a)anthracene	ND	ug/L	0.10	1	01/21/17 12:15	01/30/17 22:25	56-55-3	
Benzo(a)pyrene	ND	ug/L	0.10	1	01/21/17 12:15	01/30/17 22:25	50-32-8	
Benzo(b)fluoranthene	ND	ug/L	0.10	1	01/21/17 12:15	01/30/17 22:25	205-99-2	
Benzo(g,h,i)perylene	ND	ug/L	0.10	1	01/21/17 12:15	01/30/17 22:25	191-24-2	
Benzo(k)fluoranthene	ND	ug/L	0.10	1	01/21/17 12:15	01/30/17 22:25	207-08-9	
Chrysene	ND	ug/L	0.10	1	01/21/17 12:15	01/30/17 22:25	218-01-9	
Dibenz(a,h)anthracene	ND	ug/L	0.10	1	01/21/17 12:15	01/30/17 22:25	53-70-3	
Fluoranthene	ND	ug/L	0.10	1	01/21/17 12:15	01/30/17 22:25	206-44-0	
Fluorene	ND	ug/L	0.10	1	01/21/17 12:15	01/30/17 22:25	86-73-7	
Indeno(1,2,3-cd)pyrene	ND	ug/L	0.10	1	01/21/17 12:15	01/30/17 22:25	193-39-5	
2-Methylnaphthalene	ND	ug/L	0.10	1	01/21/17 12:15	01/30/17 22:25	91-57-6	
Naphthalene	ND	ug/L	0.10	1	01/21/17 12:15	01/30/17 22:25	91-20-3	
Phenanthrene	ND	ug/L	0.10	1	01/21/17 12:15	01/30/17 22:25	85-01-8	
Pyrene	ND	ug/L	0.10	1	01/21/17 12:15	01/30/17 22:25	129-00-0	
Surrogates								
2-Fluorobiphenyl (S)	121	%	25-150	1	01/21/17 12:15	01/30/17 22:25	321-60-8	
Terphenyl-d14 (S)	114	%	25-150	1	01/21/17 12:15	01/30/17 22:25	1718-51-0	
8260 MSV Low Level	Analytical Method: EPA 5030B/8260							
Acetone	12.0	ug/L	4.0	1		01/19/17 14:55	67-64-1	C9
Benzene	ND	ug/L	0.50	1		01/19/17 14:55	71-43-2	
Bromodichloromethane	ND	ug/L	0.50	1		01/19/17 14:55	75-27-4	
Bromoform	ND	ug/L	0.50	1		01/19/17 14:55	75-25-2	
Bromomethane	ND	ug/L	0.50	1		01/19/17 14:55	74-83-9	
2-Butanone (MEK)	ND	ug/L	2.0	1		01/19/17 14:55	78-93-3	
Carbon disulfide	ND	ug/L	1.0	1		01/19/17 14:55	75-15-0	
Carbon tetrachloride	ND	ug/L	0.50	1		01/19/17 14:55	56-23-5	
Chlorobenzene	ND	ug/L	0.50	1		01/19/17 14:55	108-90-7	
Chloroethane	ND	ug/L	0.50	1		01/19/17 14:55	75-00-3	
Chloroform	ND	ug/L	0.50	1		01/19/17 14:55	67-66-3	
Chloromethane	ND	ug/L	0.50	1		01/19/17 14:55	74-87-3	
1,2-Dibromo-3-chloropropane	ND	ug/L	0.20	1		01/19/17 14:55	96-12-8	
Dibromochloromethane	ND	ug/L	0.50	1		01/19/17 14:55	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	1		01/19/17 14:55	106-93-4	
Dichlorodifluoromethane	ND	ug/L	1.0	1		01/19/17 14:55	75-71-8	
1,1-Dichloroethane	ND	ug/L	0.50	1		01/19/17 14:55	75-34-3	
1,2-Dichloroethane	ND	ug/L	0.50	1		01/19/17 14:55	107-06-2	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS



Project: PUMA TERMINAL CW SAMPLING
Pace Project No.: 2048890

Sample: MW-110AB	Lab ID: 2048890003	Collected: 01/17/17 10:49	Received: 01/18/17 15:18	Matrix: Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV Low Level		Analytical Method: EPA 5030B/8260						
1,1-Dichloroethene	ND	ug/L	0.50	1		01/19/17 14:55	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	1		01/19/17 14:55	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	0.50	1		01/19/17 14:55	156-60-5	
1,2-Dichloropropane	ND	ug/L	0.50	1		01/19/17 14:55	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	0.50	1		01/19/17 14:55	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	0.50	1		01/19/17 14:55	10061-02-6	
Ethylbenzene	ND	ug/L	0.50	1		01/19/17 14:55	100-41-4	
2-Hexanone	ND	ug/L	1.0	1		01/19/17 14:55	591-78-6	
Isopropylbenzene (Cumene)	ND	ug/L	1.0	1		01/19/17 14:55	98-82-8	
Methyl acetate	ND	ug/L	2.0	1		01/19/17 14:55	79-20-9	
Methylene Chloride	ND	ug/L	0.50	1		01/19/17 14:55	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	1.0	1		01/19/17 14:55	108-10-1	
Methyl-tert-butyl ether	ND	ug/L	0.50	1		01/19/17 14:55	1634-04-4	
Styrene	ND	ug/L	1.0	1		01/19/17 14:55	100-42-5	
1,1,2,2-Tetrachloroethane	ND	ug/L	0.50	1		01/19/17 14:55	79-34-5	
Tetrachloroethene	ND	ug/L	0.50	1		01/19/17 14:55	127-18-4	
Toluene	ND	ug/L	0.50	1		01/19/17 14:55	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	0.50	1		01/19/17 14:55	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	0.50	1		01/19/17 14:55	79-00-5	
Trichloroethene	ND	ug/L	0.50	1		01/19/17 14:55	79-01-6	
Trichlorofluoromethane	ND	ug/L	0.50	1		01/19/17 14:55	75-69-4	
Vinyl chloride	ND	ug/L	0.50	1		01/19/17 14:55	75-01-4	
m&p-Xylene	ND	ug/L	2.0	1		01/19/17 14:55	179601-23-1	
o-Xylene	ND	ug/L	1.0	1		01/19/17 14:55	95-47-6	
Surrogates								
Dibromofluoromethane (S)	95	%	72-126	1		01/19/17 14:55	1868-53-7	
4-Bromofluorobenzene (S)	100	%	68-124	1		01/19/17 14:55	460-00-4	
Toluene-d8 (S)	107	%	79-119	1		01/19/17 14:55	2037-26-5	

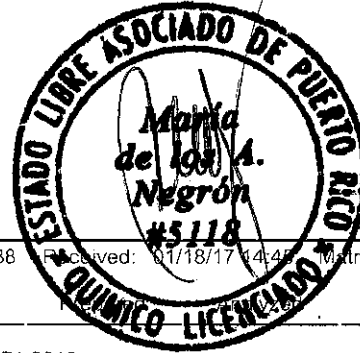
Sample: MW-110B2	Lab ID: 2048890004	Collected: 01/17/17 11:38	Received: 01/18/17 14:45	Matrix: Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8015M DRO/ORO Organics		Analytical Method: EPA 8015B Modified Preparation Method: EPA 3535						
Diesel Range Organic (C10-C28)	ND	mg/L	0.50	1	01/19/17 13:07	01/29/17 19:59		
Oil Range Organics (>C28-C40)	ND	mg/L	1.0	1	01/19/17 13:07	01/29/17 19:59		
Surrogates								
n-Pentacosane (S)	44	%	16-137	1	01/19/17 13:07	01/29/17 19:59	629-99-2	
o-Terphenyl (S)	50	%	10-121	1	01/19/17 13:07	01/29/17 19:59	84-15-1	
8021 GCV BTEX, MTBE, GRO		Analytical Method: EPA 8015/8021						
Gasoline Range Organics	ND	ug/L	50.0	1		01/20/17 06:58		
Surrogates								
4-Bromofluorobenzene (S)	92	%	44-148	1		01/20/17 06:58	460-00-4	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: PUMA TERMINAL CW SAMPLING
Pace Project No.: 2048890



Sample: MW-110B2 Lab ID: 2048890004 Collected: 01/17/17 11:38 Received: 01/18/17 14:45 Matrix: Water

Parameters	Results	Units	Report Limit	DF	CAS No.	Qual
6020 MET ICPMS Analytical Method: EPA 6020 Preparation Method: EPA 3010						
Arsenic	ND	mg/L	0.0010	1	01/24/17 08:30 02/12/17 16:13 7440-38-2	
Chromium	ND	mg/L	0.0010	1	01/24/17 08:30 02/12/17 16:13 7440-47-3	
Lead	ND	mg/L	0.0010	1	01/24/17 08:30 02/12/17 16:13 7439-92-1	
Vanadium	ND	mg/L	0.0050	1	01/24/17 08:30 02/12/17 16:13 7440-62-2	
6020 MET ICPMS, Dissolved (LF) Analytical Method: EPA 6020 Preparation Method: EPA 3005A						
Arsenic, Dissolved	ND	ug/L	1.0	1	01/24/17 09:53 02/12/17 19:18 7440-38-2	
Chromium, Dissolved	ND	ug/L	1.0	1	01/24/17 09:53 02/12/17 19:18 7440-47-3	
Lead, Dissolved	ND	ug/L	1.0	1	01/24/17 09:53 02/12/17 19:18 7439-92-1	
Vanadium, Dissolved	ND	ug/L	5.0	1	01/24/17 09:53 02/12/17 19:18 7440-62-2	
7470 Mercury Analytical Method: EPA 7470 Preparation Method: EPA 7470						
Mercury	ND	ug/L	0.20	1	01/24/17 08:59 01/24/17 18:30 7439-97-6	
7470 Mercury, Dissolved (LF) Analytical Method: EPA 7470 Preparation Method: EPA 7470						
Mercury, Dissolved	ND	ug/L	0.20	1	01/24/17 09:49 01/24/17 18:50 7439-97-6	
8270 MSSV PAH by SIM SEP Analytical Method: EPA 8270 by SIM Preparation Method: EPA 3510						
Acenaphthene	ND	ug/L	0.10	1	01/21/17 12:15 01/30/17 22:45 83-32-9	
Acenaphthylene	ND	ug/L	0.10	1	01/21/17 12:15 01/30/17 22:45 208-96-8	
Anthracene	ND	ug/L	0.10	1	01/21/17 12:15 01/30/17 22:45 120-12-7	
Benzo(a)anthracene	ND	ug/L	0.10	1	01/21/17 12:15 01/30/17 22:45 56-55-3	
Benzo(a)pyrene	ND	ug/L	0.10	1	01/21/17 12:15 01/30/17 22:45 50-32-8	
Benzo(b)fluoranthene	ND	ug/L	0.10	1	01/21/17 12:15 01/30/17 22:45 205-99-2	
Benzo(g,h,i)perylene	ND	ug/L	0.10	1	01/21/17 12:15 01/30/17 22:45 191-24-2	
Benzo(k)fluoranthene	ND	ug/L	0.10	1	01/21/17 12:15 01/30/17 22:45 207-08-9	
Chrysene	ND	ug/L	0.10	1	01/21/17 12:15 01/30/17 22:45 218-01-9	
Dibenz(a,h)anthracene	ND	ug/L	0.10	1	01/21/17 12:15 01/30/17 22:45 53-70-3	
Fluoranthene	ND	ug/L	0.10	1	01/21/17 12:15 01/30/17 22:45 206-44-0	
Fluorene	ND	ug/L	0.10	1	01/21/17 12:15 01/30/17 22:45 86-73-7	
Indeno(1,2,3-cd)pyrene	ND	ug/L	0.10	1	01/21/17 12:15 01/30/17 22:45 193-39-5	
2-Methylnaphthalene	ND	ug/L	0.10	1	01/21/17 12:15 01/30/17 22:45 91-57-6	
Naphthalene	ND	ug/L	0.10	1	01/21/17 12:15 01/30/17 22:45 91-20-3	
Phenanthrene	ND	ug/L	0.10	1	01/21/17 12:15 01/30/17 22:45 85-01-8	
Pyrene	ND	ug/L	0.10	1	01/21/17 12:15 01/30/17 22:45 129-00-0	
Surrogates						
2-Fluorobiphenyl (S)	117	%	25-150	1	01/21/17 12:15 01/30/17 22:45 321-60-8	
Terphenyl-d14 (S)	123	%	25-150	1	01/21/17 12:15 01/30/17 22:45 1718-51-0	
8260 MSV Low Level Analytical Method: EPA 5030B/8260						
Acetone	4.3	ug/L	4.0	1	01/19/17 15:13 67-64-1	C9
Benzene	ND	ug/L	0.50	1	01/19/17 15:13 71-43-2	
Bromodichloromethane	ND	ug/L	0.50	1	01/19/17 15:13 75-27-4	
Bromoform	ND	ug/L	0.50	1	01/19/17 15:13 75-25-2	
Bromomethane	ND	ug/L	0.50	1	01/19/17 15:13 74-83-9	
2-Butanone (MEK)	ND	ug/L	2.0	1	01/19/17 15:13 78-93-3	

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ANALYTICAL RESULTS



Project: PUMA TERMINAL CW SAMPLING
Pace Project No.: 2048890

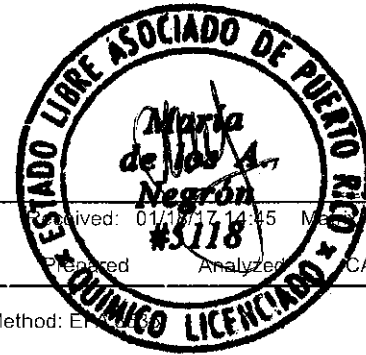
Sample: MW-110B2 Lab ID: 2048890004 Collected: 01/17/17 11:38 Received: 01/18/17 14:45 Matrix: Water
Parameters Results Units Report Limit DF Prepared: [Signature] Analyst: [Signature] CAS No. Qual

Parameters	Results	Units	Report Limit	DF	Prepared	Analyst	CAS No.	Qual
8260 MSV Low Level		Analytical Method: EPA 5030B/8260						
Carbon disulfide	ND	ug/L	1.0	1	01/19/17 15:13		75-15-0	
Carbon tetrachloride	ND	ug/L	0.50	1	01/19/17 15:13		56-23-5	
Chlorobenzene	ND	ug/L	0.50	1	01/19/17 15:13		108-90-7	
Chloroethane	ND	ug/L	0.50	1	01/19/17 15:13		75-00-3	
Chloroform	ND	ug/L	0.50	1	01/19/17 15:13		67-66-3	
Chloromethane	ND	ug/L	0.50	1	01/19/17 15:13		74-87-3	
1,2-Dibromo-3-chloropropane	ND	ug/L	0.20	1	01/19/17 15:13		96-12-8	
Dibromochloromethane	ND	ug/L	0.50	1	01/19/17 15:13		124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	1	01/19/17 15:13		106-93-4	
Dichlorodifluoromethane	ND	ug/L	1.0	1	01/19/17 15:13		75-71-8	
1,1-Dichloroethane	ND	ug/L	0.50	1	01/19/17 15:13		75-34-3	
1,2-Dichloroethane	ND	ug/L	0.50	1	01/19/17 15:13		107-06-2	
1,1-Dichloroethene	ND	ug/L	0.50	1	01/19/17 15:13		75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	1	01/19/17 15:13		156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	0.50	1	01/19/17 15:13		156-60-5	
1,2-Dichloropropane	ND	ug/L	0.50	1	01/19/17 15:13		78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	0.50	1	01/19/17 15:13		10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	0.50	1	01/19/17 15:13		10061-02-6	
Ethylbenzene	ND	ug/L	0.50	1	01/19/17 15:13		100-41-4	
2-Hexanone	ND	ug/L	1.0	1	01/19/17 15:13		591-78-6	
Isopropylbenzene (Cumene)	ND	ug/L	1.0	1	01/19/17 15:13		98-82-8	
Methyl acetate	ND	ug/L	2.0	1	01/19/17 15:13		79-20-9	
Methylene Chloride	ND	ug/L	0.50	1	01/19/17 15:13		75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	1.0	1	01/19/17 15:13		108-10-1	
Methyl-tert-butyl ether	ND	ug/L	0.50	1	01/19/17 15:13		1634-04-4	
Styrene	ND	ug/L	1.0	1	01/19/17 15:13		100-42-5	
1,1,2,2-Tetrachloroethane	ND	ug/L	0.50	1	01/19/17 15:13		79-34-5	
Tetrachloroethene	ND	ug/L	0.50	1	01/19/17 15:13		127-18-4	
Toluene	ND	ug/L	0.50	1	01/19/17 15:13		108-88-3	
1,1,1-Trichloroethane	ND	ug/L	0.50	1	01/19/17 15:13		71-55-6	
1,1,2-Trichloroethane	ND	ug/L	0.50	1	01/19/17 15:13		79-00-5	
Trichloroethene	ND	ug/L	0.50	1	01/19/17 15:13		79-01-6	
Trichlorofluoromethane	ND	ug/L	0.50	1	01/19/17 15:13		75-69-4	
Vinyl chloride	ND	ug/L	0.50	1	01/19/17 15:13		75-01-4	
m&p-Xylene	ND	ug/L	2.0	1	01/19/17 15:13		179601-23-1	
o-Xylene	ND	ug/L	1.0	1	01/19/17 15:13		95-47-6	
Surrogates								
Dibromofluoromethane (S)	93	%.	72-126	1	01/19/17 15:13		1868-53-7	
4-Bromofluorobenzene (S)	100	%.	68-124	1	01/19/17 15:13		460-00-4	
Toluene-d8 (S)	106	%.	79-119	1	01/19/17 15:13		2037-26-5	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS



Project: PUMA TERMINAL CW SAMPLING
Pace Project No.: 2048890

Sample:	Lab ID:	Collected:	Received:	Matrix:	Prepared:	Analyzed:	CAS No.	Qual
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8015M DRO/ORO Organics Analytical Method: EPA 8015B Modified Preparation Method: EPA 8015B								
Diesel Range Organic (C10-C28)	ND	mg/L	0.50	1	01/19/17 13:07	01/29/17 20:30		
Oil Range Organics (>C28-C40)	ND	mg/L	1.0	1	01/19/17 13:07	01/29/17 20:30		
Surrogates								
n-Pentacosane (S)	79	%	16-137	1	01/19/17 13:07	01/29/17 20:30	629-99-2	
o-Terphenyl (S)	66	%	10-121	1	01/19/17 13:07	01/29/17 20:30	84-15-1	
8021 GCV BTEX, MTBE, GRO Analytical Method: EPA 8015/8021								
Gasoline Range Organics	ND	ug/L	50.0	1		01/20/17 07:24		
Surrogates								
4-Bromofluorobenzene (S)	94	%	44-148	1		01/20/17 07:24	460-00-4	
6020 MET ICPMS Analytical Method: EPA 6020 Preparation Method: EPA 3010								
Arsenic	0.0039	mg/L	0.0010	1	01/24/17 08:30	02/12/17 16:17	7440-38-2	
Chromium	0.0047	mg/L	0.0010	1	01/24/17 08:30	02/12/17 16:17	7440-47-3	
Lead	0.0017	mg/L	0.0010	1	01/24/17 08:30	02/12/17 16:17	7439-92-1	
Vanadium	ND	mg/L	0.0050	1	01/24/17 08:30	02/12/17 16:17	7440-62-2	
6020 MET ICPMS, Dissolved (LF) Analytical Method: EPA 6020 Preparation Method: EPA 3005A								
Arsenic, Dissolved	1.5	ug/L	1.0	1	01/24/17 09:53	02/12/17 19:22	7440-38-2	
Chromium, Dissolved	ND	ug/L	1.0	1	01/24/17 09:53	02/12/17 19:22	7440-47-3	
Lead, Dissolved	ND	ug/L	1.0	1	01/24/17 09:53	02/12/17 19:22	7439-92-1	
Vanadium, Dissolved	ND	ug/L	5.0	1	01/24/17 09:53	02/12/17 19:22	7440-62-2	
7470 Mercury Analytical Method: EPA 7470 Preparation Method: EPA 7470								
Mercury	ND	ug/L	0.20	1	01/24/17 08:59	01/24/17 18:32	7439-97-6	
7470 Mercury, Dissolved (LF) Analytical Method: EPA 7470 Preparation Method: EPA 7470								
Mercury, Dissolved	ND	ug/L	0.20	1	01/24/17 09:49	01/24/17 18:57	7439-97-6	
8270 MSSV PAH by SIM SEP Analytical Method: EPA 8270 by SIM Preparation Method: EPA 3510								
Acenaphthene	ND	ug/L	0.10	1	01/21/17 12:15	01/30/17 23:05	83-32-9	
Acenaphthylene	ND	ug/L	0.10	1	01/21/17 12:15	01/30/17 23:05	208-96-8	
Anthracene	ND	ug/L	0.10	1	01/21/17 12:15	01/30/17 23:05	120-12-7	
Benzo(a)anthracene	ND	ug/L	0.10	1	01/21/17 12:15	01/30/17 23:05	56-55-3	
Benzo(a)pyrene	ND	ug/L	0.10	1	01/21/17 12:15	01/30/17 23:05	50-32-8	
Benzo(b)fluoranthene	ND	ug/L	0.10	1	01/21/17 12:15	01/30/17 23:05	205-99-2	
Benzo(g,h,i)perylene	ND	ug/L	0.10	1	01/21/17 12:15	01/30/17 23:05	191-24-2	
Benzo(k)fluoranthene	ND	ug/L	0.10	1	01/21/17 12:15	01/30/17 23:05	207-08-9	
Chrysene	ND	ug/L	0.10	1	01/21/17 12:15	01/30/17 23:05	218-01-9	
Dibenz(a,h)anthracene	ND	ug/L	0.10	1	01/21/17 12:15	01/30/17 23:05	53-70-3	
Fluoranthene	ND	ug/L	0.10	1	01/21/17 12:15	01/30/17 23:05	206-44-0	
Fluorene	ND	ug/L	0.10	1	01/21/17 12:15	01/30/17 23:05	86-73-7	
Indeno(1,2,3-cd)pyrene	ND	ug/L	0.10	1	01/21/17 12:15	01/30/17 23:05	193-39-5	
2-Methylnaphthalene	ND	ug/L	0.10	1	01/21/17 12:15	01/30/17 23:05	91-57-6	
Naphthalene	ND	ug/L	0.10	1	01/21/17 12:15	01/30/17 23:05	91-20-3	
Phenanthrene	ND	ug/L	0.10	1	01/21/17 12:15	01/30/17 23:05	85-01-8	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS



Project: PUMA TERMINAL CW SAMPLING
Pace Project No.: 2048890

Sample: MW-111A	Lab ID: 2048890005	Collected: 01/17/17 12:36	Received: 01/18/17 12:46	Matrix: Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	Lot No.	Qual

8270 MSSV PAH by SIM SEP Analytical Method: EPA 8270 by SIM Preparation Method: EPA 3510

Pyrene	ND	ug/L	0.10	1	01/21/17 12:15	01/30/17 23:05	129-00-0	
Surrogates								
2-Fluorobiphenyl (S)	121	%	25-150	1	01/21/17 12:15	01/30/17 23:05	321-60-8	
Terphenyl-d14 (S)	109	%	25-150	1	01/21/17 12:15	01/30/17 23:05	1718-51-0	

8260 MSV Low Level Analytical Method: EPA 5030B/8260

Acetone	ND	ug/L	4.0	1		01/19/17 15:31	67-64-1	
Benzene	ND	ug/L	0.50	1		01/19/17 15:31	71-43-2	
Bromodichloromethane	ND	ug/L	0.50	1		01/19/17 15:31	75-27-4	
Bromoform	ND	ug/L	0.50	1		01/19/17 15:31	75-25-2	
Bromomethane	ND	ug/L	0.50	1		01/19/17 15:31	74-83-9	
2-Butanone (MEK)	ND	ug/L	2.0	1		01/19/17 15:31	78-93-3	
Carbon disulfide	ND	ug/L	1.0	1		01/19/17 15:31	75-15-0	
Carbon tetrachloride	ND	ug/L	0.50	1		01/19/17 15:31	56-23-5	
Chlorobenzene	ND	ug/L	0.50	1		01/19/17 15:31	108-90-7	
Chloroethane	ND	ug/L	0.50	1		01/19/17 15:31	75-00-3	
Chloroform	ND	ug/L	0.50	1		01/19/17 15:31	67-66-3	
Chloromethane	ND	ug/L	0.50	1		01/19/17 15:31	74-87-3	
1,2-Dibromo-3-chloropropane	ND	ug/L	0.20	1		01/19/17 15:31	96-12-8	
Dibromochloromethane	ND	ug/L	0.50	1		01/19/17 15:31	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	1		01/19/17 15:31	106-93-4	
Dichlorodifluoromethane	ND	ug/L	1.0	1		01/19/17 15:31	75-71-8	
1,1-Dichloroethane	ND	ug/L	0.50	1		01/19/17 15:31	75-34-3	
1,2-Dichloroethane	ND	ug/L	0.50	1		01/19/17 15:31	107-06-2	
1,1-Dichloroethene	ND	ug/L	0.50	1		01/19/17 15:31	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	1		01/19/17 15:31	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	0.50	1		01/19/17 15:31	156-60-5	
1,2-Dichloropropane	ND	ug/L	0.50	1		01/19/17 15:31	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	0.50	1		01/19/17 15:31	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	0.50	1		01/19/17 15:31	10061-02-6	
Ethylbenzene	ND	ug/L	0.50	1		01/19/17 15:31	100-41-4	
2-Hexanone	ND	ug/L	1.0	1		01/19/17 15:31	591-78-6	
Isopropylbenzene (Cumene)	ND	ug/L	1.0	1		01/19/17 15:31	98-82-8	
Methyl acetate	ND	ug/L	2.0	1		01/19/17 15:31	79-20-9	
Methylene Chloride	ND	ug/L	0.50	1		01/19/17 15:31	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	1.0	1		01/19/17 15:31	108-10-1	
Methyl-tert-butyl ether	ND	ug/L	0.50	1		01/19/17 15:31	1634-04-4	
Styrene	ND	ug/L	1.0	1		01/19/17 15:31	100-42-5	
1,1,2,2-Tetrachloroethane	ND	ug/L	0.50	1		01/19/17 15:31	79-34-5	
Tetrachloroethene	ND	ug/L	0.50	1		01/19/17 15:31	127-18-4	
Toluene	ND	ug/L	0.50	1		01/19/17 15:31	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	0.50	1		01/19/17 15:31	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	0.50	1		01/19/17 15:31	79-00-5	
Trichloroethene	ND	ug/L	0.50	1		01/19/17 15:31	79-01-6	
Trichlorofluoromethane	ND	ug/L	0.50	1		01/19/17 15:31	75-69-4	
Vinyl chloride	ND	ug/L	0.50	1		01/19/17 15:31	75-01-4	
m&p-Xylene	ND	ug/L	2.0	1		01/19/17 15:31	179601-23-1	

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ANALYTICAL RESULTS

Project: PUMA TERMINAL CW SAMPLING
Pace Project No.: 2048890



Sample: MW-111A	Lab ID: 2048890005	Collected: 01/17/17 12:36	Received: 01/18/17 12:46	Matrix: Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV Low Level Analytical Method: EPA 5030B/8260								
o-Xylene	ND	ug/L	1.0	1		01/19/17 15:31	95-47-6	
Surrogates								
Dibromofluoromethane (S)	96	%	72-126	1		01/19/17 15:31	1868-53-7	
4-Bromofluorobenzene (S)	100	%	68-124	1		01/19/17 15:31	460-00-4	
Toluene-d8 (S)	105	%	79-119	1		01/19/17 15:31	2037-26-5	

Sample: MW-114A	Lab ID: 2048890006	Collected: 01/17/17 16:21	Received: 01/18/17 14:45	Matrix: Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8015M DRO/ORO Organics Analytical Method: EPA 8015B Modified Preparation Method: EPA 3535								
Diesel Range Organic (C10-C28)	ND	mg/L	0.50	1	01/19/17 13:07	01/29/17 21:00		
Oil Range Organics (>C28-C40)	ND	mg/L	1.0	1	01/19/17 13:07	01/29/17 21:00		
Surrogates								
n-Pentacosane (S)	17	%	16-137	1	01/19/17 13:07	01/29/17 21:00	629-99-2	
o-Terphenyl (S)	50	%	10-121	1	01/19/17 13:07	01/29/17 21:00	84-15-1	
8021 GCV BTEX, MTBE, GRO Analytical Method: EPA 8015/8021								
Gasoline Range Organics	ND	ug/L	50.0	1		01/20/17 07:51		
Surrogates								
4-Bromofluorobenzene (S)	92	%	44-148	1		01/20/17 07:51	460-00-4	
6020 MET ICPMS Analytical Method: EPA 6020 Preparation Method: EPA 3010								
Arsenic	0.0051	mg/L	0.0010	1	01/24/17 08:30	02/12/17 16:21	7440-38-2	
Chromium	0.024	mg/L	0.0010	1	01/24/17 08:30	02/12/17 16:21	7440-47-3	
Lead	0.012	mg/L	0.0010	1	01/24/17 08:30	02/12/17 16:21	7439-92-1	
Vanadium	0.041	mg/L	0.0050	1	01/24/17 08:30	02/12/17 16:21	7440-62-2	
6020 MET ICPMS, Dissolved (LF) Analytical Method: EPA 6020 Preparation Method: EPA 3005A								
Arsenic, Dissolved	ND	ug/L	1.0	1	01/24/17 09:53	02/12/17 19:26	7440-38-2	
Chromium, Dissolved	ND	ug/L	1.0	1	01/24/17 09:53	02/12/17 19:26	7440-47-3	
Lead, Dissolved	ND	ug/L	1.0	1	01/24/17 09:53	02/12/17 19:26	7439-92-1	
Vanadium, Dissolved	ND	ug/L	5.0	1	01/24/17 09:53	02/12/17 19:26	7440-62-2	
7470 Mercury Analytical Method: EPA 7470 Preparation Method: EPA 7470								
Mercury	ND	ug/L	0.20	1	01/24/17 08:59	01/24/17 18:34	7439-97-6	
7470 Mercury, Dissolved (LF) Analytical Method: EPA 7470 Preparation Method: EPA 7470								
Mercury, Dissolved	ND	ug/L	0.20	1	01/24/17 09:49	01/24/17 18:59	7439-97-6	
8270 MSSV PAH by SIM SEP Analytical Method: EPA 8270 by SIM Preparation Method: EPA 3510								
Acenaphthene	ND	ug/L	0.10	1	01/21/17 12:15	01/30/17 23:25	83-32-9	
Acenaphthylene	ND	ug/L	0.10	1	01/21/17 12:15	01/30/17 23:25	208-96-8	
Anthracene	ND	ug/L	0.10	1	01/21/17 12:15	01/30/17 23:25	120-12-7	
Benzo(a)anthracene	ND	ug/L	0.10	1	01/21/17 12:15	01/30/17 23:25	56-55-3	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS



Project: PUMA TERMINAL CW SAMPLING
Pace Project No.: 2048890

Sample: MW-114A	Lab ID: 2048890006	Collected: 01/17/17 16:21	Received: 01/18/17 12:29	Matrix: Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	No.	Qual

8270 MSSV PAH by SIM SEP

Analytical Method: EPA 8270 by SIM Preparation Method: EPA 3510

Benzo(a)pyrene	ND	ug/L	0.10	1	01/21/17 12:15	01/30/17 23:25	50-32-8	
Benzo(b)fluoranthene	ND	ug/L	0.10	1	01/21/17 12:15	01/30/17 23:25	205-99-2	
Benzo(g,h,i)perylene	ND	ug/L	0.10	1	01/21/17 12:15	01/30/17 23:25	191-24-2	
Benzo(k)fluoranthene	ND	ug/L	0.10	1	01/21/17 12:15	01/30/17 23:25	207-08-9	
Chrysene	ND	ug/L	0.10	1	01/21/17 12:15	01/30/17 23:25	218-01-9	
Dibenz(a,h)anthracene	ND	ug/L	0.10	1	01/21/17 12:15	01/30/17 23:25	53-70-3	
Fluoranthene	ND	ug/L	0.10	1	01/21/17 12:15	01/30/17 23:25	206-44-0	
Fluorene	ND	ug/L	0.10	1	01/21/17 12:15	01/30/17 23:25	86-73-7	
Indeno(1,2,3-cd)pyrene	ND	ug/L	0.10	1	01/21/17 12:15	01/30/17 23:25	193-39-5	
2-Methylnaphthalene	ND	ug/L	0.10	1	01/21/17 12:15	01/30/17 23:25	91-57-6	
Naphthalene	ND	ug/L	0.10	1	01/21/17 12:15	01/30/17 23:25	91-20-3	
Phenanthrene	ND	ug/L	0.10	1	01/21/17 12:15	01/30/17 23:25	85-01-8	
Pyrene	ND	ug/L	0.10	1	01/21/17 12:15	01/30/17 23:25	129-00-0	
Surrogates								
2-Fluorobiphenyl (S)	106	%	25-150	1	01/21/17 12:15	01/30/17 23:25	321-60-8	
Terphenyl-d14 (S)	107	%	25-150	1	01/21/17 12:15	01/30/17 23:25	1718-51-0	

8260 MSV Low Level

Analytical Method: EPA 5030B/8260

Acetone	ND	ug/L	4.0	1		01/19/17 15:49	67-64-1	C9
Benzene	ND	ug/L	0.50	1		01/19/17 15:49	71-43-2	
Bromodichloromethane	ND	ug/L	0.50	1		01/19/17 15:49	75-27-4	
Bromoform	ND	ug/L	0.50	1		01/19/17 15:49	75-25-2	
Bromomethane	ND	ug/L	0.50	1		01/19/17 15:49	74-83-9	
2-Butanone (MEK)	ND	ug/L	2.0	1		01/19/17 15:49	78-93-3	
Carbon disulfide	ND	ug/L	1.0	1		01/19/17 15:49	75-15-0	
Carbon tetrachloride	ND	ug/L	0.50	1		01/19/17 15:49	56-23-5	
Chlorobenzene	ND	ug/L	0.50	1		01/19/17 15:49	108-90-7	
Chloroethane	ND	ug/L	0.50	1		01/19/17 15:49	75-00-3	
Chloroform	ND	ug/L	0.50	1		01/19/17 15:49	67-66-3	
Chloromethane	ND	ug/L	0.50	1		01/19/17 15:49	74-87-3	
1,2-Dibromo-3-chloropropane	ND	ug/L	0.20	1		01/19/17 15:49	96-12-8	
Dibromochloromethane	ND	ug/L	0.50	1		01/19/17 15:49	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	1		01/19/17 15:49	106-93-4	
Dichlorodifluoromethane	ND	ug/L	1.0	1		01/19/17 15:49	75-71-8	
1,1-Dichloroethane	ND	ug/L	0.50	1		01/19/17 15:49	75-34-3	
1,2-Dichloroethane	ND	ug/L	0.50	1		01/19/17 15:49	107-06-2	
1,1-Dichloroethene	ND	ug/L	0.50	1		01/19/17 15:49	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	1		01/19/17 15:49	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	0.50	1		01/19/17 15:49	156-60-5	
1,2-Dichloropropane	ND	ug/L	0.50	1		01/19/17 15:49	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	0.50	1		01/19/17 15:49	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	0.50	1		01/19/17 15:49	10061-02-6	
Ethylbenzene	ND	ug/L	0.50	1		01/19/17 15:49	100-41-4	
2-Hexanone	ND	ug/L	1.0	1		01/19/17 15:49	591-78-6	
Isopropylbenzene (Cumene)	ND	ug/L	1.0	1		01/19/17 15:49	98-82-8	
Methyl acetate	ND	ug/L	2.0	1		01/19/17 15:49	79-20-9	
Methylene Chloride	ND	ug/L	0.50	1		01/19/17 15:49	75-09-2	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS



Project: PUMA TERMINAL CW SAMPLING
Pace Project No.: 2048890

Sample: MW-114A	Lab ID: 2048890006	Collected: 01/17/17 16:21	Received: 01/18/17 14:45	Matrix: Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV Low Level								
Analytical Method: EPA 5030B/8260								
4-Methyl-2-pentanone (MIBK)	ND	ug/L	1.0	1	01/19/17 15:49	108-10-1		
Methyl-tert-butyl ether	ND	ug/L	0.50	1	01/19/17 15:49	1634-04-4		
Styrene	ND	ug/L	1.0	1	01/19/17 15:49	100-42-5		
1,1,2,2-Tetrachloroethane	ND	ug/L	0.50	1	01/19/17 15:49	79-34-5		
Tetrachloroethene	ND	ug/L	0.50	1	01/19/17 15:49	127-18-4		
Toluene	ND	ug/L	0.50	1	01/19/17 15:49	108-88-3		
1,1,1-Trichloroethane	ND	ug/L	0.50	1	01/19/17 15:49	71-55-6		
1,1,2-Trichloroethane	ND	ug/L	0.50	1	01/19/17 15:49	79-00-5		
Trichloroethene	ND	ug/L	0.50	1	01/19/17 15:49	79-01-6		
Trichlorofluoromethane	ND	ug/L	0.50	1	01/19/17 15:49	75-69-4		
Vinyl chloride	ND	ug/L	0.50	1	01/19/17 15:49	75-01-4		
m&p-Xylene	ND	ug/L	2.0	1	01/19/17 15:49	179601-23-1		
o-Xylene	ND	ug/L	1.0	1	01/19/17 15:49	95-47-6		
Surrogates								
Dibromofluoromethane (S)	96	%	72-126	1	01/19/17 15:49	1868-53-7		
4-Bromofluorobenzene (S)	98	%	68-124	1	01/19/17 15:49	460-00-4		
Toluene-d8 (S)	106	%	79-119	1	01/19/17 15:49	2037-26-5		

Sample: DUP006	Lab ID: 2048890007	Collected: 01/17/17 00:00	Received: 01/18/17 14:45	Matrix: Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8015M DRO/ORO Organics								
Analytical Method: EPA 8015B Modified Preparation Method: EPA 3535								
Diesel Range Organic (C10-C28)	ND	mg/L	0.50	1	01/19/17 13:07	01/29/17 21:31		
Oil Range Organics (>C28-C40)	ND	mg/L	1.0	1	01/19/17 13:07	01/29/17 21:31		
Surrogates								
n-Pentacosane (S)	51	%	16-137	1	01/19/17 13:07	01/29/17 21:31	629-99-2	
o-Terphenyl (S)	51	%	10-121	1	01/19/17 13:07	01/29/17 21:31	84-15-1	
8021 GCV BTEX, MTBE, GRO								
Analytical Method: EPA 8015/8021								
Gasoline Range Organics	ND	ug/L	50.0	1		01/20/17 11:04		
Surrogates								
4-Bromofluorobenzene (S)	93	%	44-148	1		01/20/17 11:04	460-00-4	
6020 MET ICPMS								
Analytical Method: EPA 6020 Preparation Method: EPA 3010								
Arsenic	ND	mg/L	0.0010	1	01/24/17 08:30	02/12/17 16:25	7440-38-2	
Chromium	0.049	mg/L	0.0010	1	01/24/17 08:30	02/12/17 16:25	7440-47-3	
Lead	ND	mg/L	0.0010	1	01/24/17 08:30	02/12/17 16:25	7439-92-1	
Vanadium	ND	mg/L	0.0050	1	01/24/17 08:30	02/12/17 16:25	7440-62-2	
6020 MET ICPMS, Dissolved (LF)								
Analytical Method: EPA 6020 Preparation Method: EPA 3005A								
Arsenic, Dissolved	ND	ug/L	1.0	1	01/24/17 09:53	02/12/17 19:29	7440-38-2	
Chromium, Dissolved	49.1	ug/L	1.0	1	01/24/17 09:53	02/12/17 19:29	7440-47-3	
Lead, Dissolved	ND	ug/L	1.0	1	01/24/17 09:53	02/12/17 19:29	7439-92-1	
Vanadium, Dissolved	ND	ug/L	5.0	1	01/24/17 09:53	02/12/17 19:29	7440-62-2	

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ANALYTICAL RESULTS



Project: PUMA TERMINAL CW SAMPLING
Pace Project No.: 2048890

Sample: DUP006 Lab ID: 2048890007 Collected: 01/17/17 00:00 Received: 01/18/17 14:45 Matrix: Water
Parameters Results Units Report Limit DF Prepared

7470 Mercury Analytical Method: EPA 7470 Preparation Method: EPA 7470
Mercury 1.8 ug/L 0.20 1 01/24/17 08:59 01/24/17 18:37 7439-97-6

7470 Mercury, Dissolved (LF) Analytical Method: EPA 7470 Preparation Method: EPA 7470
Mercury, Dissolved 0.26 ug/L 0.20 1 01/24/17 09:49 01/24/17 19:01 7439-97-6

