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***The Trusted Integrator for Sustainable Solutions***

November 16, 2009

Ms. Mary P. Logan  
Remedial Project Manager  
Superfund Division  
United States Environmental Protection Agency  
77 West Jackson Boulevard, Mail Code: SR-6J  
Chicago, IL 60604-3590

**Re: Midland/Saginaw/Bay City (MSB) Water Supply Sampling Letter Report Addendum  
Arenac, Midland, Saginaw, and Bay Counties, Michigan  
Technical Direction Document No.: S05-0008-0906-034  
Document Control No.: 689-2A-AFER  
Work Order No.: 20405.012.008.0689.00**

Dear Ms. Logan:

In July 2009, the United States Environmental Protection Agency (U.S. EPA) tasked the Weston Solutions, Inc. (WESTON®), Superfund Technical Assessment and Response Team (START) to conduct water sampling at three municipal water supply facilities in Arenac, Midland, Saginaw, and Bay Counties, Michigan (the Facilities). The sampling was conducted to address stakeholder concerns about potential re-suspension of contaminants from navigational dredging into the public drinking water supply. This letter report addendum discusses the project background, re-sampling activities, and conclusions based on the July and October, 2009 sampling results.

## **PROJECT BACKGROUND**

On July 28, and 29, 2009, WESTON START mobilized to the Facilities to conduct baseline water sampling. The baseline sampling results are summarized in WESTON START's "Midland/Saginaw/Bay City (MSB) Water Supply Sampling Letter Report" dated October 5, 2009. As discussed in that report, laboratory contamination associated with the furan fraction of the sample results rendered the results unusable. Therefore, re-sampling at the Facilities was necessary to obtain representative dioxin/furan results.

## **RE-SAMPLING ACTIVITIES**

U.S. EPA conducted re-sampling at the Facilities on October 8, 2009. Eight water supply samples were collected in accordance with WESTON START's site-specific field sampling plan

Ms. Mary Logan  
U.S. EPA

MSB Water Supply Sampling Addendum  
-2- November 16, 2009

dated July 2009 and as described in the "MSB Water Supply Sampling Letter Report" dated October 5, 2009. Review and validation of the October 8, 2009, sample results indicates that all samples (including the laboratory and equipment blanks) were free of laboratory contamination, and no dioxin or furan congeners were detected in any of the eight investigative samples collected. Attachment A of this letter report provides analytical summary tables for the updated dioxin/furan results, and Attachment B provides the validated laboratory data.

## **CONCLUSIONS**

The conclusions summarized below are based on the baseline water supply sampling results.

- No dioxin or furan congeners were detected in any of the eight samples collected in October 2009.
- Each sample was analyzed for more than 180 compounds (dioxins/furans and other contaminants). Most compounds were not detected.
- Sample analytical results were compared to the U.S. EPA National Primary Drinking Water Regulations' maximum contaminant levels (MCL) established under the Safe Drinking Water Act. No contaminants were detected at concentrations exceeding the MCLs.
- Organic and inorganic contaminants were detected in all samples at low concentrations. Because MCLs are not established for all contaminants, sample results also were compared to Michigan's Part 201 Residential and Commercial I Drinking Water Criteria. None of the results for the detected compounds exceeded the Part 201 criteria.
- Analytical results for pre-treatment filtered and unfiltered samples indicate little if any difference from the filtration of raw water.

If you have any questions regarding this report, please contact me at (313) 739-2533.

Very truly yours,  
WESTON SOLUTIONS, INC.



Alexandra Clark  
WESTON START Project Manager

## **Attachments**

- A - Summary Tables
- B - Laboratory Results

cc: WESTON START DCN File

**ATTACHMENT A**  
**SUMMARY TABLES**

**Table 1**  
**Analytical Results Summary Table - Dioxins and Furans**  
**Whitestone Point Intake, Saginaw, and Midland Facilities**  
**Midland/Saginaw/Bay City Water Supply Sampling**  
**Arenac, Midland, Saginaw, and Bay Counties, Michigan**

SAMPLE ID	MSB-WSP-PRE-UNF-100809		MSB-WSP-PRE-UNF-100809D		MSB-WSP-PRE-FIL-100809		MSB-SAG-POS-UNF-100809		MSB-MID-POS-UNF-100809		MDEQ Part 201 Residential and Commercial 1 Drinking Water Criteria	National Primary Drinking Water Regulations (MCLs)
	Water		Water		Water		Water		Water			
	10/08/2009		10/08/2009		10/08/2009		10/08/2009		10/08/2009			
<b>Dioxin/Furan (µg/L)</b>												
2,3,7,8-TCDD	0.00001	U	0.00001	U	0.00001	U	0.00001	U	0.00001	U	<b>0.00003 (A,O)</b>	<b>0.00003</b>
1,2,3,7,8-PeCDD	0.00005	U	0.00005	U	0.00005	U	0.00005	U	0.00005	U	NA	NA
1,2,3,4,7,8-HxCDD	0.00005	U	0.00005	U	0.00005	U	0.00005	U	0.00005	U	NA	NA
1,2,3,6,7,8-HxCDD	0.00005	U	0.00005	U	0.00005	U	0.00005	U	0.00005	U	NA	NA
1,2,3,7,8,9-HxCDD	0.00005	U	0.00005	U	0.00005	U	0.00005	U	0.00005	U	NA	NA
1,2,3,4,6,7,8-HpCDD	0.00005	U	0.00005	U	0.00005	U	0.00005	U	0.00005	U	NA	NA
OCDD	0.0001	U	0.0001	U	0.0001	U	0.0001	U	0.0001	U	NA	NA
2,3,7,8-TCDF	0.00001	U	0.00001	U	0.00001	U	0.00001	U	0.00001	U	NA	NA
1,2,3,7,8-PeCDF	0.00005	U	0.00005	U	0.00005	U	0.00005	U	0.00005	U	NA	NA
2,3,4,7,8-PeCDF	0.00005	U	0.00005	U	0.00005	U	0.00005	U	0.00005	U	NA	NA
1,2,3,4,7,8-HxCDF	0.00005	U	0.00005	U	0.00005	U	0.00005	U	0.00005	U	NA	NA
1,2,3,6,7,8-HxCDF	0.00005	U	0.00005	U	0.00005	U	0.00005	U	0.00005	U	NA	NA
2,3,4,6,7,8-HxCDF	0.00005	U	0.00005	U	0.00005	U	0.00005	U	0.00005	U	NA	NA
1,2,3,7,8,9-HxCDF	0.00005	U	0.00005	U	0.00005	U	0.00005	U	0.00005	U	NA	NA
1,2,3,4,6,7,8-HpCDF	0.00005	U	0.00005	U	0.00005	U	0.00005	U	0.00005	U	NA	NA
1,2,3,4,7,8,9-HpCDF	0.00005	U	0.00005	U	0.00005	U	0.00005	U	0.00005	U	NA	NA
OCDF	0.0001	U	0.0001	U	0.0001	U	0.0001	U	0.0001	U	NA	NA
Total TCDDs	0.00001	U	0.00001	U	0.00001	U	0.00001	U	0.00001	U	NA	NA
Total PeCDDs	0.00005	U	0.00005	U	0.00005	U	0.00005	U	0.00005	U	NA	NA
Total HxCDDs	0.00005	U	0.00005	U	0.00005	U	0.00005	U	0.00005	U	NA	NA
Total HpCDDs	0.00005	U	0.00005	U	0.00005	U	0.00005	U	0.00005	U	NA	NA
Total TCDFs	0.00001	U	0.00001	U	0.00001	U	0.00001	U	0.00001	U	NA	NA
Total PeCDFs	0.00005	U	0.00005	U	0.00005	U	0.00005	U	0.00005	U	NA	NA
Total HxCDFs	0.00005	U	0.00005	U	0.00005	U	0.00005	U	0.00005	U	NA	NA
Total HpCDFs	0.00005	U	0.00005	U	0.00005	U	0.00005	U	0.00005	U	NA	NA

**Table 1**  
**Analytical Results Summary Table - Dioxins and Furans**  
**Whitestone Point Intake, Saginaw, and Midland Facilities**  
**Midland/Saginaw/Bay City Water Supply Sampling**  
**Arenac, Midland, Saginaw, and Bay Counties, Michigan**

Notes:

All results and criteria are presented in µg/L.

µg/L - Microgram per liter

(A) - Criterion is MDEQ Drinking Water Standard pursuant to Section 5 of 1976 PA 399, MCL 325.1005.

HpCDD - Heptachlorodibenzo-p-dioxin

HpCDF - Heptachlorodibenzofuran

HxCDD - Hexachlorodibenzo-p-dioxin

HxCDF - Heptachlorodibenzofuran

ID - Identification

MCL - Maximum contaminant level

MDEQ - Michigan Department of Environmental Quality

NA - Not available

OCDD - Octachlorodibenzo-p-dioxin

OCDF - Octachlorodibenzofuran

(O) - Generic cleanup criteria are being held at values that MDEQ has used since August 1998 in recognition of the fact that national efforts to reassess risks posed by dioxin are not yet complete

PeCDD - Pentachlorodibenzo-p-dioxin

PeCDF - Pentachlorodibenzofuran

TCDD - Tetrachlorodibenzo-p-dioxin

TCDF - Tetrachlorodibenzofuran

U - Analyte not detected above reporting limit

**Table 2**  
**Analytical Results Summary Table - Dioxins and Furans**  
**Bay City Facility**  
**Midland/Saginaw/Bay City Water Supply Sampling**  
**Arenac, Midland, Saginaw, and Bay Counties, Michigan**

<b>SAMPLE ID</b>	<b>MSB-BAY-PRE-UNF-100809</b>	<b>MSB-BAY-PRE-FIL-100809</b>	<b>MSB-BAY-POS-UNF-100809</b>			<b>MDEQ Part 201 Residential and Commercial 1 Drinking Water Criteria</b>	<b>National Primary Drinking Water Regulations (MCLs)</b>	
<b>SAMPLE MEDIUM</b>	Water	Water	Water					
<b>DATE COLLECTED</b>	10/08/2009	10/08/2009	10/08/2009					
<b>Dioxin/Furan (µg/L)</b>								
2,3,7,8-TCDD	0.00001	U	0.00001	U	0.00001	U	<b>0.00003 (A,O)</b>	<b>0.00003</b>
1,2,3,7,8-PeCDD	0.00005	U	0.00005	U	0.00005	U	NA	NA
1,2,3,4,7,8-HxCDD	0.00005	U	0.00005	U	0.00005	U	NA	NA
1,2,3,6,7,8-HxCDD	0.00005	U	0.00005	U	0.00005	U	NA	NA
1,2,3,7,8,9-HxCDD	0.00005	U	0.00005	U	0.00005	U	NA	NA
1,2,3,4,6,7,8-HpCDD	0.00005	U	0.00005	U	0.00005	U	NA	NA
OCDD	0.0001	U	0.0001	U	0.0001	U	NA	NA
2,3,7,8-TCDF	0.00001	U	0.00001	U	0.00001	U	NA	NA
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2,3,4,7,8-PeCDF	0.00005	U	0.00005	U	0.00005	U	NA	NA
1,2,3,4,7,8-HxCDF	0.00005	U	0.00005	U	0.00005	U	NA	NA
1,2,3,6,7,8-HxCDF	0.00005	U	0.00005	U	0.00005	U	NA	NA
2,3,4,6,7,8-HxCDF	0.00005	U	0.00005	U	0.00005	U	NA	NA
1,2,3,7,8,9-HxCDF	0.00005	U	0.00005	U	0.00005	U	NA	NA
1,2,3,4,6,7,8-HpCDF	0.00005	U	0.00005	U	0.00005	U	NA	NA
1,2,3,4,7,8,9-HpCDF	0.00005	U	0.00005	U	0.00005	U	NA	NA
OCDF	0.0001	U	0.0001	U	0.0001	U	NA	NA
Total TCDDs	0.00001	U	0.00001	U	0.00001	U	NA	NA
Total PeCDDs	0.00005	U	0.00005	U	0.00005	U	NA	NA
Total HxCDDs	0.00005	U	0.00005	U	0.00005	U	NA	NA
Total HpCDDs	0.00005	U	0.00005	U	0.00005	U	NA	NA
Total TCDFs	0.00001	U	0.00001	U	0.00001	U	NA	NA
Total PeCDFs	0.00005	U	0.00005	U	0.00005	U	NA	NA
Total HxCDFs	0.00005	U	0.00005	U	0.00005	U	NA	NA
Total HpCDFs	0.00005	U	0.00005	U	0.00005	U	NA	NA

**Table 2**  
**Analytical Results Summary Table - Dioxins and Furans**  
**Bay City Facility**  
**Midland/Saginaw/Bay City Water Supply Sampling**  
**Arenac, Midland, Saginaw, and Bay Counties, Michigan**

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TCDF - Tetrachlorodibenzofuran

U - Analyte not detected above reporting limit

**ATTACHMENT B**  
**LABORATORY RESULTS**

**MIDLAND, SAGINAW, AND BAY CITY WATER SUPPLY SAMPLING  
SAGINAW COUNTY, MICHIGAN  
DATA VALIDATION REPORT**

**Date:** November 4, 2009

**Laboratory:** SGS Environmental Services, Wilmington, North Carolina

**Laboratory Work Order #:** G541-28

**Data Validation Performed By:** Paul Swift, PhD, PE; Weston Solutions, Inc. (Weston)

**Weston Analytical Work Order #/TDD #:** 20405.012.008.0689.00 / S05-06-04

This data validation report has been prepared by a qualified Weston quality assurance chemist independent of the project, under the U.S. Environmental Protection Agency (U.S. EPA) Superfund Technical Assessment and Response Team (START III) Region V contract. This report documents the data validation for 9 water samples collected for the Midland, Saginaw, and Bay City Water Supply Sampling project. The samples were analyzed for polychlorinated dibenzo-*p*-dioxins (PCDD) and polychlorinated dibenzofurans (PCDF) following the laboratory's Standard Operating Procedure (SOP) based on U.S. EPA Method 1613B.

A quality assurance (QA) level IV data package was received from SGS. The data validation was conducted in general accordance with the U.S. EPA Analytical Services Branch "*National Functional Guidelines for Chlorinated Dibenzo-*p*-Dioxins and Chlorinated Dibenzofurans Data Review*" (U.S.EPA 2005) and project-specific criteria required by the Program Quality Assurance Project Plan (QAPP; Weston 2006). The attachment contains the results summary sheets.

