# ENVIRONMENTAL COVENANT

**SITE NAME: Reservoir Road (Parcel A2, or Land Unit 5)**
**GRANTOR/OWNER: Erasmus Properties (Reservoir Road) Business Trust**
**GRANTEE(S)/HOLDER(S): C. Steinweg (Baltimore), Inc. and Tradepoint Atlantic, LLC**
**PROPERTY ADDRESS: 2012-2014 Reservoir Road, Baltimore, Maryland 21219**

This Environmental Covenant is created and executed pursuant to the provisions of the Maryland Uniform Environmental Covenants Act, §§ 1-801 through 1-815 of the Environment Article, Annotated Code of Maryland ("Environment Article") and establishes the activity and use limitations resulting from the environmental response project, as defined by § 1-801(f) of the Environment Article, conducted at the real property affected by this Environmental Covenant. This Environmental Covenant has been approved by the Maryland Department of the Environment ("Department" or "MDE") and the United States Environmental Protection Agency ("EPA").

1. **Real Property Affected.** The real property affected ("Property") by this Environmental Covenant is 32.05 acres located in Baltimore, Baltimore County, Maryland.

The postal street address of the Property is: 2012-2014 Reservoir Road, Sparrows Point, Maryland 21219.
The Baltimore County Land Records Deed Reference: Liber 40618, Folio 00434
The Tax Parcel Information for the Property is: Map 0111, Grid 0009, Parcel 0499
Tax Account Identification Number: District-15, Account Number-2500014687
The Brownfield Master Inventory ("BMI") Identifier for this Property is: MD1598

The latitude and longitude of the center of the Property affected by this Environmental Covenant is: 39.241331/-76.462635

The Property has been known by the following names:

- Sparrows Point Steel Mill-Reservoir Road Warehouse

A legal description of the Property is attached to this Environmental Covenant as Exhibit A. A metes and bounds description of the Property is attached to this Environmental Covenant as Exhibit B. A map of the property is attached to this Environmental Covenant as Exhibit C. The Institutional Controls Management Plan is provided as Exhibit D of this Environmental Covenant.

2. **Property Owner/Grantor.** Erasmus Properties (Reservoir Road) Business Trust is the owner ("Owner") of the Property and the Grantor of this Environmental Covenant. The mailing address of the Owner is: 1201 Wallace Street, Baltimore, Maryland 21230. For purposes of this Environmental Covenant, the Owner shall also be a Holder.

3. **Holder/Grantee/Agency**. The State of Maryland, Department of the Environment ("Department") is the regulatory agency that determines or approves the environmental response project for which this Environmental Covenant is executed. The Department's offices are located

at 1800 Washington Boulevard, Baltimore, Maryland 21230. For purposes of this Environmental Covenant, the Department shall also be a Holder.

**4. Additional Holder(s)/Grantee(s).** C. Steinweg (Baltimore), Inc. and Tradepoint Atlantic, LLC. The mailing address of the Holder(s)/Grantee(s) is (are):

- 1201 Wallace Street, Baltimore, Maryland 21230.
- 1600 Sparrows Point Boulevard, Baltimore, Maryland 21219

**5. Regulatory Program(s) Issuing Determination.** The following regulatory program(s) within EPA and the Department is (are) responsible for having issued a determination requiring the use of this Environmental Covenant:

EPA

☒ EPA Corrective Action Program under the Resource Conservation and Recovery Act

MDE

☒ Voluntary Cleanup Program
☒ Controlled Hazardous Substance Enforcement Program
☐ Oil Control Program
☐ Solid Waste Program
☐ Resource Management Program
☐ Other Program within the Department: _____

**6. Summary of Identified Contaminants.** Reservoir Road (Parcel A2, or Land Unit 5) is currently occupied by two large warehouses formerly used for material storage of lubricants, refractory supplies, electrical materials, and other parts by the former steel mill. The Phase II assessment was conducted in accordance with the approved Parcel A2 Work Plan dated September 15, 2015. Sub-slab soil gas samples were collected from the interior of both warehouses. Soil and groundwater samples were collected throughout the property. The results from the eighteen sub-slab soil gas samples indicated detections of volatile organic compounds that did not exceed the Project Action Limit (PAL) or the Department's Tier 1 screening levels. Exceedances of the PALs in soil within Parcel A2 consisted of four inorganics (arsenic, manganese, lead, and hexavalent chromium) and benzo[a]pyrene. Human health Screening Level Risk Assessments (SLRA) conducted for the composite worker indicated that the surficial soils (0-1 feet) did not exceed a cumulative cancer risk of 1E-5 or Hazard Index (HI) of 1 for any individual target organ. However, the HI for the composite worker exceeded 1 for the subsurface soil. The protective measures to address risk to potential exposure to chemicals of concern to any population at the Property, including limits on the use of groundwater, soil disturbance notification, and excavation activity requirements, are described below in the Activity & Use Limitations.

**7. Activity & Use Limitations.** The Property is subject to the following activity and use limitations, which the Owner(s), Holders, and each subsequent owner(s) and holder(s) of the Property shall agree to abide by:

a. Property Use: Property use is limited to restricted industrial (Tier 3B) purposes as defined in the No Further Requirements Determinations issued to Erasmus Properties (Reservoir Road) Business Trust and C. Steinweg (Baltimore), Inc. by the Maryland Department of the Environment's Voluntary Cleanup Program, on September 30, 2019.

b. Use of Groundwater: There shall be no use of the groundwater beneath the Property for any purpose.

c. Soil Disturbance: As documented in the Phase II Investigation Report Area A: Parcel A2 Tradepoint Atlantic Sparrows Point prepared by ARM Group Inc., revision 4 dated June 29, 2018, the Human Health Screening Level Risk Assessment (SLRA) indicated the Hazard Index exceeded the limit of one (1) for the composite worker for subsurface soils. Therefore, the Property owner, or its designated agent, shall submit written notification, to the attention of the Chief, State Assessment and Remediation Division, Land and Materials Administration, Maryland Department of the Environment, at least thirty (30) days prior to any planned intrusive soil disturbance activities, such as excavation or grading activities that exceed one (1) foot in depth. The notification shall include the limit of disturbance on a scaled site map, excavation depths, duration of the intrusive activities, and the cumulative total of intrusive soil disturbance workdays for the rolling calendar year. All work shall be conducted in accordance with the approved Institutional Controls Management Plan provided as Exhibit D. At least one (1) foot of MDE approved clean fill or other cap material must be placed over any area of invasive disturbance to ensure restoration to existing grade that currently is acceptable for composite worker exposures.

   If the cumulative intrusive soil disturbance workdays exceeds thirty-five (35) days in a rolling year for the construction workers the notification must detail specific measures, such as the use of personal protection, OSHA HAZWOP certified workers, cycling of crews or other approved actions to ensure construction worker protection. Alternately, a revised exposure unit SLRA may be submitted to support modifications to the allowable exposure duration beyond thirty-five (35) days.

   All work must be performed with appropriate dust control measures and air monitoring in accordance with a site-specific health and safety plan to ensure that all worker protection measures are met.

d. Emergency Excavation Requirements**:** In the event of an unplanned emergency excavation on the Property, the Property owner, or its designated agent shall verbally or electronically notify the Department within twenty-four (24) hours following initiation of the emergency excavation activities. Within thirty (30) days following completion of the approved work or emergency excavation, the Property owner shall file a detailed written report with the Department, which shall include map(s) showing the excavation locations, copies of the analytical results collected from the excavated soil and groundwater, and records of disposal.

All excavated material shall be thoroughly characterized before disposal and the analytical results shall be the basis for appropriate disposition of the material at a permitted disposal facility in strict accordance with applicable local, State and federal laws and regulations. No excavated material shall be transferred to a Property other than a disposal facility without appropriate sampling of the specific material proposed to be moved and prior approval of the Department. Copies of the analytical results collected from the excavated soil and records of all soil disposal locations shall be maintained by the Property owner and made available upon request by the Department.

e. Excavation Encountering Groundwater: The Property owner shall submit written notification, to the attention of the Chief, State Assessment and Remediation Division, Land and Materials Administration, Maryland Department of the Environment, at least thirty (30) days prior to any planned future excavation that may encounter groundwater. In the event of an unplanned emergency excavation on the Property that encounters groundwater, the Property owner shall notify the Department electronically within twenty-four (24) hours following initiation of the emergency excavation activities.

   When conducting any excavation and/or dewatering activities on the Property extending to the groundwater table, the Property owner shall implement the requirements of a site-specific health and safety plan to ensure that worker protection measures are met. Any groundwater encountered during excavation activities shall be containerized during all dewatering activities at the Property and shall be analyzed before disposal. The analytical results shall be the basis for appropriate disposition of the groundwater in accordance with applicable local, State and federal laws and regulations. Within ten (10) days following completion of an excavation encountering groundwater, the Property owner shall file a detailed written report with the Department, which includes all documentation regarding sampling and disposal of the groundwater.

   Groundwater pumped under the National Pollutant Discharge Elimination System (NPDES) permitting process may be discharged according to the permit limits and requirements. Alternately, with the approval of the Department and plant operator, groundwater may be pumped to the on-site waste water treatment plant.

f. Grantee(s)/Holder(s) Notification and Activities: With respect to any notification or information required or permitted to be given or submitted by the Property owner to the Department and/or EPA under this Environmental Covenant, such notification may be given and such information may be submitted by a Grantee(s)/Holder(s) or their designated agents. Notwithstanding anything in this Environmental Covenant to the contrary, when any request, notification or other correspondence is provided to the Property owner, a copy shall also be provided to the Grantee(s)/Holder(s), the Department, and EPA.

g. The requirement to execute this Environmental Covenant.

**8. Notice of Limitations in Future Conveyances.** This Environmental Covenant runs with the land and shall be binding on successors in interest. Each instrument hereafter conveying any interest in the Property shall contain a notice of the activity and use limitations set forth in this Environmental Covenant and shall provide the recorded location of this Environmental Covenant. The then-current owner shall notify the Department in writing at least thirty (30) days prior to any transfer of the Property or of any portion of the Property. Such written notice shall include the name, address and telephone numbers of the transferee to whom such interest is conveyed.

**9. Access by the Department and EPA.** In addition to any rights already possessed by the Department or EPA, this Environmental Covenant grants to the Department and EPA a right of access to the Property to implement or enforce this Environmental Covenant.

**10. Recordation & Filing with Registry.** The Owner shall record this Environmental Covenant in the Land Records of Baltimore County within thirty (30) days of the latter of the Department and EPA's approval of this Environmental Covenant and shall send proof of the recording to the Department and EPA within thirty (30) days of recordation. This Environmental Covenant shall be filed as soon as possible after execution in the Registry of Environmental Covenants maintained by the Department. This Environmental Covenant may be found electronically on the Department's website at:

www.mde.maryland.gov/programs/Land/MarylandBrownfieldVCP/pages/ueca.aspx

**11. Termination or Modification.** This Environmental Covenant runs with the land unless terminated or modified in accordance with § 1-808 or § 1-809 of the Environment Article. The then-current owner agrees to provide the Department and EPA with written notice of the pendency of any proceeding that could lead to a foreclosure referred to in § 1-808(a)(4) of the Environment Article, within seven (7) calendar days of the owner's becoming aware of the pendency of such proceeding.

**12. EPA's Address.** Communications with EPA regarding this Environmental Covenant shall be sent to: RCRA Corrective Action Branch 1, 3LD10, Land Chemicals and Redevelopment Division, U.S. Environmental Protection Agency, 1650 Arch Street, Philadelphia, PA 19103 and electronically to R3_RCRAPOSTREM@epa.gov .

**13. Department's Address.** All written communications with the Department regarding this Environmental Covenant shall be sent to the following address: Registry of Environmental Covenants, Maryland Department of the Environment, Land and Materials Administration, Land Restoration Program, 1800 Washington Boulevard, Baltimore, Maryland 21230.

**14. Administrative Record.** The Administrative Record pertaining to the remedy selected by EPA in the Final Decision and Response to Comments ("FDRTC") is located at the United States Environmental Protection Agency, Region III, 1650 Arch Street, Philadelphia, PA 19103. In addition, records pertaining to the remedy selected by EPA in the FDRTC are maintained by the Department at 1800 Washington Blvd., Baltimore, MD 21230.

**15. Enforcement.** This Environmental Covenant shall be enforced in accordance with § 1-810 of the Environment Article.

**16. Compliance Reporting.** Within twenty-one (21) days after written request by the Department or EPA, the then current owner of the Property shall submit, to the Department, EPA and any Holder listed in Paragraph 4, written documentation stating whether or not the activity and use limitations set forth in Paragraph 7 of this Environmental Covenant are being abided by. In addition, within twenty-one (21) days after any of the following events: a) transfer of title of the Property or of any part of the Property affected by this Environmental Covenant, b) noncompliance with Paragraph 7, and c) an application for a permit or other approval for any building or site work that could affect contamination on any part of the Property, the then current Owner will send a report to the Department, EPA and any Holder. The report will state whether there is compliance with Paragraph 7. If there is noncompliance, the report will state the actions that will be taken to assure compliance.

**17. Severability.** The paragraphs of this Environmental Covenant shall be severable and should any part hereof be declared invalid or unenforceable, the remainder shall continue in full force and effect between the parties.

IN WITNESS WHEREOF, the parties hereto have caused this Environmental Covenant to be executed and delivered as of the day and year first above written.

ACKNOWLEDGMENTS by Grantor/Owner, any Grantee(s)/Holder(s), the Department and EPA, in the following form:

ATTEST:

Erasmus Properties (Reservoir Road) Business Trust,
Grantor/Owner

Date: 10/16/19

By: _____
Name: RUPERT DENNEY
Title: VICE PRESIDENT

STATE OF MARYLAND

COUNTY OF [*Insert County*] Baltimore SS:

On this 16th day of October, 2019, before me, the undersigned, personally appeared Rupert Denney, known to me (or satisfactorily proven) to be the person whose name is subscribed to the within instrument and acknowledged that he/she executed the same for the purposes therein contained.

In witness whereof, I hereunto set my hand and official seal.

Mary M. Amoss
(*Name of notary public typewritten or printed*)
Notary Public

My commission expires: MARY M AMOSS
Notary Public-Maryland
Baltimore County
My Commission Expires
January 18, 2020

Date: 10/16/19

C. Steinweg (Baltimore), Inc., Grantee/Holder
By: _____
Name: RUPERT DENNEY
Title: COMPANY SECRETARY

STATE OF MARYLAND

COUNTY OF [*Insert County*] Baltimore SS:

On this 16th day of October, 2019, before me, the undersigned, personally appeared Rupert Denney, known to me (or satisfactorily proven) to be the person whose name is subscribed to the within instrument and acknowledged that he/she executed the same for the purposes therein contained.

In witness whereof, I hereunto set my hand and official seal.

Mary M. Amoss
(*Name of notary public typewritten or printed*)
Notary Public

MARY M AMOSS
Notary Public-Maryland
Baltimore County
My Commission Expires
January 18, 2020

My commission expires: _____

Date: 10/11/19

Tradepoint Atlantic, LLC, Grantee/Holder
By: _____
Name: Marc Salotti
Title: Authorized Person

STATE OF MARYLAND

COUNTY OF [*Insert County*] SS:

On this 11 day of October, 2019, before me, the undersigned, personally appeared Marc Salotti, known to me (or satisfactorily proven) to be the person whose name is subscribed to the within instrument and acknowledged that he/she executed the same for the purposes therein contained.

In witness whereof, I hereunto set my hand and official seal.

_____
(*Name of notary public typewritten or printed*)
Notary Public

My commission expires: 7/19/21

APPROVED by the Maryland Department of the Environment
Land and Materials Administration,
Agency and Holder/Grantee

Date: Sept. 30, 2019

By: _____
Kaley Laleker
Director
Land and Materials Administration
Maryland Department of the Environment

STATE OF MARYLAND

COUNTY OF BALTIMORE SS:

On this 30th day of September, 2019, before me, the undersigned, personally appeared Kaley Laleker, known to me (or satisfactorily proven) to be the person whose name is subscribed to the within instrument and acknowledged that she executed the same for the purposes therein contained.

In witness whereof, I hereunto set my hand and official seal.

MELISSA L. ALLEN NOTARY PUBLIC BALTIMORE COUNTY, MD

_____
(*Name of notary public typewritten or printed*)
Notary Public

MELISSA L. ALLEN
NOTARY PUBLIC STATE OF MARYLAND
My Commission Expires June 17, 2021

My commission expires: June 17, 2021

Approved for form and legal sufficiency

This 20th day of August, 2019

Patricia V. Tipon

Patricia V. Tipon
Maryland Assistant Attorney General

APPROVED, by United States Environmental Protection Agency, Region III,

Date: 10.9, 2019

By: _____
John A. Armstead, Director
Land, Chemicals and Redevelopment Division
United States Environmental Protection Agency
Region III

COMMONWEALTH OF PENNSYLVANIA

COUNTY OF PHILADELPHIA SS:

On this 9 day of October, 2019, before me, the undersigned, personally appeared John Armstead, known to me (or satisfactorily proven) to be the person whose name is subscribed to the within instrument and acknowledged that he executed the same for the purposes therein contained.

In witness whereof, I hereunto set my hand and official seal.

_____
(***Name of notary public typewritten or printed***)
Notary Public

My commission expires: December 17, 2021

Commonwealth of Pennsylvania – Notary Seal
Pamela McCray, Notary Public
Philadelphia County
My commission expires December 17, 2021
Commission Number 1280785

Commonwealth of Pennsylvania – Notary Seal
Pamela McCray, Notary Public
Philadelphia County
My commission expires December 17, 2027
Commission Number 1260795

## EXHIBIT A
Legal Description of the Property

ALL that certain land or parcel of land, together with all buildings and improvements located thereon, and being in the County of Baltimore, Maryland and being more particularly described as follows:

BEING KNOWN AND DESIGNATED as Land Unit 5 as shown on those plats entitled "Condominium Plat Land Units 5 through 10, TradePoint Atlantic Land Condominium" recorded among the Land Records of Baltimore County, Maryland in Condominium Plat Book JLE 31, pp. 783-788, inclusive, and any amendments or supplements thereto, and as established by Declaration of Condominium dated April 7, 2017, by Tradepoint Atlantic, LLC and recorded among the Land Records of Baltimore County, Maryland in Liber 38841, folio 2, as amended by that First Amendment to Tradepoint Atlantic Land Condominium Declaration dated June 8, 2017, by Tradepoint Atlantic, LLC and recorded among the aforesaid Land Records in Liber 39081, folio 337, and as further amended by Second Amendment to Tradepoint Atlantic Land Condominium Declaration dated November 15, 2017, by Tradepoint Atlantic, LLC and recorded among the aforesaid Land Records in Liber 39697, folio 33, and as further amended by Third Amendment to Tradepoint Atlantic Condominium Declaration dated July 10, 2018 and recorded among the aforesaid Land Records in Liber 40488, folio 14, and any additional amendments or supplements thereto.

TOGETHER WITH an undivided percentage interest in the common elements and common expenses and common profits of the aforesaid Condominium Regime and all the rights, privileges and powers reserved for the benefit of each and every unit owner under and pursuant to the Declaration and By-Laws and Plats as the same may be amended from time to time as aforesaid.

The improvements thereon being known as Nos. 2012-2014 Reservoir Road, Baltimore, Maryland 21219 (for informational purposes only).

Tax ID No. 25-00-014687

Exhibit B

# EXHIBIT C

## DESCRIPTION OF THE LAND MADE SUBJECT TO THE CONDOMINIUM PURSUANT TO THIS SECOND AMENDMENT

**MORRIS & RITCHIE ASSOCIATES, INC.**

ENGINEERS, ARCHITECTS, PLANNERS, SURVEYORS,
AND LANDSCAPE ARCHITECTS

November 9, 2017

32.057 Acre Land Unit 5, TradePoint Atlantic Land Condominium, Located on the North Side of The Baltimore Beltway, I-695, Fifteenth Election District, Baltimore County, Maryland

BEGINNING for the same at a rebar and cap heretofore set at the end of the tenth or North eighty-nine degrees thirty-five minutes thirty-five seconds West one hundred twenty-five and two hundred sixty-two one thousandths feet line of a deed from 2010 Reservoir Road Investors, LLC to Reservoir Warehouse, LLC, dated June 7, 2013 and recorded among the Land Records of Baltimore County, Maryland in Book 33754, Page 137, said rebar and cap having Maryland Coordinate System coordinates of North 574061.81 feet and East 1463455.16 feet, thence binding reversely on the said tenth and on the ninth through fifth lines of the said deed, as now surveyed, with bearings referred to the Maryland Coordinate System (NAD'83/91), six courses, viz:

1. South 89° 36' 38" East 125.26 feet to a mag nail heretofore set,
2. North 86° 40' 53" East 360.00 feet,
3. North 77° 39' 30" East 150.00 feet to a rebar heretofore set,
4. North 85° 17' 13" East 324.06 feet to a point of curvature,
5. By a tangent curve to the left with a radius of 357.50 feet and an arc length of 332.90 feet, said curve being subtended by a chord bearing North 58° 36' 38" East 321.00 feet, to a point of tangency, and
6. North 31° 56' 04" East 262.83 feet to a rebar and cap heretofore set, thence running for new lines of division through the land conveyed by and described in a Special Warranty Deed from Sparrows Point LLC to Sparrows Point Terminal, LLC, dated September 18, 2014 and recorded among the aforesaid Land Records in Book 35478, Folio 379, six courses, viz:
7. South 78° 57' 55" East 206.20 feet,
8. South 58° 24' 38" East 405.72 feet to a rebar and cap now set on the northerly side of the Baltimore Beltway, I-695,
9. South 44° 14' 17" West 1334.75 feet to rebar and cap now set on the northerly side of the said Baltimore Beltway,
10. South 83° 42' 59" West 1006.97 feet to a rebar and cap now set,
11. North 06° 22' 46" West 842.93 feet to a rebar and cap now set, and
12. North 83° 52' 49" East 111.20 feet to the place of beginning.

3445-A Box Hill Corporate Center Drive, Abingdon, MD 21009 (410) 515-9000 Fax: (410) 515-9002 www.mragta.com

Abingdon, MD (410) 515-9000 ◆ Baltimore, MD (410) 835-5050 ◆ Laurel, MD (410) 792-9792 ◆ Towson, MD (410) 821-1690 ◆ Georgetown, DE (302) 855-5734 ◆ New Castle, DE (302) 326-2200 ◆ Sterling, VA (703) 674-0161 ◆ Raleigh, NC (984) 200-2103

CONTAINING 32.057 acres of land, more or less.

