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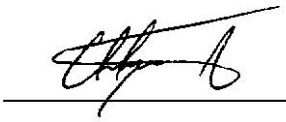

Christopher Jones
Project Manager

TETRA TECH

SUPPORTING THE GEORGIA WORLD CONGRESS CENTER

1955 EVERGREEN BLVD ♦ SUITE 300 ♦ DULUTH, GA 30096 ♦ TEL: (678) 775-3080 ♦ FAX: (678) 775-3138

March 15, 2015

Ms. Antonia Beavers
GEORGIA DEPARTMENT OF NATURAL RESOURCES
Department of Environmental Protection
Land Protection Branch
Response and Remediation Program
2 Martin Luther King, Jr. Drive, S.E., Suite 1054
Atlanta, Georgia 30334-9000

Subject: **Annual Groundwater Sampling Report #9**
Northside Drive Landfill Site, Atlanta, Georgia
Purchase Order Number 86420

Dear Ms. Beavers:

Tetra Tech, Inc. (Tetra Tech) is pleased to submit the enclosed Annual Groundwater Sampling Report #9 for the subject site on behalf of our client, the Georgia World Congress Center (GWCC). Tetra Tech prepared this report in accordance with the requirements specified in the Monitoring and Maintenance (M&M) Plan (Georgia Department of Natural Resources, December 2003, revised July 2005).

Tetra Tech field personnel originally conducted annual groundwater sampling on December 17 and 18, 2014; however, laboratory reporting limits were not reported as requested. Tetra Tech immediately contacted the laboratory to resolve the issue; however, the samples had exceeded extraction holding times. To ensure optimum data quality, Tetra Tech recommended resampling all wells associated with the Northside Drive Landfill Site annual sampling event. GA EPD agreed with Tetra Tech's recommendation in correspondence dated January 15, 2015 and all nine groundwater monitoring wells were resampled on January 19 and 20, 2015.

Metals regulated by the revised M&M Plan were not detected above laboratory reporting limits. Concentrations of two site regulated PAHs were detected above the analytical method's reporting limit. Naphthalene was detected in monitoring well MM-03 and fluoranthene was detected in monitoring well MWC-1A. During field monitoring for organic vapors, a maximum flame ionization detector (FID) concentration of 0.8 parts per million (ppm) was observed within the headspace of well MM-03. Concentrations were not above the Type 1 Risk Reduction Standards (RRS), but were above background concentrations observed in well MM-04. The groundwater sample collected from background monitoring well MM-04 did not contain any analytes regulated by the revised M&M Plan above reporting limits.

An unknown source of PAH detections observed during three previous sampling events (6th Annual [December 2011] 7th Annual [December 2012] and 8th Annual [December 2013]), and Tetra Tech therefore recommended quarterly monitoring of wells MM-03 and MWC-1A. The quarterly monitoring should assist determining if the PAHs detected in these wells were due to an off-site release unrelated to the Northside Drive Landfill. Collecting data on seasonal groundwater level trends and contaminant concentrations provides additional data points for review. On May 9, 2013, Tetra Tech received correspondence from the GA EPD which approved quarterly monitoring of wells MM-03 and MWC-1A.

Quarterly sampling was initiated upon award of the 2013 and 2014 contract issued in August 2013. Quarterly monitoring and limited sampling was initiated in September 2013 and continued to June 2014. Analytical results and groundwater trends for the quarterly events indicate that site contaminants are detected most frequently in winter and spring, when groundwater levels are at or near annual highs. Additionally, groundwater trends indicate that the groundwater level within the slurry wall in the vicinity of the dewatering well is below six feet from the top of the slurry wall at its lowest point (the northwest corner, near the dewatering well) and does not indicate any problems with the physical integrity of the slurry wall. A constant dewatering well level inside the slurry wall also suggests that groundwater is not permeating through the slurry wall, and the cap and slurry wall remain intact in the vicinity of the dewatering well. Additional information regarding the 2013-2014 quarterly gauging and sampling event is provided in the Quarterly Groundwater Gauging and Limited Sampling Report which was submitted to GA EPD on August 8, 2014.

Tetra Tech received a comprehensive review letter from the GA EPD, dated September 12, 2014. In response, Tetra Tech has addressed your comments as explained below.