**DIOXINS AND FURANS BY U.S. EPA METHOD 1613B**

**1. Samples**

The following table summarizes the water samples for which this data validation was conducted.

<b>Samples</b>	<b>Lab ID</b>	<b>Date Collected</b>	<b>Date Extracted</b>	<b>Date Analyzed</b>
MSB-Equipment-FIL-100809	G541-28-1	10/08/09	10/12/09	10/13/09
MSB-MID-POS-UNF-100809	G541-28-2	10/08/09	10/19/09	10/28/09
MSB-BAY-PRE-FIL-100809	G541-28-3	10/08/09	10/19/09	10/28/09
MSB-BAY-PRE-UNF-100809	G541-28-4	10/08/09	10/19/09	10/28/09
MSB-BAY-POS-UNF-100809	G541-28-5	10/08/09	10/19/09	10/28/09
MSB-WSP-PRE-UNF-100809	G541-28-6	10/08/09	10/19/09	10/29/09
MSB-WSP-PRE-UNF-100809D	G541-28-7	10/08/09	10/19/09	10/29/09
MSB-WSP-PRE-FIL-100809	G541-28-8	10/08/09	10/19/09	10/29/09
MSB-SAG-PRE-UNF-100809	G541-28-9	10/08/09	10/19/09	10/29/09

## 2. **Holding Times**

The Field Sampling Plan (FSP; Weston 2009) states that water samples must be stored at 4°C ( $\pm$  2°C) in the dark from the time of collection until extraction for up to a period not more than seven days. Samples were received at the laboratory two days following collection, and the recorded temperatures for the four coolers received ranged from 4.3°C to 5.7°C. No results were qualified on this basis.

## 3. **System Performance Checks**

The perfluorokerosene (PFK) standards were evaluated and the reviewer verified that the resolving power was approximately 10,000.

A Window Defining Mixture (WDM) was analyzed as required and descriptor switching times were established.

The chromatographic peak separation between the 2,3,7,8-tetrachlorodibenzofuran (TCDF) peak and the 2,3,4,7-TCDF peak was resolved with a valley of  $\leq 25\%$ .

The continuing calibration standard met the quality control (QC) criteria for retention time (RT), relative retention time (RRT), and ion abundance ratio.

## 4. **Initial Calibration Results**

The relative standard deviations (RSD) for the relative response factors (RRF) were less than 20% for the 2,3,7,8-substituted compounds and 35% for the other compounds as required.

## 5. **Continuing Calibration Results**

The measured RRFs of each analyte were within the QC limit of  $\pm 25\%$  difference (%D) for the 2,3,7,8-substituted compounds and  $\pm 35\%$  D for all other compounds of the mean values established during initial calibration.

## 6. **Identification Criteria**

The following identification criteria have been spot-checked for in the investigative samples associated with this work order.

- The RRTs for the 2,3,7,8-substituted compounds were within the appropriate RRT windows.

- From the Selected Ion Current Profiles (SICP), it was verified that the ion current responses for the two quantitation ions for each analyte maximize simultaneously (within the same 2 seconds).
- From the SICPs, it was verified that for each analyte ion listed, the S/N ratio is  $\geq 2.5:1$  and that the detector was not saturated.
- The ion abundance ratios are within the criteria listed in Table A.4 of the data validation guidance.

#### 7. **Blank Results**

A method blank was analyzed with the samples as required and was free of target compound contamination above the reporting.

#### 8. **Laboratory Control Sample (LCS) Results**

Recoveries of all congeners from the LCS and LCS duplicate recoveries were within the laboratory-established QC limits. No data were qualified on this basis.

#### 9. **Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Results**

MS/MSD analysis was not performed for this analytical batch due to limited sample volume; samples were extracted and analyzed previously, re-extraction and analysis was required due to low-level method blank contamination. All other QC criteria were achieved, and no data were qualified on this basis.

#### 10. **Compound Quantitation**

The individual and total Toxic Equivalents (TEQ) concentrations, normally calculated using the appropriate toxicity equivalency factors (TEF), were not applicable since no target analyte was detected in any field sample..

Second column confirmation was not performed for of 2,3,7,8-TCDF since no detections were observed in any field sample.

The recoveries of the internal standards were within the QC limits for all field samples

No data were qualified on the basis of compound confirmation/quantitation.

#### 11. **Overall Assessment of Data**

The data are ACCEPTABLE for use based on the information available for review.

Data Validation Report  
Midland, Saginaw, and Bay City Water Supply Sampling Project  
SGS Environmental Services  
Laboratory Work Order #: G541-28

**ATTACHMENT**

**SGS ENVIRONMENTAL SERVICES  
RESULTS SUMMARY**



Alex Clark  
Weston Solutions  
2501 Jolly Rd.  
Okemos, MI 48864-3677

Report Number: G541-28

Client Project: MSB

Dear Alex Clark,

Enclosed are the results of the analytical services performed under the referenced project for the received samples and associated QC as applicable. The samples are certified to meet the requirements of the National Environmental Laboratory Accreditation Conference Standards. Copies of this report and supporting data will be retained in our files for a period of five years in the event they are required for future reference. Any samples submitted to our laboratory will be retained for a maximum of thirty (30) days from the date of this report unless other arrangements are requested.

If there are any questions about the report or services performed during this project, please call Linda McWhirter at (910) 350-1903. We will be happy to answer any questions or concerns which you may have.

Thank you for using SGS North America, Inc. for your analytical services. We look forward to working with you again on any additional analytical needs.

Sincerely,  
SGS North America, Inc.

11/3/09

Project Manager  
Linda McWhirter

Date

**Case Narrative**  
Weston  
SGS Project: **G541-28**  
Project Name: **MSB**


**SGS North America, Inc.**

**November 3<sup>rd</sup>, 2009**

- Nine water samples were accepted into the laboratory on October 10<sup>th</sup>, 2009 at 1045 for analyses as indicated on the chain of custody. The samples were received in good condition, with a temperature range of 4.3-5.7°C.
- All extractions and analyses were completed within holding time limits, with the following quality control exceptions.

**For Method: 1613**

- The submitted samples were accepted into the lab on October 10<sup>th</sup>, 2009 and extracted on October 12<sup>th</sup> and 19<sup>th</sup>, 2009 by method 3520C. The sample extracts and associated QC extracts were then processed through clean-up as prescribed in the SGS standard operating procedures and analyzed by HRGC/HRMS for method 1613.
- These samples were initially reported under SGS SDG G541-27. However, due to laboratory contamination issues, these samples were reextracted and reported in this SDG.
- Sample **MSB-Equipment-FIL-100809** was extracted and reported prior to the extraction and analysis of the remaining samples per client request.

  
Craig R. Tronzo  
~~Data Validation~~  
Date

11/3/09

  
04 Nov 2009

Laboratory Data Review



## List of Qualifiers: Dioxin's

B Analyte was detected in the Lab Method Blank at a level above the Reporting Limit.

EDL "Estimated Detection Limit"

EMPC "Estimated Maximum Possible Concentration"

RL Report Limit

CL Control Limit

U Undetected

ppt Parts-per-trillion (pg/g; ng/L)

V Recovery is below quality control limit. The data has been validated based on a favorable signal-to-noise and detection limit.

# Outside quality control limits

\* Indicates that the ion-ratio fails high or low; analyte reported as an EMPC

An average uncertainty of 30% can be routinely achieved as concluded from the evaluation of HRGC-HRMS standard operating procedures. The following flags warn the data user of situations where the uncertainty may be greater than stated.

A Amount detected is less than the Lower Method Calibration Limit.

J Amount detected is between the Method Detection Limit and the Lower Calibration Limit.

O The recovery of this analyte in the OPR is above the Method QC Limits and the reported concentration in the sample may be biased high.

E Amount detected is greater than the Upper Calibration Limit.

S The amount of analyte present has saturated the detector. This situation results in an underestimation of the affected analyte(s).

Q Indicates the presence of a quantitative interference. This situation may result in an underestimation of the affected analyte(s).

I Indicates the presence of a qualitative interference that could cause a false positive or an overestimation of the affected analyte(s).

DPE Indicates the presence of a peak in the polychlorinated diphenylether channel that could cause a false positive or an overestimation of the affected analyte(s).



## Table of Contents

### **Section 1: Cover Letter/Case Narrative**

Contains the Table of Contents, a project narrative, the client and SGS project identifiers, the number and type of samples, the methodology used to process the samples, and a summary table of sample results. A listing of current certifications by state, a table of abbreviations and qualifiers and the Toxic Equivalent Factors (TEF) are also supplied.

### **Section 2: Project Information**

Contains the chain-of-custody(s), internal chain-of-custody(s) if applicable, sample login summary, sample receipt checklist, and any other project/client specific information.

### **Section 3: Sample Analytical Results**

Contains results for client samples. Sample results include two pages of summarized analytical data and the associated raw data. The raw data includes a quantitation report from the instrumentation used that lists, ion areas, ratios, retention times, concentrations, and signal-to-noise ratios. It also has the selected ion current profiles (SICPs) for all homolog groups and any manual integrations.

### **Section 4: Quality Control Analytical Results**

Contains results for each analytical workgroup associated with the submitted samples. A workgroup consists of the Lab Method Blank (LMB) and the Ongoing Precision and Recovery sample (OPR). All sample preparation data, including dry weight determinations, extraction logs, clean-up logs and observation notes are also documented. Any other supporting QC data will be documented here upon client request.

### **Section 5: Initial Calibration**

Contains a table summarizing calibration data such as relative response factors, concentrations, and percent relative standard deviation. This section also contains related daily instrument QC information: GC performance data, mass resolution check, windows defining mix, and SICPs for all homolog groups and any manual integrations as well as the injection prep and instrument run logs.

### **Section 6: Continuing Calibration Data**

Contains all daily instrument quality control information. This includes mass resolution checks, a table summarizing the window defining peaks, SICPs for the first and last eluters for each homolog group, SICPs documenting GC performance, a summary quantitation report showing RRFs for the Ccal and Ical, and SICPs for all homolog groups and any manual integrations, injection prep and instrumentation runlogs.



## Toxic Equivalency Factors

<u>Analyte</u>	<u>WHO* 1998</u>	<u>WHO* 2005</u>	<u>International-89</u>	<u>MADEP*</u>
2,3,7,8-TCDD	1	1	1	1
1,2,3,7,8-PeCDD	1	1	0.5	0.5
1,2,3,4,7,8-HxCDD	0.1	0.1	0.1	0.1
1,2,3,6,7,8-HxCDD	0.1	0.1	0.1	0.1
1,2,3,7,8,9-HxCDD	0.1	0.1	0.1	0.1
1,2,3,4,6,7,8-HpCDD	0.01	0.01	0.01	0.1
OCDD	0.0001	0.0003	0.001	0.001
2,3,7,8-TCDF	0.1	0.1	0.1	0.1
1,2,3,7,8-PeCDF	0.05	0.03	0.05	0.5
2,3,4,7,8-PeCDF	0.5	0.3	0.5	0.5
1,2,3,4,7,8-HxCDF	0.1	0.1	0.1	0.1
1,2,3,6,7,8-HxCDF	0.1	0.1	0.1	0.1
2,3,4,6,7,8-HxCDF	0.1	0.1	0.1	0.1
1,2,3,7,8,9-HxCDF	0.1	0.1	0.1	0.1
1,2,3,4,6,7,8-HpCDF	0.01	0.01	0.01	0.1
1,2,3,4,7,8,9-HpCDF	0.01	0.01	0.01	0.1
OCDF	0.0001	0.0003	0.001	0.001

\* World Health Organization

\* Massachusetts Department of Environmental Protection

Method 1613  
**MSB-Equipment-FIL-100809**  
 Weston Solutions

**Analytical Data Summary Sheet**

Analyte	Amount (ng/L)	RL (ng/L)	RT (min.)	Ratio	Qualifier
2,3,7,8-TCDD	ND	0.0100			
1,2,3,7,8-PeCDD	ND	0.0500			
1,2,3,4,7,8-HxCDD	ND	0.0500			
1,2,3,6,7,8-HxCDD	ND	0.0500			
1,2,3,7,8,9-HxCDD	ND	0.0500			
1,2,3,4,6,7,8-HpCDD	ND	0.0500			
OCDD	ND	0.100			
2,3,7,8-TCDF	ND	0.0100			
1,2,3,7,8-PeCDF	ND	0.0500			
2,3,4,7,8-PeCDF	ND	0.0500			
1,2,3,4,7,8-HxCDF	ND	0.0500			
1,2,3,6,7,8-HxCDF	ND	0.0500			
2,3,4,6,7,8-HxCDF	ND	0.0500			
1,2,3,7,8,9-HxCDF	ND	0.0500			
1,2,3,4,6,7,8-HpCDF	ND	0.0500			
1,2,3,4,7,8,9-HpCDF	ND	0.0500			
OCDF	ND	0.100			
Total TCDDs	ND	0.0100			
Total PeCDDs	ND	0.0500			
Total HxCDDs	ND	0.0500			
Total HpCDDs	ND	0.0500			
Total TCDFs	ND	0.0100			
Total PeCDFs	ND	0.0500			
Total HxCDFs	ND	0.0500			
Total HpCDFs	ND	0.0500			
WHO-2005 TEQ (ND=0)	0.00				
WHO-2005 TEQ (ND=½)	0.0570				

<u>Client Information</u>		<u>Sample Information</u>	
Project Name:	MSB	Matrix:	Water
Sample ID:	MSB-Equipment-FIL-100809	Weight / Volume:	951 mL
		Solids / Lipids:	NA %
		Original pH :	7
		Batch ID:	WG17356
<u>Laboratory Information</u>			
Project ID:	G541-28	Filename:	a13oct09c-5
Sample ID:	G541-28-1D	Retchk:	a13oct09c-1
Collection Date/Time:	08-Oct-09 16:25	Begin ConCal:	a13oct09c-1
Receipt Date:	10-Oct-09 10:45	Initial Cal:	m1613-092309a
Extraction Date:	12-Oct-09		
Analysis Date:	13-Oct-09 18:37		