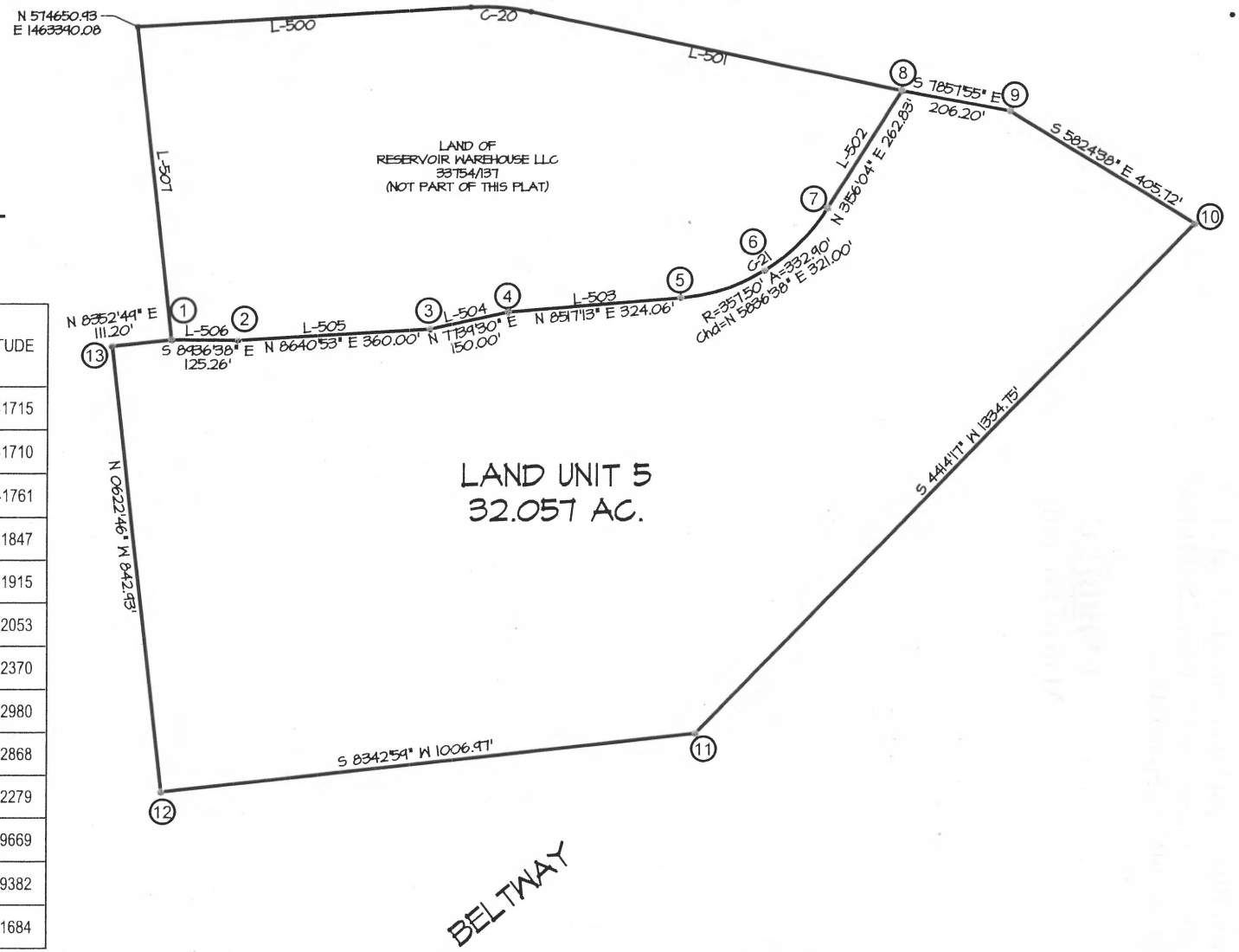
BEING part of the land conveyed by and described in a Special Warranty Deed from Sparrows Point LLC to Sparrows Point Terminal, LLC, dated September 18, 2014 and recorded among the Land Records of Baltimore County, Maryland in Book 35478, Folio 379; BEING ALSO all of Land Unit 5 as shown on the plats entitled "CONDOMINIUM PLAT, LAND UNITS 5 THROUGH 10, TRADEPOINT ATLANTIC LAND CONDOMINIUM" and to be recorded among the said Land Records.


(Current License Expires 5/2/18)

G:\18939\SURVEY\Descriptions\Land Unit 5.doc

# EXHIBIT B
## Metes and Bounds Description

## EXHIBIT C
Map of Property




| ID | NORTHING | EASTING | LONGITUDE | LATITUDE |
|---|---|---|---|---|
| 1 | 574061.80 | 1463455.16 | -76.466429 | 39.241715 |
| 2 | 574060.95 | 1463580.41 | -76.465986 | 39.241710 |
| 3 | 574081.79 | 1463939.81 | -76.464717 | 39.241761 |
| 4 | 574113.85 | 1464086.34 | -76.464199 | 39.241847 |
| 5 | 574140.47 | 1464409.31 | -76.463058 | 39.241915 |
| 6 | 574191.59 | 146566.14 | -76.462503 | 39.242053 |
| 7 | 574307.67 | 1464683.33 | -76.462087 | 39.242370 |
| 8 | 574530.72 | 1464822.35 | -76.461592 | 39.242980 |
| 9 | 574487.25 | 1465020.74 | -76.4609 | 39.242868 |
| 10 | 574278.72 | 1465370.34 | -76.459662 | 39.242279 |
| 11 | 573322.45 | 1464439.17 | -76.462970 | 39.239669 |
| 12 | 573212.23 | 1463438.25 | -76.466506 | 39.239382 |
| 13 | 574049.94 | 1463344.59 | -76.466819 | 39.241684 |

NORTH

0 150 300

Approximate Scale
1 inch = 300 feet


**GEO-TECHNOLOGY ASSOCIATES, INC.**
GEOTECHNICAL AND ENVIRONMENTAL CONSULTANTS
3445-A BOX HILL CORPORATE CENTER DRIVE
ABINGDON, MARYLAND 21009
410-515-9446
FAX: 410-515-4895
WWW.GTAENG.COM




EXHIBIT A:
ALTA LAND UNIT 5

# RESERVOIR ROAD

BALTIMORE COUNTY, MARYLAND

| JOB NO. | SCALE: | DATE: | DRAWN BY: | REVIEW BY: | FIGURE: |
|---|---|---|---|---|---|
| 31171427X1 | 1"=300' | MAY 16, 2019 | RJM | BGM | 1 |

Exhibit C

# EXHIBIT D
## Institutional Controls Management Plan

# INSTITUTIONAL CONTROLS MANAGEMENT PLAN

# PARCEL A2 – RESERVOIR ROAD PROPERTY

**Sparrows Point, Baltimore County, Maryland**

March 8, 2019

Prepared for:

**Erasmus Properties (Reservoir Road) Business Trust**
1201 Wallace Street
Baltimore, Maryland 21230

Attn: Mr. Rupert Denney

---

Prepared by:

**GEO-TECHNOLOGY ASSOCIATES, INC.**
*Geotechnical and Environmental Consultants*
3445-A Box Hill Corporate Center Drive
Abingdon, Maryland 21009
(410) 515-9446
Fax (410) 515-4895
*www.mragta.com*

GTA Project No: 31171427x1

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## APPENDICES

# INSTITUTIONAL CONTROLS MANAGEMENT PLAN

**PARCEL A2 – RESERVOIR ROAD PROPERTY**
**BALTIMORE COUNTY, MARYLAND**
**MARCH 8, 2019**

## 1.0 INTRODUCTION

At the request of Erasmus Properties (Reservoir Road) Business Trust (Client), Geo-Technology Associates, Inc. (GTA) has prepared this *Institutional Controls Management Plan* (Plan) to address the implementation of specific institutional controls required as part of the No Further Requirements Determination (NFRD) issued for the property. The property, located at 2012-2014 Reservoir Road, was entered into the Maryland Department of the Environment (MDE) Voluntary Cleanup Program (VCP) by the Client in June 2018. The MDE VCP issued inculpable person (IP) status to the Client in a letter dated June 8, 2018.

The property is partially occupied by the Reservoir Road Warehouse, the DACS Building, and roads. The remainder of the Site is comprised of open space and wooded areas. According to the Phase I Environmental Site Assessment (ESA) prepared by Weaver Boos Consultants dated May 19, 2014, the Reservoir Road Warehouse was formerly used for material storage of refractory supplies, electrical materials, and other parts. The ESA report stated that the DACS Building was formerly used for storage of materials, most notably several drums containing lubricants. Both the Reservoir Road Warehouse and DACS Building are currently intact and in use by the Client. A *Site Location Map* for the subject property is included within this report as *Figure 1*. A *Site Sketch* is included as *Figure 2*.

Please note that the property is referenced as Parcel A2 with regard to the overall Sparrows Point facility. The parcel is also referenced as Land Unit 5 as per Baltimore County Record Plat reference JLE Liber 31 Folio 786.

This Plan, and the institutional controls described herein, will be implemented by the property owner - Erasmus Properties (Reservoir Road) Business Trust, 1201 Wallace Street, Baltimore, Maryland 21230; Attn: Mr. Rupert Denney.

# 2.0 BACKGROUND

## 2.1 Environmental Studies

A Phase II ESA was performed at the property by ARM Group, Inc. on behalf of EnviroAnalytics Group. The Final *Phase II Investigation Report for Area A: Parcel A2, (Revision 4)* was issued on March 14, 2018.

The ARM Group Phase II ESA included the following Findings and Recommendations:

The objective of this Phase II Investigation was to fully characterize the nature and extent of contamination at the Site. A total of 18 sub-slab soil gas samples, 4 groundwater samples, and 50 soil samples were collected and analyzed to define the nature and extent of contamination in Parcel A2. The sampling and analysis plan for the parcel was developed to target specific features which represented a potential release of hazardous substances and/or petroleum products to the environment. Sub-slab soil gas samples were analyzed for volatile organic compounds (VOCs). Groundwater samples were analyzed for target compound list (TCL) -VOCs, TCL- semi-volatile organic compounds (SVOCs), Oil & Grease, target analyte list (TAL) -Dissolved Metals, hexavalent chromium, and cyanide. Soil samples were analyzed for TCL-VOCs, TCL-SVOCs, Oil & Grease, TAL-Metals, hexavalent chromium, and cyanide. Shallow soil samples (0 to 1 foot bgs) were also analyzed for polychlorinated biphenyls (PCBs).

**SOIL**

The concentrations of constituents in the soil have been characterized by the Phase II Investigation to provide estimates of exposure point concentrations to support risk assessment.

Lead, PCB, and Oil & Grease concentrations are well below the levels that would warrant evaluation of a removal remedy. The average lead concentrations in both the surface and sub-surface soils are below the 800 mg/kg residential screening limit (RSL), indicating that no further action is needed with respect to lead. In addition, there were no locations where detections of lead exceeded 10,000 mg/kg, the designated threshold at which delineation would be required. There were no PCB concentrations identified in Parcel A2 above the project action limit (PALs) (or the mandatory excavation criterion of 50 mg/kg) indicating that no further action is needed. There were no exceedances of the Oil & Grease PAL which would warrant additional evaluation of any existing impacts. Furthermore, non-aqueous phase liquid (NAPL) was not observed in any soil cores (or groundwater piezometers) during this investigation; thus, significant existing sources of NAPL are not suspected to be present at the Site.

There were no soil PAL exceedances for VOCs or PCBs, indicating that these parameter groups are not significant soil contaminants at the Site. Soil PAL exceedances included four metals (arsenic, manganese, lead, and hexavalent chromium) and benzo[a]pyrene. Iron and vanadium were identified as additional chemical of potential concern (COPCs) to be included in the Screening Level Risk Assessment (SLRA), despite a lack of PAL exceedances for these compounds.

### GROUNDWATER

The concentrations of constituents in the groundwater have also been characterized by the Phase II Investigation to provide estimates of exposure point concentrations to support risk assessment.

There were no VOCs that exceeded their respective PALs, and these contaminant groups were determined to not be significant groundwater contaminants at the Site. None of the temporary groundwater sample collection points showed any detections of NAPL. Four sample locations exceeded the Oil & Grease PAL with the highest concentration (1,500 µg/L) identified in groundwater sample A2-022-PZ, but all detections were flagged with the "J" qualifier indicating that they are estimated values. Analysis of the groundwater samples identified concentrations of four metals (iron, arsenic, cobalt, and manganese) that exceeded their PALs. There was only one PAL exceedance of both iron and arsenic in groundwater (A2-013-PZ), and only two exceedances of cobalt and manganese (A2-013-PZ and A2-022-PZ). Only one SVOC compound (1,4-dioxane) was identified as an exceedance of its PAL at sample location A2-013-PZ.

### SUB-SLAB SOIL GAS

The sub-slab soil gas samples collected at the Reservoir Road Warehouse and DACS Building did not contain any VOC compounds at concentrations that exceeded their specified PALs. Further investigation is not recommended based on the documentation of no significant impacts below the building slabs, indicating an insignificant risk for the vapor intrusion to indoor air exposure pathway. The current buildings are suitable for occupancy/use by industrial workers.

### HUMAN HEALTH SCREENING LEVEL RISK ASSESSMENT

Groundwater is not used on the Tradepoint Atlantic property (and is not proposed to be utilized), therefore there is no potential for direct human exposure for a Composite Worker. In the event that future construction/excavation leads to a potential Construction Worker exposure to groundwater, health and safety plans should be implemented to limit exposure risk. The evaluation of the potential for exposure via vapor intrusion indicated no potentially unacceptable risks. The groundwater data were screened to determine whether any cumulative (or individual) sample results exceeded the United States

Environmental Protection Agency (USEPA) VI TCR (carcinogen) or THQ (non-carcinogen) Screening Levels. None of the cumulative VI cancer risks were greater than or equal to 1E-5 and none of the VI non-cancer hazard estimates exceeded 1. The results of the VI evaluation indicated insignificant risks associated with the observed concentrations in groundwater.

The current Composite Worker will be exposed to surface soils. The risk ratios indicated that the cumulative cancer risk for the Composite Worker scenario was equal to 4E-6 for surface soils. A non-cancer cumulative HI of 1 was not exceeded for any organ system evaluated for Composite Worker exposure to surface soils. Since the cumulative HI did not exceed 1 for any target organ and the estimate of cumulative cancer risk was less than 1E-5, no additional action is required to address potential risks to a current Composite Worker.

The cumulative carcinogenic risk for the potential Composite Worker exposure to subsurface soils was equal to 3E-6 (below the target benchmark). An elevated hazard above the HI of 1 was calculated for the nervous system (HI=2) due to elevated manganese for a potential future Composite Worker exposure to subsurface soils. Based on this assessment, unacceptable risk to a future Composite Worker may be encountered if soil disturbances occur that relocate manganese-impacted soils to the surface. Institutional controls to prevent disturbance and to ensure proper notification and management of subsurface soils within the parcel are necessary to protect the Composite Worker, and the hazard related to manganese requires further evaluation in a Response and Development Work Plan for any future development of Parcel A2 that could relocate subsurface materials for placement at the surface.

The Construction Worker risk assessment for a site-specific exposure duration (35 work days) indicated that the cumulative cancer risks for surface and subsurface soils were below the allowable risk level of 1E-5. In addition, no elevated non-cancer hazards above the HI of 1 were calculated for any target organ for surface or subsurface soils using the site-specific 35-day exposure duration. These findings indicate that there are no potentially unacceptable risks/hazards resulting from exposures to on-site soils if the duration of intrusive work for future development projects is limited to 35 days. Since the allowable exposure duration (35 days) is less than the default baseline Construction Worker scenario (250 days), institutional controls should be implemented to ensure proper oversight and management of any future construction activity that would include disturbances of the existing soil for more than 35 intrusive work days. These controls will be protective of future Construction Workers by limiting potential exposures to surface and subsurface soils which may be impacted above the acceptable risk criteria. Potential risks and hazards will be re-evaluated in a Response and Development Work Plan if the proposed duration of intrusive work will exceed 35 days for any future construction project.

**RECOMMENDATIONS**

Sufficient remedial investigation data has been collected to evaluate the nature and extent of possible constituents of concern in Parcel A2. The presence and absence of soil, groundwater, and sub-slab soil gas impacts within Parcel A2 have been adequately described and further investigation is not warranted. Based in the evaluation of risk presented in the SLRA for potential exposure to surface soils, the Site is suitable for use by industrial workers; remedial action is not required to support occupancy and use of the parcel in its current condition.

Recommendations for the parcel are as follows:

- Based on the risk assessment presented in this Phase II Investigation Report, the future use of the parcel should be restricted as follows:
  - Deed restriction for industrial Site use only; no portion of the Site should be used for agricultural, recreational, or residential purposes.
  - Deed restriction on groundwater use; no subsurface water or groundwater should be extracted from aquifers for any purpose.

Institutional controls should be implemented for the protection of Composite and Construction Workers to ensure proper oversight and management of any future construction activity that includes disturbances of the existing soil. These institutional controls will necessarily include a written notice to the MDE of any future soil disturbance activities, proper management and characterization of any material removed from the Site, and health and safety requirements for any excavations of substantial time periods (exceeding 35 intrusive work days). Construction Worker risks for any proposed exposure durations exceeding 35 intrusive work days will be re-evaluated in site-specific Response and Development Work Plans, as necessary.

Summary data tables and sample location maps from the Phase II Investigation are included in *Appendix A*.

Based on the conclusions of the Phase II Investigation Report, MDE VCP has indicated that a NFRD will be issued for the property. The issuance of the NFRD will be predicated upon the placement of, and adherence to, certain institutional controls, as further detailed below.

## 3.0 INSTITUTIONAL CONTROLS

The following institutional controls/deed restrictions have been proposed for the Parcel A2 property by MDE VCP.

a. **Property Use**: Property use is limited to restricted industrial (Tier 3B) purposes as defined in the NFRD issued to Erasmus Properties (Reservoir Road) Business Trust by the MDE VCP.

b. **Use of Groundwater**: There shall be no use of the groundwater beneath the Property for any purpose.

c. **Soil Disturbance**: As documented in the *Phase II Investigation Report Area A: Parcel A2*, the Human Health SLRA indicated the Hazard Index exceeded the limit of 1 for the Composite Worker for subsurface soils. Therefore, the property owner, or its designated agent, shall submit written notification, to the attention of the Chief, State Assessment and Remediation Division, Land and Materials Administration, MDE, at least 30 days prior to any planned intrusive soil disturbance activities, such as excavation or grading activities that exceed one foot in depth.

d. **Emergency Excavation Requirements**: In the event of an unplanned emergency excavation on the Property, the Property owner, or its designated agent shall verbally or electronically notify the Department within 24 hours following initiation of the emergency excavation activities.

e. **Excavation Encountering Groundwater**: The Property owner shall submit written notification, to the attention of the Chief, State Assessment and Remediation Division, Land Management Administration, MDE, at least at least 30 days prior to any planned future excavation that may encounter groundwater. In the event of an unplanned emergency excavation on the Property that encounters groundwater, the Property owner shall notify the Department verbally or electronically within 24 hours following initiation of the emergency excavation activities.

The above-listed institutional controls will be included in an Environmental Covenant (EC) that will be prepared and recorded in accordance with MDE VCP requirements. Further information for each of these items is presented below.

### 3.1 Deed Restrictions

Future property use will be limited to restricted industrial (Tier 3B), as defined by MDE. The use of groundwater from beneath the property will not be allowed for any purpose. Both of these items will be included in a notice on the property deed.

### 3.2 Soil Disturbance

Soil disturbance includes excavation activities associated with utility work, site development, or maintenance, or site grading, to depths of one foot or more below grade. Generally, notification to MDE is not required for activities such as exploratory excavation for utility maintenance or repair, minor soil disturbance associated with security fencing maintenance or repair, or similar activities, that extend less than one foot below grade.

For soil disturbances that require MDE notification, the property owner, or designated agent, will prepare and submit a *30-Day Excavation Notification Form* to MDE. A copy of the form is included in *Appendix B*. The notification shall include the limit of disturbance on a scaled site map, excavation depths, duration of the intrusive activities, and the cumulative total of intrusive soil disturbance workdays for the rolling calendar year. All work shall be conducted in accordance with the approved Institutional Controls Management Plan provided as Exhibit 1. At least one foot of MDE approved clean fill or other cap material must be placed over any area of invasive disturbance to ensure restoration to existing grade that currently is acceptable for composite worker exposures.

If the cumulative intrusive soil disturbance workdays exceed 35 days in a rolling year for the construction workers the notification must detail specific measures, such as the use of personal protective equipment, OSHA HAZWOPER certified workers, cycling of crews or other approved actions to ensure construction worker protection.

Alternately, a revised exposure unit SLRA may be submitted to support modifications to the allowable exposure duration beyond 35 days. The primary contaminant of concern identified by the Phase II Investigation is manganese in subsurface soils. A more detailed investigation of manganese concentrations, based on future site development plans, may allow for alternative exposure durations, depending on concentrations in specific areas of proposed disturbance. The property owner, or designated agent, may contact MDE to discuss and prepare a detailed investigation work plan to further characterize site conditions. Included in the investigation will be activities to evaluate the need for dust control measures and air monitoring during earthwork activities on the site. A site-specific health and safety plan will also be prepared to protect onsite workers.

Excavated material shall be characterized for disposal and the analytical results shall be the basis for appropriate disposition of the material at a permitted disposal facility in accordance with applicable local, State, and Federal laws and regulations. No excavated material shall be transferred to a Property other than a disposal facility without appropriate sampling of the specific material proposed to be moved and prior approval of the Department. Copies of the analytical results collected from the excavated soil and records of soil disposal locations shall be maintained by the Property owner and made available upon request by the Department.

