

June 5, 2015

Tomas Oberding, PhD Hydrologist, Adv-District 1 New Mexico Oil Conservation Division 1220 South St. Francis Drive Santa Fe, New Mexico 87505

#### Re: First Annual Groundwater Monitoring Report State L-2 Tank Battery Site (AP-73) Lea County, New Mexico

Dear Dr. Oberding:

Enviro Clean Cardinal, LLC (EC<sup>2</sup>), on behalf of our client Chesapeake Energy Corporation (Chesapeake), is pleased to submit to the New Mexico Oil Conservation Division (NMOCD) in electronic format the *First Annual Groundwater Monitoring Report* (Report) detailing the first year of groundwater monitoring activities conducted at the State L-2 Tank Battery Site (AP-73) located in the C-NE-NW of Section 19, Township 17 South, Range 36 East, Lea County, New Mexico. These activities were conducted in accordance with the Stage 2 Abatement Plan for the Site approved by the NMOCD on June 27, 2013.

If you have any questions or comments regarding this Report, please do not hesitate to contact me at (918) 906-6780.

Sincerely, Enviro Clean Cardinal, LLC

Bur Milmin

Bruce E. McKenzie, P.G. Senior Project Manager

Enclosure: First Annual Groundwater Monitoring Report

xc: Patrick McMahon - Heidel, Samberson, Newell, Cox & McMahon (2 copies) Chase Acker - Chesapeake (4 copies)

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FIRST ANNUAL GROUNDWATER MONITORING REPORT CHESAPEAKE ENERGY CORPORATION STATE L-2 TANK BATTERY (AP-73) LEA COUNTY, NEW MEXICO

Prepared for:

Chesapeake Energy Corporation 6100 North Western Avenue Oklahoma City, Oklahoma 73118 (405) 935-3938

Prepared by:

Enviro Clean Cardinal, LLC 7060 South Yale Avenue, Suite 603 Tulsa, Oklahoma 74136 (918) 794-7828



June 5, 2015

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#### CHESAPEAKE ENERGY CORPORATION, INC. STATE L-2 TANK BATTERY (AP-73) FIRST ANNUAL GROUNDWATER MONITORING REPORT JUNE 5, 2015

#### 1.0 INTRODUCTION

Chesapeake Energy Corporation (Chesapeake) retained Enviro Clean Cardinal, LLC (EC<sup>2</sup>), to perform chloride and benzene impacted groundwater monitoring at Chesapeake's former State L-2 Tank Battery site (Site) located in Lea County, New Mexico. The Site is located approximately 8 miles south-southwest of Lovington, New Mexico in the C-NE-NW of Section 19, Township 17 South, Range 36 East, Lea County, New Mexico (coordinates 32.825319° latitude, -103.396361° longitude). The Site location and topographic features are shown on **Figure 1**. An oil and gas production tank battery was formerly located at the Site. Chesapeake purchased the Site in 2004, but never operated the tank battery. Chesapeake began abandonment and environmental investigation activities at the Site in 2007.

Initial Site investigation activities were conducted in May 2007. These investigation activities consisted of conducting EM-31 and EM-34 ground conductivity surveys, the collection of soil samples from nine boreholes, and the installation and sampling of five groundwater monitoring wells. In August 2007 following the investigation, Chesapeake submitted to the New Mexico Oil Conservation Division (NMOCD) a Stage 1 Abatement Plan for the Site. In May 2010, the NMOCD responded to Chesapeake that the agency was not adequately staffed to review the abatement plan in a timely manner and advised Chesapeake that they could proceed with abatement operations at risk. In July 2010, Chesapeake notified the NMOCD of their intent to proceed with the Stage 1 Abatement activities. On March 20, 2012, following implementation of these activities, Chesapeake submitted the Stage 1 Abatement Report for the Site.

On March 27, 2012, Chesapeake submitted to the NMOCD the *Stage 2 Abatement Plan* (Plan) for the Site. A copy of the Plan is provided in **Appendix A**. In this Plan, Chesapeake proposed the following abatement activities at the Site:

- Excavate and remove the near-surface soils at the Site containing concentrations of chloride exceeding 1,000 milligrams per kilogram (mg/kg),
- Excavate and remove the near-surface soils at the Site containing concentrations of TPH exceeding 1,000 mg/kg,

- Install clay liners in areas where chloride and/or TPH concentrations exceed 1,000 mg/kg at depths greater than five feet below ground level,
- Install one additional groundwater monitoring well downgradient of the Site,
- Monitor the groundwater at the Site until the concentrations of chloride and benzene are below the New Mexico Water Quality Control Commission standards.

On March 7, 2013, NMOCD notified Chesapeake that the Plan was administratively complete and that Chesapeake should proceed with public notice of the Plan. On March 30, 2013, Chesapeake published a notice of the proposed activities in the Albuquerque Journal, the Hobbs-Daily News Sun and the Lovington Leader. In addition, written notification of the Plan submittal was sent to all surface owners of record within a 1-mile radius of the Site. On June 27, 2013 upon completion of the notification activities, the NMOCD approved the Plan for the Site. A copy of the NMOCD correspondence approving the Plan is included in **Appendix B**.

The soil remediation activities outlined in the Plan were conducted at the Site during the period January 15, 2014 through March 27, 2014. The soil remediation activities were summarized in the document titled **Soil Remediation Summary Report**, submitted to the NMOCD on August 6, 2014.

This *First Annual Groundwater Monitoring Report* (Report) summarizes the groundwater monitoring activities conducted at the Site during the following quarterly sampling events:

- June 3 8, 2014,
- September 22 25, 2014,
- December 9, 2014
- March 10, 2015

#### 2.0 WELL INSTALLATION

As outlined in the Plan, EC<sup>2</sup> installed one additional monitoring well to complete the delineation of the groundwater impacts at the Site. During the period March 24-27, 2014, EC<sup>2</sup> oversaw New Mexico licensed (WD-1188) drilling contractor John Scarborough Drilling, Inc. (Lamesa, Texas) during the drilling and completion of one monitoring well (MW-6) at the Site.

Monitoring well MW-6 was drilled to a depth of 56 feet below ground surface (BGS), terminating approximately 12 feet below groundwater saturation. Drilling activities were conducted using a truck-mounted air rotary drilling rig and the well was installed per the specifications of New Mexico Administrative Code Title 19, Chapter 27. MW-6 was constructed with 2-inch diameter Schedule 40 PVC screen (0.020-inch) and casing. The screen is approximately 20 feet in length. The annulus space between the screens and casings was filled with filter sand pack material (across and 2 feet above the top slot of the screen), a 2-foot minimum bentonite seal was placed above the filter pack, and the remaining annulus was filled to the surface with a cement-bentonite grout. A locking well protector was cemented in-place within a 4-inch thick, 2 foot by 2 foot concrete surface pad. The locations of the Site monitoring wells are shown on attached **Figure 2**. Monitoring well completion records are provided in **Appendix C**.

## 3.0 QUARTERLY GROUNDWATER MONITORING

This Report describes the findings from four quarterly groundwater sampling events conducted at the Site from June 3, 2014 through March 10, 2015.

## 3.1 GROUNDWATER MONITORING METHODOLOGY

Prior to collecting groundwater samples during each quarterly event, EC<sup>2</sup> gauged all 6 monitoring wells (MW-1 through MW-6) at the Site using an electronic water level meter to determine the depth-to-water (DTW) within each monitoring well. The locations of these monitoring wells are shown on the attached **Figure 2**. DTWs were measured from the surveyed top-of-casing (TOC) of each well and converted to elevations relative to mean sea level. These data are presented in **Table 1**. Potentiometric surface maps were constructed utilizing these data to illustrate the groundwater flow direction within the shallow groundwater system beneath the Site. Potentiometric surface maps for each of the quarterly events are presented on **Figures 3** through **6**, respectively.

Upon completion of DTW measurement activities, EC<sup>2</sup> field personnel collected groundwater samples from monitoring wells MW-1 through MW-6. Groundwater samples were collected utilizing EPA approved low-flow purging/sampling methodologies. Field parameters consisting of pH, specific conductivity, temperature and dissolved oxygen (DO) were recorded during field activities utilizing an air-tight flow-through cell. Upon the stabilization of field parameters, groundwater samples were collected into laboratory prepared containers, labeled as to source and contents, placed on ice for preservation, placed under chain-of-custody control and shipped via overnight courier to the analytical laboratory (Test America Inc., Nashville, Tennessee). As per the Plan, the groundwater samples collected from monitoring wells MW-1 through MW-6 were analyzed for chloride (EPA Method 300.0) and the groundwater samples collected from monitoring well MW-4 were analyzed for benzene, ethylbenzene, toluene and total xylenes (BTEX) (EPA Method 8260B) during each of the four quarterly events. In addition, the groundwater samples collected from monitoring well MW-2 during the September, December and March quarterly events were also analyzed for BTEX. A summary of the laboratory analytical results for chloride and BTEX analyses is presented in Table 2, and complete copies of the laboratory analytical reports and chain-of-custody documentation is proved in Appendix D.

Chloride and benzene are the constituents of concern (COC) at the Site. As per the Plan, the laboratory analytical results from these sampling events were screened against the New Mexico

Administrative Code 20.6.2, Standards for Groundwater of 10,000 mg/L TDS Concentration or Less (Limit) for chloride (250 mg/L) and benzene (10 µg/L).

## 3.2 FIRST QUARTERLY GROUNDWATER SAMPLING RESULTS

The first quarterly groundwater sampling event was conducted at the Site during the period June 3-8, 2014. In addition to the sampling procedures discussed in Section 3.0, monitoring wells MW-1 through MW-6 were developed after liquid level measurements and prior to purging and sampling. These wells were re-developed because they had not been purged/sampled in approximately two years. Development was conducted using an air-lift pump to remove sediments that had accumulated within the well sump.

A potentiometric surface map was constructed utilizing the DTW measurements collected during this sampling event and is presented on **Figure 3**. Groundwater flow during this sampling event was, in general, from the northwest to the southeast.

As can be seen in **Table 2**, the groundwater sample collected from monitoring well MW-2 (357 mg/L) during this sampling event contained a concentration of chloride that exceeds the Limit of 250 mg/L.

The groundwater sample collected from monitoring well MW-4 (34.3  $\mu$ g/L) during this sampling event contained a concentration of benzene that exceeds the Limit of 10  $\mu$ g/L.

### 3.3 SECOND QUARTERLY GROUNDWATER SAMPLING RESULTS

The second quarterly groundwater sampling event was conducted at the Site during the period September 22-25, 2014.

A potentiometric surface map was constructed utilizing the DTW measurements collected during this sampling event and is presented on **Figure 4**. Groundwater flow during this sampling event was, in general, from the northwest to the southeast.

As can be seen in **Table 2**, the groundwater sample collected from monitoring well MW-2 (327 mg/L) during this sampling event contained a concentration of chloride that exceeds the Limit of 250 mg/L.

The groundwater sample collected from monitoring well MW-4 (4.76  $\mu$ g/L) during this sampling event contained a concentration of benzene that is well below the Limit of 10  $\mu$ g/L.

#### 3.4 THIRD QUARTERLY GROUNDWATER SAMPLING RESULTS

The third quarterly groundwater sampling event was conducted at the Site on December 9, 2014.

A potentiometric surface map was constructed utilizing the DTW measurements collected during this sampling event and is presented on **Figure 5**. Groundwater flow during this sampling event was, in general, from the northwest to the southeast.

As can be seen in **Table 2**, the groundwater samples collected from monitoring wells MW-2 (319 mg/L) and MW-4 (300 mg/L) contained concentrations of chloride that exceed the Limit of 250 mg/L.

The groundwater sample collected from monitoring well MW-4 (12.1  $\mu$ g/L) contained a concentration of benzene that slightly exceeds the Limit of 10  $\mu$ g/L.

#### 3.5 FOURTH QUARTERLY GROUNDWATER SAMPLING RESULTS

The fourth quarterly groundwater sampling event was conducted at the Site on March 10, 2015.

A potentiometric surface map was constructed utilizing the DTW measurements collected during this sampling event and is presented on **Figure 6** Groundwater flow during this sampling event was, in general, from the northeast to the southwest.

As can be seen in **Table 2**, the groundwater sample collected from monitoring well MW-2 (263 mg/L) contained a concentration of chloride that exceeds the Limit of 250 mg/L. **Figure 7** presents an isopleth of the chloride concentrations observed in the groundwater samples collected during this sampling event. As can be seen on this figure, the highest levels of chloride are located in the south central portion of the Site.

**Figure 8** presents chloride concentration trend graphs for each of the monitoring wells sampled at the Site. A review of this figure indicates that the levels of chloride observed in the groundwater samples are decreasing in two wells, increasing in two wells, and stable in two wells. The soil remediation activities conducted in the first quarter of 2014 have removed the continuing source of chloride impacts to the groundwater at the Site. Removal of the source will allow the chloride concentrations already present in the Site groundwater to naturally attenuate via the physical attenuation mechanisms of dispersion and dilution.

Benzene was not detected in the groundwater sample collected from monitoring well MW-4 during this sampling event.

**Figure 9** presents a benzene concentration trend graph for monitoring well MW-4. A review of this figure indicates that the levels of benzene observed in the groundwater samples collected from this monitoring well have decreased markedly since June 2014.

#### 4.0 CONCLUSIONS

Based upon the data presented herein, the following conclusions are presented:

- Groundwater beneath the Site is encountered at depths ranging from approximately 45 to 48 feet below ground level.
- The direction of groundwater flow at the Site is, in general, from the northwest to the southeast.
- During the reporting period, concentrations of chloride greater than the Limit of 250 mg/L were observed in the groundwater samples collected from monitoring well MW-2 (ranging from 263 mg/L to 357 mg/L) during each of the four groundwater sampling events and in the groundwater samples collected from monitoring well MW-4 (300 mg/L) during the third groundwater sampling event.
- During the reporting period, concentrations of benzene greater than the Limit of 10 μg/L were observed in the groundwater samples collected from monitoring well MW-4 (34.3 μg/L and 12.1 μg/L) during the first and third quarterly groundwater sampling events, respectively.

#### 5.0 **RECOMMENDATIONS**

Based upon a review of the data presented within this report, the following recommendations have been developed:

 As specified in the Plan, quarterly monitoring of the groundwater within the six monitoring wells at the Site should be continued until the levels of chloride and benzene observed in the groundwater samples fall below the Limits of 250 mg/L and 10 µg/L, respectively, for eight quarters. The next groundwater monitoring event at the Site is scheduled to be conducted in June 2015.

TABLES

# Table 1 : Summary of Liquid Level MeasurementsChesapeake Energy Corporation Inc., State L-2 Tank Battery (AP-73)Lea County, New Mexico

Monitoring	Top of Casing Elevation	Depth to Liquid Measurement	Depth to LNAPL	Depth to Groundwater	LNAPL Thickness	Groundwater Elevation
Well	(AMSL-Feet)	Date	(Feet-TOC)	(Feet-TOC)	(Feet)	(AMSL-Feet)
MW-1	3895.34	06/03/14		47.58		3847.76
	3895.34	09/22/14		47.66		3847.68
	3895.34	12/09/14		46.84		3848.50
	3895.34	03/10/15		47.27		3848.07
MW-2	3893.79	06/03/14		47.71		3846.08
	3893.79	09/22/14		47.82		3845.97
	3893.79	12/09/14		47.17		3846.62
	3893.79	03/10/15		47.42		3846.37
MW-3	3891.87	06/03/14		46.67		3845.20
	3891.87	09/22/14		46.78		3845.09
	3891.87	12/09/14		46.16		3845.71
	3891.87	03/10/15		46.44		3845.43
MW-4	3894.08	06/03/14		47.56		3846.52
	3894.08	09/22/14		47.65		3846.43
	3894.08	12/09/14		46.96		3847.12
	3894.08	03/10/15		47.32		3846.76
MW-5	3892.08	06/03/14		47.45		3844.63
	3892.08	09/22/14		46.56		3845.52
	3892.08	12/09/14		45.89		3846.19
	3892.08	03/10/15		46.27		3845.81
MW-6	3892.09	06/03/14		47.43		3844.66
	3892.09	09/22/14		46.54		3845.55
	3892.09	12/09/14		45.92		3846.17
	3892.09	03/10/15		46.24		3845.85

#### Notes:

1. TOC : Measured from top of casing.

2. LNAPL : Light non aqueous phase liquid.

3. --: Denotes Not Measured.

4. AMSL: Denotes above mean sea level (AMSL)

	Analyte:	Benzene	Toluene	Ethylbenzene	Xylenes	Chloride
	Cleanup Level:	5	1,000	700	10,000	250
Sample ID	Units:	μg/L	μg/L	μg/L	μg/L	mg/L
MW-1	5-Jun-14					26.8
	22-Sep-14					25.4
	9-Dec-14					27.7
	10-Mar-15					23.2
MW-2	5-Jun-14					357
	24-Sep-14	<1.00				327
	9-Dec-14	<0.500	<0.500	<0.500	<1.50	319
	10-Mar-15	<0.500				263
DUP	10-Mar-15	<0.500				264
MW-3	5-Jun-14					85.8
	25-Sep-14					86.5
	9-Dec-14					86.0
	10-Mar-15					79.5
MW-4	5-Jun-14	34.3				192
Dup	5-Jun-14	33.5				192
	24-Sep-14	4.76				239
Dup	24-Sep-14	4.83				239
	9-Dec-14	12.1	<0.500	<0.500	<1.50	300
Dup	9-Dec-14	11.3	<0.500	<0.500	<1.50	299
	10-Mar-15	<0.500				238
MW-5	5-Jun-14					129
	22-Sep-14					114
	9-Dec-14					129
	10-Mar-15					102
MW-6	5-Jun-14					133
	24-Sep-14					167
	9-Dec-14					149
	10-Mar-15					160
EQ Blank	5-Jun-14	<1.00				<1.00
	24-Sep-14	<1.00				<1.00
	9-Dec-14	<0.500	<0.500	<0.500	<1.50	<1.00
	10-Mar-15	<0.500				<1.00

# Table 2 : Summary of Laboratory Analytical Results for Groundwater SamplesChesapeake Energy Corporation, State L-2 Tank Battery (AP-73)Lea County, New Mexico

#### Notes:

1. μg/L: micrograms per liter.

2. mg/L: milligrams per liter.

3. <: Analyte not detected at the laboratory reporting limit.

- 4. All analyses performed by TestAmerica Laboratories in Nashville, Tennessee.
- 5. Cells shaded in blue indicate results that are above the laboratory reporting limit.

6. Cells with text **bolded** indicate results that exceed the New Mexico Administrative Code 20.6.2,

Standards for Groundwater, for chloride of 250 mg/L or the MCL for benzene of 5  $\mu$ g/L.

**FIGURES** 



Y:\Projects\Chesapeake\CHKHSTL201\_StateL2well\04\_CAD\FIG01\_T0P0.dwg on Jun 04, 2015-10:58am







SCALE FEET 1) AERIAL DATED 3/2/2012 - GOOGLE EARTH PRO SCREEN CAPTURE

FIGURE TITLE SITE BASE MAP

BEM			TROCEOTROMBER	TIGORE NOMBER
BEM	SCALE	1"=60'	CHKHSTL201	2
SKG	DATE	6/5/2015		



<b>MW-5</b> 3844.63	LOCATION OF MONITORING WELL AND GROUNDWATER ELEVATION 6/3/2014, FEET AMSL
	GRAVEL ROADWAY
	PIPELINE

GROUNDWATER POTENTIOMETRIC SURFACE (DASHED WHERE INFERRED)



_						
GROUNDWATER POTENTIOMETRIC SURFACE, JUNE 3, 2014						
1						



<b>MW-5</b> 3845.52	LOCATION OF MONITORING WELL AND GROUNDWATER ELEVATION 9/22/2014, FEET AMSL
	GRAVEL ROADWAY
	PIPELINE

*3845.00* GROUNDWATER POTENTIOMETRIC SURFACE (DASHED WHERE INFERRED)



TITLE GROUNDWATER POTENTIOMETRIC SURFACE, SEPTEMBER 22, 2014						
			PROJECT NUMBER	FIGURE NUMBER		
BEM						
BEM	SCALE	1"=60'	CHKHSTL201	4		
SKG	DATE	6/5/2015				



<b>MW-5</b> 3846.19	LOCATION OF MONITORING GROUNDWATER ELEVATION FEET AMSL	WELL AND 12/9/2014,
	GRAVEL ROADWAY	
	PIPELINE	

GROUNDWATER POTENTIOMETRIC SURFACE (DASHED WHERE INFERRED)



TITLE GROUNDWATER POTENTIOMETRIC SURFACE, DECEMBER 9, 2014						
			PROJECT NUMBER	FIGURE NUMBER		
BEM						
BEM	SCALE	1"=60'	CHKHSTL201	5		
SKG	DATE	6/5/2015				



<b>MW-5</b> 3845.81	LOCATION OF MONITORING WELL AND GROUNDWATER ELEVATION 3/10/2015, FEET AMSL
	GRAVEL ROADWAY
	PIPELINE

GROUNDWATER POTENTIOMETRIC SURFACE (DASHED WHERE INFERRED)



GROUNDWATER POTENTIOMETRIC SURFACE, MARCH 10, 2015						
			PROJECT NUMBER	FIGURE NUMBER		
BEM						
BEM	SCALE	1"=60'	CHKHSTL201	6		
SKG	DATE	6/5/2015				



102 LOCATION OF MONITORING WELL AND CONCENTRATION OF CHLORIDE IN GROUNDWATER 3/10/2015, mg/L

GRAVEL ROADWAY

PIPELINE



CONTOUR LINE SHOWING EQUAL CONCENTRATIONS OF CHLORIDE IN GROUNDWATER, mg/L. (DASHED WHERE INFERRED)

NS

NOT SAMPLED



Е	тіт	LΕ

#### ISOPLETH OF CHLORIDE CONCENTRATIONS IN GROUNDWATER, MARCH 20, 2015

			PROJECT NUMBER		
BEM			TROCEOTROMBER	TIGORE NOMBER	
BEM	SCALE	1"=60'	CHKHSTL201	7	
SKG	DATE	6/5/2015			





**APPENDICES** 

**APPENDIX A** 

**STAGE 2 ABATEMENT PLAN** 



Mr. Glenn Von Gonten New Mexico Oil Conservation Division 1220 South St. Francis Drive Santa Fe, New Mexico 87505

Subject: State M-1 AP-072 Stage 2 Abatement Plan

Dear Mr. Von Gonten:

On behalf of Chesapeake Energy Corporation, ARCCADIS U.S. Inc. respectfully submits the enclosed Stage 2 Abatement plan for the State M-1 site (AP-072). A Stage 1 Abatement Plan Report was submitted on March 20, 2012. Your review and approval of this Abatement Plan will be appreciated. The landowner, Darr Angell, is anxious for us to complete soil remediation at this site.

If you have any questions please do not hesitate to contact Bradley Blevins at (575) 391-1462 or via e-mail at bblevins@chkenergy or me at (432) 687-5400, e-mail address shall@aracdis-us.com.

ARCADIS U.S., Inc. 1004 North Big Spring Street Suite 300 Midland Texas 79701 Tel 432 687 5400 Fax 432 687 5401 www.arcadis-us.com

ENVIRONMENT

Date: March 27, 2012

Contact: Sharon Hall

Phone: 432 687-5400

Email: shall@aracdis-us.com

Our ref: MT001088

ARCADIS U.S., Inc. TX Engineering License # F-533

Sincerely,

ARCADIS U.S., Inc.

Sham E. Hael

Sharon E. Hall Associate Vice President

<sub>Copies:</sub> <mark>Bradley Blevins- C</mark>hesapeake, Hobbs

Imagine the result

g:\aproject\chesapeake\m-1 stage 2 plan\transmitall letter.doc



Imagine the result

**Chesapeake Energy Corporation** 

State M-1 AP-072 Stage 2 Abatement Plan Proposal

Hobbs, New Mexico

March 27, 2012

State M-1 AP-072

Stage 2 Abatement Plan Proposal

Prepared for: Chesapeake Energy Corporation Hobbs, New Mexico

Prepared by: ARCADIS U.S., Inc. 1004 North Big Spring Street Suite 300 Midland Texas 79701 Tel 432 687 5400 Fax 432 687 5401

Our Ref.: MT001088.0001.00001

Date: March 27, 2012

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Sharon Hall Associate Vice President

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Figure 2 Proposed Excavation

## Appendices

Appendix A Multi-Med Model Inputs and Outputs

Stage 2 Abatement Plan Proposal

Chesapeake Energy Corporation Hobbs, New Mexico

# **ARCADIS**

#### 1. INTRODUCTION

The subject site is a former tank battery site located east of Buckeye, New Mexico. The site was purchased by Chesapeake Energy Corporation (Chesapeake) in April 2004. Chesapeake did not operate the tank battery or the associated well field and began the process of facility abandonment in 2007.

Seven monitor wells and nine soil borings have been drilled at the site. Elevated chloride concentrations and limited hydrocarbon compounds were detected in soil samples collected from soil borings and monitoring wells. Elevated chlorides were detected in the down gradient monitor wells and light non-aqueous phase liquid (LNAPL) occurs in monitoring well MW-1. LNAPL recovery activities have been piloted at the site and will commence again upon completion of surface reclamation activities.

#### 2. SUMMARY OF STAGE 1 ABATEMENT ACTIVITIES

Initial site investigation activities were conducted in May of 2007 following abandonment of the tank battery. Stage 1 Abatement activities were conducted during the period of May 2007 through September 2011. Stage 1 Abatement activities included drilling and soil sampling of nine boreholes, drilling and sampling of seven monitor wells, EM 31 and EM 34 surveys, conversion of one monitoring well into a recovery well and recovery of phase-separated hydrocarbons from the recovery well.

New Mexico Oil Conservation Division (NMOCD) was notified of impacts to groundwater at the site via e-mail on May 30, 2007. NMOCD notified Chesapeake in a letter dated June 19, 2007 that a Stage 1 Abatement Plan was required for the site in accordance with Rule 19.

The Stage 1 Abatement Plan was submitted to NMOCD on August 22, 2007. The plan summarized site activities taken to date. The plan proposed the drilling and sampling of a minimum of three additional soil borings and installation and sampling of nine groundwater monitoring wells.

BBC contacted NMOCD via email on April 24, 2010 to inquire about the status of the Stage 1 Abatement Plan approval and Chesapeake's desire to conduct the proposed Stage 1 Abatement Plan activities. On May 27, 2010, NMOCD responded via email that the State was not staffed to review the Abatement Plans (APs) in a timely manner. On June 23, 2010, BBC contacted NMOCD via email to request a waiver of the Public Notice requirement and inform NMOCD that Chesapeake and the landowner were

#### State M-1 AP-072

Stage 2 Abatement Plan Proposal

Chesapeake Energy Corporation Hobbs, New Mexico

anxious to move forward with the proposed AP activities. NMOCD replied via email on June 23, 2010 stating they were still understaffed to review the AP and could not waive the Public Notice requirement. They advised BBC that Chesapeake could proceed "at risk." On July 12, 2010 BBC informed NMOCD by registered letter that Chesapeake was planning to start the Stage 1 Assessment on or about August 23, 2010. They further informed NMOCD they would be submitting the required Public Notices, a copy of which was attached to the letter. NMOCD did not respond to the registered letter.

The public notices were published in the Hobbs News-Sun and Lovington Leader on July 22, 2010 and the Albuquerque Journal on July 24, 2010. No comments were received from the public or NMOCD during the 30-day comment period and Chesapeake proceeded with the proposed Stage 1 Abatement Plan activities on August 26, 2010. Copies of correspondence and Public Notice are included in Appendix A.

A detailed description of site activities and results can be found in the report submitted to NMOCD dated March 20, 2012 entitled State M-1 AP-072, Stage 1 Abatement Report (Site Assessment Investigation). Analytical results for soil and groundwater sampling are summarized on Figure 1.

#### 3. STAGE 2 ABATEMENT PLAN PROPOSAL

After review of various remedial options, we propose the following Stage 2 Abatement Plan. The plan addresses soil and groundwater remediation.

#### 3.1 Soil Remediation

The selected remedial option will be the excavation of near-surface soils and installation of clay liners. The anticipated extent and depth of excavation is based on assessment activities (laboratory analysis and visual observation) and is shown in Figure 2. Near surface soils (to a depth of 5 feet below ground surface) with chloride concentrations in excess of 1,000 milligrams per kilogram (mg/kg) and a Total Petroleum Hydrocarbons (TPH) concentration in excess of 1,000 mg/kg will be excavated and disposed. Excavated soils will be disposed at Lea Land Landfill.

Areas where chloride or TPH concentrations are expected to exceed 1,000 mg/kg at depths greater than 5 feet below ground surface soils will be excavated to a depth of 5

#### State M-1 AP-072

Stage 2 Abatement Plan Proposal

Chesapeake Energy Corporation Hobbs, New Mexico

feet below ground surface. Soils will be screened in the field for chlorides using chloride field test kits and for TPH using a photoionization. Critical samples (samples used to delineate the excavations) will be submitted for laboratory analysis of chlorides and/or TPH. Following excavation, a 12-inch compacted clay layer that meets or exceeds a permeability of equal to or less than  $1 \times 10^{-8}$  centimeters per second will be installed in the excavations. The lined excavations will be backfilled with four feet of locally obtained native soil. All of the excavated areas will be re-seeded with native vegetation. Areas that are supporting vegetation will not be disturbed.

Use of the USEPA Multi-Med model demonstrates that the clay liners will mitigate the leaching of chlorides to groundwater. The model predicts that after 7000 years of infiltration through the liner the maximum concentration of chlorides in groundwater will be 221.8 milligrams per liter (mg/L). The Multi-Med inputs and outputs are included in Appendix A.

#### 3.2 Groundwater Remediation and Monitoring

One additional groundwater monitoring well will be installed downgradient of the site. The monitoring well will be designated MW-8.

Groundwater samples will be collected from all of the monitoring wells and analyzed for chlorides using USEPA method 9056 for each of four quarters. Based on sample results for one year (four quarters), sampling frequency will be reviewed and may be revised.

Sampling will be discontinued when eight quarters of sample results indicate chloride concentrations are below New Mexico Water Quality Control Commission, Title 20, Chapter 6, Part 2 standards. Sample results will be submitted to the NMOCD annually on June 15.

Following removal of LNAPL from MW-1, groundwater samples will be collected from MW-1 and analyzed for benzene, toluene ethylbenzene and xylenes (BTEX) using USEPA method 8260B for each of four quarters. Based on sample results for one year (four quarters), sampling frequency will be reviewed and may be revised.

Sampling of MW-1 for BTEX will be discontinued when eight quarters of sample results indicate BTEX concentrations are below New Mexico Water Quality Control Commission, Title 20, Chapter 6, Part 2 standards. Sample results will be submitted to

#### State M-1 AP-072

Stage 2 Abatement Plan Proposal

Chesapeake Energy Corporation Hobbs, New Mexico

the NMOCD annually on June 15. Proposed groundwater remediation is presented in Sections 3.2.1 and 3.2.2.

3.2.1 Chlorides

Chloride concentrations in groundwater exceed New Mexico Water Quality Control Commission standards in two wells (MW-1 411mg/L and MW-4 472mg/L).

Removal of near-surface soils that are a potential source of chlorides and BTEX in groundwater and lining of excavations with chloride and TPH concentrations in excess of 1,000 mg/kg will mitigate leaching of chlorides to groundwater. Considering the relatively low concentrations of chlorides in groundwater and the fact that soil removal and clay liner infiltration barrier installation will be conducted at this site, we propose monitoring the site for a period of two years before considering pumping of groundwater at this site. With the proposed source removal and mitigation and the severe drought conditions being experienced in this area, we believe it prudent to evaluate if chloride mass removal by pumping is warranted at this site.

3.2.2 Hydrocarbons

A pilot LNAPL recovery test will take place over a three week period and will be used to develop long-term recovery procedures. LNAPL will be recovered from MW-1 and disposed in a NMOCD approved facility. Additionally, two soil vent borings equipped with wind turbines will be installed in the area near MW-1.

#### 4. PUBLIC NOTIFICATION

Written notification of submittal of the Stage 2 Abatement Plan Proposal and site activities will be sent to all surface owners of record within a one-mile radius of the site. NMOCD will be supplied with a list of parties to be notified. Publication of notice of activities will be published in a state-wide circulated newspaper, the Albuquerque Journal, and two county newspapers, the Hobbs-Daily News Sun and the Lovington Leader.

#### 5. REMEDIATION WORK SCHEDULE

Soil remediation activities are expected to be completed in 15 working days (Monday through Friday). Groundwater remediation activities will be ongoing. An estimated completion date for groundwater remediation is not available.
State M-1 AP-072

#### Stage 2 Abatement Plan Proposal

Chesapeake Energy Corporation Hobbs, New Mexico

# **ARCADIS**

#### 6. REFERENCES

Groundwater Handbook; United States Environmental Protection Agency, Office of Research and Development, Center for Environmental Research Information; 1992

New Mexico Water Quality Control Commission, Title 20 Chapter 6, Part 2, Subpart I

State M-1 AP-072 Stage 1 Abatement Report (Site Assessment Investigation); ARCADIS; March 2012

State M-1Salt Water Disposal Tank Battery, Stage 1 Abatement Plan (Ap-072), BBC International; August 2007

New Mexico Water Quality Control Commission, Title 20 Chapter 6, Part 2, Subpart I





# **ARCADIS**

Appendix A

Multi-Med Model Inputs and Outputs

#### Chesapeake State M-1 Chesapeake Energy Corporation Buckeye, Lea County, New Mexico Multimed Model Input and Output (With Liner)

MOD	EL INPUT		MODEL RANGE									
IN IN	<b>NPUT PAP</b>		Minimum	Maximum								
	U	nsaturated	d Zone Flo	w Parameters								
Depth of Unsaturated Zone	m	45	feet	13.7 m	0.000000001	None						
Hydraulic Conductivity	cm/hr	2	ft/day	2.54 cm/hr	0.00000000001	10,000						
Unsaturated Zone Porosity	fraction	0.05	fraction	0.05 fraction	0.000000001	0.99						
Residual Water Content	fraction	0.01	fraction	0.010 fraction	0.00000001	1						
Unsaturated Zone Transport Parameters												
Thickness of Layer	m	45	feet	13.7 m	0.000000001	None						
Percent of Organic Matter	%	2.6	%	2.6 %	0	100						
Bulk Density	g/cm <sup>3</sup>	1.35	g/cm <sup>3</sup>	1.35 g/cm <sup>3</sup>	0.01	5						
Biological Decay Coefficient	1/yr	0	1/yr	0 1/yr	0	None						
Aquifer Parameters												
Aquifer Porosity	fraction	0.25	fraction	0.25 fraction	0.000000001	0.99						
Bulk Density	g/cm <sup>3</sup>	1.35	g/cm <sup>3</sup>	1.35 g/cm <sup>3</sup>	0.01	5						
Aquifer Thickness	m	50	ft	15.24 m	0.000000001	100,000						
Hydraulic Conductivity	m/yr	2	ft/day	223 m/yr	0.0000001	100,000,000						
Hydraulic Gradient	m/m	0.007	m/m	0.007 m/m	0.00000001	None						
Organic Carbon Content	fraction	0.00315	fraction	0.00315 fraction	0.000001	1						
Temperature of Aquifer	°C	14.4	°C	14.4 °C	0.00000001	None						
рН		6.2		6.2 <b>6</b> .2	0.3	14						
x-distance Radial Distance from												
Site to Receptor	m	1	m	1 m	1	None						
		Sou	rce Param	eters								
Infiltration Rate from the Facility	m/yr	0.124	in/yr	0.00315 m/yr	0.0000000001	10,000,000,000						
Area of Waste Disposal Unit	m <sup>2</sup>	46,800	ft <sup>2</sup>	4348 m <sup>2</sup>	0.01	None						
Length Scale of Facility	m	240	feet	33 <b>73:2</b> (56) m (11) 11	0.000000001	10,000,000,000						
Width Scale of Facility	m	195	feet	59.4 m	0.000000001	10,000,000,000						
Recharge Rate into the Plume	m/yr	16.71	in/yr	0.4244 m/yr	0	10,000,000,000						
Duration of Pulse	yr	8,000	yr	8000 yr	0.000000001	None						
Initial Concentration at Landfill	mg/L_	6,000	mg/L	6,000 mg/L	0	None						
		Addit	ional Para	meters								
Method				Gaussian	Gaussian	Patch						
Name of Chemical Specified				Chloride								

 MODEL OUTPUT

 Final Concentration at Landfill
 mg/L
 221.8
 mg/L

	MODEL OUTPUT		
Concentration at Landfill	0.0 mg/L	Time	1 yr
	0.0 mg/L		10 yr
	0.0 mg/L		20 yr
	18.9 mg/L		50 yr
	36.6 mg/L		70 yr
	45.4 mg/L		80 yr
	61.8 mg/L		100 yr
	123.4 mg/L		200 yr
	154.1 mg/L		300 yr
	166.3 mg/L		400 yr
	178.5 mg/L		500 yr
	190.7 mg/L		600 yr
	204.8 mg/L		800 yr
	211.1 mg/L		1,000 yr
	220.4 mg/L		2,000 yr
	221.6 mg/L		3,000 yr
	221.8 mg/L		4,000 yr
	221.8 mg/L		5,000 yr
	221.8 mg/L		6,000 yr
	221.8 mg/L		7,000 yr



Material	No. of Analyses	Range	Arithmetic Mean	
Igneous Rocks				
Weathered granite	8	0.34-0.57	0.45	
Weathered gabbro	4	0.42-0.45	0.43	
Basalt	94	0.03-0.35	0.17	
Sedimentary Materials				
Sandstone	65	0.14-0.49	0.34	
Siltstone	7	0.21-0.41	0.35	
Sand (fine)	243	0.26-0.53	0.43	
Sand (coarse)	26	0.31-0.46	0.39	
Gravel (fine)	38	0.25-0.38	0.34	
Gravel (coarse)	15	0.24-0.36	0.28	
Silt	281	0.34-0.61	0.46	
Clav	74	0.34-0.57	0.42	
Limestone	74	0.07-0.56	0.3	
Metamorphic Rocks				
Schist	18	0.04-0.49	0.38	

\_\_\_\_\_

Sources: From Mercer et al. (1982),

McWhorter and Sunada (1977),

Original reference Morris and Johnson, (1967).