Method 1613  
**MSB-Equipment-FIL-100809**  
 Weston Solutions

Labeled Standard	Expected Amount (ng)	Measured Amount (ng)	Percent Recovery (%)	RT (min.)	Ratio	Qualifier
<b>Extraction Standards</b>						
<sup>13</sup> C <sub>12</sub> -2,3,7,8-TCDD	2	1.91	95.5	31:29	0.78	
<sup>13</sup> C <sub>12</sub> -1,2,3,7,8-PeCDD	2	1.75	87.6	34:19	1.58	
<sup>13</sup> C <sub>12</sub> -1,2,3,4,7,8-HxCDD	2	1.95	97.4	36:55	1.27	
<sup>13</sup> C <sub>12</sub> -1,2,3,6,7,8-HxCDD	2	2.00	99.8	37:00	1.25	
<sup>13</sup> C <sub>12</sub> -1,2,3,4,6,7,8-HpCDD	2	1.91	95.4	40:21	1.06	
<sup>13</sup> C <sub>12</sub> -OCDD	4	3.44	85.9	44:39	0.89	
<sup>13</sup> C <sub>12</sub> -2,3,7,8-TCDF	2	1.80	89.9	30:54	0.80	
<sup>13</sup> C <sub>12</sub> -1,2,3,7,8-PeCDF	2	1.61	80.6	33:30	1.56	
<sup>13</sup> C <sub>12</sub> -2,3,4,7,8-PeCDF	2	1.64	82.0	34:07	1.58	
<sup>13</sup> C <sub>12</sub> -1,2,3,4,7,8-HxCDF	2	1.94	97.0	36:12	0.52	
<sup>13</sup> C <sub>12</sub> -1,2,3,6,7,8-HxCDF	2	1.90	95.0	36:17	0.53	
<sup>13</sup> C <sub>12</sub> -2,3,4,6,7,8-HxCDF	2	1.88	94.0	36:47	0.52	
<sup>13</sup> C <sub>12</sub> -1,2,3,7,8,9-HxCDF	2	1.82	91.0	37:34	0.53	
<sup>13</sup> C <sub>12</sub> -1,2,3,4,6,7,8-HpCDF	2	1.78	89.1	39:04	0.44	
<sup>13</sup> C <sub>12</sub> -1,2,3,4,7,8,9-HpCDF	2	1.77	88.7	41:02	0.44	
<b>Cleanup Standard</b>						
<sup>37</sup> Cl <sub>4</sub> -2,3,7,8-TCDD	0.4	0.388	97.0	31:30		
<b>Injection Standards</b>						
<sup>13</sup> C <sub>12</sub> -1,2,3,4-TCDD	2			31:03	0.79	
<sup>13</sup> C <sub>12</sub> -1,2,3,7,8,9-HxCDD	2			37:15	1.26	

<b>Client Information</b>		<b>Sample Information</b>	
Project Name:	MSB	Matrix:	Water
Sample ID:	MSB-Equipment-FIL-100809	Weight / Volume:	951 mL
		Solids / Lipids:	NA %
		Original pH :	7
		Batch ID:	WG17356
<b>Laboratory Information</b>		Filename:	a13oct09c-5
Project ID:	G541-28	Retchk:	a13oct09c-1
Sample ID:	G541-28-1D	Begin ConCal:	a13oct09c-1
Collection Date/Time:	08-Oct-09 16:25	Initial Cal:	m1613-092309a
Receipt Date:	10-Oct-09 10:45		
Extraction Date:	12-Oct-09		
Analysis Date:	13-Oct-09 18:37		
Analyzed by:	<u>DS</u>	Reviewed by:	<u>OD</u>
Date:	<u>10-14-09</u>	Date:	<u>10/14/09</u>

Form Version:[1613\_HRMS12]Report

Method 1613 <b>MSB-MID-POS-UNF-100809</b> Weston Solutions
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## Analytical Data Summary Sheet

Analyte	Amount (ng/L)	RL (ng/L)	RT (min.)	Ratio	Qualifier
2,3,7,8-TCDD	ND	0.0100			
1,2,3,7,8-PeCDD	ND	0.0500			
1,2,3,4,7,8-HxCDD	ND	0.0500			
1,2,3,6,7,8-HxCDD	ND	0.0500			
1,2,3,7,8,9-HxCDD	ND	0.0500			
1,2,3,4,6,7,8-HpCDD	ND	0.0500			
OCDD	ND	0.100			
2,3,7,8-TCDF	ND	0.0100			
1,2,3,7,8-PeCDF	ND	0.0500			
2,3,4,7,8-PeCDF	ND	0.0500			
1,2,3,4,7,8-HxCDF	ND	0.0500			
1,2,3,6,7,8-HxCDF	ND	0.0500			
2,3,4,6,7,8-HxCDF	ND	0.0500			
1,2,3,7,8,9-HxCDF	ND	0.0500			
1,2,3,4,6,7,8-HpCDF	ND	0.0500			
1,2,3,4,7,8,9-HpCDF	ND	0.0500			
OCDF	ND	0.100			
Total TCDDs	ND	0.0100			
Total PeCDDs	ND	0.0500			
Total HxCDDs	ND	0.0500			
Total HpCDDs	ND	0.0500			
Total TCDFs	ND	0.0100			
Total PeCDFs	ND	0.0500			
Total HxCDFs	ND	0.0500			
Total HpCDFs	ND	0.0500			
WHO-2005 TEQ (ND=0)	0.000				
WHO-2005 TEQ (ND=½)	0.0570				

<u>Client Information</u>		<u>Sample Information</u>	
Project Name:	MSB	Matrix:	Water
Sample ID:	MSB-MID-POS-UNF-100809	Weight / Volume:	960 mL
		Solids / Lipids:	NA %
		Original pH :	7
		Batch ID:	WG17375
<u>Laboratory Information</u>			
Project ID:	G541-28	Filename:	a27oct09b_3-10
Sample ID:	G541-28-2D	Retchk:	a27oct09b_2-9
Collection Date/Time:	08-Oct-09 16:05	Begin ConCal:	a27oct09b_2-9
Receipt Date:	10-Oct-09 10:45	Initial Cal:	m1613-092309a
Extraction Date:	19-Oct-09		
Analysis Date:	28-Oct-09 21:00		

Method 1613  
**MSB-MID-POS-UNF-100809**  
 Weston Solutions

Labeled Standard	Expected Amount (ng)	Measured Amount (ng)	Percent Recovery (%)	RT (min.)	Ratio	Qualifier
<b>Extraction Standards</b>						
<sup>13</sup> C <sub>12</sub> -2,3,7,8-TCDD	2	1.89	94.7	31:29	0.77	
<sup>13</sup> C <sub>12</sub> -1,2,3,7,8-PeCDD	2	1.58	79.2	34:17	1.58	
<sup>13</sup> C <sub>12</sub> -1,2,3,4,7,8-HxCDD	2	2.01	100	36:53	1.28	
<sup>13</sup> C <sub>12</sub> -1,2,3,6,7,8-HxCDD	2	2.01	100	36:58	1.25	
<sup>13</sup> C <sub>12</sub> -1,2,3,4,6,7,8-HpCDD	2	1.87	93.5	40:19	1.05	
<sup>13</sup> C <sub>12</sub> -OCDD	4	3.23	80.7	44:38	0.90	
<sup>13</sup> C <sub>12</sub> -2,3,7,8-TCDF	2	1.84	92.2	30:53	0.79	
<sup>13</sup> C <sub>12</sub> -1,2,3,7,8-PeCDF	2	1.52	76.1	33:29	1.58	
<sup>13</sup> C <sub>12</sub> -2,3,4,7,8-PeCDF	2	1.52	75.9	34:06	1.58	
<sup>13</sup> C <sub>12</sub> -1,2,3,4,7,8-HxCDF	2	2.04	102	36:10	0.52	
<sup>13</sup> C <sub>12</sub> -1,2,3,6,7,8-HxCDF	2	2.02	101	36:16	0.53	
<sup>13</sup> C <sub>12</sub> -2,3,4,6,7,8-HxCDF	2	2.01	100	36:46	0.53	
<sup>13</sup> C <sub>12</sub> -1,2,3,7,8,9-HxCDF	2	1.75	87.7	37:33	0.52	
<sup>13</sup> C <sub>12</sub> -1,2,3,4,6,7,8-HpCDF	2	1.74	86.9	39:03	0.45	
<sup>13</sup> C <sub>12</sub> -1,2,3,4,7,8,9-HpCDF	2	1.63	81.4	41:01	0.46	
<b>Cleanup Standard</b>						
<sup>37</sup> Cl <sub>4</sub> -2,3,7,8-TCDD	0.4	0.405	101	31:29		
<b>Injection Standards</b>						
<sup>13</sup> C <sub>12</sub> -1,2,3,4-TCDD	2			31:02	0.79	
<sup>13</sup> C <sub>12</sub> -1,2,3,7,8,9-HxCDD	2			37:13	1.24	

<b>Client Information</b>		<b>Sample Information</b>	
Project Name:	MSB	Matrix:	Water
Sample ID:	MSB-MID-POS-UNF-100809	Weight / Volume:	960 mL
		Solids / Lipids:	NA %
		Original pH :	7
		Batch ID:	WG17375
<b>Laboratory Information</b>		Filename:	a27oct09b_3-10
Project ID:	G541-28	Retchk:	a27oct09b_2-9
Sample ID:	G541-28-2D	Begin ConCal:	a27oct09b_2-9
Collection Date/Time:	08-Oct-09 16:05	Initial Cal:	m1613-092309a
Receipt Date:	10-Oct-09 10:45		
Extraction Date:	19-Oct-09		
Analysis Date:	28-Oct-09 21:00		
Analyzed by:	<u>DS</u>	Reviewed by:	<u>MSB</u>
Date:	<u>11-3-09</u>	Date:	<u>11/3/09</u>

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Method 1613  
**MSB-BAY-PRE-FIL-100809**  
 Weston Solutions

**Analytical Data Summary Sheet**

Analyte	Amount (ng/L)	RL (ng/L)	RT (min.)	Ratio	Qualifier
2,3,7,8-TCDD	ND	0.0100			
1,2,3,7,8-PeCDD	ND	0.0500			
1,2,3,4,7,8-HxCDD	ND	0.0500			
1,2,3,6,7,8-HxCDD	ND	0.0500			
1,2,3,7,8,9-HxCDD	ND	0.0500			
1,2,3,4,6,7,8-HpCDD	ND	0.0500			
OCDD	ND	0.100			
2,3,7,8-TCDF	ND	0.0100			
1,2,3,7,8-PeCDF	ND	0.0500			
2,3,4,7,8-PeCDF	ND	0.0500			
1,2,3,4,7,8-HxCDF	ND	0.0500			
1,2,3,6,7,8-HxCDF	ND	0.0500			
2,3,4,6,7,8-HxCDF	ND	0.0500			
1,2,3,7,8,9-HxCDF	ND	0.0500			
1,2,3,4,6,7,8-HpCDF	ND	0.0500			
1,2,3,4,7,8,9-HpCDF	ND	0.0500			
OCDF	ND	0.100			
Total TCDDs	ND	0.0100			
Total PeCDDs	ND	0.0500			
Total HxCDDs	ND	0.0500			
Total HpCDDs	ND	0.0500			
Total TCDFs	ND	0.0100			
Total PeCDFs	ND	0.0500			
Total HxCDFs	ND	0.0500			
Total HpCDFs	ND	0.0500			
WHO-2005 TEQ (ND=0)	0.000				
WHO-2005 TEQ (ND=½)	0.0570				

<u>Client Information</u>		<u>Sample Information</u>	
Project Name:	MSB	Matrix:	Water
Sample ID:	MSB-BAY-PRE-FIL-100809	Weight / Volume:	959 mL
		Solids / Lipids:	NA %
		Original pH :	7
		Batch ID:	WG17375
<u>Laboratory Information</u>		Filename:	a27oct09b_3-11
Project ID:	G541-28	Retchk:	a27oct09b_2-9
Sample ID:	G541-28-3C	Begin ConCal:	a27oct09b_2-9
Collection Date/Time:	08-Oct-09 12:40	Initial Cal:	m1613-092309a
Receipt Date:	10-Oct-09 10:45		
Extraction Date:	19-Oct-09		
Analysis Date:	28-Oct-09 21:48		

Method 1613  
**MSB-BAY-PRE-FIL-100809**  
 Weston Solutions

Labeled Standard	Expected Amount (ng)	Measured Amount (ng)	Percent Recovery (%)	RT (min.)	Ratio	Qualifier
<b>Extraction Standards</b>						
<sup>13</sup> C <sub>12</sub> -2,3,7,8-TCDD	2	1.94	97.2	31:29	0.79	
<sup>13</sup> C <sub>12</sub> -1,2,3,7,8-PeCDD	2	1.55	77.3	34:18	1.58	
<sup>13</sup> C <sub>12</sub> -1,2,3,4,7,8-HxCDD	2	2.03	102	36:53	1.27	
<sup>13</sup> C <sub>12</sub> -1,2,3,6,7,8-HxCDD	2	2.07	103	36:58	1.25	
<sup>13</sup> C <sub>12</sub> -1,2,3,4,6,7,8-HpCDD	2	1.92	95.9	40:19	1.06	
<sup>13</sup> C <sub>12</sub> -OCDD	4	3.31	82.8	44:38	0.90	
<sup>13</sup> C <sub>12</sub> -2,3,7,8-TCDF	2	1.94	96.8	30:53	0.79	
<sup>13</sup> C <sub>12</sub> -1,2,3,7,8-PeCDF	2	1.47	73.5	33:29	1.58	
<sup>13</sup> C <sub>12</sub> -2,3,4,7,8-PeCDF	2	1.47	73.5	34:06	1.58	
<sup>13</sup> C <sub>12</sub> -1,2,3,4,7,8-HxCDF	2	2.08	104	36:10	0.52	
<sup>13</sup> C <sub>12</sub> -1,2,3,6,7,8-HxCDF	2	2.07	104	36:17	0.52	
<sup>13</sup> C <sub>12</sub> -2,3,4,6,7,8-HxCDF	2	2.01	101	36:46	0.53	
<sup>13</sup> C <sub>12</sub> -1,2,3,7,8,9-HxCDF	2	1.78	89.2	37:33	0.52	
<sup>13</sup> C <sub>12</sub> -1,2,3,4,6,7,8-HpCDF	2	1.78	89.1	39:03	0.45	
<sup>13</sup> C <sub>12</sub> -1,2,3,4,7,8,9-HpCDF	2	1.69	84.3	41:01	0.46	
<b>Cleanup Standard</b>						
<sup>37</sup> Cl <sub>4</sub> -2,3,7,8-TCDD	0.4	0.417	104	31:29		
<b>Injection Standards</b>						
<sup>13</sup> C <sub>12</sub> -1,2,3,4-TCDD	2			31:02	0.79	
<sup>13</sup> C <sub>12</sub> -1,2,3,7,8,9-HxCDD	2			37:13	1.25	