8270 MSSV PAH by SIM SEP Analytical Method: EPA 8270 by SIM Preparation Method: EPA 3510

Acenaphthene	ND	ug/L	0.10	1	01/21/17 12:15	01/30/17 23:45	83-32-9
Acenaphthylene	ND	ug/L	0.10	1	01/21/17 12:15	01/30/17 23:45	208-96-8
Anthracene	ND	ug/L	0.10	1	01/21/17 12:15	01/30/17 23:45	120-12-7
Benzo(a)anthracene	ND	ug/L	0.10	1	01/21/17 12:15	01/30/17 23:45	56-55-3
Benzo(a)pyrene	ND	ug/L	0.10	1	01/21/17 12:15	01/30/17 23:45	50-32-8
Benzo(b)fluoranthene	ND	ug/L	0.10	1	01/21/17 12:15	01/30/17 23:45	205-99-2
Benzo(g,h,i)perylene	ND	ug/L	0.10	1	01/21/17 12:15	01/30/17 23:45	191-24-2
Benzo(k)fluoranthene	ND	ug/L	0.10	1	01/21/17 12:15	01/30/17 23:45	207-08-9
Chrysene	ND	ug/L	0.10	1	01/21/17 12:15	01/30/17 23:45	218-01-9
Dibenz(a,h)anthracene	ND	ug/L	0.10	1	01/21/17 12:15	01/30/17 23:45	53-70-3
Fluoranthene	ND	ug/L	0.10	1	01/21/17 12:15	01/30/17 23:45	206-44-0
Fluorene	ND	ug/L	0.10	1	01/21/17 12:15	01/30/17 23:45	86-73-7
Indeno(1,2,3-cd)pyrene	ND	ug/L	0.10	1	01/21/17 12:15	01/30/17 23:45	193-39-5
2-Methylnaphthalene	ND	ug/L	0.10	1	01/21/17 12:15	01/30/17 23:45	91-57-6
Naphthalene	ND	ug/L	0.10	1	01/21/17 12:15	01/30/17 23:45	91-20-3
Phenanthrene	ND	ug/L	0.10	1	01/21/17 12:15	01/30/17 23:45	85-01-8
Pyrene	ND	ug/L	0.10	1	01/21/17 12:15	01/30/17 23:45	129-00-0
Surrogates							
2-Fluorobiphenyl (S)	111	%	25-150	1	01/21/17 12:15	01/30/17 23:45	321-60-8
Terphenyl-d14 (S)	116	%	25-150	1	01/21/17 12:15	01/30/17 23:45	1718-51-0

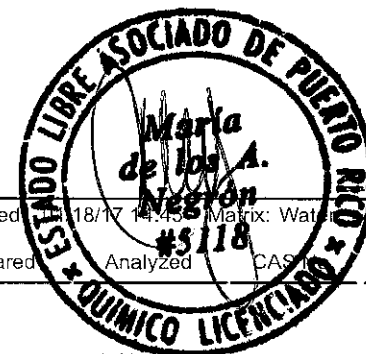
8260 MSV Low Level Analytical Method: EPA 5030B/8260

Acetone	7.4	ug/L	4.0	1		01/19/17 16:07	67-64-1	C9
Benzene	ND	ug/L	0.50	1		01/19/17 16:07	71-43-2	
Bromodichloromethane	ND	ug/L	0.50	1		01/19/17 16:07	75-27-4	
Bromoform	ND	ug/L	0.50	1		01/19/17 16:07	75-25-2	
Bromomethane	ND	ug/L	0.50	1		01/19/17 16:07	74-83-9	
2-Butanone (MEK)	ND	ug/L	2.0	1		01/19/17 16:07	78-93-3	
Carbon disulfide	ND	ug/L	1.0	1		01/19/17 16:07	75-15-0	
Carbon tetrachloride	ND	ug/L	0.50	1		01/19/17 16:07	56-23-5	
Chlorobenzene	ND	ug/L	0.50	1		01/19/17 16:07	108-90-7	
Chloroethane	ND	ug/L	0.50	1		01/19/17 16:07	75-00-3	
Chloroform	ND	ug/L	0.50	1		01/19/17 16:07	67-66-3	
Chloromethane	ND	ug/L	0.50	1		01/19/17 16:07	74-87-3	
1,2-Dibromo-3-chloropropane	ND	ug/L	0.20	1		01/19/17 16:07	96-12-8	
Dibromochloromethane	ND	ug/L	0.50	1		01/19/17 16:07	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	1		01/19/17 16:07	106-93-4	
Dichlorodifluoromethane	ND	ug/L	1.0	1		01/19/17 16:07	75-71-8	
1,1-Dichloroethane	ND	ug/L	0.50	1		01/19/17 16:07	75-34-3	
1,2-Dichloroethane	ND	ug/L	0.50	1		01/19/17 16:07	107-06-2	

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ANALYTICAL RESULTS



Project: PUMA TERMINAL CW SAMPLING

Pace Project No.: 2048890

Sample: DUP006	Lab ID: 2048890007	Collected: 01/17/17 00:00	Received: 01/18/17 14:45	Matrix: Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV Low Level		Analytical Method: EPA 5030B/8260						
1,1-Dichloroethene	ND	ug/L	0.50	1	01/19/17 16:07	01/19/17 16:07	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	1	01/19/17 16:07	01/19/17 16:07	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	0.50	1	01/19/17 16:07	01/19/17 16:07	156-60-5	
1,2-Dichloropropane	ND	ug/L	0.50	1	01/19/17 16:07	01/19/17 16:07	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	0.50	1	01/19/17 16:07	01/19/17 16:07	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	0.50	1	01/19/17 16:07	01/19/17 16:07	10061-02-6	
Ethylbenzene	ND	ug/L	0.50	1	01/19/17 16:07	01/19/17 16:07	100-41-4	
2-Hexanone	ND	ug/L	1.0	1	01/19/17 16:07	01/19/17 16:07	591-78-6	
Isopropylbenzene (Cumene)	ND	ug/L	1.0	1	01/19/17 16:07	01/19/17 16:07	98-82-8	
Methyl acetate	ND	ug/L	2.0	1	01/19/17 16:07	01/19/17 16:07	79-20-9	
Methylene Chloride	ND	ug/L	0.50	1	01/19/17 16:07	01/19/17 16:07	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	1.0	1	01/19/17 16:07	01/19/17 16:07	108-10-1	
Methyl-tert-butyl ether	4.7	ug/L	0.50	1	01/19/17 16:07	01/19/17 16:07	1634-04-4	
Styrene	ND	ug/L	1.0	1	01/19/17 16:07	01/19/17 16:07	100-42-5	
1,1,2,2-Tetrachloroethane	ND	ug/L	0.50	1	01/19/17 16:07	01/19/17 16:07	79-34-5	
Tetrachloroethene	ND	ug/L	0.50	1	01/19/17 16:07	01/19/17 16:07	127-18-4	
Toluene	ND	ug/L	0.50	1	01/19/17 16:07	01/19/17 16:07	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	0.50	1	01/19/17 16:07	01/19/17 16:07	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	0.50	1	01/19/17 16:07	01/19/17 16:07	79-00-5	
Trichloroethene	0.84	ug/L	0.50	1	01/19/17 16:07	01/19/17 16:07	79-01-6	
Trichlorofluoromethane	ND	ug/L	0.50	1	01/19/17 16:07	01/19/17 16:07	75-69-4	
Vinyl chloride	ND	ug/L	0.50	1	01/19/17 16:07	01/19/17 16:07	75-01-4	
m&p-Xylene	ND	ug/L	2.0	1	01/19/17 16:07	01/19/17 16:07	179601-23-1	
o-Xylene	ND	ug/L	1.0	1	01/19/17 16:07	01/19/17 16:07	95-47-6	
Surrogates								
Dibromofluoromethane (S)	94	%	72-126	1	01/19/17 16:07	01/19/17 16:07	1868-53-7	
4-Bromofluorobenzene (S)	98	%	68-124	1	01/19/17 16:07	01/19/17 16:07	460-00-4	
Toluene-d8 (S)	106	%	79-119	1	01/19/17 16:07	01/19/17 16:07	2037-26-5	

Sample: MW-75B2	Lab ID: 2048890008	Collected: 01/17/17 14:50	Received: 01/18/17 14:45	Matrix: Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8015M DRO/ORO Organics		Analytical Method: EPA 8015B Modified Preparation Method: EPA 3535						
Diesel Range Organic (C10-C28)	ND	mg/L	0.50	1	01/19/17 13:07	01/29/17 22:02		
Oil Range Organics (>C28-C40)	ND	mg/L	1.0	1	01/19/17 13:07	01/29/17 22:02		
Surrogates								
n-Pentacosane (S)	51	%	16-137	1	01/19/17 13:07	01/29/17 22:02	629-99-2	
o-Terphenyl (S)	56	%	10-121	1	01/19/17 13:07	01/29/17 22:02	84-15-1	
8021 GCV BTEX, MTBE, GRO		Analytical Method: EPA 8015/8021						
Gasoline Range Organics	ND	ug/L	50.0	1		01/20/17 11:31		
Surrogates								
4-Bromofluorobenzene (S)	92	%	44-148	1		01/20/17 11:31	460-00-4	

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ANALYTICAL RESULTS

Project: PUMA TERMINAL CW SAMPLING
Pace Project No.: 2048890

Sample:	Lab ID:	Collected:	Received:	Matrix:			
MW-75B2	2048890008	01/17/17 14:50	01/18/17 14:45	Water			
Parameters	Results	Units	Report Limit	DF	Prepared	CAS No.	Qual
6020 MET ICPMS Analytical Method: EPA 6020 Preparation Method: EPA 3010							
Arsenic	ND	mg/L	0.0010	1	01/24/17 08:30 02/12/17 15:41	7440-38-2	R1
Chromium	0.046	mg/L	0.0010	1	01/24/17 08:30 02/12/17 15:41	7440-47-3	M1,R1
Lead	ND	mg/L	0.0010	1	01/24/17 08:30 02/12/17 15:41	7439-92-1	R1
Vanadium	ND	mg/L	0.0050	1	01/24/17 08:30 02/12/17 15:41	7440-62-2	M1,R1
6020 MET ICPMS, Dissolved (LF) Analytical Method: EPA 6020 Preparation Method: EPA 3005A							
Arsenic, Dissolved	ND	ug/L	1.0	1	01/24/17 09:53 02/12/17 18:46	7440-38-2	
Chromium, Dissolved	47.9	ug/L	1.0	1	01/24/17 09:53 02/12/17 18:46	7440-47-3	
Lead, Dissolved	ND	ug/L	1.0	1	01/24/17 09:53 02/12/17 18:46	7439-92-1	
Vanadium, Dissolved	ND	ug/L	5.0	1	01/24/17 09:53 02/12/17 18:46	7440-62-2	M1
7470 Mercury Analytical Method: EPA 7470 Preparation Method: EPA 7470							
Mercury	1.9	ug/L	0.20	1	01/24/17 08:59 01/24/17 18:14	7439-97-6	
7470 Mercury, Dissolved (LF) Analytical Method: EPA 7470 Preparation Method: EPA 7470							
Mercury, Dissolved	ND	ug/L	0.20	1	01/24/17 09:49 01/24/17 19:03	7439-97-6	
8270 MSSV PAH by SIM SEP Analytical Method: EPA 8270 by SIM Preparation Method: EPA 3510							
Acenaphthene	ND	ug/L	0.10	1	01/23/17 11:36 01/30/17 19:06	83-32-9	
Acenaphthylene	ND	ug/L	0.10	1	01/23/17 11:36 01/30/17 19:06	208-96-8	
Anthracene	ND	ug/L	0.10	1	01/23/17 11:36 01/30/17 19:06	120-12-7	M1
Benzo(a)anthracene	ND	ug/L	0.10	1	01/23/17 11:36 01/30/17 19:06	56-55-3	
Benzo(a)pyrene	ND	ug/L	0.10	1	01/23/17 11:36 01/30/17 19:06	50-32-8	
Benzo(b)fluoranthene	ND	ug/L	0.10	1	01/23/17 11:36 01/30/17 19:06	205-99-2	
Benzo(g,h,i)perylene	ND	ug/L	0.10	1	01/23/17 11:36 01/30/17 19:06	191-24-2	
Benzo(k)fluoranthene	ND	ug/L	0.10	1	01/23/17 11:36 01/30/17 19:06	207-08-9	
Chrysene	ND	ug/L	0.10	1	01/23/17 11:36 01/30/17 19:06	218-01-9	
Dibenz(a,h)anthracene	ND	ug/L	0.10	1	01/23/17 11:36 01/30/17 19:06	53-70-3	
Fluoranthene	ND	ug/L	0.10	1	01/23/17 11:36 01/30/17 19:06	206-44-0	
Fluorene	ND	ug/L	0.10	1	01/23/17 11:36 01/30/17 19:06	86-73-7	
Indeno(1,2,3-cd)pyrene	ND	ug/L	0.10	1	01/23/17 11:36 01/30/17 19:06	193-39-5	
2-Methylnaphthalene	ND	ug/L	0.10	1	01/23/17 11:36 01/30/17 19:06	91-57-6	
Naphthalene	ND	ug/L	0.10	1	01/23/17 11:36 01/30/17 19:06	91-20-3	
Phenanthrene	ND	ug/L	0.10	1	01/23/17 11:36 01/30/17 19:06	85-01-8	
Pyrene	ND	ug/L	0.10	1	01/23/17 11:36 01/30/17 19:06	129-00-0	
Surrogates							
2-Fluorobiphenyl (S)	56	%	25-150	1	01/23/17 11:36 01/30/17 19:06	321-60-8	
Terphenyl-d14 (S)	62	%	25-150	1	01/23/17 11:36 01/30/17 19:06	1718-51-0	
8260 MSV Low Level Analytical Method: EPA 5030B/8260							
Acetone	ND	ug/L	4.0	1	01/19/17 14:00	67-64-1	C9
Benzene	ND	ug/L	0.50	1	01/19/17 14:00	71-43-2	
Bromodichloromethane	ND	ug/L	0.50	1	01/19/17 14:00	75-27-4	
Bromoform	ND	ug/L	0.50	1	01/19/17 14:00	75-25-2	
Bromomethane	ND	ug/L	0.50	1	01/19/17 14:00	74-83-9	
2-Butanone (MEK)	ND	ug/L	2.0	1	01/19/17 14:00	78-93-3	

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ANALYTICAL RESULTS



Project: PUMA TERMINAL CW SAMPLING
Sample Project No.: 2048890

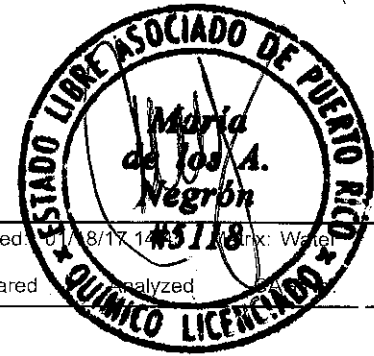
Sample:	Lab ID:	Collected:	Received:	Matrix:			
MW-75B2	2048890008	01/17/17 14:50	01/17/17 14:45	Water			
Parameters	Results	Units	Report Limit	DF	Analysis Date	CAS No.	Qual
8260 MSV Low Level							
Analytical Method: EPA 5030B/8260							
Carbon disulfide	ND	ug/L	1.0	1	01/19/17 14:00	75-15-0	
Carbon tetrachloride	ND	ug/L	0.50	1	01/19/17 14:00	56-23-5	
Chlorobenzene	ND	ug/L	0.50	1	01/19/17 14:00	108-90-7	
Chloroethane	ND	ug/L	0.50	1	01/19/17 14:00	75-00-3	
Chloroform	ND	ug/L	0.50	1	01/19/17 14:00	67-66-3	
Chloromethane	ND	ug/L	0.50	1	01/19/17 14:00	74-87-3	
1,2-Dibromo-3-chloropropane	ND	ug/L	0.20	1	01/19/17 14:00	96-12-8	
Dibromochloromethane	ND	ug/L	0.50	1	01/19/17 14:00	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	1	01/19/17 14:00	106-93-4	
Dichlorodifluoromethane	ND	ug/L	1.0	1	01/19/17 14:00	75-71-8	
1,1-Dichloroethane	ND	ug/L	0.50	1	01/19/17 14:00	75-34-3	
1,2-Dichloroethane	ND	ug/L	0.50	1	01/19/17 14:00	107-06-2	
1,1-Dichloroethene	ND	ug/L	0.50	1	01/19/17 14:00	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	1	01/19/17 14:00	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	0.50	1	01/19/17 14:00	156-60-5	
1,2-Dichloropropane	ND	ug/L	0.50	1	01/19/17 14:00	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	0.50	1	01/19/17 14:00	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	0.50	1	01/19/17 14:00	10061-02-6	
Ethylbenzene	ND	ug/L	0.50	1	01/19/17 14:00	100-41-4	
2-Hexanone	ND	ug/L	1.0	1	01/19/17 14:00	591-78-6	
Isopropylbenzene (Cumene)	ND	ug/L	1.0	1	01/19/17 14:00	98-82-8	
Methyl acetate	ND	ug/L	2.0	1	01/19/17 14:00	79-20-9	
Methylene Chloride	ND	ug/L	0.50	1	01/19/17 14:00	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	1.0	1	01/19/17 14:00	108-10-1	
Methyl-tert-butyl ether	4.7	ug/L	0.50	1	01/19/17 14:00	1634-04-4	
Styrene	ND	ug/L	1.0	1	01/19/17 14:00	100-42-5	M1
1,1,2,2-Tetrachloroethane	ND	ug/L	0.50	1	01/19/17 14:00	79-34-5	
Tetrachloroethene	ND	ug/L	0.50	1	01/19/17 14:00	127-18-4	
Toluene	ND	ug/L	0.50	1	01/19/17 14:00	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	0.50	1	01/19/17 14:00	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	0.50	1	01/19/17 14:00	79-00-5	
Trichloroethene	0.81	ug/L	0.50	1	01/19/17 14:00	79-01-6	
Trichlorofluoromethane	ND	ug/L	0.50	1	01/19/17 14:00	75-69-4	
Vinyl chloride	ND	ug/L	0.50	1	01/19/17 14:00	75-01-4	
m&p-Xylene	ND	ug/L	2.0	1	01/19/17 14:00	179601-23-1	
o-Xylene	ND	ug/L	1.0	1	01/19/17 14:00	95-47-6	
Surrogates							
Dibromofluoromethane (S)	95	%	72-126	1	01/19/17 14:00	1868-53-7	
4-Bromofluorobenzene (S)	99	%	68-124	1	01/19/17 14:00	460-00-4	
Toluene-d8 (S)	107	%	79-119	1	01/19/17 14:00	2037-26-5	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: PUMA TERMINAL CW SAMPLING
Pace Project No.: 2048890



Sample: FB-011717 Lab ID: 2048890009 Collected: 01/17/17 16:30 Received: 01/18/17 14:45 Matrix: Water
Parameters Results Units Report Limit DF Prepared Analyzed Qual

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	Qual
8021 GCV BTEX, MTBE, GRO	Analytical Method: EPA 8015/8021						
Gasoline Range Organics	ND	ug/L	50.0	1		01/20/17 13:15	
Surrogates							
4-Bromofluorobenzene (S)	92	%	44-148	1		01/20/17 13:15	460-00-4
8260 MSV Low Level	Analytical Method: EPA 5030B/8260						
Acetone	22.0	ug/L	4.0	1		01/19/17 16:25	67-64-1 C9
Benzene	ND	ug/L	0.50	1		01/19/17 16:25	71-43-2
Bromodichloromethane	ND	ug/L	0.50	1		01/19/17 16:25	75-27-4
Bromoform	ND	ug/L	0.50	1		01/19/17 16:25	75-25-2
Bromomethane	ND	ug/L	0.50	1		01/19/17 16:25	74-83-9
2-Butanone (MEK)	ND	ug/L	2.0	1		01/19/17 16:25	78-93-3
Carbon disulfide	ND	ug/L	1.0	1		01/19/17 16:25	75-15-0
Carbon tetrachloride	ND	ug/L	0.50	1		01/19/17 16:25	56-23-5
Chlorobenzene	ND	ug/L	0.50	1		01/19/17 16:25	108-90-7
Chloroethane	ND	ug/L	0.50	1		01/19/17 16:25	75-00-3
Chloroform	2.0	ug/L	0.50	1		01/19/17 16:25	67-66-3
Chloromethane	ND	ug/L	0.50	1		01/19/17 16:25	74-87-3
1,2-Dibromo-3-chloropropane	ND	ug/L	0.20	1		01/19/17 16:25	96-12-8
Dibromochloromethane	ND	ug/L	0.50	1		01/19/17 16:25	124-48-1
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	1		01/19/17 16:25	106-93-4
Dichlorodifluoromethane	ND	ug/L	1.0	1		01/19/17 16:25	75-71-8
1,1-Dichloroethane	ND	ug/L	0.50	1		01/19/17 16:25	75-34-3
1,2-Dichloroethane	ND	ug/L	0.50	1		01/19/17 16:25	107-06-2
1,1-Dichloroethene	ND	ug/L	0.50	1		01/19/17 16:25	75-35-4
cis-1,2-Dichloroethene	ND	ug/L	1.0	1		01/19/17 16:25	156-59-2
trans-1,2-Dichloroethene	ND	ug/L	0.50	1		01/19/17 16:25	156-60-5
1,2-Dichloropropane	ND	ug/L	0.50	1		01/19/17 16:25	78-87-5
cis-1,3-Dichloropropene	ND	ug/L	0.50	1		01/19/17 16:25	10061-01-5
trans-1,3-Dichloropropene	ND	ug/L	0.50	1		01/19/17 16:25	10061-02-6
Ethylbenzene	ND	ug/L	0.50	1		01/19/17 16:25	100-41-4
2-Hexanone	ND	ug/L	1.0	1		01/19/17 16:25	591-78-6
Isopropylbenzene (Cumene)	ND	ug/L	1.0	1		01/19/17 16:25	98-82-8
Methyl acetate	ND	ug/L	2.0	1		01/19/17 16:25	79-20-9
Methylene Chloride	ND	ug/L	0.50	1		01/19/17 16:25	75-09-2
4-Methyl-2-pentanone (MIBK)	ND	ug/L	1.0	1		01/19/17 16:25	108-10-1
Methyl-tert-butyl ether	ND	ug/L	0.50	1		01/19/17 16:25	1634-04-4
Styrene	ND	ug/L	1.0	1		01/19/17 16:25	100-42-5
1,1,2,2-Tetrachloroethane	ND	ug/L	0.50	1		01/19/17 16:25	79-34-5
Tetrachloroethene	ND	ug/L	0.50	1		01/19/17 16:25	127-18-4
Toluene	ND	ug/L	0.50	1		01/19/17 16:25	108-88-3
1,1,1-Trichloroethane	ND	ug/L	0.50	1		01/19/17 16:25	71-55-6
1,1,2-Trichloroethane	ND	ug/L	0.50	1		01/19/17 16:25	79-00-5
Trichloroethene	ND	ug/L	0.50	1		01/19/17 16:25	79-01-6
Trichlorofluoromethane	ND	ug/L	0.50	1		01/19/17 16:25	75-69-4
Vinyl chloride	ND	ug/L	0.50	1		01/19/17 16:25	75-01-4
m&p-Xylene	ND	ug/L	2.0	1		01/19/17 16:25	179601-23-1
o-Xylene	ND	ug/L	1.0	1		01/19/17 16:25	95-47-6

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS



Project: PUMA TERMINAL CW SAMPLING
Pace Project No.: 2048890

Sample: FB-011717 Lab ID: 2048890009 Collected: 01/17/17 16:30 Received: 01/18/17 14:45 Matrix: Water
Parameters Results Units Report Limit DF Prepared Analyzed CAS No. Qual

8260 MSV Low Level Analytical Method: EPA 5030B/8260

Surrogates

Dibromofluoromethane (S)	93	%.	72-126	1	01/19/17 16:25	1868-53-7
4-Bromofluorobenzene (S)	98	%.	68-124	1	01/19/17 16:25	460-00-4
Toluene-d8 (S)	104	%.	79-119	1	01/19/17 16:25	2037-26-5

Sample: MW-63A Lab ID: 2048890010 Collected: 01/18/17 10:33 Received: 01/18/17 14:45 Matrix: Water

Parameters Results Units Report Limit DF Prepared Analyzed CAS No. Qual

8015M DRO/ORO Organics Analytical Method: EPA 8015B Modified Preparation Method: EPA 3535

Diesel Range Organic (C10-C28)	ND	mg/L	0.50	1	01/19/17 13:07	01/29/17 23:34
Oil Range Organics (>C28-C40)	ND	mg/L	1.0	1	01/19/17 13:07	01/29/17 23:34

Surrogates

n-Pentacosane (S)	46	%.	16-137	1	01/19/17 13:07	01/29/17 23:34	629-99-2
o-Terphenyl (S)	45	%.	10-121	1	01/19/17 13:07	01/29/17 23:34	84-15-1

8021 GCV BTEX, MTBE, GRO Analytical Method: EPA 8015/8021

Gasoline Range Organics	ND	ug/L	50.0	1	01/20/17 12:49	
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Surrogates

4-Bromofluorobenzene (S)	93	%.	44-148	1	01/20/17 12:49	460-00-4
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6020 MET ICPMS Analytical Method: EPA 6020 Preparation Method: EPA 3010

Arsenic	ND	mg/L	0.0010	1	01/24/17 08:30	02/12/17 16:29	7440-38-2
Chromium	ND	mg/L	0.0010	1	01/24/17 08:30	02/12/17 16:29	7440-47-3
Lead	ND	mg/L	0.0010	1	01/24/17 08:30	02/12/17 16:29	7439-92-1
Vanadium	ND	mg/L	0.0050	1	01/24/17 08:30	02/12/17 16:29	7440-62-2

6020 MET ICPMS, Dissolved (LF) Analytical Method: EPA 6020 Preparation Method: EPA 3005A

Arsenic, Dissolved	ND	ug/L	1.0	1	01/24/17 09:53	02/12/17 19:33	7440-38-2
Chromium, Dissolved	ND	ug/L	1.0	1	01/24/17 09:53	02/12/17 19:33	7440-47-3
Lead, Dissolved	ND	ug/L	1.0	1	01/24/17 09:53	02/12/17 19:33	7439-92-1
Vanadium, Dissolved	ND	ug/L	5.0	1	01/24/17 09:53	02/12/17 19:33	7440-62-2

7470 Mercury Analytical Method: EPA 7470 Preparation Method: EPA 7470

Mercury	ND	ug/L	0.20	1	01/24/17 08:59	01/24/17 18:39	7439-97-6
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7470 Mercury, Dissolved (LF) Analytical Method: EPA 7470 Preparation Method: EPA 7470

Mercury, Dissolved	ND	ug/L	0.20	1	01/24/17 09:49	01/24/17 19:10	7439-97-6
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8270 MSSV PAH by SIM SEP Analytical Method: EPA 8270 by SIM Preparation Method: EPA 3510

Acenaphthene	ND	ug/L	0.10	1	01/23/17 11:36	01/30/17 20:06	83-32-9
Acenaphthylene	ND	ug/L	0.10	1	01/23/17 11:36	01/30/17 20:06	208-96-8
Anthracene	ND	ug/L	0.10	1	01/23/17 11:36	01/30/17 20:06	120-12-7
Benzo(a)anthracene	ND	ug/L	0.10	1	01/23/17 11:36	01/30/17 20:06	56-55-3
Benzo(a)pyrene	ND	ug/L	0.10	1	01/23/17 11:36	01/30/17 20:06	50-32-8

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS



Project: PUMA TERMINAL CW SAMPLING
Pace Project No.: 2048890

Sample: MW-63A Lab ID: 2048890010 Collected: 01/18/17 10:33 Reanalyzed: 01/18/17 14:45 Matrix: Water

8270 MSSV PAH by SIM SEP

Analytical Method: EPA 8270 by SIM Preparation Method: EPA 3510

Parameters	Results	Units	Report Limit	DF	Preparation	Analysis	CAS No.	Qual
Benzo(b)fluoranthene	ND	ug/L	0.10	1	01/23/17 11:36	01/30/17 20:06	205-99-2	
Benzo(g,h,i)perylene	ND	ug/L	0.10	1	01/23/17 11:36	01/30/17 20:06	191-24-2	
Benzo(k)fluoranthene	ND	ug/L	0.10	1	01/23/17 11:36	01/30/17 20:06	207-08-9	
Chrysene	ND	ug/L	0.10	1	01/23/17 11:36	01/30/17 20:06	218-01-9	
Dibenz(a,h)anthracene	ND	ug/L	0.10	1	01/23/17 11:36	01/30/17 20:06	53-70-3	
Fluoranthene	ND	ug/L	0.10	1	01/23/17 11:36	01/30/17 20:06	206-44-0	
Fluorene	ND	ug/L	0.10	1	01/23/17 11:36	01/30/17 20:06	86-73-7	
Indeno(1,2,3-cd)pyrene	ND	ug/L	0.10	1	01/23/17 11:36	01/30/17 20:06	193-39-5	
2-Methylnaphthalene	ND	ug/L	0.10	1	01/23/17 11:36	01/30/17 20:06	91-57-6	
Naphthalene	ND	ug/L	0.10	1	01/23/17 11:36	01/30/17 20:06	91-20-3	
Phenanthrene	ND	ug/L	0.10	1	01/23/17 11:36	01/30/17 20:06	85-01-8	
Pyrene	ND	ug/L	0.10	1	01/23/17 11:36	01/30/17 20:06	129-00-0	
Surrogates								
2-Fluorobiphenyl (S)	109	%	25-150	1	01/23/17 11:36	01/30/17 20:06	321-60-8	
Terphenyl-d14 (S)	110	%	25-150	1	01/23/17 11:36	01/30/17 20:06	1718-51-0	

8260 MSV Low Level

Analytical Method: EPA 5030B/8260

Acetone	4.9	ug/L	4.0	1		01/19/17 16:44	67-64-1	C9
Benzene	ND	ug/L	0.50	1		01/19/17 16:44	71-43-2	
Bromodichloromethane	ND	ug/L	0.50	1		01/19/17 16:44	75-27-4	
Bromoform	ND	ug/L	0.50	1		01/19/17 16:44	75-25-2	
Bromomethane	ND	ug/L	0.50	1		01/19/17 16:44	74-83-9	
2-Butanone (MEK)	ND	ug/L	2.0	1		01/19/17 16:44	78-93-3	
Carbon disulfide	ND	ug/L	1.0	1		01/19/17 16:44	75-15-0	
Carbon tetrachloride	ND	ug/L	0.50	1		01/19/17 16:44	56-23-5	
Chlorobenzene	ND	ug/L	0.50	1		01/19/17 16:44	108-90-7	
Chloroethane	ND	ug/L	0.50	1		01/19/17 16:44	75-00-3	
Chloroform	ND	ug/L	0.50	1		01/19/17 16:44	67-66-3	
Chloromethane	ND	ug/L	0.50	1		01/19/17 16:44	74-87-3	
1,2-Dibromo-3-chloropropane	ND	ug/L	0.20	1		01/19/17 16:44	96-12-8	
Dibromochloromethane	ND	ug/L	0.50	1		01/19/17 16:44	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	1		01/19/17 16:44	106-93-4	
Dichlorodifluoromethane	ND	ug/L	1.0	1		01/19/17 16:44	75-71-8	
1,1-Dichloroethane	ND	ug/L	0.50	1		01/19/17 16:44	75-34-3	
1,2-Dichloroethane	ND	ug/L	0.50	1		01/19/17 16:44	107-06-2	
1,1-Dichloroethene	ND	ug/L	0.50	1		01/19/17 16:44	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	1		01/19/17 16:44	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	0.50	1		01/19/17 16:44	156-60-5	
1,2-Dichloropropane	ND	ug/L	0.50	1		01/19/17 16:44	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	0.50	1		01/19/17 16:44	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	0.50	1		01/19/17 16:44	10061-02-6	
Ethylbenzene	ND	ug/L	0.50	1		01/19/17 16:44	100-41-4	
2-Hexanone	ND	ug/L	1.0	1		01/19/17 16:44	591-78-6	
Isopropylbenzene (Cumene)	ND	ug/L	1.0	1		01/19/17 16:44	98-82-8	
Methyl acetate	ND	ug/L	2.0	1		01/19/17 16:44	79-20-9	
Methylene Chloride	ND	ug/L	0.50	1		01/19/17 16:44	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	1.0	1		01/19/17 16:44	108-10-1	

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ANALYTICAL RESULTS

Project: PUMA TERMINAL CW SAMPLING
Pace Project No.: 2048890

Sample: MW-63A	Lab ID: 2048890010	Collected: 01/18/17 10:33	Received: 01/18/17 14:45	Matrix: Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV Low Level		Analytical Method: EPA 5030B/8260						
Methyl-tert-butyl ether	ND	ug/L	0.50	1		01/19/17 16:44	1634-04-4	
Styrene	ND	ug/L	1.0	1		01/19/17 16:44	100-42-5	
1,1,2,2-Tetrachloroethane	ND	ug/L	0.50	1		01/19/17 16:44	79-34-5	
Tetrachloroethene	ND	ug/L	0.50	1		01/19/17 16:44	127-18-4	
Toluene	ND	ug/L	0.50	1		01/19/17 16:44	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	0.50	1		01/19/17 16:44	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	0.50	1		01/19/17 16:44	79-00-5	
Trichloroethene	ND	ug/L	0.50	1		01/19/17 16:44	79-01-6	
Trichlorofluoromethane	ND	ug/L	0.50	1		01/19/17 16:44	75-69-4	
Vinyl chloride	ND	ug/L	0.50	1		01/19/17 16:44	75-01-4	
m&p-Xylene	ND	ug/L	2.0	1		01/19/17 16:44	179601-23-1	
o-Xylene	ND	ug/L	1.0	1		01/19/17 16:44	95-47-6	
Surrogates								
Dibromofluoromethane (S)	95	%.	72-126	1		01/19/17 16:44	1868-53-7	
4-Bromofluorobenzene (S)	99	%.	68-124	1		01/19/17 16:44	460-00-4	
Toluene-d8 (S)	105	%.	79-119	1		01/19/17 16:44	2037-26-5	



REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: PUMA TERMINAL CW SAMPLING
Pace Project No.: 2048890

QC Batch: 72457 Analysis Method: EPA 8015/8021
QC Batch Method: EPA 8015/8021 Analysis Description: 8021 W GCV BTEX, MTBE, GRO
Associated Lab Samples: 2048890001, 2048890002, 2048890003, 2048890004, 2048890005, 2048890006, 2048890007, 2048890008, 2048890009, 2048890010

METHOD BLANK: 303500 Matrix: Water
Associated Lab Samples: 2048890001, 2048890002, 2048890003, 2048890004, 2048890005, 2048890006, 2048890007, 2048890008, 2048890009, 2048890010

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Gasoline Range Organics	ug/L	ND	50.0	01/20/17 04:20	
4-Bromofluorobenzene (S)	%.	86	44-148	01/20/17 04:20	

LABORATORY CONTROL SAMPLE: 303501

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Gasoline Range Organics	ug/L	500	437	87	61-136	
4-Bromofluorobenzene (S)	%.			90	44-148	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 303502 303503

Parameter	Units	2048890008 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	Max RPD	Qual
Gasoline Range Organics	ug/L	ND	500	500	475	467	88	86	15-147	2	20
4-Bromofluorobenzene (S)	%.						97	97	44-148		

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

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QUALITY CONTROL DATA

Project: PUMA TERMINAL CW SAMPLING
Pace Project No.: 2048890

QC Batch: 72610 Analysis Method: EPA 7470
QC Batch Method: EPA 7470 Analysis Description: 7470 Mercury
Associated Lab Samples: 2048890002, 2048890003, 2048890004, 2048890005, 2048890006, 2048890007, 2048890008, 2048890010

METHOD BLANK: 304157 Matrix: Water
Associated Lab Samples: 2048890002, 2048890003, 2048890004, 2048890005, 2048890006, 2048890007, 2048890008, 2048890010

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Mercury	ug/L	ND	0.20	01/24/17 18:10	

LABORATORY CONTROL SAMPLE: 304158

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury	ug/L	1	1.0	103	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 304159 304160

Parameter	Units	304159		304160		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		2048890008 Result	MS Spike Conc.	MSD Spike Conc.	MS Result						
Mercury	ug/L	1.9	1	1	2.6	2.6	77	77	75-125	0	20

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: PUMA TERMINAL CW SAMPLING
Pace Project No.: 2048890

QC Batch: 72612 Analysis Method: EPA 7470
QC Batch Method: EPA 7470 Analysis Description: 7470 Mercury Dissolved
Associated Lab Samples: 2048890002, 2048890003, 2048890004, 2048890005, 2048890006, 2048890007, 2048890008, 2048890010

METHOD BLANK: 304161 Matrix: Water
Associated Lab Samples: 2048890002, 2048890003, 2048890004, 2048890005, 2048890006, 2048890007, 2048890008, 2048890010

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Mercury, Dissolved	ug/L	ND	0.20	01/24/17 18:41	

LABORATORY CONTROL SAMPLE: 304162

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury, Dissolved	ug/L	1	1.0	103	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 304163 304164

Parameter	Units	2048890008 Result	MS		MSD		MS % Rec	MSD % Rec	% Rec Limits	Max RPD	Qual
			Spike Conc.	MS Result	Spike Conc.	MSD Result					
Mercury, Dissolved	ug/L	ND	1	1.1	1	1.1	91	90	75-125	1	20

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QUALITY CONTROL DATA

Project: PUMA TERMINAL CW SAMPLING
Pace Project No.: 2048890

QC Batch: 72609 Analysis Method: EPA 6020
QC Batch Method: EPA 3010 Analysis Description: 6020 MET
Associated Lab Samples: 2048890002, 2048890003, 2048890004, 2048890005, 2048890006, 2048890007, 2048890008, 2048890010

METHOD BLANK: 304153 Matrix: Water
Associated Lab Samples: 2048890002, 2048890003, 2048890004, 2048890005, 2048890006, 2048890007, 2048890008, 2048890010

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Arsenic	mg/L	ND	0.0010	02/12/17 12:56	
Chromium	mg/L	ND	0.0010	02/12/17 12:56	
Lead	mg/L	ND	0.0010	02/12/17 12:56	
Vanadium	mg/L	ND	0.0050	02/12/17 12:56	

LABORATORY CONTROL SAMPLE: 304154

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Arsenic	mg/L	.02	0.020	102	83-115	
Chromium	mg/L	.02	0.020	102	85-115	
Lead	mg/L	.02	0.020	100	84-115	
Vanadium	mg/L	.02	0.016	82	81-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 304155 304156

Parameter	Units	304155		304156		MS % Rec	MSD % Rec	% Rec Limits	Max RPD	Qual
		MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result					
Arsenic	mg/L	ND	.02	0.016	0.020	80	101	80-120	23	20 R1
Chromium	mg/L	0.046	.02	0.058	0.074	57	136	80-120	24	20 M1,R1
Lead	mg/L	ND	.02	0.017	0.021	83	107	80-120	25	20 R1
Vanadium	mg/L	ND	.02	0.0097	0.014	49	70	80-120	35	20 M1,R1

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QUALITY CONTROL DATA

Project: PUMA TERMINAL CW SAMPLING
Pace Project No.: 2048890

QC Batch: 72614 Analysis Method: EPA 6020
QC Batch Method: EPA 3005A Analysis Description: 6020 MET Dissolved
Associated Lab Samples: 2048890002, 2048890003, 2048890004, 2048890005, 2048890006, 2048890007, 2048890008, 2048890010

METHOD BLANK: 304165 Matrix: Water
Associated Lab Samples: 2048890002, 2048890003, 2048890004, 2048890005, 2048890006, 2048890007, 2048890008, 2048890010

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Arsenic, Dissolved	ug/L	ND	1.0	02/12/17 13:20	
Chromium, Dissolved	ug/L	ND	1.0	02/12/17 13:20	
Lead, Dissolved	ug/L	ND	1.0	02/12/17 13:20	
Vanadium, Dissolved	ug/L	ND	5.0	02/12/17 13:20	

LABORATORY CONTROL SAMPLE: 304166

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Arsenic, Dissolved	ug/L	20	20.6	103	80-120	
Chromium, Dissolved	ug/L	20	20.6	103	80-120	
Lead, Dissolved	ug/L	20	20.2	101	80-120	
Vanadium, Dissolved	ug/L	20	18.4	92	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 304167 304168

Parameter	Units	304167		304168		MS % Rec	MSD % Rec	% Rec Limits	Max RPD	Qual	
		2048890008 Result	MS Spike Conc.	MSD Spike Conc.	MS Result						MSD Result
Arsenic, Dissolved	ug/L	ND	20	20	19.5	19.5	96	97	75-125	0	20
Chromium, Dissolved	ug/L	47.9	20	20	67.5	68.0	98	100	75-125	1	20
Lead, Dissolved	ug/L	ND	20	20	20.3	20.6	102	103	75-125	2	20
Vanadium, Dissolved	ug/L	ND	20	20	12.4	12.2	62	61	75-125	2	20 M1

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QUALITY CONTROL DATA

Project: PUMA TERMINAL CW SAMPLING
Pace Project No.: 2048890

QC Batch: 72436 Analysis Method: EPA 5030B/8260
QC Batch Method: EPA 5030B/8260 Analysis Description: 8260 MSV Low Level
Associated Lab Samples: 2048890001, 2048890002, 2048890003, 2048890004, 2048890005, 2048890006, 2048890007, 2048890008, 2048890009, 2048890010