### 3.3 Emergency Excavation Requirements

Emergency excavation requirements shall generally follow the requirements discussed in *Section 3.2*, with the exception that verbal/electronic notification will be made to MDE within 24 hours of initiating the work. Within 10 days following completion of the approved work or emergency excavation, the Property owner shall file a detailed written report with the Department, which shall include map(s) showing the excavation locations, copies of the analytical results collected from the excavated soil and groundwater, and records of disposal. A copy of the *Emergency Excavation Activity Form* is included in *Appendix C*. Documentation of the verbal/electronic notification to MDE should be attached to the form upon submission.

### 3.4 Excavations Encountering Groundwater

Notification requirements for excavations where groundwater is anticipated should generally follow those detailed in *Section 3.2*, using the notification form included in *Appendix B*. Previous site investigations have encountered groundwater at depths as shallow as 3.5 to 4 feet below ground surface.

When conducting excavation and/or dewatering activities on the property extending to the groundwater table, the Property owner shall implement the requirements of a site-specific health and safety plan to ensure that worker protection measures are met.

Groundwater encountered during excavation activities shall be containerized during dewatering activities at the Property and shall be analyzed before disposal. The analytical results shall be the basis for appropriate disposition of the groundwater in accordance with applicable local, State, and Federal laws and regulations.

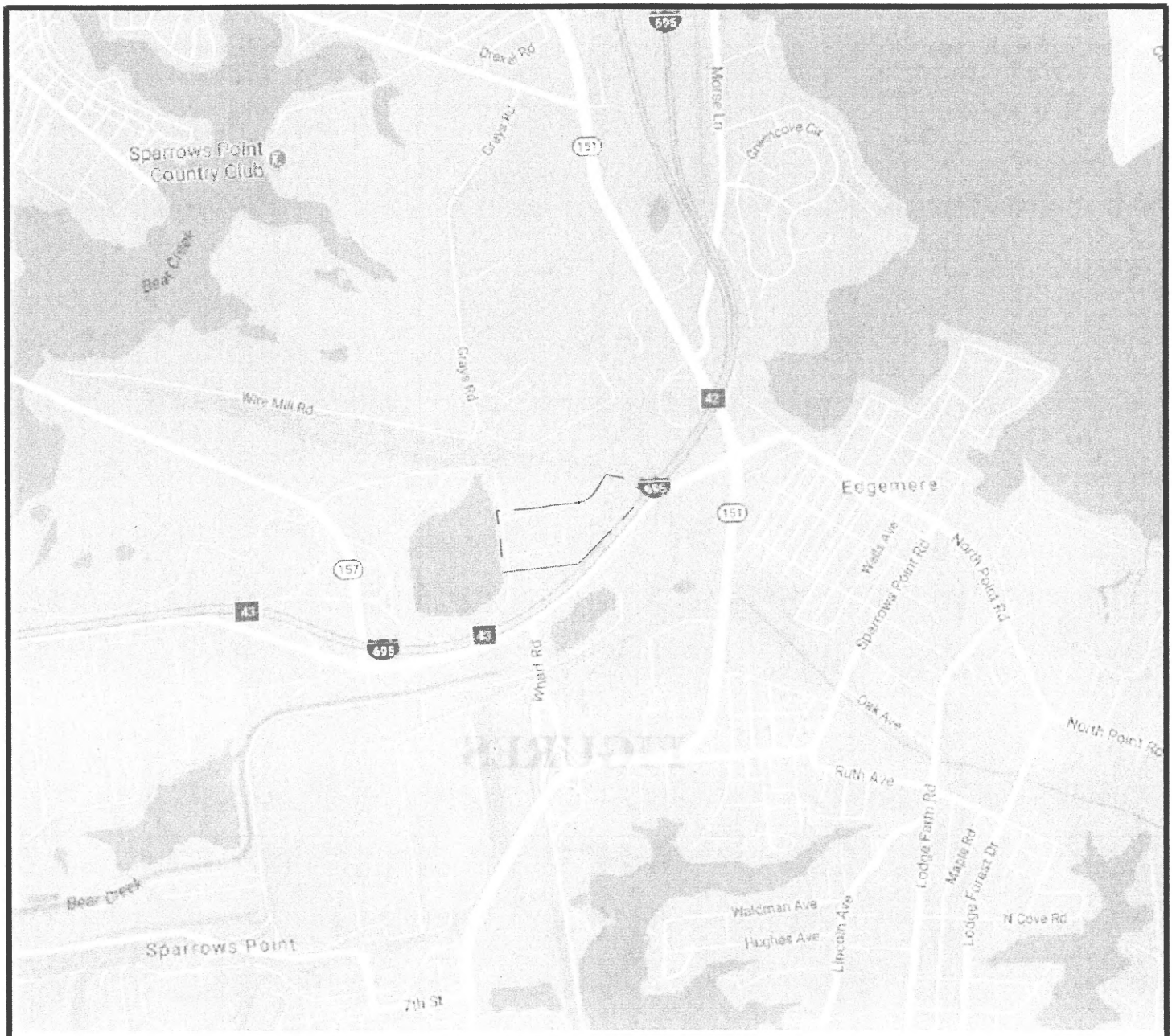
Within ten days following completion of an excavation encountering groundwater, the Property owner shall file a detailed written report with the Department, which includes documentation regarding sampling and disposal of the groundwater.

Groundwater pumped under the National Pollutant Discharge Elimination System (NPDES) permitting process may be discharged according to the permit limits and requirements. Alternately, with the approval of the Department and plant operator, groundwater may be pumped to the Sparrows Point industrial waste water treatment plant.

## 4.0 PLAN REVISIONS

At any stage of the site activities, this Plan may be revised to reflect previously unidentified field conditions, personnel changes, etc. Modifications to the Plan will be presented to the project stakeholders in Draft format for review and comment prior to finalization.

******* END OF REPORT *******




SOURCE: PLAN ADAPTED FROM A STREET MAP OF BALTIMORE COUNTY, MARYLAND PRODUCED AND MAINTAINED BY GOOGLE MAPS

**LEGEND**

SUBJECT PROPERTY

NORTH

0' 500' 1,000' 2,000' 4,000'

**SCALE: 1"=2,000'**


GEO-TECHNOLOGY ASSOCIATES, INC.
GEOTECHNICAL AND ENVIRONMENTAL CONSULTANTS
3445-A BOX HILL CORPORATE CENTER DRIVE
ABINGDON, MARYLAND 21009
410-515-9446
FAX: 410-515-4895
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# SITE LOCATION MAP
# RESERVOIR ROAD PROPERTY

BALTIMORE COUNTY, MARYLAND

| JOB NO. | SCALE: | DATE: | DRAWN BY: | REVIEW BY: | FIGURE: |
|---|---|---|---|---|---|
| 31171427 | 1"=2000' | NOVEMBER 2017 | KDJ | NBG | 1 |

L:\gta\Shared\Project Files\2017\31171427 - RESERVOIR ROAD Property\CAD\Plot\ENV 31171427-RESERVOIR ROAD Phase I Figures

# FIGURES

**Table 6**
**Summary of Organics Detected in Soil**
**Tradepoint Atlantic**
**Sparrows Point, Maryland**

| Parameter | Units | PAL | A2-017-SB-5 | A2-018-SB-1 | A2-018-SB-4 | A2-020-SB-1 | A2-020-SB-5 | A2-021-SB-1 | A2-021-SB-5 | A2-022-SB-1 | A2-022-SB-5 | A2-023-SB-1 | A2-023-SB-5 | A2-024-SB-1 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Volatile Organic Compounds** | | | | | | | | | | | | | | |
| 1,2-Dibromo-3-chloropropane | mg/kg | 0.064 | 0.005 U | 0.0046 UJ | 0.0053 UJ | **0.0048** | 0.0052 U | 0.0055 UJ | 0.0053 UJ | 0.0072 U | 0.0042 U | 0.0094 U | 0.0057 U | 0.012 U |
| 2-Butanone (MEK) | mg/kg | 190,000 | 0.01 U | 0.0091 U | 0.011 U | 0.0089 U | 0.01 U | 0.011 U | 0.011 U | 0.014 U | 0.0084 U | 0.019 U | 0.011 U | 0.024 U |
| 4-Methyl-2-pentanone (MIBK) | mg/kg | 56,000 | 0.01 U | 0.0091 U | 0.011 U | 0.0089 U | 0.01 U | 0.011 U | 0.011 U | 0.014 U | 0.0084 U | 0.019 U | 0.011 U | 0.024 U |
| Acetone | mg/kg | 670,000 | **0.027** | **0.023** | **0.019** | **0.04** | **0.012** | **0.021** | **0.011** | 0.014 U | 0.0084 U | **0.037** | **0.018** | **0.028** |
| Benzene | mg/kg | 5.1 | **0.0024 J** | 0.0046 U | 0.0053 U | 0.0044 U | 0.0052 U | 0.0055 U | 0.0053 U | 0.0072 U | 0.0042 U | 0.0094 U | 0.0057 U | 0.012 U |
| Carbon disulfide | mg/kg | 3,500 | 0.005 U | **0.011** | **0.034** | 0.0044 U | 0.0052 U | 0.0055 U | 0.0053 U | **0.045** | 0.0042 U | **0.0056 J** | **0.013** | 0.012 U |
| Cyclohexane | mg/kg | 27,000 | 0.01 U | 0.0091 U | 0.011 U | 0.0089 U | 0.01 U | 0.011 U | 0.011 U | 0.014 U | 0.0084 U | 0.019 U | 0.011 U | 0.024 U |
| Ethylbenzene | mg/kg | 25 | 0.005 U | 0.0046 U | 0.0053 U | 0.0044 U | 0.0052 U | 0.0055 U | 0.0053 U | 0.0072 U | 0.0042 U | 0.0094 U | 0.0057 U | 0.012 U |
| Methyl Acetate | mg/kg | 1,200,000 | 0.05 UJ | 0.046 UJ | 0.053 UJ | 0.044 U | 0.052 U | 0.055 UJ | 0.053 UJ | 0.072 UJ | 0.042 UJ | 0.094 U | 0.057 U | 0.12 U |
| Methylene Chloride | mg/kg | 1,000 | 0.005 U | 0.0046 U | 0.0053 U | 0.0044 U | 0.0052 U | 0.0055 U | **0.0044 J** | 0.0072 U | 0.0042 U | 0.0094 U | 0.0057 U | 0.012 U |
| Toluene | mg/kg | 47,000 | **0.0016 J** | 0.0046 U | 0.0053 U | 0.0044 U | 0.0052 U | 0.0055 U | 0.0053 U | 0.0072 U | 0.0042 U | 0.0094 U | 0.0057 U | 0.012 U |
| **Semi-Volatile Organic Compounds^** | | | | | | | | | | | | | | |
| 2-Methylnaphthalene | mg/kg | 3,000 | **0.075** | **1.8** | **0.056** | **0.0055 J** | 0.008 U | **0.03** | **0.0072 J** | **0.025** | **0.0012 J** | **0.068** | **0.21** | **0.1** |
| Acenaphthene | mg/kg | 45,000 | **0.064** | **0.12** | **0.011** | 0.0077 U | 0.008 U | 0.0076 U | 0.0074 U | **0.0032 J** | 0.0076 U | **0.013** | **0.25** | **0.012** |
| Acenaphthylene | mg/kg | 45,000 | **0.015** | **0.67** | **0.015** | 0.0077 U | 0.008 U | **0.02** | 0.0074 U | **0.14** | 0.0076 U | **0.098** | **0.025** | **0.18** |
| Acetophenone | mg/kg | 120,000 | 0.36 U | 0.35 U | 0.37 U | 0.39 U | 0.4 U | 0.38 U | 0.37 U | 0.37 U | 0.38 U | 0.36 U | 0.39 U | 0.37 U |
| Anthracene | mg/kg | 230,000 | **0.068** | **0.76** | **0.03** | **0.0033 J** | 0.008 U | **0.0074 J** | **0.0029 J** | **0.03** | 0.0076 U | **0.044** | **0.46** | **0.046** |
| Benz[a]anthracene | mg/kg | 21 | **0.24** | **3.8** | **0.14** | **0.021** | 0.008 U | **0.035** | **0.0069 J** | **0.081** | 0.0076 U | **0.14** | **0.96** | **0.076** |
| Benzaldehyde | mg/kg | 120,000 | 0.36 U | 0.35 U | 0.37 U | 0.39 U | 0.4 U | 0.38 U | 0.37 U | 0.37 U | 0.38 U | 0.36 U | 0.39 U | 0.37 U |
| Benzo[a]pyrene | mg/kg | 2.1 | **0.38** | 3.6 | **0.14** | **0.025** | 0.008 U | **0.078** | 0.0074 U | **0.052** | 0.0076 U | **0.12** | **0.93** | **0.069** |
| Benzo[b]fluoranthene | mg/kg | 21 | **0.61** | **5.5** | **0.27** | **0.041** | 0.008 U | **0.11** | **0.013** | **0.13** | 0.0076 U | **0.29** | **1.4** | **0.17** |
| Benzo[g,h,i]perylene | mg/kg | | **0.3** | **0.57** | **0.059** | **0.014** | 0.008 U | **0.042** | **0.0036 J** | **0.012** | 0.0076 U | **0.06** | **0.26** | **0.046** |
| Benzo[k]fluoranthene | mg/kg | 210 | **0.23** | **2.4** | **0.096** | **0.015** | 0.008 U | **0.035** | **0.0052 J** | **0.047** | 0.0076 U | **0.099** | **0.53** | **0.056** |
| Carbazole | mg/kg | | 0.36 U | 0.35 U | 0.37 U | 0.39 U | 0.4 U | 0.38 U | 0.37 U | 0.37 U | 0.38 U | 0.36 U | **0.2 J** | 0.37 U |
| Chrysene | mg/kg | 2,100 | **0.28** | **3.5** | **0.18** | **0.024** | 0.008 U | **0.051** | **0.011** | **0.097** | **0.0008 J** | **0.25** | **0.9** | **0.11** |
| Dibenz[a,h]anthracene | mg/kg | 2.1 | **0.11** | **0.35** | **0.027** | 0.0077 U | 0.008 U | **0.012** | 0.0074 U | **0.0064 J** | 0.0076 U | **0.028** | **0.12** | **0.019** |
| Fluoranthene | mg/kg | 30,000 | **0.39** | **5.5** | **0.26** | **0.04** | 0.008 U | **0.054** | **0.032** | **0.2** | **0.002 J** | **0.81** | **2.7** | **0.19** |
| Fluorene | mg/kg | 30,000 | **0.015** | **0.13** | **0.0053 J** | **0.0016 J** | 0.008 U | **0.0011 J** | 0.0074 U | **0.015** | **0.00071 J** | **0.016** | **0.25** | **0.031** |
| Indeno[1,2,3-c,d]pyrene | mg/kg | 21 | **0.28** | **0.89** | **0.067** | **0.014** | 0.008 U | **0.04** | 0.0074 U | **0.012** | 0.0076 U | **0.065** | **0.32** | **0.039** |
| Naphthalene | mg/kg | 17 | **0.09** | **2.8** | **0.22** | **0.0057 J** | **0.0029 J** | **0.046** | **0.011** | **0.21** | 0.0076 U | **0.16** | **0.26** | **0.31** |
| Phenanthrene | mg/kg | | **0.22** | **3.1** | **0.13** | **0.017** | 0.008 U | **0.041** | **0.042** | **0.13** | 0.0076 U | **0.51** | **2** | **0.23** |
| Pyrene | mg/kg | 23,000 | **0.46** | **4.7** | **0.27** | **0.036** | 0.008 U | **0.056** | **0.024** | **0.18** | **0.0023 J** | **0.58** | **2.2** | **0.17** |
| **PCBs** | | | | | | | | | | | | | | |
| Aroclor 1254 | mg/kg | 0.97 | N/A | 0.017 U | N/A | 0.019 U | N/A | 0.019 U | N/A | 0.019 U | N/A | 0.018 U | N/A | 0.019 U |
| Aroclor 1260 | mg/kg | 0.99 | N/A | **0.038** | N/A | 0.019 UJ | N/A | 0.019 U | N/A | 0.019 UJ | N/A | 0.018 UJ | N/A | **0.037 J** |
| PCBs (total) | mg/kg | 0.97 | N/A | **0.038 J** | N/A | 0.14 U | N/A | 0.13 U | N/A | 0.13 U | N/A | 0.12 U | N/A | **0.037 J** |
| **TPH/Oil and Grease** | | | | | | | | | | | | | | |
| Oil and Grease | mg/kg | 6,200 | **739** | **282** | **226** | **199** | **264** | **219** | **184** | **201** | **274** | **130** | **857** | **151** |

**Detections in bold**

**U**: This analyte was not detected in the sample. The numeric value represents the sample quantitation/detection limit

**UJ**: This analyte was not detected in the sample. The actual quantitation/detection limit may be higher than reported

**J**: The positive result reported for this analyte is a quantitative estimate

**B**: This analyte was not detected substantially above the level of the associated method blank/preparation or field blank

**N/A**: This parameter was not analyzed for this sample

Values in Red indicate an exceedance of the Project Action Limit (PAL)

^PAH compounds were analyzed via SIM

**Table 6**
**Summary of Organics Detected in Soil**
**Tradepoint Atlantic**
**Sparrows Point, Maryland**

| Parameter | Units | PAL | A2-012-SB-1 | A2-012-SB-4 | A2-013-SB-1 | A2-013-SB-5 | A2-014-SB-1 | A2-014-SB-5 | A2-014-SB-9 | A2-015-SB-1 | A2-015-SB-5 | A2-016-SB-1 | A2-016-SB-5 | A2-016-SB-8 | A2-017-SB-1 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Volatile Organic Compounds** | | | | | | | | | | | | | | | |
| 1,2-Dibromo-3-chloropropane | mg/kg | 0.064 | 0.0049 UJ | 0.0044 UJ | 0.0048 U | 0.0054 UJ | 0.0059 U | 0.0045 U | 0.0047 U | 0.0066 U | 0.0047 U | 0.0052 U | 0.0053 U | 0.0042 U | 0.0051 U |
| 2-Butanone (MEK) | mg/kg | 190,000 | 0.0098 U | 0.0089 U | 0.0097 U | **0.0098 J** | 0.012 U | 0.0089 U | 0.0094 U | **0.0078 J** | **0.0072 J** | **0.0088 J** | 0.011 U | 0.0085 U | **0.018** |
| 4-Methyl-2-pentanone (MIBK) | mg/kg | 56,000 | 0.0098 U | 0.0089 U | 0.0097 U | 0.011 U | 0.012 U | 0.0089 U | 0.0094 U | 0.013 U | 0.0095 U | 0.01 U | 0.011 U | 0.0085 U | 0.01 U |
| Acetone | mg/kg | 670,000 | **0.0054 J** | **0.0069 J** | **0.022** | **0.057** | **0.022** | **0.022** | 0.0094 U | **0.034** | **0.027** | **0.057** | **0.043** | **0.017** | **0.11** |
| Benzene | mg/kg | 5.1 | 0.0049 U | 0.0044 U | 0.0048 U | 0.0054 U | 0.0059 U | 0.0045 U | 0.0047 U | 0.0066 U | 0.0047 U | 0.0052 U | **0.0014 J** | 0.0042 U | **0.0033 J** |
| Carbon disulfide | mg/kg | 3,500 | **0.013** | **0.0046** | **0.005** | 0.0054 U | **0.013** | **0.003 J** | **0.0077** | **0.027 J** | **0.018** | **0.012** | 0.0053 U | **0.0035 J** | 0.0051 U |
| Cyclohexane | mg/kg | 27,000 | 0.0098 U | 0.0089 U | 0.0097 U | 0.011 U | 0.012 U | 0.0089 U | 0.0094 U | 0.013 UJ | **0.004 J** | 0.01 U | 0.011 U | 0.0085 U | 0.01 U |
| Ethylbenzene | mg/kg | 25 | 0.0049 U | 0.0044 U | 0.0048 U | 0.0054 U | 0.0059 U | 0.0045 U | 0.0047 U | 0.0066 U | 0.0047 U | 0.0052 U | 0.0053 U | 0.0042 U | 0.0051 U |
| Methyl Acetate | mg/kg | 1,200,000 | 0.049 UJ | 0.044 UJ | 0.048 UJ | 0.054 UJ | 0.059 UJ | 0.045 UJ | 0.047 UJ | 0.066 U | 0.047 U | 0.052 U | 0.053 U | 0.042 U | 0.051 UJ |
| Methylene Chloride | mg/kg | 1,000 | 0.0049 U | 0.0044 U | 0.0048 U | 0.0054 U | **0.0044 J** | 0.0045 U | 0.0047 U | 0.0066 U | 0.0047 U | 0.0052 U | 0.0053 U | 0.0042 U | **0.0043 J** |
| Toluene | mg/kg | 47,000 | 0.0049 U | 0.0044 U | 0.0048 U | 0.0054 UJ | 0.0059 U | 0.0045 U | 0.0047 U | 0.0066 U | 0.0047 U | 0.0052 U | 0.0053 U | 0.0042 U | **0.0021 J** |
| **Semi-Volatile Organic Compounds^** | | | | | | | | | | | | | | | |
| 2-Methylnaphthalene | mg/kg | 3,000 | 0.15 U | **0.0087** | **0.023** | **0.011** | **0.012** | **0.0075 J** | 0.0085 U | **0.11** | **0.044** | **0.057** | **0.23** | **0.038** | **0.055** |
| Acenaphthene | mg/kg | 45,000 | 0.15 U | 0.0078 U | **0.0067 J** | **0.003 J** | **0.048** | 0.0079 U | 0.0085 U | **0.0035 J** | **0.0021 J** | **0.34** | **0.11** | **0.031** | **0.057** |
| Acenaphthylene | mg/kg | 45,000 | 0.15 U | 0.0078 U | **0.0033 J** | **0.0022 J** | **0.0029 J** | **0.0045 J** | 0.0085 U | **0.0083** | **0.03** | **0.022** | **0.042** | **0.0083** | **0.018** |
| Acetophenone | mg/kg | 120,000 | 1.8 U | 0.39 U | 0.39 U | 0.42 U | 0.35 U | 0.39 U | 0.42 U | 0.35 U | 0.35 U | 0.36 U | 0.36 U | 0.37 U | 0.35 U |
| Anthracene | mg/kg | 230,000 | 0.15 U | 0.0078 U | **0.072** | **0.0059 J** | **0.014** | **0.0082** | 0.0085 U | **0.027** | **0.031** | **0.24** | **0.17** | **0.049** | **0.062** |
| Benz[a]anthracene | mg/kg | 21 | 0.15 U | 0.0078 U | **0.42** | **0.018** | **0.089** | **0.023** | 0.0085 U | **0.093 J** | **0.13** | **2** | **0.48** | **0.21** | **0.26** |
| Benzaldehyde | mg/kg | 120,000 | 1.8 U | 0.39 U | 0.39 U | **0.24 J** | 0.35 U | 0.39 U | 0.42 U | **0.21 J** | **0.23 J** | 0.36 U | 0.36 U | 0.37 U | 0.35 U |
| Benzo[a]pyrene | mg/kg | 2.1 | 0.15 U | 0.0078 U | **0.56** | **0.017** | **0.21** | **0.025** | 0.0085 U | **0.061** | **0.079** | 4.1 | **0.73** | **0.28** | **0.41** |
| Benzo[b]fluoranthene | mg/kg | 21 | 0.15 U | 0.0078 U | **0.89** | **0.047** | **0.26** | **0.047** | **0.0052 J** | **0.17** | **0.15** | **4.5** | **1.3** | **0.49** | **0.76** |
| Benzo[g,h,i]perylene | mg/kg | | **0.032 J** | 0.0078 U | **0.24** | 0.0084 U | **0.15** | 0.0079 U | **0.0026 J** | **0.039 J** | **0.048** | **0.73** | **0.16** | **0.055** | **0.35** |
| Benzo[k]fluoranthene | mg/kg | 210 | 0.15 U | 0.0078 U | **0.28** | **0.018** | **0.12** | **0.021** | **0.0022 J** | **0.056** | **0.059** | **1.2** | **0.44** | **0.23** | **0.26** |
| Carbazole | mg/kg | | 1.8 U | 0.39 U | 0.39 U | 0.42 U | 0.35 U | 0.39 U | 0.42 U | 0.35 U | 0.35 U | 0.36 U | 0.36 U | 0.37 U | 0.35 U |
| Chrysene | mg/kg | 2,100 | 0.15 U | 0.0078 U | **0.54** | **0.032** | **0.11** | **0.031** | **0.0019 J** | **0.15 J** | **0.15** | **2** | **0.5** | **0.25** | **0.32** |
| Dibenz[a,h]anthracene | mg/kg | 2.1 | 0.15 U | 0.0078 U | **0.14** | 0.0084 U | **0.047** | 0.0079 U | 0.0085 U | **0.018 J** | **0.021** | **0.5** | **0.077** | **0.031** | **0.15** |
| Fluoranthene | mg/kg | 30,000 | 0.15 U | 0.0078 U | **0.61** | **0.05** | **0.12** | **0.057** | 0.0085 U | **0.23 J** | **0.27** | **2** | **0.81** | **0.34** | **0.43** |
| Fluorene | mg/kg | 30,000 | 0.15 U | 0.0078 U | **0.013** | **0.0096** | **0.0053 J** | **0.005 J** | **0.00087 J** | **0.0025 J** | **0.0025 J** | **0.084** | **0.044** | **0.012** | **0.014** |
| Indeno[1,2,3-c,d]pyrene | mg/kg | 21 | 0.15 U | 0.0078 U | **0.25** | **0.0043 J** | **0.15** | **0.013** | **0.002 J** | **0.04 J** | **0.051** | **0.95** | **0.2** | **0.073** | **0.35** |
| Naphthalene | mg/kg | 17 | 0.15 U | **0.0023 J** | **0.016** | **0.014** | **0.014** | **0.012** | 0.0085 U | **0.084** | **0.23** | **0.16** | **0.27** | **0.045** | **0.095** |
| Phenanthrene | mg/kg | | 0.15 U | 0.0078 U | **0.16** | **0.045** | **0.065** | **0.029** | 0.0085 U | **0.14** | **0.12** | **0.86** | **0.59** | **0.23** | **0.27** |
| Pyrene | mg/kg | 23,000 | 0.15 U | 0.0078 U | **0.75** | **0.042** | **0.11** | **0.05** | **0.0031 J** | **0.22 J** | **0.2** | **1.9** | **0.7** | **0.33** | **0.36** |
| **PCBs** | | | | | | | | | | | | | | | |
| Aroclor 1254 | mg/kg | 0.97 | 0.019 U | N/A | 0.019 U | N/A | 0.017 U | N/A | N/A | 0.018 U | N/A | 0.018 U | N/A | N/A | 0.018 U |
| Aroclor 1260 | mg/kg | 0.99 | 0.019 U | N/A | 0.019 UJ | N/A | **0.012 J** | N/A | N/A | 0.018 U | N/A | **0.03 J** | N/A | N/A | **0.043 J** |
| PCBs (total) | mg/kg | 0.97 | 0.13 U | N/A | 0.14 U | N/A | 0.12 U | N/A | N/A | 0.12 U | N/A | 0.13 U | N/A | N/A | **0.043 J** |
| **TPH/Oil and Grease** | | | | | | | | | | | | | | | |
| Oil and Grease | mg/kg | 0.200 | **1,860** | **128** | **203** | **568** | **234** | **427** | **192** | **545** | **644** | **396** | **400** | **280** | **318** |