<b>Client Information</b>		<b>Sample Information</b>	
Project Name:	MSB	Matrix:	Water
Sample ID:	MSB-BAY-PRE-FIL-100809	Weight / Volume:	959 mL
		Solids / Lipids:	NA %
		Original pH :	7
		Batch ID:	WG17375
<b>Laboratory Information</b>		Filename:	a27oct09b_3-11
Project ID:	G541-28	Retchk:	a27oct09b_2-9
Sample ID:	G541-28-3C	Begin ConCal:	a27oct09b_2-9
Collection Date/Time:	08-Oct-09 12:40	Initial Cal:	m1613-092309a
Receipt Date:	10-Oct-09 10:45		
Extraction Date:	19-Oct-09		
Analysis Date:	28-Oct-09 21:48		
Analyzed by:	<u>DS</u>	Reviewed by:	<u>[Signature]</u>
Date:	<u>11-3-09</u>	Date:	<u>11/3/09</u>

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Method 1613  
**MSB-BAY-PRE-UNF-100809**  
 Weston Solutions

**Analytical Data Summary Sheet**

Analyte	Amount (ng/L)	RL (ng/L)	RT (min.)	Ratio	Qualifier
2,3,7,8-TCDD	ND	0.0100			
1,2,3,7,8-PeCDD	ND	0.0500			
1,2,3,4,7,8-HxCDD	ND	0.0500			
1,2,3,6,7,8-HxCDD	ND	0.0500			
1,2,3,7,8,9-HxCDD	ND	0.0500			
1,2,3,4,6,7,8-HpCDD	ND	0.0500			
OCDD	ND	0.100			
2,3,7,8-TCDF	ND	0.0100			
1,2,3,7,8-PeCDF	ND	0.0500			
2,3,4,7,8-PeCDF	ND	0.0500			
1,2,3,4,7,8-HxCDF	ND	0.0500			
1,2,3,6,7,8-HxCDF	ND	0.0500			
2,3,4,6,7,8-HxCDF	ND	0.0500			
1,2,3,7,8,9-HxCDF	ND	0.0500			
1,2,3,4,6,7,8-HpCDF	ND	0.0500			
1,2,3,4,7,8,9-HpCDF	ND	0.0500			
OCDF	ND	0.100			
Total TCDDs	ND	0.0100			
Total PeCDDs	ND	0.0500			
Total HxCDDs	ND	0.0500			
Total HpCDDs	ND	0.0500			
Total TCDFs	ND	0.0100			
Total PeCDFs	ND	0.0500			
Total HxCDFs	ND	0.0500			
Total HpCDFs	ND	0.0500			
WHO-2005 TEQ (ND=0)	0.000				
WHO-2005 TEQ (ND=½)	0.0570				

<u>Client Information</u>		<u>Sample Information</u>	
Project Name:	MSB	Matrix:	Water
Sample ID:	MSB-BAY-PRE-UNF-100809	Weight / Volume:	957 mL
		Solids / Lipids:	NA %
		Original pH :	7
		Batch ID:	WG17375
<u>Laboratory Information</u>			
Project ID:	G541-28	Filename:	a27oct09b_3-12
Sample ID:	G541-28-4D	Retchk:	a27oct09b_2-9
Collection Date/Time:	08-Oct-09 12:30	Begin ConCal:	a27oct09b_2-9
Receipt Date:	10-Oct-09 10:45	Initial Cal:	m1613-092309a
Extraction Date:	19-Oct-09		
Analysis Date:	28-Oct-09 22:36		

Method 1613  
**MSB-BAY-PRE-UNF-100809**  
 Weston Solutions

Labeled Standard	Expected Amount (ng)	Measured Amount (ng)	Percent Recovery (%)	RT (min.)	Ratio	Qualifier
<b>Extraction Standards</b>						
<sup>13</sup> C <sub>12</sub> -2,3,7,8-TCDD	2	1.83	91.5	31:29	0.78	
<sup>13</sup> C <sub>12</sub> -1,2,3,7,8-PeCDD	2	1.40	70.0	34:18	1.59	
<sup>13</sup> C <sub>12</sub> -1,2,3,4,7,8-HxCDD	2	2.01	101	36:53	1.27	
<sup>13</sup> C <sub>12</sub> -1,2,3,6,7,8-HxCDD	2	2.07	103	36:59	1.25	
<sup>13</sup> C <sub>12</sub> -1,2,3,4,6,7,8-HpCDD	2	1.91	95.5	40:19	1.06	
<sup>13</sup> C <sub>12</sub> -OCDD	4	3.37	84.3	44:38	0.89	
<sup>13</sup> C <sub>12</sub> -2,3,7,8-TCDF	2	1.92	96.1	30:53	0.79	
<sup>13</sup> C <sub>12</sub> -1,2,3,7,8-PeCDF	2	1.34	67.1	33:30	1.58	
<sup>13</sup> C <sub>12</sub> -2,3,4,7,8-PeCDF	2	1.33	66.3	34:07	1.58	
<sup>13</sup> C <sub>12</sub> -1,2,3,4,7,8-HxCDF	2	2.05	102	36:10	0.52	
<sup>13</sup> C <sub>12</sub> -1,2,3,6,7,8-HxCDF	2	2.03	101	36:17	0.52	
<sup>13</sup> C <sub>12</sub> -2,3,4,6,7,8-HxCDF	2	1.99	99.6	36:46	0.53	
<sup>13</sup> C <sub>12</sub> -1,2,3,7,8,9-HxCDF	2	1.78	89.1	37:33	0.53	
<sup>13</sup> C <sub>12</sub> -1,2,3,4,6,7,8-HpCDF	2	1.77	88.4	39:03	0.45	
<sup>13</sup> C <sub>12</sub> -1,2,3,4,7,8,9-HpCDF	2	1.69	84.7	41:01	0.45	
<b>Cleanup Standard</b>						
<sup>37</sup> Cl <sub>4</sub> -2,3,7,8-TCDD	0.4	0.397	99.3	31:29		
<b>Injection Standards</b>						
<sup>13</sup> C <sub>12</sub> -1,2,3,4-TCDD	2			31:02	0.79	
<sup>13</sup> C <sub>12</sub> -1,2,3,7,8,9-HxCDD	2			37:13	1.25	

<b>Client Information</b>		<b>Sample Information</b>	
Project Name:	MSB	Matrix:	Water
Sample ID:	MSB-BAY-PRE-UNF-100809	Weight / Volume:	957 mL
		Solids / Lipids:	NA %
		Original pH :	7
		Batch ID:	WG17375
<b>Laboratory Information</b>		Filename:	a27oct09b_3-12
Project ID:	G541-28	Retchk:	a27oct09b_2-9
Sample ID:	G541-28-4D	Begin ConCal:	a27oct09b_2-9
Collection Date/Time:	08-Oct-09 12:30	Initial Cal:	m1613-092309a
Receipt Date:	10-Oct-09 10:45		
Extraction Date:	19-Oct-09		
Analysis Date:	28-Oct-09 22:36		
Analyzed by:	<u>DS</u>	Reviewed by:	<u>[Signature]</u>
Date:	<u>11-3-09</u>	Date:	<u>11/3/09</u>

Form Version:[1613\_HRMS12]Report

Method 1613  
**MSB-BAY-POS-UNF-100809**  
 Weston Solutions

**Analytical Data Summary Sheet**

Analyte	Amount (ng/L)	RL (ng/L)	RT (min.)	Ratio	Qualifier
2,3,7,8-TCDD	ND	0.0100			
1,2,3,7,8-PeCDD	ND	0.0500			
1,2,3,4,7,8-HxCDD	ND	0.0500			
1,2,3,6,7,8-HxCDD	ND	0.0500			
1,2,3,7,8,9-HxCDD	ND	0.0500			
1,2,3,4,6,7,8-HpCDD	ND	0.0500			
OCDD	ND	0.100			
2,3,7,8-TCDF	ND	0.0100			
1,2,3,7,8-PeCDF	ND	0.0500			
2,3,4,7,8-PeCDF	ND	0.0500			
1,2,3,4,7,8-HxCDF	ND	0.0500			
1,2,3,6,7,8-HxCDF	ND	0.0500			
2,3,4,6,7,8-HxCDF	ND	0.0500			
1,2,3,7,8,9-HxCDF	ND	0.0500			
1,2,3,4,6,7,8-HpCDF	ND	0.0500			
1,2,3,4,7,8,9-HpCDF	ND	0.0500			
OCDF	ND	0.100			
Total TCDDs	ND	0.0100			
Total PeCDDs	ND	0.0500			
Total HxCDDs	ND	0.0500			
Total HpCDDs	ND	0.0500			
Total TCDFs	ND	0.0100			
Total PeCDFs	ND	0.0500			
Total HxCDFs	ND	0.0500			
Total HpCDFs	ND	0.0500			
WHO-2005 TEQ (ND=0)	0.000				
WHO-2005 TEQ (ND=½)	0.0570				

<u>Client Information</u>		<u>Sample Information</u>	
Project Name:	MSB	Matrix:	Water
Sample ID:	MSB-BAY-POS-UNF-100809	Weight / Volume:	942 mL
		Solids / Lipids:	NA %
		Original pH :	7
		Batch ID:	WG17375
<u>Laboratory Information</u>			
Project ID:	G541-28	Filename:	a27oct09b_3-13
Sample ID:	G541-28-5D	Retchk:	a27oct09b_2-9
Collection Date/Time:	08-Oct-09 13:15	Begin ConCal:	a27oct09b_2-9
Receipt Date:	10-Oct-09 10:45	Initial Cal:	m1613-092309a
Extraction Date:	19-Oct-09		
Analysis Date:	28-Oct-09 23:25		

Method 1613  
**MSB-BAY-POS-UNF-100809**  
 Weston Solutions

Labeled Standard	Expected Amount (ng)	Measured Amount (ng)	Percent Recovery (%)	RT (min.)	Ratio	Qualifier
<b>Extraction Standards</b>						
<sup>13</sup> C <sub>12</sub> -2,3,7,8-TCDD	2	1.89	94.7	31:29	0.79	
<sup>13</sup> C <sub>12</sub> -1,2,3,7,8-PeCDD	2	1.49	74.3	34:18	1.58	
<sup>13</sup> C <sub>12</sub> -1,2,3,4,7,8-HxCDD	2	2.01	100	36:53	1.27	
<sup>13</sup> C <sub>12</sub> -1,2,3,6,7,8-HxCDD	2	2.04	102	36:58	1.26	
<sup>13</sup> C <sub>12</sub> -1,2,3,4,6,7,8-HpCDD	2	1.92	95.8	40:19	1.05	
<sup>13</sup> C <sub>12</sub> -OCDD	4	3.35	83.7	44:38	0.90	
<sup>13</sup> C <sub>12</sub> -2,3,7,8-TCDF	2	1.90	95.0	30:53	0.78	
<sup>13</sup> C <sub>12</sub> -1,2,3,7,8-PeCDF	2	1.40	70.0	33:29	1.59	
<sup>13</sup> C <sub>12</sub> -2,3,4,7,8-PeCDF	2	1.39	69.4	34:06	1.57	
<sup>13</sup> C <sub>12</sub> -1,2,3,4,7,8-HxCDF	2	2.04	102	36:10	0.52	
<sup>13</sup> C <sub>12</sub> -1,2,3,6,7,8-HxCDF	2	2.03	101	36:17	0.53	
<sup>13</sup> C <sub>12</sub> -2,3,4,6,7,8-HxCDF	2	1.98	99.2	36:46	0.53	
<sup>13</sup> C <sub>12</sub> -1,2,3,7,8,9-HxCDF	2	1.76	87.9	37:33	0.53	
<sup>13</sup> C <sub>12</sub> -1,2,3,4,6,7,8-HpCDF	2	1.76	88.0	39:03	0.45	
<sup>13</sup> C <sub>12</sub> -1,2,3,4,7,8,9-HpCDF	2	1.66	83.2	41:01	0.46	
<b>Cleanup Standard</b>						
<sup>37</sup> Cl <sub>4</sub> -2,3,7,8-TCDD	0.4	0.399	99.8	31:29		
<b>Injection Standards</b>						
<sup>13</sup> C <sub>12</sub> -1,2,3,4-TCDD	2			31:02	0.78	
<sup>13</sup> C <sub>12</sub> -1,2,3,7,8,9-HxCDD	2			37:13	1.26	

<b>Client Information</b>		<b>Sample Information</b>	
Project Name:	MSB	Matrix:	Water
Sample ID:	MSB-BAY-POS-UNF-100809	Weight / Volume:	942 mL
		Solids / Lipids:	NA %
		Original pH :	7
		Batch ID:	WG17375
<b>Laboratory Information</b>		Filename:	a27oct09b_3-13
Project ID:	G541-28	Retchk:	a27oct09b_2-9
Sample ID:	G541-28-5D	Begin ConCal:	a27oct09b_2-9
Collection Date/Time:	08-Oct-09 13:15	Initial Cal:	m1613-092309a
Receipt Date:	10-Oct-09 10:45		
Extraction Date:	19-Oct-09		
Analysis Date:	28-Oct-09 23:25		
Analyzed by:	<u>OS</u>	Reviewed by:	<u>[Signature]</u>
Date:	<u>11-3-09</u>	Date:	<u>11/3/09</u>

Method 1613  
**MSB-WSP-PRE-UNF-100809**  
 Weston Solutions

**Analytical Data Summary Sheet**

Analyte	Amount (ng/L)	RL (ng/L)	RT (min.)	Ratio	Qualifier
2,3,7,8-TCDD	ND	0.0100			
1,2,3,7,8-PeCDD	ND	0.0500			
1,2,3,4,7,8-HxCDD	ND	0.0500			
1,2,3,6,7,8-HxCDD	ND	0.0500			
1,2,3,7,8,9-HxCDD	ND	0.0500			
1,2,3,4,6,7,8-HpCDD	ND	0.0500			
OCDD	ND	0.100			
2,3,7,8-TCDF	ND	0.0100			
1,2,3,7,8-PeCDF	ND	0.0500			
2,3,4,7,8-PeCDF	ND	0.0500			
1,2,3,4,7,8-HxCDF	ND	0.0500			
1,2,3,6,7,8-HxCDF	ND	0.0500			
2,3,4,6,7,8-HxCDF	ND	0.0500			
1,2,3,7,8,9-HxCDF	ND	0.0500			
1,2,3,4,6,7,8-HpCDF	ND	0.0500			
1,2,3,4,7,8,9-HpCDF	ND	0.0500			
OCDF	ND	0.100			
Total TCDDs	ND	0.0100			
Total PeCDDs	ND	0.0500			
Total HxCDDs	ND	0.0500			
Total HpCDDs	ND	0.0500			
Total TCDFs	ND	0.0100			
Total PeCDFs	ND	0.0500			
Total HxCDFs	ND	0.0500			
Total HpCDFs	ND	0.0500			
WHO-2005 TEQ (ND=0)	0.000				
WHO-2005 TEQ (ND=½)	0.0570				