METHOD BLANK: 303413 Matrix: Water
Associated Lab Samples: 2048890001, 2048890002, 2048890003, 2048890004, 2048890005, 2048890006, 2048890007, 2048890008, 2048890009, 2048890010

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
1,1,1-Trichloroethane	ug/L	ND	0.50	01/19/17 11:18	
1,1,2,2-Tetrachloroethane	ug/L	ND	0.50	01/19/17 11:18	
1,1,2-Trichloroethane	ug/L	ND	0.50	01/19/17 11:18	
1,1-Dichloroethane	ug/L	ND	0.50	01/19/17 11:18	
1,1-Dichloroethene	ug/L	ND	0.50	01/19/17 11:18	
1,2-Dibromo-3-chloropropane	ug/L	ND	0.20	01/19/17 11:18	
1,2-Dibromoethane (EDB)	ug/L	ND	1.0	01/19/17 11:18	
1,2-Dichloroethane	ug/L	ND	0.50	01/19/17 11:18	
1,2-Dichloropropane	ug/L	ND	0.50	01/19/17 11:18	
2-Butanone (MEK)	ug/L	ND	2.0	01/19/17 11:18	
2-Hexanone	ug/L	ND	1.0	01/19/17 11:18	
4-Methyl-2-pentanone (MIBK)	ug/L	ND	1.0	01/19/17 11:18	
Acetone	ug/L	ND	4.0	01/19/17 11:18	
Benzene	ug/L	ND	0.50	01/19/17 11:18	
Bromodichloromethane	ug/L	ND	0.50	01/19/17 11:18	
Bromoform	ug/L	ND	0.50	01/19/17 11:18	
Bromomethane	ug/L	ND	0.50	01/19/17 11:18	
Carbon disulfide	ug/L	ND	1.0	01/19/17 11:18	
Carbon tetrachloride	ug/L	ND	0.50	01/19/17 11:18	
Chlorobenzene	ug/L	ND	0.50	01/19/17 11:18	
Chloroethane	ug/L	ND	0.50	01/19/17 11:18	
Chloroform	ug/L	ND	0.50	01/19/17 11:18	
Chloromethane	ug/L	ND	0.50	01/19/17 11:18	
cis-1,2-Dichloroethene	ug/L	ND	1.0	01/19/17 11:18	
cis-1,3-Dichloropropene	ug/L	ND	0.50	01/19/17 11:18	
Dibromochloromethane	ug/L	ND	0.50	01/19/17 11:18	
Dichlorodifluoromethane	ug/L	ND	1.0	01/19/17 11:18	
Ethylbenzene	ug/L	ND	0.50	01/19/17 11:18	
Isopropylbenzene (Cumene)	ug/L	ND	1.0	01/19/17 11:18	
m&p-Xylene	ug/L	ND	2.0	01/19/17 11:18	
Methyl acetate	ug/L	ND	2.0	01/19/17 11:18	
Methyl-tert-butyl ether	ug/L	ND	0.50	01/19/17 11:18	
Methylene Chloride	ug/L	ND	0.50	01/19/17 11:18	
o-Xylene	ug/L	ND	1.0	01/19/17 11:18	
Styrene	ug/L	ND	1.0	01/19/17 11:18	
Tetrachloroethene	ug/L	ND	0.50	01/19/17 11:18	
Toluene	ug/L	ND	0.50	01/19/17 11:18	
trans-1,2-Dichloroethene	ug/L	ND	0.50	01/19/17 11:18	
trans-1,3-Dichloropropene	ug/L	ND	0.50	01/19/17 11:18	
Trichloroethene	ug/L	ND	0.50	01/19/17 11:18	

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QUALITY CONTROL DATA

Project: PUMA TERMINAL CW SAMPLING
Pace Project No.: 2048890

METHOD BLANK: 303413

Matrix: Water

Associated Lab Samples: 2048890001, 2048890002, 2048890003, 2048890004, 2048890005, 2048890006, 2048890007, 2048890008, 2048890009, 2048890010

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Trichlorofluoromethane	ug/L	ND	0.50	01/19/17 11:18	
Vinyl chloride	ug/L	ND	0.50	01/19/17 11:18	
4-Bromofluorobenzene (S)	%	99	68-124	01/19/17 11:18	
Dibromofluoromethane (S)	%	98	72-126	01/19/17 11:18	
Toluene-d8 (S)	%	107	79-119	01/19/17 11:18	

LABORATORY CONTROL SAMPLE: 303414

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,1,1-Trichloroethane	ug/L	50	44.6	89	62-131	
1,1,2,2-Tetrachloroethane	ug/L	50	42.6	85	15-179	
1,1,2-Trichloroethane	ug/L	50	45.5	91	58-144	
1,1-Dichloroethane	ug/L	50	43.8	88	63-129	
1,1-Dichloroethene	ug/L	50	43.5	87	51-139	
1,2-Dibromo-3-chloropropane	ug/L	50	49.1	98	21-160	
1,2-Dibromoethane (EDB)	ug/L	50	46.6	93	52-161	
1,2-Dichloroethane	ug/L	50	45.1	90	57-148	
1,2-Dichloropropane	ug/L	50	45.3	91	66-128	
2-Butanone (MEK)	ug/L	50	45.0	90	32-183	
2-Hexanone	ug/L	50	40.7	81	36-170	
4-Methyl-2-pentanone (MIBK)	ug/L	50	43.5	87	26-171	
Acetone	ug/L	50	44.1	88	22-165	
Benzene	ug/L	50	41.2	82	62-131	
Bromodichloromethane	ug/L	50	46.9	94	69-132	
Bromoform	ug/L	50	45.6	91	35-166	
Bromomethane	ug/L	50	64.0	128	34-158	
Carbon disulfide	ug/L	50	50.4	101	31-128	
Carbon tetrachloride	ug/L	50	47.6	95	54-144	
Chlorobenzene	ug/L	50	50.8	102	70-127	
Chloroethane	ug/L	50	71.6	143	17-195	
Chloroform	ug/L	50	44.4	89	73-134	
Chloromethane	ug/L	50	37.4	75	17-153	
cis-1,2-Dichloroethene	ug/L	50	43.4	87	68-129	
cis-1,3-Dichloropropene	ug/L	50	46.8	94	72-138	
Dibromochloromethane	ug/L	50	46.0	92	49-146	
Dichlorodifluoromethane	ug/L	50	45.4	91	10-179	
Ethylbenzene	ug/L	50	46.5	93	66-126	
Isopropylbenzene (Cumene)	ug/L	50	43.4	87	51-138	
m&p-Xylene	ug/L	100	92.3	92	65-129	
Methyl acetate	ug/L	50	45.7	91	20-142	
Methyl-tert-butyl ether	ug/L	50	46.9	94	37-166	
Methylene Chloride	ug/L	50	48.8	98	46-168	
o-Xylene	ug/L	50	44.4	89	65-124	

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QUALITY CONTROL DATA

Project: PUMA TERMINAL CW SAMPLING
Pace Project No.: 2048890

LABORATORY CONTROL SAMPLE: 303414

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Styrene	ug/L	50	48.4	97	72-133	
Tetrachloroethene	ug/L	50	47.9	96	46-157	
Toluene	ug/L	50	46.6	93	69-126	
trans-1,2-Dichloroethene	ug/L	50	43.4	87	60-129	
trans-1,3-Dichloropropene	ug/L	50	47.8	96	59-149	
Trichloroethene	ug/L	50	46.8	94	67-132	
Trichlorofluoromethane	ug/L	50	62.2	124	39-171	
Vinyl chloride	ug/L	50	54.9	110	27-149	
4-Bromofluorobenzene (S)	%			98	68-124	
Dibromofluoromethane (S)	%			98	72-126	
Toluene-d8 (S)	%			104	79-119	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 303415 303416

Parameter	Units	2048890008		303416		MS % Rec	MSD % Rec	% Rec Limits	Max RPD	RPD	Qual
		Result	MS Spike Conc.	MSD Spike Conc.	MS Result						
1,1,1-Trichloroethane	ug/L	ND	50	50	49.5	49.0	99	98	54-137	1	20
1,1,2,2-Tetrachloroethane	ug/L	ND	50	50	42.5	43.2	85	86	15-187	2	20
1,1,2-Trichloroethane	ug/L	ND	50	50	46.0	45.2	92	90	59-148	2	20
1,1-Dichloroethane	ug/L	ND	50	50	46.5	45.5	93	91	59-133	2	20
1,1-Dichloroethene	ug/L	ND	50	50	46.3	45.1	93	90	44-146	3	20
1,2-Dibromo-3-chloropropane	ug/L	ND	50	50	47.8	48.3	96	97	23-166	1	20
1,2-Dibromoethane (EDB)	ug/L	ND	50	50	47.5	46.8	95	94	55-166	2	20
1,2-Dichloroethane	ug/L	ND	50	50	46.2	45.8	92	92	56-154	1	20
1,2-Dichloropropane	ug/L	ND	50	50	47.6	46.7	95	93	62-135	2	20
2-Butanone (MEK)	ug/L	ND	50	50	44.9	45.0	90	90	20-205	0	20
2-Hexanone	ug/L	ND	50	50	40.4	39.7	81	79	25-189	2	20
4-Methyl-2-pentanone (MIBK)	ug/L	ND	50	50	41.6	41.1	83	82	23-184	1	20
Acetone	ug/L	ND	50	50	48.3	47.2	93	91	11-217	2	20
Benzene	ug/L	ND	50	50	44.5	43.4	89	87	52-141	2	20
Bromodichloromethane	ug/L	ND	50	50	49.5	49.3	99	99	70-134	0	20
Bromoform	ug/L	ND	50	50	46.4	46.0	93	92	37-171	1	20
Bromomethane	ug/L	ND	50	50	69.3	66.5	139	133	34-155	4	20
Carbon disulfide	ug/L	ND	50	50	58.3	54.5	117	109	28-130	7	20
Carbon tetrachloride	ug/L	ND	50	50	52.3	51.3	105	103	48-146	2	20
Chlorobenzene	ug/L	ND	50	50	53.8	53.2	108	106	67-129	1	20
Chloroethane	ug/L	ND	50	50	80.3	77.0	161	154	12-192	4	20
Chloroform	ug/L	ND	50	50	47.0	46.5	94	93	66-143	1	20
Chloromethane	ug/L	ND	50	50	37.6	39.1	75	78	14-155	4	20
cis-1,2-Dichloroethene	ug/L	ND	50	50	46.6	45.2	93	90	56-141	3	20
cis-1,3-Dichloropropene	ug/L	ND	50	50	49.3	48.5	99	97	70-139	2	20
Dibromochloromethane	ug/L	ND	50	50	47.1	46.8	94	94	50-150	1	20
Dichlorodifluoromethane	ug/L	ND	50	50	46.2	45.3	92	91	10-173	2	20
Ethylbenzene	ug/L	ND	50	50	50.4	49.2	101	98	57-135	2	20

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QUALITY CONTROL DATA

Project: PUMA TERMINAL CW SAMPLING
Pace Project No.: 2048890

Parameter	Units	MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 303415				303416				% Rec Limits	RPD	Max RPD	Qual
		2048890008 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec					
Isopropylbenzene (Cumene)	ug/L	ND	50	50	46.4	47.1	93	94	40-146	1	20		
m&p-Xylene	ug/L	ND	100	100	99.3	97.2	99	97	56-136	2	20		
Methyl acetate	ug/L	ND	50	50	44.2	45.2	88	90	10-142	2	20		
Methyl-tert-butyl ether	ug/L	4.7	50	50	51.6	51.5	94	94	35-176	0	20		
Methylene Chloride	ug/L	ND	50	50	50.8	49.1	102	98	45-166	3	20		
o-Xylene	ug/L	ND	50	50	47.0	46.7	94	93	57-133	1	20		
Styrene	ug/L	ND	50	50	16.7	14.4	33	29	58-144	15	20	M1	
Tetrachloroethene	ug/L	ND	50	50	52.2	50.9	104	102	48-143	2	20		
Toluene	ug/L	ND	50	50	50.6	49.7	101	99	59-136	2	20		
trans-1,2-Dichloroethene	ug/L	ND	50	50	47.4	45.4	95	91	57-132	4	20		
trans-1,3-Dichloropropene	ug/L	ND	50	50	49.4	48.1	99	96	59-154	3	20		
Trichloroethene	ug/L	0.81	50	50	52.6	50.8	104	100	58-140	3	20		
Trichlorofluoromethane	ug/L	ND	50	50	70.9	68.4	142	137	24-175	4	20		
Vinyl chloride	ug/L	ND	50	50	60.2	56.2	120	112	21-150	7	20		
4-Bromofluorobenzene (S)	%.						97	100	68-124				
Dibromofluoromethane (S)	%.						100	100	72-126				
Toluene-d8 (S)	%.						105	105	79-119				

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QUALITY CONTROL DATA

Project: PUMA TERMINAL CW SAMPLING
Pace Project No.: 2048890

QC Batch: 72438 Analysis Method: EPA 8015B Modified
QC Batch Method: EPA 3535 Analysis Description: EPA 8015 ORO
Associated Lab Samples: 2048890002, 2048890003, 2048890004, 2048890005, 2048890006, 2048890007, 2048890008, 2048890010

METHOD BLANK: 303428 Matrix: Water
Associated Lab Samples: 2048890002, 2048890003, 2048890004, 2048890005, 2048890006, 2048890007, 2048890008, 2048890010

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Diesel Range Organic (C10-C28)	mg/L	ND	0.25	01/29/17 17:56	
Oil Range Organics (>C28-C40)	mg/L	ND	0.50	01/29/17 17:56	
n-Pentacosane (S)	%	54	16-137	01/29/17 17:56	
o-Terphenyl (S)	%	65	10-121	01/29/17 17:56	

LABORATORY CONTROL SAMPLE: 303429

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Diesel Range Organic (C10-C28)	mg/L	.4	.16J	39	10-115	
n-Pentacosane (S)	%			47	16-137	
o-Terphenyl (S)	%			61	10-121	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 303430 303431

Parameter	Units	2048890008 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	Max RPD	Qual
Diesel Range Organic (C10-C28)	mg/L	ND	.8	.8	0.51	.43J	48	39	10-122	20	
n-Pentacosane (S)	%						65	48	16-137		
o-Terphenyl (S)	%						69	53	10-121		

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QUALITY CONTROL DATA

Project: PUMA TERMINAL CW SAMPLING
Pace Project No.: 2048890

QC Batch: 72547 Analysis Method: EPA 8270 by SIM
QC Batch Method: EPA 3510 Analysis Description: 8270 Water by SIM MSSV
Associated Lab Samples: 2048890002, 2048890003, 2048890004, 2048890005, 2048890006, 2048890007

METHOD BLANK: 303977 Matrix: Water
Associated Lab Samples: 2048890002, 2048890003, 2048890004, 2048890005, 2048890006, 2048890007

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
2-Methylnaphthalene	ug/L	ND	0.10	01/30/17 15:27	
Acenaphthene	ug/L	ND	0.10	01/30/17 15:27	
Acenaphthylene	ug/L	ND	0.10	01/30/17 15:27	
Anthracene	ug/L	ND	0.10	01/30/17 15:27	
Benzo(a)anthracene	ug/L	ND	0.10	01/30/17 15:27	
Benzo(a)pyrene	ug/L	ND	0.10	01/30/17 15:27	
Benzo(b)fluoranthene	ug/L	ND	0.10	01/30/17 15:27	
Benzo(g,h,i)perylene	ug/L	ND	0.10	01/30/17 15:27	
Benzo(k)fluoranthene	ug/L	ND	0.10	01/30/17 15:27	
Chrysene	ug/L	ND	0.10	01/30/17 15:27	
Dibenz(a,h)anthracene	ug/L	ND	0.10	01/30/17 15:27	
Fluoranthene	ug/L	ND	0.10	01/30/17 15:27	
Fluorene	ug/L	ND	0.10	01/30/17 15:27	
Indeno(1,2,3-cd)pyrene	ug/L	ND	0.10	01/30/17 15:27	
Naphthalene	ug/L	ND	0.10	01/30/17 15:27	
Phenanthrene	ug/L	ND	0.10	01/30/17 15:27	
Pyrene	ug/L	ND	0.10	01/30/17 15:27	
2-Fluorobiphenyl (S)	%	108	25-150	01/30/17 15:27	
Terphenyl-d14 (S)	%	121	25-150	01/30/17 15:27	

LABORATORY CONTROL SAMPLE: 303978

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
2-Methylnaphthalene	ug/L	4	4.6	116	35-150	
Acenaphthene	ug/L	4	4.1	101	35-150	
Acenaphthylene	ug/L	4	4.0	101	35-150	
Anthracene	ug/L	4	5.2	129	35-150	
Benzo(a)anthracene	ug/L	4	4.1	102	35-150	
Benzo(a)pyrene	ug/L	4	3.8	96	35-150	
Benzo(b)fluoranthene	ug/L	4	3.9	98	35-150	
Benzo(g,h,i)perylene	ug/L	4	4.3	108	35-150	
Benzo(k)fluoranthene	ug/L	4	3.7	93	35-150	
Chrysene	ug/L	4	3.9	99	35-150	
Dibenz(a,h)anthracene	ug/L	4	4.3	107	35-150	
Fluoranthene	ug/L	4	4.1	103	35-150	
Fluorene	ug/L	4	4.1	102	35-150	
Indeno(1,2,3-cd)pyrene	ug/L	4	4.3	108	35-150	
Naphthalene	ug/L	4	3.9	98	35-150	
Phenanthrene	ug/L	4	4.2	105	35-150	
Pyrene	ug/L	4	4.0	101	35-150	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: PUMA TERMINAL CW SAMPLING
Pace Project No.: 2048890

LABORATORY CONTROL SAMPLE: 303978

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
2-Fluorobiphenyl (S)	%.			104	25-150	
Terphenyl-d14 (S)	%.			101	25-150	

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QUALITY CONTROL DATA

Project: PUMA TERMINAL CW SAMPLING
Pace Project No.: 2048890

QC Batch: 72592 Analysis Method: EPA 8270 by SIM
QC Batch Method: EPA 3510 Analysis Description: 8270 Water by SIM MSSV
Associated Lab Samples: 2048890008, 2048890010

METHOD BLANK: 304106 Matrix: Water
Associated Lab Samples: 2048890008, 2048890010

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
2-Methylnaphthalene	ug/L	ND	0.10	01/30/17 16:07	
Acenaphthene	ug/L	ND	0.10	01/30/17 16:07	
Acenaphthylene	ug/L	ND	0.10	01/30/17 16:07	
Anthracene	ug/L	ND	0.10	01/30/17 16:07	
Benzo(a)anthracene	ug/L	ND	0.10	01/30/17 16:07	
Benzo(a)pyrene	ug/L	ND	0.10	01/30/17 16:07	
Benzo(b)fluoranthene	ug/L	ND	0.10	01/30/17 16:07	
Benzo(g,h,i)perylene	ug/L	ND	0.10	01/30/17 16:07	
Benzo(k)fluoranthene	ug/L	ND	0.10	01/30/17 16:07	
Chrysene	ug/L	ND	0.10	01/30/17 16:07	
Dibenz(a,h)anthracene	ug/L	ND	0.10	01/30/17 16:07	
Fluoranthene	ug/L	ND	0.10	01/30/17 16:07	
Fluorene	ug/L	ND	0.10	01/30/17 16:07	
Indeno(1,2,3-cd)pyrene	ug/L	ND	0.10	01/30/17 16:07	
Naphthalene	ug/L	ND	0.10	01/30/17 16:07	
Phenanthrene	ug/L	ND	0.10	01/30/17 16:07	
Pyrene	ug/L	ND	0.10	01/30/17 16:07	
2-Fluorobiphenyl (S)	%	77	25-150	01/30/17 16:07	
Terphenyl-d14 (S)	%	81	25-150	01/30/17 16:07	

LABORATORY CONTROL SAMPLE: 304107

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
2-Methylnaphthalene	ug/L	4	3.6	90	35-150	
Acenaphthene	ug/L	4	3.3	82	35-150	
Acenaphthylene	ug/L	4	3.1	79	35-150	
Anthracene	ug/L	4	4.2	105	35-150	
Benzo(a)anthracene	ug/L	4	3.3	84	35-150	
Benzo(a)pyrene	ug/L	4	3.3	81	35-150	
Benzo(b)fluoranthene	ug/L	4	3.5	88	35-150	
Benzo(g,h,i)perylene	ug/L	4	3.3	82	35-150	
Benzo(k)fluoranthene	ug/L	4	3.5	87	35-150	
Chrysene	ug/L	4	3.4	86	35-150	
Dibenz(a,h)anthracene	ug/L	4	3.3	83	35-150	
Fluoranthene	ug/L	4	3.4	85	35-150	
Fluorene	ug/L	4	3.3	83	35-150	
Indeno(1,2,3-cd)pyrene	ug/L	4	3.3	83	35-150	
Naphthalene	ug/L	4	3.1	78	35-150	
Phenanthrene	ug/L	4	3.5	86	35-150	
Pyrene	ug/L	4	3.4	86	35-150	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: PUMA TERMINAL CW SAMPLING
Pace Project No.: 2048890

LABORATORY CONTROL SAMPLE: 304107

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
2-Fluorobiphenyl (S)	%			100	25-150	
Terphenyl-d14 (S)	%			103	25-150	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 304108 304109

Parameter	Units	MS		MSD		MS % Rec	MSD % Rec	% Rec Limits	Max RPD	RPD	Qual	
		2048890008 Result	Spike Conc.	Spike Conc.	MS Result							MSD Result
2-Methylnaphthalene	ug/L	ND	4	4	5.2	5.0	131	125	35-150	4	20	
Acenaphthene	ug/L	ND	4	4	4.9	4.9	122	122	35-150	0	20	
Acenaphthylene	ug/L	ND	4	4	4.7	4.7	117	117	35-150	0	20	
Anthracene	ug/L	ND	4	4	6.5	6.8	162	171	35-150	5	20	M1
Benzo(a)anthracene	ug/L	ND	4	4	5.2	5.5	130	139	35-150	6	20	
Benzo(a)pyrene	ug/L	ND	4	4	5.0	5.3	124	132	35-150	6	20	
Benzo(b)fluoranthene	ug/L	ND	4	4	5.4	5.7	135	142	35-150	5	20	
Benzo(g,h,i)perylene	ug/L	ND	4	4	5.1	5.2	129	130	35-150	1	20	
Benzo(k)fluoranthene	ug/L	ND	4	4	5.2	5.7	129	142	35-150	9	20	
Chrysene	ug/L	ND	4	4	5.2	5.5	131	138	35-150	5	20	
Dibenz(a,h)anthracene	ug/L	ND	4	4	5.1	5.2	129	130	35-150	1	20	
Fluoranthene	ug/L	ND	4	4	5.3	5.6	132	140	35-150	6	20	
Fluorene	ug/L	ND	4	4	4.9	5.0	123	124	35-150	1	20	
Indeno(1,2,3-cd)pyrene	ug/L	ND	4	4	5.1	5.2	128	130	35-150	2	20	
Naphthalene	ug/L	ND	4	4	4.6	4.3	114	106	35-150	7	20	
Phenanthrene	ug/L	ND	4	4	5.3	5.5	132	139	35-150	5	20	
Pyrene	ug/L	ND	4	4	5.2	5.7	129	141	35-150	9	20	
2-Fluorobiphenyl (S)	%						124	119	25-150		20	
Terphenyl-d14 (S)	%						127	137	25-150		20	

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REPORT OF LABORATORY ANALYSIS

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QUALIFIERS

Project: PUMA TERMINAL CW SAMPLING

Pace Project No.: 2048890

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The Nelac Institute

LABORATORIES

PASI-N Pace Analytical Services - New Orleans

BATCH QUALIFIERS

Batch: 72701

[M5] A matrix spike/matrix spike duplicate was not performed for this batch due to insufficient sample volume.

ANALYTE QUALIFIERS

C9 Common Laboratory Contaminant.

M1 Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

R1 RPD value was outside control limits.

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: PUMA TERMINAL CW SAMPLING
Pace Project No.: 2048890

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
2048890002	EB-011717	EPA 3535	72438	EPA 8015B Modified	72991
2048890003	MW-110AB	EPA 3535	72438	EPA 8015B Modified	72991
2048890004	MW-110B2	EPA 3535	72438	EPA 8015B Modified	72991
2048890005	MW-111A	EPA 3535	72438	EPA 8015B Modified	72991
2048890006	MW-114A	EPA 3535	72438	EPA 8015B Modified	72991
2048890007	DUP006	EPA 3535	72438	EPA 8015B Modified	72991
2048890008	MW-75B2	EPA 3535	72438	EPA 8015B Modified	72991
2048890010	MW-63A	EPA 3535	72438	EPA 8015B Modified	72991
2048890001	TB-011717	EPA 8015/8021	72457		
2048890002	EB-011717	EPA 8015/8021	72457		
2048890003	MW-110AB	EPA 8015/8021	72457		
2048890004	MW-110B2	EPA 8015/8021	72457		
2048890005	MW-111A	EPA 8015/8021	72457		
2048890006	MW-114A	EPA 8015/8021	72457		
2048890007	DUP006	EPA 8015/8021	72457		
2048890008	MW-75B2	EPA 8015/8021	72457		
2048890009	FB-011717	EPA 8015/8021	72457		
2048890010	MW-63A	EPA 8015/8021	72457		
2048890002	EB-011717	EPA 3010	72609	EPA 6020	72692
2048890003	MW-110AB	EPA 3010	72609	EPA 6020	72692
2048890004	MW-110B2	EPA 3010	72609	EPA 6020	72692
2048890005	MW-111A	EPA 3010	72609	EPA 6020	72692
2048890006	MW-114A	EPA 3010	72609	EPA 6020	72692
2048890007	DUP006	EPA 3010	72609	EPA 6020	72692
2048890008	MW-75B2	EPA 3010	72609	EPA 6020	72692
2048890010	MW-63A	EPA 3010	72609	EPA 6020	72692
2048890002	EB-011717	EPA 3005A	72614	EPA 6020	72700
2048890003	MW-110AB	EPA 3005A	72614	EPA 6020	72700
2048890004	MW-110B2	EPA 3005A	72614	EPA 6020	72700
2048890005	MW-111A	EPA 3005A	72614	EPA 6020	72700
2048890006	MW-114A	EPA 3005A	72614	EPA 6020	72700
2048890007	DUP006	EPA 3005A	72614	EPA 6020	72700
2048890008	MW-75B2	EPA 3005A	72614	EPA 6020	72700
2048890010	MW-63A	EPA 3005A	72614	EPA 6020	72700
2048890002	EB-011717	EPA 7470	72610	EPA 7470	72698
2048890003	MW-110AB	EPA 7470	72610	EPA 7470	72698
2048890004	MW-110B2	EPA 7470	72610	EPA 7470	72698
2048890005	MW-111A	EPA 7470	72610	EPA 7470	72698
2048890006	MW-114A	EPA 7470	72610	EPA 7470	72698
2048890007	DUP006	EPA 7470	72610	EPA 7470	72698
2048890008	MW-75B2	EPA 7470	72610	EPA 7470	72698
2048890010	MW-63A	EPA 7470	72610	EPA 7470	72698
2048890002	EB-011717	EPA 7470	72612	EPA 7470	72699
2048890003	MW-110AB	EPA 7470	72612	EPA 7470	72699
2048890004	MW-110B2	EPA 7470	72612	EPA 7470	72699
2048890005	MW-111A	EPA 7470	72612	EPA 7470	72699

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: PUMA TERMINAL CW SAMPLING
Pace Project No.: 2048890

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
2048890006	MW-114A	EPA 7470	72612	EPA 7470	72699
2048890007	DUP006	EPA 7470	72612	EPA 7470	72699
2048890008	MW-75B2	EPA 7470	72612	EPA 7470	72699
2048890010	MW-63A	EPA 7470	72612	EPA 7470	72699
2048890002	EB-011717	EPA 3510	72547	EPA 8270 by SIM	72701
2048890003	MW-110AB	EPA 3510	72547	EPA 8270 by SIM	72701
2048890004	MW-110B2	EPA 3510	72547	EPA 8270 by SIM	72701
2048890005	MW-111A	EPA 3510	72547	EPA 8270 by SIM	72701
2048890006	MW-114A	EPA 3510	72547	EPA 8270 by SIM	72701
2048890007	DUP006	EPA 3510	72547	EPA 8270 by SIM	72701
2048890008	MW-75B2	EPA 3510	72592	EPA 8270 by SIM	72702
2048890010	MW-63A	EPA 3510	72592	EPA 8270 by SIM	72702
2048890001	TB-011717	EPA 5030B/8260	72436		
2048890002	EB-011717	EPA 5030B/8260	72436		
2048890003	MW-110AB	EPA 5030B/8260	72436		
2048890004	MW-110B2	EPA 5030B/8260	72436		
2048890005	MW-111A	EPA 5030B/8260	72436		
2048890006	MW-114A	EPA 5030B/8260	72436		
2048890007	DUP006	EPA 5030B/8260	72436		
2048890008	MW-75B2	EPA 5030B/8260	72436		
2048890009	FB-011717	EPA 5030B/8260	72436		
2048890010	MW-63A	EPA 5030B/8260	72436		

REPORT OF LABORATORY ANALYSIS

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Section A
Required Client Information:

Company: *Arcaadis*
Report To: *Efrain Calderon*
Address: *105 Atkinson Plaza Suite 401 RJ*
Copy To:
105 Km 312 Camagney P.R
Email To: *Efrain Calderon@arcaadis.com*
Purchase Order No.:
Phone: *973-977-4400* Fax: *973-977-8266*
Requested Due Date/TAT: *Graded*

Attention:
Company Name:
Address:
Pace Quote Reference:
Project Name: *Puma Terminal CW Sample*
Pace Project Manager: *John Rebold*
Project Number: *F002.1605.B*
Pace Profile #: *7252*

REGULATORY AGENCY

NPDES GROUND WATER DRINKING WATER
 UST RCRA OTHER _____

Site Location
STATE: *P.R*

ITEM #	Section D Required Client Information	Matrix Codes MATRIX / CODE	COLLECTED				SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives							Analysis Test ↑ Y/N	Residual Chlorine (Y/N)	Pace Project No./ Lab I.D.		
			COMPOSITE START	COMPOSITE END/GRAB	DATE	TIME			DATE	TIME	Unpreserved	H ₂ SO ₄	HNO ₃	HCl	NaOH				Na ₂ S ₂ O ₈	Methanol
1	SAMPLE ID (A-Z, 0-9, ., -) Sample IDs MUST BE UNIQUE	Drinking Water DW Water WT Waste Water WW Product P Soil/Solid SL Oil OL Wipe WP Air AR Tissue TS Other OT	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)																
1	TB-011911		WT	G			01/19/11	LAB	4											
2	EB-011911		WT	G			01/19/11	0946	10	S										
3	MW-110AB		WT	G			01/19/11	1049	10	S										
4	MW-110B2		WT	G			01/19/11	1138	10	S										
5	MW-111A		WT	G			01/19/11	1236	10	S										
6	MW-15B2		WT	G			01/19/11	1450	10	S										
7	DUP006		WT	G			01/19/11	/	10	S										
8	MW-15B2 (MS)		WT	G			01/19/11	1450	10	S										
9	MW-15B2 (MSD)		WT	G			01/19/11	1450	10	S										
10	MW-114A		WT	G			01/19/11	1621	10	S										
11	EB-011911		WT	G			01/19/11	1630	4											
12	MW-63A		WT	G			01/19/11	1033	10	S										

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS
Level <u>IV</u>	<i>Arcaadis / Arcaadis</i>	01/19/11	1415	<i>John Rebold</i>	1-18-17	1445	1.3
	<i>Fed Exp</i>	1-18-17	1710	<i>Fed Exp</i>			1.1
	<i>Fed Exp</i>	1-19-17	0830	<i>John Rebold</i>	1-19-17	0830	0.5
							2.2

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ORIGINAL

SAMPLER NAME AND SIGNATURE:
PRINT Name of SAMPLER: *Efrain Calderon*
SIGNATURE of SAMPLER: *[Signature]*
DATE Signed (MM/DD/YY): *01/19/11*

Temp in °C
Received on Ice (Y/N)
Custody Sealed Cooler (Y/N)
Samples Intact (Y/N)



Sample Condition Upon Receipt

WO#: 2048890

Urb. Jardines de Guaynabo
Calle Marginal Bldg A-10
Guaynabo, PR 00969

PM: JAR1 Due Date: 02/01/17
CLIENT: 98-ARCADISPR

Project #:

Courier: Pace Courier Hired Courier Fed X UPS DHL USPS Customer Other

Custody Seal on Cooler/Box Present: [see COC]

Custody Seals intact: Yes No

Thermometer Used: Therm Fisher IR 4 Therm Fisher IR 6 Therm Fisher IR 7

Type of Ice: Wet Blue None

Samples on ice: [see COC]

Cooler Temperature: [see COC]

Temp should be above freezing to 6°C

Date and initials of person examining contents: 1-18-17 [signature]

Temp must be measured from Temperature blank when present

Comments:

Table with 15 rows and 3 columns: Question, Yes/No/N/A checkboxes, and Number. Includes items like 'Temperature Blank Present?', 'Chain of Custody Present', etc.

Client Notification/ Resolution:

Person Contacted: _____ Date/Time: _____

Comments/ Resolution: _____



Sample Condition Upon Receipt

1000 Riverband Blvd., Suite F
St. Rose, LA 70087

Project #: **20**

Courier: Pace Courier Hired Courier Fed X UPS DHL USPS Customer Other

Custody Seal on Cooler/Box Present: [see COC]

Custody Seals intact: Yes No

Thermometer Used: Therm Fisher IR 5
 Therm Fisher IR 6
 Therm Fisher IR 7

Type of Ice: Wet Blue None

Samples on ice: [see COC]

Cooler Temperature: [see COC]

Temp should be above freezing to 6°C

Date and Initials of person examining contents: 1-19-17 JMB

Temp must be measured from Temperature blank when present

Comments:

Temperature Blank Present?"	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	1
Chain of Custody Present:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	2
Chain of Custody Complete:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	3
Chain of Custody Relinquished:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	4
Sampler Name & Signature on COC:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	5
Samples Arrived within Hold Time:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	6
Sufficient Volume:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	7
Correct Containers Used:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	8
Filtered vol. Rec. for Diss. tests	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	9
Sample Labels match COC:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	10
All containers received within manufacture's precautionary and/or expiration dates.	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	11
All containers needing chemical preservation have been checked (except VOA, coliform, & O&G).	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	12
All containers preservation checked found to be in compliance with EPA recommendation.	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	13
Headspace in VOA Vials (>6mm):	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	14
Trip Blank Present:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	15

Client Notification/ Resolution:

Person Contacted: _____ Date/Time: _____

Comments/ Resolution: _____

February 22, 2017

Efrain Calderon
BBL Caribe Engineering P.S.C.
48 City View Plaza1, Suite 401
Road 16, Km. 1.2
Guaynabo, PR 00968

RE: Project: PUMA TERMINAL GW SAMPLING
Pace Project No.: 2048968

Dear Efrain Calderon:

Enclosed are the analytical results for sample(s) received by the laboratory on January 19, 2017. The results relate only to the samples included in this report. Results reported herein conform to the most current, applicable TNI/NELAC standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,



Yeireliz Torres for
Juan Redondo
juan.redondo@pacelabs.com
Project Manager

Enclosures

cc: Sharon Colon
Abner Hernandez
Marianela Mercado-Burgos



REPORT OF LABORATORY ANALYSIS

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CERTIFICATIONS

Project: PUMA TERMINAL GW SAMPLING
Pace Project No.: 2048968

New Orleans Certification IDs

California Env. Lab Accreditation Program Branch:
11277CA
Florida Department of Health (NELAC): E87595
Illinois Environmental Protection Agency: 0025721
Kansas Department of Health and Environment (NELAC):
E-10266
Louisiana Dept. of Environmental Quality (NELAC/LELAP):
02006

Pennsylvania Dept. of Env Protection (NELAC): 68-04202
Texas Commission on Env. Quality (NELAC):
T104704405-09-TX
U. S. Dept. of Agriculture Foreign Soil Import: P330-10-
00119
Commonwealth of Virginia (TNI): 480246

REPORT OF LABORATORY ANALYSIS

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SAMPLE SUMMARY

Project: PUMA TERMINAL GW SAMPLING
Pace Project No.: 2048968

Lab ID	Sample ID	Matrix	Date Collected	Date Received
2048968001	TB-011817	Water	01/18/17 00:00	01/19/17 15:39
2048968002	EB-011817	Water	01/18/17 09:22	01/19/17 15:39
2048968003	MW-38A	Water	01/18/17 11:16	01/19/17 15:39
2048968004	MW-84B2	Water	01/18/17 12:31	01/19/17 15:39
2048968005	MW-84A	Water	01/18/17 13:23	01/19/17 15:39
2048968006	MW-17B	Water	01/18/17 15:34	01/19/17 15:39
2048968007	FB-011817	Water	01/18/17 15:42	01/19/17 15:39
2048968008	TB-011917	Water	01/19/17 00:00	01/19/17 15:39
2048968009	EB-011917	Water	01/19/17 10:00	01/19/17 15:39
2048968010	MW-77B	Water	01/19/17 11:17	01/19/17 15:39
2048968011	MW-20B	Water	01/19/17 12:25	01/19/17 15:39
2048968012	MW-78B	Water	01/19/17 13:15	01/19/17 15:39
2048968013	MW-21B	Water	01/19/17 13:56	01/19/17 15:39
2048968014	DUP007	Water	01/19/17 00:00	01/19/17 15:39
2048968015	FB-011917	Water	01/19/17 14:02	01/19/17 15:39

REPORT OF LABORATORY ANALYSIS

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SAMPLE ANALYTE COUNT

Project: PUMA TERMINAL GW SAMPLING
Pace Project No.: 2048968

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
2048968001	TB-011817	EPA 8015/8021	MHM	2	PASI-N
		EPA 5030B/8260	JRP	45	PASI-N
2048968002	EB-011817	EPA 8015B Modified	SLF	4	PASI-N
		EPA 8015/8021	MHM	2	PASI-N
		EPA 6020	KJR	4	PASI-N
		EPA 6020	KJR	4	PASI-N
		EPA 7470	MHB1	1	PASI-N
		EPA 7470	MHB1	1	PASI-N
		EPA 8270 by SIM	GEJ	19	PASI-N
2048968003	MW-38A	EPA 5030B/8260	JRP	45	PASI-N
		EPA 8015B Modified	SLF	4	PASI-N
		EPA 8015/8021	MHM	2	PASI-N
		EPA 6020	KJR	4	PASI-N
		EPA 6020	KJR	4	PASI-N
		EPA 7470	MHB1	1	PASI-N
		EPA 7470	MHB1	1	PASI-N
2048968004	MW-84B2	EPA 8270 by SIM	GEJ	19	PASI-N
		EPA 5030B/8260	JRP	45	PASI-N
		EPA 8015B Modified	SLF	4	PASI-N
		EPA 8015/8021	MHM	2	PASI-N
		EPA 6020	KJR	4	PASI-N
		EPA 6020	KJR	4	PASI-N
		EPA 7470	MHB1	1	PASI-N
2048968005	MW-84A	EPA 7470	MHB1	1	PASI-N
		EPA 8270 by SIM	GEJ	19	PASI-N
		EPA 5030B/8260	JRP	45	PASI-N
		EPA 8015B Modified	SLF	4	PASI-N
		EPA 8015/8021	MHM	2	PASI-N
		EPA 6020	KJR	4	PASI-N
		EPA 6020	KJR	4	PASI-N
2048968006	MW-17B	EPA 7470	MHB1	1	PASI-N
		EPA 7470	MHB1	1	PASI-N
		EPA 8270 by SIM	GEJ	19	PASI-N
		EPA 5030B/8260	JRP	45	PASI-N
		EPA 8015B Modified	SLF	4	PASI-N
		EPA 8015/8021	MHM	2	PASI-N
		EPA 6020	KJR	4	PASI-N

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SAMPLE ANALYTE COUNT

Project: PUMA TERMINAL GW SAMPLING
Pace Project No.: 2048968

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
		EPA 6020	KJR	4	PASI-N
		EPA 7470	MHB1	1	PASI-N
		EPA 7470	MHB1	1	PASI-N
		EPA 8270 by SIM	GEJ	19	PASI-N
		EPA 5030B/8260	JRP	45	PASI-N
2048968007	FB-011817	EPA 8015/8021	MHM	2	PASI-N
		EPA 5030B/8260	JRP	45	PASI-N
2048968008	TB-011917	EPA 8015/8021	MHM	2	PASI-N
		EPA 5030B/8260	JRP	45	PASI-N
2048968009	EB-011917	EPA 8015B Modified	SLF	4	PASI-N
		EPA 8015/8021	MHM	2	PASI-N
		EPA 6020	KJR	4	PASI-N
		EPA 6020	KJR	4	PASI-N
		EPA 7470	MHB1	1	PASI-N
		EPA 7470	MHB1	1	PASI-N
		EPA 8270 by SIM	GEJ	19	PASI-N
		EPA 5030B/8260	JRP	45	PASI-N
2048968010	MW-77B	EPA 8015B Modified	SLF	4	PASI-N
		EPA 8015/8021	MHM	2	PASI-N
		EPA 6020	KJR	4	PASI-N
		EPA 6020	KJR	4	PASI-N
		EPA 7470	MHB1	1	PASI-N
		EPA 7470	MHB1	1	PASI-N
		EPA 8270 by SIM	GEJ	19	PASI-N
		EPA 5030B/8260	JRP	45	PASI-N
2048968011	MW-20B	EPA 8015B Modified	SLF	4	PASI-N
		EPA 8015/8021	MHM	2	PASI-N
		EPA 6020	KJR	4	PASI-N
		EPA 6020	KJR	4	PASI-N
		EPA 7470	MHB1	1	PASI-N
		EPA 7470	MHB1	1	PASI-N
		EPA 8270 by SIM	GEJ	19	PASI-N
		EPA 5030B/8260	JRP	45	PASI-N
2048968012	MW-78B	EPA 8015B Modified	SLF	4	PASI-N
		EPA 8015/8021	MHM	2	PASI-N
		EPA 6020	KJR	4	PASI-N
		EPA 6020	KJR	4	PASI-N

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SAMPLE ANALYTE COUNT

Project: PUMA TERMINAL GW SAMPLING
Pace Project No.: 2048968

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
		EPA 7470	MHB1	1	PASI-N
		EPA 7470	MHB1	1	PASI-N
		EPA 8270 by SIM	GEJ	19	PASI-N
		EPA 5030B/8260	JRP	45	PASI-N
2048968013	MW-21B	EPA 8015B Modified	SLF	4	PASI-N
		EPA 8015/8021	MHM	2	PASI-N
		EPA 6020	KJR	4	PASI-N
		EPA 6020	KJR	4	PASI-N
		EPA 7470	MHB1	1	PASI-N
		EPA 7470	MHB1	1	PASI-N
		EPA 8270 by SIM	GEJ	19	PASI-N
		EPA 5030B/8260	JRP	45	PASI-N
2048968014	DUP007	EPA 8015B Modified	SLF	4	PASI-N
		EPA 8015/8021	MHM	2	PASI-N
		EPA 6020	KJR	4	PASI-N
		EPA 6020	KJR	4	PASI-N
		EPA 7470	MHB1	1	PASI-N
		EPA 7470	MHB1	1	PASI-N
		EPA 8270 by SIM	GEJ	19	PASI-N
		EPA 5030B/8260	JRP	45	PASI-N
2048968015	FB-011917	EPA 8015/8021	MHM	2	PASI-N
		EPA 5030B/8260	JRP	45	PASI-N

REPORT OF LABORATORY ANALYSIS

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PROJECT NARRATIVE

Project: PUMA TERMINAL GW SAMPLING
Pace Project No.: 2048968

Method: EPA 8015B Modified
Description: 8015M DRO/ORO Organics
Client: BBL Caribe / Arcadis PR
Date: February 22, 2017

General Information:

11 samples were analyzed for EPA 8015B Modified. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:

The samples were analyzed within the method required hold times with any exceptions noted below.