**Detections in bold**
**U:** This analyte was not detected in the sample. The numeric value represents the sample quantitation/detection limit.
**UJ**: This analyte was not detected in the sample. The actual quantitation/detection limit may be higher than reported.
**J**: The positive result reported for this analyte is a quantitative estimate.
**B**: This analyte was not detected substantially above the level of the associated method blank/preparation or field blank.
**N/A**: This parameter was not analyzed for this sample.
Values in Red indicate an **exceedance** of the Project Action Limit (PAL).
^PAH compounds were analyzed via SIM.

# APPENDIX A

# DATA TABLES

# &

# SAMPLE LOCATION PLANS


SOURCE: PLAN ADAPTED FROM A 2016 TOPOGRAPHIC QUADRANGLE OF SPARROWS POINT, BALTIMORE COUNTY, MARYLAND
*MORE PROPERTY BORDERS SOUTHWARD

**LEGEND**

SUBJECT PROPERTY

NORTH

0' 125' 250' 500' 1,000'

**SCALE: 1"=500'**


**GEO-TECHNOLOGY ASSOCIATES, INC.**
GEOTECHNICAL AND ENVIRONMENTAL CONSULTANTS
3445-A BOX HILL CORPORATE CENTER DRIVE
ABINGDON, MARYLAND 21009
410-515-9446
FAX: 410-515-4895
WWW.GTAENG.COM




SITE SKETCH

# RESERVOIR ROAD PROPERTY

BALTIMORE COUNTY, MARYLAND

| JOB NO. 31171427 | SCALE: 1"=500' | DATE: NOVEMBER 2017 | DRAWN BY: KDJ | REVIEW BY: NBG | FIGURE: 2 |
|---|---|---|---|---|---|

L:\gta\Shared\Project Files\2017\31171427 - RESERVOIR ROAD Property\CAD\Plot\ENV 31171427-RESERVOIR ROAD Phase I Figures

**Table 6**
**Summary of Organics Detected in Soil**
**Tradepoint Atlantic**
**Sparrows Point, Maryland**

| Parameter | Units | PAL | A2-024-SB-4 | A2-025-SB-1 | A2-025-SB-5 | A2-026-SB-1 | A2-026-SB-5 | A2-027-SB-1 | A2-027-SB-6 | A2-028-SB-1 | A2-028-SB-5 | A2-029-SB-1 | A2-029-SB-5 | A2-030-SB-1 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Volatile Organic Compounds** | | | | | | | | | | | | | | |
| 1,2-Dibromo-3-chloropropane | mg/kg | 0.064 | 0.0062 U | 0.0083 U | 0.0049 U | 0.0059 U | 0.0046 U | 0.0051 U | 0.0049 U | 0.0056 U | 0.0051 U | 0.0053 U | 0.005 U | 0.0057 U |
| 2-Butanone (MEK) | mg/kg | 190,000 | 0.012 U | 0.017 U | 0.0098 U | **0.007 J** | 0.0092 U | **0.0039 J** | 0.0098 U | **0.0097 J** | 0.01 U | **0.0065 J** | 0.01 U | 0.011 U |
| 4-Methyl-2-pentanone (MIBK) | mg/kg | 56,000 | 0.012 U | 0.017 U | 0.0098 U | **0.0023 J** | 0.0092 U | 0.01 U | 0.0098 U | 0.011 U | 0.01 U | 0.011 U | 0.01 U | 0.011 U |
| Acetone | mg/kg | 670,000 | **0.028** | **0.015 J** | **0.014** | **0.045** | **0.019** | **0.045** | **0.0093 J** | **0.26** | **0.014** | **0.061** | **0.0091 J** | **0.043** |
| Benzene | mg/kg | 5.1 | **0.0042 J** | 0.0083 U | 0.0049 U | 0.0059 U | 0.0046 U | 0.0051 U | 0.0049 U | 0.0056 U | 0.0051 U | 0.0053 U | 0.005 U | 0.0057 U |
| Carbon disulfide | mg/kg | 3,500 | **0.0067** | **0.025** | **0.0029 J** | **0.019** | **0.0052** | 0.0051 U | 0.0049 U | **0.0033 J** | 0.0051 U | **0.033** | 0.005 U | 0.0057 U |
| Cyclohexane | mg/kg | 27,000 | 0.012 U | 0.017 U | 0.0098 U | 0.012 U | 0.0092 U | 0.01 U | 0.0098 U | 0.011 U | 0.01 U | 0.011 U | 0.01 U | 0.011 U |
| Ethylbenzene | mg/kg | 25 | **0.0021 J** | 0.0083 U | 0.0049 U | 0.0059 U | 0.0046 U | 0.0051 U | 0.0049 U | 0.0056 U | 0.0051 U | 0.0053 U | 0.005 U | 0.0057 U |
| Methyl Acetate | mg/kg | 1,200,000 | 0.062 U | 0.083 U | 0.049 U | 0.059 U | **0.002 J** | 0.051 U | 0.049 U | 0.056 U | 0.051 U | 0.053 U | 0.05 U | 0.057 U |
| Methylene Chloride | mg/kg | 1,000 | 0.0062 U | 0.0083 U | 0.0049 U | 0.0059 U | **0.0062** | **0.0047 J** | **0.0048 J** | 0.0056 U | 0.0051 U | 0.0053 U | 0.005 U | 0.0057 U |
| Toluene | mg/kg | 47,000 | **0.0051 J** | 0.0083 U | 0.0049 U | 0.0059 U | 0.0046 U | 0.0051 U | 0.0049 U | 0.0056 U | 0.0051 U | 0.0053 U | 0.005 U | 0.0057 U |
| **Semi-Volatile Organic Compounds[1]** | | | | | | | | | | | | | | |
| 2-Methylnaphthalene | mg/kg | 3,000 | **0.054** | 0.0073 U | 0.0082 U | 0.073 U | **0.026** | 0.0077 U | 0.0081 U | **0.0031 J** | 0.0077 U | **0.0025 J** | 0.0084 U | **0.0067 J** |
| Acenaphthene | mg/kg | 45,000 | **0.04** | 0.0073 U | 0.0082 U | **0.098** | **0.066** | 0.0077 U | 0.0081 U | 0.0078 U | 0.0077 U | 0.008 U | 0.0084 U | 0.0075 U |
| Acenaphthylene | mg/kg | 45,000 | **0.038** | 0.0073 U | 0.0082 U | 0.073 U | **0.0061 J** | 0.0077 U | 0.0081 U | 0.0078 U | 0.0077 U | 0.008 U | 0.0084 U | **0.024** |
| Acetophenone | mg/kg | 120,000 | 0.37 U | 0.36 U | 0.41 U | 0.36 U | 0.4 U | 0.38 U | 0.4 U | 0.39 U | 0.38 U | 0.39 U | 0.42 U | 0.37 U |
| Anthracene | mg/kg | 230,000 | **0.2** | **0.0065 J** | 0.0082 U | 0.073 U | **0.025** | 0.0077 U | 0.0081 U | **0.0018 J** | 0.0077 U | **0.0023 J** | 0.0084 U | **0.023** |
| Benz[a]anthracene | mg/kg | 21 | **0.77** | **0.038** | 0.0082 U | **0.2** | **0.12** | **0.0077** | **0.0046 J** | **0.0081** | 0.0077 U | **0.0077 J** | 0.0084 U | **0.069** |
| Benzaldehyde | mg/kg | 120,000 | 0.37 U | **0.22 J** | **0.24 J** | 0.36 U | **0.26 J** | 0.38 U | 0.4 U | 0.39 U | 0.38 U | 0.39 U | 0.42 U | 0.37 U |
| Benzo[a]pyrene | mg/kg | 2.1 | **0.79** | **0.038** | **0.097** | **0.39** | **0.23** | **0.0062 J** | 0.0081 U | **0.012** | 0.0077 U | **0.0099** | 0.0084 U | **0.14** |
| Benzo[b]fluoranthene | mg/kg | 21 | **1.5** | **0.075** | 0.0082 U | **0.44** | **0.27** | **0.012** | **0.0055 J** | **0.023** | 0.0077 U | **0.021** | 0.0084 U | **0.33** |
| Benzo[g,h,i]perylene | mg/kg | | **0.35** | **0.03** | 0.0082 U | **0.32** | **0.17** | **0.008** | **0.0028 J** | **0.0055 J** | 0.0077 UJ | **0.0039 J** | 0.0084 U | **0.034** |
| Benzo[k]fluoranthene | mg/kg | 210 | **0.46** | **0.032** | 0.0082 U | **0.19** | **0.1** | **0.0064 J** | **0.0023 J** | **0.01** | 0.0077 U | **0.0094** | 0.0084 U | **0.098** |
| Carbazole | mg/kg | | 0.37 U | 0.36 U | 0.41 U | 0.36 U | 0.4 U | 0.38 U | 0.4 U | 0.39 U | 0.38 U | 0.39 U | 0.42 U | 0.37 U |
| Chrysene | mg/kg | 2,100 | **0.79** | **0.056** | 0.0082 U | **0.2** | **0.13** | **0.0067 J** | **0.0037 J** | **0.011** | 0.0077 U | **0.01** | 0.0084 U | **0.1** |
| Dibenz[a,h]anthracene | mg/kg | 2.1 | **0.16** | **0.013** | 0.0082 U | **0.085** | **0.061** | 0.0077 U | 0.0081 U | 0.0078 U | 0.0077 UJ | 0.008 U | 0.0084 U | **0.02** |
| Fluoranthene | mg/kg | 30,000 | **1.4** | **0.066** | 0.0082 U | **0.17** | **0.12** | **0.0088** | **0.006 J** | **0.014** | 0.0077 U | **0.014** | 0.0084 U | **0.078** |
| Fluorene | mg/kg | 30,000 | **0.053** | 0.0073 U | 0.0082 U | **0.0094 J** | **0.013** | 0.0077 U | 0.0081 U | **0.0013 J** | 0.0077 U | 0.008 U | 0.0084 U | **0.0037 J** |
| Indeno[1,2,3-c,d]pyrene | mg/kg | 21 | **0.42** | **0.028** | 0.0082 U | **0.28** | **0.17** | 0.0077 U | 0.0081 U | 0.0078 U | 0.0077 UJ | **0.0034 J** | 0.0084 U | **0.037** |
| Naphthalene | mg/kg | 17 | **0.19** | **0.0023 J** | 0.0082 U | 0.073 U | **0.21** | **0.0017 J** | **0.0014 J** | **0.0045 J** | 0.0077 U | **0.0037 J** | 0.0084 U | **0.0084** |
| Phenanthrene | mg/kg | | **0.81** | **0.0088** | 0.0082 U | 0.073 U | **0.091** | 0.0077 U | 0.0081 U | **0.0074 J** | 0.0077 U | **0.0085** | 0.0084 U | **0.027** |
| Pyrene | mg/kg | 23,000 | **1.3** | **0.059** | 0.0082 U | **0.18** | **0.13** | **0.0076 J** | **0.0054 J** | **0.013** | 0.0077 U | **0.013** | 0.0084 U | **0.089** |
| **PCBs** | | | | | | | | | | | | | | |
| Aroclor 1254 | mg/kg | 0.97 | N/A | 0.018 U | N/A | 0.018 U | N/A | 0.019 U | N/A | 0.019 U | N/A | 0.02 U | N/A | 0.018 U |
| Aroclor 1260 | mg/kg | 0.99 | N/A | 0.018 U | N/A | **0.02** | N/A | 0.019 U | N/A | 0.019 U | N/A | **0.021** | N/A | 0.018 U |
| PCBs (total) | mg/kg | 0.97 | N/A | 0.13 U | N/A | 0.13 U | N/A | 0.14 U | N/A | 0.13 U | N/A | 0.14 U | N/A | 0.13 U |
| **TPH/Oil and Grease** | | | | | | | | | | | | | | |
| Oil and Grease | mg/kg | 6,200 | **462** | **4,180** | **4,730** | **475** | **478** | **354** | **2,360** | **329** | **515** | **314** | **880** | **422** |

**Detections in bold**
**U**: This analyte was not detected in the sample. The numeric value represents the sample quantitation/detection limit.
**UJ**: This analyte was not detected in the sample. The actual quantitation/detection limit may be higher than reported.
**J**: The positive result reported for this analyte is a quantitative estimate.
**B**: This analyte was not detected substantially above the level of the associated method blank/preparation or field blank.
**N/A**: This parameter was not analyzed for this sample.
Values in Red indicate an exceedance of the Project Action Limit (PAL).
[1]PAH compounds were analyzed via SIM.