Comment: The analytical data sheets were not provided in the Quarterly Report to substantiate the data from quarterly sampling events conducted on September 23, 2013, March 27, 2014, and June 30, 2014, but the December 11, 2013 analytical data sheets were provided in Annual Report #8. Please submit the outstanding analytical data sheets in the next annual report.

Response: Tetra Tech has included the analytical data packages and chains-of-custody generated during limited quarterly sampling in September 2013, March 2014, and June 2014 in Attachment C of the 9th Annual Groundwater Sampling Event Report.

Comment: It appears that Figure 5A of the Quarterly Report shows data for MM-03 rather than MWC-1A, as indicated in the title. Also, the concentration of fluoranthene (0.638 mg/L) detected at MM-03 on December 11, 2013 was omitted from Figure 5A.

Response: Figure 5A provides a summary of detected PAHs and groundwater trends for MM-03. The title block has been revised. Additionally, the inadvertently omitted data from December 11, 2013 has been added to the revised figure, which is included in Attachment C.

Comment: The subject site is certified to Type 5 RRS. The statement made in Section 4.0 of Annual Report #8 and Section 6.0 of the FYRR that groundwater concentrations shall not exceed background or detection limits pursuant to Section 391-3-19-.07(6) of the Rules is partially incorrect. The referenced Rule refers to criteria for meeting Type 1 RRS in groundwater. Section 3.1 of the M&M Plan specifies the use of Type 1 RRS for groundwater at the subject site beyond the Type 5 boundary. Those RRS were derived in accordance with the Rules for Hazardous Site Response (Rules), and are either (1) the concentrations given in *Table I of Appendix Ill* of the Rules *or (2) the background or detection limit of those regulated substances that are not listed therein.* This distinction is recognized in other sections of the reports, but the statement should be corrected in future reports to avoid the impression that a standard has been exceeded.

Response: Tetra Tech has revised Section 4.0 of Annual Report #9 to better clarify when a standard has been exceeded.

As requested by representatives of the GWCC, Tetra Tech has enclosed two hard copies and one electronic copy of the 9th Annual Groundwater Sampling Report. The next annual groundwater report will be submitted by February 15, 2016. If you have any questions or comments regarding this submittal, please contact me at (678) 775-3081 or Wayne Rosser (GWCC) at (404) 223-4820.

Sincerely,

Christopher Jones
Project Manager

Enclosure

cc: Tim Bricker, Tetra Tech
Wayne Rosser, GWCC
Jason Metzger, GA EPD (letter only)
Joan Sasine, Bryan Cave International Consulting LLC (electronic copy only)

ANNUAL GROUNDWATER SAMPLING REPORT #9
NORTHSIDE DRIVE LANDFILL SITE

GEORGIA WORLD CONGRESS CENTER

ATLANTA, GEORGIA

PREPARED FOR:

GEORGIA DEPARTMENT OF NATURAL RESOURCES

DEPARTMENT OF ENVIRONMENTAL PROTECTION, LAND PROTECTION BRANCH,

RESPONSE AND REMEDIATION PROGRAM

2 MARTIN LUTHER KING, JR. DRIVE, S.E., SUITE 1054 EAST

ATLANTA, GEORGIA 30334-9000

PREPARED BY:

TETRA TECH

1955 EVERGREEN BLVD

BUILDING 200, SUITE 300

DULUTH, GEORGIA 30096

MARCH 2015

CERTIFICATIONS

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate that information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true and accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fines and imprisonment for knowing violations.

Christopher Jones
Project Manager

I certify that I am a qualified groundwater scientist who has received a baccalaureate or post-graduate degree in the natural sciences or engineering, and have sufficient training and experience in groundwater hydrology and related fields, as demonstrated by state registration and completion of accredited university courses, that enable me to make sound professional judgments regarding groundwater monitoring and contaminant fate and transport. I further certify that this report was prepared by myself or by a subordinate working under my direction.