Texture	Bulk Density g/cm^3	Average Wilting Point	Plant Available Water Inches/Ft
Sandy loam	1.6	0.057	1.66
Silt Loam	1.45	0.119	2
Loam	1.5	0.097	2.4
Sandy clay loam	1.45	0.137	1.66
Clay loam	1.45	0.157	1.9

TABLE 6-8. MEAN BULK DENSITY (g/cm3) FOR FIVE SOIL TEXTURAL CLASSIFICATIONSa,b

Soil Texture	Mean Value	Range Reported	
Silt Loams	1.32	0.86 - 1.67	
Clay and Clay Loams	1.3	0.94 - 1.54	
Sandy Loams	1.49	1.25 - 1.76	
Gravelly Silt Loams	1.22	1.02 - 1.58	
Loams	1.42	1.16 - 1.58	
All Soils	1.35	0.86 - 1.76	

a Baes, C.F., III and R.D. Sharp. 1983. A Proposal for Estimation of Soil Leaching Constants for Use in Assessment Models. J. Environ. Qual. 12(1):17-28 (Original reference).

b From Dean et al. (1989)

	Hydraulic (	Conductivity	/ (Ks)*			
Soil Type	x	s	CV	n		
Clav**	0.2	0.42	210.3	114	cm/hr	17.52
Clav Loam	0.26	0.7	267.2	345	cm/hr	22.776
Loam	1.04	1.82	174.6	735	cm/hr	91.104
Loamy Sand	14.59	11.36	77.9	315	cm/hr	1278.084
Silt	0.25	0.33	129.9	88	cm/hr	21.9
Silt Loam	0.45	1.23	275.1	1093	cm/hr	39.42
Silty Clav	0.02	0.11	453.3	126	cm/hr	1.752
Silty Clay Loam	0.07	0.19	288.7	592	cm/hr	6.132
Sand	29.7	15.6	52.4	246	cm/hr	2601.72
Sandy Clay	0.12	0.28	234.1	46	cm/hr	10.512
Sandy Clay Loam	1.31	2.74	208.6	214	cm/hr	114.756
Sandy Loam	4.42	5.63	127	1183	cm/hr	387.192

TABLE 6-2. DESCRIPTIVE STATISTICS FOR SATURATED HYDRAULIC CONDUCTIVITY (cm hr-1)

\* n = Sample size, = Mean, s = Standard deviation, CV = Coefficient of variation (percent)

\*\* Agricultural soil, less than 60 percent clay

Sources: From Dean et al. (1989),

Original reference Carsel and Parrish (1988).

Saturated water content is the maximum volumetric amount of water in the soil when all pores are filled with water. Very often it is assumed that saturated water content equals the porosity n. However, in many cases qS is smaller than n due to the fact that small amounts of air will be trapped in very small pores. Residual water content can be defined as the asymptote of the pF-curve when h gets very high negative values. Usually qR is very small - on the order of 0.001--0.02 for coarse soils but gets as high values as 0.15..0.25 for heavy clay soils. Air entry point ha is

Soil texture. Fine-textured soils can hold much more organic matter than sandy soils for two reasons. First, clay particles form electrochemical bonds that hold organic compounds. Second, decomposition occurs faster in well-aerated sandy soils. A sandy loam rarely holds more than 2% organic matter.

The recharge rate in this model is the net amount of water that percolates directly into the aquifer system outside of the land disposal facility. The recharge is assumed to have no contamination and hence dilutes the groundwater contaminant plume. The recharge rate into the plume can be calculated in a variety of ways. One possibility is to use a model, such as HELP (Hydrologic Evaluation of Landfill Performance) (Schroeder et al., 1984), without any engineering controls (leachate collection system or a liner) to simulate the water balance for natural conditions.

The infiltration rate is the net amount of leachate that percolates into the aquifer system from a land disposal facility. Because of the use of engineering controls and the presence of non-native porous materials in the landfill facility, the infiltration rate will typically be different than the recharge rate. However, it can be estimated by similar

Most soils contain 2-10 percent organic matter. The Importance of Soil Organic Matter: Key to Drought-Resistant Soil and Sustained Food Production. http://www.fao.org

**APPENDIX B** 

NMOCD APPROVAL OF STAGE 2 ABATEMENT PLAN

From:	Chase Acker
To:	Bruce McKenzie
Subject:	FW: Stage 2 Abatement Plan Approval: AP-72 Former State M-1 Tank Battery located in Unit Letter O of Section 18 in Township 17 South, Range 36 East, NMPM in Lea County, NM
Date:	Monday, April 14, 2014 1:56:01 PM

From: Griswold, Jim, EMNRD [mailto:Jim.Griswold@state.nm.us]
Sent: Thursday, June 27, 2013 5:14 PM
To: Larry Wooten
Cc: Hall, Sharon; Chase Acker
Subject: Stage 2 Abatement Plan Approval: AP-72 Former State M-1 Tank Battery located in Unit Letter O of Section 18 in Township 17 South, Range 36 East, NMPM in Lea County, NM

Mr. Wooten,

The Oil Conservation Division (OCD) has reviewed the Stage 2 Abatement Plan for the abovereferenced site submitted on your behalf by Arcadis and dated 3/27/12. That plan has substantially met the requirements of 19.15.30 NMAC and is hereby approved. Please proceed with field activities.

Be advised this approval does not relieve Chesapeake of responsibility should the situation continue to pose a threat to groundwater, surface water, human health, or the environment. Furthermore, this approval does not relieve your responsibility for compliance with any federal, state, or local laws and/or regulations. Please retain a copy of this email for your files, as no hardcopy will be sent. If you have any questions, please feel free to contact me at any time.

#### Jim Griswold

Senior Hydrologist EMNRD/Oil Conservation Division 1220 South St. Francis Drive Santa Fe, New Mexico 87505 505.476.3465 email: jim.griswold@state.nm.us

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**APPENDIX C** 

# MONITORING WELL COMPLETION RECORDS

			B	URING	RE	$\frac{00}{1}$	КŊ					-1					
GEOLOG. UNIT	DEPTH LITHOLOGIC DESCRIPTION				DG DIL		OVM SOIL GAS PPM X <u>1.0</u>						SAMPLE				REMAR
	(FEET)			UNIFIED SC CLASSIFICA	GRAPHIC LO	2	4 6	8		<u>: 14</u>	16 1	8	NUMBER	OVM READIN	RECOVERY	DEPTH	BACKGROUI OVM READI SOIL: AIR:
	0 <u>.5</u>	SILTY CLAY: BROWN, 7.5YR 40% CLAY, 10% FINE SANDS CALICHE: LIGHT GRAY TO W BROWNS, HARD, DRY	5/3, 50% SILTY, , DRY, SOFT HITE, SOME	CL													
	5 —																
		CLAYEY SILT: PINK, 7.5YR & 10% CLAY, 10% STRAY GRAV	8/3, 80% SILT, ÆLS, DRY, SOFT	ML													
	18.0—  20—	SAND: PINK, 7.5YR 7/2, 90 10% CLAY, HARD, CEMENTED	% FINE SAND, , DRY	SC													
	 25	SAND: PINK, 7.5YR 8/3, 90 10% CLAY, LOOSE, DRY TO	% FINE SAND, 44 FEET	SC													
	 												14 17			me	
	CME CON	ITINUOUS AUGER SAMPLER ABLE (24 HOURS)	WATER TAE	BLE (TIME OF	Boring)	-	JOB	N.	AME	<b>ні</b> /N	UME	BER	AK Cl	E HKI	514 <u>HST</u>	1E <u>L2(</u>	ц-2 01
	7060 S. Yal	e Ave., Suite 603 • Tulsa, O	SERVICES, I	<b>N</b> LLC 918-794-7828	3		BOR DAT DRI DRI LOG CHE	E D LLIN LLEE GGEE	RILLE G ME O BY O BY ED B	JMI ED_ ETHC		3/24/ AIR RO SCARE P.RICH	M (2014 DTAR) BOROU IARDS	<b>// —</b> / JGH D :0N :0N	6 RILLING	G RAWIN	G NO. <u>MW08</u>





## **APPENDIX D**

## LABORATORY ANALYTICAL REPORTS AND CHAIN-OF-CUSTODY DOCUMENTATION



THE LEADER IN ENVIRONMENTAL TESTING

# **ANALYTICAL REPORT**

### TestAmerica Laboratories, Inc.

TestAmerica Nashville 2960 Foster Creighton Drive Nashville, TN 37204 Tel: (615)726-0177

## TestAmerica Job ID: 490-54984-1

TestAmerica Sample Delivery Group: Property ID 890293 Client Project/Site: CHK State L-2 Revision: 1

## For:

Enviro Clean Services LLC 7060 S. Yale Avenue, Suite 603 Tulsa, Oklahoma 74136

Attn: Julie Czech

athyGartner

Authorized for release by: 7/23/2014 10:41:36 AM

Cathy Gartner, Project Manager I (615)301-5041 cathy.gartner@testamericainc.com

The test results in this report meet all 2003 NELAC and 2009 TNI requirements for accredited parameters, exceptions are noted in this report. This report may not be reproduced except in full, and with written approval from the laboratory. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.



www.testamericainc.com

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#### **Sample Summary**

Matrix

Water

Water

Water

Water

Water

Water

Water

Water

Water

Client: Enviro Clean Services LLC Project/Site: CHK State L-2

**Client Sample ID** 

MW-1

MW-4

MW-2

MW-6

MW-3

MW-5

Dup

Trip Blank

EQ Blank

Lab Sample ID

490-54984-1

490-54984-2

490-54984-3

490-54984-4

490-54984-5

490-54984-6

490-54984-7

490-54984-8

490-54984-9

TestAmerica Job ID: 490-54984-1 SDG: Property ID 890293

Collected

06/05/14 11:55

06/05/14 12:50

06/05/14 14:45

06/05/14 14:05

06/05/14 15:10

06/05/14 16:05

06/05/14 16:50

06/05/14 00:01

06/05/14 00:01

: 490-54984-1 erty ID 890293	
	3
Received	
06/10/14 08:30	
06/10/14 08:30	
06/10/14 08:30	5
06/10/14 08:30	J
06/10/14 08:30	
06/10/14 08:30	

06/10/14 08:30

06/10/14 08:30

06/10/14 08:30

#### Job ID: 490-54984-1

#### Laboratory: TestAmerica Nashville

#### Narrative

Job Narrative 490-54984-1

#### \*\*Revised Report\*\*

8260 was revised to report only Benzene per Chain of Custody. This replaces the final report generated on 6/25/14.

#### Receipt

The samples were received on 6/10/2014 8:30 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 2.8° C.

#### Except:

The following sample(s) was submitted for analysis; however, it was not listed on the Chain-of-Custody (COC): Dup (490-54984-9) Chloride and Benzene are analyzed per client request.

#### GC/MS VOA

No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

#### HPLC

No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

#### VOA Prep

No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

### Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.	
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis	
%R	Percent Recovery	5
CFL	Contains Free Liquid	J
CNF	Contains no Free Liquid	
DER	Duplicate error ratio (normalized absolute difference)	
Dil Fac	Dilution Factor	
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample	
DLC	Decision level concentration	
MDA	Minimum detectable activity	8
EDL	Estimated Detection Limit	
MDC	Minimum detectable concentration	9
MDL	Method Detection Limit	
ML	Minimum Level (Dioxin)	
NC	Not Calculated	
ND	Not detected at the reporting limit (or MDL or EDL if shown)	
PQL	Practical Quantitation Limit	
QC	Quality Control	
RER	Relative error ratio	
RL	Reporting Limit or Requested Limit (Radiochemistry)	
RPD	Relative Percent Difference, a measure of the relative difference between two points	
TEF	Toxicity Equivalent Factor (Dioxin)	
TEQ	Toxicity Equivalent Quotient (Dioxin)	

Client: Enviro Clean Services LLC Project/Site: CHK State L-2

6

#### **Client Sample ID: MW-1** Lab Sample ID: 490-54984-1 Date Collected: 06/05/14 11:55 Matrix: Water Date Received: 06/10/14 08:30 Method: 300.0 - Anions, Ion Chromatography Analyte Result Qualifier RL MDL Unit D Prepared Analyzed Dil Fac Chloride 26.8 1.00 mg/L 06/25/14 09:26 1

RL

1.00

Limits

70 - 130

70 - 130

70 - 130

70 - 130

RL

10.0

MDL Unit

MDL Unit

mg/L

ug/L

D

D

Prepared

Prepared

Prepared

#### Client Sample ID: MW-4 Date Collected: 06/05/14 12:50

Date Received: 06/10/14 08:30

4-Bromofluorobenzene (Surr)

1,2-Dichloroethane-d4 (Surr)

Dibromofluoromethane (Surr)

Analyte

Benzene

Surrogate

Analyte

Chloride

Toluene-d8 (Surr)

Method: 8260B - Volatile Organic Compounds (GC/MS)

Method: 300.0 - Anions, Ion Chromatography

Result Qualifier

Qualifier

34.3

98

102

100

101

192

Result Qualifier

%Recovery

#### Lab Sample ID: 490-54984-2 Matrix: Water

Analyzed

06/15/14 03:52

Analyzed

06/15/14 03:52

06/15/14 03:52

06/15/14 03:52

06/15/14 03:52

Analyzed

06/24/14 16:51

Dil Fac

Dil Fac

1

1

1

1

1

10

Dil Fac

RL

1.00

Limits

70 - 130

70 - 130

70 - 130

70 - 130

RL

1.00

MDL Unit

MDL Unit

mg/L

ug/L

D

D

Prepared

Prepared

Prepared

#### Client Sample ID: EQ Blank Date Collected: 06/05/14 14:45

Method: 8260B - Volatile Organic Compounds (GC/MS)

Method: 300.0 - Anions, Ion Chromatography

Result Qualifier

Qualifier

ND

98

100

101

99

ND

Result Qualifier

%Recovery

Date Received: 06/10/14 08:30

4-Bromofluorobenzene (Surr)

1,2-Dichloroethane-d4 (Surr)

Dibromofluoromethane (Surr)

Analyte

Benzene

Surrogate

Analyte

Chloride

Toluene-d8 (Surr)

#### Lab Sample ID: 490-54984-3 Matrix: Water

Analyzed

06/15/14 03:26

Analyzed

06/15/14 03:26

06/15/14 03:26

06/15/14 03:26

06/15/14 03:26

Analyzed

06/24/14 17:11

Dil Fac

Dil Fac

1

1

1

1

1

1

Dil Fac

Client: Enviro Clean Services LLC Project/Site: CHK State L-2

6

#### **Client Sample ID: MW-2** Lab Sample ID: 490-54984-4 Date Collected: 06/05/14 14:05 Matrix: Water Date Received: 06/10/14 08:30 Method: 300.0 - Anions, Ion Chromatography Analyte Result Qualifier RL MDL Unit D Prepared Analyzed Dil Fac Chloride 357 20.0 mg/L 06/24/14 17:51 20

Client: Enviro Clean Services LLC Project/Site: CHK State L-2

6

#### **Client Sample ID: MW-6** Lab Sample ID: 490-54984-5 Date Collected: 06/05/14 15:10 Matrix: Water Date Received: 06/10/14 08:30 Method: 300.0 - Anions, Ion Chromatography Analyte Result Qualifier RL MDL Unit D Prepared Analyzed Dil Fac Chloride 133 10.0 mg/L 06/24/14 18:11 10

Client: Enviro Clean Services LLC Project/Site: CHK State L-2

6

#### **Client Sample ID: MW-3** Lab Sample ID: 490-54984-6 Date Collected: 06/05/14 16:05 Matrix: Water Date Received: 06/10/14 08:30 Method: 300.0 - Anions, Ion Chromatography Analyte Result Qualifier RL MDL Unit D Prepared Analyzed Dil Fac Chloride 85.8 10.0 mg/L 06/24/14 18:31 10

Client: Enviro Clean Services LLC Project/Site: CHK State L-2

6

#### **Client Sample ID: MW-5** Lab Sample ID: 490-54984-7 Date Collected: 06/05/14 16:50 Matrix: Water Date Received: 06/10/14 08:30 Method: 300.0 - Anions, Ion Chromatography Analyte Result Qualifier RL MDL Unit D Prepared Analyzed Dil Fac Chloride 129 10.0 mg/L 06/24/14 18:51 10

RL

1.00

Limits

70 - 130

70 - 130

70 - 130

70 - 130

MDL Unit

ug/L

#### **Client Sample ID: Trip Blank** Date Collected: 06/05/14 00:01 Date Received: 06/10/14 08:30

Analyte

Benzene

Surrogate

Toluene-d8 (Surr)

4-Bromofluorobenzene (Surr)

1,2-Dichloroethane-d4 (Surr)

Dibromofluoromethane (Surr)

Method: 8260B - Volatile Organic Compounds (GC/MS)

Result Qualifier

Qualifier

ND

97

101

101

100

%Recovery

# Lab Sample ID: 490-54984-8

Prepared

Prepared

D

Matrix: Water Dil Fac Analyzed 06/15/14 02:59 1 6 Analyzed Dil Fac 06/15/14 02:59 1 06/15/14 02:59 1 06/15/14 02:59 1 06/15/14 02:59 1

RL

1.00

Limits

70 - 130

70 - 130

70 - 130

70 - 130

RL

10.0

MDL Unit

MDL Unit

mg/L

ug/L

D

D

Prepared

Prepared

Prepared

#### Client Sample ID: Dup Date Collected: 06/05/14 00:01

Date Received: 06/10/14 08:30

4-Bromofluorobenzene (Surr)

1,2-Dichloroethane-d4 (Surr)

Dibromofluoromethane (Surr)

Analyte

Benzene

Surrogate

Analyte

Chloride

Toluene-d8 (Surr)

Method: 8260B - Volatile Organic Compounds (GC/MS)

Method: 300.0 - Anions, Ion Chromatography

Result Qualifier

Qualifier

33.5

98

99

100

97

192

Result Qualifier

%Recovery

#### Lab Sample ID: 490-54984-9 Matrix: Water

Analyzed

06/15/14 04:18

Analyzed

06/15/14 04:18

06/15/14 04:18

06/15/14 04:18

06/15/14 04:18

Analyzed

06/24/14 19:11

Dil Fac

Dil Fac

1

1

1

1

1

10

Dil Fac

7/23/2014

#### Method: 8260B - Volatile Organic Compounds (GC/MS)

Nalysis Batch: 169717           Maiyo         Result         Outlifter         Ru         MOL         Unit         D         Prepared         Analyzed         Dil Fac           Surrogate         NO         1.00         ugl.         0         Prepared         Analyzed         Dil Fac           Surrogate         'NRecovery         Qualifier         Linnits         Prepared         Analyzed         Dil Fac           Surrogate         'NRecovery         Qualifier         Linnits         Prepared         Analyzed         Dil Fac           Surrogate         'NRecovery         Qualifier         Clinnits         Prepared         Analyzed         Dil Fac           Analysis Batch: 169717         100         '70 - 130         -         06/15/14 02:07         r           Lab Sample ID: LG 5490-169717/3         Spike         Result Qualifier         Unit         D         'NRec         Linnits           Analyte         Added         Result Qualifier         Unit         Unit         D         'NRec         Linnits           CLS         LCS         LCS         LCS         LCS         LCS         LCS         LCS         LCS         Introduce         ND         ND         ND         ND <th>Lab Sample ID: MB 490-16971 Matrix: Water</th> <th>7/5</th> <th></th> <th></th> <th></th> <th></th> <th></th> <th></th> <th></th> <th>Client</th> <th>Sample ID: Prep T</th> <th>Method 'ype: To</th> <th>Blank tal/NA</th>	Lab Sample ID: MB 490-16971 Matrix: Water	7/5								Client	Sample ID: Prep T	Method 'ype: To	Blank tal/NA
Maipic         Result of buildier         RL         MDL         Unit         p         Prepared         Analyzed         DIF Sec           Bernzene         ND         MB	Analysis Batch: 169717												
Analysis         Result         Qualifier         RL         MD         Unit         D         Prepared         Analyzed         DI Face           Barcano         ND         1.00         ugit         0         Prepared         Analyzed         DI Face           Surrogate         WRecovery         Qualifier         Limits         Prepared         Analyzed         DI Face           Surrogate         WRecovery         Qualifier         Limits         Prepared         Analyzed         DI Face           Surrogate         WRecovery         Qualifier         Total         Prepared         Analyzed         DI Face           Surrogate         Surrogate         Surrogate         Analyzed         DI Face         DI Face           Surrogate         Surrogate         Surrogate         Cl Surrogate         DI Face         DI Face           Analyse         Surrogate         Surrogate         Cl Surrogate         NRec         NRec         NRec           Surrogate         Surrogate         Surrogate         Surrogate         NRec         NRec         NRec           Surrogate         Surrogate         Surrogate         Surrogate         Surrogate         Surrogate         Surogate         Surogate         Suroga		N	IB MB										
Benzene         ND         1.00         ugit.         Def15/14 02:07         1           Surrogate         WRecovery Qualifier         Limits         Prepared         Analyzed         Dif Face           1:2:Def10ed/molecobanzene (Surr)         96         70.130         Prepared         Analyzed         Dif Face           1:2:Def10ed/molecobanzene (Surr)         100         70.130         Off5/14 02:07         7           1:2:Def10ed/molecobanzene (Surr)         100         70.130         Initis         Off5/14 02:07         7           1:2:Def10ed/molecobanzene (Surr)         100         70.130         Initis         Initis         Off5/14 02:07         7           1:2:Def10ed/molecobanzene (Surr)         90         70.130         Initis         Initis         Initis         Initis           1:2:Def10ed/molecobanzene (Surr)         90	Analyte	Res	ult Qualifier	RL		MDL Unit		D	Ρ	repared	Analyz	ed	Dil Fac
MB         MB         MB           Surragate         %Recovery         Qualifier         Limits         06/15/14 02:07         1           1:2:0:informathaned-4(Sum)         102         70:130         06/15/14 02:07         1           1:2:0:informathaned-4(Sum)         100         70:130         06/15/14 02:07         1           Dibromofilionarmethane (Sum)         100         70:130         06/15/14 02:07         1           Lab Sample ID: LCS 400-169717/3         Matrix: Water         Client Sample ID: Lab Control Sample         Prop Type: Total/NA           Analysis Batch: 169717         Spike         LCS         LCS         LS         Meeter           Analysis Batch: 169717         Spike         LCS         LS         LS         Surragate         WRecovery         Qualifier         Unit         D         WRec         Horizande           Surragate         X66covery         Qualifier         Limits         Unit         D         WRec         Horizande           Lab Sample ID: 490-54924-2 MS         Matrix: Water         Analysis Batch: 169717         Sample         Sample         MS         MS         MS         MS         Sample         YRec         Limits         Horizande         Horizande         Horizande         Horizan	Benzene	1	ND	1.00		ug/L					06/15/14	02:07	1
Margade         Paragrad         Analyzed         DI Pac           Surrogate         Analyzed         DI Pac           Analyzed         DI Pac           Colspan="2">Pagarad         Analyzed         DI Pac           Analyzed         DI Pac           Colspan="2">Pagarad         Analyzed         DI Pac           Lab Sample ID: LCS 400-169717/3           Markin: Water           Analyze         Client Sample ID: Lab Control Sample           Client Sample ID: Lab Control Sample           Barcone         Client Sample ID: Lab Control Sample           Added         Result         Client Sample ID: Lab Control Sample           Barcone         Client Sample ID: Client Sample ID: MV-4           Added         Result Coulifier         Unit           Barcone         Client Sample ID: MV-4           Added         Result Coulifier         Unit           Client Sample ID: MV-4           Pare Topa Topa													
Surrégate         Précouvy         Calimité         Limité         Prépare         Diritié         Diritié           1.2-Dichorestenere (Surr)         100         70.130         06/15/14/02:07         1           1.2-Dichorestenere (Surr)         100         70.130         06/15/14/02:07         1           Dibromolizoromethane (Surr)         100         70.130         06/15/14/02:07         1           Lab Sample 1D: LCS 400-169717/3         Client Sample 1D: LCS 400-169717/3         Client Sample 1D: LCS 400-169717/3         Matrix: Water           Analysis Batch: 169717         Spike         LCS LCS         %Rec.         Matrix: Water         Matrix: Water         Matrix: Water         Matrix: Water         Matrix: Water         Matrix: Sample 1D: LoS 1000 130000000000000000000000000000000	0	// // D		1					_		A		D# 5
4-2/07/0000000000000000000000000000000000		%Recove						-	P	repared		2ea	DIIFac
1,2200000000000000000000000000000000000	4-Bromonuorobenzene (Surr)		90	70 - 130							06/15/14	02:07	1
Jouene do Suri         100         70-130         Out P15/1 4/2/07         1           Lab Sample ID: LCS 490-169717/3 Matrix: Water Analysis Batch: 169717         100         70-130         Client Sample ID: LoS 490-169717/3           Matrix: Water Analysis Batch: 169717         Spike         LCS LCS         Client Sample ID: LoS 490-169717/3           Matrix: Water Analysis Batch: 169717         Spike         LCS LCS         Unit         D         %Rec.           Surrogate         LCS LCS         Units         Viller         %Rec.         Units         B0-121           Johannohuzonethane (Suri)         99         70-130         Differentiate 40 (Suri)         Surrogate         Kec.         Units           Lab Sample ID: 430-54384-2 MS         Glient Sample ID: 430-54384-2 MS         Client Sample ID: MW-4         Prep Type: Total/NA           Matrix: Water         Result         Qualifier         Unit         Mrec.         Mrec.           Analyte         Result         Qualifier         Unit         Mrec.         Mrec.           Analyte         Result         Qualifier         Unit         Mrec.         Mrec.           Lab Sample ID: 490-54984-2 MS         Matrix: Vater         Client Sample ID: MW-4         Prep Type: Total/NA           Analyte         Result	1,2-Dichloroethane-d4 (Surr)	1	02	70 - 130							06/15/14	02:07	1
Darametikacionamentaria (sur)         100         72-130         Def P14 4/2/7         1           Lab Sample (D: LCS 490-169717/3 Matrix: Water Analysis Batch: 169717         Spike         Client Sample (D: Lab Control Sample Prop Type: Total/NA Analysis Batch: 169717         Client Sample (D: Lab Control Sample Prop Type: Total/NA Analysis Batch: 169717           Analyte	Toluene-d8 (Surr)	1	00	70 - 130							06/15/14	02:07	
Lab Sample [D: LCS 490-169717/3 Matrix: Water Analysis Batch: 169717         Client Sample [D: Lab Control Sample Prep Type: Total/NA           Analyte Barzene         Spike         LCS         LCS         LCS         LCS         LCS         Lmits         Imits         Imit	Dibromofluoromethane (Surr)	1	00	70 - 130							06/15/14	02:07	1
Lab Sample D. Los 490-1697 /r/3       Sinthe D. Los 490-1697 /r/3       Chief Sample D. Lab Control Sample D. Lab Sample D. Lab Sample Sample Sample Sample Sample Sample Sample Sample Control Sample D. Lab Sample D. 490-54984-2 MS       Surrogate M. Kee. Limits         Analyte Natrix: Water       Sample Sample Sample Sample Sample Sample Control Sample D. MW-4       Prep Type: Total/NA         Analyte Natrix: Water       Sample Sample Control Sample Control Sample D. 490-54984-2 MS       MS MS       WR-ec.         Matrix: Water       Sample Sample Sample Sample Sample Control Sample D. 400-4000       Sample D. 490-54984-2 MS       WRec.         Surrogate M. Secovery Qualifier Added Presult Qualifier M. Sample Sample Control Sample D. 400 - 70 - 130       Sample Sample Sample Sample Sample Control Sample D. 400 - 70 - 130       Sample D. 490-54984-2 MS         Surrogate M. Secovery Qualifier M. Sample Sample Control Sample D. 400 - 70 - 130       Client Sample D. 400 - 70 - 130       Sample Sample Control Sample Sample Sample Control Sample D. 400 - 70 - 130         Lab Sample ID: 490-54984-2		17/2						<b>C</b> 1	iont	Compl		ontrol C	omnlo
Mathy:         Prop Type:         Prop Type:         Total NAA           Analysis Batch::         16917         Spike         LCS         LCS         LCS         Material         Cilinits         Material           Benzene         200         43:17         Unit         D         %Rec.         Limits         Iminits         Material	Lab Sample ID. LCS 490-1097	1773							ient	Jampi			
Analysis Batch:: 169/17         Spike         LCS         LCS <td>Matrix: water</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>Prep I</td> <td>ype: 10</td> <td>tal/NA</td>	Matrix: water										Prep I	ype: 10	tal/NA
Analyte         Coulier         Unit         D         %Rec.         Imits           Benzene         LCS         LCS         LCS         LCS         Benzene         86         80-121         86         80-121           Surrogate         %Recovery         Qualifier         Limits         80         80-121         86         80-121           LeS         LCS         LCS <td>Analysis Batch: 169/17</td> <td></td> <td></td> <td>Spiko</td> <td>1.09</td> <td>109</td> <td></td> <td></td> <td></td> <td></td> <td>% Poc</td> <td></td> <td></td>	Analysis Batch: 169/17			Spiko	1.09	109					% Poc		
Analyte         Audel         Read         Califier         Units         Joint	Analuto				Popult	Qualifier	Unit		п	% Pac	/intec.		
LCS         LCS <td>Bonzono</td> <td></td> <td></td> <td>50.0</td> <td>43 17</td> <td>Quaimer</td> <td></td> <td></td> <td>_</td> <td></td> <td>80 121</td> <td></td> <td></td>	Bonzono			50.0	43 17	Quaimer			_		80 121		
LCS         LCS           Surrogate         %Recovery         Qualifier         Limits           4-Brandfluoroberzene (Surr)         99         70.130           1,2-Dichloroethane-d4 (Surr)         99         70.130           Dikromdfluoromethane (Surr)         99         70.130           Dikromdfluoromethane (Surr)         99         70.130           Dikromdfluoromethane (Surr)         99         70.130           Dikromdfluoromethane (Surr)         99         70.130           Lab Sample ID: 490-54984-2 MS         Kernover (Surrover)         Surroya           Analyte         Result         Qualifier         Added           Analyte         Result         Qualifier         MS         MS           Surrogate         %Recovery         Qualifier         Limits           +Brannfluoroberzene (Surr)         100         70.130           1_2-Dichloroethane-44 (Surri)         87         70.130           Dikromdfluoroberzene (Surri)         100         70.130           1_2-Dichloroethane-44 (Surri)         87         70.130           Dikromdfluoroberzene (Surri)         100         70.130           Lab Sample ID: 490-54984-2 MSD         Ker         Ker           Matrix: Water	Delizerie			50.0	45.17		ug/L			00	00 - 121		
Surrogate         %Recovery         Qualifier         Limits           4-Bromofluorobenzene (Surr)         99         70.130           1/2-Dichlorobenzene (Surr)         99         70.130           Dibromofluorobenzene (Surr)         99         70.130           Dibromofluorobenzene (Surr)         99         70.130           Lab Sample ID: 490-54984-2 MS Matrix: Water         Client Sample ID: MW-4 Prep Type: Total/NA           Analysis Batch: 169717         Sample         Sample           Surrogate         84.3         50.0         78.55         Unit         D         %Rec.           Lab Sample ID: 490-54984.2 MS         MS         MS         %Rec.         Limits         -           Benzene         34.3         50.0         78.55         Unit         D         %Rec.           L2-Obchroorbenzene (Surr)         100         70.130         -         -         -           Surrogate         %Recovery         Qualifier         Limits         -         -           1/2-Obchroorbenzene (Surr)         100         70.130         -         -         -           1/2-Obchroorbenzene (Surr)         100         70.130         -         -         -           Lab Sample ID: 490-54984-2 MSD		LCS L	CS										
H-BromoRuborobenzene (Surr)         99         70 - 130           1.2-Dichloroethane-d4 (Surr)         92         70 - 130           Dibromofluoromethane (Surr)         99         70 - 130           Dibromofluoromethane (Surr)         99         70 - 130           Lab Sample ID: 490-54984-2 MS         Client Sample ID: MW-4           Matrix: Water         Analysis Batch: 169717         Sample           Analyte         Result         Qualifier         Added           Berzene         34.3         50.0         78.55         ugil.         0           Surrogate         %Recovery         Qualifier         Limits         75 - 133         -           Hardinuorbenzene (Surr)         100         70 - 130         70 - 130         -         -           J.2-Dichloroethane-d4 (Surr)         87         70 - 130         -         -         -           J.2-Dichloroethane-d4 (Surr)         100         70 - 130         -         -         -         -           Lab Sample ID: 490-54984-2 MSD         Katrix: Water         MSD         MSD         MSD         -         -         -         -         -         -         -         -         -         -         -         -         -         -	Surrogate	%Recovery G	Qualifier	Limits									
1.2-Dichloroethane-d4 (Surr)       92       70.130         Toluene-d8 (Surr)       99       70.130         Dibromofluoromethane (Surr)       99       70.130         Lab Sample ID: 490-54984-2 MS       Client Sample ID: MW-4       Prep Type: Total/NA         Analysis Batch: 169717       Sample Sample       Spike       MS       MS       %Rec.         Analysis Batch: 169717       Sample Sample       Spike       MS       MS       %Rec.       Limits         Benzene       34.3       50.0       78.55       ug/L       0       %Rec.       Limits         Surrogate       %Recovery       Qualifier       Limits             4-Bronnfluorobenzene (Surr)       100       70.130       70.130	4-Bromofluorobenzene (Surr)	99		70 - 130									
Toluene-d8 (Surr)         99         70.130           Dibromollouromethane (Surr)         99         70.130           Lab Sample ID: 490-54984-2 MS Matrix: Water         Client Sample ID: MW-4 Prep Type: Total/NA           Analysis Batch: 169717         Sample         Sample         Spike         MS         MS           Matrix: Water         Qualifier         Added         Result         Qualifier         Unit         D         %Rec.         Limits           Benzene         34.3         MS         Surrogate         %Recovery         Qualifier         Limits           Surrogate         %Recovery         Qualifier         Limits         Client Sample ID: MW-4           Dibromofluorobenzene (Surr)         100         70.130         Client Sample ID: MW-4           Dibromofluoromethane (Surr)         100         70.130         Client Sample ID: MW-4           Dibromofluoromethane (Surr)         100         70.130         Client Sample ID: MW-4           Analysis Batch: 169717         Sample         Sample         Spike         MSD         MSD         MSD           Analyte         Result         Qualifier         Added         Result         Qualifier         Unit         D         %Rec.         RPD         Limits	1,2-Dichloroethane-d4 (Surr)	92		70 - 130									
Dibromofiluoromethane (Surr)       99       70 - 130         Lab Sample (D: 490-54984-2 MS Matrix: Water       Client Sample ID: MW-4 Prep Type: Total/NA         Analyte       Result       Qualifier       Added       Result Qualifier       Unit       D       %Rec. 888       %Rec. To 133         Surrogate       %Recovery       Qualifier       Limits       Limits       Client Sample ID: MW-4 Prep Type: Total/NA         Journo and the second state of the second stat	Toluene-d8 (Surr)	99		70 - 130									
Lab Sample ID: 490-54984-2 MS Matrix: Water       Client Sample ID: MW-4 Prep Type: Total/NA         Analyte       Result       Qualifier       Added       Result       Qualifier       Unit       D       %Rec.       Limits	Dibromofluoromethane (Surr)	99		70 - 130									
Sample AnalyteSample ResultSpike QualifierMS AddedMS Result%Rec. LimitsAnalyteResult AddedQualifierUnit AddedD %Rec%Rec. LimitsBenzene34.350.078.55Unit Ug/LD %Rec%Rec. LimitsSurrogate%Recovery %RecoveryQualifier QualifierLimits Limits4-Bromofluorobenzene (Surr)10070.13070-une-d8 (Surr)10670.13070-une-d8 (Surr)10070.130Dibromofluoromethane (Surr)10070.130Lab Sample ID: 490-54984-2 MSDKerPrep Type: Total/NAMatrix: Water AnalyteResult ResultQualifierMSDAnalyteResult ResultQualifierAdded ResultQualifier UnitD %Rec.MSDMSDMSDMSDMSD%Rec.RPD UlmitAnalyteResult %RecoveryQualifier QualifierLimits To-130Surogate%Recovery %RecoveryQualifier QualifierLimits To-1304-Bromofluorobenzene (Surr)9770.1301,2-Dichloroethane-d4 (Surr)9970.1301,2-Dichloroethane-d4 (Surr)9970.1301,2-Dichloroethane-d4 (Surr)9970.1301,2-Dichloroethane-d4 (Surr)9970.1301,2-Dichloroethane-d4 (Surr)10070.1301,2-Dichloroethane-d4 (Surr)10070.1301,2-Dichloroethane-d4 (Surr)10070.130 </th <th>Lab Sample ID: 490-54984-2 M Matrix: Water Analysis Batch: 169717</th> <th>S</th> <th></th> <th></th> <th></th> <th></th> <th></th> <th></th> <th></th> <th></th> <th>Client Sar Prep T</th> <th>nple ID: ype: To</th> <th>MW-4 tal/NA</th>	Lab Sample ID: 490-54984-2 M Matrix: Water Analysis Batch: 169717	S									Client Sar Prep T	nple ID: ype: To	MW-4 tal/NA
Analyte         Result         Qualifier         Added         Result         Qualifier         Unit         D         %Rec         Limits           Benzene         34.3         50.0         78.55         ug/L         0         88         75.133         -           MS         MS         MS         Surrogate         %Recovery         Qualifier         Limits         -         -         88         75.133         -           4-Bromofluorobenzene (Surr)         100         70.130         - <td< th=""><th>Analysis Baton. Tool II</th><th>Sample S</th><th>ample</th><th>Spike</th><th>MS</th><th>MS</th><th></th><th></th><th></th><th></th><th>%Rec.</th><th></th><th></th></td<>	Analysis Baton. Tool II	Sample S	ample	Spike	MS	MS					%Rec.		
Benzene         34.3         50.0         78.55         ug/L         88         75.133           MS         MS         Surrogate         %Recovery         Qualifier         Limits           4-Bromofluorobenzene (Surr)         100         70.130         70.130         70.130           1.2-Dichloroethane-d4 (Surr)         87         70.130         70.130         70.130           Toluene-d8 (Surr)         106         70.130         70.130         70.130           Dibromofluoromethane (Surr)         100         70.130         70.130           Lab Sample ID: 490-54984-2 MSD         Sample         Sample         Spike         MSD         MSD         MSD           Analyte         Result         Qualifier         Added         Result         Qualifier         Unit         D         %Rec.         RPD           Benzene         34.3         50.0         79.61         Ug/L         D         %Rec.         RPD           Limits         MSD         MSD         Surrogate         %Recovery         Qualifier         Limits           4-Bromofluorobenzene (Surr)         97         70.130         12.Dichloroethane-04 (Surr)         91         75.133         1         17           Uharomofluo	Analyte	Result C	ualifier	Added	Result	Qualifier	Unit		D	%Rec	Limits		
MS         MS           Surrogate         %Recovery         Qualifier         Limits           4-Bromofluorobenzene (Surr)         100         70 - 130           1.2-Dichloroethane-d4 (Surr)         87         70 - 130           Toluene-d8 (Surr)         106         70 - 130           Dibromofluoromethane (Surr)         100         70 - 130           Lab Sample ID: 490-54984-2 MSD         Client Sample ID: MW-4           Matrix: Water         Prep Type: Total/NA           Analyte         Result         Qualifier         Added         Result         Qualifier         Unit         D         %Rec.         RPD           Analyte         Result         Qualifier         Added         Result         Qualifier         Unit         D         %Rec.         RPD           Benzene         34.3         50.0         79.61         ug/L         D         %Rec         RPD           MSD         MSD         MSD         MSD         To - 130         To - 130         To - 130           1.2-Dichloroethane-04 (Surr)         97         70 - 130         70 - 130         70 - 130           1.2-Dichloroethane-04 (Surr)         100         70 - 130         70 - 130         70 - 130	Benzene	34.3		50.0	78.55		ua/L		—	88	75 - 133		
MS         MS           Surrogate         %Recovery         Qualifier         Limits           4-Bromofluorobenzene (Surr)         100         70.130           1.2-Dichloroethane-d4 (Surr)         87         70.130           Toluene-d8 (Surr)         106         70.130           Toluene-d8 (Surr)         106         70.130           Dibromofluoromethane (Surr)         100         70.130           Lab Sample ID: 490-54984-2 MSD         Client Sample ID: MW-4           Matrix: Water         Prep Type: Total/NA           Analyte         Result         Qualifier         Added         Result         Qualifier         Unit         D         %Rec.         RPD           Analyte         Result         Qualifier         Added         Result         Qualifier         Unit         D         %Rec.         RPD           Surrogate         %Recovery         Qualifier         Limits         1         1         1           Surrogate         %Recovery         Qualifier         Limits         70.130         1         17           MSD         MSD         70.130         1         1         1         1           Dichoroethane-d4 (Surr)         89         70.130 <td< td=""><td></td><td></td><td></td><td></td><td></td><td></td><td>- 5</td><td></td><td></td><td></td><td></td><td></td><td></td></td<>							- 5						
Surrogate         %Recovery         Qualifier         Limits           4-Bromofluorobenzene (Surr)         100         70 - 130           1,2-Dichloroethane-d4 (Surr)         87         70 - 130           Toluene-d8 (Surr)         106         70 - 130           Dibromofluoromethane (Surr)         100         70 - 130           Lab Sample ID: 490-54984-2 MSD         Client Sample ID: MW-4           Matrix: Water         Prep Type: Total/NA           Analyte         Result         Qualifier         Added           Analyte         Result         Qualifier         Added           Benzene         34.3         50.0         79.61         91         75 - 133         1         17           MSD         MSD         MSD         70 - 130         70 - 130         70 - 130         71 - 130         71 - 130         71 - 130         71 - 130         1         17		MS N	1S										
4-Bromofluorobenzene (Surr)       100       70 - 130         1,2-Dichloroethane-d4 (Surr)       87       70 - 130         Toluene-d8 (Surr)       106       70 - 130         Dibromofluoromethane (Surr)       100       70 - 130         Lab Sample ID: 490-54984-2 MSD       Client Sample ID: MW-4         Matrix: Water       Prep Type: Total/NA         Analysis Batch: 169717       Sample       Spike       MSD       %Rec.       RPD         Analyte       Result       Qualifier       Added       Result       Qualifier       Unit       D       %Rec.       RPD         Benzene       34.3       50.0       79.61       ug/L       D       %Rec.       RPD       Limits         Surrogate       %Recovery       Qualifier       Limits       1       17         4-Bromofluorobenzene (Surr)       97       70 - 130       1       17         1,2-Dichloroethane-d4 (Surr)       89       70 - 130       1       17         Oliboromofluorobenzene (Surr)       100       70 - 130       1       100         10bitromofluorobenzene (Surr)       100       70 - 130       1       100	Surrogate	%Recovery	Jualifier	Limits									
1,2-Dichloroethane-d4 (Surr)       87       70 - 130         Toluene-d8 (Surr)       106       70 - 130         Dibromofluoromethane (Surr)       100       70 - 130         Lab Sample ID: 490-54984-2 MSD       Client Sample ID: MW-4         Matrix: Water       Prep Type: Total/NA         Analysis Batch: 169717       Sample       Spike       MSD       MSD         Analyte       Result       Qualifier       Added       Result       Qualifier       Unit       D       %Rec.       RPD         Limits       MSD       MSD       79.61       Unit       D       %Rec.       RPD       Limits         Surrogate       %Recovery       Qualifier       Limits       70 - 130       17         1,2-Dichloroethane-d4 (Surr)       89       70 - 130       Dibromofluoroethane-d4 (Surr)       89       70 - 130         Dibromofluoromethane (Surr)       100       70 - 130       Dibromofluoromethane (Surr)       100       70 - 130	4-Bromofluorobenzene (Surr)	100		70 - 130									
Toluene-d8 (Surr)       106       70 - 130         Dibromofluoromethane (Surr)       100       70 - 130         Lab Sample ID: 490-54984-2 MSD       Client Sample ID: MW-4         Matrix: Water       Prep Type: Total/NA         Analysis Batch: 169717       Sample         Analyte       Result       Qualifier       Added         Benzene       34.3       50.0       79.61       Unit       D       %Rec.       RPD         Limits       4-Bromofluorobenzene (Surr)       97       70 - 130       70 - 130       17         Surrogate       %Recovery       Qualifier       Limits       70 - 130       105       70 - 130         Toluene-d8 (Surr)       105       70 - 130       70 - 130       105       100       105	1,2-Dichloroethane-d4 (Surr)	87		70 - 130									
Dibromofluoromethane (Surr)       100       70 - 130         Lab Sample ID: 490-54984-2 MSD       Client Sample ID: MW-4         Matrix: Water       Prep Type: Total/NA         Analysis Batch: 169717       Sample       Spike       MSD       %Rec.       RPD         Analyte       Result       Qualifier       Added       Result       Qualifier       Unit       D       %Rec.       RPD         Benzene       34.3       O       50.0       79.61       ug/L       D       %Rec.       RPD         Surrogate       %Recovery       Qualifier       Limits       70 - 130       11       17         4-Bromofluorobenzene (Surr)       97       70 - 130       70 - 130       01<	Toluene-d8 (Surr)	106		70 - 130									
Lab Sample ID: 490-54984-2 MSDClient Sample ID: MW-4 Prep Type: Total/NA Analysis Batch: 169717Analysis Batch: 169717Sample Result QualifierSpike AddedMSDMSD%Rec.RPD LimitsLimits Total/NAAnalyte BenzeneResult 34.3Qualifier 50.0Added 79.61Result ug/LQualifier 91Unit 75.133D 1%Rec.RPD LimitsSurrogate 4-Bromofluorobenzene (Surr)%Recovery 97Qualifier 	Dibromofluoromethane (Surr)	100		70 - 130									
Matrix: Water       Prep Type: Total/NA         Analysis Batch: 169717       Sample Sample Sample MSD       %Rec.       RPD         Analyte       Result       Qualifier       Added       Result       Qualifier       Unit       D       %Rec       Limits       RPD       Limit         Benzene       34.3       50.0       79.61       Qualifier       Unit       D       %Rec       Limits       RPD       Limit         Surrogate       %Recovery       Qualifier       Limits       70 - 130 <td< td=""><td> Lab Sample ID: 490-54984-2 M</td><td>SD</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td>Client Sar</td><td>nple ID:</td><td>MW-4</td></td<>	 Lab Sample ID: 490-54984-2 M	SD									Client Sar	nple ID:	MW-4
Analysis Batch: 169717SampleSampleSpikeMSD%Rec.RPDAnalyteResultQualifierAddedResultQualifierUnitD%Rec.RPDBenzene34.350.079.61QualifierUnitD%RecLimitsRPDLimitBenzeneMSDMSD79.61QualifierUnitD%RecRPDLimitMSDMSDMSD79.6179.61QualifierUnitD%RecRPDLimit10070 - 13070 - 13070 - 13070 - 13070 - 13070 - 13070 - 13070 - 130Dibromofluoromethane (Surr)10070 - 13070 - 13070 - 13070 - 13070 - 130	Matrix: Water										Prep T	ype: To	tal/NA
SampleSampleSampleSpikeMSD%Rec.RPDAnalyteResultQualifierAddedResultQualifierUnitD%RecLimitsRPDLimitBenzene34.3	Analysis Batch: 169717	_											
AnalyteResultQualifierAddedResultQualifierUnitD%RecLimitsRPDLimitBenzene34.350.079.61ug/L09175.133117MSDMSDMSDSurrogate%RecoveryQualifierLimits4-Bromofluorobenzene (Surr)9770.1301,2-Dichloroethane-d4 (Surr)8970.130Toluene-d8 (Surr)10570.130Dibromofluoromethane (Surr)10070.130		Sample S	ample	Spike	MSD	MSD					%Rec.		RPD
Benzene         34.3         50.0         79.61         ug/L         91         75 - 133         1         17           MSD         MSD         MSD         MSD         MSD         17         17         17           Surrogate         %Recovery         Qualifier         Limits         70 - 130         17         17           1,2-Dichloroethane-d4 (Surr)         89         70 - 130	Analyte	Result C	ualifier	Added	Result	Qualifier	Unit		D	%Rec	Limits	RPD	Limit
MSDMSDSurrogate%RecoveryQualifierLimits4-Bromofluorobenzene (Surr)9770 - 1301,2-Dichloroethane-d4 (Surr)8970 - 130Toluene-d8 (Surr)10570 - 130Dibromofluoromethane (Surr)10070 - 130	Benzene	34.3		50.0	79.61		ug/L			91	75 - 133	1	17
Surrogate         %Recovery         Qualifier         Limits           4-Bromofluorobenzene (Surr)         97         70 - 130           1,2-Dichloroethane-d4 (Surr)         89         70 - 130           Toluene-d8 (Surr)         105         70 - 130           Dibromofluoromethane (Surr)         100         70 - 130		MSD N	ISD										
4-Bromofluorobenzene (Surr)         97         70 - 130           1,2-Dichloroethane-d4 (Surr)         89         70 - 130           Toluene-d8 (Surr)         105         70 - 130           Dibromofluoromethane (Surr)         100         70 - 130	Surrogate	%Recoverv G	Jualifier	Limits									
1,2-Dichloroethane-d4 (Surr)     89     70 - 130       Toluene-d8 (Surr)     105     70 - 130       Dibromofluoromethane (Surr)     100     70 - 130	4-Bromofluorobenzene (Surr)	97		70 - 130									
Toluene-d8 (Surr)         105         70 - 130           Dibromofluoromethane (Surr)         100         70 - 130	1,2-Dichloroethane-d4 (Surr)	89		70 - 130									
Dibromofluoromethane (Surr) 100 70 - 130	Toluene-d8 (Surr)	105		70 - 130									
	Dibromofluoromethane (Surr)	100		70 - 130									

#### Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 490-172274/6 Matrix: Water												Client S	Sample ID: Prep	Metho Type: T	d Blank otal/NA
Analysis Batch: 172274														.,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	o tuniti t
		МВ	МВ												
Analyte	R	esult	Qualifier		RL		MDL	Unit		D	Р	repared	Analy	zed	Dil Fac
Chloride		ND			1.00			mg/L					06/24/14	15:30	1
Γ															
Lab Sample ID: LCS 490-172274/7										CI	ient	Sample	D: Lab C	ontrol	Sample
Matrix: Water													Prep	Туре: Т	otal/NA
Analysis Batch: 172274				Snike		LCS	LCS						%Rec		
Analyte				Added		Result	Qual	ifier	Unit		D	%Rec	Limits		
Chloride				50.0		50.76			mg/L		_	102	90 - 110		
Lab Sample ID: LCSD 490-172274	/8								CI	lient	Sam	ple ID:	Lab Contr	ol Sam	ple Dup
Matrix: Water													Prep '	Type: T	'otal/NA
Analysis Batch: 172274															
				Spike		LCSD	LCSI	D					%Rec.		RPD
Analyte				Added		Result	Qual	ifier	Unit		D	%Rec	Limits	RPD	D Limit
Chloride				50.0		50.83			mg/L			102	90 _ 110	(	) 20
Lab Sample ID: 490-54984-3 MS												Cli	ent Samol	e ID: Fi	0 Blank
Matrix: Water												•	Pren '	Type: T	otal/NA
Analysis Batch: 172274													inop	.,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	otantin
	Sample	Sam	ole	Spike		MS	MS						%Rec.		
Analyte	Result	Qual	ifier	Added		Result	Qual	ifier	Unit		D	%Rec	Limits		
Chloride	ND			50.0		46.45			mg/L		_	93	80 - 120		
Γ															
Lab Sample ID: MB 490-172439/5												Client S	Sample ID:	Metho	d Blank
Matrix: Water													Prep	Туре: Т	otal/NA
Analysis Batch: 172439															
	_	MB	MB							_	_			-	
Analyte	R	esult	Qualifier		RL		MDL	Unit		D .	P	repared	Analy	zed	Dil Fac
Chionae		ND			1.00			mg/∟					06/25/14	08:25	1
Lab Sample ID: LCS 490-172439/6	i									CI	ient	Sample	e ID: Lab C	ontrol	Sample
Matrix: Water													Prep <sup>•</sup>	Type: T	otal/NA
Analysis Batch: 172439															
				Spike		LCS	LCS						%Rec.		
Analyte				Added		Result	Qual	ifier	Unit		D	%Rec	Limits		
Chloride				50.0		50.22			mg/L		_	100	90 _ 110		
Lab Sample ID: LCSD 400 472420	17								<b>C</b> 1	liont	<b>S</b>		Lab Contr	ol Sam	
Matrix: Water										ient	Jail	ihie in:		u Saili Tupo: T	
Analysis Patch: 472420													Prep	iype: I	otai/NA
Analysis Daton. 172439				Snike		LCSD	LCSI	D					%Rec		RPD
Analyte				babbΔ		Result	0.121	- ifier	Unit		р	%Rec	l imite	RDL	)   imit
Chloride				50.0		50.22	Gudi		mo/l		_	100	90, 110	·(	$\frac{1}{20}$
				50.0		JU.22			mg/∟			100	30 - 110	L L	20

#### GC/MS VOA

#### Analysis Batch: 169717

Lab Sample ID	Client Sample ID	Ргер Туре	Matrix	Method	Prep Batch
490-54984-2	MW-4	Total/NA	Water	8260B	
490-54984-2 MS	MW-4	Total/NA	Water	8260B	
490-54984-2 MSD	MW-4	Total/NA	Water	8260B	
490-54984-3	EQ Blank	Total/NA	Water	8260B	
490-54984-8	Trip Blank	Total/NA	Water	8260B	
490-54984-9	Dup	Total/NA	Water	8260B	
LCS 490-169717/3	Lab Control Sample	Total/NA	Water	8260B	
MB 490-169717/5	Method Blank	Total/NA	Water	8260B	

#### HPLC/IC

#### Analysis Batch: 172274

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-54984-2	MW-4	Total/NA	Water	300.0	
490-54984-3	EQ Blank	Total/NA	Water	300.0	
490-54984-3 MS	EQ Blank	Total/NA	Water	300.0	
490-54984-4	MW-2	Total/NA	Water	300.0	
490-54984-5	MW-6	Total/NA	Water	300.0	
490-54984-6	MW-3	Total/NA	Water	300.0	
490-54984-7	MW-5	Total/NA	Water	300.0	
490-54984-9	Dup	Total/NA	Water	300.0	
LCS 490-172274/7	Lab Control Sample	Total/NA	Water	300.0	
LCSD 490-172274/8	Lab Control Sample Dup	Total/NA	Water	300.0	
MB 490-172274/6	Method Blank	Total/NA	Water	300.0	

#### Analysis Batch: 172439

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method Prep Batch
490-54984-1	MW-1	Total/NA	Water	300.0
LCS 490-172439/6	Lab Control Sample	Total/NA	Water	300.0
LCSD 490-172439/7	Lab Control Sample Dup	Total/NA	Water	300.0
MB 490-172439/5	Method Blank	Total/NA	Water	300.0