**Table 6**
**Summary of Organics Detected in Soil**
**Tradepoint Atlantic**
**Sparrows Point, Maryland**

| Parameter | Units | PAL | A2-030-SB-5 | A2-031-SB-1 | A2-031-SB-5 | A2-032-SB-4 | A2-032-SB-5 | A2-033-SB-1 | A2-033-SB-4 | A2-034-SB-1 | A2-034-SB-3 | A2-034-SB-5 | A2-042-SB-1 | A2-042-SB-6 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Volatile Organic Compounds** | | | | | | | | | | | | | | |
| 1,2-Dibromo-3-chloropropane | mg/kg | 0.064 | 0.0056 U | 0.0053 U | 0.0049 U | 0.0052 UJ | 0.0051 UJ | 0.0053 U | 0.0061 U | 0.0048 U | 0.0048 U | 0.0048 U | 0.0057 U | 0.0061 U |
| 2-Butanone (MEK) | mg/kg | 190,000 | 0.011 U | **0.0066 J** | 0.0098 U | 0.01 U | 0.01 U | **0.0087 J** | 0.012 U | 0.0096 U | **0.01** | 0.0096 U | **0.012** | **0.025** |
| 4-Methyl-2-pentanone (MIBK) | mg/kg | 56,000 | 0.011 U | 0.011 U | 0.0098 U | 0.01 U | 0.01 U | 0.011 U | 0.012 U | 0.0096 U | 0.0096 U | 0.0096 U | 0.011 U | 0.012 U |
| Acetone | mg/kg | 670,000 | **0.022** | **0.2** | **0.0098 J** | **0.013** | **0.013** | **0.038** | **0.033** | **0.031** | **0.041 J** | **0.031** | **0.059** | **0.031** |
| Benzene | mg/kg | 5.1 | 0.0056 U | 0.0053 U | 0.0049 U | 0.0052 U | 0.0051 U | 0.0053 U | **0.0019 J** | 0.0048 U | **0.0027 J** | **0.0014 J** | 0.0057 U | **0.0043 J** |
| Carbon disulfide | mg/kg | 3,500 | 0.0056 U | 0.0053 U | 0.0049 U | **0.055** | **0.014** | **0.0098** | **0.007** | 0.0048 U | 0.0048 U | 0.0048 U | **0.0078** | **0.055** |
| Cyclohexane | mg/kg | 27,000 | 0.011 U | 0.011 U | 0.0098 U | 0.01 U | 0.01 U | 0.011 U | 0.012 U | 0.0096 U | 0.0096 U | 0.0096 U | 0.011 U | **0.016** |
| Ethylbenzene | mg/kg | 25 | 0.0056 U | 0.0053 U | 0.0049 U | 0.0052 U | 0.0051 U | 0.0053 U | 0.0061 U | 0.0048 U | 0.0048 U | 0.0048 U | 0.0057 U | **0.0019 J** |
| Methyl Acetate | mg/kg | 1,200,000 | 0.056 U | 0.053 U | 0.049 U | 0.052 UJ | 0.051 UJ | 0.053 U | 0.061 U | 0.048 U | 0.048 U | 0.048 U | 0.057 U | 0.061 U |
| Methylene Chloride | mg/kg | 1,000 | 0.0052 B | 0.0049 B | 0.0049 U | 0.0052 U | 0.0051 U | 0.0053 U | 0.0061 U | 0.0048 U | 0.0048 U | 0.0048 U | 0.0057 U | **0.0062** |
| Toluene | mg/kg | 47,000 | 0.0056 U | 0.0053 U | 0.0049 U | 0.0052 U | 0.0051 U | **0.003 J** | 0.0061 U | 0.0048 U | 0.0048 U | 0.0048 U | 0.0057 U | **0.0044 J** |
| **Semi-Volatile Organic Compounds^** | | | | | | | | | | | | | | |
| 2-Methylnaphthalene | mg/kg | 3,000 | 0.0072 U | **0.0032 J** | 0.0083 U | **0.29** | **0.017** | **0.032** | **0.18** | **0.092** | **0.14** | **0.14** | **0.022** | **0.0058 J** |
| Acenaphthene | mg/kg | 45,000 | 0.0072 U | 0.0086 U | 0.0083 U | 0.075 U | 0.0077 U | **0.03** | **0.1** | **0.009** | **0.11** | **0.087** | 0.0071 U | 0.0072 U |
| Acenaphthylene | mg/kg | 45,000 | 0.0072 U | 0.0086 U | 0.0083 U | 0.075 U | 0.0077 U | **0.022** | **0.035** | **0.017** | **0.032 J** | **0.024** | **0.02** | **0.0057 J** |
| Acetophenone | mg/kg | 120,000 | 0.36 U | 0.43 U | 0.42 U | **0.081 J** | 0.38 U | 0.35 U | 0.35 U | 0.36 U | 0.36 U | 0.36 U | 0.35 U | 0.35 U |
| Anthracene | mg/kg | 230,000 | 0.0072 U | **0.0053 J** | 0.0083 U | **0.022 J** | 0.0077 U | **0.044** | **0.4** | **0.024** | **0.19 J** | **0.19** | **0.015** | **0.0022 J** |
| Benz[a]anthracene | mg/kg | 21 | **0.0023 J** | **0.0085 J** | 0.0083 U | **0.063 J** | **0.005 J** | **0.22** | **0.72** | **0.071** | **0.96** | **0.42** | **0.086** | 0.0072 U |
| Benzaldehyde | mg/kg | 120,000 | 0.36 U | 0.43 U | 0.42 U | 0.37 U | 0.38 U | 0.35 U | 0.35 U | 0.36 U | 0.36 U | 0.36 U | **0.27 J** | **0.25 J** |
| Benzo[a]pyrene | mg/kg | 2.1 | **0.0028 J** | **0.01** | 0.0083 U | 0.075 U | 0.0077 U | **0.35** | **0.68** | **0.081** | **1.3** | **0.69** | **0.089** | 0.0072 U |
| Benzo[b]fluoranthene | mg/kg | 21 | **0.0053 J** | **0.026** | 0.0083 U | 0.075 U | 0.0077 U | **0.51** | **1.3** | **0.17** | **1.9** | **1.1** | **0.16** | 0.0072 U |
| Benzo[g,h,i]perylene | mg/kg | | **0.0015 J** | **0.0043 J** | 0.0083 U | **0.027 J** | **0.0023 J** | **0.16** | **0.16** | **0.033** | **0.17 J** | **0.15** | **0.062** | **0.0017 J** |
| Benzo[k]fluoranthene | mg/kg | 210 | **0.0029 J** | **0.011** | 0.0083 U | 0.075 U | 0.0077 U | **0.22** | **0.48** | **0.061** | **1.6** | **0.46** | **0.059** | 0.0072 U |
| Carbazole | mg/kg | | 0.36 U | 0.43 U | 0.42 U | 0.37 U | 0.38 U | 0.35 U | 0.35 U | 0.36 U | **0.17 J** | 0.36 U | 0.35 U | 0.36 U |
| Chrysene | mg/kg | 2,100 | **0.0031 J** | **0.013** | 0.0083 U | **0.067 J** | **0.0054 J** | **0.24** | **0.69** | **0.097** | **0.93** | **0.44** | **0.1** | 0.0072 U |
| Dibenz[a,h]anthracene | mg/kg | 2.1 | 0.0072 U | 0.0086 U | 0.0083 U | 0.075 U | 0.0077 U | **0.064** | **0.08** | **0.014** | **0.09 J** | **0.073** | **0.026** | 0.0072 U |
| Fluoranthene | mg/kg | 30,000 | **0.0038 J** | **0.015** | 0.0083 U | **0.15** | **0.01** | **0.26** | **1.6** | **0.15** | **1.3** | **0.64** | **0.12** | **0.015** |
| Fluorene | mg/kg | 30,000 | 0.0072 U | **0.0014 J** | 0.0083 U | **0.026 J** | **0.00073 J** | **0.0092** | **0.14** | **0.0048 J** | **0.052** | **0.053** | **0.0037 J** | **0.002 J** |
| Indeno[1,2,3-c,d]pyrene | mg/kg | 21 | 0.0072 U | 0.0086 U | 0.0083 U | 0.075 U | 0.0077 U | **0.18** | **0.19** | **0.034** | **0.24 J** | **0.2** | **0.062** | 0.0072 U |
| Naphthalene | mg/kg | 17 | 0.0072 U | **0.0034 J** | 0.0083 U | **0.24** | **0.022** | **0.065** | **0.25** | **0.42** | **0.29 J** | **0.096** | **0.054** | **0.021** |
| Phenanthrene | mg/kg | | 0.0072 U | **0.0084 J** | 0.0083 U | **0.12** | 0.0077 U | **0.13** | **1.3** | **0.14** | **0.81 J** | **0.7** | **0.08** | **0.0092** |
| Pyrene | mg/kg | 23,000 | **0.0037 J** | **0.015** | 0.0083 U | **0.11** | **0.0077 J** | **0.22** | **1.3** | **0.1** | **1.4** | **0.59** | **0.092** | **0.012** |
| **PCBs** | | | | | | | | | | | | | | |
| Aroclor 1254 | mg/kg | 0.97 | N/A | **0.0095 J** | N/A | 0.018 U | N/A | 0.018 U | N/A | 0.018 U | N/A | N/A | 0.018 U | N/A |
| Aroclor 1260 | mg/kg | 0.99 | N/A | 0.021 U | N/A | 0.018 U | N/A | **0.023 J** | N/A | **0.022 J** | N/A | N/A | **0.034 J** | N/A |
| PCBs (total) | mg/kg | 0.97 | N/A | 0.15 U | N/A | 0.13 U | N/A | 0.12 U | N/A | 0.13 U | N/A | N/A | 0.12 U | N/A |
| **TPH/Oil and Grease** | | | | | | | | | | | | | | |
| Oil and Grease | mg/kg | 6,200 | **231** | **627** | **1,010** | **717** | **282** | **204** | **682** | **241** | N/A | **668** | **462** | **829** |

**Detections in bold**
**U**: This analyte was not detected in the sample. The numeric value represents the sample quantitation/detection limit.
**UJ**: This analyte was not detected in the sample. The actual quantitation/detection limit may be higher than reported.
**J**: The positive result reported for this analyte is a quantitative estimate.
**B**: This analyte was not detected substantially above the level of the associated method blank/preparation or field blank.
**N/A**: This parameter was not analyzed for this sample.
Values in Red indicate an exceedance of the Project Action Limit (PAL).
^PAH compounds were analyzed via SIM.

**Table 7**
**Summary of Inorganics Detected in Soil**
**Tradepoint Atlantic**
**Sparrows Point, Maryland**

| Parameter | Units | PAL | A2-012-SB-1 | A2-012-SB-4 | A2-013-SB-1 | A2-013-SB-5 | A2-014-SB-1 | A2-014-SB-5 | A2-014-SB-9 | A2-015-SB-1 | A2-015-SB-5 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Metal** | | | | | | | | | | | |
| Aluminum | mg/kg | 1,100,000 | **42,300** | **14,600** | **33,700** | **8,340** | **24,500** | **15,100** | **20,000** | **12,000** | **32,200** |
| Antimony | mg/kg | 470 | 2.5 UJ | 2.7 UJ | 3 B | 3.1 UJ | 2.8 UJ | 3.4 UJ | 3.2 UJ | 2.9 UJ | 2.5 UJ |
| Arsenic | mg/kg | 3 | **2.4 J** | **2.3 J** | 3.2 | 5.8 | **2.7** | 5 | 5.2 | 13.5 | **2.9** |
| Barium | mg/kg | 220,000 | **526 J** | **83.2 J** | **388** | **40.4** | **277** | **72.4** | **62.1** | **155** | **394** |
| Beryllium | mg/kg | 2,300 | **5.2** | 0.62 B | **3.8** | 0.36 B | **4** | 0.67 B | 1 B | 0.92 B | **3.7** |
| Cadmium | mg/kg | 980 | 0.37 B | 1.4 U | **1.3 J** | 1.6 U | 0.65 B | **0.23 J** | 1.6 U | 1.4 B | 0.59 B |
| Chromium | mg/kg | 120,000 | **28.7 J** | **17.1 J** | **149** | **19** | **410** | **28.6** | **37.2** | **679 J** | **292 J** |
| Chromium VI | mg/kg | 6.3 | 1.1 U | 1.2 U | 1.2 UJ | 1.3 UJ | 1.1 UJ | 1.2 UJ | 1.3 UJ | 1.1 U | 1.1 U |
| Cobalt | mg/kg | 350 | **5.1** | **5.8** | **3.2 J** | **5.3** | 4.7 B | **8.9** | **6.7** | **19.6 J** | **6.1 J** |
| Copper | mg/kg | 47,000 | **19** | **7.8** | **30.3** | **22.5** | **46.7** | **15.3** | **18.4** | **124 J** | **34.6 J** |
| Iron | mg/kg | 820,000 | **31,900 J** | **13,000 J** | **34,100** | **13,300** | **62,000** | **20,800** | **19,800** | **171,000 J** | **102,000 J** |
| Lead | mg/kg | 800 | **6.7** | **8.8** | **65.9 J** | **64.1 J** | **123 J** | **37 J** | **18.6 J** | **109 J** | **81.5 J** |
| Manganese | mg/kg | 26,000 | **6,530** | **135** | **9,200 J** | **77.7 J** | **9,510 J** | **509 J** | **218 J** | **25,200** | **13,200** |
| Mercury | mg/kg | 350 | 0.11 R | **0.0043 J-** | **0.038 J-** | **0.058 J-** | **0.0033 J-** | **0.057 J-** | **0.041 J-** | **0.039 J** | **0.0083 J** |
| Nickel | mg/kg | 22,000 | **7.1 J** | **12.9** | **7.6 J** | **10.1 J** | **34** | **12.8** | **17.8** | **39.1 J** | **19.8 J** |
| Selenium | mg/kg | 5,800 | **5.3** | 3.7 U | 3.7 B | 4.2 U | 2.9 B | 4.5 U | 4.3 U | 3.9 U | 3.3 U |
| Vanadium | mg/kg | 5,800 | **96 J** | **21 J** | **348 J** | **24.9 J** | **1,030 J** | **46.1 J** | **39.6 J** | **1,480** | **772** |
| Zinc | mg/kg | 350,000 | **21.7 J** | **30.3 J** | **303** | **76.7** | **163** | **82** | **60.8** | **594** | **123** |
| **Other** | | | | | | | | | | | |
| Cyanide | mg/kg | 150 | **0.73 J** | 0.62 UJ | **1.1** | 0.64 U | **0.094 J** | 0.72 U | 0.74 U | **0.59** | **1.4** |

**Detections in bold**

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Values in Red indicate an exceedance of the Project Action Limit (PAL)

**Table 7**
**Summary of Inorganics Detected in Soil**
**Tradepoint Atlantic**
**Sparrows Point, Maryland**

| Parameter | Units | PAL | A2-016-SB-1 | A2-016-SB-5 | A2-016-SB-8 | A2-017-SB-1 | A2-017-SB-5 | A2-018-SB-1 | A2-018-SB-4 | A2-020-SB-1 | A2-020-SB-5 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Metal** | | | | | | | | | | | |
| Aluminum | mg/kg | 1,100,000 | **24,100** | **6,420** | **7,420** | **6,200** | **7,270** | **12,000** | **14,600** | **15,100** | **11,100** |
| Antimony | mg/kg | 470 | 2.8 U | 2.8 U | 3.2 U | 2.6 UJ | 2.4 UJ | 3 UJ | 3.2 UJ | 3.1 U | 2.8 U |
| Arsenic | mg/kg | 3 | **3** | **7.5** | **9.6** | **5.5** | 1.8 B | **4.6 J** | 2.7 U | **4.3** | **9.8** |
| Barium | mg/kg | 220,000 | **227** | **100** | **44.7** | **74.2** | **69.4** | **115 J** | **286 J** | **133** | **24.4** |
| Beryllium | mg/kg | 2,300 | **3.4** | 0.45 B | 0.29 B | 0.37 B | **0.31 J** | 0.89 B | **1.7** | 0.95 B | 0.58 B |
| Cadmium | mg/kg | 980 | 0.57 B | 1 B | 0.77 B | 0.68 B | **1.3** | 0.65 B | 1.2 B | 0.31 B | 1.4 U |
| Chromium | mg/kg | 120,000 | **591** | **724** | **1,770** | **943** | **1,120** | **819 J** | **227 J** | **22.7** | **27.5** |
| Chromium VI | mg/kg | 6.3 | 1.1 UJ | 1.1 UJ | 1.1 UJ | 1.1 UJ | **1 J-** | 1 U | 1.1 U | 1.2 U | **0.53 J** |
| Cobalt | mg/kg | 350 | **6.2** | **16.5** | **7.2** | **12.9** | **5.8** | **11.4** | **5.3 J** | **6.4** | 3.7 B |
| Copper | mg/kg | 47,000 | **51.2** | **92.8** | **61.2** | **86** | **58.6** | **120** | **58.5** | **17.3** | **13.7** |
| Iron | mg/kg | 820,000 | **89,100** | **175,000** | **313,000** | **154,000** | **196,000** | **132,000 J** | **109,000 J** | **18,900** | **32,700** |
| Lead | mg/kg | 800 | **93.9** | **120** | **141** | **112 J** | **210 J** | **150** | **173** | **32.9** | **12.4** |
| Manganese | mg/kg | 26,000 | **14,000** | **51,200** | **29,800** | **21,100 J** | **42,200 J** | **17,300** | **42,700** | **1,060** | **72.4** |
| Mercury | mg/kg | 350 | **0.02 J-** | **0.33 J-** | **0.021 J-** | **0.12 J-** | **0.35 J-** | **0.079 J-** | **0.0052 J-** | **0.11 J-** | 0.12 UJ |
| Nickel | mg/kg | 22,000 | **18.9** | **41.6** | **38.5** | **46** | **31.7** | **35.2** | **20** | **11.8** | 8.9 B |
| Selenium | mg/kg | 5,800 | 3.7 U | 3.7 U | 4.2 U | 3.5 U | 3.2 U | 4 U | 4.3 U | 4.1 U | 3.7 U |
| Vanadium | mg/kg | 5,800 | **923** | **1,570** | **4,160** | **2,820 J** | **3,320 J** | **1,830 J** | **1,010 J** | **36.6** | **35.3** |
| Zinc | mg/kg | 350,000 | **182** | **262** | **98.7** | **228** | **142** | **346 J** | **301 J** | **132** | **34.9** |
| **Other** | | | | | | | | | | | |
| Cyanide | mg/kg | 150 | **0.72** | **0.17 J** | **0.56 J** | **0.68** | **0.37 J** | **1.2 J** | **0.7 J** | 0.67 UJ | 0.66 UJ |

**Detections in bold**

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Values in Red indicate an exceedance of the Project Action Limit (PAL)

**Table 7**
**Summary of Inorganics Detected in Soil**
**Tradepoint Atlantic**
**Sparrows Point, Maryland**

| Parameter | Units | PAL | A2-021-SB-1 | A2-021-SB-5 | A2-022-SB-1 | A2-022-SB-5 | A2-023-SB-1 | A2-023-SB-5 | A2-024-SB-1 | A2-024-SB-4 |
|---|---|---|---|---|---|---|---|---|---|---|
| **Metal** | | | | | | | | | | |
| Aluminum | mg/kg | 1,100,000 | **6,330** | **5,770** | **34,300** | **10,600** | **8,660** | **16,100** | **5,510** | **14,200** |
| Antimony | mg/kg | 470 | 3.1 UJ | 2.8 UJ | 1.4 B | 3.5 UJ | 2.7 U | 2.9 U | 2.9 U | 3.1 U |
| Arsenic | mg/kg | 3 | **2.7 J** | 5.8 J | 3 | 4 | 6.7 | 6.2 | 4 | 7.5 |
| Barium | mg/kg | 220,000 | **71.6 J** | **72.9 J** | **369** | **29.3** | **131** | **236** | **112** | **237** |
| Beryllium | mg/kg | 2,300 | 0.42 B | 0.22 B | **5.5** | 0.39 B | 0.53 B | **1.3** | **1.2** | 0.97 B |
| Cadmium | mg/kg | 980 | 0.81 B | 0.46 B | **0.35 J** | 1.7 U | 0.73 B | **5** | 1.4 U | **3.9** |
| Chromium | mg/kg | 120,000 | **984 J** | **1,100 J** | **7.5** | **18** | **1,070** | **732** | **17** | **1,160** |
| Chromium VI | mg/kg | 6.3 | **3.6** | 9 | 1.1 UJ | 1.2 UJ | 1.1 U | 1.2 U | 1.1 U | 1.1 U |
| Cobalt | mg/kg | 350 | **1.8 J** | 2.6 B | 1.9 B | **2.9 J** | **4 J** | **9.2** | **5.3** | **6.7** |
| Copper | mg/kg | 47,000 | **19.3** | **44.1** | **8** | **6.5** | **45.1** | **107** | **24.9** | **80.6** |
| Iron | mg/kg | 820,000 | **136,000 J** | **185,000 J** | **7,920** | **13,600** | **139,000** | **81,700** | **19,100** | **109,000** |
| Lead | mg/kg | 800 | **34.3** | **17.5** | **10 J** | **7.4 J** | **33** | **289** | **17.4** | 954 |
| Manganese | mg/kg | 26,000 | **23,900** | **22,500** | **2,590 J** | **94.1 J** | 59,900 | **20,800** | **417** | 28,600 |
| Mercury | mg/kg | 350 | **0.0083 J-** | 0.11 R | 0.11 R | 0.11 R | **0.0073 J-** | **0.039 J-** | **0.027 J-** | **0.019 J-** |
| Nickel | mg/kg | 22,000 | **12.4** | **17.6** | **3.8 J** | **6.1 J** | **17.4** | **32.6** | **15.2** | **23.7** |
| Selenium | mg/kg | 5,800 | 4.1 U | 3.7 U | 2.8 B | 4.6 U | 3.2 B | 3.9 U | 3.9 U | 4.1 U |
| Vanadium | mg/kg | 5,800 | **734 J** | **601 J** | **28.5 J** | **28.9 J** | **3,490** | **2,450** | **45.7** | **3,550** |
| Zinc | mg/kg | 350,000 | **281 J** | **136 J** | **31.5** | **22.1** | **166** | **930** | **86.9** | **782** |
| **Other** | | | | | | | | | | |
| Cyanide | mg/kg | 150 | **0.53 J** | **0.09 J** | 0.67 U | 0.63 U | **0.092 J-** | **1.7 J-** | **0.53 J-** | **0.89 J-** |

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**Table 7**
**Summary of Inorganics Detected in Soil**
**Tradepoint Atlantic**
**Sparrows Point, Maryland**

| Parameter | Units | PAL | A2-025-SB-1 | A2-025-SB-5 | A2-026-SB-1 | A2-026-SB-5 | A2-027-SB-1 | A2-027-SB-6 | A2-028-SB-1 | A2-028-SB-5 |
|---|---|---|---|---|---|---|---|---|---|---|
| **Metal** | | | | | | | | | | |
| Aluminum | mg/kg | 1,100,000 | **42,000** | **16,600** | **14,900** | **14,900** | **13,700** | **13,400** | **11,300** | **12,000** |
| Antimony | mg/kg | 470 | **1.3 J** | 3.1 UJ | 2.4 UJ | 3.6 UJ | 2.1 UJ | 3.2 UJ | 3 UJ | 2.6 UJ |
| Arsenic | mg/kg | 3 | 3.1 | 8.5 | 8 | 9.8 | 15.8 | 9.2 | 2.5 B | **2.4** |
| Barium | mg/kg | 220,000 | **717** | **41.2** | **132** | **62.3** | **39.7** | **51.7** | **39.6** | **28.8** |
| Beryllium | mg/kg | 2,300 | **5.2** | 0.7 B | 0.66 B | 0.49 B | **0.63 J** | 0.65 B | 0.38 B | 0.5 B |
| Cadmium | mg/kg | 980 | **0.39 J** | 0.21 B | 0.52 B | 1.8 U | 1.1 U | 1.6 U | 1.5 U | 1.3 U |
| Chromium | mg/kg | 120,000 | **8.9 J** | **36.7 J** | **255 J** | **70.3 J** | **26 J** | **21.9 J** | **22** | **21.6** |
| Chromium VI | mg/kg | 6.3 | 1.1 U | 1.2 U | 1.1 U | **0.82 J** | 1.2 U | 1.2 U | 1.2 U | 1.1 U |
| Cobalt | mg/kg | 350 | **2.3 J** | **5.2 J** | **6.4 J** | **6.9 J** | **4.1 J** | **6.3 J** | **3.8 J** | **5.1** |
| Copper | mg/kg | 47,000 | **8.5 J** | **23.8 J** | **29.1 J** | **23.4 J** | **14.7 J** | **18.1 J** | **9** | **9.6** |
| Iron | mg/kg | 820,000 | **9,920 J** | **18,400 J** | **53,400 J** | **31,900 J** | **17,500 J** | **20,700 J** | **12,100** | **8,980** |
| Lead | mg/kg | 800 | **4.4 J** | **17.7 J** | **48.3 J** | **24.1 J** | **13.6 J** | **13.9 J** | **14.6** | **7.6** |
| Manganese | mg/kg | 26,000 | **5,170** | **65** | **10,700** | **867** | **72** | **74.8** | **189 J** | **60 J** |
| Mercury | mg/kg | 350 | **0.0032 J** | **0.019 J** | **0.04 J** | **0.025 J** | **0.048 J** | **0.035 J** | **0.02 J-** | **0.013 J-** |
| Nickel | mg/kg | 22,000 | 4.8 B | **13.2 J** | **18.4 J** | **17.5 J** | **11.7 J** | **16.9 J** | **9.5 J** | **12.9** |
| Selenium | mg/kg | 5,800 | **4.8** | 4.1 U | 3.2 U | 4.8 U | 2.8 U | 4.3 U | 4.1 U | 3.4 U |
| Vanadium | mg/kg | 5,800 | **29.2** | **36.3** | **1,100** | **100** | **36.1** | **29.9** | **39.2 J** | **19.2 J** |
| Zinc | mg/kg | 350,000 | **26.6** | **52.2** | **231** | **145** | **35.8** | **53.3** | **53.9** | **44.8** |
| **Other** | | | | | | | | | | |
| Cyanide | mg/kg | 150 | **0.12 J** | 0.74 U | **0.48 J** | **0.3 J** | 0.67 U | 0.61 U | 0.57 U | **0.13 J+** |

**Detections in bold**

**U:** This analyte was not detected in the sample. The numeric value represents the sample quantitation/detection limit.

**UJ**: This analyte was not detected in the sample. The actual quantitation/detection limit may be higher than reported.

**J**: The positive result reported for this analyte is a quantitative estimate.

**J-**: The positive result reported for this analyte is a quantitative estimate, but may be biased low.

**J+**: The positive result reported for this analyte is a quantitative estimate, but may be biased high.

**B**: This analyte was not detected substantially above the level of the associated method blank/preparation or field blank.