Tim Bricker
Georgia P.E. No. 22621

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Attachments

ACRONYMS AND ABBREVIATIONS

bgs	Below ground surface
COC	Chain of custody
EPA	U.S. Environmental Protection Agency
ft	Foot/feet
GA DNR	Georgia Department of Natural Resources
GA EPD	Georgia Environmental Protection Division
gal/min	Gallons per minute
GPS	Global positioning system
GWCC	Georgia World Congress Center
J	The analyte was positively identified; the associated value is the approximate concentration of the analyte in the sample
L/min	Liters per minute
LNAPL	Light non-aqueous phase liquid
m	Meter
M&M	Monitoring and maintenance
MSL	Mean sea level
NTU	Nephelometric Turbidity Units
PAHs	Polynuclear aromatic hydrocarbons
PQL	Practical quantitation limits
RRS	Risk Reduction Standards
SESD	Science and Ecosystem Support Division
TAL Metals	Target Analyte List metals
Tetra Tech	Tetra Tech EM, Inc.
µg/L	Micrograms per liter
VRP	Voluntary Remediation Program

1.0 INTRODUCTION

Tetra Tech, Inc. (Tetra Tech) has prepared the 9th Annual Groundwater Sampling Report for the Georgia World Congress Center (GWCC) for activities conducted at the Northside Drive Landfill Site (Site), previously known as the Jones Avenue Site, located in Atlanta, Georgia. The report is being submitted to the Georgia Department of Natural Resources (GA DNR), Environmental Protection Division (GA EPD), Land Protection Branch, Response and Remediation Program in partial fulfillment of requirements presented in the revised Monitoring and Maintenance (M&M) Plan for Type 5 Risk Reduction Standards (RRS) for the Site (GA EPD 2005). Quarterly groundwater sampling was conducted at the Site for two years after installation of engineering controls. Following these quarterly sampling events, nine annual groundwater sampling events have been completed, including the most recent annual sampling event conducted on January19 and 20, 2015.

This report evaluates the performance of the remedial controls implemented in July 2003 as part of the criteria for Type 5 RRS of the Georgia Hazardous Site Response Regulations, Chapter 391-3-19-.07(10) (GA DNR 2003a). The GA EPD has determined that Type 5 standards apply to the Site, and that Type 1 RRS are to be met outside of the boundary of engineering controls. The performance criteria used to evaluate the remedial controls are provided in the Type 1 RRS of the Georgia Hazardous Site Response Regulations, Chapter 391-3-19-.07(6) (GA EPD 2003b). This evaluation was supported by a groundwater sampling event conducted on January 19 and 20, 2015 to monitor the nature and extent of potential groundwater contamination outside the boundary of engineering controls at the Site.

1.1 SITE DESCRIPTION

The Site was formerly listed on the State of Georgia's Hazardous Site Inventory pursuant to the Georgia Hazardous Site Response Act, but is now part of the Georgia Voluntary Remediation Program (VRP). Two tax parcels on the south side of John Street owned by the state of Georgia were combined into one tax parcel (tax parcel identification number 14- 0082-006-12-1). Six monitoring wells (MM-02, MWC-3C, MWC-3B, MWC-1A, MWC-1B, and MWC-1C) are located on property owned by The Housing Authority of the City of Atlanta, Georgia on the north side of John Street at tax parcel identification number 14-0082-0006-008-9.

The landfill portions of the Site (also referred to as "landfill") were remediated using engineering and institutional controls, and a conservation easement. The engineering controls involved the installation of a soil-bentonite slurry wall and an engineered cap as illustrated in the approved "Revised As-Built Drawings" dated October 2003 (GA EPD 2003c). The institutional controls that were implemented consisted of a deed notice and a restrictive covenant, which included the M&M Plan (GA EPD 2005).

1.2 REPORT ORGANIZATION

Section 1.0 of this report provides a brief site description, the report's organization, and the groundwater sampling program objectives. Section 2.0 describes the groundwater sampling investigation activities performed as part of the 9th Annual Groundwater Sampling Event, which includes discussion of groundwater standards, sampling locations, and sampling procedures. Section 3.0 provides the analytical results of the Sampling Event. Section 4.0 provides an evaluation of the data from a statistical viewpoint. Section 5.0 presents a review of the non-residential use of the property. Section 6.0 provides conclusions and recommendations for the 9th Annual Groundwater Sampling Event. Section 7.0 presents deviations from the revised M&M Plan. Section 8.0 presents a list of references used in this report.