- H2: Extraction or preparation conducted outside EPA method holding time.
- MW-17B (Lab ID: 2048968006)

Sample Preparation:

The samples were prepared in accordance with EPA 3535 with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):

All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:

All criteria were within method requirements with any exceptions noted below.

Surrogates:

All surrogates were within QC limits with any exceptions noted below.

QC Batch: 72656

S2: Surrogate recovery outside laboratory control limits due to matrix interferences (confirmed by similar results from sample re-analysis).

- MW-17B (Lab ID: 2048968006)
- n-Pentacosane (S)

Method Blank:

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

QC Batch: 72656

A matrix spike/matrix spike duplicate was not performed due to insufficient sample volume.

QC Batch: 73658

A matrix spike/matrix spike duplicate was not performed due to insufficient sample volume.

Additional Comments:

REPORT OF LABORATORY ANALYSIS

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PROJECT NARRATIVE

Project: PUMA TERMINAL GW SAMPLING
Pace Project No.: 2048968

Method: EPA 8015B Modified
Description: 8015M DRO/ORO Organics
Client: BBL Caribe / Arcadis PR
Date: February 22, 2017

Batch Comments:

- QC Batch: 72656

Analyte Comments:

QC Batch: 72656

1b: Sample 2048968006 yielded low surrogate recoveries and was therefore re-extracted (outside the holding time limit). Re-analysis surrogate recoveries were within QC limits. Both sets of results were included in the report.

- MW-17B (Lab ID: 2048968006)
 - n-Pentacosane (S)

QC Batch: 73658

1b: Sample 2048968006 yielded low surrogate recoveries and was therefore re-extracted (outside the holding time limit). Re-analysis surrogate recoveries were within QC limits. Both sets of results were included in the report.

- MW-17B (Lab ID: 2048968006)
 - n-Pentacosane (S)

REPORT OF LABORATORY ANALYSIS

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PROJECT NARRATIVE

Project: PUMA TERMINAL GW SAMPLING
Pace Project No.: 2048968

Method: EPA 8015/8021
Description: 8021 GCV BTEX, MTBE, GRO
Client: BBL Caribe / Arcadis PR
Date: February 22, 2017

General Information:

15 samples were analyzed for EPA 8015/8021. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:

The samples were analyzed within the method required hold times with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):

All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:

All criteria were within method requirements with any exceptions noted below.

Surrogates:

All surrogates were within QC limits with any exceptions noted below.

Method Blank:

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

REPORT OF LABORATORY ANALYSIS

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PROJECT NARRATIVE

Project: PUMA TERMINAL GW SAMPLING
Pace Project No.: 2048968

Method: EPA 6020
Description: 6020 MET ICPMS
Client: BBL Caribe / Arcadis PR
Date: February 22, 2017

General Information:

11 samples were analyzed for EPA 6020. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:

The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:

The samples were prepared in accordance with EPA 3010 with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):

All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:

All criteria were within method requirements with any exceptions noted below.

Internal Standards:

All internal standards were within QC limits with any exceptions noted below.

Method Blank:

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

QC Batch: 72609

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 2048890008

M1: Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

- MS (Lab ID: 304155)
 - Chromium
 - Vanadium
- MSD (Lab ID: 304156)
 - Chromium
 - Vanadium

R1: RPD value was outside control limits.

- MSD (Lab ID: 304156)
 - Arsenic
 - Chromium
 - Lead
 - Vanadium

REPORT OF LABORATORY ANALYSIS

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PROJECT NARRATIVE

Project: PUMA TERMINAL GW SAMPLING
Pace Project No.: 2048968

Method: EPA 6020
Description: 6020 MET ICPMS
Client: BBL Caribe / Arcadis PR
Date: February 22, 2017

Additional Comments:

REPORT OF LABORATORY ANALYSIS

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PROJECT NARRATIVE

Project: PUMA TERMINAL GW SAMPLING
Pace Project No.: 2048968

Method: EPA 6020
Description: 6020 MET ICPMS, Dissolved (LF)
Client: BBL Caribe / Arcadis PR
Date: February 22, 2017

General Information:

11 samples were analyzed for EPA 6020. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:

The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:

The samples were prepared in accordance with EPA 3005A with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):

All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:

All criteria were within method requirements with any exceptions noted below.

Internal Standards:

All internal standards were within QC limits with any exceptions noted below.

Method Blank:

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

QC Batch: 72614

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 2048890008

M1: Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

- MS (Lab ID: 304167)
 - Vanadium, Dissolved
- MSD (Lab ID: 304168)
 - Vanadium, Dissolved

Additional Comments:

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PROJECT NARRATIVE

Project: PUMA TERMINAL GW SAMPLING
Pace Project No.: 2048968

Method: EPA 7470
Description: 7470 Mercury
Client: BBL Caribe / Arcadis PR
Date: February 22, 2017

General Information:

11 samples were analyzed for EPA 7470. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:

The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:

The samples were prepared in accordance with EPA 7470 with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):

All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:

All criteria were within method requirements with any exceptions noted below.

Method Blank:

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

REPORT OF LABORATORY ANALYSIS

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PROJECT NARRATIVE

Project: PUMA TERMINAL GW SAMPLING
Pace Project No.: 2048968

Method: EPA 7470
Description: 7470 Mercury, Dissolved (LF)
Client: BBL Caribe / Arcadis PR
Date: February 22, 2017

General Information:

11 samples were analyzed for EPA 7470. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:

The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:

The samples were prepared in accordance with EPA 7470 with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):

All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:

All criteria were within method requirements with any exceptions noted below.

Method Blank:

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

REPORT OF LABORATORY ANALYSIS

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PROJECT NARRATIVE

Project: PUMA TERMINAL GW SAMPLING
Pace Project No.: 2048968

Method: EPA 8270 by SIM
Description: 8270 MSSV PAH by SIM SEP
Client: BBL Caribe / Arcadis PR
Date: February 22, 2017

General Information:

11 samples were analyzed for EPA 8270 by SIM. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:

The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:

The samples were prepared in accordance with EPA 3510 with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):

All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:

All criteria were within method requirements with any exceptions noted below.

Internal Standards:

All internal standards were within QC limits with any exceptions noted below.

Surrogates:

All surrogates were within QC limits with any exceptions noted below.

Method Blank:

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

QC Batch: 72748

A matrix spike/matrix spike duplicate was not performed due to insufficient sample volume.

Additional Comments:

REPORT OF LABORATORY ANALYSIS

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PROJECT NARRATIVE

Project: PUMA TERMINAL GW SAMPLING
Pace Project No.: 2048968

Method: EPA 5030B/8260
Description: 8260 MSV Low Level
Client: BBL Caribe / Arcadis PR
Date: February 22, 2017

General Information:

15 samples were analyzed for EPA 5030B/8260. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:

The samples were analyzed within the method required hold times with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):

All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:

All criteria were within method requirements with any exceptions noted below.

Internal Standards:

All internal standards were within QC limits with any exceptions noted below.

Surrogates:

All surrogates were within QC limits with any exceptions noted below.

Method Blank:

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

Analyte Comments:

QC Batch: 72642

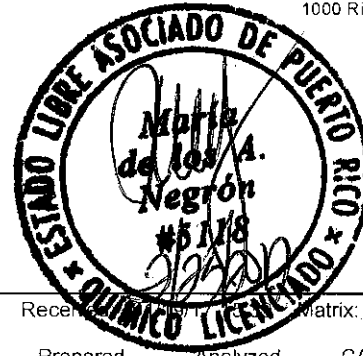
C9: Common Laboratory Contaminant.

- MW-17B (Lab ID: 2048968006)
 - Acetone
- MW-84A (Lab ID: 2048968005)
 - Acetone
- TB-011817 (Lab ID: 2048968001)
 - Acetone
- TB-011917 (Lab ID: 2048968008)
 - Acetone

This data package has been reviewed for quality and completeness and is approved for release.

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: PUMA TERMINAL GW SAMPLING
Pace Project No.: 2048968

Sample: TB-011817 Lab ID: 2048968001 Collected: 01/18/17 00:00 Received: 01/25/17 14:46 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8021 GCV BTEX, MTBE, GRO		Analytical Method: EPA 8015/8021						
Gasoline Range Organics	ND	ug/L	50.0	1		01/25/17 20:46		
Surrogates								
4-Bromofluorobenzene (S)	103	%	44-148	1		01/25/17 20:46	460-00-4	
8260 MSV Low Level		Analytical Method: EPA 5030B/8260						
Acetone	18.5	ug/L	4.0	1		01/20/17 14:46	67-64-1	C9
Benzene	ND	ug/L	0.50	1		01/20/17 14:46	71-43-2	
Bromodichloromethane	0.50	ug/L	0.50	1		01/20/17 14:46	75-27-4	
Bromoform	ND	ug/L	0.50	1		01/20/17 14:46	75-25-2	
Bromomethane	ND	ug/L	0.50	1		01/20/17 14:46	74-83-9	
2-Butanone (MEK)	ND	ug/L	2.0	1		01/20/17 14:46	78-93-3	
Carbon disulfide	ND	ug/L	1.0	1		01/20/17 14:46	75-15-0	
Carbon tetrachloride	ND	ug/L	0.50	1		01/20/17 14:46	56-23-5	
Chlorobenzene	ND	ug/L	0.50	1		01/20/17 14:46	108-90-7	
Chloroethane	ND	ug/L	0.50	1		01/20/17 14:46	75-00-3	
Chloroform	2.4	ug/L	0.50	1		01/20/17 14:46	67-66-3	
Chloromethane	ND	ug/L	0.50	1		01/20/17 14:46	74-87-3	
1,2-Dibromo-3-chloropropane	ND	ug/L	0.20	1		01/20/17 14:46	96-12-8	
Dibromochloromethane	ND	ug/L	0.50	1		01/20/17 14:46	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	1		01/20/17 14:46	106-93-4	
Dichlorodifluoromethane	ND	ug/L	1.0	1		01/20/17 14:46	75-71-8	
1,1-Dichloroethane	ND	ug/L	0.50	1		01/20/17 14:46	75-34-3	
1,2-Dichloroethane	ND	ug/L	0.50	1		01/20/17 14:46	107-06-2	
1,1-Dichloroethene	ND	ug/L	0.50	1		01/20/17 14:46	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	1		01/20/17 14:46	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	0.50	1		01/20/17 14:46	156-60-5	
1,2-Dichloropropane	ND	ug/L	0.50	1		01/20/17 14:46	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	0.50	1		01/20/17 14:46	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	0.50	1		01/20/17 14:46	10061-02-6	
Ethylbenzene	ND	ug/L	0.50	1		01/20/17 14:46	100-41-4	
2-Hexanone	ND	ug/L	1.0	1		01/20/17 14:46	591-78-6	
Isopropylbenzene (Cumene)	ND	ug/L	1.0	1		01/20/17 14:46	98-82-8	
Methyl acetate	ND	ug/L	2.0	1		01/20/17 14:46	79-20-9	
Methylene Chloride	ND	ug/L	0.50	1		01/20/17 14:46	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	1.0	1		01/20/17 14:46	108-10-1	
Methyl-tert-butyl ether	ND	ug/L	0.50	1		01/20/17 14:46	1634-04-4	
Styrene	ND	ug/L	1.0	1		01/20/17 14:46	100-42-5	
1,1,2,2-Tetrachloroethane	ND	ug/L	0.50	1		01/20/17 14:46	79-34-5	
Tetrachloroethene	ND	ug/L	0.50	1		01/20/17 14:46	127-18-4	
Toluene	ND	ug/L	0.50	1		01/20/17 14:46	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	0.50	1		01/20/17 14:46	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	0.50	1		01/20/17 14:46	79-00-5	
Trichloroethene	ND	ug/L	0.50	1		01/20/17 14:46	79-01-6	
Trichlorofluoromethane	ND	ug/L	0.50	1		01/20/17 14:46	75-69-4	
Vinyl chloride	ND	ug/L	0.50	1		01/20/17 14:46	75-01-4	
m&p-Xylene	ND	ug/L	2.0	1		01/20/17 14:46	179601-23-1	
o-Xylene	ND	ug/L	1.0	1		01/20/17 14:46	95-47-6	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS



Project: PUMA TERMINAL GW SAMPLING
Pace Project No.: 2048968

Sample: TB-011817 Lab ID: 2048968001 Collected: 01/18/17 00:00 Received: 01/19/17 15:39 Matrix: Water
Parameters Results Units Report Limit DF Prepared Analyzed CAS No. Qual

8260 MSV Low Level Analytical Method: EPA 5030B/8260

Surrogates

Dibromofluoromethane (S)	93	%	72-126	1	01/20/17 14:46	1868-53-7
4-Bromofluorobenzene (S)	99	%	68-124	1	01/20/17 14:46	460-00-4
Toluene-d8 (S)	106	%	79-119	1	01/20/17 14:46	2037-26-5

Sample: EB-011817 Lab ID: 2048968002 Collected: 01/18/17 09:22 Received: 01/19/17 15:39 Matrix: Water
Parameters Results Units Report Limit DF Prepared Analyzed CAS No. Qual

8015M DRO/ORO Organics Analytical Method: EPA 8015B Modified Preparation Method: EPA 3535

Diesel Range Organic (C10-C28)	ND	mg/L	0.50	1	01/24/17 12:12	02/02/17 11:58
Oil Range Organics (>C28-C40)	ND	mg/L	1.0	1	01/24/17 12:12	02/02/17 11:58
Surrogates						
n-Pentacosane (S)	51	%	16-137	1	01/24/17 12:12	02/02/17 11:58 629-99-2
o-Terphenyl (S)	57	%	10-121	1	01/24/17 12:12	02/02/17 11:58 84-15-1

8021 GCV BTEX, MTBE, GRO Analytical Method: EPA 8015/8021

Gasoline Range Organics	ND	ug/L	50.0	1	01/25/17 21:13	
Surrogates						
4-Bromofluorobenzene (S)	100	%	44-148	1	01/25/17 21:13	460-00-4

6020 MET ICPMS Analytical Method: EPA 6020 Preparation Method: EPA 3010

Arsenic	ND	mg/L	0.0010	1	01/24/17 08:30	02/12/17 16:32 7440-38-2
Chromium	ND	mg/L	0.0010	1	01/24/17 08:30	02/12/17 16:32 7440-47-3
Lead	ND	mg/L	0.0010	1	01/24/17 08:30	02/12/17 16:32 7439-92-1
Vanadium	ND	mg/L	0.0050	1	01/24/17 08:30	02/12/17 16:32 7440-62-2

6020 MET ICPMS, Dissolved (LF) Analytical Method: EPA 6020 Preparation Method: EPA 3005A

Arsenic, Dissolved	ND	ug/L	1.0	1	01/24/17 09:53	02/12/17 19:37 7440-38-2
Chromium, Dissolved	ND	ug/L	1.0	1	01/24/17 09:53	02/12/17 19:37 7440-47-3
Lead, Dissolved	ND	ug/L	1.0	1	01/24/17 09:53	02/12/17 19:37 7439-92-1
Vanadium, Dissolved	ND	ug/L	5.0	1	01/24/17 09:53	02/12/17 19:37 7440-62-2

7470 Mercury Analytical Method: EPA 7470 Preparation Method: EPA 7470

Mercury	ND	ug/L	0.20	1	01/24/17 08:59	01/24/17 17:01 7439-97-6
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7470 Mercury, Dissolved (LF) Analytical Method: EPA 7470 Preparation Method: EPA 7470

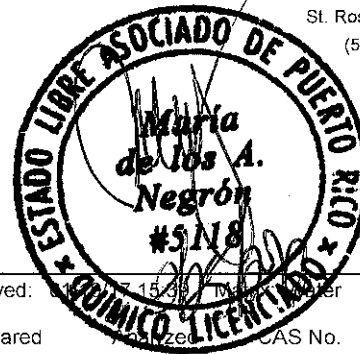
Mercury, Dissolved	ND	ug/L	0.20	1	01/24/17 09:49	01/24/17 19:12 7439-97-6
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8270 MSSV PAH by SIM SEP Analytical Method: EPA 8270 by SIM Preparation Method: EPA 3510

Acenaphthene	ND	ug/L	0.10	1	01/25/17 09:39	01/31/17 13:54 83-32-9
Acenaphthylene	ND	ug/L	0.10	1	01/25/17 09:39	01/31/17 13:54 208-96-8
Anthracene	ND	ug/L	0.10	1	01/25/17 09:39	01/31/17 13:54 120-12-7
Benzo(a)anthracene	ND	ug/L	0.10	1	01/25/17 09:39	01/31/17 13:54 56-55-3
Benzo(a)pyrene	ND	ug/L	0.10	1	01/25/17 09:39	01/31/17 13:54 50-32-8

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: PUMA TERMINAL GW SAMPLING
Pace Project No.: 2048968

Sample: EB-011817	Lab ID: 2048968002	Collected: 01/18/17 09:22	Received: 01/25/17 09:39	Prepared: 01/31/17 13:54	CAS No.	Qual
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8270 MSSV PAH by SIM SEP

Analytical Method: EPA 8270 by SIM Preparation Method: EPA 3510

Parameters	Results	Units	Report Limit	DF	Prepared	CAS No.	Qual
Benzo(b)fluoranthene	ND	ug/L	0.10	1	01/25/17 09:39	01/31/17 13:54	205-99-2
Benzo(g,h,i)perylene	ND	ug/L	0.10	1	01/25/17 09:39	01/31/17 13:54	191-24-2
Benzo(k)fluoranthene	ND	ug/L	0.10	1	01/25/17 09:39	01/31/17 13:54	207-08-9
Chrysene	ND	ug/L	0.10	1	01/25/17 09:39	01/31/17 13:54	218-01-9
Dibenz(a,h)anthracene	ND	ug/L	0.10	1	01/25/17 09:39	01/31/17 13:54	53-70-3
Fluoranthene	ND	ug/L	0.10	1	01/25/17 09:39	01/31/17 13:54	206-44-0
Fluorene	ND	ug/L	0.10	1	01/25/17 09:39	01/31/17 13:54	86-73-7
Indeno(1,2,3-cd)pyrene	ND	ug/L	0.10	1	01/25/17 09:39	01/31/17 13:54	193-39-5
2-Methylnaphthalene	ND	ug/L	0.10	1	01/25/17 09:39	01/31/17 13:54	91-57-6
Naphthalene	ND	ug/L	0.10	1	01/25/17 09:39	01/31/17 13:54	91-20-3
Phenanthrene	ND	ug/L	0.10	1	01/25/17 09:39	01/31/17 13:54	85-01-8
Pyrene	ND	ug/L	0.10	1	01/25/17 09:39	01/31/17 13:54	129-00-0
Surrogates							
2-Fluorobiphenyl (S)	78	%	25-150	1	01/25/17 09:39	01/31/17 13:54	321-60-8
Terphenyl-d14 (S)	78	%	25-150	1	01/25/17 09:39	01/31/17 13:54	1718-51-0

8260 MSV Low Level

Analytical Method: EPA 5030B/8260

Parameters	Results	Units	Report Limit	DF	Prepared	CAS No.	Qual
Acetone	ND	ug/L	4.0	1	01/20/17 15:04	67-64-1	
Benzene	ND	ug/L	0.50	1	01/20/17 15:04	71-43-2	
Bromodichloromethane	ND	ug/L	0.50	1	01/20/17 15:04	75-27-4	
Bromoform	ND	ug/L	0.50	1	01/20/17 15:04	75-25-2	
Bromomethane	ND	ug/L	0.50	1	01/20/17 15:04	74-83-9	
2-Butanone (MEK)	ND	ug/L	2.0	1	01/20/17 15:04	78-93-3	
Carbon disulfide	ND	ug/L	1.0	1	01/20/17 15:04	75-15-0	
Carbon tetrachloride	ND	ug/L	0.50	1	01/20/17 15:04	56-23-5	
Chlorobenzene	ND	ug/L	0.50	1	01/20/17 15:04	108-90-7	
Chloroethane	ND	ug/L	0.50	1	01/20/17 15:04	75-00-3	
Chloroform	ND	ug/L	0.50	1	01/20/17 15:04	67-66-3	
Chloromethane	ND	ug/L	0.50	1	01/20/17 15:04	74-87-3	
1,2-Dibromo-3-chloropropane	ND	ug/L	0.20	1	01/20/17 15:04	96-12-8	
Dibromochloromethane	ND	ug/L	0.50	1	01/20/17 15:04	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	1	01/20/17 15:04	106-93-4	
Dichlorodifluoromethane	ND	ug/L	1.0	1	01/20/17 15:04	75-71-8	
1,1-Dichloroethane	ND	ug/L	0.50	1	01/20/17 15:04	75-34-3	
1,2-Dichloroethane	ND	ug/L	0.50	1	01/20/17 15:04	107-06-2	
1,1-Dichloroethene	ND	ug/L	0.50	1	01/20/17 15:04	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	1	01/20/17 15:04	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	0.50	1	01/20/17 15:04	156-60-5	
1,2-Dichloropropane	ND	ug/L	0.50	1	01/20/17 15:04	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	0.50	1	01/20/17 15:04	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	0.50	1	01/20/17 15:04	10061-02-6	
Ethylbenzene	ND	ug/L	0.50	1	01/20/17 15:04	100-41-4	
2-Hexanone	ND	ug/L	1.0	1	01/20/17 15:04	591-78-6	
Isopropylbenzene (Cumene)	ND	ug/L	1.0	1	01/20/17 15:04	98-82-8	
Methyl acetate	ND	ug/L	2.0	1	01/20/17 15:04	79-20-9	
Methylene Chloride	ND	ug/L	0.50	1	01/20/17 15:04	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	1.0	1	01/20/17 15:04	108-10-1	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS



Project: PUMA TERMINAL GW SAMPLING
Pace Project No.: 2048968

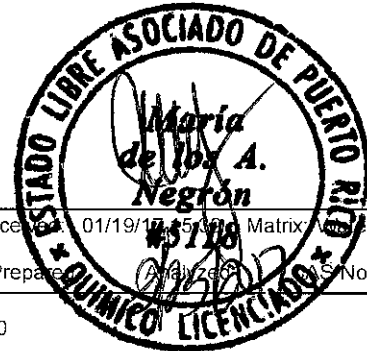
Sample:	Lab ID:	Collected:	Received:	Matrix:				
EB-011817	2048968002	01/18/17 09:22	01/19/17 15:39	Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV Low Level Analytical Method: EPA 5030B/8260								
Methyl-tert-butyl ether	ND	ug/L	0.50	1	01/20/17 15:04	1634-04-4		
Styrene	ND	ug/L	1.0	1	01/20/17 15:04	100-42-5		
1,1,2,2-Tetrachloroethane	ND	ug/L	0.50	1	01/20/17 15:04	79-34-5		
Tetrachloroethene	ND	ug/L	0.50	1	01/20/17 15:04	127-18-4		
Toluene	ND	ug/L	0.50	1	01/20/17 15:04	108-88-3		
1,1,1-Trichloroethane	ND	ug/L	0.50	1	01/20/17 15:04	71-55-6		
1,1,2-Trichloroethane	ND	ug/L	0.50	1	01/20/17 15:04	79-00-5		
Trichloroethene	ND	ug/L	0.50	1	01/20/17 15:04	79-01-6		
Trichlorofluoromethane	ND	ug/L	0.50	1	01/20/17 15:04	75-69-4		
Vinyl chloride	ND	ug/L	0.50	1	01/20/17 15:04	75-01-4		
m&p-Xylene	ND	ug/L	2.0	1	01/20/17 15:04	179601-23-1		
o-Xylene	ND	ug/L	1.0	1	01/20/17 15:04	95-47-6		
Surrogates								
Dibromofluoromethane (S)	94	%	72-126	1	01/20/17 15:04	1868-53-7		
4-Bromofluorobenzene (S)	99	%	68-124	1	01/20/17 15:04	460-00-4		
Toluene-d8 (S)	106	%	79-119	1	01/20/17 15:04	2037-26-5		

Sample:	Lab ID:	Collected:	Received:	Matrix:				
MW-38A	2048968003	01/18/17 11:16	01/19/17 15:39	Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8015M DRO/ORO Organics Analytical Method: EPA 8015B Modified Preparation Method: EPA 3535								
Diesel Range Organic (C10-C28)	ND	mg/L	0.50	1	01/24/17 12:12	02/02/17 12:26		
Oil Range Organics (>C28-C40)	ND	mg/L	1.0	1	01/24/17 12:12	02/02/17 12:26		
Surrogates								
n-Pentacosane (S)	39	%	16-137	1	01/24/17 12:12	02/02/17 12:26	629-99-2	
o-Terphenyl (S)	44	%	10-121	1	01/24/17 12:12	02/02/17 12:26	84-15-1	
8021 GCV BTEX, MTBE, GRO Analytical Method: EPA 8015/8021								
Gasoline Range Organics	ND	ug/L	50.0	1	01/25/17 21:40			
Surrogates								
4-Bromofluorobenzene (S)	101	%	44-148	1	01/25/17 21:40		460-00-4	
6020 MET ICPMS Analytical Method: EPA 6020 Preparation Method: EPA 3010								
Arsenic	ND	mg/L	0.0010	1	01/24/17 08:30	02/12/17 16:44	7440-38-2	
Chromium	ND	mg/L	0.0010	1	01/24/17 08:30	02/12/17 16:44	7440-47-3	
Lead	0.0014	mg/L	0.0010	1	01/24/17 08:30	02/12/17 16:44	7439-92-1	
Vanadium	0.0070	mg/L	0.0050	1	01/24/17 08:30	02/12/17 16:44	7440-62-2	
6020 MET ICPMS, Dissolved (LF) Analytical Method: EPA 6020 Preparation Method: EPA 3005A								
Arsenic, Dissolved	ND	ug/L	1.0	1	01/24/17 09:53	02/12/17 19:41	7440-38-2	
Chromium, Dissolved	ND	ug/L	1.0	1	01/24/17 09:53	02/12/17 19:41	7440-47-3	
Lead, Dissolved	ND	ug/L	1.0	1	01/24/17 09:53	02/12/17 19:41	7439-92-1	
Vanadium, Dissolved	ND	ug/L	5.0	1	01/24/17 09:53	02/12/17 19:41	7440-62-2	

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ANALYTICAL RESULTS



Project: PUMA TERMINAL GW SAMPLING
Pace Project No.: 2048968

Sample:	Lab ID:	Collected:	Received:	Matrix:	Prepared:	Analysed:	MS No.	Qual
Parameters	Results	Units	Report Limit	DF	Prepared	Analysed	MS No.	Qual
7470 Mercury	Analytical Method: EPA 7470 Preparation Method: EPA 7470							
Mercury	ND	ug/L	0.20	1	01/24/17 08:59	01/24/17 17:03	7439-97-6	
7470 Mercury, Dissolved (LF)	Analytical Method: EPA 7470 Preparation Method: EPA 7470							
Mercury, Dissolved	ND	ug/L	0.20	1	01/24/17 09:49	01/24/17 19:15	7439-97-6	
8270 MSSV PAH by SIM SEP	Analytical Method: EPA 8270 by SIM Preparation Method: EPA 3510							
Acenaphthene	ND	ug/L	0.10	1	01/25/17 09:39	01/31/17 14:14	83-32-9	
Acenaphthylene	ND	ug/L	0.10	1	01/25/17 09:39	01/31/17 14:14	208-96-8	
Anthracene	ND	ug/L	0.10	1	01/25/17 09:39	01/31/17 14:14	120-12-7	
Benzo(a)anthracene	ND	ug/L	0.10	1	01/25/17 09:39	01/31/17 14:14	56-55-3	
Benzo(a)pyrene	ND	ug/L	0.10	1	01/25/17 09:39	01/31/17 14:14	50-32-8	
Benzo(b)fluoranthene	ND	ug/L	0.10	1	01/25/17 09:39	01/31/17 14:14	205-99-2	
Benzo(g,h,i)perylene	ND	ug/L	0.10	1	01/25/17 09:39	01/31/17 14:14	191-24-2	
Benzo(k)fluoranthene	ND	ug/L	0.10	1	01/25/17 09:39	01/31/17 14:14	207-08-9	
Chrysene	ND	ug/L	0.10	1	01/25/17 09:39	01/31/17 14:14	218-01-9	
Dibenz(a,h)anthracene	ND	ug/L	0.10	1	01/25/17 09:39	01/31/17 14:14	53-70-3	
Fluoranthene	ND	ug/L	0.10	1	01/25/17 09:39	01/31/17 14:14	206-44-0	
Fluorene	ND	ug/L	0.10	1	01/25/17 09:39	01/31/17 14:14	86-73-7	
Indeno(1,2,3-cd)pyrene	ND	ug/L	0.10	1	01/25/17 09:39	01/31/17 14:14	193-39-5	
2-Methylnaphthalene	ND	ug/L	0.10	1	01/25/17 09:39	01/31/17 14:14	91-57-6	
Naphthalene	ND	ug/L	0.10	1	01/25/17 09:39	01/31/17 14:14	91-20-3	
Phenanthrene	ND	ug/L	0.10	1	01/25/17 09:39	01/31/17 14:14	85-01-8	
Pyrene	ND	ug/L	0.10	1	01/25/17 09:39	01/31/17 14:14	129-00-0	
Surrogates								
2-Fluorobiphenyl (S)	78	%	25-150	1	01/25/17 09:39	01/31/17 14:14	321-60-8	
Terphenyl-d14 (S)	78	%	25-150	1	01/25/17 09:39	01/31/17 14:14	1718-51-0	
8260 MSV Low Level	Analytical Method: EPA 5030B/8260							
Acetone	ND	ug/L	4.0	1	01/20/17 15:23	01/20/17 15:23	67-64-1	
Benzene	ND	ug/L	0.50	1	01/20/17 15:23	01/20/17 15:23	71-43-2	
Bromodichloromethane	ND	ug/L	0.50	1	01/20/17 15:23	01/20/17 15:23	75-27-4	
Bromoform	ND	ug/L	0.50	1	01/20/17 15:23	01/20/17 15:23	75-25-2	
Bromomethane	ND	ug/L	0.50	1	01/20/17 15:23	01/20/17 15:23	74-83-9	
2-Butanone (MEK)	ND	ug/L	2.0	1	01/20/17 15:23	01/20/17 15:23	78-93-3	
Carbon disulfide	ND	ug/L	1.0	1	01/20/17 15:23	01/20/17 15:23	75-15-0	
Carbon tetrachloride	ND	ug/L	0.50	1	01/20/17 15:23	01/20/17 15:23	56-23-5	
Chlorobenzene	ND	ug/L	0.50	1	01/20/17 15:23	01/20/17 15:23	108-90-7	
Chloroethane	ND	ug/L	0.50	1	01/20/17 15:23	01/20/17 15:23	75-00-3	
Chloroform	0.62	ug/L	0.50	1	01/20/17 15:23	01/20/17 15:23	67-66-3	
Chloromethane	ND	ug/L	0.50	1	01/20/17 15:23	01/20/17 15:23	74-87-3	
1,2-Dibromo-3-chloropropane	ND	ug/L	0.20	1	01/20/17 15:23	01/20/17 15:23	96-12-8	
Dibromochloromethane	ND	ug/L	0.50	1	01/20/17 15:23	01/20/17 15:23	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	1	01/20/17 15:23	01/20/17 15:23	106-93-4	
Dichlorodifluoromethane	ND	ug/L	1.0	1	01/20/17 15:23	01/20/17 15:23	75-71-8	
1,1-Dichloroethane	ND	ug/L	0.50	1	01/20/17 15:23	01/20/17 15:23	75-34-3	
1,2-Dichloroethane	ND	ug/L	0.50	1	01/20/17 15:23	01/20/17 15:23	107-06-2	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS



Project: PUMA TERMINAL GW SAMPLING
Pace Project No.: 2048968

Sample: **MW-38A** Lab ID: **2048968003** Collected: 01/18/17 11:16 Received: 01/19/17 15:39 Matrix: Water
Prepared: [Signature] Analyzed: [Signature] CAS No. Qual

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV Low Level		Analytical Method: EPA 5030B/8260						
1,1-Dichloroethene	ND	ug/L	0.50	1	01/20/17 15:23	75-35-4		
cis-1,2-Dichloroethene	ND	ug/L	1.0	1	01/20/17 15:23	156-59-2		
trans-1,2-Dichloroethene	ND	ug/L	0.50	1	01/20/17 15:23	156-60-5		
1,2-Dichloropropane	ND	ug/L	0.50	1	01/20/17 15:23	78-87-5		
cis-1,3-Dichloropropene	ND	ug/L	0.50	1	01/20/17 15:23	10061-01-5		
trans-1,3-Dichloropropene	ND	ug/L	0.50	1	01/20/17 15:23	10061-02-6		
Ethylbenzene	ND	ug/L	0.50	1	01/20/17 15:23	100-41-4		
2-Hexanone	ND	ug/L	1.0	1	01/20/17 15:23	591-78-6		
Isopropylbenzene (Cumene)	ND	ug/L	1.0	1	01/20/17 15:23	98-82-8		
Methyl acetate	ND	ug/L	2.0	1	01/20/17 15:23	79-20-9		
Methylene Chloride	ND	ug/L	0.50	1	01/20/17 15:23	75-09-2		
4-Methyl-2-pentanone (MIBK)	ND	ug/L	1.0	1	01/20/17 15:23	108-10-1		
Methyl-tert-butyl ether	ND	ug/L	0.50	1	01/20/17 15:23	1634-04-4		
Styrene	ND	ug/L	1.0	1	01/20/17 15:23	100-42-5		
1,1,2,2-Tetrachloroethane	ND	ug/L	0.50	1	01/20/17 15:23	79-34-5		
Tetrachloroethene	ND	ug/L	0.50	1	01/20/17 15:23	127-18-4		
Toluene	ND	ug/L	0.50	1	01/20/17 15:23	108-88-3		
1,1,1-Trichloroethane	ND	ug/L	0.50	1	01/20/17 15:23	71-55-6		
1,1,2-Trichloroethane	ND	ug/L	0.50	1	01/20/17 15:23	79-00-5		
Trichloroethene	ND	ug/L	0.50	1	01/20/17 15:23	79-01-6		
Trichlorofluoromethane	ND	ug/L	0.50	1	01/20/17 15:23	75-69-4		
Vinyl chloride	ND	ug/L	0.50	1	01/20/17 15:23	75-01-4		
m&p-Xylene	ND	ug/L	2.0	1	01/20/17 15:23	179601-23-1		
o-Xylene	ND	ug/L	1.0	1	01/20/17 15:23	95-47-6		
Surrogates								
Dibromofluoromethane (S)	95	%	72-126	1	01/20/17 15:23	1868-53-7		
4-Bromofluorobenzene (S)	100	%	68-124	1	01/20/17 15:23	460-00-4		
Toluene-d8 (S)	106	%	79-119	1	01/20/17 15:23	2037-26-5		

Sample: **MW-84B2** Lab ID: **2048968004** Collected: 01/18/17 12:31 Received: 01/19/17 15:39 Matrix: Water
Parameters Results Units Report Limit DF Prepared Analyzed CAS No. Quali

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Quali
8015M DRO/ORO Organics		Analytical Method: EPA 8015B Modified Preparation Method: EPA 3535						
Diesel Range Organic (C10-C28)	ND	mg/L	0.50	1	01/24/17 12:12	02/02/17 12:55		
Oil Range Organics (>C28-C40)	ND	mg/L	1.0	1	01/24/17 12:12	02/02/17 12:55		
Surrogates								
n-Pentacosane (S)	68	%	16-137	1	01/24/17 12:12	02/02/17 12:55	629-99-2	
o-Terphenyl (S)	62	%	10-121	1	01/24/17 12:12	02/02/17 12:55	84-15-1	
8021 GCV BTEX, MTBE, GRO		Analytical Method: EPA 8015/8021						
Gasoline Range Organics	ND	ug/L	50.0	1	01/25/17 22:07			
Surrogates								
4-Bromofluorobenzene (S)	101	%	44-148	1	01/25/17 22:07	460-00-4		

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ANALYTICAL RESULTS



Project: PUMA TERMINAL GW SAMPLING
Pace Project No.: 2048968

Sample: MW-84B2 Lab ID: 2048968004 Collected: 01/18/17 12:31 Received: 01/18/17 12:31 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prep	Analysis	CAS No.	Qual
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6020 MET ICPMS

Analytical Method: EPA 6020 Preparation Method: EPA 3010

Arsenic	0.0026	mg/L	0.0010	1	01/24/17 08:30	02/12/17 16:48	7440-38-2	
Chromium	ND	mg/L	0.0010	1	01/24/17 08:30	02/12/17 16:48	7440-47-3	
Lead	ND	mg/L	0.0010	1	01/24/17 08:30	02/12/17 16:48	7439-92-1	
Vanadium	ND	mg/L	0.0050	1	01/24/17 08:30	02/12/17 16:48	7440-62-2	

6020 MET ICPMS, Dissolved (LF)

Analytical Method: EPA 6020 Preparation Method: EPA 3005A

Arsenic, Dissolved	1.3	ug/L	1.0	1	01/24/17 09:53	02/12/17 19:53	7440-38-2	
Chromium, Dissolved	ND	ug/L	1.0	1	01/24/17 09:53	02/12/17 19:53	7440-47-3	
Lead, Dissolved	ND	ug/L	1.0	1	01/24/17 09:53	02/12/17 19:53	7439-92-1	
Vanadium, Dissolved	ND	ug/L	5.0	1	01/24/17 09:53	02/12/17 19:53	7440-62-2	

7470 Mercury

Analytical Method: EPA 7470 Preparation Method: EPA 7470

Mercury	ND	ug/L	0.20	1	01/24/17 08:59	01/24/17 17:10	7439-97-6	
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7470 Mercury, Dissolved (LF)

Analytical Method: EPA 7470 Preparation Method: EPA 7470

Mercury, Dissolved	ND	ug/L	0.20	1	01/24/17 09:49	01/24/17 19:17	7439-97-6	
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8270 MSSV PAH by SIM SEP