**N/A**: This parameter was not analyzed for this sample.

**R**: The result for this analyte is unreliable. Additional data is needed to confirm or disprove the presence of this compound/analyte.

Values in Red indicate an exceedance of the Project Action Limit (PAL)

**Table 7**
**Summary of Inorganics Detected in Soil**
**Tradepoint Atlantic**
**Sparrows Point, Maryland**

| Parameter | Units | PAL | A2-029-SB-1 | A2-029-SB-5 | A2-030-SB-1 | A2-030-SB-5 | A2-031-SB-1 | A2-031-SB-5 | A2-031-SB-10 | A2-032-SB-4 |
|---|---|---|---|---|---|---|---|---|---|---|
| **Metal** | | | | | | | | | | |
| Aluminum | mg/kg | 1,100,000 | **14,800** | **13,400** | **15,900** | **14,700** | **22,400** | **16,900** | N/A | **27,100** |
| Antimony | mg/kg | 470 | 3.2 UJ | 2.5 UJ | 2.9 UJ | 2.7 UJ | 3.3 UJ | 2.9 UJ | N/A | 3.3 UJ |
| Arsenic | mg/kg | 3 | 6.8 | 5.5 | 6.4 | 4.8 | 9.4 | 5.8 | 4.2 | 4.1 J |
| Barium | mg/kg | 220,000 | **55.5** | **37.5** | **88.1** | **38.9** | **70.1** | **51.7** | N/A | **347 J** |
| Beryllium | mg/kg | 2,300 | 0.58 B | 0.35 B | 0.64 B | 0.42 B | 0.81 B | 0.59 B | N/A | **3.1** |
| Cadmium | mg/kg | 980 | 1.6 U | 1.2 U | **0.26 J** | 1.4 U | **0.24 J** | 1.5 U | N/A | 1.4 B |
| Chromium | mg/kg | 120,000 | **38.1** | **19.6** | **28.5** | **31.3** | **34.9** | **37.8** | N/A | **318 J** |
| Chromium VI | mg/kg | 6.3 | 1.2 U | 1.3 U | 1.1 U | 1.1 U | 1.3 U | **0.76 J** | N/A | 1.1 U |
| Cobalt | mg/kg | 350 | **4.9 J** | **4.1** | 7.7 | **6.3** | 7.7 | **6.1** | N/A | **6.7** |
| Copper | mg/kg | 47,000 | **15.4** | **10.6** | **25** | **14.1** | **20.5** | **14.2** | N/A | **38** |
| Iron | mg/kg | 820,000 | **21,200** | **15,100** | **19,500** | **17,800** | **25,900** | **18,200** | N/A | **72,500 J** |
| Lead | mg/kg | 800 | **25** | **10.3** | **78.9** | **13.4** | **33.7** | **13.9** | N/A | **69.8** |
| Manganese | mg/kg | 26,000 | **230 J** | **64.3 J** | **222 J** | **173 J** | **560 J** | **83.6 J** | N/A | **12,200** |
| Mercury | mg/kg | 350 | **0.033 J-** | **0.017 J-** | **0.59 J-** | **0.042 J-** | **0.058 J-** | **0.02 J-** | N/A | **0.0099 J-** |
| Nickel | mg/kg | 22,000 | **12.6** | **11.3** | **14.2** | **17.6** | **17.8** | **15.5** | N/A | **14.2** |
| Selenium | mg/kg | 5,800 | 4.2 U | 3.3 U | 3.9 U | 3.6 U | 4.4 U | 3.9 U | N/A | 2.7 B |
| Vanadium | mg/kg | 5,800 | **61.7 J** | **22.8 J** | **35.7 J** | **27.9 J** | **72 J** | **31 J** | N/A | **517 J** |
| Zinc | mg/kg | 350,000 | **73.7** | **34.4** | **117** | **41** | **121** | **43.4** | N/A | **602 J** |
| **Other** | | | | | | | | | | |
| Cyanide | mg/kg | 150 | **0.46 J+** | 0.73 U | 0.68 U | **0.19 J+** | 0.68 U | 0.61 U | N/A | **0.3 J** |

**Detections in bold**

**U:** This analyte was not detected in the sample. The numeric value represents the sample quantitation/detection limit.

**UJ**: This analyte was not detected in the sample. The actual quantitation/detection limit may be higher than reported.

**J**: The positive result reported for this analyte is a quantitative estimate.

**J-**: The positive result reported for this analyte is a quantitative estimate, but may be biased low.

**J+**: The positive result reported for this analyte is a quantitative estimate, but may be biased high.

**B**: This analyte was not detected substantially above the level of the associated method blank/preparation or field blank.

**N/A**: This parameter was not analyzed for this sample.

**R**: The result for this analyte is unreliable. Additional data is needed to confirm or disprove the presence of this compound/analyte.

Values in Red indicate an exceedance of the Project Action Limit (PAL)

**Table 7**
**Summary of Inorganics Detected in Soil**
**Tradepoint Atlantic**
**Sparrows Point, Maryland**

| Parameter | Units | PAL | A2-032-SB-5 | A2-033-SB-1 | A2-033-SB-4 | A2-034-SB-1 | A2-034-SB-3 | A2-034-SB-5 | A2-042-SB-1 | A2-042-SB-6 |
|---|---|---|---|---|---|---|---|---|---|---|
| **Metal** | | | | | | | | | | |
| Aluminum | mg/kg | 1,100,000 | **13,200** | **19,000** | **7,240** | **15,300** | **8,940** | **11,100** | **15,700** | **36,600** |
| Antimony | mg/kg | 470 | 2.9 UJ | 2.9 U | 2.7 U | 2.1 UJ | 2.9 UJ | 3 UJ | 3.2 UJ | 2.8 UJ |
| Arsenic | mg/kg | 3 | **2.7 J** | **4.4** | **6** | **11** | **5.1** | **5.6** | **6.8** | 2.3 U |
| Barium | mg/kg | 220,000 | **183 J** | **176** | **65.1** | **184 J** | **72.3 J** | **124 J** | **223** | **490** |
| Beryllium | mg/kg | 2,300 | 0.68 B | **2.8** | 0.33 B | **0.85** | 0.61 B | 0.72 B | **1.2** | **5** |
| Cadmium | mg/kg | 980 | 1.5 U | 1.1 B | 0.48 B | **1.8** | 0.81 B | **0.77 J** | **2.4** | 0.51 B |
| Chromium | mg/kg | 120,000 | **22.6 J** | **636** | **986** | **1,040** | **608** | **863** | **448 J** | **27.5 J** |
| Chromium VI | mg/kg | 6.3 | 1.1 U | 1.1 U | 1.1 U | 1.1 UJ | 1.1 UJ | 1.1 UJ | 1.1 U | 1.1 U |
| Cobalt | mg/kg | 350 | **6.2** | **9.4** | **14.4** | **16.7** | **17.5** | **6.4** | **7.3 J** | 2 B |
| Copper | mg/kg | 47,000 | **9.4** | **67.1** | **80.3** | **159** | **90.6** | **60** | **75.3 J** | **6.2 J** |
| Iron | mg/kg | 820,000 | **12,200 J** | **93,700** | **187,000** | **208,000** | **160,000** | **164,000** | **105,000 J** | **25,900 J** |
| Lead | mg/kg | 800 | **10.5** | **134** | **85.5** | **304** | **163** | **65.4** | **175 J** | **5.3 J** |
| Manganese | mg/kg | 26,000 | **148** | **16,800** | **23,100** | **32,800** | **30,300** | **18,700** | **17,000** | **6,550** |
| Mercury | mg/kg | 350 | **0.0033 J-** | **0.02 J-** | **0.084 J-** | **0.066 J-** | **0.1 J-** | **0.027 J-** | **0.041 J** | 0.1 U |
| Nickel | mg/kg | 22,000 | **14.7** | **28** | **41.7** | **84** | **27** | **58.5** | **25.7 J** | 3.6 B |
| Selenium | mg/kg | 5,800 | 3.9 U | 2.3 B | 3.6 U | **1.9 J** | 3.8 U | 4 U | 4.3 U | **3.8** |
| Vanadium | mg/kg | 5,800 | **27.2 J** | **1,800** | **3,700** | **2,030 J** | **2,090 J** | **2,540 J** | **994** | **115** |
| Zinc | mg/kg | 350,000 | **42 J** | **348** | **167** | **530** | **308** | **264** | **719** | **38.6** |
| **Other** | | | | | | | | | | |
| Cyanide | mg/kg | 150 | 0.56 UJ | **0.45 J-** | **0.23 J** | **0.7** | N/A | **0.62** | **0.36 J** | **0.36 J** |

**Detections in bold**

**U:** This analyte was not detected in the sample. The numeric value represents the sample quantitation/detection limit.

**UJ**: This analyte was not detected in the sample. The actual quantitation/detection limit may be higher than reported.

**J**: The positive result reported for this analyte is a quantitative estimate.

**J-**: The positive result reported for this analyte is a quantitative estimate, but may be biased low.

**J+**: The positive result reported for this analyte is a quantitative estimate, but may be biased high.

**B**: This analyte was not detected substantially above the level of the associated method blank/preparation or field blank.

**N/A**: This parameter was not analyzed for this sample.

**R**: The result for this analyte is unreliable. Additional data is needed to confirm or disprove the presence of this compound/analyte.

Values in Red indicate an exceedance of the Project Action Limit (PAL)

| TABLE 8<br>SUMMARY OF SOIL PAL EXCEEDANCES | | | | | | |
|---|---|---|---|---|---|---|
| **Parameter** | **CAS#** | **Frequency of Detections (%)** | **Sample ID of Max Result** | **Unit** | **PAL Solid** | **Max Result** |
| Arsenic | 7440-38-2 | 92 | A2-027-SB-1 | mg/kg | 3.0 | 15.8 |
| Benzo[a]pyrene | 50-32-8 | 73 | A2-016-SB-1 | mg/kg | 2.10 | 4.1 |
| Chromium VI | 18540-29-9 | 12 | A2-021-SB-5 | mg/kg | 6.3 | 9 |
| Lead | 7439-92-1 | 100 | A2-024-SB-4 | mg/kg | 800 | 954 |
| Manganese | 7439-96-5 | 100 | A2-023-SB-1 | mg/kg | 26,000 | 59,900 |

**TABLE 9**
**SOIL PAL EXCEEDANCES FOR SPECIFIC TARGETS**

| Target Feature | Boring ID | Sample Depth (ft) | Parameter | PAL (mg/kg) | Result (mg/kg) | Final Flag |
|---|---|---|---|---|---|---|
| Dredge Disposal Dike | A2-020-SB | 1 | Arsenic | 3 | 4.3 | |
| | | 5 | Arsenic | 3 | 9.8 | |
| | A2-021-SB | 5 | Arsenic | 3 | 5.8 | J |
| | | 5 | Chromium VI | 6.3 | 9.0 | |
| Electric Substation | A2-015-SB | 1 | Arsenic | 3 | 13.5 | |
| | A2-042-SB | 1 | Arsenic | 3 | 6.8 | |
| Truck Loading Bays | A2-032-SB | 4 | Arsenic | 3 | 4.1 | J |
| | A2-033-SB | 1 | Arsenic | 3 | 4.4 | |
| | | 4 | Arsenic | 3 | 6.0 | |
| | A2-034-SB | 1 | Arsenic | 3 | 11.0 | |
| | | 1 | Manganese | 26,000 | 32,800 | |
| | | 3 | Arsenic | 3 | 5.1 | |
| | | 3 | Manganese | 26,000 | 30,300 | |
| | | 5 | Arsenic | 3 | 5.6 | |

J = The positive result reported for this analyte is a quantitative estimate.

**Table 10**
**Summary of Organics Detected in Groundwater**
**Tradepoint Atlantic**
**Sparrows Point, Maryland**

| Parameter | Units | PAL | A2-013-PZ | A2-022-PZ | A2-025-PZ | A2-031-PZ |
|---|---|---|---|---|---|---|
| **Volatile Organic Compounds** | | | | | | |
| 1,1-Dichloroethane | µg/L | 2.7 | **2.4** | 1 U | 1 U | 1 U |
| Carbon disulfide | µg/L | 810 | **0.45 J** | 1 U | 1 U | **1** |
| Methyl tert-butyl ether (MTBE) | µg/L | 14 | **0.79 J** | 1 U | 1 U | 1 U |
| **Semi-Volatile Organic Compounds^** | | | | | | |
| 1,4-Dioxane | µg/L | 0.46 | 1.3 | **0.37** | 0.1 U | **0.048 J** |
| Acenaphthene | µg/L | 530 | 0.1 U | **1.1** | 0.1 U | 0.1 U |
| Anthracene | µg/L | 1,800 | 0.1 U | **0.026 J** | 0.1 U | 0.1 U |
| bis(2-Ethylhexyl)phthalate | µg/L | 6 | **0.26 J** | **0.29 J** | **0.22 J** | **0.26 J** |
| Fluoranthene | µg/L | 800 | 0.1 U | **0.26** | 0.1 U | 0.1 U |
| Fluorene | µg/L | 290 | 0.1 U | **1.2** | 0.1 U | 0.1 U |
| Naphthalene | µg/L | 0.17 | **0.034 J** | **0.033 J** | **0.034 J** | 0.1 U |
| Phenanthrene | µg/L | | 0.1 U | **0.14** | 0.1 U | 0.1 U |
| Pyrene | µg/L | 120 | 0.1 U | **0.15** | 0.1 U | 0.1 U |
| **TPH/Oil and Grease** | | | | | | |
| Oil and Grease | µg/L | 47 | 1,000 J | 1,500 J | 1,000 J | 1,200 J |

**Detections in bold**

**U:** This analyte was not detected in the sample. The numeric value represents the sample quantitation/detection limit.

**J**: The positive result reported for this analyte is a quantitative estimate, but may be biased low.

Values in Red indicate an exceedance of the Project Action Limit (PAL)

^PAH compounds were analyzed via SIM

**Table 11**
**Summary of Inorganics Detected in Groundwater**
**Tradepoint Atlantic**
**Sparrows Point, Maryland**

| Parameter | Units | PAL | A2-013-PZ | A2-022-PZ | A2-025-PZ | A2-031-PZ |
|---|---|---|---|---|---|---|
| **Metal, Dissolved** | | | | | | |
| Aluminum, Dissolved | µg/L | 20,000 | 50 U | 50 U | 25.9 B | 19.3 B |
| Arsenic, Dissolved | µg/L | 10 | 12.5 J | **9.4 J** | 5 U | **5.9 J** |
| Barium, Dissolved | µg/L | 2,000 | **77.2** | **46** | **76.6** | **28.4** |
| Cadmium, Dissolved | µg/L | 5 | **0.61 J** | 0.52 B | 0.76 B | 3 U |
| Chromium, Dissolved | µg/L | 100 | 5 U | 5 U | **3 J** | 5 U |
| Cobalt, Dissolved | µg/L | 6 | 8.6 | 5 U | 5 U | 6.6 |
| Copper, Dissolved | µg/L | 1,300 | 2.5 B | 5 U | 6.3 B | 5 U |
| Iron, Dissolved | µg/L | 14,000 | 96,300 | **12,000** | **92.6** | **12,100** |
| Manganese, Dissolved | µg/L | 430 | 9,140 | **365** | **22.8** | 984 |
| Nickel, Dissolved | µg/L | 390 | **5.7 J** | **1.5 J** | **1.8 J** | **9.8 J** |
| Selenium, Dissolved | µg/L | 50 | 8 U | 8 U | **8.2** | 8 U |
| Silver, Dissolved | µg/L | 94 | 2.1 B | 6 U | 6 U | 6 U |
| Vanadium, Dissolved | µg/L | 86 | **3.3 J** | 0.85 B | **11.1** | 0.6 B |
| Zinc, Dissolved | µg/L | 6,000 | 6.7 B | 1.1 B | 1.6 B | 6.8 B |

**Detections in bold**
**U:** This analyte was not detected in the sample. The numeric value represents the sample quantitation/detection limit.
**J**: The positive result reported for this analyte is a quantitative estimate, but may be biased low.
**B**: This analyte was not detected substantially above the level of the associated method blank/preparation or field blank.
Values in Red indicate an exceedance of the Project Action Limit (PAL)

**Table 12**
**Cumulative Vapor Intrusion Comparison**

| Parameter | Type | Organ Systems | VI Screening Criteria (ug/L) | A2-013-PZ | | A2-022-PZ | | A2-025-PZ | | A2-031-PZ | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Conc. (ug/L) | Cancer Risk | Conc. (ug/L) | Cancer Risk | Conc. (ug/L) | Cancer Risk | Conc. (ug/L) | Cancer Risk |
| **Cancer Risk** | | | | | | | | | | | |
| 1,4-Dioxane | SVOC | | 130,000 | 1.3 | 1.0E-10 | 0.37 | 2.8E-11 | 0.1 U | 0 | 0.048 J | 3.7E-12 |
| Naphthalene | SVOC | | 200 | 0.034 J | 1.7E-09 | 0.033 J | 1.7E-09 | 0.034 J | 1.7E-09 | 0.1 U | 0 |
| 1,1-Dichloroethane | VOC | | 330 | 2.4 | 7.3E-08 | 1 U | 0 | 1 U | 0 | 1 U | 0 |
| Methyl tert-butyl ether (MTBE) | VOC | | 20,000 | 0.79 J | 4.0E-10 | 1 U | 0 | 1 U | 0 | 1 U | 0 |
| Cumulative Vapor Intrusion Cancer Risk | | | | | 7E-08 | | 2E-09 | | 2E-09 | | 4E-12 |

Highlighted values indicate exceedances of the cumulative vapor intrusion criteria TCR > 1E-05 (none)
Conc. = Concentration
U: This analyte was not detected in the sample. The numeric value represents the sample quantitation/detection limit.
J: The positive result reported for this analyte is a quantitative estimate.

**Table 13**
**Summary of VOCs Detected in Sub-Slab Soil Gas**
**Reservoir Road Warehouse**
**Tradepoint Atlantic**
**Sparrows Point, Maryland**

| Parameter | Units | PAL | A2-001-SG | A2-002-SG | A2-003-SG | A2-004-SG | A2-005-SG |
|---|---|---|---|---|---|---|---|
| **Volatile Organic Compounds** | | | | | | | |
| 1,1,1-Trichloroethane | µg/m3 | 2,200,000 | 1.09 U | 1.09 U | 1.09 U | 1.09 U | 1.09 U |
| 1,2,4-Trimethylbenzene* | µg/m3 | 3,100 | **5.59** | **1.01** | 0.98 U | 0.98 U | 0.98 U |
| 1,3,5-Trimethylbenzene* | µg/m3 | 2,200 | **1.19** | 0.98 U | 0.98 U | 0.98 U | 0.98 U |
| 2-Butanone (MEK) | µg/m3 | 2,200,000 | **32.1** | **12.4** | **24.7** | **33.9** | **15.1** |
| 4-Methyl-2-pentanone (MIBK) | µg/m3 | 1,400,000 | 0.82 U | **0.86** | 0.82 U | **1.27** | 0.82 U |
| Acetone | µg/m3 | 14,000,000 | **149** | **87.9** | **177** | **136** | **108** |
| Benzene | µg/m3 | 1,600 | **5.75** | **2.08** | **9.81** | **1.82** | **5.43** |
| Bromodichloromethane | µg/m3 | | **2.88** | **6.97** | **2.81** | **2.61** | **3.55** |
| Carbon disulfide | µg/m3 | 310,000 | **110** | **47.7** | **159** | **107** | **39** |
| Chloroform | µg/m3 | 540 | **17.7** | **51.8** | **26.8** | **15** | **31.6** |
| Chloromethane | µg/m3 | 40,000 | **0.43** | 0.41 U | **0.58** | **0.41** | 0.41 U |
| Dichlorodifluoromethane* | µg/m3 | 44,000 | **6.8** | **6.24** | **2.75** | **2.66** | **2.66** |
| Ethylbenzene | µg/m3 | 5,000 | **5.82** | **1.56** | **0.91** | 0.87 U | **0.91** |
| Methyl tert-butyl ether (MTBE) | µg/m3 | 48,000 | 0.72 U | 0.72 U | 0.72 U | 0.72 U | 0.72 U |
| Methylene Chloride | µg/m3 | 270,000 | **22.9** | **22.9** | **4.93** | **7.3** | **5.2** |
| Naphthalene* | µg/m3 | 370 | 2.62 U | **1.65 J** | 2.62 U | **1.62 J** | **1.14 J** |
| Tetrachloroethene | µg/m3 | 18,000 | 1.36 U | 1.36 U | 1.36 U | 1.36 U | 1.36 U |
| Toluene | µg/m3 | 2,200,000 | **21.3** | **14.4** | **42** | **9.53** | **57** |
| Trichloroethene | µg/m3 | 880 | 1.07 U | **3.01** | **2.58** | 1.07 U | 1.07 U |
| Trichlorofluoromethane* | µg/m3 | 310,000 | **1.52** | **1.62** | **1.42** | **1.26** | **1.97** |
| Xylenes | µg/m3 | 44,000 | **19.5** | **6.82** | **3.82** | **2.74** | **3.52** |

**Detections in bold**
* indicates non-validated data result
U: This analyte was not detected in the sample. The numeric value represents the sample quantitation/detection limit.
J: The positive result reported for this analyte is a quantitative estimate.
Values in red indicate an exceedance of the Project Action Limit (PAL)

**Table 13**
**Summary of VOCs Detected in Sub-Slab Soil Gas**
**Reservoir Road Warehouse**
**Tradepoint Atlantic**
**Sparrows Point, Maryland**

| Parameter | Units | PAL | A2-006-SG | A2-007-SG | A2-008-SG | A2-035-SG | A2-036-SG |
|---|---|---|---|---|---|---|---|
| **Volatile Organic Compounds** | | | | | | | |
| 1,1,1-Trichloroethane | µg/m3 | 2,200,000 | 1.09 U | 1.09 U | 1.09 U | 1.09 U | 1.09 U |
| 1,2,4-Trimethylbenzene* | µg/m3 | 3,100 | 0.98 U | 0.98 U | 0.98 U | **1.46** | 0.98 U |
| 1,3,5-Trimethylbenzene* | µg/m3 | 2,200 | 0.98 U | 0.98 U | 0.98 U | 0.98 U | 0.98 U |
| 2-Butanone (MEK) | µg/m3 | 2,200,000 | **32.4** | **25.1** | **24.9** | **72.2** | **38.3** |
| 4-Methyl-2-pentanone (MIBK) | µg/m3 | 1,400,000 | **1.68** | 0.82 U | 0.82 U | 0.82 U | 0.82 U |
| Acetone | µg/m3 | 14,000,000 | **154** | **134** | **134** | **210** | **194** |
| Benzene | µg/m3 | 1,600 | **4.09** | **2.91** | **4.82** | **2.97** | **2.62** |
| Bromodichloromethane | µg/m3 | | **2.14** | **1.54** | **5.03** | **2.01** | **2.95** |
| Carbon disulfide | µg/m3 | 310,000 | **42.9** | **30.9** | **57.6** | **72.9** | **71.4** |
| Chloroform | µg/m3 | 540 | **12.7** | **4.59** | **42** | **16** | **22.6** |
| Chloromethane | µg/m3 | 40,000 | **0.43** | 0.41 U | 0.41 U | 0.41 U | **0.43** |
| Dichlorodifluoromethane* | µg/m3 | 44,000 | **8.88** | **2.72** | **2.65** | **6.41** | **2.64** |
| Ethylbenzene | µg/m3 | 5,000 | **1.04** | **1.09** | **0.96** | **1.91** | 0.87 U |
| Methyl tert-butyl ether (MTBE) | µg/m3 | 48,000 | **1.69** | 0.72 U | 0.72 U | 0.72 U | 0.72 U |
| Methylene Chloride | µg/m3 | 270,000 | **30.9** | **3.81** | **8.93** | **22.8** | **8.19** |
| Naphthalene* | µg/m3 | 370 | 2.62 U | 2.62 U | **1.45 J** | **1.63 J** | **2.24 J** |
| Tetrachloroethene | µg/m3 | 18,000 | 1.36 U | 1.36 U | 1.36 U | 1.36 U | 1.36 U |
| Toluene | µg/m3 | 2,200,000 | **15.6** | **20.3** | **30.8** | **42.6** | **17.9** |
| Trichloroethene | µg/m3 | 880 | 1.07 U | 1.07 U | 1.07 U | 1.07 U | 1.07 U |
| Trichlorofluoromethane* | µg/m3 | 310,000 | **2.04** | **1.23** | **1.42** | **1.53** | **1.28** |
| Xylenes | µg/m3 | 44,000 | **3.78** | **4.3** | **3.69** | **8.03** | **2.69** |

**Detections in bold**

* indicates non-validated data result

U: This analyte was not detected in the sample. The numeric value represents the sample quantitation/detection limit.