This report also includes seven (7) enclosures and three (3) attachments. Enclosure 1 contains figures illustrating the site location, a potentiometric map, and groundwater levels outside of the slurry wall. Enclosure 2 provides tables summarizing the analytes regulated for groundwater at this site, historical summaries of field parameter measurements, analytical results for metals, and analytical results for polynuclear aromatic hydrocarbons (PAHs). Enclosure 3 contains a copy of the Tetra Tech logbook notes. Enclosure 4 presents completed groundwater sampling field data sheets created by Tetra Tech for each groundwater monitoring well. Enclosure 5 provides a photographic log from the most recent landfill inspection, this log was also included in the Quarters-42/43 Landfill Maintenance and Inspection Report. Enclosure 6 presents the chain of custody (COC) provided to the laboratory with the samples. Enclosure 7 provides data validation for the analytical results received from the laboratory. Attachment A provides analytical results from the laboratory. Attachment B provides a certification letter from the laboratory stating that the laboratory is approved according to Chapter 391-3-26-.05, and Attachment C is the revised Figure 5A and quarterly groundwater monitoring analytical results for wells MM-03 and MWC-01.

1.3 OBJECTIVES

Two years of quarterly sampling were completed between March 2004 and December 2005 in accordance with the revised M&M Plan (GA EPD 2005). Subsequently, the frequency of groundwater sampling was reduced to once annually. The purpose of this ongoing annual sampling program is to evaluate the performance of the remedial controls, and to establish existing conditions and background data that may be used for statistical analysis, if warranted.

The specific objectives of the annual groundwater sampling efforts are to identify and/or evaluate the following potential conditions:

- A release to groundwater of regulated substances from the landfill at concentrations above background and/or the Type 1 RRS of the Georgia Hazardous Site Response Regulations of Chapter 391-3-19-.07
- Migration of existing concentrations of regulated substances to locations outside of the landfill

The annual sampling event also involves the measurement of groundwater levels both inside and outside the slurry wall.

2.0 GROUNDWATER SAMPLING INVESTIGATION ACTIVITIES

This section describes the applicable regulatory standards, procedures, and methods used by Tetra Tech to collect, analyze and evaluate the groundwater samples collected during the sampling event conducted on January 19 and 20, 2015.

2.1 GROUNDWATER STANDARDS

Based on historical data collected during previous sampling events conducted by GA EPD, the regulated analytes for the Site include polynuclear aromatic hydrocarbons (PAHs) and metals. The Georgia Type 1 RRS for regulated substances, presented in the Georgia Hazardous Site Response Regulations, Chapter 391-3-19-.07 (GA EPD 2003a) were used as the groundwater standards for the Sampling Event. Table 1 of Enclosure 2 lists the regulated analytes for the Site, the frequency at which they continue to be monitored during the annual sampling program, the Type 1 RRS, and the laboratory analytical methods used to measure the concentrations of each analyte in the samples.

2.2 GROUNDWATER SAMPLING LOCATIONS

Water level measurements were collected from the following nine groundwater monitoring wells and the landfill dewatering well, which are located in and around the landfill, as shown in Figure 1 in Enclosure 1:

- MM-04 – the up gradient, background monitoring well for site groundwater, located on the southeastern corner of the site, near the intersection of Bush Street and Gray Street.
- MM-01 – located near the western boundary of the site, along Northside Drive
- MM-02 – located on the northwestern corner of the western end of John Street, near the intersection of Northside Drive and John Street
- MWC-3B, MWC-3C – located just outside the northwestern corner of the site, by the intersection of John Street and Northside Drive
- MM-03 – located on the northern boundary of the site along John Street, midway between Northside Drive and Gray Street
- MWC-1A, MWC-1B, MWC-1C – located on the northeastern corner of the site, at the intersection of John Street and Gray Street
- Dewatering well – located within the limits of the engineering controls of the landfill slurry wall near the northwest corner of the landfill

Groundwater samples were also collected from all of the wells except the dewatering well. It should be noted that monitoring well MWC-1A was previously classified as dry due to insufficient water (≤ 6 inches) during sampling events conducted in December 2006 to December 2010. Redeveloping the well in November 2011 may have removed the blockage which allowed the well to be sampled in subsequent monitoring events. In addition, the demolition of the Herndon Homes Apartment complex located just north of these wells may have altered the groundwater recharge and flow characteristics on the northern perimeter of the site.

In accordance with the M&M plan, the site monitoring wells were gauged starting with the background well MM-04, and continuing (in the order shown) with site monitoring wells MM-01, MM-02, MWC-3C, MWC-3B, MM-03, MWC-1A, MWC-1C and MWC-1B (GA EPD 2005).