<u>Client Information</u>		<u>Sample Information</u>	
Project Name:	MSB	Matrix:	Water
Sample ID:	MSB-WSP-PRE-UNF-100809	Weight / Volume:	947 mL
		Solids / Lipids:	NA %
		Original pH :	7
		Batch ID:	WG17375
<u>Laboratory Information</u>			
Project ID:	G541-28	Filename:	a27oct09b_5-4
Sample ID:	G541-28-6D	Retchk:	a27oct09b_4-14
Collection Date/Time:	08-Oct-09 10:00	Begin ConCal:	a27oct09b_4-14
Receipt Date:	10-Oct-09 10:45	Initial Cal:	m1613-092309a
Extraction Date:	19-Oct-09		
Analysis Date:	29-Oct-09 14:55		

Method 1613  
**MSB-WSP-PRE-UNF-100809**  
 Weston Solutions

Labeled Standard	Expected Amount (ng)	Measured Amount (ng)	Percent Recovery (%)	RT (min.)	Ratio	Qualifier
<b>Extraction Standards</b>						
<sup>13</sup> C <sub>12</sub> -2,3,7,8-TCDD	2	1.87	93.4	31:29	0.78	
<sup>13</sup> C <sub>12</sub> -1,2,3,7,8-PeCDD	2	1.53	76.5	34:18	1.58	
<sup>13</sup> C <sub>12</sub> -1,2,3,4,7,8-HxCDD	2	1.98	99.1	36:54	1.27	
<sup>13</sup> C <sub>12</sub> -1,2,3,6,7,8-HxCDD	2	1.98	98.8	36:59	1.27	
<sup>13</sup> C <sub>12</sub> -1,2,3,4,6,7,8-HpCDD	2	1.91	95.6	40:20	1.06	
<sup>13</sup> C <sub>12</sub> -OCDD	4	3.44	85.9	44:38	0.89	
<sup>13</sup> C <sub>12</sub> -2,3,7,8-TCDF	2	1.84	91.9	30:53	0.80	
<sup>13</sup> C <sub>12</sub> -1,2,3,7,8-PeCDF	2	1.46	73.0	33:30	1.58	
<sup>13</sup> C <sub>12</sub> -2,3,4,7,8-PeCDF	2	1.46	72.9	34:06	1.59	
<sup>13</sup> C <sub>12</sub> -1,2,3,4,7,8-HxCDF	2	2.05	102	36:11	0.52	
<sup>13</sup> C <sub>12</sub> -1,2,3,6,7,8-HxCDF	2	2.04	102	36:16	0.52	
<sup>13</sup> C <sub>12</sub> -2,3,4,6,7,8-HxCDF	2	1.96	98.0	36:46	0.53	
<sup>13</sup> C <sub>12</sub> -1,2,3,7,8,9-HxCDF	2	1.74	87.2	37:33	0.52	
<sup>13</sup> C <sub>12</sub> -1,2,3,4,6,7,8-HpCDF	2	1.76	88.0	39:03	0.45	
<sup>13</sup> C <sub>12</sub> -1,2,3,4,7,8,9-HpCDF	2	1.69	84.7	41:01	0.45	
<b>Cleanup Standard</b>						
<sup>37</sup> Cl <sub>4</sub> -2,3,7,8-TCDD	0.4	0.401	100	31:30		
<b>Injection Standards</b>						
<sup>13</sup> C <sub>12</sub> -1,2,3,4-TCDD	2			31:02	0.80	
<sup>13</sup> C <sub>12</sub> -1,2,3,7,8,9-HxCDD	2			37:14	1.26	

<b>Client Information</b>		<b>Sample Information</b>	
Project Name:	MSB	Matrix:	Water
Sample ID:	MSB-WSP-PRE-UNF-100809	Weight / Volume:	947 mL
		Solids / Lipids:	NA %
		Original pH :	7
		Batch ID:	WG17375
<b>Laboratory Information</b>		Filename:	a27oct09b_5-4
Project ID:	G541-28	Retchk:	a27oct09b_4-14
Sample ID:	G541-28-6D	Begin ConCal:	a27oct09b_4-14
Collection Date/Time:	08-Oct-09 10:00	Initial Cal:	m1613-092309a
Receipt Date:	10-Oct-09 10:45		
Extraction Date:	19-Oct-09		
Analysis Date:	29-Oct-09 14:55		
Analyzed by:	<u>OS</u>	Reviewed by:	<u>[Signature]</u>
Date:	<u>11-3-09</u>	Date:	<u>11/3/09</u>

Method 1613  
**MSB-WSP-PRE-UNF-100809D**  
 Weston Solutions

**Analytical Data Summary Sheet**

Analyte	Amount (ng/L)	RL (ng/L)	RT (min.)	Ratio	Qualifier
2,3,7,8-TCDD	ND	0.0100			
1,2,3,7,8-PeCDD	ND	0.0500			
1,2,3,4,7,8-HxCDD	ND	0.0500			
1,2,3,6,7,8-HxCDD	ND	0.0500			
1,2,3,7,8,9-HxCDD	ND	0.0500			
1,2,3,4,6,7,8-HpCDD	ND	0.0500			
OCDD	ND	0.100			
2,3,7,8-TCDF	ND	0.0100			
1,2,3,7,8-PeCDF	ND	0.0500			
2,3,4,7,8-PeCDF	ND	0.0500			
1,2,3,4,7,8-HxCDF	ND	0.0500			
1,2,3,6,7,8-HxCDF	ND	0.0500			
2,3,4,6,7,8-HxCDF	ND	0.0500			
1,2,3,7,8,9-HxCDF	ND	0.0500			
1,2,3,4,6,7,8-HpCDF	ND	0.0500			
1,2,3,4,7,8,9-HpCDF	ND	0.0500			
OCDF	ND	0.100			
Total TCDDs	ND	0.0100			
Total PeCDDs	ND	0.0500			
Total HxCDDs	ND	0.0500			
Total HpCDDs	ND	0.0500			
Total TCDFs	ND	0.0100			
Total PeCDFs	ND	0.0500			
Total HxCDFs	ND	0.0500			
Total HpCDFs	ND	0.0500			
WHO-2005 TEQ (ND=0)	0.000				
WHO-2005 TEQ (ND=1/2)	0.0570				

<u>Client Information</u>		<u>Sample Information</u>	
Project Name:	MSB	Matrix:	Water
Sample ID:	MSB-WSP-PRE-UNF-100809D	Weight / Volume:	951 mL
		Solids / Lipids:	NA %
		Original pH :	7
		Batch ID:	WG17375
<u>Laboratory Information</u>			
Project ID:	G541-28	Filename:	a27oct09b_5-5
Sample ID:	G541-28-7C	Retchk:	a27oct09b_4-14
Collection Date/Time:	08-Oct-09 10:00	Begin ConCal:	a27oct09b_4-14
Receipt Date:	10-Oct-09 10:45	Initial Cal:	m1613-092309a
Extraction Date:	19-Oct-09		
Analysis Date:	29-Oct-09 15:44		

Method 1613  
**MSB-WSP-PRE-UNF-100809D**  
 Weston Solutions

Labeled Standard	Expected Amount (ng)	Measured Amount (ng)	Percent Recovery (%)	RT (min.)	Ratio	Qualifier
<b>Extraction Standards</b>						
<sup>13</sup> C <sub>12</sub> -2,3,7,8-TCDD	2	1.67	83.6	31:29	0.79	
<sup>13</sup> C <sub>12</sub> -1,2,3,7,8-PeCDD	2	1.49	74.4	34:18	1.59	
<sup>13</sup> C <sub>12</sub> -1,2,3,4,7,8-HxCDD	2	1.95	97.4	36:54	1.27	
<sup>13</sup> C <sub>12</sub> -1,2,3,6,7,8-HxCDD	2	1.94	96.8	36:59	1.26	
<sup>13</sup> C <sub>12</sub> -1,2,3,4,6,7,8-HpCDD	2	1.91	95.5	40:20	1.05	
<sup>13</sup> C <sub>12</sub> -OCDD	4	3.37	84.3	44:38	0.90	
<sup>13</sup> C <sub>12</sub> -2,3,7,8-TCDF	2	1.68	84.2	30:53	0.80	
<sup>13</sup> C <sub>12</sub> -1,2,3,7,8-PeCDF	2	1.39	69.3	33:30	1.59	
<sup>13</sup> C <sub>12</sub> -2,3,4,7,8-PeCDF	2	1.42	70.8	34:06	1.60	
<sup>13</sup> C <sub>12</sub> -1,2,3,4,7,8-HxCDF	2	1.97	98.5	36:11	0.52	
<sup>13</sup> C <sub>12</sub> -1,2,3,6,7,8-HxCDF	2	1.92	96.0	36:17	0.53	
<sup>13</sup> C <sub>12</sub> -2,3,4,6,7,8-HxCDF	2	1.91	95.7	36:46	0.53	
<sup>13</sup> C <sub>12</sub> -1,2,3,7,8,9-HxCDF	2	1.70	84.9	37:33	0.52	
<sup>13</sup> C <sub>12</sub> -1,2,3,4,6,7,8-HpCDF	2	1.74	87.0	39:03	0.46	
<sup>13</sup> C <sub>12</sub> -1,2,3,4,7,8,9-HpCDF	2	1.70	84.9	41:01	0.45	
<b>Cleanup Standard</b>						
<sup>37</sup> Cl <sub>4</sub> -2,3,7,8-TCDD	0.4	0.397	99.3	31:30		
<b>Injection Standards</b>						
<sup>13</sup> C <sub>12</sub> -1,2,3,4-TCDD	2			31:02	0.79	
<sup>13</sup> C <sub>12</sub> -1,2,3,7,8,9-HxCDD	2			37:14	1.26	

<b>Client Information</b>		<b>Sample Information</b>	
Project Name:	MSB	Matrix:	Water
Sample ID:	MSB-WSP-PRE-UNF-100809D	Weight / Volume:	951 mL
		Solids / Lipids:	NA %
		Original pH :	7
		Batch ID:	WG17375
<b>Laboratory Information</b>		Filename:	a27oct09b_5-5
Project ID:	G541-28	Retchk:	a27oct09b_4-14
Sample ID:	G541-28-7C	Begin ConCal:	a27oct09b_4-14
Collection Date/Time:	08-Oct-09 10:00	Initial Cal:	m1613-092309a
Receipt Date:	10-Oct-09 10:45		
Extraction Date:	19-Oct-09		
Analysis Date:	29-Oct-09 15:44		
Analyzed by:	<u>DS</u>	Reviewed by:	<u>[Signature]</u>
Date:	<u>11-3-09</u>	Date:	<u>11/3/09</u>

Form Version:[1613\_HRMS12]Repor

Method 1613  
**MSB-WSP-PRE-FIL-100809**  
 Weston Solutions

**Analytical Data Summary Sheet**

Analyte	Amount (ng/L)	RL (ng/L)	RT (min.)	Ratio	Qualifier
2,3,7,8-TCDD	ND	0.0100			
1,2,3,7,8-PeCDD	ND	0.0500			
1,2,3,4,7,8-HxCDD	ND	0.0500			
1,2,3,6,7,8-HxCDD	ND	0.0500			
1,2,3,7,8,9-HxCDD	ND	0.0500			
1,2,3,4,6,7,8-HpCDD	ND	0.0500			
OCDD	ND	0.100			
2,3,7,8-TCDF	ND	0.0100			
1,2,3,7,8-PeCDF	ND	0.0500			
2,3,4,7,8-PeCDF	ND	0.0500			
1,2,3,4,7,8-HxCDF	ND	0.0500			
1,2,3,6,7,8-HxCDF	ND	0.0500			
2,3,4,6,7,8-HxCDF	ND	0.0500			
1,2,3,7,8,9-HxCDF	ND	0.0500			
1,2,3,4,6,7,8-HpCDF	ND	0.0500			
1,2,3,4,7,8,9-HpCDF	ND	0.0500			
OCDF	ND	0.100			
Total TCDDs	ND	0.0100			
Total PeCDDs	ND	0.0500			
Total HxCDDs	ND	0.0500			
Total HpCDDs	ND	0.0500			
Total TCDFs	ND	0.0100			
Total PeCDFs	ND	0.0500			
Total HxCDFs	ND	0.0500			
Total HpCDFs	ND	0.0500			
WHO-2005 TEQ (ND=0)	0.000				
WHO-2005 TEQ (ND=½)	0.0570				

<u>Client Information</u>		<u>Sample Information</u>	
Project Name:	MSB	Matrix:	Water
Sample ID:	MSB-WSP-PRE-FIL-100809	Weight / Volume:	953 mL
		Solids / Lipids:	NA %
		Original pH :	7
		Batch ID:	WG17375
<u>Laboratory Information</u>			
Project ID:	G541-28	Filename:	a27oct09b_5-6
Sample ID:	G541-28-8D	Retchk:	a27oct09b_4-14
Collection Date/Time:	08-Oct-09 10:20	Begin ConCal:	a27oct09b_4-14
Receipt Date:	10-Oct-09 10:45	Initial Cal:	m1613-092309a
Extraction Date:	19-Oct-09		
Analysis Date:	29-Oct-09 16:32		