Date Collected: 06/06/14 11:55       Matrix: Water         Date Received: 06/10/14 08:30       Batch       Batch       Matrix: Water         Prep Type       Type       Type       Statch       Statch       Prepared         Date Collected: 06/06/14 12:50       Lab       Collected: 06/06/14 08:30       Lab       Lab       Collected: 06/07/14 08:30       Lab       Lab       Collected: 06/07/14 08:30       Lab       Collected: 06/07/14 08:30       Lab       Lab       Collected: 06/07/14 08:30       Matrix: Water         Pren Type       Statch       Batch       Batch       Batch       Batch       Collected: 06/07/14 08:30       Matrix: Water         Pren Type       Factor       Anaysti       Batch       Batch       Batch       Prepared       of Analyzed       Analysti       Lab         Client Sample ID: EQ Blank       Run       Factor       Anount       Marrix: Water       Did       Initial       Final       Batch       Prepared       of Analyzed       Analysti       Lab         Client Sample ID: EQ Blank       Lab       Lab       Statch       Prepared       of Analyzed       Analysti       Lab         Total Received: 06/0714 08:30       Batch       Prepared       Prepared       of Analyzed       Analysti       Lab <th><b>Client Samp</b></th> <th>le ID: MW-1</th> <th></th> <th></th> <th></th> <th></th> <th></th> <th></th> <th>Lab Samp</th> <th>ole ID: 4</th> <th>90-54984-1</th>	<b>Client Samp</b>	le ID: MW-1							Lab Samp	ole ID: 4	90-54984-1
Date Received: 06/10/14 08:30       Batch       Batch       Batch       Batch       Batch       Batch       Preparty       Final       Anount       Final       Batch       Prepared       Or Analyzed       Analyse       Lab         ToleNNA       Analyses       S00.0       1       10 ntl.       Initial       Final       Batch       or Analyzed       Analyset       Lab         Client Sample ID: MW-4       Each       Batch       Batch       Batch       Marrix: Water         Date Collected: 06/06/14 12:50       Batch       Batch       Run       Final       Anount       Anount       Marrix: Water         ToleNNA       Analysis       S250B       Tol. NN       1       10 ntl.       10 ntl.       100717       06/15/14 03:32       Analyst       Lab         Client Sample ID: EQ Blank       Batch       Run       Final       Anount       Inmite       Inmite       10 ntl.       100717       06/24/14 16:51       HMT       TAL NSH         Date Collected: 06/05/14 14:05       Batch       Run       Final       Anount       Anount       Inmite       Inmite<	Date Collected	: 06/05/14 11:	55							Ν	Aatrix: Water
Prep Type         Batch TolumXA         Batch Anaysis         Batch SO 0         Batch Initial Faulty         Final Amount 1         Batch Number         Prepared or Analyzed 172439         Prepared of Analyzed O622410226         Analysis         Lab           Client Sample ID: MW-4 Data Collectic: 06/05/14 12:50         Lab         Lab         Lab         Lab         Lab         Lab         Lab         Lab         Lab         Mariysis         Lab         Lab         Mariysis         Lab         Lab         Mariysis         Lab         Lab <th>Date Received:</th> <th>: 06/10/14 08:3</th> <th>30</th> <th></th> <th></th> <th></th> <th></th> <th></th> <th></th> <th></th> <th></th>	Date Received:	: 06/10/14 08:3	30								
Prep Type	Г	Batch	Batch		Dil	Initial	Final	Batch	Prenared		
Total NA     Analysis     300.0     Image: Market	Prep Type	Type	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Client Sample ID: MW-4       Lab Sample ID: 490-54984-2         Date Collected: 06/05/14 12:50       Method         Prep Type       Type         Tote/NA       Analysis         85009       10         Itent Sample ID: EQ Blank       Number         Tote/NA       Analysis         85009       10         10 <th>Total/NA</th> <th>Analysis</th> <th>300.0</th> <th></th> <th>1</th> <th>10 mL</th> <th></th> <th>172439</th> <th>06/25/14 09:26</th> <th>JHS</th> <th>TAL NSH</th>	Total/NA	Analysis	300.0		1	10 mL		172439	06/25/14 09:26	JHS	TAL NSH
Client Sample ID: MW-4 Date Collected: 06/05/14 12:50 Date Received: 06/10/14 08:30       Lab Sample ID: 490-54984-2 Matrix: Water         Prop Type       Type       Method       Run       Factor       Amount       Amount       Number       or Analyzed       Analysis       Lab       Sample ID: 490-54984-2         Prop Type       Type       Method       Run       Factor       Amount       Amount       Number       or Analyzed       Analysis       Lab       Sample ID: 490-54984-2         Client Sample ID: EQ Blank       Date Collected: 06/05/14 14/45       Lab Sample ID: 490-54984-3       Matrix: Water         Date Collected: 06/05/14 14/45       Lab Sample ID: 490-54984-3       Matrix: Water       Matrix: Water         Date Collected: 06/05/14 14/45       Method       Run       Factor       Amount       Number       or Analyzed       Analyst       Lab         Total/NA       Analysis       300.0       1       10 mL       10 mL       100mL       106/11/14 08:30       Matrix: Water         Client Sample ID: MW-2       Batch       Batch       Method       Run       Factor       Amount       Number       or Analyzed       Analyst       Lab         Total/NA       Analysis       300.0       1       10 mL       10 mL       100/11/11 <td< td=""><td></td><td>, and yord</td><td></td><td></td><td>·</td><td>102</td><td></td><td></td><td>00/20/11 00:20</td><td>0.10</td><td></td></td<>		, and yord			·	102			00/20/11 00:20	0.10	
Date Collected: 06/05/14 12:50     Matrix: Water       Prop Type     Type     Method     Run     Factor     Amount     Amount     Number     or Analyzed     Analyst     Lab       Total/NA     Analysis     52008     10     10 mL     10 mL     100 mL     100717     06/15/14 03:52     JMG     TAL NSH       Total/NA     Analysis     52008     10     10 mL     10 mL     100 mL     12274     06/24/14 16:51     HMT     TAL NSH       Client Sample ID: EQ Blank     Lab     Sample ID: 400-54984-3     Matrix: Water     Matrix: Water       Date Received: 06/10/14 08:30     Batch     Run     Final     Amount     Amount     Number     of Analyzed     Analyst     Lab       Total/NA     Analysts     300.0     1     10 mL     10 mL     100mL     10077     06/15/14 03:26     JMG     TAL NSH       Total/NA     Analysts     300.0     1     10 mL     100 mL     172274     06/24/14 17:11     HMT     TAL NSH       Client Sample ID: MW-2     Batch     Batch     Run     Dil     Initial     Final     Analyst     Lab     Sample ID: 490-54984-4       Date Collected: 06/05/14 14:05     Date Collected: 06/05/14 14:05     Date Collected: 06/05/14 14:05:0     Matrix: Wa	Client Samp	le ID: MW-4							Lab Samp	ole ID: 4	90-54984-2
Date Received: 06/10/14 08:30       Prop Type     Statch     Batch     Run     Factor     Analysis     Batch     Prepared Statistical       TotaliNA     Analysis     300.0     10     10 mL     10 mL     10 mL     10 mL     06/15/14 03:52     JMG     TAL NSH       Client Sample ID: EQ Blank     Analysis     300.0     10     10 mL     10 mL     172274     06/24/14 16:51     HMT     TAL NSH       Client Sample ID: EQ Blank     Batch     Run     Factor     Amount     Amount     Amount     Amount     Mumber     Of 15/14 03:52     JMG     TAL NSH       Client Sample ID: EQ Blank     Batch     Batch     Run     Factor     Amount     Amount     Amount     Number     Of 15/14 03:26     JMG     TAL NSH       Total/NA     Analysis     2508     10     Initial     Final     Batch     Prepared     or Analyzed     Analyst     Lab       Total/NA     Analysis     300.0     1     10 mL     10 mL     10 27274     06/24/14 17:11     HMT     TAL NSH       Client Sample ID: MW-2     Batch     Run     Factor     Amount     Amount     Amount     Mount     Amount     Mount     Mount     Mount     Mount     Motick     Matrix: Water<	Date Collected	: 06/05/14 12:	50							Ν	/latrix: Water
Prep Type         Type         Method         Run         Dil         Initial         Final         Batch         Prepared         Or Analysed         Analyst         Lab           TotalNA         Analysis         300.0         10         10 mL         10 mL         100717         06/24/14 16:51         HMT         TAL NSH           TotalNA         Analysis         300.0         10         10 mL         10 mL         1007274         06/24/14 16:51         HMT         TAL NSH           Client Sample ID: EQ Blank         EQ 61/01/14 08:30         Method         Matrix: Water         Matrix: Water         Matrix: Water           Date Collecter: 66/05/14 14.455         Batch         Run         Factor         Amount         Amount         Mumber         06/24/14 16:51         HMT         TAL NSH           TotalNA         Analysis         300.0         1         10 mL         10 mL         1007L         107274         06/24/14 17:11         HMT         TAL NSH           Client Sample ID: MW-2         Batch         Run         Factor         Amount         Amount         Matrix: Water           Date Collected: 66/05/14 14:0.50         Batch         Run         Factor         Amount         Amount         Matrix: Water	Date Received:	: 06/10/14 08:3	30								
Pep Type Total/NAType AnalysisMethod 8280BRun 1Factor 1Amount 10Amount 10Number 10or Analyzed 06/15/114 03.52Analyzed JMGAnalyzed TAL NSHClient Sample ID: EQ Blank Date Collected: 06/05/14 14:45 Date Collected: 06/05/14 14:45 Date Collected: 06/10/14 08:30RunDil Freat 10Initial 10Final 10Batch Prep TypePrep Type Total/NA AnalysisBatch Batch BatchRunDil Final Prep TypeDil 10Initial 10Final 10Batch Prep TypePrep Type Total/NA AnalysisAnalysis AnalysisAnalysis AnalysisAnalysis AnalysisAnalysis AnalysisAnalysis AnalysisAnalysis AnalysisAnalysis AnalysisAnalysis AnalysisAnalysis AnalysisAnalysis AnalysisAnalysis AnalysisAnalysis AnalysisAnalysis AnalysisAnalysis AnalysisAnalysis AnalysisAnalysis AnalysisAnalysis AnalysisAnalysis 	Г	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Total/NA         Analysis         8260B         1         1         10 mL         10 mL         169717         06/15/14 03:52         JMG         TAL NSH           Total/NA         Analysis         300.0         10         10 mL         10 mL         10 mL         10 mL         06/15/14 03:52         JMG         TAL NSH           Client Sample ID: EQ Blank         Lab Sample ID: 490-54984-3         Matrix: Water         Matrix: Water           Date Collected: 06/10/14 08:30         Batch         Batch         Prep Type         Matrix: Water           Total/NA         Analysis         8260B         Run         Factor         Amount         Amount         Number         of Analysed         Analysis         JMG         TAL NSH           Total/NA         Analysis         300.0         1         10 mL         10 mL         10 mL         69/15/14 03:26         JMG         TAL NSH           Client Sample ID: MW-2         Matrix: Water         Lab Sample ID: 490-54984-4         Matrix: Water         Matrix: Water           Date Collected: 06/10/14 08:30         Run         Factor         Amount         Amount         Mumber         of Analysed         Analystis         Matrix: Water           Date Collected: 06/10/14 08:30         Batch         Batch <td>Prep Type</td> <td>Туре</td> <td>Method</td> <td>Run</td> <td>Factor</td> <td>Amount</td> <td>Amount</td> <td>Number</td> <td>or Analyzed</td> <td>Analyst</td> <td>Lab</td>	Prep Type	Туре	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA     Analysis     300.0     10     10 mL     172274     06/24/14 18.51     HMT     TAL NSH       Client Sample ID: EQ Blank Date Collected: 06/05/14 14:45     Lab Sample ID: 490-54984-3 Matrix: Water     Matrix: Water       Prep Type     Type     Method     Run     Factor     Amount     Amount     Number     of ////14 03:20     Analysis     July     Lab     Analysis     July     Lab     Analysis     July     Lab     Total/NA     Analysis     July     Lab     Analysis     July     Lab     Total/NA     Analysis     July     Lab     Total/NA     Analysis     July     Lab     Total/NA     July     Lab     Total/NA     July     Lab     July     Total/NA     July     Lab     July     Total/NA     July     Lab     July     Total/NA     July     Lab     July     Total/NA     July     Ju	Total/NA	Analysis	8260B		1	10 mL	10 mL	169717	06/15/14 03:52	JMG	TAL NSH
Client Sample ID: EQ Blank Date Collected: 06/05/14 14:45 Date Received: 06/10/14 08:30 Prep Type Type Type Method Run Factor 1 0 mL 10 m	Total/NA	Analysis	300.0		10	10 mL		172274	06/24/14 16:51	НМТ	TAL NSH
Client Sample ID: EQ Blank       Lab Sample ID: 490-54984-3         Date Collected: 06/05/14 14:45       Matrix: Water         Date Received: 06/10/14 08:30       Batch       Batch       Run       Factor       Amount       Amount       Number       Or Analyzed       Analysis       Lab       Sample ID: 490-54984-3         Prep Type       Type       Method       Run       Factor       Amount       Amount       Number       Or Analyzed       Analysis       Lab       Tal. NSH         Client Sample ID: MW-2       Lab Sample ID: 490-54984-4       Matrix: Water       Matrix: Water       Matrix: Water         Date Received: 06/10/14 08:30       Batch       Batch       Run       Final       Amount       Analysis       Analysis       Matrix: Water         Total/NA       Analysis       300.0       Run       Factor       Amount       Amount       Matrix: Water         Client Sample ID: MW-6       Lab Sample ID: 490-54984-4       Matrix: Water       Matrix: Water         Total/NA       Analysis       300.0       Run       Factor       Amount       Amount       Mumber       Of Analyzed       Analyst       Lab         Total/NA       Analysis       300.0       Run       Factor       Amount       Amount       Mu	<u> </u>										
Date Collected: 06/05/14 14:45       Matrix: Water         Date Received: 06/10/14 08:30       Batch       Run       Dil       Initial       Final       Batch       Prepared       Analysis       Lab         Total/NA       Analysis       300.0       1       10 mL       10 mL       1000L       1000L       1000L       06/15/14 03:26       JMG       TAL NSH         Total/NA       Analysis       300.0       1       10 mL       1000L       172274       06/24/14 17:11       HMT       TAL NSH         Client Sample ID: MW-2       Lab Sample ID: 490-54984-4       Matrix: Water         Date Received: 06/10/14 08:30       Batch       Run       Final       Analysis       Analysis       Matrix: Water         Total/NA       Analysis       300.0       100 mL       Initial       Final       Batch       Prepared       or Analyzed       Analysis       Lab         Total/NA       Analysis       300.0       100 mL       Initial       Final       Batch       Prepared       or Analyzed       Analysis       Lab       Matrix: Water         Total/NA       Analysis       300.0       100 mL       Initial       Final       Maunt       Number       or Analyzed       Analysis       Lab <td>Client Samp</td> <td>le ID: EQ BI</td> <td>ank</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>Lab Samp</td> <td>ole ID: 49</td> <td>90-54984-3</td>	Client Samp	le ID: EQ BI	ank						Lab Samp	ole ID: 49	90-54984-3
Date Received:     User Notice (10) 14 06:30       Prep Type     Type     Method     Run     Factor     Amount     Initial     Final     Batch     Prepared     Analysis     Lab       Total/NA     Analysis     300.0     1     10 mL     10 mL     169717     06/15/14 03:26     Analysis     Lab       Total/NA     Analysis     300.0     1     10 mL     172274     06/24/14 17:11     HMT     TAL NSH       Client Sample ID: MW-2     Batch     Batch     Run     Factor     Amount     Initial     Final     Batch     Od/24/14 17:11     HMT     TAL NSH       Client Sample ID: MW-2     Lab Sample ID: 490-54984-4     Matrix: Water     Matrix: Water     Matrix: Water       Date Received: 06/10/14 08:30     Batch     Run     Factor     Amount     Amount     Maryst     Lab       Prep Type     Type     Method     Run     Factor     Amount     Amount     Matrix: Water       Total/NA     Analysis     300.0     Run     Factor     Amount     Amount     Mumber     or Analyzed     Analyst     Lab       Client Sample ID: MW-6     Lab Sample ID: MW-6     Lab Sample ID: 490-54984-5     Matrix: Water     Matrix: Water       Total/NA     Analysis     300.	Date Collected	: 06/05/14 14:4	45 20							N	Aatrix: Water
Batch Total/NA         Batch Analysis         Batch Betch Analysis         Batch Betch Betch Analysis         Batch Betch Betch Analysis         Dil Betch Betch Analysis         Initial Betch 1         Final 1         Batch Amount 10 mL         Prepared Amalysis         Analysis JMG         Lab TAL NSH           Client Sample ID: MW-2 Date Collected: 06/05/14 14:05         Analysis         300.0         1         10 mL         10 mL         172274         06/24/14 17:11         HMT         TAL NSH           Client Sample ID: MW-2 Date Received: 06/05/14 14:05         Batch Analysis         Batch Method         Run         Dil Factor         Initial Amount         Final Amount         Batch Number         Prepared or Analyzed of/24/14 17:51         Analyst Matrix: Water           Client Sample ID: MW-6 Total/NA         Batch Analysis         Batch 300.0         Run         Factor 20         Amount 10 mL         Amount 172274         Dil Of/24/14 17:51         Analyst HMT         Lab TAL NSH           Client Sample ID: MW-6 Date Received: 06/05/14 15:10         Batch Analysis         Batch 300.0         Run         Factor 10         Amount 10         Amount 10         Amount 172274         Prepared or Analyzed Of/24/14 18:11         Analyst HMT         Lab TAL NSH           Client Sample ID: MW-3 Date Received: 06/05/14 16:05         Batch Matrix: Water         Dil Initial Factor         Final Amount 10		: 06/10/14 08:3	50								
Prep Type Total/NAType AnalysisMethod 8260BRunFactor 1Amount 10 mLNumber 10 mLor Analyzed 169717Analyst 06/16/14 03:26Lab JMGTAL NSHTotal/NAAnalysis300.0110 mL10 mL10 mL10971706/24/14 03:26JMGTAL NSHTotal/NAAnalysis300.0110 mL10 mL17227406/24/14 17:11HMTTAL NSHClient Sample ID: MW-2 Date Collected: 06/05/14 14:05 Date Received: 06/10/14 08:30Batch MethodRunDil FactorInitial AmountFinal AmountBatch NumberPrepared or AnalyzedAnalyst AnalystLab Matrix: WaterPrep Type Total/NABatch AnalysisBatch 300.0RunDil FactorInitial AmountFinal AmountBatch NumberPrepared or AnalyzedAnalyst AnalystLab LabClient Sample ID: MW-6 Date Collected: 06/05/14 15:10 Date Received: 06/10/14 08:30Batch MethodRunPrep FactorFinal AmountBatch NumberPrepared or AnalyzedAnalyst AnalystLab TAL NSHClient Sample ID: MW-3 Date Collected: 06/05/14 16:05 Date Received: 06/10/14 08:30RunPinitial FactorFinal AmountBatch AmountPrepared or AnalyzedAnalyst LabLab TAL NSHClient Sample ID: MW-3 Date Received: 06/10/14 08:30Batch <b< td=""><td></td><td>Batch</td><td>Batch</td><td></td><td>Dil</td><td>Initial</td><td>Final</td><td>Batch</td><td>Prepared</td><td></td><td></td></b<>		Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Total/NA       Analysis       8260B       1       10 mL       10 mL       169717       06/15/14 03:26       JMG       TAL NSH         Total/NA       Analysis       300.0       1       10 mL       10 mL       169717       06/15/14 03:26       JMG       TAL NSH         Client Sample ID: MW-2       Date Collected: 06/05/14 14:05       Lab Sample ID: 490-54984-4       Matrix: Water         Date Received: 06/10/14 08:30       Batch       Batch       Method       Run       Factor       Amount       Amount       Number       06/24/14 17:51       HMT       TAL NSH         Client Sample ID: MW-6       Batch       Batch       Batch       Prep Type       Type       Method       Run       Factor       Amount       Number       06/24/14 17:51       HMT       TAL NSH         Client Sample ID: MW-6       Lab Sample ID: MW-6       Lab Sample ID: 490-54984-5       Matrix: Water         Date Received: 06/05/14 16:10       Dil       Initial       Final       Mount       Number       or Analyzed       Analyst       Lab         Total/NA       Analysis       300.0       0       10       10 mL       Tal NSH        TAL NSH         Client Sample ID: MW-6       Batch       Batch       Batch <td< td=""><td>Prep Type</td><td>Туре</td><td>Method</td><td>Run</td><td>Factor</td><td>Amount</td><td>Amount</td><td>Number</td><td>or Analyzed</td><td>Analyst</td><td>Lab</td></td<>	Prep Type	Туре	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NAAnalysis300.0110 mL17227406/24/14 17:11HMTTAL NSHClient Sample ID: MW-2Lab Sample ID: MW-2Date Collected: 06/05/14 14:05MethodDilInitialFinalBatchPrep TypeTotal/NAAnalysisBatchMethod300.0RunFactorAmountNumber10 mL10 mL10 mL11227406/24/14 17:51Client Sample ID: MW-6Date Collected: 06/05/14 15:10Date Received: 06/10/14 08:30Prep TypeTypeBatchRunPrep TypeTypeMethodTotal/NAAnalysisBatchRunPrep TypeTypeBatchRunFotal/NAAnalysisBatchPrep TypeTypeBatchPrep TypeTypeTotal/NAAnalysisBatchRunPrep TypeTypeTotal/NAAnalysisBatchRunPrep TypeTypeBatchBatchPrep TypeTypeBatchRunPrep TypeTypeBatchRunPrep TypeTypeBatchBatchPrep TypeTypeBatchRunPrep TypeTypeDate Collected: 06/05/14 16:05Date Collected: 06/05/	Total/NA	Analysis	8260B		1	10 mL	10 mL	169717	06/15/14 03:26	JMG	TAL NSH
Client Sample ID: MW-2       Lab Sample ID: 490-54984-4         Date Collected: 06/05/14 14:05       Matrix: Water         Date Received: 06/10/14 08:30       Batch       Batch       Dil       Initial       Final       Batch       Prepared       Or Analyzed       Analysit       Lab         Prep Type       Type       Method       Run       Pactor       Amount       Amount       Number       or Analyzed       Analyst       Lab         Client Sample ID: MW-6       Date Received: 06/10/14 08:30       Eab       Dil       Initial       Final       Batch       Prep Type       Analysis       Analyst       Lab         Date Received: 06/10/14 08:30       Batch       Run       Pactor       Amount       Amount       Number       or Analyzed       Analyst       Lab         Prep Type       Type       Method       Run       Pactor       Amount       Amount       Number       or Analyzed       Analyst       Lab         Initial       Final       Batch       Batch       Run       Dil       Initial       Final       Matrix: Water         Date Received: 06/10/14 08:30       300.0       Run       Final       Amount       Number       of Analyset       Analyst       Lab <td>Total/NA</td> <td>Analysis</td> <td>300.0</td> <td></td> <td>1</td> <td>10 mL</td> <td></td> <td>172274</td> <td>06/24/14 17:11</td> <td>HMT</td> <td>TAL NSH</td>	Total/NA	Analysis	300.0		1	10 mL		172274	06/24/14 17:11	HMT	TAL NSH
Client Cample ID: MW-2     Matrix: Water       Date Collected: 06/05/14 14:05     Matrix: Water       Date Received: 06/10/14 08:30     Method       Prep Type     Type       Total/NA     Analysis       Batch     Batch       Prep Type     Type       Method     Run       Factor     Amount       10 mL     Mumber       06/24/14 17:51     HMT       Client Sample ID: MW-6     Lab Sample ID: 490-54984-5       Date Received: 06/05/14 15:10     Matrix: Water       Date Received: 06/10/14 08:30     Run       Prep Type     Type       Total/NA     Analysis       Method     Run       Prep Type     Type       Method     Run       Prep Type     Type       Method     Run       10     10 mL       10     Initial       Final     Batch       Prep Type     Type       Matrix: Water       Od/24/14 18:11       HMT     TAL NSH	Client Samp								l ah Samr		20-5/08/-/
Date Received: 06/10/14 08:30       Batch       Prep Type       Type       Method       Run       Factor       Amount       Amount       Number       Of // 1/2       Analysis       Analysis       Jab       TAL NSH         Client Sample ID: MW-6       Lab Sample ID: 490-54984-5         Date Received: 06/10/14 08:30       Method       Run       Factor       Amount       Amount       Number       Of // 4/14 17:51       HMT       TAL NSH         Client Sample ID: MW-6       Lab Sample ID: 490-54984-5         Date Received: 06/10/14 08:30       Batch       Prep Type       Prep Type       Method       Run       Factor       Amount       Amount       Number       or Analyzed       Analyst       Lab         Total/NA       Analysis       300.0       Method       Run       Factor       Amount       Amount       Number       or Analyzed       Analyst       Lab         Client Sample ID: MW-3       Diate Collected: 06/05/14 16:05       Date Received: 06/10/14 08:30       Matrix: Water       Date Received: 06/10/14 08:30       Matrix:	Date Collected	· 06/05/14 14·0	15						Lab Gamp		Aatriv: Wator
Batch Total/NA       Batch Analysis       Batch Method       Run       Dil Factor       Initial Amount       Final Amount       Batch Number       Prepared or Analyzed 06/24/14 17:51       Analyst HMT       Lab         Client Sample ID: MW-6 Date Collected: 06/05/14 15:10 Date Received: 06/10/14 08:30       Eab       Lab Sample ID: 490-54984-5 Matrix: Water         Prep Type       Type       Batch Analysis       Batch Method       Run       Dil Factor       Initial Amount       Final Amount       Batch Number       Prepared or Analyzed of Analyzed       Analyst Analyst       Lab         Prep Type       Type Total/NA       Batch Analysis       Batch 300.0       Run       Dil Factor       Initial Amount       Final Amount       Batch Number       Prepared or Analyzed 06/24/14 18:11       Analyst HMT       Lab         Client Sample ID: MW-3 Date Collected: 06/05/14 16:05 Date Received: 06/10/14 08:30       Run       Dil Factor       Initial Amount       Final Amount       Batch Number       Prepared or Analyzed 06/24/14 18:31       Analyst HMT       Lab         Prep Type       Batch Total/NA       Batch Analysis       Run       Factor 10       Amount 10       Mount 10       Mount 10       Number 172274       Ob/24/14 18:31       Analyst Analyst 06/24/14 18:31       Lab	Date Received:	: 06/10/14 08:3	30								
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Initial     Prep Type     Type     Method     Run     Factor     Amount     Amount     Number     Of/24/14 17:31     HMI     HAL NSH       Client Sample ID: MW-6     Date Collected: 06/05/14 15:10     Date Received: 06/10/14 08:30     Dil     Initial     Final     Batch     Prepared     or Analyzed     Analyst     Lab       Prep Type     Type     Method     Run     Factor     Amount     Amount     Number     or Analyzed     Analyst     Lab       Client Sample ID: MW-3     Doi:     10     10     Initial     Final     Batch     Number     or Analyzed     Analyst     Lab       Client Sample ID: MW-3     Date Collected: 06/05/14 16:05     Date Collected: 06/05/14 16:05     Matrix: Water       Date Received: 06/10/14 08:30     Batch     Run     Final     Batch     Prepared       Prep Type     Type     Method     Run     Factor     Amount     Amount     Number     of Analyzed     Analyst       Lab     Sample ID: MW-3     Date Collected: 06/05/14 16:05     Date Collected: 06/05/14 16:05     Matrix: Water       Date Received: 06/10/14 08:30     Method     Run     Factor     Amount     Amount     Number     or Analyzed     Analyst       Prep Type     Type     Method	Prep Type	Туре	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	
Client Sample ID: MW-6 Date Collected: 06/05/14 15:10       Lab Sample ID: 490-54984-5 Matrix: Water         Date Collected: 06/05/14 15:10         Date Received: 06/10/14 08:30         Prep Type       Batch Analysis       Batch 300.0       Run       Final 10       Initial Mount       Final Amount       Batch Number       Prepared of/24/14 18:11       Analyst HMT       Lab         Client Sample ID: MW-3 Date Collected: 06/05/14 16:05       Batch Date Received: 06/10/14 08:30       Batch Batch       Batch Method       Run       Dil Factor 10       Initial Mount       Final Amount       Batch Matrix: Water       Prepared Od/24/14 18:31       Analyst Analyst       Lab Lab         Prep Type       Batch Total/NA       Batch       Batch Analysis       Run       Dil Factor 10       Initial 10 mL       Final Amount       Batch Number       Prepared of/24/14 18:31       Analyst Analyst       Lab	I otal/NA	Analysis	300.0		20	10 mL		1/22/4	06/24/14 17:51	HMT	TAL NSH
Date Collected: 06/05/14 15:10       Matrix: Water         Date Received: 06/10/14 08:30       Matrix: Water         Prep Type       Type       Method       Run       Final       Amount       Mount       Number       or Analyzed       Analyst       Lab         Total/NA       Analysis       300.0       Method       Run       Final       Amount       Mount       Number       06/24/14 18:11       Analyst       Lab         Client Sample ID: MW-3       Date Collected: 06/05/14 16:05       Matrix: Water       Matrix: Water         Date Received: 06/10/14 08:30       Method       Run       Final       Final       Batch       Prepared       Matrix: Water         Prep Type       Type       Method       Run       Dil       Initial       Final       Batch       Prepared       Matrix: Water         Date Collected: 06/05/14 16:05       Matrix: Water       Matrix: Water       Matrix: Water         Date Received: 06/10/14 08:30       Method       Run       Final       Amount       Mount       Number       or Analyzed       Analyst       Lab         Total/NA       Analysis       300.0       Method       Run       Final       Amount       Mount       Mount       Mount       06/24/14 18:31 <td< td=""><td>Client Samp</td><td>le ID: MW-6</td><td></td><td></td><td></td><td></td><td></td><td></td><td>Lab Samp</td><td>ole ID: 4</td><td>90-54984-5</td></td<>	Client Samp	le ID: MW-6							Lab Samp	ole ID: 4	90-54984-5
Date Received: 06/10/14 08:30         Prep Type       Batch       Batch       Batch       Prepared       Prepared       Prepared       Analysis       Analysis       Lab         Total/NA       Analysis       300.0       Run       Factor       Amount       Number       06/24/14 18:11       Analyst       Lab         Client Sample ID: MW-3       Date Collected: 06/05/14 16:05       Date Collected: 06/05/14 16:05       Matrix: Water         Date Received: 06/10/14 08:30       Batch       Run       Final       Amount       Batch       Prepared       Analyst       Lab         Prep Type       Batch       Batch       Method       Run       Dil       Initial       Final       Batch       Prepared       Matrix: Water         Date Collected: 06/05/14 16:05       Date Received: 06/10/14 08:30       Method       Run       Final       Amount       Mounter       Prepared       Or Analyzed       Analyst       Lab         Total/NA       Analysis       Method       Run       Dil       Initial       Final       Batch       Prepared       Or Analyzed       Analyst       Lab         Total/NA       Analysis       Method       Run       Total       In mutor       In mutor       In mutor	Date Collected	: 06/05/14 15: <sup>4</sup>	10							Ν	Aatrix: Water
Prep Type Total/NABatch Method AnalysisBatch Method 300.0RunDil Factor 10Initial AmountFinal AmountBatch Number 172274Prepared of Analyzed 06/24/14 18:11Analyst HMTLab TAL NSHClient Sample ID: MW-3 Date Collected: 06/05/14 16:05 Date Received: 06/10/14 08:30Batch Batch Total/NABatch Batch Method 300.0Prepared Prepared 10Dil Initial HMTFinal Amount Dil HMTBatch Total/NAPrepared Of/24/14 18:11Analyst HMTLab Lab Lab Matrix: WaterPrep Type Total/NABatch AnalysisBatch Method 300.0RunDil Factor 10Initial Amount 10Final Amount AmountBatch Mumber Of/24/14 18:31Analyst Analyst Analyst HMTLab TAL NSH	Date Received:	: 06/10/14 08:3	80								
Prep Type Total/NAType AnalysisMethod 300.0Run FactorFactor 10Amount 10 mLAmount AmountNumber 172274or Analyzed 06/24/14 18:11Analyst HMTLab TAL NSHClient Sample ID: MW-3 Date Collected: 06/05/14 16:05 Date Received: 06/10/14 08:30Method Batch Total/NADil FactorInitial AmountFinal AmountBatch NumberPrepared of AnalyzedPrepared of AnalyzedAnalyst Lab TAL NSHLab TAL NSH	Γ	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Total/NA       Analysis       300.0       10       10 mL       172274       06/24/14 18:11       HMT       TAL NSH         Client Sample ID: MW-3 Date Collected: 06/05/14 16:05 Date Received: 06/10/14 08:30       Lab Sample ID: 490-54984-6 Matrix: Water         Prep Type       Batch       Batch       Dil Method       Dil Factor       Initial       Final Amount       Batch       Prepared or Analyzed       Analysis       Analyst       Lab         Total/NA       Analysis       300.0       Mu       10       <	Prep Type	Туре	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Client Sample ID: MW-3       Lab Sample ID: 490-54984-6         Date Collected: 06/05/14 16:05       Matrix: Water         Date Received: 06/10/14 08:30       Batch       Batch       Dil       Initial       Final       Batch       Prepared         Prep Type       Type       Method       Run       Factor       Amount       Amount       Number       or Analyzed       Analyst       Lab         Total/NA       Analysis       300.0       Mu       10       10       10       10       10       TAL NSH	Total/NA	Analysis	300.0		10	10 mL		172274	06/24/14 18:11	НМТ	TAL NSH
Client Sample ID: MW-3     Lab Sample ID: 490-54984-6       Date Collected: 06/05/14 16:05     Matrix: Water       Date Received: 06/10/14 08:30     Batch     Batch     Prepared       Prep Type     Type     Method     Run     Factor     Amount     Amount     Number     or Analyzed     Analyst     Lab       Total/NA     Analysis     300.0     Method     10     10 mL     10 mL     172274     06/24/14 18:31     Analyst     Lab	_										
Matrix: Water         Date Collected: 06/05/14 16:05       Matrix: Water         Date Received: 06/10/14 08:30         Prep Type       Type       Method       Run       Factor       Amount       Amount       Number       or Analyzed       Analyst       Lab         Total/NA       Analysis       300.0       Method       10       10 mL       172274       06/24/14 18:31       HMT       TAL NSH	<b>Client Samp</b>	le ID: MW-3							Lab Samp	ole ID: 49	90-54984-6
Date Received: 06/10/14 08:30         Prep Type       Batch       Batch       Dil       Initial       Final       Batch       Prepared         Total/NA       Analysis       300.0       Method       10       10 mL       10 mL       172274       06/24/14 18:31       Analyst       Lab	Date Collected	: 06/05/14 16:0	05							Ν	Aatrix: Water
Batch     Batch     Dil     Initial     Final     Batch     Prepared       Prep Type     Type     Method     Run     Factor     Amount     Amount     Number     or Analyzed     Analyst     Lab       Total/NA     Analysis     300.0     10     10 mL     10 mL     172274     06/24/14 18:31     HMT     TAL NSH	Date Received:	: 06/10/14 08:3	30								
Prep Type     Type     Method     Run     Factor     Amount     Amount     Number     or Analyzed     Analyst     Lab       Total/NA     Analysis     300.0     10     10 mL     172274     06/24/14 18:31     HMT     TAL NSH	Γ	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Total/NA         Analysis         300.0         10         10 mL         172274         06/24/14 18:31         HMT         TAL NSH	Prep Type	Туре	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
	Total/NA	Analysis	300.0		10	10 mL		172274	06/24/14 18:31	HMT	TAL NSH

Lab Sample ID: 490-54984-7

### Client Sample ID: MW-5

Date Collected	: 06/05/14 16: : 06/10/14 08:3	50 30							Γ	Aatrix: Water
Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		10	10 mL		172274	06/24/14 18:51	HMT	TAL NSH
Client Samp	le ID: Trip E	Blank						Lab Samp	ole ID: 4	90-54984-8
Date Collected	: 06/05/14 00:0	01							N	Matrix: Water

#### Date Received: 06/10/14 08:30

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Туре	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	10 mL	10 mL	169717	06/15/14 02:59	JMG	TAL NSH

#### Client Sample ID: Dup Date Collected: 06/05/14 00:01 Date Received: 06/10/14 08:30

#### Lab Sample ID: 490-54984-9 Matrix: Water

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Туре	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	10 mL	10 mL	169717	06/15/14 04:18	JMG	TAL NSH
Total/NA	Analysis	300.0		10	10 mL		172274	06/24/14 19:11	HMT	TAL NSH

#### Laboratory References:

TAL NSH = TestAmerica Nashville, 2960 Foster Creighton Drive, Nashville, TN 37204, TEL (615)726-0177
## Client: Enviro Clean Services LLC Project/Site: CHK State L-2

Method	Method Description	Protocol	Laboratory
8260B	Volatile Organic Compounds (GC/MS)	SW846	TAL NSH
300.0	Anions, Ion Chromatography	MCAWW	TAL NSH

#### Protocol References:

MCAWW = "Methods For Chemical Analysis Of Water And Wastes", EPA-600/4-79-020, March 1983 And Subsequent Revisions.

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

#### Laboratory References:

TAL NSH = TestAmerica Nashville, 2960 Foster Creighton Drive, Nashville, TN 37204, TEL (615)726-0177

## Laboratory: TestAmerica Nashville

#### The certifications listed below are applicable to this report.

Authority	Program	EPA Region	Certification ID	Expiration Date
Oklahoma	State Program	6	9412	08-31-14

TestAmerica	
THE-LEADER IN-ENVIRONMENTAL TESTING       Nashville, TN   COOLER RECEIPT FORM	490-54984 Chain of Custody
Cooler Received/Opened On <u>७ ७० ।५ ९ ०८३०</u>	
1. Tracking #(last 4 digits, FedEx) ৭৫৯০ ০০৭৫০	
Courier: Feder IR Gun ID <u>946600220</u> man 6.10.11	
2. Temperature of rep. sample or temp blank when opened: $4 \sqrt{3}$ Degrees Celsiu	s
3. If Item #2 temperature is 0°C or less, was the representative sample or temp blan	ik frozen? YES NO. (NA
4. Were custody seals on outside of cooler?	(YES)NONA
If yes, how many and where: / # mm /	$\bigcirc$
5. Were the seals intact, signed, and dated correctly?	YES NONA
6. Were custody papers inside cooler?	YES NONA
I certify that I opened the cooler and answered questions 1-6 (intial)	
7. Were custody seals on containers: YES NO and Inta	act YESNONA
Were these signed and dated correctly?	YESNONA
8. Packing mat'l used? Subblewrap Plastic bag Peanuts Vermiculite Foam Ins	ert Paper Other None
9. Cooling process: (Ice) Ice-pack Ice (direct contact)	Dry ice Other None
10. Did all containers arrive in good condition (unbroken)?	YES)NONA
11. Were all container labels complete (#, date, signed, pres., etc)?	(YES.).NONA
12. Did all container labels and tags agree with custody papers? $\checkmark$	T WINY (YES. NO. )NA
13a. Were VOA vials received?	YESNONA
b. Was there any observable headspace present in any VOA vial?	YES(NO)NA
14. Was there a Trip Blank in this cooler? YESNONA If multiple cooler	rs, sequence #
I certify that I unloaded the cooler and answered questions 7-14 (intial)	
15a. On pres'd bottles, did pH test strips suggest preservation reached the correct	pH level? YESNO.(NA)
b. Did the bottle labels indicate that the correct preservatives were used	YES., NONA
16. Was residual chlorine present?	YESNO.(.NA)
I certify that I checked for chlorine and pH as per SOP and answered questions 15-	<u>16 (intial)</u>
17. Were custody papers properly filled out (ink, signed, etc)?	YESNONA
18. Did you sign the custody papers in the appropriate place?	YES.).NONA
19. Were correct containers used for the analysis requested?	YES).NONA
20. Was sufficient amount of sample sent in each container?	YES.,NONA
I certify that I entered this project into LIMS and answered questions 17-20 (intial)	
I certify that I attached a label with the unique LIMS number to each container (intia	
21. Were there Non-Conformance issues at login? YESNO Was a NCM generate	ed?/YES)NO# <u>11,341</u> /0

1 2 3 4 5 6 7 8 9 10	11 12 ♀ 13	AIN OF CLISTOD	NY RECORD		No. 00177
	PROJECT NUMBE	R	PROJECT NAME:		coc of
INTEL 101 101 101	SHIPPED TO: T& NAS Ho	n i	PROJECT MANAGER:		AT: STANDA PD
SAMPLER'S PRINTED NAME: Terry Fisher	iners	) )		ASOW:	GEWSUB: 750-521 PROP ID: 890293
SAMPLER'S SIGNATURE	Matrix Conta	E (300 B260C		Loc: 490	
Date Time Sample ID	Sample of Sample	iloridi NZNE (	· · · · · · · · · · · · · · · · · · ·	<b>34984</b>	
k k k	. #	CI BI			REMARKS
6-5-14 1155 mw-1	water 1	$\times$			0
6-5-14 1250 mw-4	water 4	XX			fed
6-5-14 1445 EQ Blook	water 4	XX			R
6-S-14 1405 MU-2	wher 1	×			4
6-5-14 1510 mu-6	water 1	×			Y
6-5-14 1605 MW-3	wher 1	×			6
6-5-19 1680 mm-5	water 1	×			7
Tr.p	water 2	· ` ×			8
G	C				
TOTAL NUMBER OF CONTAINERS					
RELINQUISHED BY:	DATE (-9-14	RECEIVED BY:	8.2 1.	DATE Delicht	
RELINQUISHED BY:	DATE	RECEIVED BY:	Ċ	DATE TIME	
METHOD OF SHIPMENT: FED-EX		AIRBILL NUMBER:			
RECEIVED IN LABORATORY BY:	DATE	Send PDF, EDD, and	INVOICE (if applicable) to: JULIE CZECH at jo	zech@envirocleanps.	COM
LABORATORY CONTACT: (615) 726-0177		LABORATORY ADDR	ress: Creighton dr., Nashm	LLE, TN 37204	
POINT OF ORIGIN: OKLAHOMA CITY	II NORMAN II W	VOODWARD II AI	RLINGTON I MIDLAND	OTHER:	
PAGE #1 - RECEIVING LAB	PAGE #2	2 - ENVIRO CLEAN PROJ	JECT FILE	PAGE #3 - ENVIRO C —	LEAN OA/QC DEPT

Page 23 of 24

7/23/2014

Client: Enviro Clean Services LLC

## Login Number: 54984 List Number: 1

Creator: Gambill, Shane

Question	Answer	Comment
Radioactivity wasn't checked or is = background as measured by a survey meter.</td <td>True</td> <td></td>	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	2.8
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	False	Received extra samples not listed on COC.
Samples are received within Holding Time.	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Job Number: 490-54984-1 SDG Number: Property ID 890293



THE LEADER IN ENVIRONMENTAL TESTING

# **ANALYTICAL REPORT**

## TestAmerica Laboratories, Inc.

TestAmerica Nashville 2960 Foster Creighton Drive Nashville, TN 37204 Tel: (615)726-0177

## TestAmerica Job ID: 490-62346-1

TestAmerica Sample Delivery Group: Property ID 890293 Client Project/Site: CHK State L-2

## For:

······ Links ······

Review your project results through

**Total**Access

Have a Question?

Ask-

The

www.testamericainc.com

Visit us at:

Expert

Enviro Clean Services LLC 7060 S. Yale Avenue, Suite 603 Tulsa, Oklahoma 74136

Attn: Ms. Julie Czech

L'athy Gartner

Authorized for release by: 10/24/2014 10:12:30 AM

Cathy Gartner, Project Manager I (615)301-5041 cathy.gartner@testamericainc.com

The test results in this report meet all 2003 NELAC and 2009 TNI requirements for accredited parameters, exceptions are noted in this report. This report may not be reproduced except in full, and with written approval from the laboratory. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

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## **Sample Summary**

Matrix

Water

Water

Water

Water

Water

Water

Water

Water

Water

Client: Enviro Clean Services LLC Project/Site: CHK State L-2

**Client Sample ID** 

MW-1

MW-2

MW-3

MW-4

MW-5

MW-6

Dup

EQ Blank

Trip Blank

Lab Sample ID

490-62346-1

490-62346-2

490-62346-3

490-62346-4

490-62346-5

490-62346-6

490-62346-7

490-62346-8

490-62346-9

TestAmerica Job ID SDG: Pro

09/24/14 18:00

09/24/14 00:01

09/24/14 00:01

	2 490-62346-1 erty ID 890293	): er	a Job II G: Prop	SDG
3				• "
	Received	_	cted	Collec
	09/26/14 09:00		4 10:45	09/22/14
	09/26/14 09:00		4 18:55	09/24/14
5	09/26/14 09:00		4 10:43	09/25/14
	09/26/14 09:00		4 17:45	09/24/14
	09/26/14 09:00		4 11:45	09/22/14
0	09/26/14 09:00		4 19:40	09/24/14

09/26/14 09:00

09/26/14 09:00

09/26/14 09:00

4

5

## Job ID: 490-62346-1

#### Laboratory: TestAmerica Nashville

#### Narrative

Job Narrative 490-62346-1

#### Comments

No additional comments.

#### Receipt

The samples were received on 9/26/2014 9:00 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 0.9° C.

#### GC/MS VOA

No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

#### HPLC/IC

No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

#### VOA Prep

No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

#### Job ID: 490-62346-2

#### Laboratory: TestAmerica Nashville

#### Narrative

Job Narrative 490-62346-2

#### \*\*Revised Report\*\*

MW-3 was added to the report per client request. This replaces the report generated on 10/15/14.

#### Receipt

The samples were received on 9/26/2014 9:00 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 0.9° C.

#### HPLC/IC

Method(s) 300.0: Due to re-analyses for confirmation purposes, a matrix spike / matrix spike duplicate (MS/MSD) was not analyzed with batch 200117. However, the laboratory control sample / laboratory control sample duplicate (LCS/LCSD) recoveries were within acceptance limits.

(LCS 490-200117/7), (LCSD 490-200117/8)

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

## Qualifiers

## HPLC/IC

HPLC/IC		
Qualifier	Qualifier Description	
4	MS, MSD: The analyte present in the original sample is greater than 4 times the matrix spike concentration; therefore, control limits are not	 5
F	applicable. Result exceeded calibration range	
-		

## Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.	
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis	
%R	Percent Recovery	
CFL	Contains Free Liquid	
CNF	Contains no Free Liquid	
DER	Duplicate error ratio (normalized absolute difference)	
Dil Fac	Dilution Factor	
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample	
DLC	Decision level concentration	
MDA	Minimum detectable activity	
EDL	Estimated Detection Limit	
MDC	Minimum detectable concentration	
MDL	Method Detection Limit	
ML	Minimum Level (Dioxin)	
NC	Not Calculated	
ND	Not detected at the reporting limit (or MDL or EDL if shown)	
PQL	Practical Quantitation Limit	
QC	Quality Control	
RER	Relative error ratio	
RL	Reporting Limit or Requested Limit (Radiochemistry)	
RPD	Relative Percent Difference, a measure of the relative difference between two points	
TEF	Toxicity Equivalent Factor (Dioxin)	

TEQ Toxicity Equivalent Quotient (Dioxin)

## **Client Sample Results**

Client: Enviro Clean Services LLC Project/Site: CHK State L-2

6

#### **Client Sample ID: MW-1** Lab Sample ID: 490-62346-1 Date Collected: 09/22/14 10:45 Matrix: Water Date Received: 09/26/14 09:00 Method: 300.0 - Anions, Ion Chromatography Analyte Result Qualifier RL MDL Unit D Prepared Analyzed Dil Fac Chloride 25.4 1.00 mg/L 10/09/14 17:12 1

## **Client Sample ID: MW-2** Date Collected: 09/24/14 18:55

Date Received: 09/26/14 09:00

Analyte

Benzene

Surrogate

Analyte

Chloride

Toluene-d8 (Surr)

Method: 8260B - Volatile Organic Compounds (GC/MS)

## Lab Sample ID: 490-62346-2 Matrix: Water

Result Qualifier Dil Fac MDL Unit RL D Prepared Analyzed ND 1.00 ug/L 10/01/14 01:24 1 6 %Recovery Qualifier Limits Prepared Analyzed Dil Fac 4-Bromofluorobenzene (Surr) 95 70 - 130 10/01/14 01:24 1 95 70 - 130 10/01/14 01:24 1,2-Dichloroethane-d4 (Surr) 1 98 70 - 130 10/01/14 01:24 1 Dibromofluoromethane (Surr) 96 70 - 130 10/01/14 01:24 1 Method: 300.0 - Anions, Ion Chromatography Result Qualifier RL MDL Unit D Prepared Analyzed Dil Fac 327 10.0 mg/L 10/14/14 02:01 10

## **Client Sample Results**

Client: Enviro Clean Services LLC Project/Site: CHK State L-2

6

#### **Client Sample ID: MW-3** Lab Sample ID: 490-62346-3 Date Collected: 09/25/14 10:43 Matrix: Water Date Received: 09/26/14 09:00 Method: 300.0 - Anions, Ion Chromatography Analyte Result Qualifier RL MDL Unit D Prepared Analyzed Dil Fac Chloride 86.5 1.00 mg/L 10/23/14 13:32 1

RL

1.00

Limits

70 - 130

70 - 130

70 - 130

70 - 130

RL

10.0

MDL Unit

MDL Unit

mg/L

ug/L

D

D

Prepared

Prepared

Prepared

## Client Sample ID: MW-4

Date Collected: 09/24/14 17:45 Date Received: 09/26/14 09:00

4-Bromofluorobenzene (Surr)

1,2-Dichloroethane-d4 (Surr)

Dibromofluoromethane (Surr)

Analyte

Benzene

Surrogate

Analyte

Chloride

Toluene-d8 (Surr)

Method: 8260B - Volatile Organic Compounds (GC/MS)

Method: 300.0 - Anions, Ion Chromatography

Result Qualifier

Qualifier

4.76

94

101

99

100

239

Result Qualifier

%Recovery

## Lab Sample ID: 490-62346-4 Matrix: Water

Analyzed

10/01/14 02:16

Analyzed

10/01/14 02:16

10/01/14 02:16

10/01/14 02:16

10/01/14 02:16

Analyzed

10/14/14 02:21

Dil Fac

Dil Fac

1

1

1

1

1

10

Dil Fac

10/24/2014

## **Client Sample Results**

Client: Enviro Clean Services LLC Project/Site: CHK State L-2

6

#### **Client Sample ID: MW-5** Lab Sample ID: 490-62346-5 Date Collected: 09/22/14 11:45 Matrix: Water Date Received: 09/26/14 09:00 Method: 300.0 - Anions, Ion Chromatography Analyte Result Qualifier RL MDL Unit D Prepared Analyzed Dil Fac Chloride 114 10.0 mg/L 10/14/14 02:42 10

## **Client Sample Results**

Client: Enviro Clean Services LLC Project/Site: CHK State L-2

6

#### **Client Sample ID: MW-6** Lab Sample ID: 490-62346-6 Date Collected: 09/24/14 19:40 Matrix: Water Date Received: 09/26/14 09:00 Method: 300.0 - Anions, Ion Chromatography Analyte Result Qualifier RL MDL Unit D Prepared Analyzed Dil Fac Chloride 167 10.0 mg/L 10/14/14 15:11 10

## Client Sample ID: EQ Blank

Date Collected: 09/24/14 18:00 Date Received: 09/26/14 09:00

## Lab Sample ID: 490-62346-7 Matrix: Water

Method: 8260B - Volatile Orga	nic Compounds	(GC/MS)							
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		1.00		ug/L			10/01/14 00:33	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	96		70 - 130			-		10/01/14 00:33	1
1,2-Dichloroethane-d4 (Surr)	99		70 - 130					10/01/14 00:33	1
Toluene-d8 (Surr)	98		70 - 130					10/01/14 00:33	1
Dibromofluoromethane (Surr)	99		70 - 130					10/01/14 00:33	1
Method: 300.0 - Anions, Ion C	hromatography								
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	ND		1.00		mg/L			10/14/14 15:31	1

RL

1.00

Limits

70 - 130

70 - 130

70 - 130

70 - 130

RL

10.0

MDL Unit

MDL Unit

mg/L

ug/L

D

D

Prepared

Prepared

Prepared

## Client Sample ID: Dup Date Collected: 09/24/14 00:01

Date Received: 09/26/14 09:00

4-Bromofluorobenzene (Surr)

1,2-Dichloroethane-d4 (Surr)

Dibromofluoromethane (Surr)

Analyte

Benzene

Surrogate

Analyte

Chloride

Toluene-d8 (Surr)

Method: 8260B - Volatile Organic Compounds (GC/MS)