2.2.1 Geographic Locations of Monitoring Wells and Site Landmarks

The geographic locations of the monitoring wells were determined in November 2003 using a global positioning system (GPS) consisting of a Trimble™ TSC1™ data collector and GPS Pathfinder® Pro XRS receiver. The coordinates of the existing wells were used to show the well locations on Figure 1. The locations

of property monuments were also determined using this equipment. The GPS coordinates for the monuments on the northern perimeter of the site were updated in December 2011 during the quarterly inspection conducted on December 7, 2011 to alleviate problems with locating the monuments using only the figures during previous quarterly inspections. The horizontal accuracy of the locations of the groundwater monitoring wells was determined to be plus or minus (±) one meter (m). A Georgia-registered land surveyor using traditional field survey techniques determined the elevation of monitoring wells at the site within an accuracy of ± 0.01 foot.

Due to detections of regulated analytes above practical quantitation limits (PQLs) in wells MM-03 and MWC-1A, discussed in further detail in Section 3.0 of this report, groundwater elevations inside and outside of the slurry wall were compared (see Figures 3 and 4 in Enclosure 1).

2.3 GROUNDWATER SAMPLING AND ANALYSIS PROCEDURES

During sampling activities conducted on January 19 and 20, 2015, Tetra Tech collected groundwater samples from nine monitoring wells. Groundwater samples were collected using the U.S. Environmental Protection Agency (EPA) Region 4 Science and Ecosystem Support Division (SESD) "Traditional Multiple Volume Purge" method, in accordance with the EPA Region 4 SESD Field Branches Quality System and Technical Procedure (FBQSTP) for Groundwater Sampling, dated March 6, 2013 (EPA 2013). Groundwater samples were collected in partial fulfillment of the revised M&M Plan; see Section 7.0 for deviations from the revised M&M Plan.

2.3.1 Well Redevelopment in November 2011

In an attempt to reduce the increased turbidity observed in the groundwater samples during the 5th Annual Sampling Event, Tetra Tech performed redevelopment on all of the wells on-site, with the exception of the dewatering well, in November 2011. Wells were purged using a Waterra Hydrolift II inertial pump (Hydrolift II), which utilizes a motor-driven actuator to oscillate the tubing and foot valve assembly up and down to force trapped water and fine sediments upwards through the tubing. The simultaneous pumping and surging action is believed to draw fine sediments into the tubing and remove them from the well (Waterra 2011).

Wells subjected to redevelopment were pumped with the Hydrolift II until the purged water became clear, then the wells were surged and purged a second time until the purged water became clear again. Purged water was contained in 55-gallon drums on-site to await analytical results and was later appropriately disposed (see Section 2.3.2.6).

2.3.2 Measuring Depth to Groundwater

During the 9th Annual Sampling Event, the depth to groundwater was measured in wells MM-04, MM-01, MM-02, MWC-3B, MWC-3C, MM-03, MWC-1A, MWC-1B, MWC-1C, and the dewatering well using an oil-water interface probe capable of measuring depth to groundwater and detecting the presence of light non-aqueous-phase liquids (LNAPL). The top of each well casing was used as the measurement reference point. Groundwater level measurements were recorded to the nearest 0.01 foot. The probe was decontaminated prior to initial use and between wells (see Section 2.3.5, Sampling Decontamination Procedures for more information). The depths to groundwater were recorded on the Groundwater Sampling Data Sheets (see Enclosure 4).

2.3.3 Air Monitoring Near Monitoring Wells

After removing the monitoring well's protective manhole cover and casing cap, but prior to measuring the groundwater level, the breathing zone was checked for organic vapors using a photoionization detector (PID), calibrated in the field prior to use. No elevated readings were observed in the breathing zone. However, when the inlet port was inserted into the well headspace, several elevated readings were detected, with a maximum concentration of 0.8 parts per million (ppm) measured within the headspace of well MM-03. Air monitoring screening results are presented in the logbook notes in Enclosure 3 and on the Groundwater Sampling Data Sheets in Enclosure 4.

2.3.4 Measuring Water Quality Parameters

Water quality parameters were measured using a YSI-556 multi-parameter water quality meter with a flow-through cell and a Hach 2100Q turbidity meter. The water quality and turbidity meters were calibrated in the field prior to initiating sampling activities each day. The specified water quality parameters (pH, temperature, specific conductivity, and turbidity) were measured in the field during the purging period of each well. The data is presented in Table 2 of Enclosure 2, as well as in the Groundwater Sampling Data Sheets in Enclosure 4. Groundwater generated during well purging was contained in 55-gallon drums placed on-site to await analytical results.