Method 1613  
**MSB-WSP-PRE-FIL-100809**  
 Weston Solutions

Labeled Standard	Expected Amount (ng)	Measured Amount (ng)	Percent Recovery (%)	RT (min.)	Ratio	Qualifier
<b>Extraction Standards</b>						
<sup>13</sup> C <sub>12</sub> -2,3,7,8-TCDD	2	1.89	94.4	31:29	0.79	
<sup>13</sup> C <sub>12</sub> -1,2,3,7,8-PeCDD	2	1.52	76.2	34:18	1.57	
<sup>13</sup> C <sub>12</sub> -1,2,3,4,7,8-HxCDD	2	2.03	101	36:54	1.27	
<sup>13</sup> C <sub>12</sub> -1,2,3,6,7,8-HxCDD	2	2.02	101	36:59	1.26	
<sup>13</sup> C <sub>12</sub> -1,2,3,4,6,7,8-HpCDD	2	1.95	97.5	40:20	1.05	
<sup>13</sup> C <sub>12</sub> -OCDD	4	3.51	87.7	44:39	0.90	
<sup>13</sup> C <sub>12</sub> -2,3,7,8-TCDF	2	1.91	95.4	30:53	0.79	
<sup>13</sup> C <sub>12</sub> -1,2,3,7,8-PeCDF	2	1.43	71.6	33:30	1.58	
<sup>13</sup> C <sub>12</sub> -2,3,4,7,8-PeCDF	2	1.45	72.5	34:06	1.59	
<sup>13</sup> C <sub>12</sub> -1,2,3,4,7,8-HxCDF	2	2.10	105	36:11	0.52	
<sup>13</sup> C <sub>12</sub> -1,2,3,6,7,8-HxCDF	2	2.08	104	36:17	0.52	
<sup>13</sup> C <sub>12</sub> -2,3,4,6,7,8-HxCDF	2	2.03	102	36:46	0.53	
<sup>13</sup> C <sub>12</sub> -1,2,3,7,8,9-HxCDF	2	1.81	90.5	37:33	0.53	
<sup>13</sup> C <sub>12</sub> -1,2,3,4,6,7,8-HpCDF	2	1.77	88.7	39:03	0.45	
<sup>13</sup> C <sub>12</sub> -1,2,3,4,7,8,9-HpCDF	2	1.75	87.5	41:01	0.45	
<b>Cleanup Standard</b>						
<sup>37</sup> Cl <sub>4</sub> -2,3,7,8-TCDD	0.4	0.407	102	31:30		
<b>Injection Standards</b>						
<sup>13</sup> C <sub>12</sub> -1,2,3,4-TCDD	2			31:02	0.79	
<sup>13</sup> C <sub>12</sub> -1,2,3,7,8,9-HxCDD	2			37:14	1.25	

<b>Client Information</b>		<b>Sample Information</b>	
Project Name:	MSB	Matrix:	Water
Sample ID:	MSB-WSP-PRE-FIL-100809	Weight / Volume:	953 mL
		Solids / Lipids:	NA %
		Original pH :	7
		Batch ID:	WG17375
<b>Laboratory Information</b>		Filename:	a27oct09b_5-6
Project ID:	G541-28	Retchk:	a27oct09b_4-14
Sample ID:	G541-28-8D	Begin ConCal:	a27oct09b_4-14
Collection Date/Time:	08-Oct-09 10:20	Initial Cal:	m1613-092309a
Receipt Date:	10-Oct-09 10:45		
Extraction Date:	19-Oct-09		
Analysis Date:	29-Oct-09 16:32		
Analyzed by:	<u>DS</u>	Reviewed by:	<u>CD</u>
Date:	<u>11-3-09</u>	Date:	<u>11/3/09</u>

Form Version: [1613\_HRMS12]Report

Method 1613  
**MSB-SAG-POS-UNF-100809**  
 Weston Solutions

**Analytical Data Summary Sheet**

Analyte	Amount (ng/L)	RL (ng/L)	RT (min.)	Ratio	Qualifier
2,3,7,8-TCDD	ND	0.0100			
1,2,3,7,8-PeCDD	ND	0.0500			
1,2,3,4,7,8-HxCDD	ND	0.0500			
1,2,3,6,7,8-HxCDD	ND	0.0500			
1,2,3,7,8,9-HxCDD	ND	0.0500			
1,2,3,4,6,7,8-HpCDD	ND	0.0500			
OCDD	ND	0.100			
2,3,7,8-TCDF	ND	0.0100			
1,2,3,7,8-PeCDF	ND	0.0500			
2,3,4,7,8-PeCDF	ND	0.0500			
1,2,3,4,7,8-HxCDF	ND	0.0500			
1,2,3,6,7,8-HxCDF	ND	0.0500			
2,3,4,6,7,8-HxCDF	ND	0.0500			
1,2,3,7,8,9-HxCDF	ND	0.0500			
1,2,3,4,6,7,8-HpCDF	ND	0.0500			
1,2,3,4,7,8,9-HpCDF	ND	0.0500			
OCDF	ND	0.100			
Total TCDDs	ND	0.0100			
Total PeCDDs	ND	0.0500			
Total HxCDDs	ND	0.0500			
Total HpCDDs	ND	0.0500			
Total TCDFs	ND	0.0100			
Total PeCDFs	ND	0.0500			
Total HxCDFs	ND	0.0500			
Total HpCDFs	ND	0.0500			
WHO-2005 TEQ (ND=0)	0.000				
WHO-2005 TEQ (ND=1/2)	0.0570				

<u>Client Information</u>		<u>Sample Information</u>	
Project Name:	MSB	Matrix:	Water
Sample ID:	MSB-SAG-POS-UNF-100809	Weight / Volume:	965 mL
		Solids / Lipids:	NA %
		Original pH :	7
		Batch ID:	WG17375
<u>Laboratory Information</u>			
Project ID:	G541-28	Filename:	a27oct09b_5-7
Sample ID:	G541-28-9D	Retchk:	a27oct09b_4-14
Collection Date/Time:	08-Oct-09 14:45	Begin ConCal:	a27oct09b_4-14
Receipt Date:	10-Oct-09 10:45	Initial Cal:	m1613-092309a
Extraction Date:	19-Oct-09		
Analysis Date:	29-Oct-09 17:20		

Method 1613  
**MSB-SAG-POS-UNF-100809**  
 Weston Solutions

Labeled Standard	Expected Amount (ng)	Measured Amount (ng)	Percent Recovery (%)	RT (min.)	Ratio	Qualifier
<b>Extraction Standards</b>						
<sup>13</sup> C <sub>12</sub> -2,3,7,8-TCDD	2	1.79	89.7	31:29	0.77	
<sup>13</sup> C <sub>12</sub> -1,2,3,7,8-PeCDD	2	1.45	72.6	34:18	1.59	
<sup>13</sup> C <sub>12</sub> -1,2,3,4,7,8-HxCDD	2	1.96	98.1	36:54	1.28	
<sup>13</sup> C <sub>12</sub> -1,2,3,6,7,8-HxCDD	2	1.94	97.2	36:59	1.25	
<sup>13</sup> C <sub>12</sub> -1,2,3,4,6,7,8-HpCDD	2	1.88	94.0	40:20	1.06	
<sup>13</sup> C <sub>12</sub> -OCDD	4	3.36	84.1	44:38	0.90	
<sup>13</sup> C <sub>12</sub> -2,3,7,8-TCDF	2	1.82	90.8	30:53	0.79	
<sup>13</sup> C <sub>12</sub> -1,2,3,7,8-PeCDF	2	1.37	68.6	33:30	1.58	
<sup>13</sup> C <sub>12</sub> -2,3,4,7,8-PeCDF	2	1.39	69.4	34:06	1.58	
<sup>13</sup> C <sub>12</sub> -1,2,3,4,7,8-HxCDF	2	2.01	100	36:11	0.52	
<sup>13</sup> C <sub>12</sub> -1,2,3,6,7,8-HxCDF	2	1.98	99.0	36:17	0.53	
<sup>13</sup> C <sub>12</sub> -2,3,4,6,7,8-HxCDF	2	1.94	96.8	36:46	0.53	
<sup>13</sup> C <sub>12</sub> -1,2,3,7,8,9-HxCDF	2	1.72	85.8	37:33	0.53	
<sup>13</sup> C <sub>12</sub> -1,2,3,4,6,7,8-HpCDF	2	1.73	86.4	39:03	0.45	
<sup>13</sup> C <sub>12</sub> -1,2,3,4,7,8,9-HpCDF	2	1.68	83.8	41:01	0.45	
<b>Cleanup Standard</b>						
<sup>37</sup> Cl <sub>4</sub> -2,3,7,8-TCDD	0.4	0.383	95.8	31:30		
<b>Injection Standards</b>						
<sup>13</sup> C <sub>12</sub> -1,2,3,4-TCDD	2			31:02	0.79	
<sup>13</sup> C <sub>12</sub> -1,2,3,7,8,9-HxCDD	2			37:14	1.25	

<b>Client Information</b>		<b>Sample Information</b>	
Project Name:	MSB	Matrix:	Water
Sample ID:	MSB-SAG-POS-UNF-100809	Weight / Volume:	965 mL
		Solids / Lipids:	NA %
		Original pH :	7
		Batch ID:	WG17375
<b>Laboratory Information</b>		Filename:	a27oct09b_5-7
Project ID:	G541-28	Retchk:	a27oct09b_4-14
Sample ID:	G541-28-9D	Begin ConCal:	a27oct09b_4-14
Collection Date/Time:	08-Oct-09 14:45	Initial Cal:	m1613-092309a
Receipt Date:	10-Oct-09 10:45		
Extraction Date:	19-Oct-09		
Analysis Date:	29-Oct-09 17:20		
Analyzed by:	<u>DS</u>	Reviewed by:	_____
Date:	<u>11-3-09</u>	Date:	_____

Method 1613 - Blank Results  
**LMB**

**Analytical Data Summary Sheet**

Analyte	Amount (ng/L)	RL (ng/L)	RT (min.)	Ratio	Qualifier
2,3,7,8-TCDD	ND	0.0100			
1,2,3,7,8-PeCDD	ND	0.0500			
1,2,3,4,7,8-HxCDD	ND	0.0500			
1,2,3,6,7,8-HxCDD	ND	0.0500			
1,2,3,7,8,9-HxCDD	ND	0.0500			
1,2,3,4,6,7,8-HpCDD	ND	0.0500			
OCDD	ND	0.100			
2,3,7,8-TCDF	ND	0.0100			
1,2,3,7,8-PeCDF	ND	0.0500			
2,3,4,7,8-PeCDF	ND	0.0500			
1,2,3,4,7,8-HxCDF	ND	0.0500			
1,2,3,6,7,8-HxCDF	ND	0.0500			
2,3,4,6,7,8-HxCDF	ND	0.0500			
1,2,3,7,8,9-HxCDF	ND	0.0500			
1,2,3,4,6,7,8-HpCDF	ND	0.0500			
1,2,3,4,7,8,9-HpCDF	ND	0.0500			
OCDF	ND	0.100			
Total TCDDs	ND	0.0100			
Total PeCDDs	ND	0.0500			
Total HxCDDs	ND	0.0500			
Total HpCDDs	ND	0.0500			
Total TCDFs	ND	0.0100			
Total PeCDFs	ND	0.0500			
Total HxCDFs	ND	0.0500			
Total HpCDFs	ND	0.0500			
WHO-2005 TEQ (ND=0)	0.00				
WHO-2005 TEQ (ND=½)	0.0570				

<u>Sample Information</u>			
Matrix:	Water		
Weight / Volume:	1000	mL	
Solids / Lipids:	NA	%	
Original pH :	5		
Batch ID:	WG17356		
<u>Laboratory Information</u>			
Sample ID:	LMB17356	Filename:	a13oct09c-4
		Retchk:	a13oct09c-1
		Begin ConCal:	a13oct09c-1
Extraction Date:	12-Oct-09	Initial Cal:	m1613-092309a
Analysis Date:	13-Oct-09	17:48	

Method 1613 - Blank Results  
**LMB**

Labeled Standard	Expected Amount (ng)	Measured Amount (ng)	Percent Recovery (%)	RT (min.)	Ratio	Qualifier
<b>Extraction Standards</b>						
<sup>13</sup> C <sub>12</sub> -2,3,7,8-TCDD	2	1.86	93.1	31:29	0.78	
<sup>13</sup> C <sub>12</sub> -1,2,3,7,8-PeCDD	2	1.76	88.1	34:19	1.57	
<sup>13</sup> C <sub>12</sub> -1,2,3,4,7,8-HxCDD	2	1.92	95.9	36:55	1.26	
<sup>13</sup> C <sub>12</sub> -1,2,3,6,7,8-HxCDD	2	1.96	98.1	37:00	1.24	
<sup>13</sup> C <sub>12</sub> -1,2,3,4,6,7,8-HpCDD	2	1.91	95.6	40:21	1.05	
<sup>13</sup> C <sub>12</sub> -OCDD	4	3.03	75.7	44:40	0.90	
<sup>13</sup> C <sub>12</sub> -2,3,7,8-TCDF	2	1.75	87.3	30:54	0.79	
<sup>13</sup> C <sub>12</sub> -1,2,3,7,8-PeCDF	2	1.59	79.6	33:30	1.57	
<sup>13</sup> C <sub>12</sub> -2,3,4,7,8-PeCDF	2	1.64	81.9	34:07	1.56	
<sup>13</sup> C <sub>12</sub> -1,2,3,4,7,8-HxCDF	2	1.87	93.3	36:12	0.52	
<sup>13</sup> C <sub>12</sub> -1,2,3,6,7,8-HxCDF	2	1.85	92.5	36:17	0.52	
<sup>13</sup> C <sub>12</sub> -2,3,4,6,7,8-HxCDF	2	1.84	92.0	36:47	0.52	
<sup>13</sup> C <sub>12</sub> -1,2,3,7,8,9-HxCDF	2	1.78	89.2	37:34	0.52	
<sup>13</sup> C <sub>12</sub> -1,2,3,4,6,7,8-HpCDF	2	1.78	88.9	39:04	0.45	
<sup>13</sup> C <sub>12</sub> -1,2,3,4,7,8,9-HpCDF	2	1.77	88.3	41:02	0.44	
<b>Cleanup Standard</b>						
<sup>37</sup> Cl <sub>4</sub> -2,3,7,8-TCDD	0.4	0.385	96.3	31:30		
<b>Injection Standards</b>						
<sup>13</sup> C <sub>12</sub> -1,2,3,4-TCDD	2			31:03	0.80	
<sup>13</sup> C <sub>12</sub> -1,2,3,7,8,9-HxCDD	2			37:15	1.25	

<u>Sample Information</u>			
Matrix:	Water		
Weight / Volume:	1000	mL	
Solids / Lipids:	NA	%	
Original pH :	5		
Batch ID:	WG17356		
<b>Laboratory Information</b>			
Sample ID:	LMB17356		
Extraction Date:	12-Oct-09	Filename:	a13oct09c-4
Analysis Date:	13-Oct-09 17:48	Retchk:	a13oct09c-1
		Begin ConCal:	a13oct09c-1
		Initial Cal:	m1613-092309a
Analyzed by:	<u>OS</u>	Reviewed by:	<u>OS</u>
Date:	<u>10-14-09</u>	Date:	<u>10/14/09</u>