Method: 300.0 - Anions, Ion Chromatography

Result Qualifier

Qualifier

4.83

97

101

97

99

239

Result Qualifier

%Recovery

## Lab Sample ID: 490-62346-8 Matrix: Water

Analyzed

10/01/14 03:07

Analyzed

10/01/14 03:07

10/01/14 03:07

10/01/14 03:07

10/01/14 03:07

Analyzed

10/14/14 03:02

Dil Fac

Dil Fac

1

1

1

1

1

10

Dil Fac

TestAmerica	Nashville
-------------	-----------

RL

1.00

Limits

70 - 130

70 - 130

70 - 130

70 - 130

MDL Unit

ug/L

## **Client Sample ID: Trip Blank** Date Collected: 09/24/14 00:01

Method: 8260B - Volatile Organic Compounds (GC/MS)

Result Qualifier

Qualifier

ND

97

95

98

95

%Recovery

Date Received: 09/26/14 09:00

4-Bromofluorobenzene (Surr)

1,2-Dichloroethane-d4 (Surr)

Dibromofluoromethane (Surr)

Analyte

Benzene

Surrogate

Toluene-d8 (Surr)

## Lab Sample ID: 490-62346-9 Matrix: Water

Analyzed

09/30/14 23:41

Analyzed

09/30/14 23:41

09/30/14 23:41

09/30/14 23:41

09/30/14 23:41

Prepared

Prepared

D

Dil Fac 6 Dil Fac 1 1 1 1

1

## Method: 8260B - Volatile Organic Compounds (GC/MS)

Las Gample ID. ND 430-1340	015/8									Client S	ample ID: M	ethod	Blan
Matrix: Water											Prep Ty	pe: To	tal/N/
Analysis Batch: 194015													
	ME	MB											
Analyte	Resul	t Qualifier	RL		MDL	Unit		D	Pi	repared	Analyze	d	Dil Fa
Benzene	NE	)	1.00			ug/L					09/30/14 19	<b>∂</b> :11	
	МЕ	B MB											
Surrogate	%Recovery	Qualifier	Limits					_	PI	repared	Analyze	d	Dil Fa
4-Bromofluorobenzene (Surr)	95	;	70 - 130								09/30/14 19	<del>)</del> :11	
1,2-Dichloroethane-d4 (Surr)	98	;	70 - 130								09/30/14 19	):11	
Toluene-d8 (Surr)	102	?	70 - 130								09/30/14 19	ə:11	
Dibromofluoromethane (Surr)	98	}	70 - 130								09/30/14 19	ə:11	
Lab Sample ID: LCS 490-194	4015/3							Cli	ent	Sample	ID: Lab Coi	ntrol S	ampl
Matrix: Water											Prep Ty	pe: To	tal/N/
Analysis Batch: 194015													
			Spike	LCS	LCS						%Rec.		
Analyte			Added	Result	Quali	fier	Unit		D	%Rec	Limits		
Benzene			100	101.3			ug/L		_	101	80 - 121		
Ethylbenzene			100	88.52			ug/L			89	80 - 130		
Xylenes, Total			250	221.7			ug/L			89	80 - 132		
Toluene			100	93.54			ug/L			94	80 - 126		
	LCS LC	s											
Surrogate	%Recovery Qu	alifier	Limits										
4-Bromofluorobenzene (Surr)	98		70 - 130										
1,2-Dichloroethane-d4 (Surr)	93		70 - 130										
Toluene-d8 (Surr)	100		70 - 130										
Dibromofluoromethane (Surr)	97		70 - 130										
Dibromofluoromethane (Surr)	97 <b>94015/4</b>		70 - 130				CI	lient S	Sam	ple ID:	Lab Control	Sampl	e Du
Dibromofluoromethane (Surr) Lab Sample ID: LCSD 490-1 Matrix: Water	97 <b>94015/4</b>		70 - 130				C	lient S	Sam	ple ID:	Lab Control Prep Ty	Sampl pe: To	e Du tal/N
Dibromofluoromethane (Surr) Lab Sample ID: LCSD 490-19 Matrix: Water Analysis Batch: 194015	97 <b>94015/4</b>		70 - 130				C	lient S	Sam	ple ID:	Lab Control Prep Ty	Sampl pe: To	e Du tal/N
Dibromofluoromethane (Surr) Lab Sample ID: LCSD 490-1 Matrix: Water Analysis Batch: 194015	97 94015/4		70 - 130 Spike	LCSD	LCSD	)	CI	lient S	Sam	ple ID:	Lab Control Prep Ty %Rec.	Sampl pe: To	e Du tal/N/ RP
Dibromofluoromethane (Surr) Lab Sample ID: LCSD 490-1 Matrix: Water Analysis Batch: 194015 Analyte	97 94015/4		70 - 130 Spike Added	LCSD Result	LCSD Quali	) fier	Cl	lient S	Sam	ple ID:   %Rec	Lab Control Prep Ty %Rec. Limits	Sampl pe: To RPD	e Du tal/N/ RP Lim
Dibromofluoromethane (Surr) Lab Sample ID: LCSD 490-1 Matrix: Water Analysis Batch: 194015 Analyte Benzene	97 94015/4 		70 - 130 Spike Added 100	LCSD Result 104.4	LCSD Quali	) fier	C Unit ug/L	lient S	Sam	<b>ple ID:</b>   <u>%Rec</u> 104	Lab Control Prep Ty %Rec. Limits 80 - 121	Sampl pe: Tot RPD 3	e Du tal/N/ RP Lim
Dibromofluoromethane (Surr) Lab Sample ID: LCSD 490-1 Matrix: Water Analysis Batch: 194015 Analyte Benzene Ethylbenzene	97 94015/4 		70 - 130 Spike Added 100 100	LCSD Result 104.4 93.75	LCSE Quali	) fier	Cl Unit ug/L ug/L	lient S	Sam	<b>ple ID:</b> %Rec 104 94	Lab Control Prep Ty %Rec. Limits 80 - 121 80 - 130	Sampl pe: Tor RPD 3 6	e Du tal/NJ RP Lim 1
Dibromofluoromethane (Surr) Lab Sample ID: LCSD 490-1 Matrix: Water Analysis Batch: 194015 Analyte Benzene Ethylbenzene Xylenes, Total	97 94015/4 		<b>Spike</b> <b>Added</b> 100 100 250	LCSD Result 104.4 93.75 235.1	LCSE Quali	) fier	Cl Unit ug/L ug/L ug/L	lient S	Sam	<b>ple ID:</b> %Rec 104 94 94	Lab Control Prep Ty %Rec. Limits 80 - 121 80 - 130 80 - 132	Sampl pe: To RPD 3 6 6	e Du tal/N/ RP Lim 1 1
Dibromofluoromethane (Surr) Lab Sample ID: LCSD 490-1 Matrix: Water Analysis Batch: 194015 Analyte Benzene Ethylbenzene Xylenes, Total Toluene	97 94015/4		<b>Spike</b> <b>Added</b> 100 250 100	LCSD Result 104.4 93.75 235.1 97.33	LCSE Quali	) fier	C Unit ug/L ug/L ug/L ug/L	lient S	D D	<b>ple ID:</b> %Rec 104 94 94 97	Lab Control Prep Ty %Rec. Limits 80 - 121 80 - 130 80 - 132 80 - 126	Sampl pe: Tot 3 6 6 4	e Du tal/N/ RP Lim 1 1 1
Dibromofluoromethane (Surr) Lab Sample ID: LCSD 490-1 Matrix: Water Analysis Batch: 194015 Analyte Benzene Ethylbenzene Xylenes, Total Toluene	97 94015/4 	 SD	<b>Spike</b> <b>Added</b> 100 100 250 100	LCSD Result 104.4 93.75 235.1 97.33	LCSE Quali	) fier	Cl ug/L ug/L ug/L ug/L	lient S	Sam	<b>%Rec</b> 104 94 97	Lab Control Prep Ty %Rec. Limits 80 - 121 80 - 130 80 - 132 80 - 126	Sampl pe: To RPD 3 6 6 6 4	e Du tal/N/ RP Lim 1 1 1
Dibromofluoromethane (Surr) Lab Sample ID: LCSD 490-19 Matrix: Water Analysis Batch: 194015 Analyte Benzene Ethylbenzene Xylenes, Total Toluene Surrogate	97 94015/4 	SD alifier	70 - 130 Spike Added 100 250 100 Limits	LCSD Result 104.4 93.75 235.1 97.33	LCSE Quali	) fier	Cl ug/L ug/L ug/L	lient S	Sam	<b>ple ID:</b> %Rec 104 94 97	Lab Control Prep Ty %Rec. Limits 80 - 121 80 - 130 80 - 132 80 - 126	Sampl pe: To RPD 3 6 6 4	e Du tal/N/ RP Lim 1 1 1
Dibromofluoromethane (Surr) Lab Sample ID: LCSD 490-19 Matrix: Water Analysis Batch: 194015 Analyte Benzene Ethylbenzene Xylenes, Total Toluene Surrogate 4-Bromofluorobenzene (Surr)	97 94015/4 	SD alifier	70 - 130         Spike         Added         100         250         100         250         100         250         100         270 - 130	LCSD Result 104.4 93.75 235.1 97.33	LCSE Quali	) fier	C Unit ug/L ug/L ug/L ug/L	lient S	Sam	<b>%Rec</b> 104 94 97	Lab Control Prep Ty %Rec. Limits 80 - 121 80 - 130 80 - 132 80 - 126	Sampl pe: To RPD 3 6 6 4	e Du tal/N/ RP Lim 1 1 1
Dibromofluoromethane (Surr) Lab Sample ID: LCSD 490-19 Matrix: Water Analysis Batch: 194015 Analyte Benzene Ethylbenzene Xylenes, Total Toluene Surrogate 4-Bromofluorobenzene (Surr) 1,2-Dichloroethane-d4 (Surr)	97 94015/4 	SD alifier	70 - 130         Spike         Added         100         250         100         250         100         270 - 130         70 - 130	LCSD Result 104.4 93.75 235.1 97.33	LCSE Quali	) fier	C Unit ug/L ug/L ug/L ug/L	lient S	D	<b>%Rec</b> 104 94 97	Lab Control Prep Ty %Rec. Limits 80 - 121 80 - 130 80 - 132 80 - 126	Sampl pe: To RPD 3 6 6 4	e Du tal/N/ RP Lim 1 1 1 1
Dibromofluoromethane (Surr) Lab Sample ID: LCSD 490-1 Matrix: Water Analysis Batch: 194015 Analyte Benzene Ethylbenzene Xylenes, Total Toluene Surrogate 4-Bromofluorobenzene (Surr) 1,2-Dichloroethane-d4 (Surr) Toluene-d8 (Surr)	97 94015/4 	SD alifier	70 - 130         Spike         Added         100         250         100         250         100         250         100         250         100         250         100         250         100         250         100         250         100         250         100         250         100         250         100         250         100         250         100         250         100         250         100         250         100         20         70 - 130         70 - 130	LCSD Result 104.4 93.75 235.1 97.33	LCSE Quali	) fier	C Unit ug/L ug/L ug/L ug/L	lient S	D	<b>%Rec</b> 104 94 97	Lab Control Prep Ty %Rec. Limits 80 - 121 80 - 130 80 - 132 80 - 126	Sampl pe: To RPD 3 6 6 4	e Du tal/N, RP Lim 1 1 1 1

#### Lab Sample ID: 490-62334-B-20 MS Matrix: Water Analysis Batch: 194015

	Sample	Sample	Spike	MS	MS				%Rec.	
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	
Benzene	ND		100	112.3		ug/L		112	75 <sub>-</sub> 133	 
Ethylbenzene	ND		100	95.31		ug/L		95	79 - 139	

TestAmerica Nashville

Prep Type: Total/NA

**Client Sample ID: Matrix Spike** 

**Client Sample ID: Matrix Spike Duplicate** 

Prep Type: Total/NA

## Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

96

99

Lab Sample ID: 490-62334-B- Matrix: Water Analysis Batch: 194015	20 MS							Client	Sample ID: Prep Ty	Matrix Spike pe: Total/NA
	Sample	Sample	Spike	MS	MS				%Rec.	
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	
Xylenes, Total	ND		250	236.9		ug/L		95	74 - 141	
Toluene	ND		100	99.60		ug/L		100	75 _ 136	
	MS	MS								
Surrogate	%Recovery	Qualifier	Limits							
4-Bromofluorobenzene (Surr)	100		70 - 130							
1,2-Dichloroethane-d4 (Surr)	97		70 - 130							

70 - 130

70 - 130

## Lab Sample ID: 490-62334-C-20 MSD Matrix: Water

## Analysis Batch: 194015

Dibromofluoromethane (Surr)

Toluene-d8 (Surr)

	Sample	Sample	Spike	MSD	MSD				%Rec.		RPD
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Benzene	ND		100	114.6		ug/L		115	75 - 133	2	17
Ethylbenzene	ND		100	98.41		ug/L		98	79 - 139	3	15
Xylenes, Total	ND		250	245.8		ug/L		98	74 _ 141	4	15
Toluene	ND		100	102.2		ug/L		102	75 - 136	3	15
	MSD	MSD									
Surrogate	%Recovery	Qualifier	Limits								
4-Bromofluorobenzene (Surr)	100		70 - 130								
1,2-Dichloroethane-d4 (Surr)	97		70 - 130								
Toluene-d8 (Surr)	95		70 - 130								
Dibromofluoromethane (Surr)	98		70 - 130								

## Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 490-196574/3 Matrix: Water									Client S	Sample ID: I Prep Ty	Method ype: To	Blank tal/NA
Analysis Batch: 196574	MD											
Analyta Basult	NID		ы		MDI	Unit			Bronorod	Analyz	- d	
	Quaimer		1.00		WDL	Unit		- <u> </u>	Frepareu	Allaly2		
			1.00			mg/L				10/09/14	4:59	T
								Clier	nt Sample	e ID: Lab Co	ontrol S	ample
Matrix: Water										Prep Ty	pe: To	tal/NA
Analysis Batch: 196574												
		Spike		LCS	LCS					%Rec.		
Analyte		Added		Result	Qual	ifier	Unit	D	%Rec	Limits		
Chloride		50.0		49.62			mg/L		99	90 - 110		
 Lab Sample ID: LCSD 490-196574/5							C	lient Sa	mple ID:	Lab Contro	Samp	le Dup
Matrix: Water										Prep T	vpe: To	tal/NA
Analysis Batch: 196574												
······ <b>·········</b> ·····················		Spike		LCSD	LCS	C				%Rec.		RPD
Analyte		Added		Result	Qual	ifier	Unit	D	%Rec	Limits	RPD	Limit
Chloride		50.0		49.64			mg/L		99	90 - 110	0	20

## TestAmerica Nashville

## Method: 300.0 - Anions, Ion Chromatography (Continued)

Lab Cample ID: 400 00007 A 4 MO								011-0-1	0	Madula	0
Lab Sample ID: 490-62597-A-1 MS Matrix: Water								Client	Sample ID: Pren Ty	watrix	spike tal/ΝΔ
Analysis Batch: 196574									i i cp i j	,pc. 10	
	Sample	Sample	Spike	M	6 MS				%Rec.		
Analyte	Result	Qualifier	Added	Resu	t Qualifier	Unit	D	%Rec	Limits		
Chloride	ND		50.0	48.2	9	mg/L		97	80 - 120		
Lab Sample ID: 490 62597 A 1 MSD							Client	Samplo IF	). Matrix Sn	iko Duu	olicato
Lab Sample ID. 490-62597-A-1 MSL Matrix: Wator	·						Chefit d		Prop T	ike Duj	
Analysis Batch: 196574									Fiebil	/pe. 10	
Analysis Datch. 1903/4	Sample	Sample	Spike	MS	MSD				%Rec.		RPD
Analvte	Result	Qualifier	Added	Resu	t Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Chloride	ND		50.0	47.9	9	mg/L		96	80 - 120	1	20
Lab Sample ID: MB 490-197744/6								Client S	ample ID: N	/lethod	Blank
Matrix: Water									Prep Ty	/ре: То	tal/NA
Analysis Batch: 197744											
• • •	_	MR MR					_				
Analyte	R	Qualifier			MDL Unit		D	Prepared	Analyze	ea	DIIFac
Chioride		ND		1.00	mg/L				10/13/14 1	9:00	1
Lab Sample ID: I CS 490-197744/7							Clier	nt Sample	D: I ab Co	ntrol S	ample
Matrix: Water								it oumpro	Pren Ty	ne: To	tal/NA
Analysis Batch: 197744											
· ···· <b>,</b> ··· · · · · · · · · · · · · · · · · ·			Spike	LC	S LCS				%Rec.		
Analyte			Added	Resu	t Qualifier	Unit	D	%Rec	Limits		
Chloride			50.0	47.9	3	mg/L		96	90 - 110		
_ _						_					
Lab Sample ID: LCSD 490-197744/8						C	lient Sa	mple ID: I	Lab Control	Samp	le Dup
Matrix: Water									Prep Ty	/ре: То	tal/NA
Analysis Batch: 197744			<b>.</b>								
• • •				1.001	1 1 2 2 2				% Dee		
			Spike	LCSI	) LCSD	Unit		% Boo	%Rec.	BBD	RPD
			Added	LCSI Resu	D LCSD t Qualifier		D	%Rec	%Rec. Limits		RPD Limit
Chloride			Spike Added 50.0	LCSI Resu 47.8	t Qualifier	Unit mg/L	<u>D</u>	<b>%Rec</b> 96	%Rec. Limits 90 - 110	<b>RPD</b>	RPD Limit 20
Chloride			Spike Added 50.0	LCSI Resu 47.8	D LCSD t Qualifier	Unit mg/L	D	%Rec 96	%Rec. Limits 90 - 110	RPD 0 Matrix	RPD Limit 20
Chloride Lab Sample ID: 490-62310-L-21 MS Matrix: Water			Spike Added 50.0	LCSI Resu 47.8	D LCSD t Qualifier	Unit mg/L	D	%Rec 96 Client	%Rec. Limits 90 - 110 Sample ID: Prep Ty	RPD 0 Matrix (pe: To	RPD Limit 20 Spike
Chloride Lab Sample ID: 490-62310-L-21 MS Matrix: Water Analysis Batch: 197744			Spike Added 50.0	LCSI Resu 47.8	D LCSD t Qualifier	mg/L	D	%Rec 96 Client	%Rec. Limits 90 - 110 Sample ID: Prep Ty	RPD 0 Matrix /pe: To	RPD Limit 20 Spike tal/NA
Analyte Chloride Lab Sample ID: 490-62310-L-21 MS Matrix: Water Analysis Batch: 197744	Sample	Sample	Spike Added 50.0 Spike	LCSI Resu 47.8	D LCSD t Qualifier	mg/L	<u>D</u>	%Rec 96 Client	%Rec. Limits 90 - 110 Sample ID: Prep Ty %Rec.	RPD 0 Matrix /pe: To	RPD Limit 20 Spike tal/NA
Analyte Chloride Lab Sample ID: 490-62310-L-21 MS Matrix: Water Analysis Batch: 197744 Analyte	Sample Result	Sample Qualifier	Spike Added 50.0 Spike Added	LCSI Resu 47.8 Ma Resu	LCSD t Qualifier	Unit mg/L	D	%Rec 96 Client %Rec	%Rec. Limits 90 - 110 Sample ID: Prep Ty %Rec. Limits	RPD 0 Matrix (pe: To	RPD Limit 20 Spike tal/NA
Analyte         Chloride         Lab Sample ID: 490-62310-L-21 MS         Matrix: Water         Analysis Batch: 197744         Analyte         Chloride	Sample Result 357	Sample Qualifier E	Spike Added 50.0 Spike Added 50.0	LCSI Resu 47.8 47.8 <b>M</b> Resu 368.	CSD CUALIFIER SMS tQualifier E4	- Unit mg/L - Unit mg/L	D	%Rec           96           Client           %Rec           22	%Rec. Limits 90 - 110 Sample ID: Prep Ty %Rec. Limits 80 - 120	RPD 0 Matrix (pe: To	RPD Limit 20 Spike tal/NA
Analyte Chloride Lab Sample ID: 490-62310-L-21 MS Matrix: Water Analysis Batch: 197744 Analyte Chloride	Sample Result 357	Sample Qualifier E	Spike Added 50.0 Spike Added 50.0	LCSI Resu 47.8 M: Resu 368.	LCSD t Qualifier 5 MS t Qualifier 1 E 4	Unit mg/L Unit mg/L	D	%Rec 96 Client 22	%Rec. Limits 90 - 110 Sample ID: Prep Ty %Rec. Limits 80 - 120	RPD 0 Matrix /pe: To	RPD Limit 20 Spike tal/NA
Analyte Chloride Lab Sample ID: 490-62310-L-21 MS Matrix: Water Analysis Batch: 197744 Analyte Chloride Lab Sample ID: MB 490-197916/6 Matrix: Water	Sample Result 357	Sample Qualifier E	Spike Added 50.0 Spike Added 50.0	LCSI Resu 47.8 M: Resu 368.	CSD <u>Qualifier</u> SMS <u>Qualifier</u> <u>E</u> 4	Unit mg/L Unit mg/L	D	%Rec 96 Client %Rec 22 Client S	%Rec. Limits 90 - 110 Sample ID: Prep Ty %Rec. Limits 80 - 120 Sample ID: M	RPD 0 Matrix /pe: To Method	RPD Limit 20 Spike tal/NA
Analyte Chloride Lab Sample ID: 490-62310-L-21 MS Matrix: Water Analysis Batch: 197744 Analyte Chloride Lab Sample ID: MB 490-197916/6 Matrix: Water Analysis Batch: 197916	Sample Result 357	Sample Qualifier E	Spike Added 50.0 Spike Added 50.0	LCSI Resu 47.8 M: <u>Resu</u> 368.	LCSD <u>Qualifier</u> MS <u>Qualifier</u> <u>E</u> 4	Unit mg/L Unit mg/L	D	%Rec 96 Client %Rec 22 Client S	%Rec. Limits 90 - 110 Sample ID: Prep Ty %Rec. Limits 80 - 120 Sample ID: M Prep Ty	RPD 0 Matrix /pe: To //ethod /pe: To	RPD Limit 20 Spike tal/NA Blank tal/NA
Analyte Chloride Lab Sample ID: 490-62310-L-21 MS Matrix: Water Analysis Batch: 197744 Analyte Chloride Lab Sample ID: MB 490-197916/6 Matrix: Water Analysis Batch: 197916	Sample Result 357	Sample Qualifier E	Spike Added 50.0 Spike Added 50.0	LCSI Resu 47.8 M: <u>Resu</u> 368.	LCSD <u>Qualifier</u> MS <u>Qualifier</u> E 4	Unit mg/L Unit mg/L	D	%Rec 96 Client 22 Client S	%Rec. Limits 90 - 110 Sample ID: Prep Ty %Rec. Limits 80 - 120 Sample ID: M Prep Ty	RPD 0 Matrix /pe: To //ethod /pe: To	RPD Limit 20 Spike tal/NA Blank tal/NA
Analyte Chloride Lab Sample ID: 490-62310-L-21 MS Matrix: Water Analysis Batch: 197744 Analyte Chloride Lab Sample ID: MB 490-197916/6 Matrix: Water Analysis Batch: 197916 Analyte	Sample Result 357	Sample Qualifier E MB MB esult Qualifier	Spike Added 50.0 Spike Added 50.0	LCSI Resu 47.8 M: Resu 368.	A LCSD t Qualifier S MS t Qualifier T E 4	Unit mg/L Unit mg/L	D	%Rec       96         Olient       %Rec         22       Client S         Client S       S	%Rec. Limits 90 - 110 Sample ID: Prep Ty %Rec. Limits 80 - 120 Sample ID: M Prep Ty	RPD 0 Matrix /pe: To //ethod /pe: To	RPD Limit 20 Spike tal/NA Blank tal/NA
Analyte Chloride Lab Sample ID: 490-62310-L-21 MS Matrix: Water Analysis Batch: 197744 Analyte Chloride Lab Sample ID: MB 490-197916/6 Matrix: Water Analysis Batch: 197916 Analyte Chloride	Sample Result 357	Sample Qualifier E MB MB esult Qualifier	Spike Added 50.0 Spike Added 50.0	LCSI Resu 47.8 M: Resu 368. 1.00	MDL Unit	Unit mg/L mg/L	D	%Rec 96 Client 22 Client S Prepared	%Rec. Limits 90 - 110 Sample ID: Prep Ty %Rec. Limits 80 - 120 Sample ID: M Prep Ty - Analyze 10/14/14 1	RPD 0 Matrix /pe: To //ethod /pe: To	RPD Limit 20 Spike tal/NA Blank tal/NA Dil Fac
Analyte Chloride Lab Sample ID: 490-62310-L-21 MS Matrix: Water Analysis Batch: 197744 Analyte Chloride Lab Sample ID: MB 490-197916/6 Matrix: Water Analysis Batch: 197916 Analyte Chloride	Sample Result 357	Sample Qualifier E MB MB esult Qualifier	Spike Added 50.0 Spike Added 50.0	LCSI Resu 47.8 M: Resu 368. 1.00	MDL Unit	Unit mg/L Unit mg/L	D	%Rec         96         Client         %Rec         22         Client S         Prepared	%Rec. Limits 90 - 110 Sample ID: Prep Ty %Rec. Limits 80 - 120 Sample ID: M Prep Ty Analyze 10/14/14 1	RPD 0 Matrix /pe: To /pe: To /pe: To	RPD Limit 20 Spike tal/NA Blank tal/NA Dil Fac
Analyte Chloride Lab Sample ID: 490-62310-L-21 MS Matrix: Water Analysis Batch: 197744 Analyte Chloride Lab Sample ID: MB 490-197916/6 Matrix: Water Analysis Batch: 197916 Analyte Chloride Lab Sample ID: LCS 490-197916/7	Sample Result 357	Sample Qualifier E MB MB esult Qualifier ND	Spike Added 50.0 Spike Added 50.0	LCSI Resu 47.8 M: Resu 368. 1.00	MDL Unit	Unit mg/L Unit mg/L	D	%Rec       96         Client         %Rec         22         Client S         Prepared         Mt Sample	%Rec. Limits 90 - 110 Sample ID: Prep Ty %Rec. Limits 80 - 120 Sample ID: M Prep Ty Analyze 10/14/14 1 PID: Lab Co	RPD 0 Matrix /pe: To //ethod /pe: To ad 3:51	RPD Limit 20 Spike tal/NA Blank tal/NA Dil Fac 1 ample
Analyte Chloride Lab Sample ID: 490-62310-L-21 MS Matrix: Water Analysis Batch: 197744 Analyte Chloride Lab Sample ID: MB 490-197916/6 Matrix: Water Analysis Batch: 197916 Analyte Chloride Lab Sample ID: LCS 490-197916/7 Matrix: Water	Sample Result 357	Sample Qualifier E MB MB esult ND	Spike Added 50.0 Spike Added 50.0	LCSI Resu 47.8 M: Resu 368. 1.00	MDL Unit	Unit mg/L Unit mg/L	D	%Rec       96         Client         %Rec         22         Client S         Prepared         Main Sample	%Rec. Limits 90 - 110 Sample ID: Prep Ty %Rec. Limits 80 - 120 Sample ID: M Prep Ty Analyze 10/14/14 1 Prep Ty	RPD 0 Matrix /pe: To //ethod /pe: To 3:51 	RPD Limit 20 Spike tal/NA Blank tal/NA Dil Fac 1 cample tal/NA
Analyte Chloride Lab Sample ID: 490-62310-L-21 MS Matrix: Water Analysis Batch: 197744 Analyte Chloride Lab Sample ID: MB 490-197916/6 Matrix: Water Analysis Batch: 197916 Analyte Chloride Lab Sample ID: LCS 490-197916/7 Matrix: Water Analysis Batch: 197916	Sample Result 357	Sample Qualifier E MB MB esult Qualifier ND	Spike Added 50.0 Spike Added 50.0	LCSI Resu 47.8 Resu 368. 1.00	MDL Unit	Unit mg/L mg/L	D	%Rec         96         Client         %Rec         22         Client S         Prepared         nt Sample	%Rec.           Limits           90 - 110           Sample ID:           Prep T           %Rec.           Limits           80 - 120           Sample ID: M           Prep T           Maintain           90 - 110	RPD 0 Matrix /pe: To //ethod /pe: To ad 3:51	RPD Limit 20 Spike tal/NA Blank tal/NA Dil Fac 1 ample tal/NA
Analyte Chloride Lab Sample ID: 490-62310-L-21 MS Matrix: Water Analysis Batch: 197744 Analyte Chloride Lab Sample ID: MB 490-197916/6 Matrix: Water Analysis Batch: 197916 Analyte Chloride Lab Sample ID: LCS 490-197916/7 Matrix: Water Analysis Batch: 197916	Sample Result 357	Sample Qualifier E MB MB esult Qualifier ND	Spike Added 50.0 Spike Added 50.0 Spike	LCSI Resu 47.8 M: Resu 368. 1.00	MDL Unit MDL Unit MDL Unit	Unit mg/L Unit mg/L	D	%Rec 96 Client 22 Client S Prepared	%Rec. Limits 90 - 110 Sample ID: Prep Ty %Rec. Limits 80 - 120 Sample ID: M Prep Ty Analyze 10/14/14 1 Prep Ty %Rec.	RPD 0 Matrix /pe: To //ethod /pe: To ad 3:51 	RPD Limit 20 Spike tal/NA Blank tal/NA Dil Fac 1 ample tal/NA
Analyte Chloride Lab Sample ID: 490-62310-L-21 MS Matrix: Water Analysis Batch: 197744 Analyte Chloride Lab Sample ID: MB 490-197916/6 Matrix: Water Analysis Batch: 197916 Analyte Chloride Lab Sample ID: LCS 490-197916/7 Matrix: Water Analysis Batch: 197916 Analyte Chloride	Sample Result 357	Sample Qualifier E MB MB esult Qualifier ND	Spike Added 50.0 Spike Added 50.0	LCSI Resu 47.8 M: Resu 368. 368. LC: Resu	MDL Unit MDL Unit MDL Unit G LCS	Unit mg/L Unit mg/L	D D Clier	%Rec         96         Client         %Rec         22         Client S         Prepared         Main Sample         %Rec	%Rec. Limits 90 - 110 Sample ID: Prep Ty %Rec. Limits 80 - 120 Sample ID: M Prep Ty Analyze 10/14/14 1 Prep Ty %Rec. Limits 20 / (2-10)	RPD 0 Matrix /pe: To //ethod /pe: To 3:51 	RPD Limit 20 Spike tal/NA Blank tal/NA Dil Fac 1 ample tal/NA

Lab Sample ID: LCSD 490-197916/8	5								C	ient S	Sam	ple ID:	Lab Contr	ol Sampl	e Dup
Matrix: Water													Prep <sup>·</sup>	Гуре: To	tal/NA
Analysis Batch: 197916															
				Spike		LCSD	LCSD						%Rec.		RPD
Analyte				Added	I	Result	Qualifi	ier	Unit		D	%Rec	Limits	RPD	Limit
Chloride				50.0		53.41			mg/L		_	107	90 _ 110	2	20
 Lab Sample ID: 490-62346-7 MS												Cli	ent Sampl	e ID: EQ	Blank
Matrix: Water													Prep <sup>•</sup>	Гуре: То	tal/NA
Analysis Batch: 197916															
	Sample	Sam	ple	Spike		MS	MS						%Rec.		
Analyte	Result	Qual	ifier	Added	I	Result	Qualifi	ier	Unit		D	%Rec	Limits		
Chloride	ND			50.0		50.78			mg/L		_	102	80 - 120		
- Lab Sample ID: MB 490-200384/6												Client S	Sample ID:	Method	Blank
Matrix: Water													Prep '	Гуре: То	tal/NA
Analysis Batch: 200384															
-															
		MB	МВ												
Analyte	R	MB esult	MB Qualifier		RL		MDL U	Jnit		D	Pi	repared	Analy	zed	Dil Fac
Analyte Chloride	R	MB esult ND	MB Qualifier		<b>RL</b> 1.00			<b>Jnit</b> ng/L		D	Pi	repared	Analy	<b>zed</b>	Dil Fac
Analyte Chloride Lab Sample ID: LCS 490-200384/7	R	MB esult ND	MB Qualifier		<b>RL</b> 1.00		MDL U	<b>Jnit</b> ng/L		D Cli	Pi ient	repared Sample	Analy 10/23/14	zed 11:51	Dil Fac 1
Analyte Chloride Lab Sample ID: LCS 490-200384/7 Matrix: Water	R	MB esult ND	MB Qualifier		<b>RL</b> 1.00		MDL U	<b>Jnit</b> ng/L		D Cli	Pi	repared Sample	Analy 10/23/14 e ID: Lab C Prep	zed 11:51 Control S Type: To	Dil Fac 1 ample tal/NA
Analyte Chloride Lab Sample ID: LCS 490-200384/7 Matrix: Water Analysis Batch: 200384	R	MB esult ND	MB Qualifier		<b>RL</b> 1.00		MDL L	<b>Jnit</b> ng/L		Cli	Pi	repared Sample	Analy 10/23/14 e ID: Lab C Prep	zed 11:51 Control S Type: To	Dil Fac 1 ample tal/NA
Analyte Chloride Lab Sample ID: LCS 490-200384/7 Matrix: Water Analysis Batch: 200384	R	MB esult ND	MB Qualifier	 Spike	<b>RL</b> 1.00	LCS		Jnit ng/L		D Cli	Pi	repared Sample	Analy 10/23/14 e ID: Lab C Prep * %Rec.	zed 11:51	Dil Fac 1 ample tal/NA
Analyte Chloride Lab Sample ID: LCS 490-200384/7 Matrix: Water Analysis Batch: 200384 Analyte	R	MB esult ND	MB Qualifier	Spike Added	<b>RL</b> 1.00	LCS Result	MDL U	Jnit ng/L	Unit	CI	Pi ient	Sample %Rec	Analy 10/23/14 e ID: Lab C Prep * %Rec. Limits	zed 11:51 Control S Type: To	Dil Fac 1 ample tal/NA
Analyte Chloride Lab Sample ID: LCS 490-200384/7 Matrix: Water Analysis Batch: 200384 Analyte Chloride	R	MB esult ND	MB Qualifier	Spike Added 50.0	<b>RL</b> 1.00	LCS Result 49.39	LCS	Jnit ng/L ier	Unit mg/L		Pi ient	Sample %Rec 99	Analy 10/23/14 e ID: Lab C Prep ° %Rec. Limits 90 - 110	control S Type: To	Dil Fac 1 ample tal/NA
Analyte Chloride Lab Sample ID: LCS 490-200384/7 Matrix: Water Analysis Batch: 200384 Analyte Chloride Lab Sample ID: LCSD 490-200384/8	R	MB esult ND	MB Qualifier	Spike Added 50.0	RL 1.00	LCS Result 49.39	MDL LCS Qualifi	Jnit ng/L	Unit mg/L	CI	ient D Sam	Sample %Rec 99	Analy 10/23/14 a ID: Lab C Prep %Rec. Limits 90 - 110 Lab Contr	zed 11:51 Control S Type: To	Dil Fac 1 ample tal/NA e Dup
Analyte Chloride Lab Sample ID: LCS 490-200384/7 Matrix: Water Analysis Batch: 200384 Analyte Chloride Lab Sample ID: LCSD 490-200384/8 Matrix: Water	R	MB esult ND	MB Qualifier	Spike Added 50.0	RL 1.00	LCS Result 49.39	LCS Qualifi	Jnit ng/L	Unit mg/L	CI	Priient	Sample %Rec 99 ple ID:	Analy 10/23/14 e ID: Lab C Prep * %Rec. Limits 90 - 110 Lab Contr Prep *	zed 11:51 Control S Type: To OI Sampl Type: To	Dil Fac 1 ample tal/NA e Dup tal/NA
Analyte Chloride Lab Sample ID: LCS 490-200384/7 Matrix: Water Analysis Batch: 200384 Analyte Chloride Lab Sample ID: LCSD 490-200384/8 Matrix: Water Analysis Batch: 200384	R	MB esult ND	MB Qualifier	Spike Added 50.0	RL 1.00	LCS Result 49.39	MDL L LCS Qualifi	Jnit ng/L	Unit mg/L C	Cli	Priient	Sample %Rec 99 ple ID:	Analy 10/23/14 e ID: Lab C Prep * %Rec. Limits 90 - 110 Lab Contr Prep *	zed 11:51 Control S Type: To ol Sampl Type: To	Dil Fac 1 ample tal/NA e Dup tal/NA
Analyte Chloride Lab Sample ID: LCS 490-200384/7 Matrix: Water Analysis Batch: 200384 Analyte Chloride Lab Sample ID: LCSD 490-200384/8 Matrix: Water Analysis Batch: 200384	R	MB esult ND	MB Qualifier	Spike Added 50.0 Spike	RL 1.00	LCS Result 49.39	LCS LCS LCSD	Jnit ng/L	Unit mg/L	CI	Pi ient Sam	Sample %Rec 99 ple ID:	Analy 10/23/14 e ID: Lab C Prep ° %Rec. Limits 90 - 110 Lab Contr Prep ° %Rec.	zed 11:51 Control S Type: To	Dil Fac 1 ample tal/NA e Dup tal/NA RPD
Analyte Chloride Lab Sample ID: LCS 490-200384/7 Matrix: Water Analysis Batch: 200384 Analyte Chloride Lab Sample ID: LCSD 490-200384/8 Matrix: Water Analysis Batch: 200384 Analyte	R	MB esult ND	MB Qualifier	Spike Added 50.0 Spike Added	RL 1.00	LCS Result 49.39 LCSD Result	MDL L LCS Qualifi Qualifi	Jnit ng/L ier	Unit mg/L C	CI	Pi ient Sam	sample %Rec 99 ple ID: %Rec	Analy 10/23/14 e ID: Lab C Prep ° %Rec. Limits 90 - 110 Lab Contr Prep ° %Rec. Limits	zed 11:51 Control S Type: To ol Sampl Type: To RPD	Dil Fac 1 ample tal/NA e Dup tal/NA RPD Limit