2.3.5 Collection of Groundwater Samples

Collection of samples for laboratory analysis utilized a peristaltic pump at all sampling locations. Purging activities were complete after a minimum of three (3) well casing volumes were removed and water quality parameters stabilized, in accordance with Section 3.2.2 of the revised M&M Plan (GA EPD 2005). At all

sampling locations, tubing used in sample collection was certified-clean Teflon™-lined polyethylene tubing. Samples were collected from all monitoring wells (excluding the dewatering well) using the sampling procedures outlined in the beginning of Section 2.3 in this report.

2.3.5.1 Placement of Sample Tubing

During groundwater sampling activities, the depth to the pump intake for each sample was recorded on the Groundwater Sampling Data Sheets (see Enclosure 4). Sample tubing was placed in the water column in accordance with the EPA Region 4 SESD FBQSTP for Groundwater Sampling, which recommends the pump intake be placed just below the water column when purging via the traditional multiple volume method (EPA 2013).

2.3.5.2 Purge Rates

All site wells were purged until at least three well volumes in accordance with EPA groundwater sampling procedures. For all site wells, purge rates did not exceed aquifer recharge rates and flow rates ranged from 0.227 to 0.454 liters per minute (L/min). It should be noted that purge rates for all wells were slowed to rates below 0.5 L/min during sample collection. In general, purge rates were based on drawdown and aquifer recharge rates measured during purging. Water quality parameters were measured and recorded but not used for determination of purge rates.

2.3.5.3 Sampling Order

Sample containers were filled in order of decreasing volatility of the intended analytical parameters and were preserved immediately upon collection. Field groundwater measurements, the method of purging and sampling, sampling personnel, the date and time of sample collection, the analytical parameters requested, and other pertinent information were recorded in the sampling logbook, on the groundwater sampling data sheets, and on the COC forms (see Enclosures 3, 4, and 6).

2.3.5.4 Duplicate Sample

One field duplicate sample was collected at monitoring well MM-03. The original MM-03 sample was collected after water quality parameters stabilized and three well volumes had been removed. Upon completion, all tubing associated with the original sample collection was removed and replaced prior to collecting the field duplicate. A duplicate set of sample containers was collected in the same order of decreasing volatility of the intended analytical parameters and labeled MM-03-DUP.

2.3.5.5 Post-Sampling Activities

After collection, sample containers were labeled, preserved, and placed on ice in coolers to maintain their temperature at 4 degrees Celsius. Appropriate EPA-approved COC procedures were followed. Samples were packaged and shipped as specified in the M&M Plan (GA EPD 2005). The COC form completed for the collected samples is presented in Enclosure 6.

Groundwater purged from the monitoring wells during the 9th Annual Groundwater Sampling Event was placed in three 55-gallon drums, which were stored near the maintenance building located on the southeastern side of the parking lot. After the analytical results from the groundwater samples collected from the monitoring wells established that regulated analyte concentrations in the groundwater were below RRS values and published Georgia Instream Water Quality Standards, the purged water was discharged to the on-site storm water system in accordance with the revised M&M Plan requirements (GA EPD 2005).

2.3.6 Groundwater Sample Analytical Methods

Gulf Coast Analytical Laboratories (GCAL), located in Baton Rouge, Louisiana, analyzed the groundwater samples for PAHs, Target Analyte List (TAL) metals, and mercury using three methods. The PAHs were analyzed by EPA SW-846 Method 8270D with SIM analysis (by gas chromatography/mass spectrometry with selective ion monitoring). The metals (with the exception of mercury) were analyzed by EPA SW-846 Method 6020A (inductively coupled plasma/mass spectrometry). Mercury was analyzed by EPA SW-846 Method 7470A (cold vapor atomic absorption). All analytical methods were obtained from the same source document and are equally valid for use.

Analytical methods used prior to the 9th Annual Groundwater Sampling Event (conducted in January 2015), adhered to the methods as defined in the M&M Plan (EPA SW-846 Method 8310 for PAHs, EPA SW-846 Method 6010C for metals and EPA SW-846 Method 7470A for mercury). During laboratory procurement activities for the 9th Annual Groundwater Sampling Event, Tetra Tech learned that analytical laboratories are phasing out the 8310 PAH method and Method 6010C for metals. These methods are being replaced with Method 8270D SIM for PAHs and Method 6020A for metals. Laboratories contend these methods are better choices to eliminate interferences and therefore no longer support Method 8310 for PAHs and Method 6010C for metals. In correspondence dated December 11, 2014, GA EPD accepted the change in analytical methods for PAHs and metals on the condition that laboratory reporting limits remain unchanged from previous reports.