J: The positive result reported for this analyte is a quantitative estimate.

Values in red indicate an exceedance of the Project Action Limit (PAL)

**Table 13**
**Summary of VOCs Detected in Sub-Slab Soil Gas**
**Reservoir Road Warehouse**
**Tradepoint Atlantic**
**Sparrows Point, Maryland**

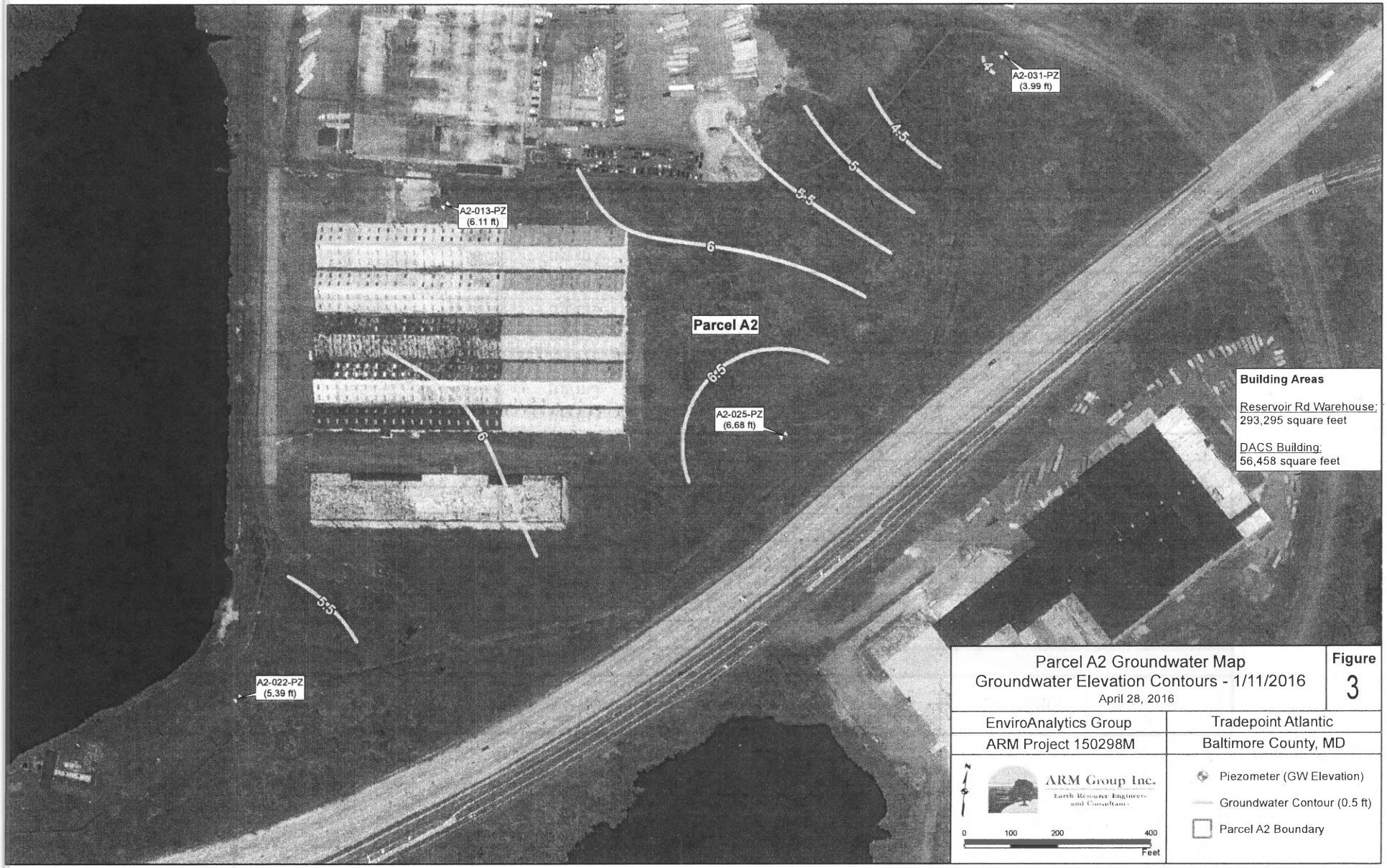
| Parameter | Units | PAL | A2-037-SG | A2-038-SG | A2-039-SG | A2-040-SG | A2-041-SG |
|---|---|---|---|---|---|---|---|
| **Volatile Organic Compounds** | | | | | | | |
| 1,1,1-Trichloroethane | µg/m3 | 2,200,000 | 1.09 U | 1.09 U | **3.55** | 1.09 U | 1.09 U |
| 1,2,4-Trimethylbenzene* | µg/m3 | 3,100 | 0.98 U | **0.99** | 0.98 U | 0.98 U | 0.98 U |
| 1,3,5-Trimethylbenzene* | µg/m3 | 2,200 | 0.98 U | 0.98 U | 0.98 U | 0.98 U | 0.98 U |
| 2-Butanone (MEK) | µg/m3 | 2,200,000 | **23.3** | **54.5** | **24** | **34.6** | **22.3** |
| 4-Methyl-2-pentanone (MIBK) | µg/m3 | 1,400,000 | **1.43** | **0.9** | 0.82 U | 0.82 U | 0.82 U |
| Acetone | µg/m3 | 14,000,000 | **175** | **215** | **137** | **160** | **165** |
| Benzene | µg/m3 | 1,600 | **3.16** | **2.65** | **3** | **5.24** | **4.38** |
| Bromodichloromethane | µg/m3 | | **4.96** | **3.82** | **2.01** | **3.69** | **3.02** |
| Carbon disulfide | µg/m3 | 310,000 | **47.1** | **74.5** | **28.4** | **64.9** | **46.2** |
| Chloroform | µg/m3 | 540 | **30.2** | **23.6** | **12.1** | **16.1** | **13.3** |
| Chloromethane | µg/m3 | 40,000 | **0.5** | **0.45** | 0.41 U | **0.45** | 0.41 U |
| Dichlorodifluoromethane* | µg/m3 | 44,000 | **4.41** | **3.67** | **5.24** | **2.71** | **2.58** |
| Ethylbenzene | µg/m3 | 5,000 | **0.96** | **1.35** | **1.17** | **0.91** | **1.04** |
| Methyl tert-butyl ether (MTBE) | µg/m3 | 48,000 | **1.26** | 0.72 U | 0.72 U | 0.72 U | 0.72 U |
| Methylene Chloride | µg/m3 | 270,000 | **20.3** | **10.9** | **15.5** | **3.46** | **3.57** |
| Naphthalene* | µg/m3 | 370 | **2.61 J** | **2.24 J** | **1.59 J** | **2.01 J** | **1.62 J** |
| Tetrachloroethene | µg/m3 | 18,000 | **1.9** | 1.36 U | 1.36 U | 1.36 U | 1.36 U |
| Toluene | µg/m3 | 2,200,000 | **16.4** | **43.3** | **45.9** | **34** | **48.7** |
| Trichloroethene | µg/m3 | 880 | 1.07 U | 1.07 U | 1.07 U | 1.07 U | 1.07 U |
| Trichlorofluoromethane* | µg/m3 | 310,000 | **1.58** | **1.31** | **1.79** | **1.26** | **1.52** |
| Xylenes | µg/m3 | 44,000 | **4.39** | **5.21** | **4.65** | **3.47** | **4.39** |

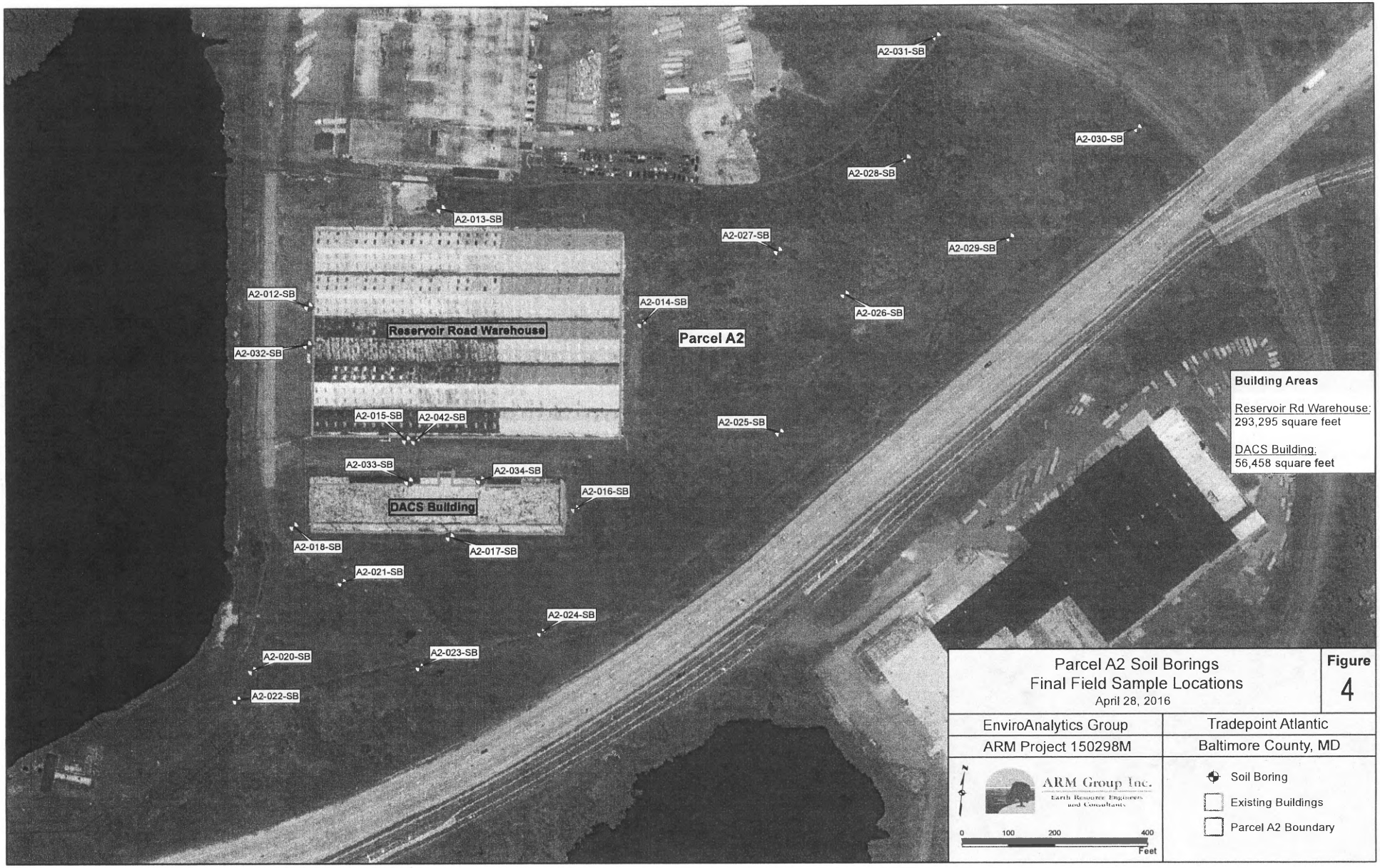
**Detections in bold**
* indicates non-validated data result
U: This analyte was not detected in the sample. The numeric value represents the sample quantitation/detection limit.
J: The positive result reported for this analyte is a quantitative estimate.
Values in red indicate an exceedance of the Project Action Limit (PAL)

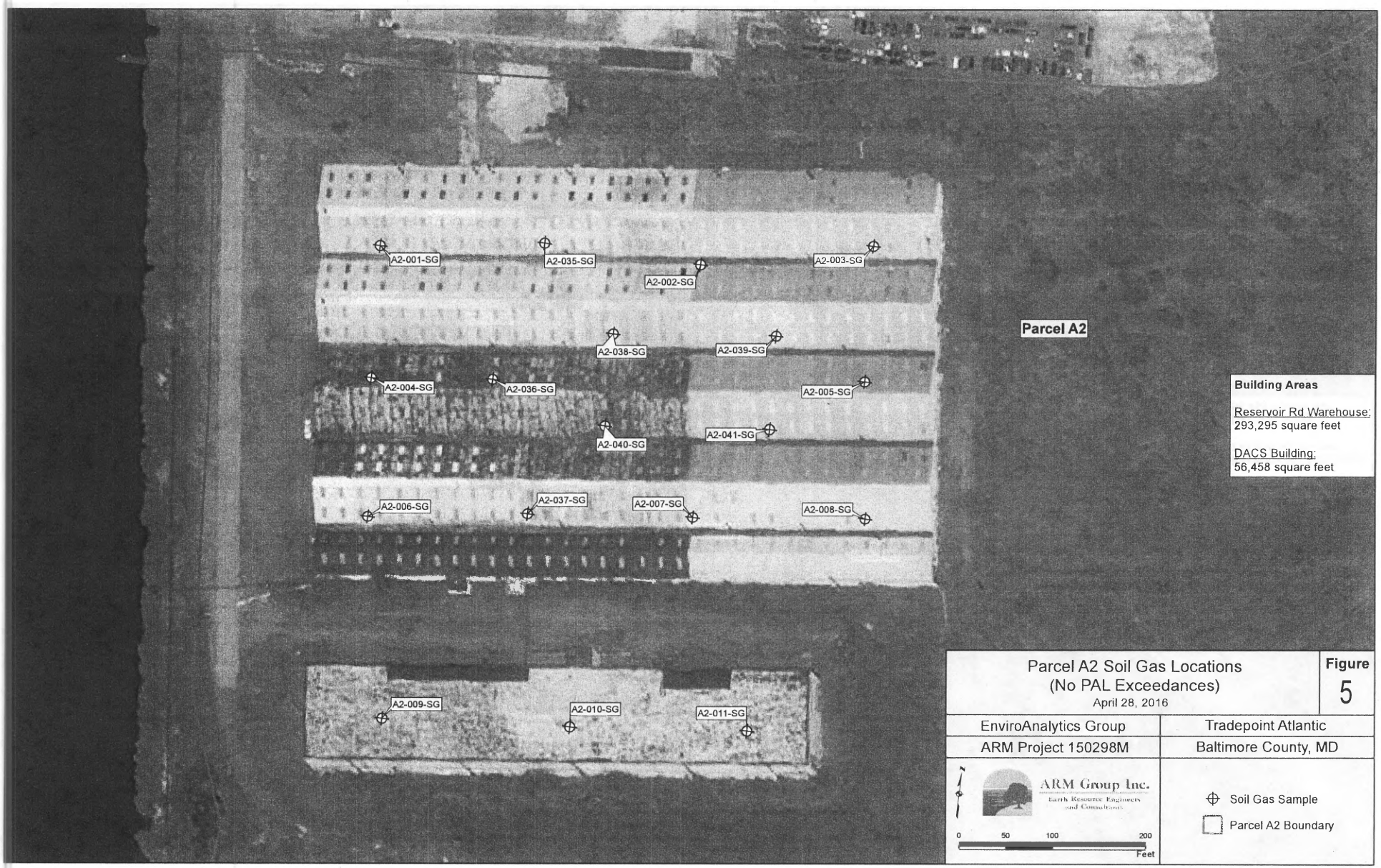
**Table 14**
**Summary of VOCs Detected in Sub-Slab Soil Gas**
**DACS Building**
**Tradepoint Atlantic**
**Sparrows Point, Maryland**

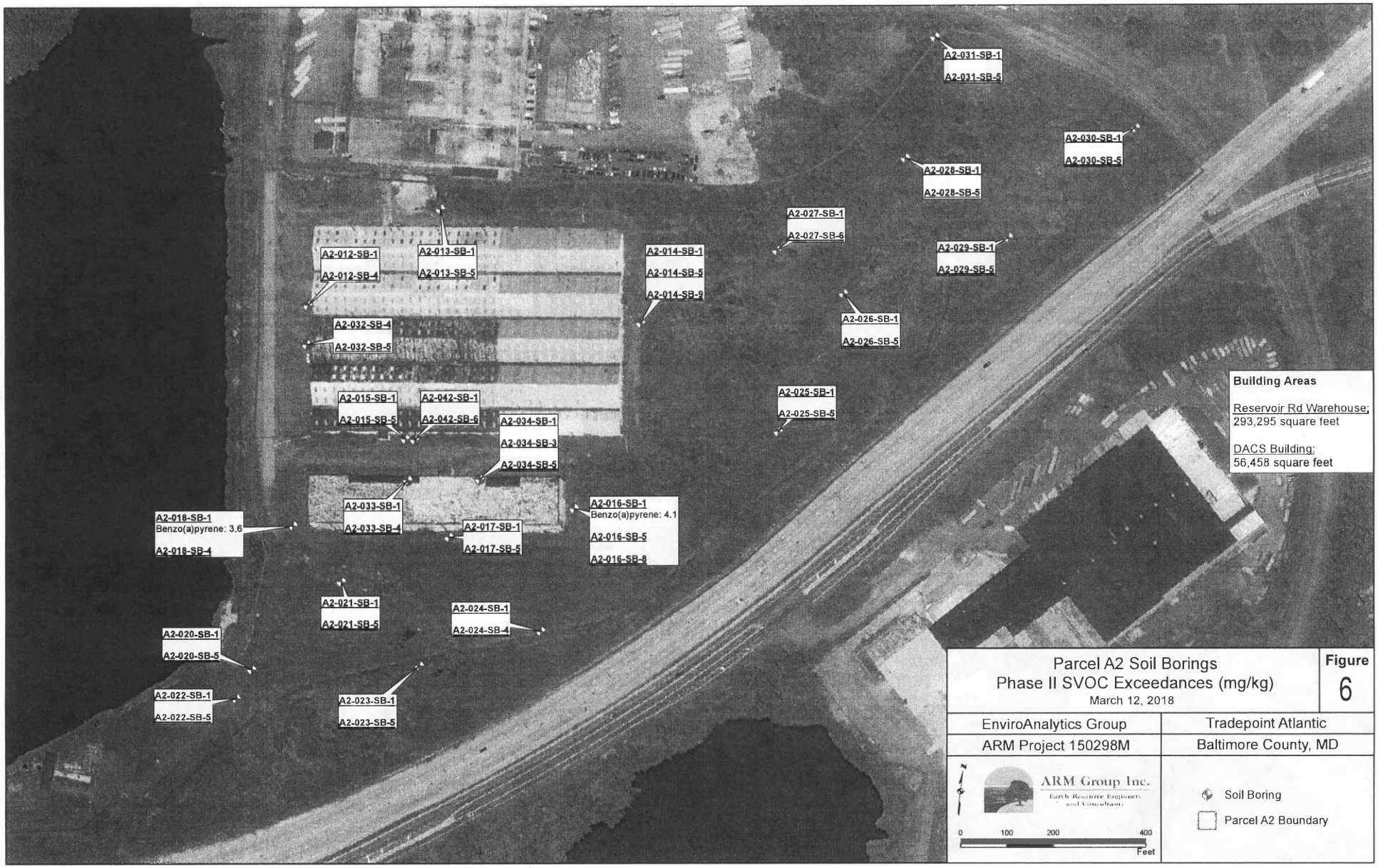
| Parameter | Units | PAL | A2-009-SG | A2-010-SG | A2-011-SG |
|---|---|---|---|---|---|
| **Volatile Organic Compounds** | | | | | |
| 2-Butanone (MEK) | µg/m3 | 2,200,000 | **20.9** | **6.69** | **21** |
| 4-Methyl-2-pentanone (MIBK) | µg/m3 | 1,400,000 | **1.76** | 0.82 U | **1.68** |
| Acetone | µg/m3 | 14,000,000 | **146** | **54.5** | **130** |
| Benzene | µg/m3 | 1,600 | **5.53** | **1.76** | **9.58** |
| Bromodichloromethane | µg/m3 | | **7.5** | **3.62** | **3.48** |
| Carbon disulfide | µg/m3 | 310,000 | **40.4** | **33.6** | **76.9** |
| Chloroform | µg/m3 | 540 | **46.1** | **43.7** | **20.3** |
| Chloromethane | µg/m3 | 40,000 | **0.54** | **0.43** | **0.52** |
| Dichlorodifluoromethane* | µg/m3 | 44,000 | **2.8** | **2.9** | **10.1** |
| Ethylbenzene | µg/m3 | 5,000 | **8.21** | **4.34** | **7.3** |
| Methyl tert-butyl ether (MTBE) | µg/m3 | 48,000 | **1.77** | **1.37** | **1.87** |
| Methylene Chloride | µg/m3 | 270,000 | **16.3** | **14.7** | **31.8** |
| Tetrachloroethene | µg/m3 | 18,000 | **1.42** | 1.36 U | 1.36 U |
| Toluene | µg/m3 | 2,200,000 | **19.4** | **14.3** | **21.1** |
| Trichloroethene | µg/m3 | 880 | **2.47** | **1.18** | 1.07 U |
| Trichlorofluoromethane* | µg/m3 | 310,000 | **6.47** | **3.42** | **3.32** |
| Xylenes | µg/m3 | 44,000 | **32.8** | **16.2** | **29.1** |