Analytical Method: EPA 8270 by SIM Preparation Method: EPA 3510

Acenaphthene	ND	ug/L	0.10	1	01/25/17 09:39	01/31/17 14:34	83-32-9	
Acenaphthylene	ND	ug/L	0.10	1	01/25/17 09:39	01/31/17 14:34	208-96-8	
Anthracene	ND	ug/L	0.10	1	01/25/17 09:39	01/31/17 14:34	120-12-7	
Benzo(a)anthracene	ND	ug/L	0.10	1	01/25/17 09:39	01/31/17 14:34	56-55-3	
Benzo(a)pyrene	ND	ug/L	0.10	1	01/25/17 09:39	01/31/17 14:34	50-32-8	
Benzo(b)fluoranthene	ND	ug/L	0.10	1	01/25/17 09:39	01/31/17 14:34	205-99-2	
Benzo(g,h,i)perylene	ND	ug/L	0.10	1	01/25/17 09:39	01/31/17 14:34	191-24-2	
Benzo(k)fluoranthene	ND	ug/L	0.10	1	01/25/17 09:39	01/31/17 14:34	207-08-9	
Chrysene	ND	ug/L	0.10	1	01/25/17 09:39	01/31/17 14:34	218-01-9	
Dibenz(a,h)anthracene	ND	ug/L	0.10	1	01/25/17 09:39	01/31/17 14:34	53-70-3	
Fluoranthene	ND	ug/L	0.10	1	01/25/17 09:39	01/31/17 14:34	206-44-0	
Fluorene	ND	ug/L	0.10	1	01/25/17 09:39	01/31/17 14:34	86-73-7	
Indeno(1,2,3-cd)pyrene	ND	ug/L	0.10	1	01/25/17 09:39	01/31/17 14:34	193-39-5	
2-Methylnaphthalene	ND	ug/L	0.10	1	01/25/17 09:39	01/31/17 14:34	91-57-6	
Naphthalene	ND	ug/L	0.10	1	01/25/17 09:39	01/31/17 14:34	91-20-3	
Phenanthrene	ND	ug/L	0.10	1	01/25/17 09:39	01/31/17 14:34	85-01-8	
Pyrene	ND	ug/L	0.10	1	01/25/17 09:39	01/31/17 14:34	129-00-0	
Surrogates								
2-Fluorobiphenyl (S)	70	%	25-150	1	01/25/17 09:39	01/31/17 14:34	321-60-8	
Terphenyl-d14 (S)	71	%	25-150	1	01/25/17 09:39	01/31/17 14:34	1718-51-0	

8260 MSV Low Level

Analytical Method: EPA 5030B/8260

Acetone	ND	ug/L	4.0	1		01/20/17 15:41	67-64-1	
Benzene	ND	ug/L	0.50	1		01/20/17 15:41	71-43-2	
Bromodichloromethane	ND	ug/L	0.50	1		01/20/17 15:41	75-27-4	
Bromoform	ND	ug/L	0.50	1		01/20/17 15:41	75-25-2	
Bromomethane	ND	ug/L	0.50	1		01/20/17 15:41	74-83-9	
2-Butanone (MEK)	ND	ug/L	2.0	1		01/20/17 15:41	78-93-3	

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ANALYTICAL RESULTS

Project: PUMA TERMINAL GW SAMPLING
Pace Project No.: 2048968

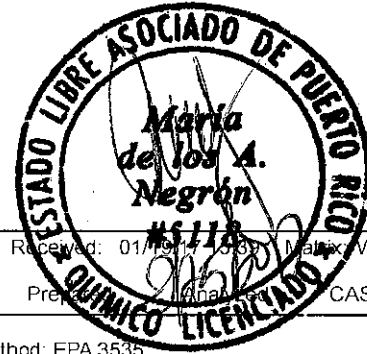
Sample: MW-84B2 Lab ID: 2048968004 Collected: 01/18/17 12:31 Received: 01/20/17 15:41 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV Low Level		Analytical Method: EPA 5030B/8260						
Carbon disulfide	ND	ug/L	1.0	1		01/20/17 15:41	75-15-0	
Carbon tetrachloride	ND	ug/L	0.50	1		01/20/17 15:41	56-23-5	
Chlorobenzene	ND	ug/L	0.50	1		01/20/17 15:41	108-90-7	
Chloroethane	ND	ug/L	0.50	1		01/20/17 15:41	75-00-3	
Chloroform	ND	ug/L	0.50	1		01/20/17 15:41	67-66-3	
Chloromethane	ND	ug/L	0.50	1		01/20/17 15:41	74-87-3	
1,2-Dibromo-3-chloropropane	ND	ug/L	0.20	1		01/20/17 15:41	96-12-8	
Dibromochloromethane	ND	ug/L	0.50	1		01/20/17 15:41	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	1		01/20/17 15:41	106-93-4	
Dichlorodifluoromethane	ND	ug/L	1.0	1		01/20/17 15:41	75-71-8	
1,1-Dichloroethane	ND	ug/L	0.50	1		01/20/17 15:41	75-34-3	
1,2-Dichloroethane	ND	ug/L	0.50	1		01/20/17 15:41	107-06-2	
1,1-Dichloroethene	ND	ug/L	0.50	1		01/20/17 15:41	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	1		01/20/17 15:41	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	0.50	1		01/20/17 15:41	156-60-5	
1,2-Dichloropropane	ND	ug/L	0.50	1		01/20/17 15:41	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	0.50	1		01/20/17 15:41	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	0.50	1		01/20/17 15:41	10061-02-6	
Ethylbenzene	ND	ug/L	0.50	1		01/20/17 15:41	100-41-4	
2-Hexanone	ND	ug/L	1.0	1		01/20/17 15:41	591-78-6	
Isopropylbenzene (Cumene)	ND	ug/L	1.0	1		01/20/17 15:41	98-82-8	
Methyl acetate	ND	ug/L	2.0	1		01/20/17 15:41	79-20-9	
Methylene Chloride	ND	ug/L	0.50	1		01/20/17 15:41	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	1.0	1		01/20/17 15:41	108-10-1	
Methyl-tert-butyl ether	ND	ug/L	0.50	1		01/20/17 15:41	1634-04-4	
Styrene	ND	ug/L	1.0	1		01/20/17 15:41	100-42-5	
1,1,2,2-Tetrachloroethane	ND	ug/L	0.50	1		01/20/17 15:41	79-34-5	
Tetrachloroethene	ND	ug/L	0.50	1		01/20/17 15:41	127-18-4	
Toluene	ND	ug/L	0.50	1		01/20/17 15:41	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	0.50	1		01/20/17 15:41	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	0.50	1		01/20/17 15:41	79-00-5	
Trichloroethene	ND	ug/L	0.50	1		01/20/17 15:41	79-01-6	
Trichlorofluoromethane	ND	ug/L	0.50	1		01/20/17 15:41	75-69-4	
Vinyl chloride	ND	ug/L	0.50	1		01/20/17 15:41	75-01-4	
m&p-Xylene	ND	ug/L	2.0	1		01/20/17 15:41	179601-23-1	
o-Xylene	ND	ug/L	1.0	1		01/20/17 15:41	95-47-6	
Surrogates								
Dibromofluoromethane (S)	96	%	72-126	1		01/20/17 15:41	1868-53-7	
4-Bromofluorobenzene (S)	98	%	68-124	1		01/20/17 15:41	460-00-4	
Toluene-d8 (S)	105	%	79-119	1		01/20/17 15:41	2037-26-5	

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ANALYTICAL RESULTS



Project: PUMA TERMINAL GW SAMPLING
Pace Project No.: 2048968

Sample: MW-84A Lab ID: 2048968005 Collected: 01/18/17 13:23 Received: 01/19/17 09:00 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Preparation	Analysis	CAS No.	Qual
8015M DRO/ORO Organics Analytical Method: EPA 8015B Modified Preparation Method: EPA 3535								
Diesel Range Organic (C10-C28)	ND	mg/L	0.50	1	01/24/17 12:12	02/02/17 13:23		
Oil Range Organics (>C28-C40)	ND	mg/L	1.0	1	01/24/17 12:12	02/02/17 13:23		
Surrogates								
n-Pentacosane (S)	37	%	16-137	1	01/24/17 12:12	02/02/17 13:23	629-99-2	
o-Terphenyl (S)	38	%	10-121	1	01/24/17 12:12	02/02/17 13:23	84-15-1	
8021 GCV BTEX, MTBE, GRO Analytical Method: EPA 8015/8021								
Gasoline Range Organics	ND	ug/L	50.0	1		01/25/17 23:30		
Surrogates								
4-Bromofluorobenzene (S)	102	%	44-148	1		01/25/17 23:30	460-00-4	
6020 MET ICPMS Analytical Method: EPA 6020 Preparation Method: EPA 3010								
Arsenic	0.012	mg/L	0.0010	1	01/24/17 08:30	02/12/17 16:52	7440-38-2	
Chromium	ND	mg/L	0.0010	1	01/24/17 08:30	02/12/17 16:52	7440-47-3	
Lead	ND	mg/L	0.0010	1	01/24/17 08:30	02/12/17 16:52	7439-92-1	
Vanadium	ND	mg/L	0.0050	1	01/24/17 08:30	02/12/17 16:52	7440-62-2	
6020 MET ICPMS, Dissolved (LF) Analytical Method: EPA 6020 Preparation Method: EPA 3005A								
Arsenic, Dissolved	10.7	ug/L	1.0	1	01/24/17 09:53	02/12/17 19:57	7440-38-2	
Chromium, Dissolved	ND	ug/L	1.0	1	01/24/17 09:53	02/12/17 19:57	7440-47-3	
Lead, Dissolved	ND	ug/L	1.0	1	01/24/17 09:53	02/12/17 19:57	7439-92-1	
Vanadium, Dissolved	ND	ug/L	5.0	1	01/24/17 09:53	02/12/17 19:57	7440-62-2	
7470 Mercury Analytical Method: EPA 7470 Preparation Method: EPA 7470								
Mercury	ND	ug/L	0.20	1	01/24/17 08:59	01/24/17 17:12	7439-97-6	
7470 Mercury, Dissolved (LF) Analytical Method: EPA 7470 Preparation Method: EPA 7470								
Mercury, Dissolved	ND	ug/L	0.20	1	01/24/17 09:49	01/24/17 19:24	7439-97-6	
8270 MSSV PAH by SIM SEP Analytical Method: EPA 8270 by SIM Preparation Method: EPA 3510								
Acenaphthene	ND	ug/L	0.10	1	01/25/17 09:39	01/31/17 15:13	83-32-9	
Acenaphthylene	ND	ug/L	0.10	1	01/25/17 09:39	01/31/17 15:13	208-96-8	
Anthracene	ND	ug/L	0.10	1	01/25/17 09:39	01/31/17 15:13	120-12-7	
Benzo(a)anthracene	ND	ug/L	0.10	1	01/25/17 09:39	01/31/17 15:13	56-55-3	
Benzo(a)pyrene	ND	ug/L	0.10	1	01/25/17 09:39	01/31/17 15:13	50-32-8	
Benzo(b)fluoranthene	ND	ug/L	0.10	1	01/25/17 09:39	01/31/17 15:13	205-99-2	
Benzo(g,h,i)perylene	ND	ug/L	0.10	1	01/25/17 09:39	01/31/17 15:13	191-24-2	
Benzo(k)fluoranthene	ND	ug/L	0.10	1	01/25/17 09:39	01/31/17 15:13	207-08-9	
Chrysene	ND	ug/L	0.10	1	01/25/17 09:39	01/31/17 15:13	218-01-9	
Dibenz(a,h)anthracene	ND	ug/L	0.10	1	01/25/17 09:39	01/31/17 15:13	53-70-3	
Fluoranthene	ND	ug/L	0.10	1	01/25/17 09:39	01/31/17 15:13	206-44-0	
Fluorene	ND	ug/L	0.10	1	01/25/17 09:39	01/31/17 15:13	86-73-7	
Indeno(1,2,3-cd)pyrene	ND	ug/L	0.10	1	01/25/17 09:39	01/31/17 15:13	193-39-5	
2-Methylnaphthalene	ND	ug/L	0.10	1	01/25/17 09:39	01/31/17 15:13	91-57-6	
Naphthalene	ND	ug/L	0.10	1	01/25/17 09:39	01/31/17 15:13	91-20-3	
Phenanthrene	ND	ug/L	0.10	1	01/25/17 09:39	01/31/17 15:13	85-01-8	

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ANALYTICAL RESULTS

Project: PUMA TERMINAL GW SAMPLING
Pace Project No.: 2048968



Sample: MW-84A Lab ID: 2048968005 Collected: 01/18/17 13:23 Received: 01/25/17 09:38 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Printed	Received	Matrix	CAS No.	Qual
8270 MSSV PAH by SIM SEP									
Analytical Method: EPA 8270 by SIM Preparation Method: EPA 3510									
Pyrene	ND	ug/L	0.10	1	01/25/17 09:39	01/31/17 15:13		129-00-0	
Surrogates									
2-Fluorobiphenyl (S)	82	%	25-150	1	01/25/17 09:39	01/31/17 15:13		321-60-8	
Terphenyl-d14 (S)	87	%	25-150	1	01/25/17 09:39	01/31/17 15:13		1718-51-0	
8260 MSV Low Level									
Analytical Method: EPA 5030B/8260									
Acetone	50.9	ug/L	4.0	1	01/20/17 15:59	01/20/17 15:59		67-64-1	C9
Benzene	ND	ug/L	0.50	1	01/20/17 15:59	01/20/17 15:59		71-43-2	
Bromodichloromethane	ND	ug/L	0.50	1	01/20/17 15:59	01/20/17 15:59		75-27-4	
Bromoform	ND	ug/L	0.50	1	01/20/17 15:59	01/20/17 15:59		75-25-2	
Bromomethane	ND	ug/L	0.50	1	01/20/17 15:59	01/20/17 15:59		74-83-9	
2-Butanone (MEK)	ND	ug/L	2.0	1	01/20/17 15:59	01/20/17 15:59		78-93-3	
Carbon disulfide	ND	ug/L	1.0	1	01/20/17 15:59	01/20/17 15:59		75-15-0	
Carbon tetrachloride	ND	ug/L	0.50	1	01/20/17 15:59	01/20/17 15:59		56-23-5	
Chlorobenzene	ND	ug/L	0.50	1	01/20/17 15:59	01/20/17 15:59		108-90-7	
Chloroethane	ND	ug/L	0.50	1	01/20/17 15:59	01/20/17 15:59		75-00-3	
Chloroform	ND	ug/L	0.50	1	01/20/17 15:59	01/20/17 15:59		67-66-3	
Chloromethane	ND	ug/L	0.50	1	01/20/17 15:59	01/20/17 15:59		74-87-3	
1,2-Dibromo-3-chloropropane	ND	ug/L	0.20	1	01/20/17 15:59	01/20/17 15:59		96-12-8	
Dibromochloromethane	ND	ug/L	0.50	1	01/20/17 15:59	01/20/17 15:59		124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	1	01/20/17 15:59	01/20/17 15:59		106-93-4	
Dichlorodifluoromethane	ND	ug/L	1.0	1	01/20/17 15:59	01/20/17 15:59		75-71-8	
1,1-Dichloroethane	ND	ug/L	0.50	1	01/20/17 15:59	01/20/17 15:59		75-34-3	
1,2-Dichloroethane	ND	ug/L	0.50	1	01/20/17 15:59	01/20/17 15:59		107-06-2	
1,1-Dichloroethene	ND	ug/L	0.50	1	01/20/17 15:59	01/20/17 15:59		75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	1	01/20/17 15:59	01/20/17 15:59		156-59-2	
trans-1,2-Dichloroethene	0.62	ug/L	0.50	1	01/20/17 15:59	01/20/17 15:59		156-60-5	
1,2-Dichloropropane	ND	ug/L	0.50	1	01/20/17 15:59	01/20/17 15:59		78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	0.50	1	01/20/17 15:59	01/20/17 15:59		10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	0.50	1	01/20/17 15:59	01/20/17 15:59		10061-02-6	
Ethylbenzene	ND	ug/L	0.50	1	01/20/17 15:59	01/20/17 15:59		100-41-4	
2-Hexanone	ND	ug/L	1.0	1	01/20/17 15:59	01/20/17 15:59		591-78-6	
Isopropylbenzene (Cumene)	ND	ug/L	1.0	1	01/20/17 15:59	01/20/17 15:59		98-82-8	
Methyl acetate	ND	ug/L	2.0	1	01/20/17 15:59	01/20/17 15:59		79-20-9	
Methylene Chloride	ND	ug/L	0.50	1	01/20/17 15:59	01/20/17 15:59		75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	1.0	1	01/20/17 15:59	01/20/17 15:59		108-10-1	
Methyl-tert-butyl ether	3.3	ug/L	0.50	1	01/20/17 15:59	01/20/17 15:59		1634-04-4	
Styrene	ND	ug/L	1.0	1	01/20/17 15:59	01/20/17 15:59		100-42-5	
1,1,2,2-Tetrachloroethane	ND	ug/L	0.50	1	01/20/17 15:59	01/20/17 15:59		79-34-5	
Tetrachloroethene	ND	ug/L	0.50	1	01/20/17 15:59	01/20/17 15:59		127-18-4	
Toluene	ND	ug/L	0.50	1	01/20/17 15:59	01/20/17 15:59		108-88-3	
1,1,1-Trichloroethane	ND	ug/L	0.50	1	01/20/17 15:59	01/20/17 15:59		71-55-6	
1,1,2-Trichloroethane	ND	ug/L	0.50	1	01/20/17 15:59	01/20/17 15:59		79-00-5	
Trichloroethene	ND	ug/L	0.50	1	01/20/17 15:59	01/20/17 15:59		79-01-6	
Trichlorofluoromethane	ND	ug/L	0.50	1	01/20/17 15:59	01/20/17 15:59		75-69-4	
Vinyl chloride	ND	ug/L	0.50	1	01/20/17 15:59	01/20/17 15:59		75-01-4	
m&p-Xylene	ND	ug/L	2.0	1	01/20/17 15:59	01/20/17 15:59		179601-23-1	

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ANALYTICAL RESULTS



Project: PUMA TERMINAL GW SAMPLING
Pace Project No.: 2048968

Sample: MW-84A Lab ID: 2048968005 Collected: 01/18/17 13:23 Received: 01/19/17 15:39 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV Low Level		Analytical Method: EPA 5030B/8260						
o-Xylene	ND	ug/L	1.0	1	01/20/17 15:59		95-47-6	
Surrogates								
Dibromofluoromethane (S)	95	%	72-126	1	01/20/17 15:59		1868-53-7	
4-Bromofluorobenzene (S)	99	%	68-124	1	01/20/17 15:59		460-00-4	
Toluene-d8 (S)	105	%	79-119	1	01/20/17 15:59		2037-26-5	

Sample: MW-17B Lab ID: 2048968006 Collected: 01/18/17 15:34 Received: 01/19/17 15:39 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8015M DRO/ORO Organics		Analytical Method: EPA 8015B Modified Preparation Method: EPA 3535						
Diesel Range Organic (C10-C28)	ND	mg/L	0.50	1	01/24/17 12:12	02/02/17 13:51		
Diesel Range Organic (C10-C28)	ND	mg/L	0.50	1	02/06/17 08:47	02/06/17 13:13		H2
Oil Range Organics (>C28-C40)	ND	mg/L	1.0	1	01/24/17 12:12	02/02/17 13:51		
Oil Range Organics (>C28-C40)	ND	mg/L	1.0	1	02/06/17 08:47	02/06/17 13:13		H2
Surrogates								
n-Pentacosane (S)	11	%	16-137	1	01/24/17 12:12	02/02/17 13:51	629-99-2	1b,S2
n-Pentacosane (S)	21	%	16-137	1	02/06/17 08:47	02/06/17 13:13	629-99-2	1b
o-Terphenyl (S)	36	%	10-121	1	02/06/17 08:47	02/06/17 13:13	84-15-1	
o-Terphenyl (S)	32	%	10-121	1	01/24/17 12:12	02/02/17 13:51	84-15-1	

8021 GCV BTEX, MTBE, GRO		Analytical Method: EPA 8015/8021						
Gasoline Range Organics	ND	ug/L	50.0	1		01/25/17 23:57		
Surrogates								
4-Bromofluorobenzene (S)	102	%	44-148	1		01/25/17 23:57	460-00-4	

6020 MET ICPMS		Analytical Method: EPA 6020 Preparation Method: EPA 3010						
Arsenic	ND	mg/L	0.0010	1	01/24/17 08:30	02/12/17 16:56	7440-38-2	
Chromium	0.093	mg/L	0.0010	1	01/24/17 08:30	02/12/17 16:56	7440-47-3	
Lead	0.010	mg/L	0.0010	1	01/24/17 08:30	02/12/17 16:56	7439-92-1	
Vanadium	0.24	mg/L	0.0050	1	01/24/17 08:30	02/12/17 16:56	7440-62-2	

6020 MET ICPMS, Dissolved (LF)		Analytical Method: EPA 6020 Preparation Method: EPA 3005A						
Arsenic, Dissolved	ND	ug/L	1.0	1	01/24/17 09:53	02/12/17 20:01	7440-38-2	
Chromium, Dissolved	1.3	ug/L	1.0	1	01/24/17 09:53	02/12/17 20:01	7440-47-3	
Lead, Dissolved	ND	ug/L	1.0	1	01/24/17 09:53	02/12/17 20:01	7439-92-1	
Vanadium, Dissolved	44.0	ug/L	5.0	1	01/24/17 09:53	02/12/17 20:01	7440-62-2	

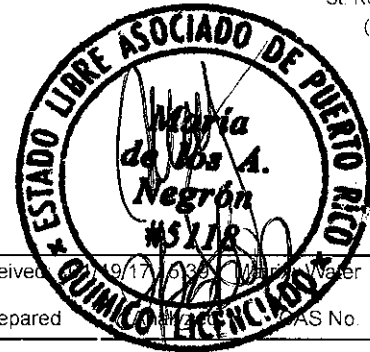
7470 Mercury		Analytical Method: EPA 7470 Preparation Method: EPA 7470						
Mercury	0.45	ug/L	0.20	1	01/24/17 08:59	01/24/17 17:14	7439-97-6	

7470 Mercury, Dissolved (LF)		Analytical Method: EPA 7470 Preparation Method: EPA 7470						
Mercury, Dissolved	ND	ug/L	0.20	1	01/24/17 09:49	01/24/17 19:26	7439-97-6	

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ANALYTICAL RESULTS



Project: PUMA TERMINAL GW SAMPLING
Pace Project No.: 2048968

Sample: MW-17B Lab ID: 2048968006 Collected: 01/18/17 15:34 Received: 01/17/17 09:39

Parameters	Results	Units	Report Limit	DF	Prepared	AS No.	Qual
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8270 MSSV PAH by SIM SEP

Analytical Method: EPA 8270 by SIM Preparation Method: EPA 3510

Acenaphthene	ND	ug/L	0.10	1	01/25/17 09:39	01/31/17 15:33	83-32-9
Acenaphthylene	ND	ug/L	0.10	1	01/25/17 09:39	01/31/17 15:33	208-96-8
Anthracene	ND	ug/L	0.10	1	01/25/17 09:39	01/31/17 15:33	120-12-7
Benzo(a)anthracene	ND	ug/L	0.10	1	01/25/17 09:39	01/31/17 15:33	56-55-3
Benzo(a)pyrene	ND	ug/L	0.10	1	01/25/17 09:39	01/31/17 15:33	50-32-8
Benzo(b)fluoranthene	ND	ug/L	0.10	1	01/25/17 09:39	01/31/17 15:33	205-99-2
Benzo(g,h,i)perylene	ND	ug/L	0.10	1	01/25/17 09:39	01/31/17 15:33	191-24-2
Benzo(k)fluoranthene	ND	ug/L	0.10	1	01/25/17 09:39	01/31/17 15:33	207-08-9
Chrysene	ND	ug/L	0.10	1	01/25/17 09:39	01/31/17 15:33	218-01-9
Dibenz(a,h)anthracene	ND	ug/L	0.10	1	01/25/17 09:39	01/31/17 15:33	53-70-3
Fluoranthene	ND	ug/L	0.10	1	01/25/17 09:39	01/31/17 15:33	206-44-0
Fluorene	ND	ug/L	0.10	1	01/25/17 09:39	01/31/17 15:33	86-73-7
Indeno(1,2,3-cd)pyrene	ND	ug/L	0.10	1	01/25/17 09:39	01/31/17 15:33	193-39-5
2-Methylnaphthalene	ND	ug/L	0.10	1	01/25/17 09:39	01/31/17 15:33	91-57-6
Naphthalene	ND	ug/L	0.10	1	01/25/17 09:39	01/31/17 15:33	91-20-3
Phenanthrene	ND	ug/L	0.10	1	01/25/17 09:39	01/31/17 15:33	85-01-8
Pyrene	ND	ug/L	0.10	1	01/25/17 09:39	01/31/17 15:33	129-00-0
Surrogates							
2-Fluorobiphenyl (S)	59	%	25-150	1	01/25/17 09:39	01/31/17 15:33	321-60-8
Terphenyl-d14 (S)	62	%	25-150	1	01/25/17 09:39	01/31/17 15:33	1718-51-0

8260 MSV Low Level

Analytical Method: EPA 5030B/8260

Acetone	6.3	ug/L	4.0	1		01/20/17 16:17	67-64-1	C9
Benzene	ND	ug/L	0.50	1		01/20/17 16:17	71-43-2	
Bromodichloromethane	ND	ug/L	0.50	1		01/20/17 16:17	75-27-4	
Bromoform	ND	ug/L	0.50	1		01/20/17 16:17	75-25-2	
Bromomethane	ND	ug/L	0.50	1		01/20/17 16:17	74-83-9	
2-Butanone (MEK)	ND	ug/L	2.0	1		01/20/17 16:17	78-93-3	
Carbon disulfide	ND	ug/L	1.0	1		01/20/17 16:17	75-15-0	
Carbon tetrachloride	ND	ug/L	0.50	1		01/20/17 16:17	56-23-5	
Chlorobenzene	ND	ug/L	0.50	1		01/20/17 16:17	108-90-7	
Chloroethane	ND	ug/L	0.50	1		01/20/17 16:17	75-00-3	
Chloroform	ND	ug/L	0.50	1		01/20/17 16:17	67-66-3	
Chloromethane	ND	ug/L	0.50	1		01/20/17 16:17	74-87-3	
1,2-Dibromo-3-chloropropane	ND	ug/L	0.20	1		01/20/17 16:17	96-12-8	
Dibromochloromethane	ND	ug/L	0.50	1		01/20/17 16:17	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	1		01/20/17 16:17	106-93-4	
Dichlorodifluoromethane	ND	ug/L	1.0	1		01/20/17 16:17	75-71-8	
1,1-Dichloroethane	ND	ug/L	0.50	1		01/20/17 16:17	75-34-3	
1,2-Dichloroethane	ND	ug/L	0.50	1		01/20/17 16:17	107-06-2	
1,1-Dichloroethene	ND	ug/L	0.50	1		01/20/17 16:17	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	1		01/20/17 16:17	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	0.50	1		01/20/17 16:17	156-60-5	
1,2-Dichloropropane	ND	ug/L	0.50	1		01/20/17 16:17	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	0.50	1		01/20/17 16:17	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	0.50	1		01/20/17 16:17	10061-02-6	
Ethylbenzene	ND	ug/L	0.50	1		01/20/17 16:17	100-41-4	

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ANALYTICAL RESULTS

Project: PUMA TERMINAL GW SAMPLING

Pace Project No.: 2048968



Sample: MW-17B		Lab ID: 2048968006	Collected: 01/18/17 15:34	Received: 01/19/17 15:39	Matrix: Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual	
8260 MSV Low Level		Analytical Method: EPA 5030B/8260							
2-Hexanone	ND	ug/L	1.0	1	01/20/17 16:17	591-78-6			
Isopropylbenzene (Cumene)	ND	ug/L	1.0	1	01/20/17 16:17	98-82-8			
Methyl acetate	ND	ug/L	2.0	1	01/20/17 16:17	79-20-9			
Methylene Chloride	ND	ug/L	0.50	1	01/20/17 16:17	75-09-2			
4-Methyl-2-pentanone (MIBK)	ND	ug/L	1.0	1	01/20/17 16:17	108-10-1			
Methyl-tert-butyl ether	ND	ug/L	0.50	1	01/20/17 16:17	1634-04-4			
Styrene	ND	ug/L	1.0	1	01/20/17 16:17	100-42-5			
1,1,2,2-Tetrachloroethane	ND	ug/L	0.50	1	01/20/17 16:17	79-34-5			
Tetrachloroethene	ND	ug/L	0.50	1	01/20/17 16:17	127-18-4			
Toluene	ND	ug/L	0.50	1	01/20/17 16:17	108-88-3			
1,1,1-Trichloroethane	ND	ug/L	0.50	1	01/20/17 16:17	71-55-6			
1,1,2-Trichloroethane	ND	ug/L	0.50	1	01/20/17 16:17	79-00-5			
Trichloroethene	ND	ug/L	0.50	1	01/20/17 16:17	79-01-6			
Trichlorofluoromethane	ND	ug/L	0.50	1	01/20/17 16:17	75-69-4			
Vinyl chloride	ND	ug/L	0.50	1	01/20/17 16:17	75-01-4			
m&p-Xylene	ND	ug/L	2.0	1	01/20/17 16:17	179601-23-1			
o-Xylene	ND	ug/L	1.0	1	01/20/17 16:17	95-47-6			
Surrogates									
Dibromofluoromethane (S)	94	%	72-126	1	01/20/17 16:17	1868-53-7			
4-Bromofluorobenzene (S)	98	%	68-124	1	01/20/17 16:17	460-00-4			
Toluene-d8 (S)	104	%	79-119	1	01/20/17 16:17	2037-26-5			

Sample: FB-011817		Lab ID: 2048968007	Collected: 01/18/17 15:42	Received: 01/19/17 15:39	Matrix: Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual	
8021 GCV BTEX, MTBE, GRO		Analytical Method: EPA 8015/8021							
Gasoline Range Organics	ND	ug/L	50.0	1	01/26/17 00:24				
Surrogates									
4-Bromofluorobenzene (S)	100	%	44-148	1	01/26/17 00:24	460-00-4			
8260 MSV Low Level		Analytical Method: EPA 5030B/8260							
Acetone	ND	ug/L	4.0	1	01/20/17 16:35	67-64-1			
Benzene	ND	ug/L	0.50	1	01/20/17 16:35	71-43-2			
Bromodichloromethane	ND	ug/L	0.50	1	01/20/17 16:35	75-27-4			
Bromoform	ND	ug/L	0.50	1	01/20/17 16:35	75-25-2			
Bromomethane	ND	ug/L	0.50	1	01/20/17 16:35	74-83-9			
2-Butanone (MEK)	ND	ug/L	2.0	1	01/20/17 16:35	78-93-3			
Carbon disulfide	ND	ug/L	1.0	1	01/20/17 16:35	75-15-0			
Carbon tetrachloride	ND	ug/L	0.50	1	01/20/17 16:35	56-23-5			
Chlorobenzene	ND	ug/L	0.50	1	01/20/17 16:35	108-90-7			
Chloroethane	ND	ug/L	0.50	1	01/20/17 16:35	75-00-3			
Chloroform	ND	ug/L	0.50	1	01/20/17 16:35	67-66-3			
Chloromethane	ND	ug/L	0.50	1	01/20/17 16:35	74-87-3			
1,2-Dibromo-3-chloropropane	ND	ug/L	0.20	1	01/20/17 16:35	96-12-8			
Dibromochloromethane	ND	ug/L	0.50	1	01/20/17 16:35	124-48-1			

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ANALYTICAL RESULTS

Project: PUMA TERMINAL GW SAMPLING
Pace Project No.: 2048968

Sample: FB-011817 Lab ID: 2048968007 Collected: 01/18/17 15:42 Received: 01/19/17 15:39 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV Low Level		Analytical Method: EPA 5030B/8260						
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	1		01/20/17 16:35	106-93-4	
Dichlorodifluoromethane	ND	ug/L	1.0	1		01/20/17 16:35	75-71-8	
1,1-Dichloroethane	ND	ug/L	0.50	1		01/20/17 16:35	75-34-3	
1,2-Dichloroethane	ND	ug/L	0.50	1		01/20/17 16:35	107-06-2	
1,1-Dichloroethene	ND	ug/L	0.50	1		01/20/17 16:35	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	1		01/20/17 16:35	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	0.50	1		01/20/17 16:35	156-60-5	
1,2-Dichloropropane	ND	ug/L	0.50	1		01/20/17 16:35	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	0.50	1		01/20/17 16:35	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	0.50	1		01/20/17 16:35	10061-02-6	
Ethylbenzene	ND	ug/L	0.50	1		01/20/17 16:35	100-41-4	
2-Hexanone	ND	ug/L	1.0	1		01/20/17 16:35	591-78-6	
Isopropylbenzene (Cumene)	ND	ug/L	1.0	1		01/20/17 16:35	98-82-8	
Methyl acetate	ND	ug/L	2.0	1		01/20/17 16:35	79-20-9	
Methylene Chloride	ND	ug/L	0.50	1		01/20/17 16:35	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	1.0	1		01/20/17 16:35	108-10-1	
Methyl-tert-butyl ether	ND	ug/L	0.50	1		01/20/17 16:35	1634-04-4	
Styrene	ND	ug/L	1.0	1		01/20/17 16:35	100-42-5	
1,1,2,2-Tetrachloroethane	ND	ug/L	0.50	1		01/20/17 16:35	79-34-5	
Tetrachloroethene	ND	ug/L	0.50	1		01/20/17 16:35	127-18-4	
Toluene	ND	ug/L	0.50	1		01/20/17 16:35	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	0.50	1		01/20/17 16:35	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	0.50	1		01/20/17 16:35	79-00-5	
Trichloroethene	ND	ug/L	0.50	1		01/20/17 16:35	79-01-6	
Trichlorofluoromethane	ND	ug/L	0.50	1		01/20/17 16:35	75-69-4	
Vinyl chloride	ND	ug/L	0.50	1		01/20/17 16:35	75-01-4	
m&p-Xylene	ND	ug/L	2.0	1		01/20/17 16:35	179601-23-1	
o-Xylene	ND	ug/L	1.0	1		01/20/17 16:35	95-47-6	
Surrogates								
Dibromofluoromethane (S)	97	%	72-126	1		01/20/17 16:35	1868-53-7	
4-Bromofluorobenzene (S)	98	%	68-124	1		01/20/17 16:35	460-00-4	
Toluene-d8 (S)	104	%	79-119	1		01/20/17 16:35	2037-26-5	

Sample: TB-011917 Lab ID: 2048968008 Collected: 01/19/17 00:00 Received: 01/19/17 15:39 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8021 GCV BTEX, MTBE, GRO		Analytical Method: EPA 8015/8021						
Gasoline Range Organics	ND	ug/L	50.0	1		01/26/17 00:51		
Surrogates								
4-Bromofluorobenzene (S)	103	%	44-148	1		01/26/17 00:51	460-00-4	
8260 MSV Low Level		Analytical Method: EPA 5030B/8260						
Acetone	15.8	ug/L	4.0	1		01/20/17 16:53	67-64-1	C9
Benzene	ND	ug/L	0.50	1		01/20/17 16:53	71-43-2	
Bromodichloromethane	0.57	ug/L	0.50	1		01/20/17 16:53	75-27-4	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: PUMA TERMINAL GW SAMPLING
Pace Project No.: 2048968



Sample: TB-011917 Lab ID: 2048968008 Collected: 01/19/17 00:00 Received: 01/19/17 03:30 Matrix: Water
Parameters Results Units Report Limit DF Prepared Analyzed

8260 MSV Low Level

Analytical Method: EPA 5030B/8260

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	Lot No.	Qual
Bromoform	ND	ug/L	0.50	1		01/20/17 16:53	75-25-2	
Bromomethane	ND	ug/L	0.50	1		01/20/17 16:53	74-83-9	
2-Butanone (MEK)	ND	ug/L	2.0	1		01/20/17 16:53	78-93-3	
Carbon disulfide	ND	ug/L	1.0	1		01/20/17 16:53	75-15-0	
Carbon tetrachloride	ND	ug/L	0.50	1		01/20/17 16:53	56-23-5	
Chlorobenzene	ND	ug/L	0.50	1		01/20/17 16:53	108-90-7	
Chloroethane	ND	ug/L	0.50	1		01/20/17 16:53	75-00-3	
Chloroform	2.5	ug/L	0.50	1		01/20/17 16:53	67-66-3	
Chloromethane	ND	ug/L	0.50	1		01/20/17 16:53	74-87-3	
1,2-Dibromo-3-chloropropane	ND	ug/L	0.20	1		01/20/17 16:53	96-12-8	
Dibromochloromethane	ND	ug/L	0.50	1		01/20/17 16:53	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	1		01/20/17 16:53	106-93-4	
Dichlorodifluoromethane	ND	ug/L	1.0	1		01/20/17 16:53	75-71-8	
1,1-Dichloroethane	ND	ug/L	0.50	1		01/20/17 16:53	75-34-3	
1,2-Dichloroethane	ND	ug/L	0.50	1		01/20/17 16:53	107-06-2	
1,1-Dichloroethene	ND	ug/L	0.50	1		01/20/17 16:53	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	1		01/20/17 16:53	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	0.50	1		01/20/17 16:53	156-60-5	
1,2-Dichloropropane	ND	ug/L	0.50	1		01/20/17 16:53	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	0.50	1		01/20/17 16:53	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	0.50	1		01/20/17 16:53	10061-02-6	
Ethylbenzene	ND	ug/L	0.50	1		01/20/17 16:53	100-41-4	
2-Hexanone	ND	ug/L	1.0	1		01/20/17 16:53	591-78-6	
Isopropylbenzene (Cumene)	ND	ug/L	1.0	1		01/20/17 16:53	98-82-8	
Methyl acetate	ND	ug/L	2.0	1		01/20/17 16:53	79-20-9	
Methylene Chloride	ND	ug/L	0.50	1		01/20/17 16:53	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	1.0	1		01/20/17 16:53	108-10-1	
Methyl-tert-butyl ether	ND	ug/L	0.50	1		01/20/17 16:53	1634-04-4	
Styrene	ND	ug/L	1.0	1		01/20/17 16:53	100-42-5	
1,1,2,2-Tetrachloroethane	ND	ug/L	0.50	1		01/20/17 16:53	79-34-5	
Tetrachloroethene	ND	ug/L	0.50	1		01/20/17 16:53	127-18-4	
Toluene	ND	ug/L	0.50	1		01/20/17 16:53	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	0.50	1		01/20/17 16:53	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	0.50	1		01/20/17 16:53	79-00-5	
Trichloroethene	ND	ug/L	0.50	1		01/20/17 16:53	79-01-6	
Trichlorofluoromethane	ND	ug/L	0.50	1		01/20/17 16:53	75-69-4	
Vinyl chloride	ND	ug/L	0.50	1		01/20/17 16:53	75-01-4	
m&p-Xylene	ND	ug/L	2.0	1		01/20/17 16:53	179601-23-1	
o-Xylene	ND	ug/L	1.0	1		01/20/17 16:53	95-47-6	
Surrogates								
Dibromofluoromethane (S)	95	%	72-126	1		01/20/17 16:53	1868-53-7	
4-Bromofluorobenzene (S)	99	%	68-124	1		01/20/17 16:53	460-00-4	
Toluene-d8 (S)	105	%	79-119	1		01/20/17 16:53	2037-26-5	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS



Project: PUMA TERMINAL GW SAMPLING
Pace Project No.: 2048968

Sample: EB-011917 Lab ID: 2048968009 Collected: 01/19/17 10:00 Received: 01/19/17 15:49 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analysis	CAS No.	Qual
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8015M DRO/ORO Organics

Analytical Method: EPA 8015B Modified Preparation Method: EPA 3535

Diesel Range Organic (C10-C28)	ND	mg/L	0.50	1	01/24/17 12:12	02/02/17 14:19		
Oil Range Organics (>C28-C40)	ND	mg/L	1.0	1	01/24/17 12:12	02/02/17 14:19		
Surrogates								
n-Pentacosane (S)	27	%	16-137	1	01/24/17 12:12	02/02/17 14:19	629-99-2	
o-Terphenyl (S)	38	%	10-121	1	01/24/17 12:12	02/02/17 14:19	84-15-1	

8021 GCV BTEX, MTBE, GRO

Analytical Method: EPA 8015/8021

Gasoline Range Organics	ND	ug/L	50.0	1		01/26/17 01:18		
Surrogates								
4-Bromofluorobenzene (S)	102	%	44-148	1		01/26/17 01:18	460-00-4	