Prep Type

Total/NA

Matrix

Water

**Client Sample ID** 

Matrix Spike Duplicate

Matrix Spike

MW-2

MW-4

Dup

EQ Blank

Trip Blank

Method Blank

Lab Control Sample

Lab Control Sample Dup

Method

8260B

Prep Batch

#### 490-62346-9 LCS 490-194015/3

**GC/MS VOA** 

Lab Sample ID

490-62346-2

490-62346-4

490-62346-7

490-62346-8

490-62334-B-20 MS

490-62334-C-20 MSD

LCSD 490-194015/4

MB 490-194015/8

Analysis Batch: 194015

## HPLC/IC

## Analysis Batch: 196574

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-62346-1	MW-1	Total/NA	Water	300.0	
490-62597-A-1 MS	Matrix Spike	Total/NA	Water	300.0	
490-62597-A-1 MSD	Matrix Spike Duplicate	Total/NA	Water	300.0	
LCS 490-196574/4	Lab Control Sample	Total/NA	Water	300.0	
LCSD 490-196574/5	Lab Control Sample Dup	Total/NA	Water	300.0	
MB 490-196574/3	Method Blank	Total/NA	Water	300.0	

### Analysis Batch: 197744

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-62310-L-21 MS	Matrix Spike	Total/NA	Water	300.0	
490-62346-2	MW-2	Total/NA	Water	300.0	
490-62346-4	MW-4	Total/NA	Water	300.0	
490-62346-5	MW-5	Total/NA	Water	300.0	
490-62346-8	Dup	Total/NA	Water	300.0	
LCS 490-197744/7	Lab Control Sample	Total/NA	Water	300.0	
LCSD 490-197744/8	Lab Control Sample Dup	Total/NA	Water	300.0	
MB 490-197744/6	Method Blank	Total/NA	Water	300.0	

## Analysis Batch: 197916

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-62346-6	MW-6	Total/NA	Water	300.0	
490-62346-7	EQ Blank	Total/NA	Water	300.0	
490-62346-7 MS	EQ Blank	Total/NA	Water	300.0	
LCS 490-197916/7	Lab Control Sample	Total/NA	Water	300.0	
LCSD 490-197916/8	Lab Control Sample Dup	Total/NA	Water	300.0	
MB 490-197916/6	Method Blank	Total/NA	Water	300.0	

### Analysis Batch: 200384

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-62346-3	MW-3	Total/NA	Water	300.0	
LCS 490-200384/7	Lab Control Sample	Total/NA	Water	300.0	
LCSD 490-200384/8	Lab Control Sample Dup	Total/NA	Water	300.0	
MB 490-200384/6	Method Blank	Total/NA	Water	300.0	

Client Sample	D: MW-1							Lab Samp	le ID: 49	90-62346-1
Date Collected:	09/22/14 10:4	15						•	N	Atrix: Water
Date Received: 0	9/26/14 09:0	0								
Γ		5.4.1				·		- ·		
Dren Turne	Batch	Batch	Dum	Dil	Initial	Final	Batch	Prepared	Amelyot	Lah
	Iype		Run	Factor	Amount	Amount		Or Analyzed		
Iotal/INA	Analysis	300.0		1	10 mL		196574	10/09/14 17:12	CLN	TAL NSH
Client Sample	D: MW-2							Lab Samp	le ID: 49	90-62346-2
Date Collected: (	09/24/14 18:5	55							N	latrix: Water
Date Received: (	9/26/14 09:0	0								
	Patah	Patah		Dil	Initial	Final	Patah	Bronorod		
Dran Turna	Batch	Mathed	Dum	Dii	Amount	Filiai	Ddicii		Analyst	l ah
			Kuli			10 ml	104015			
	Analysis	8200B		1		TOTIL	194015	10/01/14 01.24	DJIVI	TALINGH
Total/NA	Analysis	300.0		10	10 mL		197744	10/14/14 02:01	JHS	TAL NSH
Client Sample	D: MW-3							Lab Samp	le ID: 49	90-62346-3
Date Collected: (	09/25/14 10:4	13							N	latrix: Water
Date Received: 0	9/26/14 09:0	0								
	Batch	Batch	_	Dil	Initial	Final	Batch	Prepared		
Prep Type	Type	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	
Iotal/INA	Analysis	300.0		1	10 mL		200384	10/23/14 13:32	JH2	TAL NSH
Client Sample	D: MW-4							Lab Samp	le ID: 49	90-62346-4
Date Collected: (	09/24/14 17:4	15							N	latrix: Water
Date Received: (	9/26/14 09:0	0								
Γ	Datah	Datah		Dil	Initial	Final	Detah	Drenered		
Bron Tuno	Tuno	Mathad	Bun	Easter	Amount	Filidi	Ddicii	Frepareu	Analyst	Lab
	Analysis	8260B	Kuii	1	10 ml	10 ml	10/015	10/01/14 02:16		
	Analysis	02000				TO THE	134013	10/01/14 02:10	DOIN	
Total/NA	Analysis	300.0		10	10 mL		197744	10/14/14 02:21	JHS	TAL NSH
Client Sample	D: MW-5							Lab Samp	le ID: 49	90-62346-5
Date Collected: (	09/22/14 11:4	15							N	Atrix: Water
Date Received: (	9/26/14 09:0	0								
Г	Batch	Batch		Dil	Initial	Final	Batch	Bronarod		
Bron Type	Type	Mothod	Bun	Eactor	Amount	Amount	Numbor	or Applyzod	Analyst	Lab
			Kuli			Amount		0/14/14 02:42		
Iotai/NA	Analysis	300.0		10	TO THE		197744	10/14/14 02.42	JUQ	TAL NOR
Client Sample	D: MW-6							Lab Samp	le ID: 49	90-62346-6
Date Collected:	09/24/14 19:4	10							N	latrix: Water
	15/20/14 09:0	v								
	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Dren Turne	Tune		-		• •					
Ргер Туре	Туре	wethod	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab

## **Client Sample ID: EQ Blank**

#### Date Collected: 09/24/14 18:00 Date Received: 09/26/14 09:00

Date Received.	09/20/14 09:0	0								
	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Туре	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	10 mL	10 mL	194015	10/01/14 00:33	BJM	TAL NSH
Total/NA	Analysis	300.0		1	10 mL		197916	10/14/14 15:31	JHS	TAL NSH

## **Client Sample ID: Dup**

#### Date Collected: 09/24/14 00:01 Date Received: 09/26/14 09:00

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Туре	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	10 mL	10 mL	194015	10/01/14 03:07	BJM	TAL NSH
Total/NA	Analysis	300.0		10	10 mL	1.0 mL	197744	10/14/14 03:02	JHS	TAL NSH

## **Client Sample ID: Trip Blank**

## Date Collected: 09/24/14 00:01 Date Received: 09/26/14 09:00

_	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Ргер Туре	Туре	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	10 mL	10 mL	194015	09/30/14 23:41	BJM	TAL NSH

#### Laboratory References:

TAL NSH = TestAmerica Nashville, 2960 Foster Creighton Drive, Nashville, TN 37204, TEL (615)726-0177

# Lab Sample ID: 490-62346-7 Matrix: Water

Matrix: Water

## Lab Sample ID: 490-62346-9 Matrix: Water

Lab Sample ID: 490-62346-8

## Client: Enviro Clean Services LLC Project/Site: CHK State L-2

Method	Method Description	Protocol	Laboratory
8260B	Volatile Organic Compounds (GC/MS)	SW846	TAL NSH
300.0	Anions, Ion Chromatography	MCAWW	TAL NSH

#### Protocol References:

MCAWW = "Methods For Chemical Analysis Of Water And Wastes", EPA-600/4-79-020, March 1983 And Subsequent Revisions.

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

#### Laboratory References:

TAL NSH = TestAmerica Nashville, 2960 Foster Creighton Drive, Nashville, TN 37204, TEL (615)726-0177

## Laboratory: TestAmerica Nashville

## The certifications listed below are applicable to this report.

Authority	Program	EPA Region	Certification ID	Expiration Date
Oklahoma	State Program	6	9412	08-31-15

TestAmerica THE LEADER IN ENVIRONMENTAL TESTING Nashville, TN COOLER RECEIPT FORM	
	490-62346 Chain of Custody
Cooler Received/Opened On 9/26/2014 @ 0900	
1. Tracking #5020(last 4 digits, FedEx)	
Courier: <u>FedEx</u> IR Gun ID <u>94660220</u>	
2. Temperature of rep. sample or temp blank when opened: $\cancel{0.7}$ Degrees Celsiu	'S
3. If Item #2 temperature is 0°C or less, was the representative sample or temp blan	nk frozen? YES NO.
4. Were custody seals on outside of cooler?	ESNONA
If yes, how many and where: <u>@}Freconf</u>	
5. Were the seals intact, signed, and dated correctly?	CESNONA
6. Were custody papers inside cooler?	E.NONA
I certify that I opened the cooler and answered questions 1-6 (intial)	mom
7. Were custody seals on containers: YES NO and Inta	act YESNONA
Were these signed and dated correctly?	YESNONA
8. Packing mat'l used? Bubblewrap Plastic bag Peanuts Vermiculite Foam Ins	ert Paper Other None
9. Cooling process: Ice lce-pack Ice (direct contact)	Dry ice Other None
10. Did all containers arrive in good condition (unbroken)?	YESNONA
11. Were all container labels complete (#, date, signed, pres., etc)?	YESNONA
12. Did all container labels and tags agree with custody papers?	YES. NONA
13a. Were VOA vials received?	YESNONA
b. Was there any observable headspace present in any VOA vial?	YESNONA
14. Was there a Trip Blank in this cooler? YE9NONA If multiple coolers	s, sequence #
I certify that I unloaded the cooler and answered guestions 7-14 (intial)	
15a. On pres'd bottles, did pH test strips suggest preservation reached the correct	pH level? YESNONA
b. Did the bottle labels indicate that the correct preservatives were used	YESNONA
16. Was residual chlorine present?	YESNO.
I certify that I checked for chlorine and pH as per SOP and answered questions 15-1	6 (intial)
17. Were custody papers properly filled out (ink, signed, etc)?	YESNONA
18. Did you sign the custody papers in the appropriate place?	YESNONA
19. Were correct containers used for the analysis requested?	YESNONA
20. Was sufficient amount of sample sent in each container?	YESNONA
I certify that I entered this project into LIMS and answered questions 17-20 (intial)	
I certify that I attached a label with the unique LIMS number to each container (intial	
21. Were there Non-Conformance issues at login YES. No Was a NCM generate	d?YES.NO
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1 2 3 4 5 6 7 8 9 10	11 12 13		
	CHAIN OF CU		
ENVIROCLEAN	CHKHSTL201	CHK STATE L-2	coc <u>/</u> of <u>_/</u>
T SERVICES, LLC (918) 794-7828	SHIPPED TO: TA NASHVILLE	PROJECT MANAGER: BRUCE MCKENZIE	TAT: STANDARD
SAMPLER'S PRINTED NAME: Terry Fisher	ners C)		ASOW: GEWSUB: 750-521
SAMPLER'S SIGNATURE:	Matrix Contai (300) (8260		62346
Date Time Sample ID	Sample f Sample ORIDE		
	# of CHL BEN		REMARKS
9-22-14 1045 mw-1	Data 1 X		0
9-24-14 1855 mw-2	wrter 4 X X		2
7-25-14 1043 mw - 3	kunter 1		Ś
4-24-14 1745 MW- 4	X X H votra		4
9-22-14 1145 mw - 5	Water 1 X		5
9-24-14 1940 mm-6	water 1 X		8
9-24-14 1800 EQ Blank	WHAN Y XX		7
9-24-14 - Dup	MA L XX		A
- TRIP Blank	war 2 x		(here
	V		
TOTAL NUMBER OF CONTAINERS	→ 20 -		
RELINQUISHED BY:	TIME 1400 RECEIVED BY	1720 DATE	<u>Oqhuliy</u>
RELINQUISHEDST:	DATE RECEIVED BY	r: TIME	
METHOD OF SHIPMENT: FED EX	AIRBILL NUM	on 169 S262 S	5020
RECEIVED IN LABORATORY BY:	DATE Send PDF, ED	)), and INVOICE (if applicable) to: JULIE CZECH at jczech@en	wirocleanps.com
LABORATORY CONTACT:	LABORATOR	Y ADDRESS:	
(615) 726-0177	2960 FO	STER CREIGHTON DR., NASHVILLE, IN	37204
POINT OF ORIGIN:	] NORMAN □ WOODWARD	ARLINGTON     MIDLAND     OTHE	77
PAGE #1 - RECEIVING LAB	PAGE #2 - ENVIRO CLE	AN PROJECT FILE PAGE #	#3 - ENVIRO CLEAN QA/QC DEPT

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,

10/24/2014

Client: Enviro Clean Services LLC

## Login Number: 62346 List Number: 1

Creator: Gambill, Shane

Question	Answer	Comment
Radioactivity wasn't checked or is = background as measured by a<br survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	0.9
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time.	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	True	

Job Number: 490-62346-2 SDG Number: Property ID 890293

List Source: TestAmerica Nashville



THE LEADER IN ENVIRONMENTAL TESTING

# **ANALYTICAL REPORT**

## TestAmerica Laboratories, Inc.

TestAmerica Nashville 2960 Foster Creighton Drive Nashville, TN 37204 Tel: (615)726-0177

## TestAmerica Job ID: 490-68603-1

TestAmerica Sample Delivery Group: Property ID 890293 Client Project/Site: CHK STATE L-2

## For:

······ Links ······

Review your project results through

**Total**Access

Have a Question?

Ask-

The

www.testamericainc.com

Visit us at:

Expert

Enviro Clean Services LLC 7060 S. Yale Avenue, Suite 603 Tulsa, Oklahoma 74136

Attn: Ms. Julie Czech

Cathy Gartner

Authorized for release by: 12/31/2014 2:09:59 PM

Cathy Gartner, Project Manager I (615)301-5041 cathy.gartner@testamericainc.com

The test results in this report meet all 2003 NELAC and 2009 TNI requirements for accredited parameters, exceptions are noted in this report. This report may not be reproduced except in full, and with written approval from the laboratory. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

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## **Sample Summary**

Matrix

Water

Water

Water

Water

Water

Water

Water

Water

Water

Client: Enviro Clean Services LLC Project/Site: CHK STATE L-2

**Client Sample ID** 

MW-1

MW-2

MW-3

MW-4

MW-5

MW-6

DUP

Trip

EQ Blank

Lab Sample ID

490-68603-1

490-68603-2

490-68603-3

490-68603-4

490-68603-5

490-68603-6

490-68603-7

490-68603-8

490-68603-9

TestAmerica Job ID: 490-68603-1 SDG: Property ID 890293

Collected

12/09/14 09:35

12/09/14 13:15

12/09/14 15:40

12/09/14 11:30

12/09/14 16:35

12/09/14 14:45

12/09/14 09:40

12/09/14 00:01

12/09/14 00:01

): 490-68603-1 erty ID 890293	
Received	3
12/13/14 08:45	
12/13/14 08:45	
12/13/14 08:45	5
12/13/14 08:45	Ð
12/13/14 08:45	
12/13/14 08:45	0
12/13/14 08:45	
12/13/14 08:45	

12/13/14 08:45

### Job ID: 490-68603-1

#### Laboratory: TestAmerica Nashville

#### Narrative

Job Narrative 490-68603-1

#### Comments

No additional comments.

#### Receipt

The samples were received on 12/13/2014 8:45 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 1.2° C.

#### GC/MS VOA

No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

#### HPLC/IC

Method(s) 300.0: The following samples were diluted due to the nature of the sample matrix: DUP (490-68603-8), MW-2 (490-68603-2), MW-3 (490-68603-3), MW-4 (490-68603-4), MW-5 (490-68603-5), MW-6 (490-68603-6). Elevated reporting limits (RLs) are provided.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

#### VOA Prep

No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

## Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.	4
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis	
%R	Percent Recovery	
CFL	Contains Free Liquid	<b>.</b>
CNF	Contains no Free Liquid	
DER	Duplicate error ratio (normalized absolute difference)	6
Dil Fac	Dilution Factor	
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample	
DLC	Decision level concentration	
MDA	Minimum detectable activity	8
EDL	Estimated Detection Limit	
MDC	Minimum detectable concentration	9
MDL	Method Detection Limit	
ML	Minimum Level (Dioxin)	
NC	Not Calculated	
ND	Not detected at the reporting limit (or MDL or EDL if shown)	
PQL	Practical Quantitation Limit	
QC	Quality Control	
RER	Relative error ratio	
RL	Reporting Limit or Requested Limit (Radiochemistry)	1 2
RPD	Relative Percent Difference, a measure of the relative difference between two points	
TEF	Toxicity Equivalent Factor (Dioxin)	
TEQ	Toxicity Equivalent Quotient (Dioxin)	
Client: Enviro Clean Services LLC Project/Site: CHK STATE L-2

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#### **Client Sample ID: MW-1** Lab Sample ID: 490-68603-1 Date Collected: 12/09/14 09:35 Matrix: Water Date Received: 12/13/14 08:45 Method: 300.0 - Anions, Ion Chromatography Analyte Result Qualifier RL MDL Unit D Prepared Analyzed Dil Fac Chloride 27.7 1.00 mg/L 12/30/14 04:21 1

# Client Sample ID: MW-2

Date Collected: 12/09/14 13:15 Date Received: 12/13/14 08:45

## Lab Sample ID: 490-68603-2 Matrix: Water

5 6 7

Method: 8260B - Volatile Orga	nic Compounds	(GC/MS)							
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		0.500		ug/L			12/16/14 21:00	1
Ethylbenzene	ND		0.500		ug/L			12/16/14 21:00	1
Toluene	ND		0.500		ug/L			12/16/14 21:00	1
Xylenes, Total	ND		1.50		ug/L			12/16/14 21:00	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	102		70 - 130			-		12/16/14 21:00	1
4-Bromofluorobenzene (Surr)	100		70 - 130					12/16/14 21:00	1
Dibromofluoromethane (Surr)	102		70 - 130					12/16/14 21:00	1
Toluene-d8 (Surr)	106		70 - 130					12/16/14 21:00	1
Method: 300.0 - Anions, Ion Cl	nromatography								
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	319		20.0		mg/L			12/30/14 05:01	20

Client: Enviro Clean Services LLC Project/Site: CHK STATE L-2

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#### **Client Sample ID: MW-3** Lab Sample ID: 490-68603-3 Date Collected: 12/09/14 15:40 Matrix: Water Date Received: 12/13/14 08:45 Method: 300.0 - Anions, Ion Chromatography Analyte Result Qualifier RL MDL Unit D Prepared Analyzed Dil Fac Chloride 86.0 5.00 mg/L 12/30/14 05:21 5

# Client Sample ID: MW-4

Date Collected: 12/09/14 11:30 Date Received: 12/13/14 08:45

## Lab Sample ID: 490-68603-4 Matrix: Water

5 6 7

Method: 8260B - Volatile Orga	nic Compounds	(GC/MS)							
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	12.1		0.500		ug/L			12/16/14 21:29	1
Ethylbenzene	ND		0.500		ug/L			12/16/14 21:29	1
Toluene	ND		0.500		ug/L			12/16/14 21:29	1
Xylenes, Total	ND		1.50		ug/L			12/16/14 21:29	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	100		70 - 130			-		12/16/14 21:29	1
4-Bromofluorobenzene (Surr)	98		70 _ 130					12/16/14 21:29	1
Dibromofluoromethane (Surr)	101		70 - 130					12/16/14 21:29	1
Toluene-d8 (Surr)	105		70 - 130					12/16/14 21:29	1
Method: 300.0 - Anions, Ion Cl	hromatography								
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	300		20.0		mg/L			12/30/14 05:41	20

Client: Enviro Clean Services LLC Project/Site: CHK STATE L-2

6

#### **Client Sample ID: MW-5** Lab Sample ID: 490-68603-5 Date Collected: 12/09/14 16:35 Matrix: Water Date Received: 12/13/14 08:45 Method: 300.0 - Anions, Ion Chromatography Analyte Result Qualifier RL MDL Unit D Prepared Analyzed Dil Fac Chloride 129 5.00 mg/L 12/30/14 06:01 5

Client: Enviro Clean Services LLC Project/Site: CHK STATE L-2

6

#### **Client Sample ID: MW-6** Lab Sample ID: 490-68603-6 Date Collected: 12/09/14 14:45 Matrix: Water Date Received: 12/13/14 08:45 Method: 300.0 - Anions, Ion Chromatography Analyte Result Qualifier RL MDL Unit D Prepared Analyzed Dil Fac Chloride 149 5.00 mg/L 12/30/14 06:21 5

## Client Sample ID: EQ Blank Date Collected: 12/09/14 09:40

Date Received: 12/13/14 08:45

## Lab Sample ID: 490-68603-7 Matrix: Water

5 6 7

include of the second of ge						_			
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		0.500		ug/L			12/16/14 21:57	1
Ethylbenzene	ND		0.500		ug/L			12/16/14 21:57	1
Toluene	ND		0.500		ug/L			12/16/14 21:57	1
Xylenes, Total	ND		1.50		ug/L			12/16/14 21:57	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	100		70 - 130			-		12/16/14 21:57	1
4-Bromofluorobenzene (Surr)	98		70 - 130					12/16/14 21:57	1
Dibromofluoromethane (Surr)	103		70 - 130					12/16/14 21:57	1
Toluene-d8 (Surr)	105		70 - 130					12/16/14 21:57	1
_ Method: 300.0 - Anions, Ion C	hromatography								
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	ND		1 00		ma/l			12/30/14 06:41	1

## Client Sample ID: DUP

Date Collected: 12/09/14 00:01 Date Received: 12/13/14 08:45

## Lab Sample ID: 490-68603-8 Matrix: Water

Method: 8260B - Volatile Organic Compounds (GC/MS) Dil Fac Result Qualifier MDL Unit Analyte RL D Prepared Analyzed 0.500 ug/L 12/22/14 15:36 Benzene 11.3 1 ug/L Ethylbenzene ND 0.500 12/22/14 15:36 1 Toluene ND 0.500 ug/L 12/22/14 15:36 1 Xylenes, Total ND 1.50 ug/L 12/22/14 15:36 1 %Recovery Prepared Surrogate Qualifier Dil Fac Limits Analyzed 1,2-Dichloroethane-d4 (Surr) 97 70 - 130 12/22/14 15:36 1 4-Bromofluorobenzene (Surr) 99 70 - 130 12/22/14 15:36 1 Dibromofluoromethane (Surr) 98 70 - 130 12/22/14 15:36 1 Toluene-d8 (Surr) 105 70 - 130 12/22/14 15:36 1 Method: 300.0 - Anions, Ion Chromatography Result Qualifier RL MDL Unit Dil Fac Analyte D Prepared Analyzed 20.0 12/30/14 07:01 Chloride 299 mg/L 20

8 9 1(

6

11 12

## **Client Sample ID: Trip** Date Collected: 12/09/14 00:01

Date Received: 12/13/14 08:45

Analyte

Toluene

## Lab Sample ID: 490-68603-9 Matrix: Water

Method: 8260B - Volatile Organic Compounds (GC/MS) Dil Fac Result Qualifier RL MDL Unit D Prepared Analyzed Benzene ND 0.500 ug/L 12/16/14 20:31 1 ND Ethylbenzene ug/L 12/16/14 20:31 0.500 1 ND 0.500 ug/L 12/16/14 20:31 1 ug/L 12/16/14 20:31 Xylenes, Total ND 1.50 1 %Recovery Surrogate Qualifier Limits Prepared Analyzed Dil Fac 70 - 130 1,2-Dichloroethane-d4 (Surr) 100 12/16/14 20:31 1 4-Bromofluorobenzene (Surr) 97 70 - 130 12/16/14 20:31 1 Dibromofluoromethane (Surr) 100 70 - 130 12/16/14 20:31 1 Toluene-d8 (Surr) 105 70 - 130 12/16/14 20:31 1

4-Bromofluorobenzene (Surr)

Dibromofluoromethane (Surr)

Toluene-d8 (Surr)

96

97

106

## Method: 8260B - Volatile Organic Compounds (GC/MS)

Lab Sample ID: MB 490-214311/7	,									Client S	Sample ID: Me	thod	Blank
Matrix: Water											Prep Type	e: Tot	tal/NA
Analysis Batch: 214311													
-	M	В МВ											
Analyte	Resu	t Qualifier	RL		MDL U	Jnit		D	Pr	repared	Analyzed		Dil Fac
Benzene	N	5	0.500		u	ıg/L					12/16/14 13:2	20	1
Ethylbenzene	N	)	0.500		u	ıg/L					12/16/14 13:2	20	1
Toluene	N	)	0.500		u	ıg/L					12/16/14 13:2	20	1
Xylenes, Total	N	)	1.50		u	ıg/L					12/16/14 13:2	20	1
	М	8 <i>MB</i>											
Surrogate	%Recover	Qualifier	Limits						Pı	repared	Analyzed		Dil Fac
1,2-Dichloroethane-d4 (Surr)	9	9	70 - 130								12/16/14 13:2	20	1
4-Bromofluorobenzene (Surr)	10	1	70 - 130								12/16/14 13:2	20	1
Dibromofluoromethane (Surr)	9	6	70 - 130								12/16/14 13:2	20	1
Toluene-d8 (Surr)	10	7	70 - 130								12/16/14 13:2	20	1
Lab Sample ID: LCS 490-214311/	3							Cli	ent	Sample	ID: Lab Cont	rol Sa	ample
Matrix: Water											Prep Type	e: Tot	tal/NA
Analysis Batch: 214311													
-			Spike	LCS	LCS						%Rec.		
Analyte			Added	Result	Qualifi	ier	Unit		D	%Rec	Limits		
Benzene			50.0	42.41			ug/L		_	85	80 - 121		
Ethylbenzene			50.0	52.66			ug/L			105	80 - 130		
Toluene			50.0	50.92			ug/L			102	80 - 126		
Xylenes, Total			150	160.7			ug/L			107	80 - 132		
	LCS LC	s											
Surrogate	%Recovery Qu	alifier	Limits										
1,2-Dichloroethane-d4 (Surr)	96		70 - 130										
4-Bromofluorobenzene (Surr)	96		70 - 130										
Dibromofluoromethane (Surr)	98		70 - 130										
Toluene-d8 (Surr)	106		70 - 130										
_ Lab Sample ID: LCSD 490-21431	1/4						CI	lient S	Sam	ple ID:	Lab Control S	ampl	e Dup
Matrix: Water											Prep Type	e: Tot	tal/NA
Analysis Batch: 214311													
· · · · · · · · · · · · · · · · · · ·			Spike	LCSD	LCSD						%Rec.		RPD
Analyte			Added	Result	Qualifi	ier	Unit		D	%Rec	Limits	RPD	Limit
Benzene			50.0	43.60			ug/L		_	87	80 - 121	3	17
Ethylbenzene			50.0	53.35			ug/L			107	80 - 130	1	15
Toluene			50.0	51.87			uq/L			104	80 - 126	2	15
Xylenes, Total			150	165.1			ug/L			110	80 - 132	3	15
	LCSD LC	SD											
Surrogate	%Recovery Qu	alifier	Limits										
1.2-Dichloroethane-d4 (Surr)	95		70 - 130										

70 - 130

70 - 130

70 - 130

## Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: 490-68721-B	-1 MS								Client	t Sample ID: N	latrix	Spike
Matrix: Water										Prep Typ	e: To	al/N/
Analysis Batch: 214311												
-	Sample Sa	nple	Spike	MS	MS					%Rec.		
Analyte	Result Qu	alifier	Added	Result	Qualifi	er U	nit	D	%Rec	Limits		
Benzene	2.50		50.0	42.31		 ug	/L		80	75 - 133		
Ethylbenzene	ND		50.0	48.68		uç	/L		97	79 <sub>-</sub> 139		
Toluene	ND		50.0	47.25		uç	/L		94	75 <sub>-</sub> 136		
Xylenes, Total	ND		150	150.2		ug	/L		100	74 <sub>-</sub> 141		
<b>•</b> • •	MS MS											
Surrogate	Qu	alifier	Limits									
1,2-Dichloroethane-d4 (Surr)	93		70 - 130									
4-Bromofluorobenzene (Surr)	94		70 - 130									
Dibromofluoromethane (Surr)	96		70_130									
Toluene-d8 (Surr)	106		70 - 130									
Lah Comula ID: 400 69704 C	4 MOD						0	liant C	amala II	D. Mateix Call	• D	liest
Lab Sample ID. 490-66721-C								nent Sa	ampie n		e Dup	
Matrix: Water										Prep Typ	e: 10	al/N/
Analysis Batch: 214311	Sample Sa	mala	Spike	Men	Men					% Bee		БВ
Anglita	Sample Sa	npie	Spike	Booult	Qualifi				% Bee	%Rec.		
Panzana				40.04	Quaim							
	2.50		50.0	42.01		uç	/∟		01	75 - 133	1	1
	ND		50.0	48.93		ug	/L		98	79 - 139	1	1
	ND		50.0	47.60		ug	/L		95	75 - 136	1	1
Xylenes, Total	ND		150	152.1		uç	/L		101	74 - 141	1	1
	MSD MS	D										
Surrogate	%Recovery Qu	alifier	Limits									
1,2-Dichloroethane-d4 (Surr)	95		70 - 130									
4-Bromofluorobenzene (Surr)	96		70 - 130									
Dibromofluoromethane (Surr)	96		70 - 130									
Toluene-d8 (Surr)	107		70_130									
Lab Sample ID: MB 490-2160	010/7								Client S	Sample ID: Me	thod	Blan
Matrix: Water										Prep Typ	e: To	al/N/
Analysis Batch: 216010												
	ME	B MB										
Analyte	Resul	t Qualifier	RL		MDL U	Jnit	I	D P	repared	Analyzed		Dil Fa
Benzene	N	<u> </u>	0.500			ıg/L				12/22/14 15:	07 —	
Ethylbenzene	NE	)	0.500		u	ıg/L				12/22/14 15:	07	
Toluene	NE	)	0.500		u	ıg/L				12/22/14 15:	07	
Xylenes, Total	N	)	1.50		u	ig/L				12/22/14 15:	07	
Surroanto	ME M Deserver		1::4-					_	leanar-d	Amaliana		n;; r-
									repared		07	га ווע
1,2-µicnioroetnane-d4 (Surr)	10		70 - 130							12/22/14 15:	07	
4-вготопиогорепzene (Surr)	9	5	70 - 130							12/22/14 15:	07	
Dibromofluoromethane (Surr)	9	<b>)</b>	70 - 130							12/22/14 15:	07	
Toluene-d8 (Surr)	10:	5	70 - 130							12/22/14 15:	07	

## Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

#### Lab Sample ID: LCS 490-216010/3 Matrix: Water

#### **Client Sample ID: Lab Control Sample** Prep Type: Total/NA

## Analysis Batch: 216010

	Spike	LCS	LCS				%Rec.	
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	
Benzene	50.0	41.55		ug/L		83	80 - 121	
Ethylbenzene	50.0	50.73		ug/L		101	80 - 130	
Toluene	50.0	49.02		ug/L		98	80 - 126	
Xylenes, Total	150	158.2		ug/L		105	80 - 132	

	LCS	LCS	
Surrogate	%Recovery	Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	97		70 - 130
4-Bromofluorobenzene (Surr)	96		70 - 130
Dibromofluoromethane (Surr)	99		70 - 130
Toluene-d8 (Surr)	105		70 - 130

#### Lab Sample ID: LCSD 490-216010/4 Matrix: Water

## Analysis Batch: 216010

	Spike	LCSD	LCSD				%Rec.		RPD
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Benzene	50.0	41.63		ug/L		83	80 - 121	0	17
Ethylbenzene	50.0	50.90		ug/L		102	80 - 130	0	15
Toluene	50.0	48.87		ug/L		98	80 - 126	0	15
Xylenes, Total	150	156.2		ug/L		104	80 - 132	1	15

	LCSD	LCSD	
Surrogate	%Recovery	Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	95		70 - 130
4-Bromofluorobenzene (Surr)	97		70 - 130
Dibromofluoromethane (Surr)	97		70 - 130
Toluene-d8 (Surr)	104		70 - 130

## Lab Sample ID: 490-69258-B-2 MS

#### Matrix: Water Analysis Batch: 216010

· ·····, ··· · · · · · · · · · · · · ·	Sample	Sample	Spike	MS	MS				%Rec.	
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	
Benzene	ND		50.0	41.19		ug/L		82	75 - 133	
Ethylbenzene	ND		50.0	49.82		ug/L		100	79 <sub>-</sub> 139	
Toluene	0.547		50.0	49.06		ug/L		97	75 <sub>-</sub> 136	
Xylenes, Total	ND		150	151.4		ug/L		101	74 <sub>-</sub> 141	
	МС	MS								

%Recovery	Qualifier	Limits
92		70 - 130
98		70 - 130
98		70 - 130
105		70 - 130
	%Recovery 92 98 98 105	%Recovery         Qualifier           92         98           98         98           105         105

# Client Sample ID: Lab Control Sample Dup

# Prep Type: Total/NA

## **Client Sample ID: Matrix Spike** Prep Type: Total/NA

Chloride

## Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: 490-69258-C-2 MS Matrix: Water	SD						Client S	Sample II	D: Matrix Sp Prep T	oike Dup vpe: Tot	licate al/NA
Analysis Batch: 216010										,	
	Sample	Sample	Spike	MSD	MSD				%Rec.		RPD
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Benzene	ND		50.0	42.02		ug/L		84	75 - 133	2	17
Ethylbenzene	ND		50.0	51.17		ug/L		102	79 - 139	3	15
Toluene	0.547		50.0	49.50		ug/L		98	75 - 136	1	15
Xylenes, Total	ND		150	156.1		ug/L		104	74 <sub>-</sub> 141	3	15
	MSD	MSD									
Surrogate	%Recovery	Qualifier	Limits								
1,2-Dichloroethane-d4 (Surr)	98		70 _ 130	-							
4-Bromofluorobenzene (Surr)	98		70 - 130								
Dibromofluoromethane (Surr)	99		70 - 130								
Toluene-d8 (Surr)	103		70 - 130								
Method: 300.0 - Anions, Ion C	Chromat	ography									
Lab Sample ID: MR 490 217429/3								Client	Sample ID:	Mothod	Blank
Matrix: Water								Client	Dron T	vpe: Tot	
Analysis Batch: 217429									перт	ype. roi	
Analysis Datch. 217425		МВ МВ									
Analyte	R	esult Qualifier		RL	MDL Unit		D	Prepared	Analvz	ed	Dil Fac
Chloride	·	ND		1.00	mg/L		·		12/29/14	23:01	1
					5						
Lab Sample ID: LCS 490-217429/4	1						Clier	t Sample	e ID: Lab Co	ontrol Sa	ample
Matrix: Water									Prep T	ype: Tot	al/NA
Analysis Batch: 217429											
-			Spike	LCS	LCS				%Rec.		
Analyte			Added	Result	Qualifier	Unit	D	%Rec	Limits		
Chloride			50.0	49.46		mg/L		99	90 - 110		
Lab Sample ID: 1 CSD 490-217429	/5					C	iont Sa	nnie ID:	Lah Contro	l Sample	
Matrix: Water						0		inple ib.	Dron T	vne: Tot	
Analysis Batch: 217/29									перт	ype. roi	
Analysis Datch. 217425			Spike	LCSD	LCSD				%Rec.		RPD
Analyte			Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Chloride			50.0	49.54		ma/L		99	90 - 110	0	20
						5					-
Lab Sample ID: 490-68603-1 MS									<b>Client San</b>	nple ID:	MW-1
Matrix: Water										-	
Analysia Databy 247420									Prep T	ype: Tot	al/NA
Analysis Batch: 21/429									Prep T	ype: Tot	al/NA
Analysis Batch: 217429	Sample	Sample	Spike	MS	MS				Prep T %Rec.	ype: Tot	al/NA