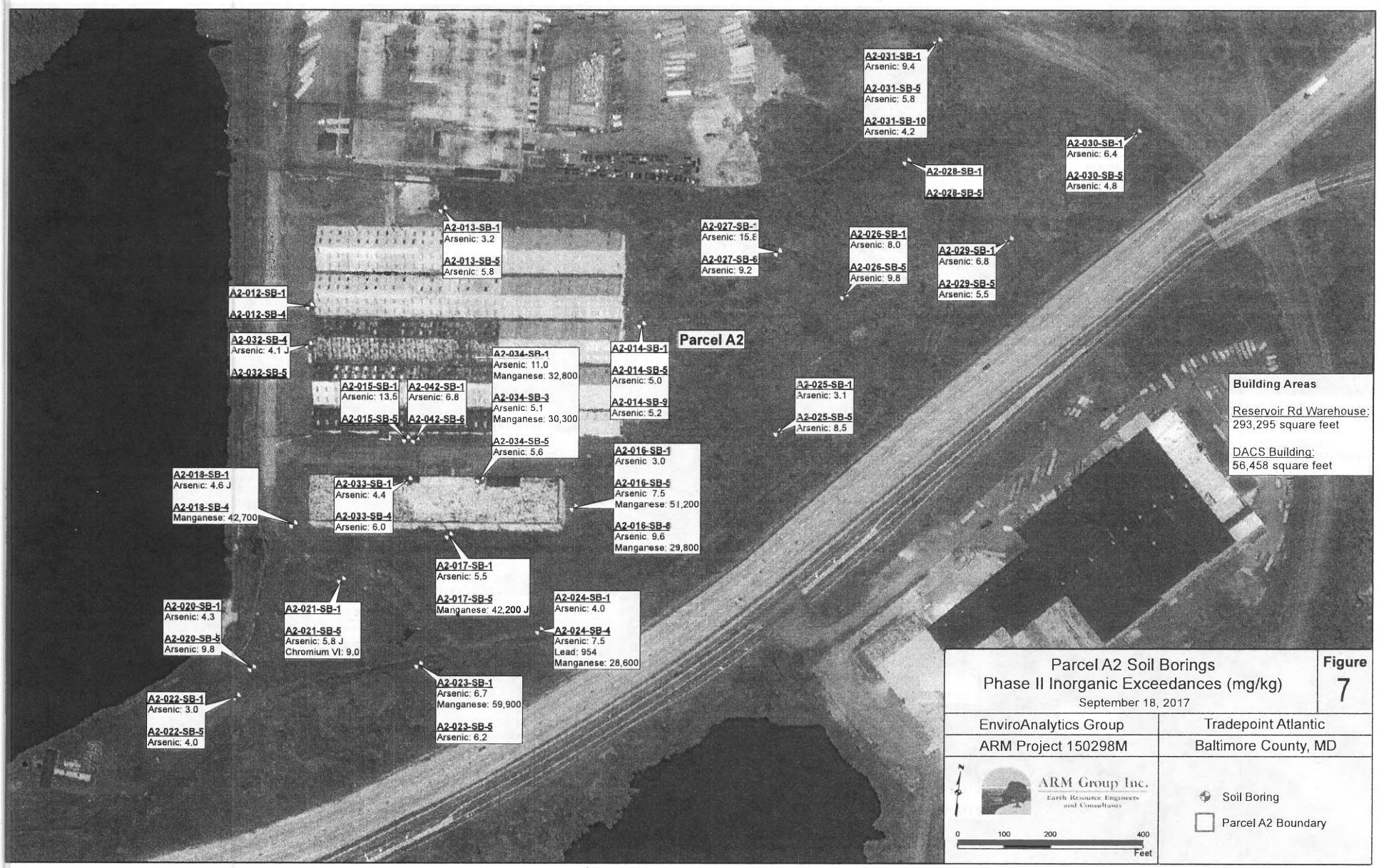
**Detections in bold**
* indicates non-validated data result
U: This analyte was not detected in the sample. The numeric value represents the sample quantitation/detection limit.
**Values in red indicate an exceedance of the Project Action Limit (PAL)**


A2-031-PZ
(3.99 ft)
A2-013-PZ
(6.11 ft)
A2-025-PZ
(6.68 ft)
A2-022-PZ
(5.39 ft)
Parcel A2
4
4.5
5
5.5
6
6.5
Building Areas
Reservoir Rd Warehouse:
293,295 square feet
DACS Building:
56,458 square feet
Parcel A2 Groundwater Map
Groundwater Elevation Contours - 1/11/2016
April 28, 2016
Figure
3
EnviroAnalytics Group
Tradepoint Atlantic
ARM Project 150298M
Baltimore County, MD
ARM Group Inc.
Earth Resource Engineers and Consultants
0
100
200
400
Feet
Piezometer (GW Elevation)
Groundwater Contour (0.5 ft)
Parcel A2 Boundary

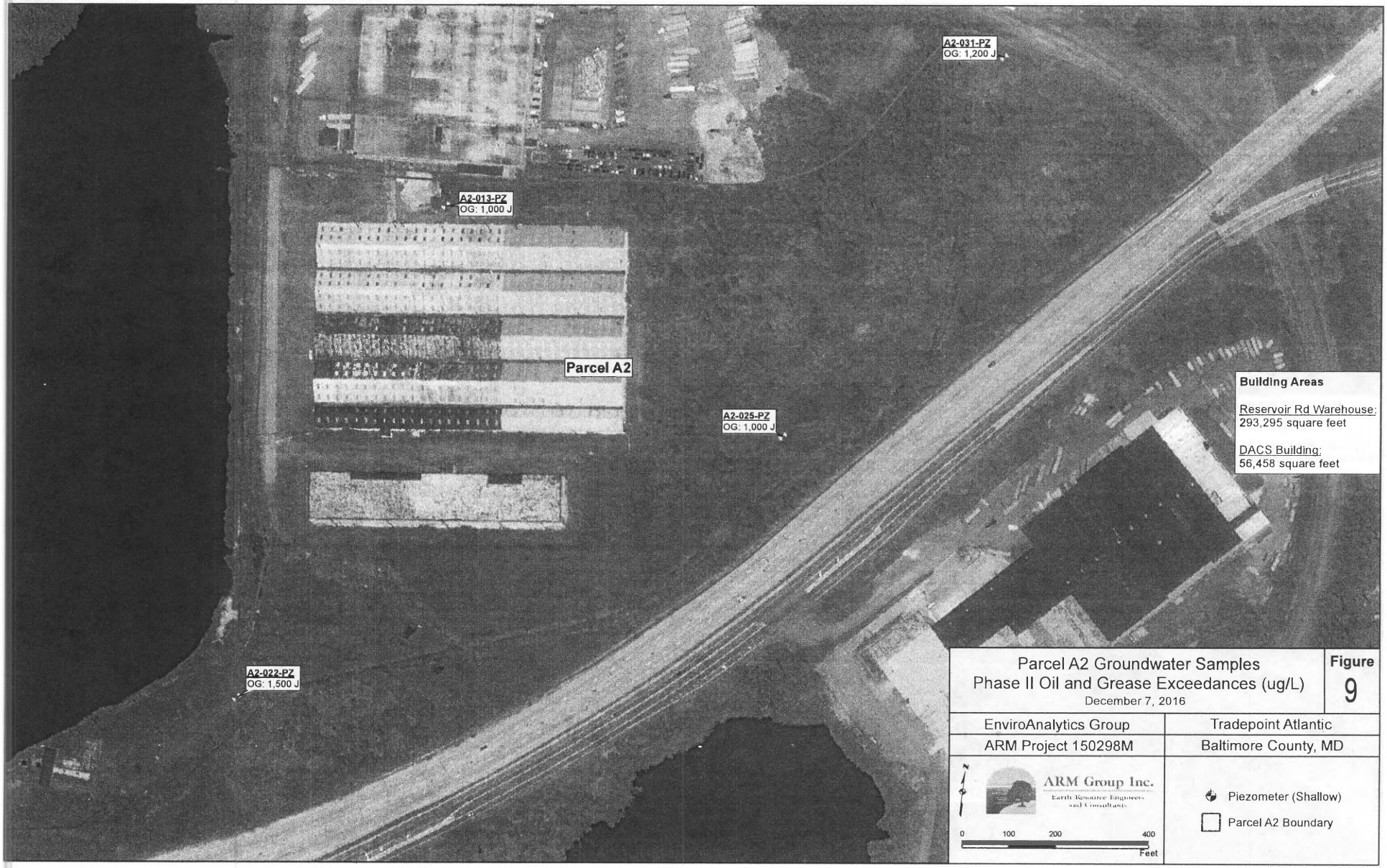

A2-031-SB
A2-030-SB
A2-028-SB
A2-013-SB
A2-027-SB
A2-029-SB
A2-012-SB
A2-014-SB
A2-026-SB
Reservoir Road Warehouse
Parcel A2
A2-032-SB
A2-015-SB
A2-042-SB
A2-025-SB
A2-033-SB
A2-034-SB
A2-016-SB
DACS Building
A2-018-SB
A2-017-SB
A2-021-SB
A2-024-SB
A2-020-SB
A2-023-SB
A2-022-SB
Building Areas
Reservoir Rd Warehouse:
293,295 square feet
DACS Building:
56,458 square feet
Parcel A2 Soil Borings
Final Field Sample Locations
April 28, 2016
Figure
4
EnviroAnalytics Group
Tradepoint Atlantic
ARM Project 150298M
Baltimore County, MD
ARM Group Inc.
Earth Resource Engineers and Consultants
0
100
200
400
Feet
Soil Boring
Existing Buildings
Parcel A2 Boundary


A2-001-SG
A2-035-SG
A2-002-SG
A2-003-SG
A2-038-SG
A2-039-SG
A2-004-SG
A2-036-SG
A2-005-SG
A2-040-SG
A2-041-SG
A2-006-SG
A2-037-SG
A2-007-SG
A2-008-SG
A2-009-SG
A2-010-SG
A2-011-SG
Parcel A2
Building Areas
Reservoir Rd Warehouse:
293,295 square feet
DACS Building:
56,458 square feet
Parcel A2 Soil Gas Locations
(No PAL Exceedances)
April 28, 2016
Figure
5
EnviroAnalytics Group
Tradepoint Atlantic
ARM Project 150298M
Baltimore County, MD
ARM Group Inc.
Earth Resource Engineers and Consultants
0
50
100
200
Feet
Soil Gas Sample
Parcel A2 Boundary


A2-031-SB-1
A2-031-SB-5
A2-030-SB-1
A2-030-SB-5
A2-028-SB-1
A2-028-SB-5
A2-027-SB-1
A2-027-SB-6
A2-029-SB-1
A2-029-SB-5
A2-014-SB-1
A2-014-SB-5
A2-014-SB-9
A2-012-SB-1
A2-012-SB-4
A2-013-SB-1
A2-013-SB-5
A2-026-SB-1
A2-026-SB-5
A2-032-SB-4
A2-032-SB-5
A2-025-SB-1
A2-025-SB-5
A2-015-SB-1
A2-015-SB-5
A2-042-SB-1
A2-042-SB-6
A2-034-SB-1
A2-034-SB-3
A2-034-SB-5
A2-033-SB-1
A2-033-SB-4
A2-016-SB-1
Benzo(a)pyrene: 4.1
A2-016-SB-5
A2-016-SB-8
A2-018-SB-1
Benzo(a)pyrene: 3.6
A2-018-SB-4
A2-017-SB-1
A2-017-SB-5
A2-021-SB-1
A2-021-SB-5
A2-024-SB-1
A2-024-SB-4
A2-020-SB-1
A2-020-SB-5
A2-022-SB-1
A2-022-SB-5
A2-023-SB-1
A2-023-SB-5
Building Areas
Reservoir Rd Warehouse:
293,295 square feet
DACS Building:
56,458 square feet
Parcel A2 Soil Borings
Phase II SVOC Exceedances (mg/kg)
March 12, 2018
Figure
6
EnviroAnalytics Group
Tradepoint Atlantic
ARM Project 150298M
Baltimore County, MD
ARM Group Inc.
Earth Resource Engineers and Consultants
0
100
200
400
Feet
Soil Boring
Parcel A2 Boundary


A2-031-SB-1
Arsenic: 9.4
A2-031-SB-5
Arsenic: 5.8
A2-031-SB-10
Arsenic: 4.2
A2-030-SB-1
Arsenic: 6.4
A2-030-SB-5
Arsenic: 4.8
A2-028-SB-1
A2-028-SB-5
A2-013-SB-1
Arsenic: 3.2
A2-013-SB-5
Arsenic: 5.8
A2-027-SB-1
Arsenic: 15.8
A2-027-SB-6
Arsenic: 9.2
A2-026-SB-1
Arsenic: 8.0
A2-026-SB-5
Arsenic: 9.8
A2-029-SB-1
Arsenic: 6.8
A2-029-SB-5
Arsenic: 5.5
A2-012-SB-1
A2-012-SB-4
Parcel A2
A2-032-SB-4
Arsenic: 4.1 J
A2-032-SB-5
A2-034-SB-1
Arsenic: 11.0
Manganese: 32,800
A2-034-SB-3
Arsenic: 5.1
Manganese: 30,300
A2-034-SB-5
Arsenic: 5.6
A2-014-SB-1
A2-014-SB-5
Arsenic: 5.0
A2-014-SB-9
Arsenic: 5.2
A2-015-SB-1
Arsenic: 13.5
A2-015-SB-5
A2-042-SB-1
Arsenic: 6.8
A2-042-SB-6
A2-025-SB-1
Arsenic: 3.1
A2-025-SB-5
Arsenic: 8.5
A2-018-SB-1
Arsenic: 4.6 J
A2-018-SB-4
Manganese: 42,700
A2-033-SB-1
Arsenic: 4.4
A2-033-SB-4
Arsenic: 6.0
A2-016-SB-1
Arsenic 3.0
A2-016-SB-5
Arsenic 7.5
Mangarese: 51,200
A2-016-SB-9
Arsenic 9.6
Mangarese: 29,800
A2-017-SB-1
Arsenic: 5.5
A2-017-SB-5
Manganese: 42,200 J
A2-020-SB-1
Arsenic: 4.3
A2-020-SB-5
Arsenic: 9.8
A2-021-SB-1
A2-021-SB-5
Arsenic: 5.8 J
Chromium VI: 9.0
A2-024-SB-1
Arsenic: 4.0
A2-024-SB-4
Arsenic: 7.5
Lead: 954
Manganese: 28,600
A2-023-SB-1
Arsenic: 6.7
Manganese: 59,900
A2-023-SB-5
Arsenic: 6.2
A2-022-SB-1
Arsenic: 3.0
A2-022-SB-5
Arsenic: 4.0
Building Areas
Reservoir Rd Warehouse:
293,295 square feet
DACS Building:
56,458 square feet
Parcel A2 Soil Borings
Phase II Inorganic Exceedances (mg/kg)
September 18, 2017
Figure
7
EnviroAnalytics Group
Tradepoint Atlantic
ARM Project 150298M
Baltimore County, MD
ARM Group Inc.
Earth Resource Engineers and Consultants
0
100
200
400
Feet
Soil Boring
Parcel A2 Boundary


A2-031-PZ
A2-013-PZ
1,1-Dioxane: 1.3
Parcel A2
A2-025-PZ
A2-022-PZ
Building Areas
Reservoir Rd Warehouse:
293,295 square feet
DACS Building:
56,458 square feet
Parcel A2 Groundwater Samples
Phase II SVOC Exceedances (ug/L)
June 3, 2016
Figure
8
EnviroAnalytics Group
ARM Project 150298M
Tradepoint Atlantic
Baltimore County, MD
N
ARM Group Inc.
Earth Resource Engineers and Consultants
0
100
200
400
Feet
Piezometer (Shallow)
Parcel A2 Boundary


A2-031-PZ
OG: 1,200 J
A2-013-PZ
OG: 1,000 J
Parcel A2
A2-025-PZ
OG: 1,000 J
A2-022-PZ
OG: 1,500 J
Building Areas
Reservoir Rd Warehouse:
293,295 square feet
DACS Building:
56,458 square feet
Parcel A2 Groundwater Samples
Phase II Oil and Grease Exceedances (ug/L)
December 7, 2016
Figure
9
EnviroAnalytics Group
Tradepoint Atlantic
ARM Project 150298M
Baltimore County, MD
ARM Group Inc.
Earth Resource Engineers and Consultants
0
100
200
400
Feet
Piezometer (Shallow)
Parcel A2 Boundary


A2-031-PZ
Cobalt: 6.6
Manganese: 984
A2-013-PZ
Arsenic: 12.5 J
Cobalt: 8.6
Iron: 96,300
Manganese: 9,140
Parcel A2
A2-025-PZ
A2-022-PZ
Building Areas
Reservoir Rd Warehouse:
293,295 square feet
DACS Building:
56,458 square feet
Parcel A2 Groundwater Samples
Phase II Inorganic Exceedances (ug/L)
December 7, 2016
Figure
10
EnviroAnalytics Group
Tradepoint Atlantic
ARM Project 150298M
Baltimore County, MD
ARM Group Inc.
Earth Resource Engineers and Consultants
0
100
200
400
Feet
Piezometer (Shallow)
Parcel A2 Boundary

# APPENDIX B

# 30-DAY EXCAVATION NOTIFICATION FORM

# MDE Environmental Covenant Notification

## 30 Day Excavation Activity

This notification is a requirement of Environmental Convenants established for Parcel A2 - Reservior Road Property, Sparrows Point, Baltimore County, Maryland, as part of a No Further Requirements determination for this property.

Notification and Attachments must be mailed within 30 days prior to excavation to:

**Chief, State Assessment and Remediation Division**
**Land and Materials Administration**
**Land Restoration Program**
**Maryland Department of the Environment**
**1800 Washington Blvd., Baltimore, MD 21230**

<table>
<tr><td>Date:</td><td colspan="2"></td></tr>
<tr><td colspan="3">Facility Soil Disturbance Location Description:</td></tr>
<tr><td colspan="3">Describe purpose of excavation:</td></tr>
<tr><td colspan="3">Company performing excavation:</td></tr>
<tr><td>Approximate Excavation Date(s):</td><td>Estimated Excavation Depth:</td><td>Estimated Excavation Length/Width:</td></tr>
<tr><td>Groundwater Expected to be Encountered?<br>☐ Yes ☐ No</td><td colspan="2">Expected Duration:<br>_____ Days</td></tr>
</table>

HASP provided by Contractor:

☐ Yes ☐ No Date on document: _____

Worker PPE Requirements:

☐ Level A (see HASP)
☐ Level B (see HASP)
☐ Level C (gloves, tyvek suit, respirator)
☐ Level D (hard hat, gloves, boots, glasses)

Sketch of dig project attached: ☐ Yes ☐ No

Soil Management

Describe how excavated soil will be managed on-site:

Clean Fill Required? ☐ Yes ☐ No

If yes, describe type of material, approximate volume, and potential sources:

Soil Disposal Anticipated? ☐ Yes ☐ No

Describe aniticipated volume, testing requirements, and disposal locations/facilities:

| Property Owner Representative: | Date: |
| --- | --- |
| | |

# APPENDIX C

# EMERGENCY EXCAVATION ACTIVITY FORM

# MDE Environmental Covenant Notification

## Emergency Excavation Activity

This notification is a requirement of Environmental Convenants established for Parcel A2 - Reservior Road Property, Sparrows Point, Baltimore County, Maryland, as part of a No Further Requirements determination for this property.

Notification and Attachments must be mailed within 10 days of completing excavation to:

**Chief, State Assessment and Remediation Division**
**Land and Materials Administration**
**Land Restoration Program**
**Maryland Department of the Environment**
**1800 Washington Blvd., Baltimore, MD 21230**

<table>
<tr><td>Date:</td><td colspan="2">Electronic Notification Date (attached email correspondence):</td></tr>
<tr><td colspan="3">Facility Soil Disturbance Location Description:</td></tr>
<tr><td colspan="3">Describe purpose of excavation:</td></tr>
<tr><td colspan="3">Company performing excavation:</td></tr>
<tr><td>Excavation Date(s):</td><td>Excavation Depth:</td><td>Excavation Length/Width:</td></tr>
<tr><td>Groundwater Encountered?<br>☐ Yes ☐ No</td><td colspan="2">Visual or Olfactory Evidence of Contamination</td></tr>
<tr><td>Expected Duration:<br>_____ Days</td><td colspan="2"></td></tr>
</table>

HASP provided by Contractor:

☐ Yes ☐ No Date on document: _____

Worker PPE Requirements:

☐ Level A (see HASP)

☐ Level B (see HASP)

☐ Level C (gloves, tyvek suit, respirator)

☐ Level D (hard hat, gloves, boots, glasses)

Sketch of dig project attached: ☐ Yes ☐ No

Soil Management

Describe how excavated soil will be managed on-site:

Clean Fill Required? ☐ Yes ☐ No

If yes, describe type of material, approximate volume, and potential sources:

Soil Disposal Anticipated? ☐ Yes ☐ No

Describe aniticipated volume, testing requirements, and disposal locations/facilities:

| Property Owner Representative: | Date: |
| --- | --- |