6020 MET ICPMS

Analytical Method: EPA 6020 Preparation Method: EPA 3010

Arsenic	ND	mg/L	0.0010	1	01/24/17 08:30	02/12/17 17:00	7440-38-2	
Chromium	ND	mg/L	0.0010	1	01/24/17 08:30	02/12/17 17:00	7440-47-3	
Lead	ND	mg/L	0.0010	1	01/24/17 08:30	02/12/17 17:00	7439-92-1	
Vanadium	ND	mg/L	0.0050	1	01/24/17 08:30	02/12/17 17:00	7440-62-2	

6020 MET ICPMS, Dissolved (LF)

Analytical Method: EPA 6020 Preparation Method: EPA 3005A

Arsenic, Dissolved	ND	ug/L	1.0	1	01/24/17 09:53	02/12/17 20:05	7440-38-2	
Chromium, Dissolved	ND	ug/L	1.0	1	01/24/17 09:53	02/12/17 20:05	7440-47-3	
Lead, Dissolved	ND	ug/L	1.0	1	01/24/17 09:53	02/12/17 20:05	7439-92-1	
Vanadium, Dissolved	ND	ug/L	5.0	1	01/24/17 09:53	02/12/17 20:05	7440-62-2	

7470 Mercury

Analytical Method: EPA 7470 Preparation Method: EPA 7470

Mercury	ND	ug/L	0.20	1	01/24/17 08:59	01/24/17 17:16	7439-97-6	
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7470 Mercury, Dissolved (LF)

Analytical Method: EPA 7470 Preparation Method: EPA 7470

Mercury, Dissolved	ND	ug/L	0.20	1	01/24/17 09:49	01/24/17 19:28	7439-97-6	
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8270 MSSV PAH by SIM SEP

Analytical Method: EPA 8270 by SIM Preparation Method: EPA 3510

Acenaphthene	ND	ug/L	0.10	1	01/25/17 09:39	01/31/17 15:53	83-32-9	
Acenaphthylene	ND	ug/L	0.10	1	01/25/17 09:39	01/31/17 15:53	208-96-8	
Anthracene	ND	ug/L	0.10	1	01/25/17 09:39	01/31/17 15:53	120-12-7	
Benzo(a)anthracene	ND	ug/L	0.10	1	01/25/17 09:39	01/31/17 15:53	56-55-3	
Benzo(a)pyrene	ND	ug/L	0.10	1	01/25/17 09:39	01/31/17 15:53	50-32-8	
Benzo(b)fluoranthene	ND	ug/L	0.10	1	01/25/17 09:39	01/31/17 15:53	205-99-2	
Benzo(g,h,i)perylene	ND	ug/L	0.10	1	01/25/17 09:39	01/31/17 15:53	191-24-2	
Benzo(k)fluoranthene	ND	ug/L	0.10	1	01/25/17 09:39	01/31/17 15:53	207-08-9	
Chrysene	ND	ug/L	0.10	1	01/25/17 09:39	01/31/17 15:53	218-01-9	
Dibenz(a,h)anthracene	ND	ug/L	0.10	1	01/25/17 09:39	01/31/17 15:53	53-70-3	
Fluoranthene	ND	ug/L	0.10	1	01/25/17 09:39	01/31/17 15:53	206-44-0	
Fluorene	ND	ug/L	0.10	1	01/25/17 09:39	01/31/17 15:53	86-73-7	
Indeno(1,2,3-cd)pyrene	ND	ug/L	0.10	1	01/25/17 09:39	01/31/17 15:53	193-39-6	
2-Methylnaphthalene	ND	ug/L	0.10	1	01/25/17 09:39	01/31/17 15:53	91-57-6	
Naphthalene	ND	ug/L	0.10	1	01/25/17 09:39	01/31/17 15:53	91-20-3	
Phenanthrene	ND	ug/L	0.10	1	01/25/17 09:39	01/31/17 15:53	85-01-8	

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ANALYTICAL RESULTS



Project: PUMA TERMINAL GW SAMPLING
Pace Project No.: 2048968

Sample: EB-011917 Lab ID: 2048968009 Collected: 01/19/17 10:00 Received: 01/19/17 05:00 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analysed	CAS No.	Qual
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8270 MSSV PAH by SIM SEP

Analytical Method: EPA 8270 by SIM Preparation Method: EPA 3510

Pyrene	ND	ug/L	0.10	1	01/25/17 09:39	01/31/17 15:53	129-00-0	
Surrogates								
2-Fluorobiphenyl (S)	81	%	25-150	1	01/25/17 09:39	01/31/17 15:53	321-60-8	
Terphenyl-d14 (S)	81	%	25-150	1	01/25/17 09:39	01/31/17 15:53	1718-51-0	

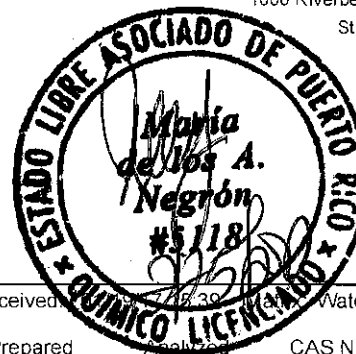
8260 MSV Low Level

Analytical Method: EPA 5030B/8260

Acetone	ND	ug/L	4.0	1		01/20/17 17:11	67-64-1	
Benzene	ND	ug/L	0.50	1		01/20/17 17:11	71-43-2	
Bromodichloromethane	ND	ug/L	0.50	1		01/20/17 17:11	75-27-4	
Bromoform	ND	ug/L	0.50	1		01/20/17 17:11	75-25-2	
Bromomethane	ND	ug/L	0.50	1		01/20/17 17:11	74-83-9	
2-Butanone (MEK)	ND	ug/L	2.0	1		01/20/17 17:11	78-93-3	
Carbon disulfide	ND	ug/L	1.0	1		01/20/17 17:11	75-15-0	
Carbon tetrachloride	ND	ug/L	0.50	1		01/20/17 17:11	56-23-5	
Chlorobenzene	ND	ug/L	0.50	1		01/20/17 17:11	108-90-7	
Chloroethane	ND	ug/L	0.50	1		01/20/17 17:11	75-00-3	
Chloroform	ND	ug/L	0.50	1		01/20/17 17:11	67-66-3	
Chloromethane	ND	ug/L	0.50	1		01/20/17 17:11	74-87-3	
1,2-Dibromo-3-chloropropane	ND	ug/L	0.20	1		01/20/17 17:11	96-12-8	
Dibromochloromethane	ND	ug/L	0.50	1		01/20/17 17:11	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	1		01/20/17 17:11	106-93-4	
Dichlorodifluoromethane	ND	ug/L	1.0	1		01/20/17 17:11	75-71-8	
1,1-Dichloroethane	ND	ug/L	0.50	1		01/20/17 17:11	75-34-3	
1,2-Dichloroethane	ND	ug/L	0.50	1		01/20/17 17:11	107-06-2	
1,1-Dichloroethene	ND	ug/L	0.50	1		01/20/17 17:11	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	1		01/20/17 17:11	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	0.50	1		01/20/17 17:11	156-60-5	
1,2-Dichloropropane	ND	ug/L	0.50	1		01/20/17 17:11	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	0.50	1		01/20/17 17:11	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	0.50	1		01/20/17 17:11	10061-02-6	
Ethylbenzene	ND	ug/L	0.50	1		01/20/17 17:11	100-41-4	
2-Hexanone	ND	ug/L	1.0	1		01/20/17 17:11	591-78-6	
Isopropylbenzene (Cumene)	ND	ug/L	1.0	1		01/20/17 17:11	98-82-8	
Methyl acetate	ND	ug/L	2.0	1		01/20/17 17:11	79-20-9	
Methylene Chloride	ND	ug/L	0.50	1		01/20/17 17:11	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	1.0	1		01/20/17 17:11	108-10-1	
Methyl-tert-butyl ether	ND	ug/L	0.50	1		01/20/17 17:11	1634-04-4	
Styrene	ND	ug/L	1.0	1		01/20/17 17:11	100-42-5	
1,1,2,2-Tetrachloroethane	ND	ug/L	0.50	1		01/20/17 17:11	79-34-5	
Tetrachloroethene	ND	ug/L	0.50	1		01/20/17 17:11	127-18-4	
Toluene	ND	ug/L	0.50	1		01/20/17 17:11	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	0.50	1		01/20/17 17:11	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	0.50	1		01/20/17 17:11	79-00-5	
Trichloroethene	ND	ug/L	0.50	1		01/20/17 17:11	79-01-6	
Trichlorofluoromethane	ND	ug/L	0.50	1		01/20/17 17:11	75-69-4	
Vinyl chloride	ND	ug/L	0.50	1		01/20/17 17:11	75-01-4	
m&p-Xylene	ND	ug/L	2.0	1		01/20/17 17:11	179601-23-1	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: PUMA TERMINAL GW SAMPLING
Pace Project No.: 2048968

Sample: **EB-011917** Lab ID: **2048968009** Collected: 01/19/17 10:00 Received: 01/19/17 10:30 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analized	CAS No.	Qual
8260 MSV Low Level Analytical Method: EPA 5030B/8260								
o-Xylene	ND	ug/L	1.0	1	01/20/17 17:11	01/20/17 17:11	95-47-6	
Surrogates								
Dibromofluoromethane (S)	96	%	72-126	1	01/20/17 17:11	01/20/17 17:11	1868-53-7	
4-Bromofluorobenzene (S)	98	%	68-124	1	01/20/17 17:11	01/20/17 17:11	460-00-4	
Toluene-d8 (S)	104	%	79-119	1	01/20/17 17:11	01/20/17 17:11	2037-26-5	

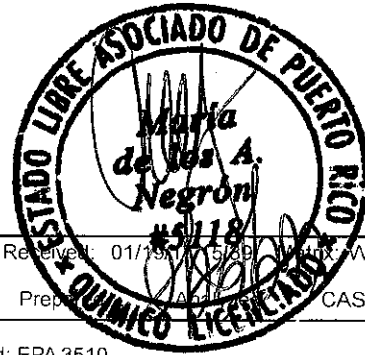
Sample: **MW-77B** Lab ID: **2048968010** Collected: 01/19/17 11:17 Received: 01/19/17 15:39 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analized	CAS No.	Qual
8015M DRO/ORO Organics Analytical Method: EPA 8015B Modified Preparation Method: EPA 3535								
Diesel Range Organic (C10-C28)	ND	mg/L	0.50	1	01/24/17 12:12	02/02/17 14:47		
Oil Range Organics (>C28-C40)	ND	mg/L	1.0	1	01/24/17 12:12	02/02/17 14:47		
Surrogates								
n-Pentacosane (S)	17	%	16-137	1	01/24/17 12:12	02/02/17 14:47	629-99-2	
o-Terphenyl (S)	44	%	10-121	1	01/24/17 12:12	02/02/17 14:47	84-15-1	
8021 GCV BTEX, MTBE, GRO Analytical Method: EPA 8015/8021								
Gasoline Range Organics	ND	ug/L	50.0	1	01/26/17 01:46	01/26/17 01:46		
Surrogates								
4-Bromofluorobenzene (S)	102	%	44-148	1	01/26/17 01:46	01/26/17 01:46	460-00-4	
6020 MET ICPMS Analytical Method: EPA 6020 Preparation Method: EPA 3010								
Arsenic	0.0015	mg/L	0.0010	1	01/24/17 08:30	02/12/17 17:04	7440-38-2	
Chromium	0.0072	mg/L	0.0010	1	01/24/17 08:30	02/12/17 17:04	7440-47-3	
Lead	ND	mg/L	0.0010	1	01/24/17 08:30	02/12/17 17:04	7439-92-1	
Vanadium	0.026	mg/L	0.0050	1	01/24/17 08:30	02/12/17 17:04	7440-62-2	
6020 MET ICPMS, Dissolved (LF) Analytical Method: EPA 6020 Preparation Method: EPA 3005A								
Arsenic, Dissolved	1.0	ug/L	1.0	1	01/24/17 09:53	02/12/17 20:09	7440-38-2	
Chromium, Dissolved	ND	ug/L	1.0	1	01/24/17 09:53	02/12/17 20:09	7440-47-3	
Lead, Dissolved	ND	ug/L	1.0	1	01/24/17 09:53	02/12/17 20:09	7439-92-1	
Vanadium, Dissolved	6.4	ug/L	5.0	1	01/24/17 09:53	02/12/17 20:09	7440-62-2	
7470 Mercury Analytical Method: EPA 7470 Preparation Method: EPA 7470								
Mercury	ND	ug/L	0.20	1	01/24/17 08:59	01/24/17 17:18	7439-97-6	
7470 Mercury, Dissolved (LF) Analytical Method: EPA 7470 Preparation Method: EPA 7470								
Mercury, Dissolved	ND	ug/L	0.20	1	01/24/17 09:49	01/24/17 19:30	7439-97-6	
8270 MSSV PAH by SIM SEP Analytical Method: EPA 8270 by SIM Preparation Method: EPA 3510								
Acenaphthene	ND	ug/L	0.10	1	01/25/17 09:39	01/31/17 16:13	83-32-9	
Acenaphthylene	ND	ug/L	0.10	1	01/25/17 09:39	01/31/17 16:13	208-96-8	
Anthracene	ND	ug/L	0.10	1	01/25/17 09:39	01/31/17 16:13	120-12-7	
Benzo(a)anthracene	ND	ug/L	0.10	1	01/25/17 09:39	01/31/17 16:13	56-55-3	

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ANALYTICAL RESULTS



Project: PUMA TERMINAL GW SAMPLING
Pace Project No.: 2048968

Sample: MW-77B	Lab ID: 2048968010	Collected: 01/19/17 11:17	Received: 01/19/17 15:39	Matrix: Water			
Parameters	Results	Units	Report Limit	DF	Prep	CAS No.	Qual

8270 MSSV PAH by SIM SEP

Analytical Method: EPA 8270 by SIM Preparation Method: EPA 3510

Benzo(a)pyrene	ND	ug/L	0.10	1	01/25/17 09:39	01/31/17 16:13	50-32-8
Benzo(b)fluoranthene	ND	ug/L	0.10	1	01/25/17 09:39	01/31/17 16:13	205-99-2
Benzo(g,h,i)perylene	ND	ug/L	0.10	1	01/25/17 09:39	01/31/17 16:13	191-24-2
Benzo(k)fluoranthene	ND	ug/L	0.10	1	01/25/17 09:39	01/31/17 16:13	207-08-9
Chrysene	ND	ug/L	0.10	1	01/25/17 09:39	01/31/17 16:13	218-01-9
Dibenz(a,h)anthracene	ND	ug/L	0.10	1	01/25/17 09:39	01/31/17 16:13	53-70-3
Fluoranthene	ND	ug/L	0.10	1	01/25/17 09:39	01/31/17 16:13	206-44-0
Fluorene	ND	ug/L	0.10	1	01/25/17 09:39	01/31/17 16:13	86-73-7
Indeno(1,2,3-cd)pyrene	ND	ug/L	0.10	1	01/25/17 09:39	01/31/17 16:13	193-39-5
2-Methylnaphthalene	ND	ug/L	0.10	1	01/25/17 09:39	01/31/17 16:13	91-57-6
Naphthalene	ND	ug/L	0.10	1	01/25/17 09:39	01/31/17 16:13	91-20-3
Phenanthrene	ND	ug/L	0.10	1	01/25/17 09:39	01/31/17 16:13	85-01-8
Pyrene	ND	ug/L	0.10	1	01/25/17 09:39	01/31/17 16:13	129-00-0
Surrogates							
2-Fluorobiphenyl (S)	66	%	25-150	1	01/25/17 09:39	01/31/17 16:13	321-60-8
Terphenyl-d14 (S)	76	%	25-150	1	01/25/17 09:39	01/31/17 16:13	1718-51-0

8260 MSV Low Level

Analytical Method: EPA 5030B/8260

Acetone	ND	ug/L	4.0	1	01/20/17 17:30	67-64-1
Benzene	ND	ug/L	0.50	1	01/20/17 17:30	71-43-2
Bromodichloromethane	ND	ug/L	0.50	1	01/20/17 17:30	75-27-4
Bromoform	ND	ug/L	0.50	1	01/20/17 17:30	75-25-2
Bromomethane	ND	ug/L	0.50	1	01/20/17 17:30	74-83-9
2-Butanone (MEK)	ND	ug/L	2.0	1	01/20/17 17:30	78-93-3
Carbon disulfide	ND	ug/L	1.0	1	01/20/17 17:30	75-15-0
Carbon tetrachloride	ND	ug/L	0.50	1	01/20/17 17:30	56-23-5
Chlorobenzene	ND	ug/L	0.50	1	01/20/17 17:30	108-90-7
Chloroethane	ND	ug/L	0.50	1	01/20/17 17:30	75-00-3
Chloroform	ND	ug/L	0.50	1	01/20/17 17:30	67-66-3
Chloromethane	ND	ug/L	0.50	1	01/20/17 17:30	74-87-3
1,2-Dibromo-3-chloropropane	ND	ug/L	0.20	1	01/20/17 17:30	96-12-8
Dibromochloromethane	ND	ug/L	0.50	1	01/20/17 17:30	124-48-1
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	1	01/20/17 17:30	106-93-4
Dichlorodifluoromethane	ND	ug/L	1.0	1	01/20/17 17:30	75-71-8
1,1-Dichloroethane	ND	ug/L	0.50	1	01/20/17 17:30	75-34-3
1,2-Dichloroethane	ND	ug/L	0.50	1	01/20/17 17:30	107-06-2
1,1-Dichloroethene	ND	ug/L	0.50	1	01/20/17 17:30	75-35-4
cis-1,2-Dichloroethene	ND	ug/L	1.0	1	01/20/17 17:30	156-59-2
trans-1,2-Dichloroethene	ND	ug/L	0.50	1	01/20/17 17:30	156-60-5
1,2-Dichloropropane	ND	ug/L	0.50	1	01/20/17 17:30	78-87-5
cis-1,3-Dichloropropene	ND	ug/L	0.50	1	01/20/17 17:30	10061-01-5
trans-1,3-Dichloropropene	ND	ug/L	0.50	1	01/20/17 17:30	10061-02-6
Ethylbenzene	ND	ug/L	0.50	1	01/20/17 17:30	100-41-4
2-Hexanone	ND	ug/L	1.0	1	01/20/17 17:30	591-78-6
Isopropylbenzene (Cumene)	ND	ug/L	1.0	1	01/20/17 17:30	98-82-8
Methyl acetate	ND	ug/L	2.0	1	01/20/17 17:30	79-20-9
Methylene Chloride	ND	ug/L	0.50	1	01/20/17 17:30	75-09-2

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ANALYTICAL RESULTS

Project: PUMA TERMINAL GW SAMPLING
Pace Project No.: 2048968

Sample: MW-77B Lab ID: 2048968010 Collected: 01/19/17 11:17 Received: 01/19/17 15:39 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV Low Level Analytical Method: EPA 5030B/8260								
4-Methyl-2-pentanone (MIBK)	ND	ug/L	1.0	1	01/20/17 17:30	01/20/17 17:30	108-10-1	
Methyl-tert-butyl ether	ND	ug/L	0.50	1	01/20/17 17:30	01/20/17 17:30	1634-04-4	
Styrene	ND	ug/L	1.0	1	01/20/17 17:30	01/20/17 17:30	100-42-5	
1,1,2,2-Tetrachloroethane	ND	ug/L	0.50	1	01/20/17 17:30	01/20/17 17:30	79-34-5	
Tetrachloroethene	ND	ug/L	0.50	1	01/20/17 17:30	01/20/17 17:30	127-18-4	
Toluene	ND	ug/L	0.50	1	01/20/17 17:30	01/20/17 17:30	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	0.50	1	01/20/17 17:30	01/20/17 17:30	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	0.50	1	01/20/17 17:30	01/20/17 17:30	79-00-5	
Trichloroethene	ND	ug/L	0.50	1	01/20/17 17:30	01/20/17 17:30	79-01-6	
Trichlorofluoromethane	ND	ug/L	0.50	1	01/20/17 17:30	01/20/17 17:30	75-69-4	
Vinyl chloride	ND	ug/L	0.50	1	01/20/17 17:30	01/20/17 17:30	75-01-4	
m&p-Xylene	ND	ug/L	2.0	1	01/20/17 17:30	01/20/17 17:30	179601-23-1	
o-Xylene	ND	ug/L	1.0	1	01/20/17 17:30	01/20/17 17:30	95-47-6	
Surrogates								
Dibromofluoromethane (S)	95	%	72-126	1	01/20/17 17:30	01/20/17 17:30	1868-53-7	
4-Bromofluorobenzene (S)	98	%	68-124	1	01/20/17 17:30	01/20/17 17:30	460-00-4	
Toluene-d8 (S)	105	%	79-119	1	01/20/17 17:30	01/20/17 17:30	2037-26-5	

Sample: MW-20B Lab ID: 2048968011 Collected: 01/19/17 12:25 Received: 01/19/17 15:39 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8015M DRO/ORO Organics Analytical Method: EPA 8015B Modified Preparation Method: EPA 3535								
Diesel Range Organic (C10-C28)	ND	mg/L	0.50	1	01/24/17 12:12	02/02/17 15:16		
Oil Range Organics (>C28-C40)	ND	mg/L	1.0	1	01/24/17 12:12	02/02/17 15:16		
Surrogates								
n-Pentacosane (S)	47	%	16-137	1	01/24/17 12:12	02/02/17 15:16	629-99-2	
o-Terphenyl (S)	54	%	10-121	1	01/24/17 12:12	02/02/17 15:16	84-15-1	
8021 GCV BTEX, MTBE, GRO Analytical Method: EPA 8015/8021								
Gasoline Range Organics	ND	ug/L	50.0	1		01/26/17 02:12		
Surrogates								
4-Bromofluorobenzene (S)	98	%	44-148	1		01/26/17 02:12	460-00-4	
6020 MET ICPMS Analytical Method: EPA 6020 Preparation Method: EPA 3010								
Arsenic	ND	mg/L	0.0010	1	01/24/17 08:30	02/12/17 17:08	7440-38-2	
Chromium	0.0040	mg/L	0.0010	1	01/24/17 08:30	02/12/17 17:08	7440-47-3	
Lead	ND	mg/L	0.0010	1	01/24/17 08:30	02/12/17 17:08	7439-92-1	
Vanadium	ND	mg/L	0.0050	1	01/24/17 08:30	02/12/17 17:08	7440-62-2	
6020 MET ICPMS, Dissolved (LF) Analytical Method: EPA 6020 Preparation Method: EPA 3005A								
Arsenic, Dissolved	ND	ug/L	1.0	1	01/24/17 09:53	02/12/17 20:13	7440-38-2	
Chromium, Dissolved	2.9	ug/L	1.0	1	01/24/17 09:53	02/12/17 20:13	7440-47-3	
Lead, Dissolved	ND	ug/L	1.0	1	01/24/17 09:53	02/12/17 20:13	7439-92-1	
Vanadium, Dissolved	ND	ug/L	5.0	1	01/24/17 09:53	02/12/17 20:13	7440-62-2	

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ANALYTICAL RESULTS

Project: PUMA TERMINAL GW SAMPLING
Pace Project No.: 2048968

Sample: MW-20B Lab ID: 2048968011 Collected: 01/19/17 12:25 Received: 01/24/17 08:59 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
7470 Mercury Analytical Method: EPA 7470 Preparation Method: EPA 7470								
Mercury	ND	ug/L	0.20	1	01/24/17 08:59	01/24/17 17:21	7439-97-6	
7470 Mercury, Dissolved (LF) Analytical Method: EPA 7470 Preparation Method: EPA 7470								
Mercury, Dissolved	ND	ug/L	0.20	1	01/24/17 09:49	01/24/17 19:32	7439-97-6	
8270 MSSV PAH by SIM SEP Analytical Method: EPA 8270 by SIM Preparation Method: EPA 3510								
Acenaphthene	ND	ug/L	0.10	1	01/25/17 09:39	01/31/17 16:33	83-32-9	
Acenaphthylene	ND	ug/L	0.10	1	01/25/17 09:39	01/31/17 16:33	208-96-8	
Anthracene	ND	ug/L	0.10	1	01/25/17 09:39	01/31/17 16:33	120-12-7	
Benzo(a)anthracene	ND	ug/L	0.10	1	01/25/17 09:39	01/31/17 16:33	56-55-3	
Benzo(a)pyrene	ND	ug/L	0.10	1	01/25/17 09:39	01/31/17 16:33	50-32-8	
Benzo(b)fluoranthene	ND	ug/L	0.10	1	01/25/17 09:39	01/31/17 16:33	205-99-2	
Benzo(g,h,i)perylene	ND	ug/L	0.10	1	01/25/17 09:39	01/31/17 16:33	191-24-2	
Benzo(k)fluoranthene	ND	ug/L	0.10	1	01/25/17 09:39	01/31/17 16:33	207-08-9	
Chrysene	ND	ug/L	0.10	1	01/25/17 09:39	01/31/17 16:33	218-01-9	
Dibenz(a,h)anthracene	ND	ug/L	0.10	1	01/25/17 09:39	01/31/17 16:33	53-70-3	
Fluoranthene	ND	ug/L	0.10	1	01/25/17 09:39	01/31/17 16:33	206-44-0	
Fluorene	ND	ug/L	0.10	1	01/25/17 09:39	01/31/17 16:33	86-73-7	
Indeno(1,2,3-cd)pyrene	ND	ug/L	0.10	1	01/25/17 09:39	01/31/17 16:33	193-39-5	
2-Methylnaphthalene	ND	ug/L	0.10	1	01/25/17 09:39	01/31/17 16:33	91-57-6	
Naphthalene	ND	ug/L	0.10	1	01/25/17 09:39	01/31/17 16:33	91-20-3	
Phenanthrene	ND	ug/L	0.10	1	01/25/17 09:39	01/31/17 16:33	85-01-8	
Pyrene	ND	ug/L	0.10	1	01/25/17 09:39	01/31/17 16:33	129-00-0	
Surrogates								
2-Fluorobiphenyl (S)	61	%	25-150	1	01/25/17 09:39	01/31/17 16:33	321-60-8	
Terphenyl-d14 (S)	69	%	25-150	1	01/25/17 09:39	01/31/17 16:33	1718-51-0	
8260 MSV Low Level Analytical Method: EPA 5030B/8260								
Acetone	ND	ug/L	4.0	1		01/20/17 17:48	67-64-1	
Benzene	ND	ug/L	0.50	1		01/20/17 17:48	71-43-2	
Bromodichloromethane	ND	ug/L	0.50	1		01/20/17 17:48	75-27-4	
Bromoform	ND	ug/L	0.50	1		01/20/17 17:48	75-25-2	
Bromomethane	ND	ug/L	0.50	1		01/20/17 17:48	74-83-9	
2-Butanone (MEK)	ND	ug/L	2.0	1		01/20/17 17:48	78-93-3	
Carbon disulfide	ND	ug/L	1.0	1		01/20/17 17:48	75-15-0	
Carbon tetrachloride	ND	ug/L	0.50	1		01/20/17 17:48	56-23-5	
Chlorobenzene	ND	ug/L	0.50	1		01/20/17 17:48	108-90-7	
Chloroethane	ND	ug/L	0.50	1		01/20/17 17:48	75-00-3	
Chloroform	ND	ug/L	0.50	1		01/20/17 17:48	67-66-3	
Chloromethane	ND	ug/L	0.50	1		01/20/17 17:48	74-87-3	
1,2-Dibromo-3-chloropropane	ND	ug/L	0.20	1		01/20/17 17:48	96-12-8	
Dibromochloromethane	ND	ug/L	0.50	1		01/20/17 17:48	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	1		01/20/17 17:48	106-93-4	
Dichlorodifluoromethane	ND	ug/L	1.0	1		01/20/17 17:48	75-71-8	
1,1-Dichloroethane	ND	ug/L	0.50	1		01/20/17 17:48	75-34-3	
1,2-Dichloroethane	ND	ug/L	0.50	1		01/20/17 17:48	107-06-2	

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ANALYTICAL RESULTS



Project: PUMA TERMINAL GW SAMPLING
Pace Project No.: 2048968

Sample: MW-20B Lab ID: 2048968011 Collected: 01/19/17 12:25 Received: 01/19/17 15:39 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
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8260 MSV Low Level

Analytical Method: EPA 5030B/8260

1,1-Dichloroethene	ND	ug/L	0.50	1		01/20/17 17:48	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	1		01/20/17 17:48	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	0.50	1		01/20/17 17:48	156-60-5	
1,2-Dichloropropane	ND	ug/L	0.50	1		01/20/17 17:48	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	0.50	1		01/20/17 17:48	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	0.50	1		01/20/17 17:48	10061-02-6	
Ethylbenzene	ND	ug/L	0.50	1		01/20/17 17:48	100-41-4	
2-Hexanone	ND	ug/L	1.0	1		01/20/17 17:48	591-78-6	
Isopropylbenzene (Cumene)	ND	ug/L	1.0	1		01/20/17 17:48	98-82-8	
Methyl acetate	ND	ug/L	2.0	1		01/20/17 17:48	79-20-9	
Methylene Chloride	ND	ug/L	0.50	1		01/20/17 17:48	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	1.0	1		01/20/17 17:48	108-10-1	
Methyl-tert-butyl ether	ND	ug/L	0.50	1		01/20/17 17:48	1634-04-4	
Styrene	ND	ug/L	1.0	1		01/20/17 17:48	100-42-5	
1,1,2,2-Tetrachloroethane	ND	ug/L	0.50	1		01/20/17 17:48	79-34-5	
Tetrachloroethene	ND	ug/L	0.50	1		01/20/17 17:48	127-18-4	
Toluene	ND	ug/L	0.50	1		01/20/17 17:48	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	0.50	1		01/20/17 17:48	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	0.50	1		01/20/17 17:48	79-00-5	
Trichloroethene	ND	ug/L	0.50	1		01/20/17 17:48	79-01-6	
Trichlorofluoromethane	ND	ug/L	0.50	1		01/20/17 17:48	75-69-4	
Vinyl chloride	ND	ug/L	0.50	1		01/20/17 17:48	75-01-4	
m&p-Xylene	ND	ug/L	2.0	1		01/20/17 17:48	179601-23-1	
o-Xylene	ND	ug/L	1.0	1		01/20/17 17:48	95-47-6	

Surrogates

Dibromofluoromethane (S)	96	%	72-126	1		01/20/17 17:48	1868-53-7	
4-Bromofluorobenzene (S)	99	%	68-124	1		01/20/17 17:48	460-00-4	
Toluene-d8 (S)	105	%	79-119	1		01/20/17 17:48	2037-26-5	

Sample: MW-78B Lab ID: 2048968012 Collected: 01/19/17 13:15 Received: 01/19/17 15:39 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
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8015M DRO/ORO Organics

Analytical Method: EPA 8015B Modified Preparation Method: EPA 3535

Diesel Range Organic (C10-C28)	ND	mg/L	0.50	1	01/24/17 12:12	02/02/17 15:44		
Oil Range Organics (>C28-C40)	ND	mg/L	1.0	1	01/24/17 12:12	02/02/17 15:44		
Surrogates								
n-Pentacosane (S)	43	%	16-137	1	01/24/17 12:12	02/02/17 15:44	629-99-2	
o-Terphenyl (S)	45	%	10-121	1	01/24/17 12:12	02/02/17 15:44	84-15-1	

8021 GCV BTEX, MTBE, GRO

Analytical Method: EPA 8015/8021

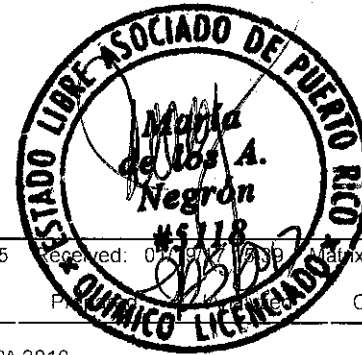
Gasoline Range Organics	ND	ug/L	50.0	1		01/26/17 02:40		
Surrogates								
4-Bromofluorobenzene (S)	100	%	44-148	1		01/26/17 02:40	460-00-4	

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ANALYTICAL RESULTS

Project: PUMA TERMINAL GW SAMPLING
Pace Project No.: 2048968



Sample: MW-78B Lab ID: 2048968012 Collected: 01/19/17 13:15 Received: 01/24/17 08:30 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Preparation	Analysis	CAS No.	Qual
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6020 MET ICPMS Analytical Method: EPA 6020 Preparation Method: EPA 3010

Arsenic	ND	mg/L	0.0010	1	01/24/17 08:30	02/12/17 17:12	7440-38-2	
Chromium	0.0074	mg/L	0.0010	1	01/24/17 08:30	02/12/17 17:12	7440-47-3	
Lead	ND	mg/L	0.0010	1	01/24/17 08:30	02/12/17 17:12	7439-92-1	
Vanadium	ND	mg/L	0.0050	1	01/24/17 08:30	02/12/17 17:12	7440-62-2	

6020 MET ICPMS, Dissolved (LF) Analytical Method: EPA 6020 Preparation Method: EPA 3005A

Arsenic, Dissolved	ND	ug/L	1.0	1	01/24/17 09:53	02/12/17 20:17	7440-38-2	
Chromium, Dissolved	7.2	ug/L	1.0	1	01/24/17 09:53	02/12/17 20:17	7440-47-3	
Lead, Dissolved	ND	ug/L	1.0	1	01/24/17 09:53	02/12/17 20:17	7439-92-1	
Vanadium, Dissolved	ND	ug/L	5.0	1	01/24/17 09:53	02/12/17 20:17	7440-62-2	

7470 Mercury Analytical Method: EPA 7470 Preparation Method: EPA 7470

Mercury	0.93	ug/L	0.20	1	01/24/17 08:59	01/24/17 17:23	7439-97-6	
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7470 Mercury, Dissolved (LF) Analytical Method: EPA 7470 Preparation Method: EPA 7470

Mercury, Dissolved	ND	ug/L	0.20	1	01/24/17 09:49	01/24/17 19:35	7439-97-6	
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8270 MSSV PAH by SIM SEP Analytical Method: EPA 8270 by SIM Preparation Method: EPA 3510

Acenaphthene	ND	ug/L	0.10	1	01/25/17 09:39	01/31/17 16:53	83-32-9	
Acenaphthylene	ND	ug/L	0.10	1	01/25/17 09:39	01/31/17 16:53	208-96-8	
Anthracene	ND	ug/L	0.10	1	01/25/17 09:39	01/31/17 16:53	120-12-7	
Benzo(a)anthracene	ND	ug/L	0.10	1	01/25/17 09:39	01/31/17 16:53	56-55-3	
Benzo(a)pyrene	ND	ug/L	0.10	1	01/25/17 09:39	01/31/17 16:53	50-32-8	
Benzo(b)fluoranthene	ND	ug/L	0.10	1	01/25/17 09:39	01/31/17 16:53	205-99-2	
Benzo(g,h,i)perylene	ND	ug/L	0.10	1	01/25/17 09:39	01/31/17 16:53	191-24-2	
Benzo(k)fluoranthene	ND	ug/L	0.10	1	01/25/17 09:39	01/31/17 16:53	207-08-9	
Chrysene	ND	ug/L	0.10	1	01/25/17 09:39	01/31/17 16:53	218-01-9	
Dibenz(a,h)anthracene	ND	ug/L	0.10	1	01/25/17 09:39	01/31/17 16:53	53-70-3	
Fluoranthene	ND	ug/L	0.10	1	01/25/17 09:39	01/31/17 16:53	206-44-0	
Fluorene	ND	ug/L	0.10	1	01/25/17 09:39	01/31/17 16:53	86-73-7	
Indeno(1,2,3-cd)pyrene	ND	ug/L	0.10	1	01/25/17 09:39	01/31/17 16:53	193-39-5	
2-Methylnaphthalene	ND	ug/L	0.10	1	01/25/17 09:39	01/31/17 16:53	91-57-6	
Naphthalene	ND	ug/L	0.10	1	01/25/17 09:39	01/31/17 16:53	91-20-3	
Phenanthrene	ND	ug/L	0.10	1	01/25/17 09:39	01/31/17 16:53	85-01-8	
Pyrene	ND	ug/L	0.10	1	01/25/17 09:39	01/31/17 16:53	129-00-0	
Surrogates								
2-Fluorobiphenyl (S)	78	%	25-150	1	01/25/17 09:39	01/31/17 16:53	321-60-8	
Terphenyl-d14 (S)	84	%	25-150	1	01/25/17 09:39	01/31/17 16:53	1718-51-0	

8260 MSV Low Level Analytical Method: EPA 5030B/8260

Acetone	ND	ug/L	4.0	1		01/20/17 18:06	67-64-1	
Benzene	ND	ug/L	0.50	1		01/20/17 18:06	71-43-2	
Bromodichloromethane	ND	ug/L	0.50	1		01/20/17 18:06	75-27-4	
Bromoform	ND	ug/L	0.50	1		01/20/17 18:06	75-25-2	
Bromomethane	ND	ug/L	0.50	1		01/20/17 18:06	74-83-9	
2-Butanone (MEK)	ND	ug/L	2.0	1		01/20/17 18:06	78-93-3	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS



Project: PUMA TERMINAL GW SAMPLING
Pace Project No.: 2048968

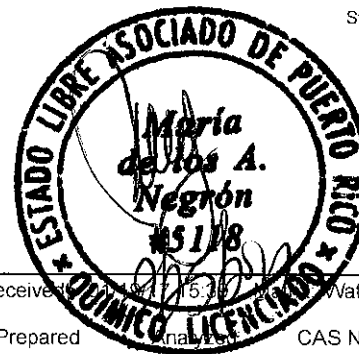
Sample: MW-78B Lab ID: 2048968012 Collected: 01/19/17 13:15 Received: 01/20/17 18:06 Matrix: Water
Prepared: [Signature] CAS No. Qual

Parameters	Results	Units	Report Limit	DF	Preparation	CAS No.	Qual
8260 MSV Low Level		Analytical Method: EPA 5030B/8260					
Carbon disulfide	ND	ug/L	1.0	1	01/20/17 18:06	75-15-0	
Carbon tetrachloride	ND	ug/L	0.50	1	01/20/17 18:06	56-23-5	
Chlorobenzene	ND	ug/L	0.50	1	01/20/17 18:06	108-90-7	
Chloroethane	ND	ug/L	0.50	1	01/20/17 18:06	75-00-3	
Chloroform	ND	ug/L	0.50	1	01/20/17 18:06	67-66-3	
Chloromethane	ND	ug/L	0.50	1	01/20/17 18:06	74-87-3	
1,2-Dibromo-3-chloropropane	ND	ug/L	0.20	1	01/20/17 18:06	96-12-8	
Dibromochloromethane	ND	ug/L	0.50	1	01/20/17 18:06	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	1	01/20/17 18:06	106-93-4	
Dichlorodifluoromethane	ND	ug/L	1.0	1	01/20/17 18:06	75-71-8	
1,1-Dichloroethane	ND	ug/L	0.50	1	01/20/17 18:06	75-34-3	
1,2-Dichloroethane	ND	ug/L	0.50	1	01/20/17 18:06	107-06-2	
1,1-Dichloroethene	ND	ug/L	0.50	1	01/20/17 18:06	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	1	01/20/17 18:06	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	0.50	1	01/20/17 18:06	156-60-5	
1,2-Dichloropropane	ND	ug/L	0.50	1	01/20/17 18:06	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	0.50	1	01/20/17 18:06	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	0.50	1	01/20/17 18:06	10061-02-6	
Ethylbenzene	ND	ug/L	0.50	1	01/20/17 18:06	100-41-4	
2-Hexanone	ND	ug/L	1.0	1	01/20/17 18:06	591-78-6	
Isopropylbenzene (Cumene)	ND	ug/L	1.0	1	01/20/17 18:06	98-82-8	
Methyl acetate	ND	ug/L	2.0	1	01/20/17 18:06	79-20-9	
Methylene Chloride	ND	ug/L	0.50	1	01/20/17 18:06	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	1.0	1	01/20/17 18:06	108-10-1	
Methyl-tert-butyl ether	ND	ug/L	0.50	1	01/20/17 18:06	1634-04-4	
Styrene	ND	ug/L	1.0	1	01/20/17 18:06	100-42-5	
1,1,2,2-Tetrachloroethane	ND	ug/L	0.50	1	01/20/17 18:06	79-34-5	
Tetrachloroethene	ND	ug/L	0.50	1	01/20/17 18:06	127-18-4	
Toluene	ND	ug/L	0.50	1	01/20/17 18:06	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	0.50	1	01/20/17 18:06	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	0.50	1	01/20/17 18:06	79-00-5	
Trichloroethene	ND	ug/L	0.50	1	01/20/17 18:06	79-01-6	
Trichlorofluoromethane	ND	ug/L	0.50	1	01/20/17 18:06	75-69-4	
Vinyl chloride	ND	ug/L	0.50	1	01/20/17 18:06	75-01-4	
m&p-Xylene	ND	ug/L	2.0	1	01/20/17 18:06	179601-23-1	
o-Xylene	ND	ug/L	1.0	1	01/20/17 18:06	95-47-6	
Surrogates							
Dibromofluoromethane (S)	96	%	72-126	1	01/20/17 18:06	1868-53-7	
4-Bromofluorobenzene (S)	97	%	68-124	1	01/20/17 18:06	460-00-4	
Toluene-d8 (S)	105	%	79-119	1	01/20/17 18:06	2037-26-5	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS



Project: PUMA TERMINAL GW SAMPLING
Pace Project No.: 2048968

Sample: MW-21B	Lab ID: 2048968013	Collected: 01/19/17 13:56	Received: 01/24/17 15:30	Matrix: Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyst	CAS No.	Qual

8015M DRO/ORO Organics

Analytical Method: EPA 8015B Modified Preparation Method: EPA 3535

Diesel Range Organic (C10-C28)	ND	mg/L	0.50	1	01/24/17 12:12	02/02/17 16:12		
Oil Range Organics (>C28-C40)	ND	mg/L	1.0	1	01/24/17 12:12	02/02/17 16:12		
Surrogates								
n-Pentacosane (S)	39	%	16-137	1	01/24/17 12:12	02/02/17 16:12	629-99-2	
o-Terphenyl (S)	39	%	10-121	1	01/24/17 12:12	02/02/17 16:12	84-15-1	

8021 GCV BTEX, MTBE, GRO

Analytical Method: EPA 8015/8021

Gasoline Range Organics	ND	ug/L	50.0	1		01/26/17 03:07		
Surrogates								
4-Bromofluorobenzene (S)	102	%	44-148	1		01/26/17 03:07	460-00-4	

6020 MET ICPMS

Analytical Method: EPA 6020 Preparation Method: EPA 3010

Arsenic	ND	mg/L	0.0010	1	01/24/17 08:30	02/12/17 17:16	7440-38-2	
Chromium	0.0040	mg/L	0.0010	1	01/24/17 08:30	02/12/17 17:16	7440-47-3	
Lead	ND	mg/L	0.0010	1	01/24/17 08:30	02/12/17 17:16	7439-92-1	
Vanadium	ND	mg/L	0.0050	1	01/24/17 08:30	02/12/17 17:16	7440-62-2	

6020 MET ICPMS, Dissolved (LF)

Analytical Method: EPA 6020 Preparation Method: EPA 3005A

Arsenic, Dissolved	ND	ug/L	1.0	1	01/24/17 09:53	02/12/17 20:21	7440-38-2	
Chromium, Dissolved	2.7	ug/L	1.0	1	01/24/17 09:53	02/12/17 20:21	7440-47-3	
Lead, Dissolved	ND	ug/L	1.0	1	01/24/17 09:53	02/12/17 20:21	7439-92-1	
Vanadium, Dissolved	ND	ug/L	5.0	1	01/24/17 09:53	02/12/17 20:21	7440-62-2	

7470 Mercury

Analytical Method: EPA 7470 Preparation Method: EPA 7470

Mercury	0.27	ug/L	0.20	1	01/24/17 08:59	01/24/17 17:25	7439-97-6	
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7470 Mercury, Dissolved (LF)

Analytical Method: EPA 7470 Preparation Method: EPA 7470

Mercury, Dissolved	ND	ug/L	0.20	1	01/24/17 09:49	01/24/17 19:37	7439-97-6	
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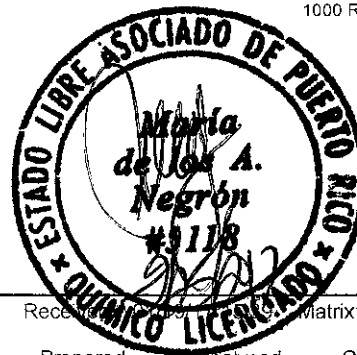
8270 MSSV PAH by SIM SEP

Analytical Method: EPA 8270 by SIM Preparation Method: EPA 3510

Acenaphthene	ND	ug/L	0.10	1	01/25/17 09:39	01/31/17 17:13	83-32-9	
Acenaphthylene	ND	ug/L	0.10	1	01/25/17 09:39	01/31/17 17:13	208-96-8	
Anthracene	ND	ug/L	0.10	1	01/25/17 09:39	01/31/17 17:13	120-12-7	
Benzo(a)anthracene	ND	ug/L	0.10	1	01/25/17 09:39	01/31/17 17:13	56-55-3	
Benzo(a)pyrene	ND	ug/L	0.10	1	01/25/17 09:39	01/31/17 17:13	50-32-8	
Benzo(b)fluoranthene	ND	ug/L	0.10	1	01/25/17 09:39	01/31/17 17:13	205-99-2	
Benzo(g,h,i)perylene	ND	ug/L	0.10	1	01/25/17 09:39	01/31/17 17:13	191-24-2	
Benzo(k)fluoranthene	ND	ug/L	0.10	1	01/25/17 09:39	01/31/17 17:13	207-08-9	
Chrysene	ND	ug/L	0.10	1	01/25/17 09:39	01/31/17 17:13	218-01-9	
Dibenz(a,h)anthracene	ND	ug/L	0.10	1	01/25/17 09:39	01/31/17 17:13	53-70-3	
Fluoranthene	ND	ug/L	0.10	1	01/25/17 09:39	01/31/17 17:13	206-44-0	
Fluorene	ND	ug/L	0.10	1	01/25/17 09:39	01/31/17 17:13	86-73-7	
Indeno(1,2,3-cd)pyrene	ND	ug/L	0.10	1	01/25/17 09:39	01/31/17 17:13	193-39-5	
2-Methylnaphthalene	ND	ug/L	0.10	1	01/25/17 09:39	01/31/17 17:13	91-57-6	
Naphthalene	ND	ug/L	0.10	1	01/25/17 09:39	01/31/17 17:13	91-20-3	
Phenanthrene	ND	ug/L	0.10	1	01/25/17 09:39	01/31/17 17:13	85-01-8	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: PUMA TERMINAL GW SAMPLING
Pace Project No.: 2048968

Sample: MW-21B Lab ID: 2048968013 Collected: 01/19/17 13:56 Received: 01/25/17 09:39 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
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8270 MSSV PAH by SIM SEP

Analytical Method: EPA 8270 by SIM Preparation Method: EPA 3510

Pyrene	ND	ug/L	0.10	1	01/25/17 09:39	01/31/17 17:13	129-00-0	
Surrogates								
2-Fluorobiphenyl (S)	79	%	25-150	1	01/25/17 09:39	01/31/17 17:13	321-60-8	
Terphenyl-d14 (S)	83	%	25-150	1	01/25/17 09:39	01/31/17 17:13	1718-51-0	

8260 MSV Low Level

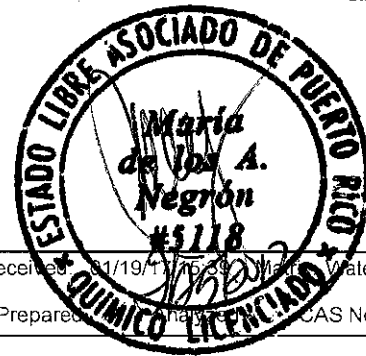
Analytical Method: EPA 5030B/8260

Acetone	ND	ug/L	4.0	1		01/20/17 18:24	67-64-1	
Benzene	ND	ug/L	0.50	1		01/20/17 18:24	71-43-2	
Bromodichloromethane	ND	ug/L	0.50	1		01/20/17 18:24	75-27-4	
Bromoform	ND	ug/L	0.50	1		01/20/17 18:24	75-25-2	
Bromomethane	ND	ug/L	0.50	1		01/20/17 18:24	74-83-9	
2-Butanone (MEK)	ND	ug/L	2.0	1		01/20/17 18:24	78-93-3	
Carbon disulfide	ND	ug/L	1.0	1		01/20/17 18:24	75-15-0	
Carbon tetrachloride	ND	ug/L	0.50	1		01/20/17 18:24	56-23-5	
Chlorobenzene	ND	ug/L	0.50	1		01/20/17 18:24	108-90-7	
Chloroethane	ND	ug/L	0.50	1		01/20/17 18:24	75-00-3	
Chloroform	ND	ug/L	0.50	1		01/20/17 18:24	67-66-3	
Chloromethane	ND	ug/L	0.50	1		01/20/17 18:24	74-87-3	
1,2-Dibromo-3-chloropropane	ND	ug/L	0.20	1		01/20/17 18:24	96-12-8	
Dibromochloromethane	ND	ug/L	0.50	1		01/20/17 18:24	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	1		01/20/17 18:24	106-93-4	
Dichlorodifluoromethane	ND	ug/L	1.0	1		01/20/17 18:24	75-71-8	
1,1-Dichloroethane	ND	ug/L	0.50	1		01/20/17 18:24	75-34-3	
1,2-Dichloroethane	ND	ug/L	0.50	1		01/20/17 18:24	107-06-2	
1,1-Dichloroethene	ND	ug/L	0.50	1		01/20/17 18:24	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	1		01/20/17 18:24	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	0.50	1		01/20/17 18:24	156-60-5	
1,2-Dichloropropane	ND	ug/L	0.50	1		01/20/17 18:24	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	0.50	1		01/20/17 18:24	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	0.50	1		01/20/17 18:24	10061-02-6	
Ethylbenzene	ND	ug/L	0.50	1		01/20/17 18:24	100-41-4	
2-Hexanone	ND	ug/L	1.0	1		01/20/17 18:24	591-78-6	
Isopropylbenzene (Cumene)	ND	ug/L	1.0	1		01/20/17 18:24	98-82-8	
Methyl acetate	ND	ug/L	2.0	1		01/20/17 18:24	79-20-9	
Methylene Chloride	ND	ug/L	0.50	1		01/20/17 18:24	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	1.0	1		01/20/17 18:24	108-10-1	
Methyl-tert-butyl ether	2.8	ug/L	0.50	1		01/20/17 18:24	1634-04-4	
Styrene	ND	ug/L	1.0	1		01/20/17 18:24	100-42-5	
1,1,2,2-Tetrachloroethane	ND	ug/L	0.50	1		01/20/17 18:24	79-34-5	
Tetrachloroethene	ND	ug/L	0.50	1		01/20/17 18:24	127-18-4	
Toluene	ND	ug/L	0.50	1		01/20/17 18:24	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	0.50	1		01/20/17 18:24	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	0.50	1		01/20/17 18:24	79-00-5	
Trichloroethene	ND	ug/L	0.50	1		01/20/17 18:24	79-01-6	
Trichlorofluoromethane	ND	ug/L	0.50	1		01/20/17 18:24	75-69-4	
Vinyl chloride	ND	ug/L	0.50	1		01/20/17 18:24	75-01-4	
m&p-Xylene	ND	ug/L	2.0	1		01/20/17 18:24	179601-23-1	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS



Project: PUMA TERMINAL GW SAMPLING
Pace Project No.: 2048968

Sample: MW-21B Lab ID: 2048968013 Collected: 01/19/17 13:56 Received: 01/19/17 16:39 Matrix: Water
Parameters Results Units Report Limit DF Prepared Analyzed CAS No. Qual

8260 MSV Low Level Analytical Method: EPA 5030B/8260

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
o-Xylene	ND	ug/L	1.0	1	01/20/17 18:24	01/20/17 18:24	95-47-6	
Surrogates								
Dibromofluoromethane (S)	96	%	72-126	1	01/20/17 18:24	01/20/17 18:24	1868-53-7	
4-Bromofluorobenzene (S)	100	%	68-124	1	01/20/17 18:24	01/20/17 18:24	460-00-4	
Toluene-d8 (S)	105	%	79-119	1	01/20/17 18:24	01/20/17 18:24	2037-26-5	

Sample: DUP007 Lab ID: 2048968014 Collected: 01/19/17 00:00 Received: 01/19/17 15:39 Matrix: Water
Parameters Results Units Report Limit DF Prepared Analyzed CAS No. Qual

8015M DRO/ORO Organics Analytical Method: EPA 8015B Modified Preparation Method: EPA 3535

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
Diesel Range Organic (C10-C28)	ND	mg/L	0.50	1	01/24/17 12:12	02/02/17 16:40		
Oil Range Organics (>C28-C40)	ND	mg/L	1.0	1	01/24/17 12:12	02/02/17 16:40		
Surrogates								
n-Pentacosane (S)	41	%	16-137	1	01/24/17 12:12	02/02/17 16:40	629-99-2	
o-Terphenyl (S)	44	%	10-121	1	01/24/17 12:12	02/02/17 16:40	84-15-1	

8021 GCV BTEX, MTBE, GRO Analytical Method: EPA 8015/8021

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
Gasoline Range Organics	ND	ug/L	50.0	1	01/26/17 03:35	01/26/17 03:35		
Surrogates								
4-Bromofluorobenzene (S)	101	%	44-148	1	01/26/17 03:35	01/26/17 03:35	460-00-4	

6020 MET ICPMS Analytical Method: EPA 6020 Preparation Method: EPA 3010

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
Arsenic	ND	mg/L	0.0010	1	01/24/17 08:30	02/12/17 17:20	7440-38-2	
Chromium	0.0040	mg/L	0.0010	1	01/24/17 08:30	02/12/17 17:20	7440-47-3	
Lead	ND	mg/L	0.0010	1	01/24/17 08:30	02/12/17 17:20	7439-92-1	
Vanadium	ND	mg/L	0.0050	1	01/24/17 08:30	02/12/17 17:20	7440-62-2	

6020 MET ICPMS, Dissolved (LF) Analytical Method: EPA 6020 Preparation Method: EPA 3005A

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
Arsenic, Dissolved	ND	ug/L	1.0	1	01/24/17 09:53	02/12/17 20:25	7440-38-2	
Chromium, Dissolved	2.8	ug/L	1.0	1	01/24/17 09:53	02/12/17 20:25	7440-47-3	
Lead, Dissolved	ND	ug/L	1.0	1	01/24/17 09:53	02/12/17 20:25	7439-92-1	
Vanadium, Dissolved	ND	ug/L	5.0	1	01/24/17 09:53	02/12/17 20:25	7440-62-2	

7470 Mercury Analytical Method: EPA 7470 Preparation Method: EPA 7470

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
Mercury	0.27	ug/L	0.20	1	01/24/17 08:59	01/24/17 17:27	7439-97-6	

7470 Mercury, Dissolved (LF) Analytical Method: EPA 7470 Preparation Method: EPA 7470

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
Mercury, Dissolved	ND	ug/L	0.20	1	01/24/17 09:49	01/24/17 19:39	7439-97-6	

8270 MSSV PAH by SIM SEP Analytical Method: EPA 8270 by SIM Preparation Method: EPA 3510

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
Acenaphthene	ND	ug/L	0.10	1	01/25/17 09:39	01/31/17 17:33	83-32-9	
Acenaphthylene	ND	ug/L	0.10	1	01/25/17 09:39	01/31/17 17:33	208-96-8	
Anthracene	ND	ug/L	0.10	1	01/25/17 09:39	01/31/17 17:33	120-12-7	
Benzo(a)anthracene	ND	ug/L	0.10	1	01/25/17 09:39	01/31/17 17:33	56-55-3	

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ANALYTICAL RESULTS

Project: PUMA TERMINAL GW SAMPLING
Pace Project No.: 2048968



Sample: DUP007 Lab ID: 2048968014 Collected: 01/19/17 00:00 Received: 01/19/17 09:39 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Preparation Method	CAS No.	Qual
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8270 MSSV PAH by SIM SEP

Analytical Method: EPA 8270 by SIM Preparation Method: EPA 3510

Benzo(a)pyrene	ND	ug/L	0.10	1	01/25/17 09:39	01/31/17 17:33	50-32-8
Benzo(b)fluoranthene	ND	ug/L	0.10	1	01/25/17 09:39	01/31/17 17:33	205-99-2
Benzo(g,h,i)perylene	ND	ug/L	0.10	1	01/25/17 09:39	01/31/17 17:33	191-24-2
Benzo(k)fluoranthene	ND	ug/L	0.10	1	01/25/17 09:39	01/31/17 17:33	207-08-9
Chrysene	ND	ug/L	0.10	1	01/25/17 09:39	01/31/17 17:33	218-01-9
Dibenz(a,h)anthracene	ND	ug/L	0.10	1	01/25/17 09:39	01/31/17 17:33	53-70-3
Fluoranthene	ND	ug/L	0.10	1	01/25/17 09:39	01/31/17 17:33	206-44-0
Fluorene	ND	ug/L	0.10	1	01/25/17 09:39	01/31/17 17:33	86-73-7
Indeno(1,2,3-cd)pyrene	ND	ug/L	0.10	1	01/25/17 09:39	01/31/17 17:33	193-39-5
2-Methylnaphthalene	ND	ug/L	0.10	1	01/25/17 09:39	01/31/17 17:33	91-57-6
Naphthalene	ND	ug/L	0.10	1	01/25/17 09:39	01/31/17 17:33	91-20-3
Phenanthrene	ND	ug/L	0.10	1	01/25/17 09:39	01/31/17 17:33	85-01-8
Pyrene	ND	ug/L	0.10	1	01/25/17 09:39	01/31/17 17:33	129-00-0
Surrogates							
2-Fluorobiphenyl (S)	72	%	25-150	1	01/25/17 09:39	01/31/17 17:33	321-60-8
Terphenyl-d14 (S)	74	%	25-150	1	01/25/17 09:39	01/31/17 17:33	1718-51-0

8260 MSV Low Level

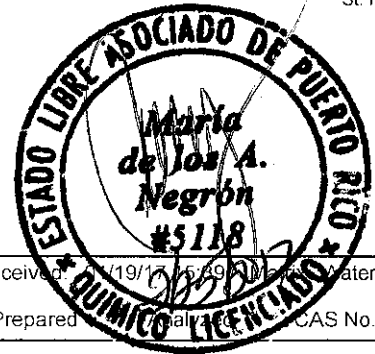
Analytical Method: EPA 5030B/8260

Acetone	ND	ug/L	4.0	1	01/20/17 18:42	67-64-1
Benzene	ND	ug/L	0.50	1	01/20/17 18:42	71-43-2
Bromodichloromethane	ND	ug/L	0.50	1	01/20/17 18:42	75-27-4
Bromoform	ND	ug/L	0.50	1	01/20/17 18:42	75-25-2
Bromomethane	ND	ug/L	0.50	1	01/20/17 18:42	74-83-9
2-Butanone (MEK)	ND	ug/L	2.0	1	01/20/17 18:42	78-93-3
Carbon disulfide	ND	ug/L	1.0	1	01/20/17 18:42	75-15-0
Carbon tetrachloride	ND	ug/L	0.50	1	01/20/17 18:42	56-23-5
Chlorobenzene	ND	ug/L	0.50	1	01/20/17 18:42	108-90-7
Chloroethane	ND	ug/L	0.50	1	01/20/17 18:42	75-00-3
Chloroform	ND	ug/L	0.50	1	01/20/17 18:42	67-66-3
Chloromethane	ND	ug/L	0.50	1	01/20/17 18:42	74-87-3
1,2-Dibromo-3-chloropropane	ND	ug/L	0.20	1	01/20/17 18:42	96-12-8
Dibromochloromethane	ND	ug/L	0.50	1	01/20/17 18:42	124-48-1
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	1	01/20/17 18:42	106-93-4
Dichlorodifluoromethane	ND	ug/L	1.0	1	01/20/17 18:42	75-71-8
1,1-Dichloroethane	ND	ug/L	0.50	1	01/20/17 18:42	75-34-3
1,2-Dichloroethane	ND	ug/L	0.50	1	01/20/17 18:42	107-06-2
1,1-Dichloroethene	ND	ug/L	0.50	1	01/20/17 18:42	75-35-4
cis-1,2-Dichloroethene	ND	ug/L	1.0	1	01/20/17 18:42	156-59-2
trans-1,2-Dichloroethene	ND	ug/L	0.50	1	01/20/17 18:42	156-60-5
1,2-Dichloropropane	ND	ug/L	0.50	1	01/20/17 18:42	78-87-5
cis-1,3-Dichloropropene	ND	ug/L	0.50	1	01/20/17 18:42	10061-01-5
trans-1,3-Dichloropropene	ND	ug/L	0.50	1	01/20/17 18:42	10061-02-6
Ethylbenzene	ND	ug/L	0.50	1	01/20/17 18:42	100-41-4
2-Hexanone	ND	ug/L	1.0	1	01/20/17 18:42	591-78-6
Isopropylbenzene (Cumene)	ND	ug/L	1.0	1	01/20/17 18:42	98-82-8
Methyl acetate	ND	ug/L	2.0	1	01/20/17 18:42	79-20-9
Methylene Chloride	ND	ug/L	0.50	1	01/20/17 18:42	75-09-2

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS



Project: PUMA TERMINAL GW SAMPLING
Pace Project No.: 2048968

Sample:	Lab ID:	Collected:	Received:	Matrix:				
DUP007	2048968014	01/19/17 00:00	01/19/17 05:49 AM	Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV Low Level		Analytical Method: EPA 5030B/8260						
4-Methyl-2-pentanone (MIBK)	ND	ug/L	1.0	1	01/20/17 18:42	108-10-1		
Methyl-tert-butyl ether	2.8	ug/L	0.50	1	01/20/17 18:42	1634-04-4		
Styrene	ND	ug/L	1.0	1	01/20/17 18:42	100-42-5		
1,1,2,2-Tetrachloroethane	ND	ug/L	0.50	1	01/20/17 18:42	79-34-5		
Tetrachloroethene	ND	ug/L	0.50	1	01/20/17 18:42	127-18-4		
Toluene	ND	ug/L	0.50	1	01/20/17 18:42	108-88-3		
1,1,1-Trichloroethane	ND	ug/L	0.50	1	01/20/17 18:42	71-55-6		
1,1,2-Trichloroethane	ND	ug/L	0.50	1	01/20/17 18:42	79-00-5		
Trichloroethene	ND	ug/L	0.50	1	01/20/17 18:42	79-01-6		
Trichlorofluoromethane	ND	ug/L	0.50	1	01/20/17 18:42	75-69-4		
Vinyl chloride	ND	ug/L	0.50	1	01/20/17 18:42	75-01-4		
m&p-Xylene	ND	ug/L	2.0	1	01/20/17 18:42	179601-23-1		
o-Xylene	ND	ug/L	1.0	1	01/20/17 18:42	95-47-6		
Surrogates								
Dibromofluoromethane (S)	95	%	72-126	1	01/20/17 18:42	1868-53-7		
4-Bromofluorobenzene (S)	99	%	68-124	1	01/20/17 18:42	460-00-4		
Toluene-d8 (S)	106	%	79-119	1	01/20/17 18:42	2037-26-5		

Sample:	Lab ID:	Collected:	Received:	Matrix:				
FB-011917	2048968015	01/19/17 14:02	01/19/17 15:39	Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8021 GCV BTEX, MTBE, GRO		Analytical Method: EPA 8015/8021						
Gasoline Range Organics	ND	ug/L	50.0	1	01/26/17 04:01			
Surrogates								
4-Bromofluorobenzene (S)	102	%	44-148	1	01/26/17 04:01	460-00-4		
8260 MSV Low Level		Analytical Method: EPA 5030B/8260						
Acetone	ND	ug/L	4.0	1	01/20/17 19:01	67-64-1		
Benzene	ND	ug/L	0.50	1	01/20/17 19:01	71-43-2		
Bromodichloromethane	ND	ug/L	0.50	1	01/20/17 19:01	75-27-4		
Bromoform	ND	ug/L	0.50	1	01/20/17 19:01	75-25-2		
Bromomethane	ND	ug/L	0.50	1	01/20/17 19:01	74-83-9		
2-Butanone (MEK)	ND	ug/L	2.0	1	01/20/17 19:01	78-93-3		
Carbon disulfide	ND	ug/L	1.0	1	01/20/17 19:01	75-15-0		
Carbon tetrachloride	ND	ug/L	0.50	1	01/20/17 19:01	56-23-5		
Chlorobenzene	ND	ug/L	0.50	1	01/20/17 19:01	108-90-7		
Chloroethane	ND	ug/L	0.50	1	01/20/17 19:01	75-00-3		
Chloroform	ND	ug/L	0.50	1	01/20/17 19:01	67-66-3		
Chloromethane	ND	ug/L	0.50	1	01/20/17 19:01	74-87-3		
1,2-Dibromo-3-chloropropane	ND	ug/L	0.20	1	01/20/17 19:01	96-12-8		
Dibromochloromethane	ND	ug/L	0.50	1	01/20/17 19:01	124-48-1		
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	1	01/20/17 19:01	106-93-4		
Dichlorodifluoromethane	ND	ug/L	1.0	1	01/20/17 19:01	75-71-8		
1,1-Dichloroethane	ND	ug/L	0.50	1	01/20/17 19:01	75-34-3		
1,2-Dichloroethane	ND	ug/L	0.50	1	01/20/17 19:01	107-06-2		

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: PUMA TERMINAL GW SAMPLING
Pace Project No.: 2048968

Sample: FB-011917 Lab ID: 2048968015 Collected: 01/19/17 14:02 Received: 01/19/17 15:39 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV Low Level		Analytical Method: EPA 5030B/8260						
1,1-Dichloroethene	ND	ug/L	0.50	1		01/20/17 19:01	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	1		01/20/17 19:01	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	0.50	1		01/20/17 19:01	156-60-5	
1,2-Dichloropropane	ND	ug/L	0.50	1		01/20/17 19:01	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	0.50	1		01/20/17 19:01	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	0.50	1		01/20/17 19:01	10061-02-6	
Ethylbenzene	ND	ug/L	0.50	1		01/20/17 19:01	100-41-4	
2-Hexanone	ND	ug/L	1.0	1		01/20/17 19:01	591-78-6	
Isopropylbenzene (Cumene)	ND	ug/L	1.0	1		01/20/17 19:01	98-82-8	
Methyl acetate	ND	ug/L	2.0	1		01/20/17 19:01	79-20-9	
Methylene Chloride	ND	ug/L	0.50	1		01/20/17 19:01	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	1.0	1		01/20/17 19:01	108-10-1	
Methyl-tert-butyl ether	ND	ug/L	0.50	1		01/20/17 19:01	1634-04-4	
Styrene	ND	ug/L	1.0	1		01/20/17 19:01	100-42-5	
1,1,2,2-Tetrachloroethane	ND	ug/L	0.50	1		01/20/17 19:01	79-34-5	
Tetrachloroethene	ND	ug/L	0.50	1		01/20/17 19:01	127-18-4	
Toluene	ND	ug/L	0.50	1		01/20/17 19:01	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	0.50	1		01/20/17 19:01	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	0.50	1		01/20/17 19:01	79-00-5	
Trichloroethene	ND	ug/L	0.50	1		01/20/17 19:01	79-01-6	
Trichlorofluoromethane	ND	ug/L	0.50	1		01/20/17 19:01	75-69-4	
Vinyl chloride	ND	ug/L	0.50	1		01/20/17 19:01	75-01-4	
m&p-Xylene	ND	ug/L	2.0	1		01/20/17 19:01	179601-23-1	
o-Xylene	ND	ug/L	1.0	1		01/20/17 19:01	95-47-6	
Surrogates								
Dibromofluoromethane (S)	94	%	72-126	1		01/20/17 19:01	1868-53-7	
4-Bromofluorobenzene (S)	99	%	68-124	1		01/20/17 19:01	460-00-4	
Toluene-d8 (S)	107	%	79-119	1		01/20/17 19:01	2037-26-5	



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QUALITY CONTROL DATA

Project: PUMA TERMINAL GW SAMPLING
Pace Project No.: 2048968

QC Batch: 72788 Analysis Method: EPA 8015/8021
QC Batch Method: EPA 8015/8021 Analysis Description: 8021 W GCV BTEX , MTBE, GRO
Associated Lab Samples: 2048968001, 2048968002, 2048968003, 2048968004, 2048968005, 2048968006, 2048968007, 2048968008, 2048968009, 2048968010, 2048968011, 2048968012, 2048968013, 2048968014, 2048968015

METHOD BLANK: 304892 Matrix: Water
Associated Lab Samples: 2048968001, 2048968002, 2048968003, 2048968004, 2048968005, 2048968006, 2048968007, 2048968008, 2048968009, 2048968010, 2048968011, 2048968012, 2048968013, 2048968014, 2048968015

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Gasoline Range Organics	ug/L	ND	50.0	01/25/17 19:25	
4-Bromofluorobenzene (S)	%	103	44-148	01/25/17 19:25	

LABORATORY CONTROL SAMPLE: 304893

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Gasoline Range Organics	ug/L	500	516	103	61-136	
4-Bromofluorobenzene (S)	%			103	44-148	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 304894 304895

Parameter	Units	2048968004 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	Max RPD	Qual
Gasoline Range Organics	ug/L	ND	500	500	537	506	103	96	15-147	6	20
4-Bromofluorobenzene (S)	%						103	106	44-148		

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QUALITY CONTROL DATA

Project: PUMA TERMINAL GW SAMPLING
Pace Project No.: 2048968

QC Batch: 72646 Analysis Method: EPA 7470
QC Batch Method: EPA 7470 Analysis Description: 7470 Mercury
Associated Lab Samples: 2048968002, 2048968003, 2048968004, 2048968005, 2048968006, 2048968009, 2048968010, 2048968011, 2048968012, 2048968013, 2048968014

METHOD BLANK: 304310 Matrix: Water
Associated Lab Samples: 2048968002, 2048968003, 2048968004, 2048968005, 2048968006, 2048968009, 2048968010, 2048968011, 2048968012, 2048968013, 2048968014

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Mercury	ug/L	ND	0.20	01/24/17 16:43	

LABORATORY CONTROL SAMPLE: 304311

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury	ug/L	1	1.0	102	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 304312 304313

Parameter	Units	2048986001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	Max RPD	Qual
Mercury	ug/L	ND	1	1	0.99	1.0	99	104	75-125	5	20

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QUALITY CONTROL DATA

Project: PUMA TERMINAL GW SAMPLING
Pace Project No.: 2048968

QC Batch: 72612 Analysis Method: EPA 7470
QC Batch Method: EPA 7470 Analysis Description: 7470 Mercury Dissolved
Associated Lab Samples: 2048968002, 2048968003, 2048968004, 2048968005, 2048968006, 2048968009, 2048968010, 2048968011, 2048968012, 2048968013, 2048968014

METHOD BLANK: 304161 Matrix: Water
Associated Lab Samples: 2048968002, 2048968003, 2048968004, 2048968005, 2048968006, 2048968009, 2048968010, 2048968011, 2048968012, 2048968013, 2048968014

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Mercury, Dissolved	ug/L	ND	0.20	01/24/17 18:41	

LABORATORY CONTROL SAMPLE: 304162

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury, Dissolved	ug/L	1	1.0	103	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 304163 304164

Parameter	Units	2048890008 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Mercury, Dissolved	ug/L	ND	1	1	1.1	1.1	91	90	75-125	1	20	

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QUALITY CONTROL DATA

Project: PUMA TERMINAL GW SAMPLING
Pace Project No.: 2048968

QC Batch: 72609 Analysis Method: EPA 6020
QC Batch Method: EPA 3010 Analysis Description: 6020 MET
Associated Lab Samples: 2048968002, 2048968003, 2048968004, 2048968005, 2048968006, 2048968009, 2048968010, 2048968011, 2048968012, 2048968013, 2048968014

METHOD BLANK: 304153 Matrix: Water
Associated Lab Samples: 2048968002, 2048968003, 2048968004, 2048968005, 2048968006, 2048968009, 2048968010, 2048968011, 2048968012, 2048968013, 2048968014

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Arsenic	mg/L	ND	0.0010	02/12/17 12:56	
Chromium	mg/L	ND	0.0010	02/12/17 12:56	
Lead	mg/L	ND	0.0010	02/12/17 12:56	
Vanadium	mg/L	ND	0.0050	02/12/17 12:56	

LABORATORY CONTROL SAMPLE: 304154

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Arsenic	mg/L	.02	0.020	102	83-115	
Chromium	mg/L	.02	0.020	102	85-115	
Lead	mg/L	.02	0.020	100	84-115	
Vanadium	mg/L	.02	0.016	82	81-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 304155 304156

Parameter	Units	2048890008 Result	MS		MSD		MS % Rec	MSD % Rec	% Rec Limits	Max		
			Spike Conc.	MS Spike Conc.	MSD Spike Conc.	MS Result				MSD Result	RPD	RPD
Arsenic	mg/L	ND	.02	.02	0.016	0.020	80	101	80-120	23	20	R1
Chromium	mg/L	0.046	.02	.02	0.058	0.074	57	136	80-120	24	20	M1,R1
Lead	mg/L	ND	.02	.02	0.017	0.021	83	107	80-120	25	20	R1
Vanadium	mg/L	ND	.02	.02	0.0097	0.014	49	70	80-120	35	20	M1,R1

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QUALITY CONTROL DATA

Project: PUMA TERMINAL GW SAMPLING
Pace Project No.: 2048968

QC Batch: 72614 Analysis Method: EPA 6020
QC Batch Method: EPA 3005A Analysis Description: 6020 MET Dissolved
Associated Lab Samples: 2048968002, 2048968003, 2048968004, 2048968005, 2048968006, 2048968009, 2048968010, 2048968011, 2048968012, 2048968013, 2048968014

METHOD BLANK: 304165 Matrix: Water
Associated Lab Samples: 2048968002, 2048968003, 2048968004, 2048968005, 2048968006, 2048968009, 2048968010, 2048968011, 2048968012, 2048968013, 2048968014

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Arsenic, Dissolved	ug/L	ND	1.0	02/12/17 13:20	
Chromium, Dissolved	ug/L	ND	1.0	02/12/17 13:20	
Lead, Dissolved	ug/L	ND	1.0	02/12/17 13:20	
Vanadium, Dissolved	ug/L	ND	5.0	02/12/17 13:20	

LABORATORY CONTROL SAMPLE: 304166

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Arsenic, Dissolved	ug/L	20	20.6	103	80-120	
Chromium, Dissolved	ug/L	20	20.6	103	80-120	
Lead, Dissolved	ug/L	20	20.2	101	80-120	
Vanadium, Dissolved	ug/L	20	18.4	92	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 304167 304168

Parameter	Units	2048890008 Result	MS		MSD		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
			Spike Conc.	MS Result	MSD Result	MSD Spike Conc.						
Arsenic, Dissolved	ug/L	ND	20	20	19.5	19.5	96	97	75-125	0	20	
Chromium, Dissolved	ug/L	47.9	20	20	67.5	68.0	98	100	75-125	1	20	
Lead, Dissolved	ug/L	ND	20	20	20.3	20.6	102	103	75-125	2	20	
Vanadium, Dissolved	ug/L	ND	20	20	12.4	12.2	62	61	75-125	2	20	M1

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QUALITY CONTROL DATA

Project: PUMA TERMINAL GW SAMPLING
Pace Project No.: 2048968

QC Batch: 72642 Analysis Method: EPA 5030B/8260
QC Batch Method: EPA 5030B/8260 Analysis Description: 8260 MSV Low Level
Associated Lab Samples: 2048968001, 2048968002, 2048968003, 2048968004, 2048968005, 2048968006, 2048968007, 2048968008, 2048968009, 2048968010, 2048968011, 2048968012, 2048968013, 2048968014, 2048968015

METHOD BLANK: 304302 Matrix: Water
Associated Lab Samples: 2048968001, 2048968002, 2048968003, 2048968004, 2048968005, 2048968006, 2048968007, 2048968008, 2048968009, 2048968010, 2048968011, 2048968012, 2048968013, 2048968014, 2048968015

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
1,1,1-Trichloroethane	ug/L	ND	0.50	01/20/17 13:16	
1,1,2,2-Tetrachloroethane	ug/L	ND	0.50	01/20/17 13:16	
1,1,2-Trichloroethane	ug/L	ND	0.50	01/20/17 13:16	
1,1-Dichloroethane	ug/L	ND	0.50	01/20/17 13:16	
1,1-Dichloroethene	ug/L	ND	0.50	01/20/17 13:16	
1,2-Dibromo-3-chloropropane	ug/L	ND	0.20	01/20/17 13:16	
1,2-Dibromoethane (EDB)	ug/L	ND	1.0	01/20/17 13:16	
1,2-Dichloroethane	ug/L	ND	0.50	01/20/17 13:16	
1,2-Dichloropropane	ug/L	ND	0.50	01/20/17 13:16	
2-Butanone (MEK)	ug/L	ND	2.0	01/20/17 13:16	
2-Hexanone	ug/L	ND	1.0	01/20/17 13:16	
4-Methyl-2-pentanone (MIBK)	ug/L	ND	1.0	01/20/17 13:16	
Acetone	ug/L	ND	4.0	01/20/17 13:16	
Benzene	ug/L	ND	0.50	01/20/17 13:16	
Bromodichloromethane	ug/L	ND	0.50	01/20/17 13:16	
Bromoform	ug/L	ND	0.50	01/20/17 13:16	
Bromomethane	ug/L	ND	0.50	01/20/17 13:16	
Carbon disulfide	ug/L	ND	1.0	01/20/17 13:16	
Carbon tetrachloride	ug/L	ND	0.50	01/20/17 13:16	
Chlorobenzene	ug/L	ND	0.50	01/20/17 13:16	
Chloroethane	ug/L	ND	0.50	01/20/17 13:16	
Chloroform	ug/L	ND	0.50	01/20/17 13:16	
Chloromethane	ug/L	ND	0.50	01/20/17 13:16	
cis-1,2-Dichloroethene	ug/L	ND	1.0	01/20/17 13:16	
cis-1,3-Dichloropropene	ug/L	ND	0.50	01/20/17 13:16	
Dibromochloromethane	ug/L	ND	0.50	01/20/17 13:16	
Dichlorodifluoromethane	ug/L	ND	1.0	01/20/17 13:16	
Ethylbenzene	ug/L	ND	0.50	01/20/17 13:16	
Isopropylbenzene (Cumene)	ug/L	ND	1.0	01/20/17 13:16	
m&p-Xylene	ug/L	ND	2.0	01/20/17 13:16	
Methyl acetate	ug/L	ND	2.0	01/20/17 13:16	
Methyl-tert-butyl ether	ug/L	ND	0.50	01/20/17 13:16	
Methylene Chloride	ug/L	ND	0.50	01/20/17 13:16	
o-Xylene	ug/L	ND	1.0	01/20/17 13:16	
Styrene	ug/L	ND	1.0	01/20/17 13:16	
Tetrachloroethene	ug/L	ND	0.50	01/20/17 13:16	
Toluene	ug/L	ND	0.50	01/20/17 13:16	
trans-1,2-Dichloroethene	ug/L	ND	0.50	01/20/17 13:16	
trans-1,3-Dichloropropene	ug/L	ND	0.50	01/20/17 13:16	
Trichloroethene	ug/L	ND	0.50	01/20/17 13:16	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: PUMA TERMINAL GW SAMPLING
Pace Project No.: 2048968

METHOD BLANK: 304302 Matrix: Water
Associated Lab Samples: 2048968001, 2048968002, 2048968003, 2048968004, 2048968005, 2048968006, 2048968007, 2048968008, 2048968009, 2048968010, 2048968011, 2048968012, 2048968013, 2048968014, 2048968015

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Trichlorofluoromethane	ug/L	ND	0.50	01/20/17 13:16	
Vinyl chloride	ug/L	ND	0.50	01/20/17 13:16	
4-Bromofluorobenzene (S)	%	99	68-124	01/20/17 13:16	
Dibromofluoromethane (S)	%	97	72-126	01/20/17 13:16	
Toluene-d8 (S)	%	105	79-119	01/20/17 13:16	

LABORATORY CONTROL SAMPLE: 304303

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,1,1-Trichloroethane	ug/L	50	43.1	86	62-131	
1,1,2,2-Tetrachloroethane	ug/L	50	39.5	79	15-179	
1,1,2-Trichloroethane	ug/L	50	44.5	89	58-144	
1,1-Dichloroethane	ug/L	50	42.3	85	63-129	
1,1-Dichloroethene	ug/L	50	40.0	80	51-139	
1,2-Dibromo-3-chloropropane	ug/L	50	45.5	91	21-160	
1,2-Dibromoethane (EDB)	ug/L	50	46.1	92	52-161	
1,2-Dichloroethane	ug/L	50	44.4	89	57-148	
1,2-Dichloropropane	ug/L	50	43.6	87	66-128	
2-Butanone (MEK)	ug/L	50	46.3	93	32-183	
2-Hexanone	ug/L	50	40.6	81	36-170	
4-Methyl-2-pentanone (MIBK)	ug/L	50	43.3	87	26-171	
Acetone	ug/L	50	45.0	90	22-165	
Benzene	ug/L	50	40.0	80	62-131	
Bromodichloromethane	ug/L	50	45.9	92	69-132	
Bromoform	ug/L	50	44.1	88	35-166	
Bromomethane	ug/L	50	65.4	131	34-158	
Carbon disulfide	ug/L	50	47.8	96	31-128	
Carbon tetrachloride	ug/L	50	44.9	90	54-144	
Chlorobenzene	ug/L	50	50.0	100	70-127	
Chloroethane	ug/L	50	73.6	147	17-195	
Chloroform	ug/L	50	43.1	86	73-134	
Chloromethane	ug/L	50	33.2	66	17-153	
cis-1,2-Dichloroethene	ug/L	50	41.7	83	68-129	
cis-1,3-Dichloropropene	ug/L	50	45.9	92	72-138	
Dibromochloromethane	ug/L	50	45.5	91	49-146	
Dichlorodifluoromethane	ug/L	50	36.0	72	10-179	
Ethylbenzene	ug/L	50	45.1	90	66-126	
Isopropylbenzene (Cumene)	ug/L	50	41.1	82	51-138	
m&p-Xylene	ug/L	100	91.2	91	65-129	
Methyl acetate	ug/L	50	43.6	87	20-142	
Methyl-tert-butyl ether	ug/L	50	44.8	90	37-166	
Methylene Chloride	ug/L	50	46.9	94	46-168	
o-Xylene	ug/L	50	42.7	85	65-124	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: PUMA TERMINAL GW SAMPLING
Pace Project No.: 2048968