TestAmerica Nashville

50.0

27.7

70.56

mg/L

86

80 - 120

## **GC/MS VOA**

#### Analysis Batch: 214311

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-68603-2	MW-2	Total/NA	Water	8260B	
490-68603-4	MW-4	Total/NA	Water	8260B	
490-68603-7	EQ Blank	Total/NA	Water	8260B	
490-68603-9	Trip	Total/NA	Water	8260B	
490-68721-B-1 MS	Matrix Spike	Total/NA	Water	8260B	
490-68721-C-1 MSD	Matrix Spike Duplicate	Total/NA	Water	8260B	
LCS 490-214311/3	Lab Control Sample	Total/NA	Water	8260B	
LCSD 490-214311/4	Lab Control Sample Dup	Total/NA	Water	8260B	
MB 490-214311/7	Method Blank	Total/NA	Water	8260B	
Analysis Batch: 21601	0				
Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-68603-8	DUP	Total/NA	Water	8260B	
490-69258-B-2 MS	Matrix Spike	Total/NA	Water	8260B	
490-69258-C-2 MSD	Matrix Spike Duplicate	Total/NA	Water	8260B	
LCS 490-216010/3	Lab Control Sample	Total/NA	Water	8260B	
LCSD 490-216010/4	Lab Control Sample Dup	Total/NA	Water	8260B	
MB 490-216010/7	Method Blank	Total/NA	Water	8260B	

#### HPLC/IC

#### Analysis Batch: 217429

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-68603-1	MW-1	Total/NA	Water	300.0	
490-68603-1 MS	MW-1	Total/NA	Water	300.0	
490-68603-2	MW-2	Total/NA	Water	300.0	
490-68603-3	MW-3	Total/NA	Water	300.0	
490-68603-4	MW-4	Total/NA	Water	300.0	
490-68603-5	MW-5	Total/NA	Water	300.0	
490-68603-6	MW-6	Total/NA	Water	300.0	
490-68603-7	EQ Blank	Total/NA	Water	300.0	
490-68603-8	DUP	Total/NA	Water	300.0	
LCS 490-217429/4	Lab Control Sample	Total/NA	Water	300.0	
LCSD 490-217429/5	Lab Control Sample Dup	Total/NA	Water	300.0	
MB 490-217429/3	Method Blank	Total/NA	Water	300.0	

Client Sample	e ID: MW-1							Lab Samp	le ID: 49	90-68603-1
Date Collected:	12/09/14 09:3	35							Ν	latrix: Water
Date Received:	12/13/14 08:4	15								
Г	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Type	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		1	10 mL		217429	12/30/14 04:21	JHS	TAL NSH
L										
Client Sample	e ID: MW-2							Lab Samp	le ID: 49	90-68603-2
Date Collected:	12/09/14 13:	15						-	Ν	Aatrix: Water
Date Received:	12/13/14 08:4	15								
Γ	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Type	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	10 mL	10 mL	214311	12/16/14 21:00	PS1	TAL NSH
Total/NA	Analysis	300.0		20	10 ml		217429	12/30/14 05:01	JHS	TAL NSH
	, analysis	000.0		20	TO THE		211120	12,00,11,00.01	0110	In Le Norr
Client Sample	e ID: MW-3							Lab Samp	ole ID: 49	90-68603-3
Date Collected:	12/09/14 15:4	40							Ν	latrix: Water
Date Received:	12/13/14 08:4	15								
Г	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Pren Tyne	Type	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Δnalvst	Lah
Total/NA	Analysis	- 300.0		5	10 mL		217429	12/30/14 05:21		TAL NSH
	,									
Client Sample	e ID: MW-4							Lab Samr	le ID: 49	90-68603-4
Date Collected:	12/09/14 11:	30							Λ	latrix: Water
Date Received:	12/13/14 08:4	15								
Γ										
Dura Tana	Batch	Batch	<b>D</b>	Dil	Initial	Final	Batch	Prepared	A	16
		Method	Run	Factor	Amount	Amount		or Analyzed	Analyst	
i otal/inA	Analysis	8260B		1	TUML	TUML	214311	12/16/14 21:29	P51	TAL NSH
Total/NA	Analysis	300.0		20	10 mL		217429	12/30/14 05:41	JHS	TAL NSH
Client Sample	م ID· MW-5							l ah Samr		0-68603-5
Date Collected:	12/09/14 16.1	25						Lab Gamp	ΛΟ 10. 40 Λ	latrix: Water
Date Received:	12/13/14 08:4	15								
	Batch	Batch	_	Dil	Initial	Final	Batch	Prepared		
Prep Type	Туре	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	_ Lab
I otal/NA	Analysis	300.0		5	10 mL		217429	12/30/14 06:01	JHS	TAL NSH
Client Sample	e ID: MW-6							Lab Samr	le ID: 49	90-68603-6
Client Sample	e ID: MW-6	45						Lab Samp	ole ID: 49	90-68603-6 Iatrix: Water
Client Sample Date Collected: Date Received:	e ID: MW-6 12/09/14 14:4 12/13/14 08:4	45 15						Lab Samp	ole ID: 49 N	90-68603-6 Iatrix: Water
Client Sample Date Collected: Date Received:	e ID: MW-6 12/09/14 14:4 12/13/14 08:4 Batch	45 IS Batch		Dil	Initial	Final	Batch	Lab Samp	ole ID: 49 N	90-68603-6 Iatrix: Water
Client Sample Date Collected: Date Received:	e ID: MW-6 12/09/14 14:4 12/13/14 08:4 Batch Type	45 IS Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Lab Samp Prepared or Analyzed	Die ID: 49	90-68603-6 Natrix: Water

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Туре	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	10 mL	10 mL	214311	12/16/14 21:57	PS1	TAL NSH
Total/NA	Analysis	300.0		1	10 mL		217429	12/30/14 06:41	JHS	TAL NSH

## Client Sample ID: DUP

#### Date Collected: 12/09/14 00:01 Date Received: 12/13/14 08:45

	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Туре	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	10 mL	10 mL	216010	12/22/14 15:36	MJH	TAL NSH
Total/NA	Analysis	300.0		20	10 mL		217429	12/30/14 07:01	JHS	TAL NSH

## Client Sample ID: Trip

#### Date Collected: 12/09/14 00:01 Date Received: 12/13/14 08:45

_	Batch	Batch		Dil	Initial	Final	Batch	Prepared			
Prep Type	Туре	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab	
Total/NA	Analysis	8260B		1	10 mL	10 mL	214311	12/16/14 20:31	PS1	TAL NSH	-

#### Laboratory References:

TAL NSH = TestAmerica Nashville, 2960 Foster Creighton Drive, Nashville, TN 37204, TEL (615)726-0177

## TestAmerica Job ID: 490-68603-1 SDG: Property ID 890293

Lab Sample ID: 490-68603-7

Lab Sample ID: 490-68603-8

Matrix: Water

Matrix: Water

9

## Lab Sample ID: 490-68603-9 Matrix: Water

#### Client: Enviro Clean Services LLC Project/Site: CHK STATE L-2

Method	Method Description	Protocol	Laboratory
8260B	Volatile Organic Compounds (GC/MS)	SW846	TAL NSH
300.0	Anions, Ion Chromatography	MCAWW	TAL NSH

#### Protocol References:

MCAWW = "Methods For Chemical Analysis Of Water And Wastes", EPA-600/4-79-020, March 1983 And Subsequent Revisions.

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

#### Laboratory References:

TAL NSH = TestAmerica Nashville, 2960 Foster Creighton Drive, Nashville, TN 37204, TEL (615)726-0177

Client: Enviro Clean Services LLC Project/Site: CHK STATE L-2

## Laboratory: TestAmerica Nashville

#### The certifications listed below are applicable to this report.

Authority	Program	EPA Region	Certification ID	Expiration Date
Oklahoma	State Program	6	9412	08-31-15

TestAmerica THE LEADER IN ENVIRONMENTAL TESTING Nashville, TN	COOLER RECEIPT FORM	
Cooler Received/Opened On	12/12/2014 @ 0845	490-68603 Chain of Custody
1. Tracking #6.5.7	(last 4 digits, FedEx)	
Courier: <u>FedEx</u> IR Gun ID	<u>12080142</u>	
2. Temperature of rep. sample or te	mp blank when opened: <u>/ a</u> Degrees Cels	ius
3. If Item #2 temperature is 0°C or le	ss, was the representative sample or temp blar	k frozen? YES NO NA
<ol> <li>Were custody seals on outside of If yes, how many and where:</li> </ol>	cooler? One front + B	act (yes)na
5. Were the seals intact, signed, and	I dated correctly?	YES NONA
6. Were custody papers inside cool	ər?	YES NO NA
I certify that I opened the cooler and	answered questions 1-6 (initial)	₩
7. Were custody seals on containers	s: YES NO and Inta	act YESNONA
Were these signed and dated cor	rectly?	YESNO
8. Packing mat'l used? Bubblewrap	Plastic bag Peanuts Vermiculite Foam Ins	ert Paper Other None
9. Cooling process:	Ice lce-pack dce (direct contact)	Dry ice Other None
10. Did all containers arrive in good	condition (unbroken)?	VES NONA
11. Were all container labels comple	ete (#, date, signed, pres., etc)?	VES NONA
12. Did all container labels and tags	agree with custody papers?	VESNONA
13a. Were VOA vials received?		YES.NONA
b. Was there any observable head	Ispace present in any VOA vial?	YES. NO NA
14. Was there a Trip Blank in this co	ooler? (ESNONA If multiple cooler	s, sequence #
I certify that I unloaded the cooler an	nd answered questions 7-14 (intial)	<u>DA</u>
15a. On pres'd bottles, did pH test s	trips suggest preservation reached the correct	pH level? YESNO.NA
b. Did the bottle labels indicate the	nat the correct preservatives were used	YES
16. Was residual chlorine present?		YESNO(NA)
I certify that I checked for chlorine a	nd pH as per SOP and answered questions 15-1	I6 (intial) OA
17. Were custody papers properly fi	lled out (ink, signed, etc)?	VES NONA
18. Did you sign the custody papers	in the appropriate place?	YES NO NA
19. Were correct containers used fo	r the analysis requested?	ES.NONA
20. Was sufficient amount of sample	e sent in each container?	ES.NONA
I certify that I entered this project int	o LIMS and answered questions 17-20 (intial)	
I certify that I attached a label with th	e unique LIMS number to each container (intia	NON
21. Were there Non-Conformance is	sues at login? YESNO Was a NCM generate	d? YES. (NO).#

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	1		המטטאס אניט	M2 00176
	PROJECT NUM	BER:	PROJECT NAME:	))) ) ) , , , , , , , , , , , , , , , ,
	SHIPPED TO:	120-	PRO.IFCT MANAGER:	τΔτ.
(918) 794-7828	TANASI	MULE	BRUCE MICKENZIE	STANDARD
SAMPLER'S PRINTED NAME: TERRY FISHES	iners	)		ASOW: GEN/SUB: 750-521 PROP ID: 890293
SAMPLER'S SIGNATURE	Matrix Conta	≡ (300 8260C		
Date Time Sample ID	Sample of Sample	iloridi Nzne (		Loc: 490 68603
	. #	C B		REMARKS
12-9-14 0935 MW-1	wither 1	×	•	
12-9-14 1315 MW-2	water 4	XX		
3 12-9-14 1540 MW-3	water 1	×		
4 12-9-14 1130 MW-4	water 4	XX		
5 12-9-14 1635 MW-5	Water 1	X		
6 12-9-14 1445 mw-6	woter	×		
7 12-9-14 0940 EQ Blank	evoter 4	XX		
3 12-9-14 - Dup	evater 4	XX		
1 1 100	water 2	×		
	14			
TOTAL NUMBER OF CONTAINERS				
RELINQUISHED BY:	DATE 12-11-1	Y BEOSIVED BY:		DATE $1 > 1 > 1 > 1 \neq 1 $ The $1 > 1 > 1 \neq 2 $ The $1 \neq 1 \neq 2 $ is $1 \neq 2 \neq 2 $ if $1 \neq 2 \neq $
RELINQUISHED BY:	DATE	RECEIVED BY:		DATE THE TRANSPORT
METHOD OF SHIPMENT: FED. EX		AIRBILL NUMBER:		
RECEIVED IN LABORATORY BY:	DATE	Send PDF, EDD, an	nd INVOICE (if applicable) to: JULIE CZECH at jczech	n@envirocleanps.com
LABORATORY CONTACT:		LABORATORY ADI	DRESS:	
(615) 728-0177		2960 FOSTEF	R CREIGHTON DR., NASHMILLE	, TN 37204
POINT OF ORIGIN: OKLAHOMA CITY	I NORMAN I	WOODWARD □		OTHER:
	PAGE	#2 - EINVIRO CLEAN TR		AGE 共3 - ENVIRO CLEAN OA/OC DEPT

E

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12/31/2014

Client: Enviro Clean Services LLC

#### Login Number: 68603 List Number: 1

Creator: Armstrong, Daniel

Question	Answer	Comment
Radioactivity wasn't checked or is = background as measured by a survey meter.</td <td>True</td> <td></td>	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	1.2C
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time.	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Residual Chlorine Checked.

13

Job Number: 490-68603-1 SDG Number: Property ID 890293

#### List Source: TestAmerica Nashville



THE LEADER IN ENVIRONMENTAL TESTING

# **ANALYTICAL REPORT**

## TestAmerica Laboratories, Inc.

TestAmerica Nashville 2960 Foster Creighton Drive Nashville, TN 37204 Tel: (615)726-0177

# TestAmerica Job ID: 490-74228-1

TestAmerica Sample Delivery Group: Property ID 890293 Client Project/Site: CHK STATE L-2

# For:

······ Links ······

Review your project results through

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Have a Question?

Ask-

The

www.testamericainc.com

Visit us at:

Expert

Enviro Clean Services LLC 7060 S. Yale Avenue, Suite 603 Tulsa, Oklahoma 74136

Attn: Ms. Julie Czech

Cathy Gartner

Authorized for release by: 3/26/2015 8:21:25 AM

Cathy Gartner, Project Manager I (615)301-5041 cathy.gartner@testamericainc.com

The test results in this report meet all 2003 NELAC and 2009 TNI requirements for accredited parameters, exceptions are noted in this report. This report may not be reproduced except in full, and with written approval from the laboratory. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

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## **Sample Summary**

Matrix

Water

Water

Water

Water

Water

Water

Water

Water

Water

Client: Enviro Clean Services LLC Project/Site: CHK STATE L-2

Client Sample ID

MW-1

MW-4

MW-2

MW-6

MW-3

MW-5

Dup

TRIP

EQ Blank

Lab Sample ID

490-74228-1

490-74228-2

490-74228-3

490-74228-4

490-74228-5

490-74228-6

490-74228-7

490-74228-8

490-74228-9

TestAmerica Job SDG: P

03/10/15 00:01

03/10/15 00:01

	erty ID 890293	SDG: Prope
3	Received	Collected
	03/13/15 09:00	03/10/15 09:45
	03/13/15 09:00	03/10/15 11:40
5	03/13/15 09:00	03/10/15 13:05
	03/13/15 09:00	03/10/15 14:15
	03/13/15 09:00	03/10/15 15:35
	03/13/15 09:00	03/10/15 17:00
	03/13/15 09:00	03/10/15 09:55

03/13/15 09:00

03/13/15 09:00

#### Job ID: 490-74228-1

#### Laboratory: TestAmerica Nashville

Narrative

Job Narrative 490-74228-1

#### Comments

No additional comments.

#### Receipt

The samples were received on 3/13/2015 9:00 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 1.4° C.

#### GC/MS VOA

Method(s) 8260B: The continuing calibration verification (CCV) associated with batch 235618 recovered above the upper control limit for Acetone and 2-Methyl-2-propanol. The samples associated with this CCV were non-detects for the affected analytes; therefore, the data have been reported. The following samples are impacted: (CCVIS 490-235618/3).

Method(s) 8260B: The continuing calibration verification (CCV) associated with batch 235872 recovered above the upper control limit for Acetone. The samples associated with this CCV were non-detects for the affected analytes; therefore, the data have been reported. The following samples are impacted: (CCVIS 490-235872/2).

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

#### HPLC/IC

No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

#### VOA Prep

No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

## Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.	
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis	
%R	Percent Recovery	5
CFL	Contains Free Liquid	J
CNF	Contains no Free Liquid	
DER	Duplicate error ratio (normalized absolute difference)	
Dil Fac	Dilution Factor	
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample	
DLC	Decision level concentration	
MDA	Minimum detectable activity	8
EDL	Estimated Detection Limit	
MDC	Minimum detectable concentration	9
MDL	Method Detection Limit	
ML	Minimum Level (Dioxin)	
NC	Not Calculated	
ND	Not detected at the reporting limit (or MDL or EDL if shown)	
PQL	Practical Quantitation Limit	
QC	Quality Control	
RER	Relative error ratio	
RL	Reporting Limit or Requested Limit (Radiochemistry)	
RPD	Relative Percent Difference, a measure of the relative difference between two points	
TEF	Toxicity Equivalent Factor (Dioxin)	
TEQ	Toxicity Equivalent Quotient (Dioxin)	

Client: Enviro Clean Services LLC Project/Site: CHK STATE L-2

6

#### **Client Sample ID: MW-1** Lab Sample ID: 490-74228-1 Date Collected: 03/10/15 09:45 Matrix: Water Date Received: 03/13/15 09:00 Method: 300.0 - Anions, Ion Chromatography Analyte Result Qualifier RL MDL Unit D Prepared Analyzed Dil Fac Chloride 23.2 1.00 mg/L 03/20/15 06:19 1

## Client Sample ID: MW-4 Date Collected: 03/10/15 11:40

Date Received: 03/13/15 09:00

Method: 8260B - Volatile Organic Compounds (GC/MS)

## Lab Sample ID: 490-74228-2 Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		0.500		ug/L			03/17/15 18:38	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	104		70 - 130			-		03/17/15 18:38	1
4-Bromofluorobenzene (Surr)	100		70 _ 130					03/17/15 18:38	1
Dibromofluoromethane (Surr)	95		70 - 130					03/17/15 18:38	1
Toluene-d8 (Surr)	104		70 - 130					03/17/15 18:38	1
- Method: 300.0 - Anions, Ion C	hromatography								
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	238		2.00		mg/L			03/25/15 13:41	2

## Client Sample ID: MW-2 Date Collected: 03/10/15 13:05

Date Received: 03/13/15 09:00

## Lab Sample ID: 490-74228-3 Matrix: Water

6

5

Method: 8260B - Volatile Orga	nic Compounds	(GC/MS)							
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		0.500		ug/L			03/17/15 19:04	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	105		70 - 130			-		03/17/15 19:04	1
4-Bromofluorobenzene (Surr)	98		70 _ 130					03/17/15 19:04	1
Dibromofluoromethane (Surr)	96		70 - 130					03/17/15 19:04	1
Toluene-d8 (Surr)	103		70 - 130					03/17/15 19:04	1
Method: 300.0 - Anions, Ion C	hromatography								
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	263		5.00		mg/L			03/20/15 06:57	5

1.00

mg/L

Client: Enviro Clean Services LLC Project/Site: CHK STATE L-2

Chloride

03/20/15 07:17

Matrix: Water

Dil Fac

1

#### **Client Sample ID: MW-6** Lab Sample ID: 490-74228-4 Date Collected: 03/10/15 14:15 Date Received: 03/13/15 09:00 Method: 300.0 - Anions, Ion Chromatography Analyte Result Qualifier RL MDL Unit D Prepared Analyzed

160

6

1.00

mg/L

Client: Enviro Clean Services LLC Project/Site: CHK STATE L-2

Chloride

03/20/15 08:14

#### **Client Sample ID: MW-3** Lab Sample ID: 490-74228-5 Date Collected: 03/10/15 15:35 Matrix: Water Date Received: 03/13/15 09:00 Method: 300.0 - Anions, Ion Chromatography Analyte Result Qualifier RL MDL Unit D Prepared Analyzed

79.5

Dil Fac 1 6

Client: Enviro Clean Services LLC Project/Site: CHK STATE L-2

6

#### **Client Sample ID: MW-5** Lab Sample ID: 490-74228-6 Date Collected: 03/10/15 17:00 Matrix: Water Date Received: 03/13/15 09:00 Method: 300.0 - Anions, Ion Chromatography Analyte Result Qualifier RL MDL Unit D Prepared Analyzed Dil Fac Chloride 102 1.00 mg/L 03/20/15 08:33 1

## **Client Sample ID: EQ Blank** Date Collected: 03/10/15 09:55

Method: 8260B - Volatile Organic Compounds (GC/MS)

Result Qualifier

## Date Received: 03/13/15 09:00

Analyte

## Lab Sample ID: 490-74228-7 Matrix: Water

Analyzed

6

Dil Fac

1

Benzene	ND		0.500	ug/L			03/17/15 14:15	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	102		70 - 130				03/17/15 14:15	1
4-Bromofluorobenzene (Surr)	98		70 - 130				03/17/15 14:15	1
Dibromofluoromethane (Surr)	94		70 - 130				03/17/15 14:15	1
Toluene-d8 (Surr)	103		70 - 130				03/17/15 14:15	1
- Method: 300.0 - Anions, Ion C	hromatography							
Analyte	Result	Qualifier	RL	MDL Unit	D	Prepared	Analyzed	Dil Fac
Chloride	ND		1.00	mg/L			03/20/15 08:52	1

RL

MDL Unit

D

Prepared

Method: 8260B - Volatile Organic Compounds (GC/MS)

#### Client Sample ID: Dup Date Collected: 03/10/15 00:01 Date Received: 03/13/15 09:00

## Lab Sample ID: 490-74228-8 Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		0.500		ug/L			03/17/15 19:30	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	102		70 - 130			-		03/17/15 19:30	1
4-Bromofluorobenzene (Surr)	98		70 - 130					03/17/15 19:30	1
Dibromofluoromethane (Surr)	96		70 - 130					03/17/15 19:30	1
Toluene-d8 (Surr)	102		70 - 130					03/17/15 19:30	1
Method: 300.0 - Anions, Ion C	hromatography								
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	264		5.00		mg/L			03/20/15 09:11	5

RL

0.500

Limits

70 - 130

70 - 130

70 - 130

70 - 130

MDL Unit

ug/L

## Client Sample ID: TRIP Date Collected: 03/10/15 00:01

Date Received: 03/13/15 09:00

1,2-Dichloroethane-d4 (Surr)

4-Bromofluorobenzene (Surr)

Dibromofluoromethane (Surr)

Toluene-d8 (Surr)

Analyte

Benzene

Surrogate

Method: 8260B - Volatile Organic Compounds (GC/MS)

Result Qualifier

Qualifier

ND

103

98

100

98

%Recovery

## Lab Sample ID: 490-74228-9 Matrix: Water

Analyzed

03/24/15 15:22

Analyzed

03/24/15 15:22

03/24/15 15:22

03/24/15 15:22

03/24/15 15:22

Prepared

Prepared

D

Dil Fac

Dil Fac

1

1

1

1

1

## Method: 8260B - Volatile Organic Compounds (GC/MS)

Lab Sample ID: MB 490-234265/	8							C	lient S	ample ID:	Method	l Blank
Matrix: Water										Prep T	ype: To	otal/NA
Analysis Batch: 234265												
	-	MB MB					_	_	_			
Analyte	Res	ult Qualifier			MDL Unit		D	Pre	pared	Analyz	ed	Dil Fac
Benzene	I	ND	0.500		ug/L					03/17/15	13:23	1
	I	ИВ МВ										
Surrogate	%Recov	ery Qualifier	Limits					Pre	pared	Analyz	ed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	1	104	70 - 130							03/17/15	13:23	1
4-Bromofluorobenzene (Surr)		98	70 - 130							03/17/15	13:23	1
Dibromofluoromethane (Surr)		95	70 - 130							03/17/15	13:23	1
Toluene-d8 (Surr)	1	02	70 - 130							03/17/15	13:23	1
Lab Sample ID: LCS 490-234265	5/4						Clie	ent S	Sample	ID: Lab Co	ontrol S	Sample
Matrix: Water										Prep T	vpe: To	otal/NA
Analysis Batch: 234265												
			Spike	LCS	LCS					%Rec.		
Analyte			Added	Result	Qualifier	Unit		D	%Rec	Limits		
Benzene			50.0	53.04		ug/L			106	80 - 121		
	%Recovery 0	Qualifier	Limits									
1,2-Dichloroethane-d4 (Surr)	104		70 - 130									
4-Bromofluorobenzene (Surr)	97		70 - 130									
Dibromofluoromethane (Surr)	94		70 - 130									
Lab Sample ID: LCSD 490-23420 Matrix: Water	65/5					CI	ient S	amp	le ID: I	Lab Contro Prep T	l Samp ype: To	le Dup otal/NA
Lab Sample ID: LCSD 490-23420 Matrix: Water Analysis Batch: 234265	65/5		Snika			CI	ient S	amp	ole ID: I	Lab Contro Prep T	l Samp ype: To	otal/NA
Lab Sample ID: LCSD 490-23420 Matrix: Water Analysis Batch: 234265	65/5		Spike	LCSD	LCSD	CI	ient S	amp	ole ID: I	Lab Contro Prep T %Rec.	I Samp ype: To	n <mark>le Dup</mark> tal/NA RPD
Lab Sample ID: LCSD 490-23420 Matrix: Water Analysis Batch: 234265 Analyte	65/5		Spike Added	LCSD Result	LCSD Qualifier		ient S	amp	%Rec	Lab Contro Prep T %Rec. Limits	I Samp ype: To 	RPD Limit
Lab Sample ID: LCSD 490-23420 Matrix: Water Analysis Batch: 234265 Analyte Benzene	65/5		<b>Spike</b> <u>Added</u> 50.0	LCSD Result 54.04	LCSD Qualifier	CI - Unit ug/L	ient S	amp	<b>%Rec</b> 108	Lab Contro Prep T %Rec. Limits 80 - 121	I Samp ype: To 2	RPD Limit
Lab Sample ID: LCSD 490-23420 Matrix: Water Analysis Batch: 234265 Analyte Benzene	55/5		Spike Added 50.0	LCSD Result 54.04	LCSD Qualifier	CI Unit ug/L	ient S	amp	<b>%Rec</b> 108	Lab Contro Prep T %Rec. Limits 80 - 121	I Samp ype: To RPD 2	RPD Limit 17
Lab Sample ID: LCSD 490-23420 Matrix: Water Analysis Batch: 234265 Analyte Benzene Surrogate	LCSD L %Recovery (	.CSD Qualifier	Spike Added 50.0	LCSD Result 54.04	LCSD Qualifier	Cl Unit ug/L	ient S	amp	<b>%Rec</b> 108	Lab Contro Prep T %Rec. Limits 80 - 121	I Samp ype: To <u>RPD</u> 2	RPD Limit
Lab Sample ID: LCSD 490-23420 Matrix: Water Analysis Batch: 234265 Analyte Benzene Surrogate 1,2-Dichloroethane-d4 (Surr)	55/5 LCSD L %Recovery C 105	.CSD Qualifier	Spike Added 50.0 Limits 70 - 130	LCSD Result 54.04	LCSD Qualifier	Cl Unit ug/L	ient S	amp	<b>%Rec</b> 108	Lab Contro Prep T %Rec. Limits 80 - 121	I Samp ype: To RPD 2	RPD Limit 17
Lab Sample ID: LCSD 490-23420 Matrix: Water Analysis Batch: 234265 Analyte Benzene Surrogate 1,2-Dichloroethane-d4 (Surr) 4-Bromofiluorobenzene (Surr)	55/5 LCSD L %Recovery C 105 97	.CSD Qualifier	Spike Added 50.0 Limits 70 - 130 70 - 130	LCSD Result 54.04	LCSD Qualifier	CI ug/L	ient S	amp	<b>%Rec</b> 108	Lab Contro Prep T %Rec. Limits 80 - 121	I Samp ype: To 2	le Dup otal/NA RPD Limit 17
Lab Sample ID: LCSD 490-23424 Matrix: Water Analysis Batch: 234265 Analyte Benzene Surrogate 1,2-Dichloroethane-d4 (Surr) 4-Bromofluorobenzene (Surr) Dibromofluoromethane (Surr)	55/5 LCSD L %Recovery C 105 97 93	.CSD Qualifier	Spike Added 50.0 Limits 70 - 130 70 - 130 70 - 130	LCSD Result 54.04	LCSD Qualifier	CI unit ug/L	ient S	<u>D</u>	%Rec 108	Lab Contro Prep T %Rec. Limits 80 - 121	I Samp ype: To <u>RPD</u> 2	le Dup otal/NA RPD Limit 17
Lab Sample ID: LCSD 490-23424 Matrix: Water Analysis Batch: 234265 Analyte Benzene Surrogate 1,2-Dichloroethane-d4 (Surr) 4-Bromofluorobenzene (Surr) Dibromofluoromethane (Surr) Toluene-d8 (Surr)	LCSD L %Recovery 0 105 97 93 102	.CSD Qualifier	Spike           Added           50.0           Limits           70 - 130           70 - 130           70 - 130           70 - 130           70 - 130	LCSD Result 54.04	LCSD Qualifier	CI	ient S	D	%Rec 108	Lab Contro Prep T %Rec. Limits 80 - 121	I Samp ype: To RPD 2	le Dup otal/NA RPD Limit 17
Lab Sample ID: LCSD 490-23424 Matrix: Water Analysis Batch: 234265 Analyte Benzene Surrogate 1,2-Dichloroethane-d4 (Surr) 4-Bromofluorobenzene (Surr) Dibromofluoromethane (Surr) Toluene-d8 (Surr) Lab Sample ID: 490-74166-B-1 M	LCSD L %Recovery 0 105 97 93 102	.CSD Qualifier	Spike           Added           50.0           Limits           70 - 130           70 - 130           70 - 130           70 - 130           70 - 130	LCSD Result 54.04	LCSD Qualifier	CI ug/L	ient S	D	%Rec 108	Lab Contro Prep T %Rec. Limits 80 - 121	I Samp ype: To 2	RPD Limit 17
Lab Sample ID: LCSD 490-23424 Matrix: Water Analysis Batch: 234265 Analyte Benzene Surrogate 1,2-Dichloroethane-d4 (Surr) 4-Bromofluorobenzene (Surr) Dibromofluoromethane (Surr) Toluene-d8 (Surr) Lab Sample ID: 490-74166-B-1 M Matrix: Water	LCSD L %Recovery 0 105 97 93 102	.CSD Qualifier	Spike           Added           50.0           Limits           70 - 130           70 - 130           70 - 130           70 - 130           70 - 130	LCSD Result 54.04	LCSD Qualifier	CI ug/L	ient S	D	%Rec 108	Lab Contro Prep T %Rec. Limits 80 - 121 Sample ID Prep T	I Samp ype: To 2 : Matrix ype: To	A Spike otal/NA
Lab Sample ID: LCSD 490-23424 Matrix: Water Analysis Batch: 234265 Analyte Benzene Surrogate 1,2-Dichloroethane-d4 (Surr) 4-Bromofluorobenzene (Surr) Dibromofluoromethane (Surr) Toluene-d8 (Surr) Lab Sample ID: 490-74166-B-1 M Matrix: Water Analysis Batch: 234265	LCSD L %Recovery 0 105 97 93 102	.CSD Qualifier	Spike           Added           50.0           Limits           70 - 130           70 - 130           70 - 130           70 - 130           70 - 130	LCSD Result 54.04	LCSD Qualifier	CI ug/L	ient S	D _	%Rec 108	Lab Contro Prep T %Rec. Limits 80 - 121 Sample ID Prep T	I Samp ype: To 2 : Matrix ype: To	A Spike otal/NA
Lab Sample ID: LCSD 490-23424 Matrix: Water Analysis Batch: 234265 Analyte Benzene Surrogate 1,2-Dichloroethane-d4 (Surr) 4-Bromofluorobenzene (Surr) Dibromofluoromethane (Surr) Toluene-d8 (Surr) Lab Sample ID: 490-74166-B-1 M Matrix: Water Analysis Batch: 234265	LCSD L %Recovery 0 105 97 93 102 NS Sample S	.CSD Qualifier	Spike           Added           50.0           Limits           70 - 130           70 - 130           70 - 130           70 - 130           70 - 130           70 - 130	LCSD Result 54.04	LCSD Qualifier	CI ug/L	ient S	<b>D</b>	%Rec 108	Lab Contro Prep T %Rec. Limits 80 - 121 Sample ID Prep T %Rec.	I Samp ype: To 2 : Matrix ype: To	A Spike otal/NA
Lab Sample ID: LCSD 490-23424 Matrix: Water Analysis Batch: 234265 Analyte Benzene Surrogate 1,2-Dichloroethane-d4 (Surr) 4-Bromofluorobenzene (Surr) Dibromofluoromethane (Surr) Toluene-d8 (Surr) Lab Sample ID: 490-74166-B-1 M Matrix: Water Analysis Batch: 234265 Analyte	55/5 <i>LCSD L</i> %Recovery 0 105 97 93 102 MS Sample 5 Result 0	CSD Qualifier	Spike           Added           50.0           Limits           70 - 130           70 - 130           70 - 130           70 - 130           70 - 130           Spike           Added	LCSD Result 54.04 MS Result	LCSD Qualifier MS Qualifier	CI ug/L	ient S	D _	%Rec 108	Lab Contro Prep T %Rec. Limits 80 - 121 Sample ID Prep T %Rec. Limits	I Samp ype: To 2 : Matrix ype: To	RPD Limit 17
Lab Sample ID: LCSD 490-23424 Matrix: Water Analysis Batch: 234265 Analyte Benzene Surrogate 1,2-Dichloroethane-d4 (Surr) 4-Bromofluorobenzene (Surr) Dibromofluoromethane (Surr) Toluene-d8 (Surr) Lab Sample ID: 490-74166-B-1 M Matrix: Water Analysis Batch: 234265 Analyte Benzene	55/5 <i>LCSD L</i> %Recovery 0 105 97 93 102 MS Sample 5 Result 0 ND 7	CSD Qualifier	Spike           Added           50.0           Limits           70 - 130           70 - 130           70 - 130           70 - 130           70 - 130           50.0	LCSD Result 54.04 MS Result 52.63	LCSD Qualifier MS Qualifier	CI ug/L	ient S	D	%Rec           108           Client           %Rec           105	Lab Contro Prep T %Rec. Limits 80 - 121 Sample ID Prep T %Rec. Limits 75 - 133	I Samp ype: To RPD 2 : Matrix ype: To	A C Spike
Lab Sample ID: LCSD 490-23424 Matrix: Water Analysis Batch: 234265 Analyte Benzene Surrogate 1,2-Dichloroethane-d4 (Surr) 4-Bromofluorobenzene (Surr) Dibromofluoromethane (Surr) Toluene-d8 (Surr) Lab Sample ID: 490-74166-B-1 M Matrix: Water Analysis Batch: 234265 Analyte Benzene	55/5 LCSD L %Recovery C 105 97 93 102 MS Sample S Result C ND	CSD Qualifier	Spike           Added           50.0           Limits           70 - 130           70 - 130           70 - 130           70 - 130           70 - 130           50.0	LCSD Result 54.04 MS Result 52.63	LCSD Qualifier MS Qualifier	CI ug/L	ient S	D	%Rec           108           Client           %Rec           105	Lab Contro Prep T %Rec. Limits 80 - 121 Sample ID Prep T %Rec. Limits 75 - 133	I Samp ype: To 2 : Matrix ype: To	A Spike
Lab Sample ID: LCSD 490-23424 Matrix: Water Analysis Batch: 234265 Analyte Benzene Surrogate 1,2-Dichloroethane-d4 (Surr) 4-Bromofluorobenzene (Surr) Dibromofluoromethane (Surr) Toluene-d8 (Surr) Lab Sample ID: 490-74166-B-1 M Matrix: Water Analysis Batch: 234265 Analyte Benzene	55/5 <i>LCSD L</i> %Recovery 0 105 97 93 102 MS Sample 5 Result 0 MS M %Recovery 0	CSD Qualifier	Spike           Added           50.0           Limits           70 - 130           70 - 130           70 - 130           70 - 130           50.0	LCSD Result 54.04 MS Result 52.63	LCSD Qualifier MS Qualifier	CI ug/L	ient S	D	%Rec           108           Client           %Rec           105	Lab Contro Prep T %Rec. Limits 80 - 121 Sample ID Prep T %Rec. Limits 75 - 133	I Samp ype: To 2 : Matrix ype: To	A Spike
Lab Sample ID: LCSD 490-23424 Matrix: Water Analysis Batch: 234265 Analyte Benzene Surrogate 1,2-Dichloroethane-d4 (Surr) 4-Bromofluorobenzene (Surr) Dibromofluoromethane (Surr) Toluene-d8 (Surr) Lab Sample ID: 490-74166-B-1 M Matrix: Water Analysis Batch: 234265 Analyte Benzene Surrogate 1,2-Dichlorgethane-d4 (Surr)	LCSD L %Recovery Q 105 97 93 102 NS Sample S Result Q ND S MS M %Recovery Q 106	CSD Qualifier Sample Qualifier //S Qualifier	Spike           Added           50.0           Limits           70 - 130           70 - 130           70 - 130           70 - 130           50.0           Spike           Added           50.0	LCSD Result 54.04 MS Result 52.63	LCSD Qualifier MS Qualifier	CI ug/L	ient S	D	%Rec           108           Client           %Rec           105	Lab Contro Prep T %Rec. Limits 80 - 121 Sample ID Prep T %Rec. Limits 75 - 133	I Samp ype: To 2 : Matrix ype: To	A Spike
Lab Sample ID: LCSD 490-23424 Matrix: Water Analysis Batch: 234265 Analyte Benzene Surrogate 1,2-Dichloroethane-d4 (Surr) 4-Bromofluorobenzene (Surr) Dibromofluoromethane (Surr) Toluene-d8 (Surr) Lab Sample ID: 490-74166-B-1 N Matrix: Water Analysis Batch: 234265 Analyte Benzene Surrogate 1,2-Dichloroethane-d4 (Surr) 4-Bromofluorobenzene (Surr)	55/5 LCSD L %Recovery 0 105 97 93 102 MS Sample 5 Result 0 ND 5 MS M %Recovery 0 106 97	CSD Qualifier Sample Qualifier VIS Qualifier	Spike           Added           50.0           Limits           70 - 130           70 - 130           70 - 130           70 - 130           70 - 130           50.0           Limits           50.0           Limits           70 - 130           50.0           Limits           70 - 130           70 - 130	LCSD Result 54.04 MS Result 52.63	LCSD Qualifier MS Qualifier	CI ug/L	ient S	D	%Rec           108           Client           %Rec           105	Lab Contro Prep T %Rec. Limits 80 - 121 Sample ID Prep T %Rec. Limits 75 - 133	I Samp ype: To 2 : Matrix ype: To	a Spike
Lab Sample ID: LCSD 490-23424 Matrix: Water Analysis Batch: 234265 Analyte Benzene Surrogate 1,2-Dichloroethane-d4 (Surr) 4-Bromofluoromethane (Surr) Dibromofluoromethane (Surr) Toluene-d8 (Surr) Lab Sample ID: 490-74166-B-1 N Matrix: Water Analysis Batch: 234265 Analyte Benzene Surrogate 1,2-Dichloroethane-d4 (Surr) 4-Bromofluorobenzene (Surr) Dibromofluoromethane (Surr)	55/5 LCSD L %Recovery C 105 97 93 102 MS Sample S Result C ND 7 %Recovery C 106 97 93 102	CSD Qualifier Sample Qualifier MS Qualifier	Spike           Added           50.0           Limits           70 - 130           70 - 130           70 - 130           70 - 130           70 - 130           50.0           Limits           50.0           Limits           70 - 130           50.0           Limits           70 - 130           70 - 130           70 - 130           70 - 130	LCSD Result 54.04 MS Result 52.63	LCSD Qualifier MS Qualifier	CI ug/L	ient S		%Rec           108           Client           %Rec           105	Lab Contro Prep T %Rec. Limits 80 - 121 Sample ID Prep T %Rec. Limits 75 - 133	I Samp ype: To 2 : Matrix ype: To	A Spike
**Client Sample ID: Method Blank** 