**Analytical Results**  
for  
**Ongoing Precision Result (OPR)**

Analyte	Spiked pg/ul	AMT pg/ul	REC %	Range pg/ul		Flag
				Lower	Upper	
2,3,7,8-TCDD	10.0	9.73	97.3	6.70	15.8	
1,2,3,7,8-PeCDD	50.0	50.3	101	35.0	71.0	
1,2,3,4,7,8-HxCDD	50.0	49.0	97.9	35.0	82.0	
1,2,3,6,7,8-HxCDD	50.0	49.7	99.5	38.0	67.0	
1,2,3,7,8,9-HxCDD	50.0	48.4	96.8	32.0	81.0	
1,2,3,4,6,7,8-HpCDD	50.0	48.5	97.1	35.0	70.0	
OCDD	100	97.9	97.9	78.0	144	
2,3,7,8-TCDF	10.0	9.62	96.2	7.50	15.8	
1,2,3,7,8-PeCDF	50.0	49.8	99.5	40.0	67.0	
2,3,4,7,8-PeCDF	50.0	48.4	96.8	34.0	80.0	
1,2,3,4,7,8-HxCDF	50.0	49.9	99.8	36.0	67.0	
1,2,3,6,7,8-HxCDF	50.0	50.2	100	42.0	65.0	
2,3,4,6,7,8-HxCDF	50.0	50.2	100	35.0	78.0	
1,2,3,7,8,9-HxCDF	50.0	50.8	102	39.0	65.0	
1,2,3,4,6,7,8-HpCDF	50.0	49.7	99.4	41.0	61.0	
1,2,3,4,7,8,9-HpCDF	50.0	49.9	99.9	39.0	69.0	
OCDF	100	108	108	63.0	170	

# = Outside range limits  
\* = Ion Ratio Out

**QC Information**

OPR Lab ID: OPR17356  
Extraction Date: 12-Oct-09  
Analysis Date: 13-Oct-09  
Method: 1613

**File Information**

OPR Filename : a13oct09c-2  
Retchk: a13oct09c-1  
Begin ConCal: a13oct09c-1  
Initial Cal: m1613-092309a

**Sample Information**

Matrix: Water

**Analytical Results**  
for  
**Ongoing Precision Result (OPR)**

Labeled Standard	Spiked pg/ul	AMT pg/ul	REC %	Range pg/ul		Flag
				Lower	Upper	
<b>Extraction Standards</b>						
<sup>13</sup> C <sub>12</sub> -2,3,7,8-TCDD	100	83.9	83.9	20.0	175	
<sup>13</sup> C <sub>12</sub> -1,2,3,7,8-PeCDD	100	83.2	83.2	21.0	227	
<sup>13</sup> C <sub>12</sub> -1,2,3,4,7,8-HxCDD	100	87.6	87.6	21.0	193	
<sup>13</sup> C <sub>12</sub> -1,2,3,6,7,8-HxCDD	100	89.8	89.8	25.0	163	
<sup>13</sup> C <sub>12</sub> -1,2,3,4,6,7,8-HpCDD	100	88.9	88.9	26.0	166	
<sup>13</sup> C <sub>12</sub> -OCDD	200	178	89.2	26.0	397	
<sup>13</sup> C <sub>12</sub> -2,3,7,8-TCDF	100	80.0	80.0	22.0	152	
<sup>13</sup> C <sub>12</sub> -1,2,3,7,8-PeCDF	100	79.3	79.3	21.0	192	
<sup>13</sup> C <sub>12</sub> -2,3,4,7,8-PeCDF	100	78.5	78.5	13.0	328	
<sup>13</sup> C <sub>12</sub> -1,2,3,4,7,8-HxCDF	100	92.4	92.4	19.0	202	
<sup>13</sup> C <sub>12</sub> -1,2,3,6,7,8-HxCDF	100	89.6	89.6	21.0	159	
<sup>13</sup> C <sub>12</sub> -2,3,4,6,7,8-HxCDF	100	85.0	85.0	22.0	176	
<sup>13</sup> C <sub>12</sub> -1,2,3,7,8,9-HxCDF	100	81.0	81.0	17.0	205	
<sup>13</sup> C <sub>12</sub> -1,2,3,4,6,7,8-HpCDF	100	80.2	80.2	21.0	158	
<sup>13</sup> C <sub>12</sub> -1,2,3,4,7,8,9-HpCDF	100	85.3	85.3	20.0	186	
<b>Cleanup Standards</b>						
<sup>37</sup> C <sub>14</sub> -2,3,7,8-TCDD	20.0	17.3	86.5	6.20	38.2	

Form Version:[OPR]1613

**QC Information**


OPR Lab ID: OPR17356  
 Extraction Date: 12-Oct-09  
 Analysis Date: 13-Oct-09  
 Method: 1613

**File Information**

OPR Filename : a13oct09c-2  
 Retchk: a13oct09c-1  
 Begin ConCal: a13oct09c-1  
 Initial Cal: m1613-092309a

**Sample Information**

Matrix: Water

Reviewed by: 

Date Reviewed: 10/24/09

**Analytical Results**  
for  
**Ongoing Precision Result (OPRD)**

Analyte	Spiked pg/ul	AMT pg/ul	Recovery %	#	Range pg/ul		OPR Rec(%)	#	RPD	#
					Lower	Upper				
2,3,7,8-TCDD	10.0	9.85	98.5		6.70	15.8	97.3 ✓		1.19	
1,2,3,7,8-PeCDD	50.0	50.5	101		35.0	71.0	101 ✓		0.478	
1,2,3,4,7,8-HxCDD	50.0	49.5	99.0		35.0	82.0	97.9 ✓		1.05	
1,2,3,6,7,8-HxCDD	50.0	49.7	99.4		38.0	67.0	99.5 ✓		0.0764	
1,2,3,7,8,9-HxCDD	50.0	49.2	98.5		32.0	81.0	96.8 ✓		1.70	
1,2,3,4,6,7,8-HpCDD	50.0	49.1	98.1		35.0	70.0	97.1 ✓		1.03	
OCDD	100	98.0	98.0		78.0	144	97.9 ✓		0.0704	
2,3,7,8-TCDF	10.0	9.67	96.7		7.50	15.8	96.2 ✓		0.477	
1,2,3,7,8-PeCDF	50.0	49.8	99.6		40.0	67.0	99.5 ✓		0.0221	
2,3,4,7,8-PeCDF	50.0	48.4	96.9		34.0	80.0	96.8 ✓		0.112	
1,2,3,4,7,8-HxCDF	50.0	50.5	101		36.0	67.0	99.8 ✓		1.07	
1,2,3,6,7,8-HxCDF	50.0	51.1	102		42.0	65.0	100 ✓		1.74	
2,3,4,6,7,8-HxCDF	50.0	50.5	101		35.0	78.0	100 ✓		0.624	
1,2,3,7,8,9-HxCDF	50.0	50.7	101		39.0	65.0	102 ✓		0.0926	
1,2,3,4,6,7,8-HpCDF	50.0	50.4	101		41.0	61.0	99.4 ✓		1.28	
1,2,3,4,7,8,9-HpCDF	50.0	50.4	101		39.0	69.0	99.9 ✓		0.956	
OCDF	100	103	103		63.0	170	108 ✓		4.08	

# = Outside range limits  
\* = Ion Ratio Out

**QC Information**

OPRD Lab ID: OPRD17356  
Extraction Date: 12-Oct-09  
Analysis Date: 13-OCT-09 17:00:32  
Method: 1613

**File Information**

OPRD Filename: a13oct09c-3  
Retchk: a13oct09c-1  
Begin ConCal: a13oct09c-1  
Initial Cal: m1613-092309a


**Sample Information**

Matrix: Water

**Analytical Results**  
for  
**Ongoing Precision Result (OPRD)**

Labeled Standard	Spiked pg/ul	AMT pg/ul	REC %	Range pg/ul		Flag
				Lower	Upper	
<b>Extraction Standards</b>						
<sup>13</sup> C <sub>12</sub> -2,3,7,8-TCDD	100	93.3	93.3	20.0	175	
<sup>13</sup> C <sub>12</sub> -1,2,3,7,8-PeCDD	100	89.0	89.0	21.0	227	
<sup>13</sup> C <sub>12</sub> -1,2,3,4,7,8-HxCDD	100	96.5	96.5	21.0	193	
<sup>13</sup> C <sub>12</sub> -1,2,3,6,7,8-HxCDD	100	101	101	25.0	163	
<sup>13</sup> C <sub>12</sub> -1,2,3,4,6,7,8-HpCDD	100	97.5	97.5	26.0	166	
<sup>13</sup> C <sub>12</sub> -OCDD	200	179	89.7	26.0	397	
<sup>13</sup> C <sub>12</sub> -2,3,7,8-TCDF	100	90.6	90.6	22.0	152	
<sup>13</sup> C <sub>12</sub> -1,2,3,7,8-PeCDF	100	82.0	82.0	21.0	192	
<sup>13</sup> C <sub>12</sub> -2,3,4,7,8-PeCDF	100	84.4	84.4	13.0	328	
<sup>13</sup> C <sub>12</sub> -1,2,3,4,7,8-HxCDF	100	98.0	98.0	19.0	202	
<sup>13</sup> C <sub>12</sub> -1,2,3,6,7,8-HxCDF	100	96.6	96.6	21.0	159	
<sup>13</sup> C <sub>12</sub> -2,3,4,6,7,8-HxCDF	100	93.9	93.9	22.0	176	
<sup>13</sup> C <sub>12</sub> -1,2,3,7,8,9-HxCDF	100	90.2	90.2	17.0	205	
<sup>13</sup> C <sub>12</sub> -1,2,3,4,6,7,8-HpCDF	100	91.3	91.3	21.0	158	
<sup>13</sup> C <sub>12</sub> -1,2,3,4,7,8,9-HpCDF	100	92.9	92.9	20.0	186	
<b>Cleanup Standards</b>						
<sup>37</sup> C <sub>14</sub> -2,3,7,8-TCDD	20.0	19.5	97.5	6.20	38.2	

Form Version:[OPRD]1613

<u>QC Information</u>		<u>File Information</u>	
OPRD Lab ID:	OPRD17356	OPRD Filename :	a13oct09c-3
Extraction Date:	12-Oct-09	Retchk:	a13oct09c-1
Analysis Date:	13-OCT-09 17:00:32	Begin ConCal:	a13oct09c-1
Method:	1613	Initial Cal:	m1613-092309a
<b>Sample Information</b>			
Matrix:	Water		
Reviewed by:		Date Reviewed:	10/14/09

Method 1613 - Blank Results  
**LMB**

**Analytical Data Summary Sheet**

Analyte	Amount (ng/L)	RL (ng/L)	RT (min.)	Ratio	Qualifier
2,3,7,8-TCDD	ND	0.0100			
1,2,3,7,8-PeCDD	ND	0.0500			
1,2,3,4,7,8-HxCDD	ND	0.0500			
1,2,3,6,7,8-HxCDD	ND	0.0500			
1,2,3,7,8,9-HxCDD	ND	0.0500			
1,2,3,4,6,7,8-HpCDD	ND	0.0500			
OCDD	ND	0.100			
2,3,7,8-TCDF	ND	0.0100			
1,2,3,7,8-PeCDF	ND	0.0500			
2,3,4,7,8-PeCDF	ND	0.0500			
1,2,3,4,7,8-HxCDF	ND	0.0500			
1,2,3,6,7,8-HxCDF	ND	0.0500			
2,3,4,6,7,8-HxCDF	ND	0.0500			
1,2,3,7,8,9-HxCDF	ND	0.0500			
1,2,3,4,6,7,8-HpCDF	ND	0.0500			
1,2,3,4,7,8,9-HpCDF	ND	0.0500			
OCDF	ND	0.100			
Total TCDDs	ND	0.0100			
Total PeCDDs	ND	0.0500			
Total HxCDDs	ND	0.0500			
Total HpCDDs	ND	0.0500			
Total TCDFs	ND	0.0100			
Total PeCDFs	ND	0.0500			
Total HxCDFs	ND	0.0500			
Total HpCDFs	ND	0.0500			
WHO-2005 TEQ (ND=0)	0.000				
WHO-2005 TEQ (ND=½)	0.0570				

<u>Sample Information</u>			
Matrix:	Water		
Weight / Volume:	1000	mL	
Solids / Lipids:	NA	%	
Original pH :	5		
Batch ID:	WG17375		
<u>Laboratory Information</u>			
Sample ID:	LMB17375	Filename:	a27oct09b_5-3
		Retchk:	a27oct09b_4-14
		Begin ConCal:	a27oct09b_4-14
Extraction Date:	19-Oct-09		
Analysis Date:	29-Oct-09	14:07	Initial Cal: m1613-092309a

Method 1613 - Blank Results  
**LMB**

Labeled Standard	Expected Amount (ng)	Measured Amount (ng)	Percent Recovery (%)	RT (min.)	Ratio	Qualifier
<b>Extraction Standards</b>						
<sup>13</sup> C <sub>12</sub> -2,3,7,8-TCDD	2	1.94	97.1	31:29	0.78	
<sup>13</sup> C <sub>12</sub> -1,2,3,7,8-PeCDD	2	1.70	85.1	34:18	1.57	
<sup>13</sup> C <sub>12</sub> -1,2,3,4,7,8-HxCDD	2	2.04	102	36:54	1.27	
<sup>13</sup> C <sub>12</sub> -1,2,3,6,7,8-HxCDD	2	2.05	103	36:59	1.26	
<sup>13</sup> C <sub>12</sub> -1,2,3,4,6,7,8-HpCDD	2	1.90	94.8	40:20	1.05	
<sup>13</sup> C <sub>12</sub> -OCDD	4	3.55	88.6	44:38	0.89	
<sup>13</sup> C <sub>12</sub> -2,3,7,8-TCDF	2	1.88	93.9	30:53	0.79	
<sup>13</sup> C <sub>12</sub> -1,2,3,7,8-PeCDF	2	1.62	81.1	33:29	1.59	
<sup>13</sup> C <sub>12</sub> -2,3,4,7,8-PeCDF	2	1.63	81.5	34:06	1.58	
<sup>13</sup> C <sub>12</sub> -1,2,3,4,7,8-HxCDF	2	2.13	106	36:11	0.52	
<sup>13</sup> C <sub>12</sub> -1,2,3,6,7,8-HxCDF	2	2.10	105	36:16	0.52	
<sup>13</sup> C <sub>12</sub> -2,3,4,6,7,8-HxCDF	2	2.01	101	36:46	0.53	
<sup>13</sup> C <sub>12</sub> -1,2,3,7,8,9-HxCDF	2	1.76	87.8	37:33	0.53	
<sup>13</sup> C <sub>12</sub> -1,2,3,4,6,7,8-HpCDF	2	1.80	90.1	39:03	0.46	
<sup>13</sup> C <sub>12</sub> -1,2,3,4,7,8,9-HpCDF	2	1.70	85.1	41:01	0.45	
<b>Cleanup Standard</b>						
<sup>37</sup> Cl <sub>4</sub> -2,3,7,8-TCDD	0.4	0.429	107	31:30		
<b>Injection Standards</b>						
<sup>13</sup> C <sub>12</sub> -1,2,3,4-TCDD	2			31:02	0.78	
<sup>13</sup> C <sub>12</sub> -1,2,3,7,8,9-HxCDD	2			37:14	1.25	