LABORATORY CONTROL SAMPLE: 304303

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Styrene	ug/L	50	47.7	95	72-133	
Tetrachloroethene	ug/L	50	46.5	93	46-157	
Toluene	ug/L	50	45.0	90	69-126	
trans-1,2-Dichloroethene	ug/L	50	40.7	81	60-129	
trans-1,3-Dichloropropene	ug/L	50	47.5	95	59-149	
Trichloroethene	ug/L	50	45.6	91	67-132	
Trichlorofluoromethane	ug/L	50	58.3	117	39-171	
Vinyl chloride	ug/L	50	51.3	103	27-149	
4-Bromofluorobenzene (S)	%			96	68-124	
Dibromofluoromethane (S)	%			98	72-126	
Toluene-d8 (S)	%			103	79-119	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 304304 304305

Parameter	Units	MS		MSD		MS % Rec	MSD % Rec	% Rec Limits	Max RPD	Qual	
		2048968003 Result	Spike Conc.	Spike Conc.	Result						Result
1,1,1-Trichloroethane	ug/L	ND	50	50	49.5	47.3	99	95	54-137	5	20
1,1,2,2-Tetrachloroethane	ug/L	ND	50	50	42.5	42.3	85	85	15-187	1	20
1,1,2-Trichloroethane	ug/L	ND	50	50	47.1	47.7	94	95	59-148	1	20
1,1-Dichloroethane	ug/L	ND	50	50	46.7	44.4	93	89	59-133	5	20
1,1-Dichloroethene	ug/L	ND	50	50	46.5	43.6	93	87	44-146	6	20
1,2-Dibromo-3-chloropropane	ug/L	ND	50	50	47.1	47.1	94	94	23-166	0	20
1,2-Dibromoethane (EDB)	ug/L	ND	50	50	48.1	48.0	96	96	55-166	0	20
1,2-Dichloroethane	ug/L	ND	50	50	46.8	45.8	94	92	56-154	2	20
1,2-Dichloropropane	ug/L	ND	50	50	47.4	46.6	95	93	62-135	2	20
2-Butanone (MEK)	ug/L	ND	50	50	46.4	45.3	93	91	20-205	2	20
2-Hexanone	ug/L	ND	50	50	41.4	41.5	83	83	25-189	0	20
4-Methyl-2-pentanone (MIBK)	ug/L	ND	50	50	43.7	44.0	87	88	23-184	1	20
Acetone	ug/L	ND	50	50	45.9	48.0	92	96	11-217	4	20
Benzene	ug/L	ND	50	50	44.4	42.8	89	86	52-141	4	20
Bromodichloromethane	ug/L	ND	50	50	49.3	48.3	99	97	70-134	2	20
Bromoform	ug/L	ND	50	50	46.4	46.7	93	93	37-171	1	20
Bromomethane	ug/L	ND	50	50	73.8	70.8	148	142	34-155	4	20
Carbon disulfide	ug/L	ND	50	50	57.9	51.8	116	104	28-130	11	20
Carbon tetrachloride	ug/L	ND	50	50	52.2	49.5	104	99	48-146	5	20
Chlorobenzene	ug/L	ND	50	50	54.8	54.0	110	108	67-129	1	20
Chloroethane	ug/L	ND	50	50	89.1	80.3	178	161	12-192	10	20
Chloroform	ug/L	0.62	50	50	47.7	46.1	94	91	66-143	3	20
Chloromethane	ug/L	ND	50	50	38.1	35.8	76	72	14-155	6	20
cis-1,2-Dichloroethene	ug/L	ND	50	50	45.6	44.0	91	88	56-141	4	20
cis-1,3-Dichloropropene	ug/L	ND	50	50	48.9	48.1	98	96	70-139	2	20
Dibromochloromethane	ug/L	ND	50	50	48.5	48.2	97	96	50-150	1	20
Dichlorodifluoromethane	ug/L	ND	50	50	43.1	42.4	86	85	10-173	2	20
Ethylbenzene	ug/L	ND	50	50	50.6	49.0	101	98	57-135	3	20

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: PUMA TERMINAL GW SAMPLING
Pace Project No.: 2048968

Parameter	Units	MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 304304		304305		MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	Max RPD	RPD	Qual
		2048968003 Result	MS Spike Conc.	MSD Spike Conc.									
Isopropylbenzene (Cumene)	ug/L	ND	50	50	47.3	45.7	95	91	40-146	3	20		
m&p-Xylene	ug/L	ND	100	100	103	97.9	103	98	56-136	5	20		
Methyl acetate	ug/L	ND	50	50	41.7	42.6	83	85	10-142	2	20		
Methyl-tert-butyl ether	ug/L	ND	50	50	46.4	46.1	93	92	35-176	1	20		
Methylene Chloride	ug/L	ND	50	50	50.2	48.7	100	97	45-166	3	20		
o-Xylene	ug/L	ND	50	50	47.8	46.9	96	94	57-133	2	20		
Styrene	ug/L	ND	50	50	51.5	50.5	103	101	58-144	2	20		
Tetrachloroethene	ug/L	ND	50	50	54.4	51.8	109	104	48-143	5	20		
Toluene	ug/L	ND	50	50	50.2	48.3	100	97	59-136	4	20		
trans-1,2-Dichloroethene	ug/L	ND	50	50	47.1	44.0	94	88	57-132	7	20		
trans-1,3-Dichloropropene	ug/L	ND	50	50	50.6	50.2	101	100	59-154	1	20		
Trichloroethene	ug/L	ND	50	50	51.8	49.7	104	99	58-140	4	20		
Trichlorofluoromethane	ug/L	ND	50	50	72.9	68.4	146	137	24-175	6	20		
Vinyl chloride	ug/L	ND	50	50	58.5	56.3	117	113	21-150	4	20		
4-Bromofluorobenzene (S)	%							98	99	68-124			
Dibromofluoromethane (S)	%							97	97	72-126			
Toluene-d8 (S)	%							102	103	79-119			

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QUALITY CONTROL DATA

Project: PUMA TERMINAL GW SAMPLING
Pace Project No.: 2048968

QC Batch: 72656 Analysis Method: EPA 8015B Modified
QC Batch Method: EPA 3535 Analysis Description: EPA 8015 ORO
Associated Lab Samples: 2048968002, 2048968003, 2048968004, 2048968005, 2048968006, 2048968009, 2048968010, 2048968011, 2048968012, 2048968013, 2048968014

METHOD BLANK: 304345 Matrix: Water
Associated Lab Samples: 2048968002, 2048968003, 2048968004, 2048968005, 2048968006, 2048968009, 2048968010, 2048968011, 2048968012, 2048968013, 2048968014

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Diesel Range Organic (C10-C28)	mg/L	ND	0.25	02/02/17 11:02	
Oil Range Organics (>C28-C40)	mg/L	ND	0.50	02/02/17 11:02	
n-Pentacosane (S)	%.	37	16-137	02/02/17 11:02	
o-Terphenyl (S)	%.	49	10-121	02/02/17 11:02	

LABORATORY CONTROL SAMPLE: 304346

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Diesel Range Organic (C10-C28)	mg/L	.4	ND	20	10-115	
n-Pentacosane (S)	%.			18	16-137	
o-Terphenyl (S)	%.			25	10-121	

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QUALITY CONTROL DATA

Project: PUMA TERMINAL GW SAMPLING
Pace Project No.: 2048968

QC Batch: 73658 Analysis Method: EPA 8015B Modified
QC Batch Method: EPA 3535 Analysis Description: EPA 8015 ORO
Associated Lab Samples: 2048968006

METHOD BLANK: 308983 Matrix: Water
Associated Lab Samples: 2048968006

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Diesel Range Organic (C10-C28)	mg/L	ND	0.25	02/06/17 12:16	
Oil Range Organics (>C28-C40)	mg/L	ND	0.50	02/06/17 12:16	
n-Pentacosane (S)	%	55	16-137	02/06/17 12:16	
o-Terphenyl (S)	%	56	10-121	02/06/17 12:16	

LABORATORY CONTROL SAMPLE: 308984

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Diesel Range Organic (C10-C28)	mg/L	.4	.23J	58	10-115	
n-Pentacosane (S)	%			54	16-137	
o-Terphenyl (S)	%			68	10-121	

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QUALITY CONTROL DATA

Project: PUMA TERMINAL GW SAMPLING
Pace Project No.: 2048968

QC Batch: 72748 Analysis Method: EPA 8270 by SIM
QC Batch Method: EPA 3510 Analysis Description: 8270 Water by SIM MSSV
Associated Lab Samples: 2048968002, 2048968003, 2048968004, 2048968005, 2048968006, 2048968009, 2048968010, 2048968011, 2048968012, 2048968013, 2048968014

METHOD BLANK: 304752 Matrix: Water
Associated Lab Samples: 2048968002, 2048968003, 2048968004, 2048968005, 2048968006, 2048968009, 2048968010, 2048968011, 2048968012, 2048968013, 2048968014

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
2-Methylnaphthalene	ug/L	ND	0.10	01/31/17 13:14	
Acenaphthene	ug/L	ND	0.10	01/31/17 13:14	
Acenaphthylene	ug/L	ND	0.10	01/31/17 13:14	
Anthracene	ug/L	ND	0.10	01/31/17 13:14	
Benzo(a)anthracene	ug/L	ND	0.10	01/31/17 13:14	
Benzo(a)pyrene	ug/L	ND	0.10	01/31/17 13:14	
Benzo(b)fluoranthene	ug/L	ND	0.10	01/31/17 13:14	
Benzo(g,h,i)perylene	ug/L	ND	0.10	01/31/17 13:14	
Benzo(k)fluoranthene	ug/L	ND	0.10	01/31/17 13:14	
Chrysene	ug/L	ND	0.10	01/31/17 13:14	
Dibenz(a,h)anthracene	ug/L	ND	0.10	01/31/17 13:14	
Fluoranthene	ug/L	ND	0.10	01/31/17 13:14	
Fluorene	ug/L	ND	0.10	01/31/17 13:14	
Indeno(1,2,3-cd)pyrene	ug/L	ND	0.10	01/31/17 13:14	
Naphthalene	ug/L	ND	0.10	01/31/17 13:14	
Phenanthrene	ug/L	ND	0.10	01/31/17 13:14	
Pyrene	ug/L	ND	0.10	01/31/17 13:14	
2-Fluorobiphenyl (S)	%	78	25-150	01/31/17 13:14	
Terphenyl-d14 (S)	%	82	25-150	01/31/17 13:14	

LABORATORY CONTROL SAMPLE: 304753

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
2-Methylnaphthalene	ug/L	4	3.1	76	35-150	
Acenaphthene	ug/L	4	2.8	69	35-150	
Acenaphthylene	ug/L	4	2.8	69	35-150	
Anthracene	ug/L	4	3.9	96	35-150	
Benzo(a)anthracene	ug/L	4	3.2	80	35-150	
Benzo(a)pyrene	ug/L	4	3.0	75	35-150	
Benzo(b)fluoranthene	ug/L	4	3.0	75	35-150	
Benzo(g,h,i)perylene	ug/L	4	3.3	84	35-150	
Benzo(k)fluoranthene	ug/L	4	2.9	71	35-150	
Chrysene	ug/L	4	3.1	77	35-150	
Dibenz(a,h)anthracene	ug/L	4	3.3	83	35-150	
Fluoranthene	ug/L	4	3.1	77	35-150	
Fluorene	ug/L	4	2.8	70	35-150	
Indeno(1,2,3-cd)pyrene	ug/L	4	3.3	84	35-150	
Naphthalene	ug/L	4	2.6	64	35-150	

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QUALITY CONTROL DATA

Project: PUMA TERMINAL GW SAMPLING
Pace Project No.: 2048968

LABORATORY CONTROL SAMPLE: 304753

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Phenanthrene	ug/L	4	3.1	76	35-150	
Pyrene	ug/L	4	3.1	77	35-150	
2-Fluorobiphenyl (S)	%			81	25-150	
Terphenyl-d14 (S)	%			88	25-150	

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QUALIFIERS

Project: PUMA TERMINAL GW SAMPLING
Pace Project No.: 2048968

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.
ND - Not Detected at or above adjusted reporting limit.
J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.
MDL - Adjusted Method Detection Limit.
PQL - Practical Quantitation Limit.
RL - Reporting Limit.
S - Surrogate
1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.
Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.
LCS(D) - Laboratory Control Sample (Duplicate)
MS(D) - Matrix Spike (Duplicate)
DUP - Sample Duplicate
RPD - Relative Percent Difference
NC - Not Calculable.
SG - Silica Gel - Clean-Up
U - Indicates the compound was analyzed for, but not detected.
N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.
Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.
TNI - The Nelac Institute

LABORATORIES

PASI-N Pace Analytical Services - New Orleans

BATCH QUALIFIERS

Batch: 72656

[1]

Batch: 73229

[M5] A matrix spike/matrix spike duplicate was not performed for this batch due to insufficient sample volume.

Batch: 73444

[M5] A matrix spike/matrix spike duplicate was not performed for this batch due to insufficient sample volume.

Batch: 73710

[M5] A matrix spike/matrix spike duplicate was not performed for this batch due to insufficient sample volume.

ANALYTE QUALIFIERS

1b Sample 2048968006 yielded low surrogate recoveries and was therefore re-extracted (outside the holding time limit). Re-analysis surrogate recoveries were within QC limits. Both sets of results were included in the report.
C9 Common Laboratory Contaminant.
H2 Extraction or preparation conducted outside EPA method holding time.
M1 Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.
R1 RPD value was outside control limits.
S2 Surrogate recovery outside laboratory control limits due to matrix interferences (confirmed by similar results from sample re-analysis).

REPORT OF LABORATORY ANALYSIS

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: PUMA TERMINAL GW SAMPLING
Pace Project No.: 2048968

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
2048968002	EB-011817	EPA 3535	72656	EPA 8015B Modified	73444
2048968003	MW-38A	EPA 3535	72656	EPA 8015B Modified	73444
2048968004	MW-84B2	EPA 3535	72656	EPA 8015B Modified	73444
2048968005	MW-84A	EPA 3535	72656	EPA 8015B Modified	73444
2048968006	MW-17B	EPA 3535	72656	EPA 8015B Modified	73444
2048968006	MW-17B	EPA 3535	73658	EPA 8015B Modified	73710
2048968009	EB-011917	EPA 3535	72656	EPA 8015B Modified	73444
2048968010	MW-77B	EPA 3535	72656	EPA 8015B Modified	73444
2048968011	MW-20B	EPA 3535	72656	EPA 8015B Modified	73444
2048968012	MW-78B	EPA 3535	72656	EPA 8015B Modified	73444
2048968013	MW-21B	EPA 3535	72656	EPA 8015B Modified	73444
2048968014	DUP007	EPA 3535	72656	EPA 8015B Modified	73444
2048968001	TB-011817	EPA 8015/8021	72788		
2048968002	EB-011817	EPA 8015/8021	72788		
2048968003	MW-38A	EPA 8015/8021	72788		
2048968004	MW-84B2	EPA 8015/8021	72788		
2048968005	MW-84A	EPA 8015/8021	72788		
2048968006	MW-17B	EPA 8015/8021	72788		
2048968007	FB-011817	EPA 8015/8021	72788		
2048968008	TB-011917	EPA 8015/8021	72788		
2048968009	EB-011917	EPA 8015/8021	72788		
2048968010	MW-77B	EPA 8015/8021	72788		
2048968011	MW-20B	EPA 8015/8021	72788		
2048968012	MW-78B	EPA 8015/8021	72788		
2048968013	MW-21B	EPA 8015/8021	72788		
2048968014	DUP007	EPA 8015/8021	72788		
2048968015	FB-011917	EPA 8015/8021	72788		
2048968002	EB-011817	EPA 3010	72609	EPA 6020	72692
2048968003	MW-38A	EPA 3010	72609	EPA 6020	72692
2048968004	MW-84B2	EPA 3010	72609	EPA 6020	72692
2048968005	MW-84A	EPA 3010	72609	EPA 6020	72692
2048968006	MW-17B	EPA 3010	72609	EPA 6020	72692
2048968009	EB-011917	EPA 3010	72609	EPA 6020	72692
2048968010	MW-77B	EPA 3010	72609	EPA 6020	72692
2048968011	MW-20B	EPA 3010	72609	EPA 6020	72692
2048968012	MW-78B	EPA 3010	72609	EPA 6020	72692
2048968013	MW-21B	EPA 3010	72609	EPA 6020	72692
2048968014	DUP007	EPA 3010	72609	EPA 6020	72692
2048968002	EB-011817	EPA 3005A	72614	EPA 6020	72700
2048968003	MW-38A	EPA 3005A	72614	EPA 6020	72700
2048968004	MW-84B2	EPA 3005A	72614	EPA 6020	72700
2048968005	MW-84A	EPA 3005A	72614	EPA 6020	72700
2048968006	MW-17B	EPA 3005A	72614	EPA 6020	72700
2048968009	EB-011917	EPA 3005A	72614	EPA 6020	72700
2048968010	MW-77B	EPA 3005A	72614	EPA 6020	72700
2048968011	MW-20B	EPA 3005A	72614	EPA 6020	72700

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: PUMA TERMINAL GW SAMPLING
Pace Project No.: 2048968

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
2048968012	MW-78B	EPA 3005A	72614	EPA 6020	72700
2048968013	MW-21B	EPA 3005A	72614	EPA 6020	72700
2048968014	DUP007	EPA 3005A	72614	EPA 6020	72700
2048968002	EB-011817	EPA 7470	72646	EPA 7470	72694
2048968003	MW-38A	EPA 7470	72646	EPA 7470	72694
2048968004	MW-84B2	EPA 7470	72646	EPA 7470	72694
2048968005	MW-84A	EPA 7470	72646	EPA 7470	72694
2048968006	MW-17B	EPA 7470	72646	EPA 7470	72694
2048968009	EB-011917	EPA 7470	72646	EPA 7470	72694
2048968010	MW-77B	EPA 7470	72646	EPA 7470	72694
2048968011	MW-20B	EPA 7470	72646	EPA 7470	72694
2048968012	MW-78B	EPA 7470	72646	EPA 7470	72694
2048968013	MW-21B	EPA 7470	72646	EPA 7470	72694
2048968014	DUP007	EPA 7470	72646	EPA 7470	72694
2048968002	EB-011817	EPA 7470	72612	EPA 7470	72699
2048968003	MW-38A	EPA 7470	72612	EPA 7470	72699
2048968004	MW-84B2	EPA 7470	72612	EPA 7470	72699
2048968005	MW-84A	EPA 7470	72612	EPA 7470	72699
2048968006	MW-17B	EPA 7470	72612	EPA 7470	72699
2048968009	EB-011917	EPA 7470	72612	EPA 7470	72699
2048968010	MW-77B	EPA 7470	72612	EPA 7470	72699
2048968011	MW-20B	EPA 7470	72612	EPA 7470	72699
2048968012	MW-78B	EPA 7470	72612	EPA 7470	72699
2048968013	MW-21B	EPA 7470	72612	EPA 7470	72699
2048968014	DUP007	EPA 7470	72612	EPA 7470	72699
2048968002	EB-011817	EPA 3510	72748	EPA 8270 by SIM	73229
2048968003	MW-38A	EPA 3510	72748	EPA 8270 by SIM	73229
2048968004	MW-84B2	EPA 3510	72748	EPA 8270 by SIM	73229
2048968005	MW-84A	EPA 3510	72748	EPA 8270 by SIM	73229
2048968006	MW-17B	EPA 3510	72748	EPA 8270 by SIM	73229
2048968009	EB-011917	EPA 3510	72748	EPA 8270 by SIM	73229
2048968010	MW-77B	EPA 3510	72748	EPA 8270 by SIM	73229
2048968011	MW-20B	EPA 3510	72748	EPA 8270 by SIM	73229
2048968012	MW-78B	EPA 3510	72748	EPA 8270 by SIM	73229
2048968013	MW-21B	EPA 3510	72748	EPA 8270 by SIM	73229
2048968014	DUP007	EPA 3510	72748	EPA 8270 by SIM	73229
2048968001	TB-011817	EPA 5030B/8260	72642		
2048968002	EB-011817	EPA 5030B/8260	72642		
2048968003	MW-38A	EPA 5030B/8260	72642		
2048968004	MW-84B2	EPA 5030B/8260	72642		
2048968005	MW-84A	EPA 5030B/8260	72642		
2048968006	MW-17B	EPA 5030B/8260	72642		
2048968007	FB-011817	EPA 5030B/8260	72642		
2048968008	TB-011917	EPA 5030B/8260	72642		
2048968009	EB-011917	EPA 5030B/8260	72642		
2048968010	MW-77B	EPA 5030B/8260	72642		
2048968011	MW-20B	EPA 5030B/8260	72642		

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: PUMA TERMINAL GW SAMPLING
Pace Project No.: 2048968

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
2048968012	MW-78B	EPA 5030B/8260	72642		
2048968013	MW-21B	EPA 5030B/8260	72642		
2048968014	DUP007	EPA 5030B/8260	72642		
2048968015	FB-011917	EPA 5030B/8260	72642		

REPORT OF LABORATORY ANALYSIS

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CHAIN-OF-CUSTODY / Analytical Document
 WOH#: 2048968



1 of 2
 2075272

Section C
 Invoice Information: 2048968
 Attention:

Section B
 Required Project Information:
 Report To: E. Fraix Colaboracion
 Copy To:

Section A
 Required Client Information:
 Company: Arcadis
 Address: 4800 Highway Plaza, Suite 401
 Dallas, TX 75244
 Phone: (972) 412-1100
 Email: e.fraix@arcadis.com

Company Name: E. Fraix Colaboracion
 Address: 4800 Highway Plaza, Suite 401 Dallas, TX 75244
 Pace Order No.: 105 Nov 12 composite P.B.
 Project Name: Runa Terminal CW Sampling
 Project Profile #: 105-11-4086
 Requested Due Date/TAT: Standard

REGULATORY AGENCY: PR
 NPDES GROUND WATER DRINKING WATER
 UST RCRA OTHER

Site Location: PR
 State: PR

Requested Analysis Filtered (Y/N)

ITEM #	SAMPLE ID (A-Z, 0-9 / -)	Matrix Codes MATRIX / CODE Drinking Water: DW Water: WT Waste Water: WW Product: P Soil/Solid: SL Oil: OL Sludge: WP Air: AR Tissue: TS Other: OT	COLLECTED		SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives Unpreserved H ₂ SO ₄ HNO ₃ HCl NaOH Na ₂ S ₂ O ₈ Methanol Other	Analysis Test	Requested Analysis Filtered (Y/N)	Residual Chlorine (Y/N)	Pace Project No./ Lab I.D.
			COMPOSITE START	COMPOSITE END/GRAB							
1	TB-014817		DATE	TIME	DATE	TIME					
2	FB-014517		DATE	TIME	DATE	TIME					
3	MW-384		DATE	TIME	DATE	TIME					
4	MW-84B2		DATE	TIME	DATE	TIME					
5	MW-84A		DATE	TIME	DATE	TIME					
6	MW-17B		DATE	TIME	DATE	TIME					
7	FB-014817		DATE	TIME	DATE	TIME					
8	TB-014917		DATE	TIME	DATE	TIME					
9	FB-014917		DATE	TIME	DATE	TIME					
10	MW-205		DATE	TIME	DATE	TIME					
11	MW-205		DATE	TIME	DATE	TIME					
12	MW-205		DATE	TIME	DATE	TIME					

RELIQUISHED BY/AFFILIATION	DATE	TIME	ACCEPTED BY/AFFILIATION	DATE	TIME	SAMPLE CONDITIONS
<u>Arcadis Colaboracion</u>	<u>9/19/17</u>	<u>1539</u>	<u>[Signature]</u>	<u>1-19-17</u>	<u>15:37</u>	
<u>[Signature]</u>	<u>1-19-17</u>	<u>17:00</u>	<u>[Signature]</u>	<u>1-20-17</u>	<u>0830</u>	Temp in °C 3.1 S.I 0.16
<u>[Signature]</u>	<u>1-20-17</u>	<u>0830</u>	<u>[Signature]</u>	<u>1-20-17</u>	<u>0830</u>	Received on Y
<u>[Signature]</u>	<u>1-20-17</u>	<u>0830</u>	<u>[Signature]</u>	<u>1-20-17</u>	<u>0830</u>	Custody Y
<u>[Signature]</u>	<u>1-20-17</u>	<u>0830</u>	<u>[Signature]</u>	<u>1-20-17</u>	<u>0830</u>	Sealed Cooler Y
<u>[Signature]</u>	<u>1-20-17</u>	<u>0830</u>	<u>[Signature]</u>	<u>1-20-17</u>	<u>0830</u>	Samples Intact Y

SAMPLER NAME AND SIGNATURE
 PRINT Name of SAMPLER: Arcadis Colaboracion
 SIGNATURE of SAMPLER: [Signature]
 DATE Signed (MM/DD/YYYY): 01/19/17

ORIGINAL

*Important Note: By signing this form you are accepting Pace's NET 30 day payment terms and agreeing to late charges of 1.5% per month for any invoices not paid within 30 days.



CHAIN-OF-CUSTODY / Analytical Request Document

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

Section A
 Required Client Information:
 Company: Arcadis
 Address: 148 Citrus Blvd Suite 401
 Phone: 813-947-4059
 Requested Due Date/TAT: 5 days

Section B
 Required Project Information:
 Report To: Efraim Calabrese
 Copy To: _____
 Purchase Order No.: _____
 Project Name: Puma Terminal I-W
 Project Number: 15002 16051D

Section C
 Invoice Information:
 Page: 2 of 2
 Invoice Number: 2075276

REGULATORY AGENCY:
 NPDES GROUND WATER DRINKING WATER
 UST RCRA OTHER _____

Site Location: PA
 STATE: _____

Face Quote Reference: Juan Reboredo
 Face Project Manager: _____
 Pace Profile #: _____

ITEM #	Section D Required Client Information	Matrix Codes MATRIX / CODE	MATRIX CODE (see vial codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED		SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives	Analysis Test	Requested Analysis: Filtered (Y/N)	Residual Chlorine (Y/N)	Pace Project No./ Lab I.D.
					COMPOSITE START	COMPOSITE END/GRAB							
1	MW-21A	Drinking Water	WT G	G	DATE: 01/19/17	TIME: 1356		105	H ₂ SO ₄ HCl NaOH Na ₂ S ₂ O ₃ Other	X			
2	DUP001	Water	WA G	G	DATE: 01/19/17	TIME: /		105	H ₂ SO ₄ HCl NaOH Na ₂ S ₂ O ₃ Other	X			
3	FB-011917	Waste Water	WF G	G	DATE: 01/19/17	TIME: 1402		4	H ₂ SO ₄ HCl NaOH Na ₂ S ₂ O ₃ Other	X			
4		Product											
5		Soil/Solid											
6		Oil											
7		Wipe											
8		Air											
9		Tissue											
10		Other											
11													
12													

ADDITIONAL COMMENTS: Arcadis Color Arcadis 01/19/17 1539
1-19-17 F/W
Fed Ex Pace
Fed Ex Pace
Fed Ex Pace

RELINQUISHED BY / AFFILIATION: _____ DATE: _____ TIME: _____

ACCEPTED BY / AFFILIATION: _____ DATE: 1-19-17 15:29 TIME: _____

SAMPLE CONDITIONS:
 Received on: _____ Ice (Y/N): _____ Custody (Y/N): _____ Sealed Cooler (Y/N): _____ Samples Intact (Y/N): _____

Temp in °C: _____

SAMPLER NAME AND SIGNATURE: _____
 PRINT Name of SAMPLER: Andre Colon
 SIGNATURE of SAMPLER: _____
 DATE Signed (MM/DD/YY): 01/19/17

ORIGINAL

*Important Note: By signing this form you are accepting Pace's NET 30 day payment terms and agreeing to late charges of 1.5% per month for any invoices not paid within 30 days.



1000 Riverbend Blvd., Suite F
St. Rose, LA 70087

Sample Condition Upon Receipt

Project #: **20**

Courier: Pace Courier Hired Courier Fed X UPS DHL USPS Customer Other

Custody Seal on Cooler/Box Present: [see COC]

Custody Seals intact: Yes No

Thermometer Used:

- Therm Fisher IR 5
- Therm Fisher IR 6
- Therm Fisher IR 7

Type of Ice: Wet Blue None

Samples on ice: [see COC]

Cooler Temperature: [see COC]

Temp should be above freezing to 6°C

Date and Initials of person examining contents: 1-20-17 JMB

Temp must be measured from Temperature blank when present

Comments:

Temperature Blank Present? <input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	1
Chain of Custody Present: <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	2
Chain of Custody Complete: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	3
Chain of Custody Relinquished: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	4
Sampler Name & Signature on COC: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	5
Samples Arrived within Hold Time: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	6
Sufficient Volume: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	7
Correct Containers Used: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	8
Filtered vol. Rec. for Diss. tests <input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	9
Sample Labels match COC: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	10
All containers received within manufacture's precautionary and/or expiration dates. <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	11
All containers needing chemical preservation have been checked (except VOA, coliform, & O&G). <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	12
All containers preservation checked found to be in compliance with EPA recommendation. <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	13
Headspace in VOA Vials (>6mm): <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	14
Trip Blank Present: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	15

Client Notification/ Resolution:

Person Contacted: _____

Date/Time: _____

Comments/ Resolution: _____

APPENDIX E

Calibration Logs



Project/Site Name: Puma Terminal

Project Number: COO2.1605B

SERIAL #: A3-3910

PINE INSTRUMENT #: R 19111

PARAMETER: (Check as applicable)

% LEL (Explosivity) % O₂ H₂S ppm CO ppm VOC ppm Other (Specify) _____

STANDARDS:

STD NUMBER	TYPE	STD VALUE	VENDOR/LOT#	DATE STD RECEIVED	EXPIRATION DATE
Standard 1	LEL Pentane Stimulant	58%	P.E. 400062		Exp. 2018
Standard 2	Oxygen	15%			
Standard 3	H ₂ S	20 ppm			
Standard 4	CO	60 ppm			
Standard 5	Isobutylene (VOC)	100 ppm	P.E. 594188		Sep 2019

CALIBRATION DATA:

Important Note! Instrument needs calibration if it fails the bump test (percent deviation exceeds acceptable range) or at least monthly.

DATE (mm/dd/yy)	TIME (24 hr.)	ST D #	INST. RESPONSE (BUMP TEST)	% DEV (FROM CYLINDER LABEL)	INST. CALIBRATION (PASSED, FAILED)	INST. RESPONSE AFTER CAL. (BUMP TEST)	SAMPLER INITIALS	COMMENTS
12/19/16	0800	1	42	±10%	Failed	58	A.C.	
		2	17.5			16.0		
		3	17			20		
		4	15			60		
		5	100.	±2%	Pass			

12/20/16	0720	1	40	±10%	Failed	58	A.C.	
		2	16.0			14.1		
		3	19			20		
		4	59			60		
		5	94	±2%	Failed	100		

12/21/16	0741	1	34	±10%	Failed	58	A.C.	
		2	18.4			15.5		
		3	16			20		
		4	65			60		
		5	94.1	±2%		100.0	A.C.	

Project/Site Name: Puma Terminal
Project Number: E002.1605 B

SERIAL #: A3-3010 PINE INSTRUMENT #: R19111

PARAMETER: (Check as applicable)

% LEL (Explosivity) % O₂ H₂S ppm CO ppm VOC ppm Other (Specify) _____

STANDARDS:

STD NUMBER	TYPE	STD VALUE	VENDOR/LOT#	DATE STD RECEIVED	EXPIRATION DATE
Standard 1	LEL Pentane Stimulant	58%	P.E 400062		Exp Jun 2018
Standard 2	Oxygen	15%			
Standard 3	H ₂ S	20 ppm			
Standard 4	CO	60 ppm			
Standard 5	Isobutylene (VOC)	100 ppm	P.E 544188		Sep 2017

CALIBRATION DATA:

Important Note! Instrument needs calibration if it fails the bump test (percent deviation exceeds acceptable range) or at least monthly.

DATE (mm/dd/yy)	TIME (24 hr.)	ST D #	INST. RESPONSE (BUMP TEST)	% DEV (FROM CYLINDER LABEL)	INST. CALIBRATION (PASSED, FAILED)	INST. RESPONSE AFTER CAL. (BUMP TEST)	SAMPLER INITIALS	COMMENTS
12/22/16	0725	1	29	±10%	Failed	58	AC	
		2	18.6			14.7		
		3	14			20		
		4	56			60		
		5	98	±2%	Pass 100.0	100.0		

12/21/16	074	1	38	±10%	Failed	58	AC	
		2	17.0			14.6		
		3	16			20		
		4	55			60		
		5	100.0	±2%	Pass			

12/28/16	0735	1	40	±10%	Failed	58	AC	
		2	17.6			14.9		
		3	18			20		
		4	59			60		
		5	98	±2%	Failed	100.0	AC	

Project/Site Name: Puma Terrace
Project Number: E002-16050

SERIAL #: A3-301 PINE INSTRUMENT #: R19111

PARAMETER: (Check as applicable)

% LEL (Explosivity) % O₂ H₂S ppm CO ppm VOC ppm Other (Specify) _____

STANDARDS:

STD NUMBER	TYPE	STD VALUE	VENDOR/LOT#	DATE STD RECEIVED	EXPIRATION DATE
Standard 1	LEL Pentane Stimulant	58%	P.E 400062		Exp Jan 2018
Standard 2	Oxygen	15%			
Standard 3	H ₂ S	20 ppm			
Standard 4	CO	60 ppm			
Standard 5	Isobutylene (VOC)	100 ppm	AE 544184		Sep 2019

CALIBRATION DATA:

Important Note! Instrument needs calibration if it fails the bump test (percent deviation exceeds acceptable range) or at least monthly.

DATE (mm/dd/yy)	TIME (24 hr.)	ST D #	INST. RESPONSE (BUMP TEST)	% DEV (FROM CYLINDER LABEL)	INST. CALIBRATION (PASSED, FAILED)	INST. RESPONSE AFTER CAL. (BUMP TEST)	SAMPLER INITIALS	COMMENTS
12/29/16	0755	1	42	±10%	P	58	Ac	
		2	18			14.1		
		3	19			20		
		4	60			60		
		5	98	±2%	P	100		

01/03/17	0800	1	46	±10%	F	58	Ac	
		2	15.6			14.8		
		3	20			20		
		4	58			60		
		5	99	±2%	F	100.		

01/01/17	0858	1	49	±10%	F	58	Ac	
		2	15.9			14.1		
		3	21			20		
		4	59			60		
		5	99.1	±2%	F	100.0		

Project/Site Name: Puma Terminal
Project Number: E002.1605B

SERIAL #: A3-301 PINE INSTRUMENT #: R19111

PARAMETER: (Check as applicable)

% LEL (Explosivity) % O₂ H₂S ppm CO ppm VOC ppm Other (Specify) _____

STANDARDS:

STD NUMBER	TYPE	STD VALUE	VENDOR/LOT#	DATE STD RECEIVED	EXPIRATION DATE
Standard 1	LEL Pentane Stimulant	58%	P.E. 400062		Exp Jan 18
Standard 2	Oxygen	15%			
Standard 3	H ₂ S	20 ppm			
Standard 4	CO	60 ppm	P/E 544188		30/19
Standard 5	Isobutylene (VOC)	100 ppm			

CALIBRATION DATA:

Important Note! Instrument needs calibration if it fails the bump test (percent deviation exceeds acceptable range) or at least monthly.

DATE (mm/dd/yy)	TIME (24 hr.)	ST D #	INST. RESPONSE (BUMP TEST)	% DEV (FROM CYLINDER LABEL)	INST. CALIBRATION (PASSED, FAILED)	INST. RESPONSE AFTER CAL. (BUMP TEST)	SAMPLER INITIALS	COMMENTS
01/05/17	0940	1	46	±10%	P	58	Ac	
		2	17			14.9		
		3	18			20		
		4	57			60		
		5	94.7	±2%	F	100.0		

01/11/17	0938	1	45	±10%	P	58	Ac	
		2	16			14.9		
		3	18			20		
		4	58			60		
		5	98	±2%	P	100.0		

01/12/17	0935	1	36	±10%	P	58	Ac	
		2	16.0			14.6		
		3	19			20		
		4	57			60		
		5	100.0	±2%	P	✓	Ac	

Project/Site Name: Prima Terminal
Project Number: E002.1605B

SERIAL #: A3-3011 PINE INSTRUMENT #: R191111

PARAMETER: (Check as applicable)

% LEL (Explosivity) % O₂ H₂S ppm CO ppm VOC ppm Other (Specify) _____

STANDARDS:

STD NUMBER	TYPE	STD VALUE	VENDOR/LOT#	DATE STD RECEIVED	EXPIRATION DATE
Standard 1	LEL Pentane Stimulant	58%	P.E 40062		Exo Jun 18
Standard 2	Oxygen	15%			
Standard 3	H ₂ S	20 ppm			
Standard 4	CO	60 ppm			
Standard 5	Isobutylene (VOC)	100 ppm	P.E 544188		Sep 19

CALIBRATION DATA:

Important Note! Instrument needs calibration if it fails the bump test (percent deviation exceeds acceptable range) or at least monthly.

DATE (mm/dd/yy)	TIME (24 hr.)	ST D #	INST. RESPONSE (BUMP TEST)	% DEV (FROM CYLINDER LABEL)	INST. CALIBRATION (PASSED, FAILED)	INST. RESPONSE AFTER CAL. (BUMP TEST)	SAMPLER INITIALS	COMMENTS
01/17/19	0800	1	56	±10%	F	58	AC	
		2	15.2			14.9		
		3	20			20		
		4	68			60		
		5	100.0	±2%	Pass	/		

01/18/19	0930	1	55	±10%	F	58	AC	
		2	14.8			14.9		
		3	20			20		
		4	62			60		
		5	100.0	±2%	P	/		

01/19/19	0815	1	54	±10%	F	58	AC	
		2	16.9			14.9		
		3	14			20		
		4	60			60		
		5	96.4	±2%	F	100.0	AC	

APPENDIX F

Pace Analytical Services Explanation letter



RE: Contestación a requerimientos de límites de la Junta para agua subterránea

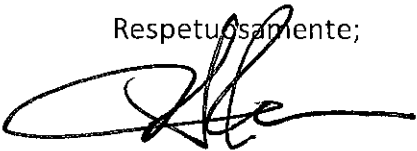
A quien pueda interesar:

A continuación respuestas, comentarios y observaciones de Pace Analytical con relación al document Guía de Cierre Permanente para sistemas de tanques de almacenamiento soterrados notificado el 17 de febrero del 2015 y discutidos en reunion llevada a cabo el 24 de marzo del 2015 con Wilmarie Rivera y Juan Osorio de la JCA y nuevamente mencionados en la pasada reunión del 20 de abril del presente año.

- Los límites de rastreo sugeridos para los compuestos que no presentan MCL (nivel máximo de contaminación) de agua subterránea, son para agua potable según lo indica la propia guía (pag 31 iten d), lo que no aplica para muestras de agua subterránea cruda y el método 8270.
- Estos límites se extraen del Reglamento de Calidad de Agua según la guía (pag 31 item f) del año 2010, y hace mención que se obtienen de los estados de Florida y Luisiana los cuales no pertenecen a la region II de EPA como Puerto Rico por lo que Pace solicitó deben ser revisados de todas formas ya que la guía se aprueba el 20 de enero del 2015. Se acordó que basado en éstas y otras discrepancias señaladas, se revisaría el reglamento y que muestras tanto Pace reportaría los los límites validados mas bajos posible.
- Pace presenta en la reunión del 24 de marzo del 2015 un documento (tabla comparativa) alertando a la Junta de que los límites de agua potable requeridos para los compuestos en cuestión (Benzo(a) antraceno, Benzo(a) pireno y Benzo (a) fluoranteno no podían ser alcanzados aún utilizando la tecnología más sofisticada (8270 SIM) para analizar PAH's.
- Se establece que el tipo de muestra de agua subterránea es no tratada y contiene posibles contaminantes y minerales causantes de interferencias, por lo que lograr límites de detección extremadamente bajos con precisión no es posible.

De tener preguntas o dudas a lo expuesto de mi parte en esta minuta , estamos en la mayor disposición de aclarar las mismas hasta donde nuestra capacidad y conocimiento así lo permita.

Respetuosamente;

A handwritten signature in black ink, appearing to read 'JR', with a large, sweeping flourish extending to the left.

Juan A. Redondo Diaz

Gerente de Proyectos

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