Prep Type: Total/NA

5 6

7

#### Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: 490-74166-C	-1 MSD						Client Sa	ample IC	D: Matrix Sp	oike Dup	olicate
Matrix: Water									Prep T	ype: To	tal/NA
Analysis Batch: 234265											
	Sample	Sample	Spike	MSD	MSD				%Rec.		RPD
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Benzene	ND		50.0	54.64		ug/L		109	75 _ 133	4	17
	MSD	MSD									
Surrogate	%Recovery	Qualifier	Limits								
1,2-Dichloroethane-d4 (Surr)	106		70 - 130								
4-Bromofluorobenzene (Surr)	97		70 - 130								
Dibromofluoromethane (Surr)	94		70 - 130								
Toluene-d8 (Surr)	104		70 - 130								

#### Lab Sample ID: MB 490-235872/7 Matrix: Water

#### Analysis Batch: 235872

	MB	мв							
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		0.500		ug/L			03/24/15 13:32	1
	MB	МВ							
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	104		70 - 130			-		03/24/15 13:32	1
4-Bromofluorobenzene (Surr)	96		70 - 130					03/24/15 13:32	1
Dibromofluoromethane (Surr)	100		70 - 130					03/24/15 13:32	1
Toluene-d8 (Surr)	98		70 - 130					03/24/15 13:32	1

#### Lab Sample ID: LCS 490-235872/3 Matrix: Water

#### Analysis Batch: 235872

-	Spike	LCS	LCS				%Rec.	
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	
1,1,1,2-Tetrachloroethane	50.0	53.53		ug/L		107	74 _ 135	
1,1,1-Trichloroethane	50.0	48.58		ug/L		97	78 - 135	
1,1,2,2-Tetrachloroethane	50.0	56.14		ug/L		112	69 _ 131	
Benzene	50.0	50.10		ug/L		100	80 - 121	

	LCS	LCS	
Surrogate	%Recovery	Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	100		70 - 130
4-Bromofluorobenzene (Surr)	100		70 - 130
Dibromofluoromethane (Surr)	100		70 - 130
Toluene-d8 (Surr)	97		70 - 130

#### Lab Sample ID: LCSD 490-235872/4 Matrix: Water Analysis Batch: 235872

#### Spike LCSD LCSD %Rec. RPD Analyte Added Result Qualifier Unit D %Rec Limits RPD Limit 1,1,1,2-Tetrachloroethane 50.0 53.99 108 74 - 135 ug/L 1 16 ug/L 1,1,1-Trichloroethane 50.0 48.60 97 78 - 135 17 0 1,1,2,2-Tetrachloroethane 50.0 56.94 ug/L 114 69 - 131 20 1 Benzene 50.0 50.06 ug/L 100 80 - 121 17 0

#### **Client Sample ID: Lab Control Sample** Prep Type: Total/NA

Prep Type: Total/NA

Client Sample ID: Lab Control Sample Dup

TestAmerica Nashville

**Client Sample ID: Matrix Spike** 

Prep Type: Total/NA

#### Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

#### Lab Sample ID: LCSD 490-235872/4

#### Matrix: Water

#### Analysis Batch: 235872

	LCSD	LCSD	
Surrogate	%Recovery	Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	99		70 - 130
4-Bromofluorobenzene (Surr)	99		70 - 130
Dibromofluoromethane (Surr)	100		70 - 130
Toluene-d8 (Surr)	99		70 - 130

#### Lab Sample ID: 490-74760-B-1 MS

#### Matrix: Water Analysis Ratch: 225972

Analysis Batch: 235672										
	Sample	Sample	Spike	MS	MS				%Rec.	
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	
1,1,1,2-Tetrachloroethane	ND		50.0	52.57		ug/L		105	73 _ 141	 
1,1,1-Trichloroethane	ND		50.0	50.68		ug/L		101	76 _ 149	
1,1,2,2-Tetrachloroethane	ND		50.0	54.81		ug/L		110	56 - 143	
Benzene	ND		50.0	51.93		ug/L		104	75 <sub>-</sub> 133	

	MS	MS	
Surrogate	%Recovery	Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	98		70 - 130
4-Bromofluorobenzene (Surr)	99		70 - 130
Dibromofluoromethane (Surr)	96		70 - 130
Toluene-d8 (Surr)	96		70 - 130

#### Lab Sample ID: 490-74760-C-1 MSD Matrix: Water Analysis Batch: 235872

#### Sample Sample MSD MSD RPD Spike %Rec. RPD Analyte Result Qualifier Added **Result Qualifier** Unit D %Rec Limits Limit 1,1,1,2-Tetrachloroethane ND 50.0 54.29 ug/L 109 73 - 141 3 16 1,1,1-Trichloroethane ND 50.0 53.63 ug/L 107 76 - 149 17 6 1,1,2,2-Tetrachloroethane ND 50.0 55.56 ug/L 111 56 - 143 1 20 Benzene ND 50.0 52.96 ug/L 106 75 - 133 2 17

	MSD	MSD	
Surrogate	%Recovery	Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	98		70 - 130
4-Bromofluorobenzene (Surr)	99		70 - 130
Dibromofluoromethane (Surr)	99		70 - 130
Toluene-d8 (Surr)	96		70 - 130

#### Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 490-235032/3 Matrix: Water	35032/3						Client S	ample ID: Metho Prep Type: T	d Blank <sup>'</sup> otal/NA
Analysis Batch: 235032									
	MB	МВ							
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	ND		1.00		mg/L			03/20/15 03:08	1

## Client Sample ID: Matrix Spike Duplicate

Prep Type: Total/NA

## TestAmerica Nashville

#### Method: 300.0 - Anions, Ion Chromatography (Continued)

Lab Sample ID: LCS 490-2350	32/4						Clien	t Sample	ID: Lab C	ontrol S	ample
Matrix: Water									Prep T	ype: To	tal/NA
Analysis Batch: 235032											
			Spike	LCS	LCS				%Rec.		
Analyte			Added	Result	Qualifier	Unit	D	%Rec	Limits		
Chloride			100	99.36		mg/L		99	90 _ 110		
Lab Sample ID: 490-74199-C-1	MS							Client	Sample ID	: Matrix	Spike
Matrix: Water									Prep T	ype: To	tal/NA
Analysis Batch: 235032											
	Sample	Sample	Spike	MS	MS				%Rec.		
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits		
Chloride	4.81		100	102.8		mg/L		98	80 - 120		
Lab Sample ID: 490-74199-C-1	MSD					c	lient S	ample II	): Matrix Si	oike Dur	olicate
Matrix: Water									Pren T	vne: To	tal/NA
Analysis Batch: 235032										,	
Analysis Baton: 200002	Sample	Sample	Spike	MSD	MSD				%Rec.		RPD
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Chloride	4.81		100	107.9		mg/L		103	80 - 120	5	20
Lab Sample ID: MB 490-23617	5/3							Client S	Sample ID:	Method	Blank
Matrix: Water									Prep T	ype: To	tal/NA
Analysis Batch: 236175											
		MB MB									
Analyte	Re	MB MB esult Qualifier	r	RL	MDL Unit		D	Prepared	Analyz	ed	Dil Fac
Analyte Chloride	Re	MB MB esult Qualified ND	r	RL	MDL Unit mg/L		D	Prepared	Analyz 03/25/15	<b>ed</b> 05:20	Dil Fac
Analyte Chloride	Re	MB MB esult Qualifier	r	RL 1.00	MDL Unit mg/L			Prepared	Analyz 03/25/15	ed 05:20	Dil Fac 1
Analyte Chloride Lab Sample ID: LCS 490-2361 Matrix: Water	R(	MB MB esult Qualifier	r	RL 1.00	MDL Unit mg/L		D I	Prepared t Sample	Analyz 03/25/15 D: Lab C Prep T	ontrol S	Dil Fac 1 ample tal/NA
Analyte Chloride Lab Sample ID: LCS 490-2361 Matrix: Water Analysis Batch: 236175	Re	MB MB esult Qualifier	<u>,                                    </u>	RL 1.00	MDL Unit mg/L		D	Prepared t Sample	Analyz 03/25/15 e ID: Lab C Prep T	ontrol S	Dil Fac 1 ample tal/NA
Analyte Chloride Lab Sample ID: LCS 490-2361 Matrix: Water Analysis Batch: 236175	Re	MB MB esult Qualifier	Spike	RL	MDL Unit mg/L		D I	Prepared t Sample	Analyz 03/25/15 D: Lab C Prep T %Rec.	ontrol S	Dil Fac 1 ample tal/NA
Analyte Chloride Lab Sample ID: LCS 490-2361 Matrix: Water Analysis Batch: 236175 Analyte	R(	MB MB esult Qualifier ND	Spike Added	RL 1.00 LCS Result	MDL Unit mg/L LCS Qualifier	Unit	D I	Prepared t Sample %Rec	Analyz 03/25/15 Prep T %Rec. Limits	ontrol S	Dil Fac 1 ample tal/NA
Analyte Chloride Lab Sample ID: LCS 490-2361 Matrix: Water Analysis Batch: 236175 Analyte Chloride	Re	MB MB esult Qualified ND	Spike Added 100	RL 1.00 LCS Result 100.5	MDL Unit mg/L LCS Qualifier	Unit mg/L	D I	Prepared t Sample <u>%Rec</u> 101	Analyz 03/25/15 e ID: Lab Co Prep T %Rec. Limits 90 - 110	ontrol S	Dil Fac 1 ample tal/NA
Analyte Chloride Lab Sample ID: LCS 490-2361 Matrix: Water Analysis Batch: 236175 Analyte Chloride	R	MB MB esult Qualifier ND	Spike Added 100	RL           1.00           LCS           Result           100.5	MDL Unit mg/L LCS Qualifier	Unit mg/L	D I	Prepared t Sample <u>%Rec</u> 101	Analyz 03/25/15 D: Lab C Prep T %Rec. Limits 90 - 110	ontrol S ype: To	Dil Fac 1 ample tal/NA
Analyte Chloride Lab Sample ID: LCS 490-2361 Matrix: Water Analysis Batch: 236175 Analyte Chloride Lab Sample ID: LCSD 490-236	Ra	MB MB esult Qualifier ND	Spike Added 100	RL 1.00 LCS Result 100.5	MDL Unit mg/L LCS Qualifier	Unit mg/L Clie	Clien	Prepared t Sample <u>%Rec</u> 101 mple ID:	Analyz 03/25/15 D: Lab C Prep T %Rec. Limits 90 - 110 Lab Contro	ontrol S. ype: To	Dil Fac 1 ample tal/NA e Dup
Analyte Chloride Lab Sample ID: LCS 490-2361 Matrix: Water Analysis Batch: 236175 Analyte Chloride Lab Sample ID: LCSD 490-236 Matrix: Water	Ra	MB MB esult Qualifier ND	Spike Added 100	RL 1.00 LCS Result 100.5	MDL Unit mg/L LCS Qualifier	Unit mg/L Clie	Clien	Prepared t Sample <u>%Rec</u> 101 mple ID:	Analyz 03/25/15 a ID: Lab Co Prep T %Rec. Limits 90 - 110 Lab Contro Prep T	ed 05:20 ontrol S ype: To Sampl Sampl ype: To	Dil Fac 1 ample tal/NA e Dup tal/NA
Analyte Chloride Lab Sample ID: LCS 490-2361 Matrix: Water Analysis Batch: 236175 Analyte Chloride Lab Sample ID: LCSD 490-236 Matrix: Water Analysis Batch: 236175	Ra	MB MB esult Qualifier	Spike Added 100	RL 1.00 LCS Result 100.5	MDL Unit mg/L LCS Qualifier	Unit mg/L Clie	D Clien D_ ent Sar	Prepared t Sample <u>%Rec</u> 101 mple ID:	Analyz 03/25/15 e ID: Lab Co Prep T %Rec. Limits 90 - 110 Lab Contro Prep T	ed 05:20 ontrol S ype: To Sampl ype: To	Dil Fac 1 ample tal/NA e Dup tal/NA
Analyte Chloride Lab Sample ID: LCS 490-2361 Matrix: Water Analysis Batch: 236175 Analyte Chloride Lab Sample ID: LCSD 490-236 Matrix: Water Analysis Batch: 236175 Analysis Batch: 236175	R	MB MB esult Qualifier	Spike Added 100 Spike	RL 1.00 LCS Result 100.5	MDL Unit mg/L LCS Qualifier	Unit mg/L Clie	Clien	Prepared t Sample <u>%Rec</u> 101 nple ID:	Analyz 03/25/15 a ID: Lab Co Prep T %Rec. Limits 90 - 110 Lab Contro Prep T %Rec.	ontrol S ype: To Sampl ype: To	Dil Fac 1 ample tal/NA e Dup tal/NA RPD
Analyte Chloride Lab Sample ID: LCS 490-2361 Matrix: Water Analysis Batch: 236175 Analyte Chloride Lab Sample ID: LCSD 490-236 Matrix: Water Analysis Batch: 236175 <u>Analyte</u> Chloride	R	MB MB esult Qualifier	Spike Added 100 Spike Added 100	RL           1.00           LCS           Result           100.5           LCSD           Result           102.2	MDL Unit mg/L LCS Qualifier	Unit mg/L Clic	Clien Clien D ent Sar	Prepared t Sample <u>%Rec</u> 101 nple ID: <u>%Rec</u> 102	Analyz 03/25/15 D: Lab C: Prep T %Rec. Limits 90 - 110 Lab Contro Prep T %Rec. Limits 90 - 110	ed 05:20 - ontrol S. ype: To Sampl ype: To RPD 2	Dil Fac 1 ample tal/NA e Dup tal/NA RPD Limit 20
Analyte Chloride Lab Sample ID: LCS 490-2361 Matrix: Water Analysis Batch: 236175 Analyte Chloride Lab Sample ID: LCSD 490-236 Matrix: Water Analysis Batch: 236175 Analyte Chloride	R	MB MB esult ND	Spike Added 100 Spike Added 100	RL           1.00           LCS           Result           100.5           LCSD           Result           102.2	MDL Unit mg/L LCS Qualifier	Unit mg/L Clie Unit mg/L	D Clien Clien D ont Sar	Prepared t Sample <u>%Rec</u> 101 mple ID: <u>%Rec</u> 102	Analyz 03/25/15 a ID: Lab C Prep T %Rec. Limits 90 - 110 Lab Contro Prep T %Rec. Limits 90 - 110	ed 05:20 - ontrol S ype: To Sampl ype: To RPD 2	Dil Fac 1 ample tal/NA e Dup tal/NA RPD Limit 20
Analyte Chloride Lab Sample ID: LCS 490-2361 Matrix: Water Analysis Batch: 236175 Analyte Chloride Lab Sample ID: LCSD 490-236 Matrix: Water Analysis Batch: 236175 Analysis Batch: 236175 Analyte Chloride Lab Sample ID: 490-74654-D-1	R	MB MB esult ND	Spike Added 100 Spike Added 100	RL           1.00           LCS           Result           100.5           LCSD           Result           102.2	MDL Unit mg/L LCS Qualifier	Unit mg/L Clie Unit mg/L	D Clien Clien D ent Sar	repared t Sample <u>%Rec</u> 101 mple ID: <u>%Rec</u> 102 Client	Analyz 03/25/15 a ID: Lab C Prep T %Rec. Limits 90 - 110 Lab Contro Prep T %Rec. Limits 90 - 110 Sample ID	ed 05:20 ontrol S ype: To Sampl ype: To RPD 2 : Matrix	Dil Fac 1 ample tal/NA e Dup tal/NA RPD Limit 20 Spike
Analyte Chloride Lab Sample ID: LCS 490-2361 Matrix: Water Analysis Batch: 236175 Analyte Chloride Lab Sample ID: LCSD 490-236 Matrix: Water Analysis Batch: 236175 <u>Analyte</u> Chloride Lab Sample ID: 490-74654-D-1 Matrix: Water	R	MB MB esult ND	Spike Added 100 Spike Added 100	RL           1.00           LCS           Result           100.5           LCSD           Result           102.2	MDL Unit mg/L LCS Qualifier	Unit mg/L Clic Unit mg/L	D IIII	Prepared t Sample <u>%Rec</u> 101 nple ID: <u>%Rec</u> 102 Client	Analyz 03/25/15 a ID: Lab C Prep T %Rec. Limits 90 - 110 Lab Contro Prep T %Rec. Limits 90 - 110 Sample ID Prep T	ed 05:20 - ontrol S ype: To Sampl ype: To <u>RPD</u> 2 : Matrix ype: To	Dil Fac 1 ample tal/NA e Dup tal/NA RPD Limit 20 Spike tal/NA
Analyte Chloride Lab Sample ID: LCS 490-2361 Matrix: Water Analysis Batch: 236175 Analyte Chloride Lab Sample ID: LCSD 490-236 Matrix: Water Analysis Batch: 236175 Analyte Chloride Lab Sample ID: 490-74654-D-1 Matrix: Water Analysis Batch: 236175	R	MB MB esult ND	Spike Added 100 Spike Added 100	RL           1.00           LCS           Result           100.5           LCSD           Result           102.2	MDL Unit mg/L LCS Qualifier	Unit mg/L Clie Unit mg/L	Clien Clien D ent Sar	Prepared t Sample <u>%Rec</u> 101 mple ID: <u>%Rec</u> 102 Client	Analyz 03/25/15 a ID: Lab Co Prep T %Rec. Limits 90 - 110 Lab Contro Prep T %Rec. Limits 90 - 110 Sample ID Prep T	ed 05:20 ontrol S ype: To Sampl ype: To RPD 2 : Matrix ype: To	Dil Fac 1 ample tal/NA e Dup tal/NA RPD Limit 20 Spike tal/NA
Analyte         Chloride         Lab Sample ID: LCS 490-2361         Matrix: Water         Analysis Batch: 236175         Analyte         Chloride         Lab Sample ID: LCSD 490-236         Matrix: Water         Analysis Batch: 236175         Analyte         Chloride         Lab Sample ID: LCSD 490-236         Matrix: Water         Analyte         Chloride         Lab Sample ID: 490-74654-D-1         Matrix: Water         Analysis Batch: 236175	Rd	MB MB esult ND Qualifier	Spike Added 100 Spike Added 100 Spike	RL           1.00           LCS           Result           100.5           LCSD           Result           102.2	MDL Unit mg/L LCS Qualifier	Unit mg/L Clie Unit mg/L	Clien Clien D ent Sar D	Prepared t Sample <u>%Rec</u> 101 mple ID: <u>%Rec</u> 102 Client	Analyz 03/25/15 a ID: Lab C Prep T %Rec. Limits 90 - 110 Lab Contro Prep T %Rec. Limits 90 - 110 Sample ID Prep T %Rec.	ed 05:20 ontrol S ype: To Sampl ype: To RPD 2 : Matrix ype: To	Dil Fac 1 ample tal/NA e Dup tal/NA RPD Limit 20 Spike tal/NA
Analyte Chloride Lab Sample ID: LCS 490-2361 Matrix: Water Analysis Batch: 236175 Analyte Chloride Lab Sample ID: LCSD 490-236 Matrix: Water Analysis Batch: 236175 Analyte Chloride Lab Sample ID: 490-74654-D-1 Matrix: Water Analysis Batch: 236175 Analyte	75/4	MB MB esult ND Qualifier Sample Qualifier	Spike Added 100 Spike Added 100 Spike Added	RL           1.00           LCS           Result           100.5           LCSD           Result           102.2           MS           Result	MDL Unit mg/L LCS Qualifier Qualifier MS Qualifier	Unit mg/L Clie Unit Unit	Clien D ent Sar D D	Prepared t Sample <u>%Rec</u> 101 mple ID: <u>%Rec</u> Client	Analyz 03/25/15 a ID: Lab C Prep T %Rec. Limits 90 - 110 Lab Contro Prep T %Rec. Limits 90 - 110 Sample ID Prep T %Rec. Limits	ed 05:20 ontrol S. ype: To Sampl ype: To <u>RPD</u> 2 : Matrix ype: To	Dil Fac 1 ample tal/NA e Dup tal/NA RPD Limit 20 Spike tal/NA

#### **GC/MS VOA**

#### Analysis Batch: 234265

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-74166-B-1 MS	Matrix Spike	Total/NA	Water	8260B	
490-74166-C-1 MSD	Matrix Spike Duplicate	Total/NA	Water	8260B	
490-74228-2	MW-4	Total/NA	Water	8260B	
490-74228-3	MW-2	Total/NA	Water	8260B	
490-74228-7	EQ Blank	Total/NA	Water	8260B	
490-74228-8	Dup	Total/NA	Water	8260B	
LCS 490-234265/4	Lab Control Sample	Total/NA	Water	8260B	
LCSD 490-234265/5	Lab Control Sample Dup	Total/NA	Water	8260B	
MB 490-234265/8	Method Blank	Total/NA	Water	8260B	
Analysis Batch: 23587	2				
Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-74228-9	TRIP	Total/NA	Water	8260B	
490-74760-B-1 MS	Matrix Spike	Total/NA	Water	8260B	
490-74760-C-1 MSD	Matrix Spike Duplicate	Total/NA	Water	8260B	
LCS 490-235872/3	Lab Control Sample	Total/NA	Water	8260B	
LCSD 490-235872/4	Lab Control Sample Dup	Total/NA	Water	8260B	
MB 490-235872/7	Method Blank	Total/NA	Water	8260B	

#### HPLC/IC

#### Analysis Batch: 235032

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-74199-C-1 MS	Matrix Spike	Total/NA	Water	300.0	
490-74199-C-1 MSD	Matrix Spike Duplicate	Total/NA	Water	300.0	
490-74228-1	MW-1	Total/NA	Water	300.0	
490-74228-3	MW-2	Total/NA	Water	300.0	
490-74228-4	MW-6	Total/NA	Water	300.0	
490-74228-5	MW-3	Total/NA	Water	300.0	
490-74228-6	MW-5	Total/NA	Water	300.0	
490-74228-7	EQ Blank	Total/NA	Water	300.0	
490-74228-8	Dup	Total/NA	Water	300.0	
LCS 490-235032/4	Lab Control Sample	Total/NA	Water	300.0	
MB 490-235032/3	Method Blank	Total/NA	Water	300.0	

#### Analysis Batch: 236175

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method Prep Batch
490-74228-2	MW-4	Total/NA	Water	300.0
490-74654-D-1 MS	Matrix Spike	Total/NA	Water	300.0
LCS 490-236175/4	Lab Control Sample	Total/NA	Water	300.0
LCSD 490-236175/5	Lab Control Sample Dup	Total/NA	Water	300.0
MB 490-236175/3	Method Blank	Total/NA	Water	300.0

<b>Client Samp</b>	le ID: MW-1							Lab Samp	ole ID: 49	90-74228-1
Date Collected	: 03/10/15 09:4	45							Ν	Aatrix: Water
Date Received:	03/13/15 09:0	00								
Γ	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Type	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analvst	Lab
Total/NA	Analysis	300.0		1	10 mL		235032	03/20/15 06:19	JHS	TAL NSH
L	,									
<b>Client Samp</b>	le ID: MW-4							Lab Samp	ole ID: 4	90-74228-2
Date Collected	: 03/10/15 11:4	40						-	Ν	Aatrix: Water
Date Received:	03/13/15 09:0	00								
Г	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Type	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	5 mL	5 mL	234265	03/17/15 18:38	PS	TAL NSH
	Analysis	300.0		2	10 ml		236175	03/25/15 13:41	ILIS	
	Analysis	300.0		2	TO THE		230175	03/23/13 13.41	5115	TALINGI
Client Samp	le ID: MW-2							Lab Samp	ole ID: 4	90-74228-3
Date Collected	: 03/10/15 13:0	05							Ν	Aatrix: Water
Date Received:	03/13/15 09:0	00								
Г	Batch	Batch		Dil	Initial	Final	Batch	Bronarod		
Pren Tyne	Type	Method	Run	Eactor	Amount	Amount	Number	or Analyzed	Analvet	Lah
	Analysis		(un	1	5 ml	5 ml	234265	03/17/15 19:04	PS	- TAL NSH
		02002		-	10	02	005000	00/00/45 00 57		
I Otal/INA	Analysis	300.0		5	10 mL		235032	03/20/15 06:57	JH2	TAL NSH
Client Samp	le ID: MW-6							Lab Samp	ole ID: 4	90-74228-4
Date Collected	: 03/10/15 14: <sup>,</sup>	15							Ν	Aatrix: Water
Date Received:	03/13/15 09:0	00								
Г	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Type	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		1	10 mL		235032	03/20/15 07:17	JHS	TAL NSH
Client Samp	le ID: MW-3							Lab Samp	ole ID: 4	90-74228-5
Date Collected	: 03/10/15 15:3	35							Ν	Aatrix: Water
Date Received:	03/13/15 09:0	00								
Γ	Batch	Batch		Dil	Initial	Final	Batch	Prenared		
Prep Type	Type	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
	Analysis	- 300.0		1	10 ml		235032	03/20/15 08:14	JHS	- TAL NSH
	, and yord			·	102		200002	00/20/10 00/11	0.10	
Client Samp	le ID: MW-5							Lab Samp	ole ID: 4	90-74228-6
Date Collected	: 03/10/15 17:0	00						-	Ν	Aatrix: Water
Date Received:	03/13/15 09:0	00								
Γ	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Type	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analvst	Lab
Total/NA	Analysis	300.0		1	10 mL		235032	03/20/15 08:33	JHS	TAL NSH
1	-									

Date Received. 0	0/10/10 00.0									
	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Туре	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	5 mL	5 mL	234265	03/17/15 14:15	PS	TAL NSH
Total/NA	Analysis	300.0		1	10 mL		235032	03/20/15 08:52	JHS	TAL NSH

#### Client Sample ID: Dup Date Collected: 03/10/15 00:01

#### Date Received: 03/13/15 09:00

Γ	Batch	Batch		Dil	Initial	Final	Batch	Prepared		
Prep Type	Туре	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	5 mL	5 mL	234265	03/17/15 19:30	PS	TAL NSH
Total/NA	Analysis	300.0		5	10 mL		235032	03/20/15 09:11	JHS	TAL NSH

#### Client Sample ID: TRIP

#### Date Collected: 03/10/15 00:01 Date Received: 03/13/15 09:00

_	Batch	Batch		Dil	Initial	Final	Batch	Prepared			
Ргер Туре	Туре	Method	Run	Factor	Amount	Amount	Number	or Analyzed	Analyst	Lab	
Total/NA	Analysis	8260B		1	10 mL	10 mL	235872	03/24/15 15:22	NC	TAL NSH	-

#### Laboratory References:

TAL NSH = TestAmerica Nashville, 2960 Foster Creighton Drive, Nashville, TN 37204, TEL (615)726-0177

#### TestAmerica Job ID: 490-74228-1 SDG: Property ID 890293

# Lab Sample ID: 490-74228-7

Matrix: Water

Matrix: Water

### Lab Sample ID: 490-74228-9 Matrix: Water

Lab Sample ID: 490-74228-8

#### Client: Enviro Clean Services LLC Project/Site: CHK STATE L-2

Method	Method Description	Protocol	Laboratory
8260B	Volatile Organic Compounds (GC/MS)	SW846	TAL NSH
300.0	Anions, Ion Chromatography	MCAWW	TAL NSH

#### Protocol References:

MCAWW = "Methods For Chemical Analysis Of Water And Wastes", EPA-600/4-79-020, March 1983 And Subsequent Revisions.

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

#### Laboratory References:

TAL NSH = TestAmerica Nashville, 2960 Foster Creighton Drive, Nashville, TN 37204, TEL (615)726-0177

TestAmerica Nashville

Client: Enviro Clean Services LLC Project/Site: CHK STATE L-2

### Laboratory: TestAmerica Nashville

#### The certifications listed below are applicable to this report.

Authority	Program	EPA Region	Certification ID	Expiration Date
Oklahoma	State Program	6	9412	08-31-15

TestAmerica Nashville

TestAmerica		I A MARINA MATANINA MATANINA MANANA MANA
THE LEADER IN ENVIRONMENTAL TESTING		
Nashville, TN	COOLER RECEIPT FORM	
Cooler Received/Opened On 3/13/2015 @	a <u>0900</u>	190-74228 Chain of Custody
1. Tracking #	(last 4 digits, FedEx)	
Courier: <u>FedEx</u> IR Gun ID_9466	60220	
2. Temperature of rep. sample or temp l	blank when opened: Degrees Celsius	
3. If Item #2 temperature is 0°C or less, v	was the representative sample or temp blank	frozen? YES NO
4. Were custody seals on outside of coo	ler?	TES.NONA
If yes, how many and where: (z) fr	Font/Back	
5. Were the seals intact, signed, and dat	ed correctly?	YESNONA
6. Were custody papers inside cooler?		ESNONA
I certify that I opened the cooler and ans	wered questions 1-6 (intial)	mon
7. Were custody seals on containers:	YES NO and Intact	YESNO. (NA)
Were these signed and dated correctly	у?	YESNONA
8. Packing mat'l used? Bubblewrap Pla	astic bag Peanuts Vermiculite Foam Inser	t Paper Other None
9. Cooling process:	(ce) Ice-pack (ce (direct contact))	Dry ice Other None
10. Did all containers arrive in good con	dition (unbroken)?	YES NO NA
11. Were all container labels complete (#	ŧ, date, signed, pres., etc)?	ESNONA
12. Did all container labels and tags agree	ee with custody papers?	YES).NONA
13a. Were VOA vials received?		YESNONA
b. Was there any observable headspa	ce present in any VOA vial?	YESNONA
14. Was there a Trip Blank in this cooler	? (YES).NONA If multiple coolers,	sequence #
I certify that I unloaded the cooler and an	iswered questions 7-14 (intial)	<u>}</u>
15a. On pres'd bottles, did pH test strips	suggest preservation reached the correct pl	level? YESNO.NA
b. Did the bottle labels indicate that the	he correct preservatives were used	ES).NONA
16. Was residual chlorine present?		YESNO. NA
I certify that I checked for chlorine and p	H as per SOP and answered questions 15-16	(intial) <u>D4</u>
17. Were custody papers properly filled	out (ink, signed, etc)?	VESNONA
18. Did you sign the custody papers in the second s	he appropriate place?	(YES)NONA
19. Were correct containers used for the	analysis requested?	YESNONA
20. Was sufficient amount of sample ser	nt in each container?	
I certify that I entered this project into LI	MS and answered questions 17-20 (intial)	DH
I certify that I attached a label with the un	nique LIMS number to each container (intial)	DA
21. Were there Non-Conformance issues	at login? YESNO Was a NCM generated?	? YES

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	POINT	(615)726	LABORATORY	RECEIVED IN I	METHOD OF S	RELINQUISHE	RELINQUISHE	TOTAL NUMBE	$\left\langle \right\rangle$				1	3-10-15	3-10-15	3-10-15	3-10-15	3-10-15	3-0-15	3-10-15	3-10-15	Date	SAMPLER'S S	TERR		Γ		
	OF ORIGIN:	7710	CONTACT	LABORAIC	HIPMENT:			ER OF CON					\$		0955	1700	1535	1415	1305	1140	945	Time	IGNATURE					
PAGE #1 - RECEIVING LAB					FEDEX			ITAINERS			A A		TRIP	Dup	EQ BLANK	mw-5	mu-3	mw-6	Me-2	mw-4	mu-1	Sample ID	2	she r	(918) 794-7828			
	I NORMAN			TIME		DATE	TIME 18						water	water	weller	water	water	wher	when	water	WATER	Sample	e Matri:	x	TA	SHIPPED	PROJECT	
PAGE #2 -			Ę	s	A		2015	27		 			2	μ	1	1	-	- ×	1	34 >		# of Sample	e Conta	ainers	NASHMIL		- NUMBER	CHA
ENVIRO CLE	ODWARD	2960 FO	ABORATOR	and PDF, El	RBILL NUM	ECEIVED B		-					×	XX	x X	<u>~</u>	×		×	×	~	BENZENE	(8260	) (C)	lfn			N OF CU
AN PROJECT FILE	ARLINGTON     MIDLAND	STER CREIGHTON DR., NASHM	YY ADDRESS:	DD, and INVOICE (if applicable) to: JULIE CZECH at jo	18ER: 29 1252 8365		at TAN																		BRUCE MCKENZE	PROJECT MANAGER:	PROJECT NAME:	JSTODY RECORD
PAGE #3 - ENVIRO (	D OTHER:	lle, TN 37204		czech@envirocleanps		DATE TIME	DATE3-13-15 TIME 0900		]			 V												ASOW:				
SLEAN QA/QC DEPT				.com			Temp 1.4															гос. 490 74228 REMARKS		GEN/SUB: 750-521 PROP ID: 890293	STANDARD	TAT:	coc l of	No. 00220

R

1

Client: Enviro Clean Services LLC

#### Login Number: 74228 List Number: 1

Creator: Armstrong, Daniel

Question	Answer	Comment
Radioactivity wasn't checked or is = background as measured by a survey meter.</td <td>True</td> <td></td>	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	1.4C
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time.	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

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Job Number: 490-74228-1 SDG Number: Property ID 890293

List Source: TestAmerica Nashville