<b>Sample Information</b>			
Matrix:	Water		
Weight / Volume:	1000	mL	
Solids / Lipids:	NA	%	
Original pH :	5		
Batch ID:	WG17375		
<b>Laboratory Information</b>			
Sample ID:	LMB17375	Filename:	a27oct09b_5-3
		Retchk:	a27oct09b_4-14
		Begin ConCal:	a27oct09b_4-14
Extraction Date:	19-Oct-09	Initial Cal:	m1613-092309a
Analysis Date:	29-Oct-09 14:07		
Analyzed by:	<u>DS</u>	Reviewed by:	<u>MD</u>
Date:	<u>11-3-09</u>	Date:	<u>11/3/09</u>

**Analytical Results**  
for  
**Ongoing Precision Result (OPR)**

Analyte	Spiked pg/ul	AMT pg/ul	REC %	Range pg/ul		Flag
				Lower	Upper	
2,3,7,8-TCDD	10.0	8.95	89.5	6.70	15.8	
1,2,3,7,8-PeCDD	50.0	45.7	91.5	35.0	71.0	
1,2,3,4,7,8-HxCDD	50.0	45.2	90.4	35.0	82.0	
1,2,3,6,7,8-HxCDD	50.0	45.3	90.7	38.0	67.0	
1,2,3,7,8,9-HxCDD	50.0	44.4	88.7	32.0	81.0	
1,2,3,4,6,7,8-HpCDD	50.0	43.6	87.1	35.0	70.0	
OCDD	100	86.7	86.7	78.0	144	
2,3,7,8-TCDF	10.0	8.69	86.9	7.50	15.8	
1,2,3,7,8-PeCDF	50.0	45.0	90.1	40.0	67.0	
2,3,4,7,8-PeCDF	50.0	44.0	88.0	34.0	80.0	
1,2,3,4,7,8-HxCDF	50.0	45.0	90.0	36.0	67.0	
1,2,3,6,7,8-HxCDF	50.0	44.2	88.5	42.0	65.0	
2,3,4,6,7,8-HxCDF	50.0	44.3	88.6	35.0	78.0	
1,2,3,7,8,9-HxCDF	50.0	45.1	90.1	39.0	65.0	
1,2,3,4,6,7,8-HpCDF	50.0	45.0	90.1	41.0	61.0	
1,2,3,4,7,8,9-HpCDF	50.0	44.2	88.3	39.0	69.0	
OCDF	100	84.8	84.8	63.0	170	

# = Outside range limits  
\* = Ion Ratio Out

**QC Information**

OPR Lab ID: OPR17375  
Extraction Date: 19-Oct-09  
Analysis Date: 29-Oct-09  
Method: 1613

**File Information**

OPR Filename : a27oct09b\_5-1  
Retchk: a27oct09b\_4-14  
Begin ConCal: a27oct09b\_4-14  
Initial Cal: m1613-092309a


**Sample Information**

Matrix: Water

**Analytical Results**  
for  
**Ongoing Precision Result (OPR)**

Labeled Standard	Spiked pg/ul	AMT pg/ul	REC %	Range pg/ul		Flag
				Lower	Upper	
<b>Extraction Standards</b>						
<sup>13</sup> C <sub>12</sub> -2,3,7,8-TCDD	100	91.4	91.4	20.0	175	
<sup>13</sup> C <sub>12</sub> -1,2,3,7,8-PeCDD	100	76.4	76.4	21.0	227	
<sup>13</sup> C <sub>12</sub> -1,2,3,4,7,8-HxCDD	100	100	100	21.0	193	
<sup>13</sup> C <sub>12</sub> -1,2,3,6,7,8-HxCDD	100	99.7	99.7	25.0	163	
<sup>13</sup> C <sub>12</sub> -1,2,3,4,6,7,8-HpCDD	100	97.6	97.6	26.0	166	
<sup>13</sup> C <sub>12</sub> -OCDD	200	188	94.0	26.0	397	
<sup>13</sup> C <sub>12</sub> -2,3,7,8-TCDF	100	90.7	90.7	22.0	152	
<sup>13</sup> C <sub>12</sub> -1,2,3,7,8-PeCDF	100	72.8	72.8	21.0	192	
<sup>13</sup> C <sub>12</sub> -2,3,4,7,8-PeCDF	100	73.1	73.1	13.0	328	
<sup>13</sup> C <sub>12</sub> -1,2,3,4,7,8-HxCDF	100	104	104	19.0	202	
<sup>13</sup> C <sub>12</sub> -1,2,3,6,7,8-HxCDF	100	106	106	21.0	159	
<sup>13</sup> C <sub>12</sub> -2,3,4,6,7,8-HxCDF	100	99.2	99.2	22.0	176	
<sup>13</sup> C <sub>12</sub> -1,2,3,7,8,9-HxCDF	100	86.9	86.9	17.0	205	
<sup>13</sup> C <sub>12</sub> -1,2,3,4,6,7,8-HpCDF	100	89.0	89.0	21.0	158	
<sup>13</sup> C <sub>12</sub> -1,2,3,4,7,8,9-HpCDF	100	86.7	86.7	20.0	186	
<b>Cleanup Standards</b>						
<sup>37</sup> C <sub>14</sub> -2,3,7,8-TCDD	20.0	19.7	98.4	6.20	38.2	

Form Version: [OPR]1613

<b>QC Information</b>		<b>File Information</b>	
OPR Lab ID:	OPR17375	OPR Filename :	a27oct09b_5-1
Extraction Date:	19-Oct-09	Retchk:	a27oct09b_4-14
Analysis Date:	29-Oct-09	Begin ConCal:	a27oct09b_4-14
Method:	1613	Initial Cal:	m1613-092309a
<b>Sample Information</b>			
Matrix:	Water		
Reviewed by:		Date Reviewed:	11/3/09

**Analytical Results**  
for  
**Ongoing Precision Result (OPRD)**

Analyte	Spiked pg/ul	AMT pg/ul	Recovery %	#	Range pg/ul		OPR Rec(%)	#	RPD	#
					Lower	Upper				
2,3,7,8-TCDD	10.0	9.28	92.8		6.70	15.8	89.5 ✓		3.54	
1,2,3,7,8-PeCDD	50.0	47.5	94.9		35.0	71.0	91.5 ✓		3.70	
1,2,3,4,7,8-HxCDD	50.0	46.4	92.8		35.0	82.0	90.4 ✓		2.60	
1,2,3,6,7,8-HxCDD	50.0	47.1	94.1		38.0	67.0	90.7 ✓		3.72	
1,2,3,7,8,9-HxCDD	50.0	45.6	91.2		32.0	81.0	88.7 ✓		2.81	
1,2,3,4,6,7,8-HpCDD	50.0	44.8	89.5		35.0	70.0	87.1 ✓		2.72	
OCDD	100	89.8	89.8		78.0	144	86.7 ✓		3.46	
2,3,7,8-TCDF	10.0	9.02	90.2		7.50	15.8	86.9 ✓		3.80	
1,2,3,7,8-PeCDF	50.0	46.7	93.4		40.0	67.0	90.1 ✓		3.60	
2,3,4,7,8-PeCDF	50.0	46.2	92.4		34.0	80.0	88.0 ✓		4.84	
1,2,3,4,7,8-HxCDF	50.0	46.1	92.3		36.0	67.0	90.0 ✓		2.49	
1,2,3,6,7,8-HxCDF	50.0	47.2	94.4		42.0	65.0	88.5 ✓		6.49	
2,3,4,6,7,8-HxCDF	50.0	45.8	91.5		35.0	78.0	88.6 ✓		3.22	
1,2,3,7,8,9-HxCDF	50.0	46.8	93.5		39.0	65.0	90.1 ✓		3.71	
1,2,3,4,6,7,8-HpCDF	50.0	46.5	93.1		41.0	61.0	90.1 ✓		3.26	
1,2,3,4,7,8,9-HpCDF	50.0	45.2	90.5		39.0	69.0	88.3 ✓		2.38	
OCDF	100	88.4	88.4		63.0	170	84.8 ✓		4.20	

# = Outside range limits  
\* = Ion Ratio Out

**QC Information**

OPRD Lab ID: OPRD17375  
Extraction Date: 19-Oct-09  
Analysis Date: 29-OCT-09 13:18:57  
Method: 1613

**File Information**

OPRD Filename: a27oct09b\_5-2  
Retchk: a27oct09b\_4-14  
Begin ConCal: a27oct09b\_4-14  
Initial Cal: m1613-092309a

**Sample Information**

Matrix: Water

**Analytical Results**  
for  
**Ongoing Precision Result (OPRD)**

Labeled Standard	Spiked pg/ul	AMT pg/ul	REC %	Range pg/ul		Flag
				Lower	Upper	
<b>Extraction Standards</b>						
<sup>13</sup> C <sub>12</sub> -2,3,7,8-TCDD	100	85.2	85.2	20.0	175	
<sup>13</sup> C <sub>12</sub> -1,2,3,7,8-PeCDD	100	69.8	69.8	21.0	227	
<sup>13</sup> C <sub>12</sub> -1,2,3,4,7,8-HxCDD	100	94.4	94.4	21.0	193	
<sup>13</sup> C <sub>12</sub> -1,2,3,6,7,8-HxCDD	100	92.3	92.3	25.0	163	
<sup>13</sup> C <sub>12</sub> -1,2,3,4,6,7,8-HpCDD	100	93.8	93.8	26.0	166	
<sup>13</sup> C <sub>12</sub> -OCDD	200	171	85.4	26.0	397	
<sup>13</sup> C <sub>12</sub> -2,3,7,8-TCDF	100	86.4	86.4	22.0	152	
<sup>13</sup> C <sub>12</sub> -1,2,3,7,8-PeCDF	100	66.1	66.1	21.0	192	
<sup>13</sup> C <sub>12</sub> -2,3,4,7,8-PeCDF	100	65.8	65.8	13.0	328	
<sup>13</sup> C <sub>12</sub> -1,2,3,4,7,8-HxCDF	100	95.9	95.9	19.0	202	
<sup>13</sup> C <sub>12</sub> -1,2,3,6,7,8-HxCDF	100	95.4	95.4	21.0	159	
<sup>13</sup> C <sub>12</sub> -2,3,4,6,7,8-HxCDF	100	92.1	92.1	22.0	176	
<sup>13</sup> C <sub>12</sub> -1,2,3,7,8,9-HxCDF	100	79.7	79.7	17.0	205	
<sup>13</sup> C <sub>12</sub> -1,2,3,4,6,7,8-HpCDF	100	85.4	85.4	21.0	158	
<sup>13</sup> C <sub>12</sub> -1,2,3,4,7,8,9-HpCDF	100	81.4	81.4	20.0	186	
<b>Cleanup Standards</b>						
<sup>37</sup> C <sub>14</sub> -2,3,7,8-TCDD	20.0	19.8	99.1	6.20	38.2	

Form Version: [OPRD]1613

**QC Information**


OPRD Lab ID: OPRD17375  
 Extraction Date: 19-Oct-09  
 Analysis Date: 29-OCT-09 13:18:57  
 Method: 1613

**File Information**

OPRD Filename : a27oct09b\_5-2  
 Retchk: a27oct09b\_4-14  
 Begin ConCal: a27oct09b\_4-14  
 Initial Cal: m1613-092309a

**Sample Information**

Matrix: Water

Reviewed by: 

Date Reviewed: 11/3/09



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1

CLIENT: WESTON

CONTACT: ALEX CLARK PHONE NO.: 337391-7533

PROJECT: MSB SITE/PWSID#: \_\_\_\_\_

REPORTS TO: ALEX CLARK FAX NO.: 33739-7501

INVOICE TO: NO INVOICE - QUOTE #: \_\_\_\_\_

RE-RUN FROM MSB CONT. P.O. NUMBER: \_\_\_\_\_

SGS Reference:

Preservatives Used	Analysis Required	Shipping Carrier	Shipping Ticket No.	Special Deliverable Requirements:	Special Instructions:
	3				

PAGE 1 OF 1

LAB NO.	SAMPLE IDENTIFICATION	DATE	TIME	MATRIX	NO CONTAINERS	SAMPLE TYPE	REMARKS
	MSB-EQUIPMENT-FIL-100809	10/19/09	1625	Water	3	G	*Need ALL Consigners
	MSB-MID-POS-VNF-100809		1605		3		
	MSB-BAY-PRE-FIL-100809		1240		3		*Please run
	MSB-BAY-PRE-VNF-100809		1230		3		Equipment and
	MSB-BAY-POS-VNF-100809		1315		3		MB first and
	MSB-NSP-PRE-VNF-100809		1600		3		refact results
	MSB-NSP-PRE-FIL-100809		1000		2		Phos for
	MSB-NSP-PRE-VNF-100809		1620		3		mainly investigative
	MSB-SIB-POS-VNF-100809		1445		3		Samples

4

Collected/Relinquished By: (1) D. Zwigell Date 10/20/09 Time 1630 Received By: Matthew Beer

Relinquished By: (2) Matthew Beer Date 10/19/09 Time 1600 Received By: FedEx

Relinquished By: (3) \_\_\_\_\_ Date \_\_\_\_\_ Time \_\_\_\_\_ Received By: \_\_\_\_\_

Relinquished By: (4) \_\_\_\_\_ Date 10/20/09 Time 1045 Received By: Alexandria Michael

Samples Received Cold? (Circle) YES NO

Temperature °C: 5.7, 4.3, 4.6, 4.5

Chain of Custody Seal: (Circle) INTACT BROKEN ABSENT

Special Instructions: Please see above comments and run ASAP

Requested Turnaround Time: RUSH Date Needed: ASAP