2.3.7 Sampling Decontamination Procedures

The Tetra Tech field team used pre-cleaned and dedicated sampling equipment for the 9th Annual Groundwater Sampling Event. In instances where equipment was required to come into contact with groundwater from multiple wells, decontamination procedures were conducted in accordance with the EPA Region 4 SESD FBQSTP for Field Equipment Cleaning and Decontamination, dated December 20, 2011 (EPA 2011) prior to introducing the equipment into the water column.

2.3.7.1 Well Sounders and Tapes

Before starting, and between use at each well, equipment went through the following decontamination procedure:

1. Well sounders and tapes were rinsed with analyte-free water
2. Well sounders and tapes were washed using a phosphate-free, laboratory-grade detergent (Luminox®) and analyte-free deionized (ultra-pure lab-grade) water mixture
3. The sounders and tapes were then rinsed with analyte-free deionized water (ultra-pure lab-grade water was used during the 9th Annual Groundwater Sampling Event)

2.3.7.2 Automatic Sampler Tubing

New tubing was used for each well; therefore, no decontamination of tubing was required.

3.0 GROUNDWATER SAMPLING INVESTIGATION RESULTS

This section presents the field and laboratory analytical results of the groundwater samples collected during the 9th Annual Groundwater Sampling Event. The fixed laboratory analytical data package prepared by GCAL located in Baton Rouge, Louisiana is presented in Attachment A.

3.1 Detections of Site Regulated Substances Above Practical Quantitation Limits

A slight sulfur-like odor was noted while sampling MWC-1C. No additional odors were observed at any of the remaining wells during sampling activities. Analytical results for MM-03 and MM-03-DUP indicated that concentrations of naphthalene were detected at levels above EPA SW-846 Method 8270 PQLs, but below Type 1 RRS values.

The analyte fluoranthene was also detected in monitoring well MWC-1A at levels above EPA SW-846 Method 8270 PQLs, but below Type 1 RRS values. See Table 3 and 4 in Enclosure 2 for a summary of all analytical results from the 9th Annual Groundwater Sampling Event. The concentrations of site regulated substances detected above PQLs are summarized in the table below:

Analyte	Concentration	Well	Type 1 RRS
Fluoranthene	0.330 µg/L	MWC-1A	1,000 µg/L
Naphthalene	2.52 µg/L 1.93 µg/L	MM-03 MM-03-DUP	20 µg/L

Notes:
µg/L micrograms per liter
DUP duplicate

No site-regulated analytes were detected above the analytical method's PQL in the samples collected from the background monitoring well (MM-04).

3.2 Analytical Methods

The PAHs were analyzed by EPA SW-846 Method 8270D (by gas chromatography/mass spectrometry with selective ion monitoring). The metals (with the exception of mercury) were analyzed by EPA SW-846 Method 6020A (inductively coupled plasma/mass spectrometry). Mercury was analyzed by EPA SW-846 Method 7470A (cold vapor atomic absorption). All analytical methods were obtained from the same source document and are equally valid for use. Section 7.0 discusses the results of Tetra Tech's data evaluation procedures.

Enclosure 7 presents the data validation report prepared following the 9th Annual Groundwater Sampling Event.

3.3 Summary

A summary of the analytical results for the samples collected during the sampling event are presented in Tables 3 and 4 (Metals and PAHs, respectively) in Enclosure 2 of this report. According to the groundwater potentiometric surface map prepared by Tetra Tech using groundwater levels measured during the January 2015 sampling event, the groundwater flow continues to move in a northwesterly direction (see Figure 2 in Enclosure 1). Additionally, groundwater levels outside of the slurry wall are depicted in Figures 3 and 4 of Enclosure 1. The dewatering well water level, depicted in Table 2 of Enclosure 2, has remained stable since monitoring activities began 10 years ago, suggesting that the landfill cap and slurry wall are intact within the vicinity of the dewatering well.

4.0 DATA EVALUATION

This section presents an evaluation of the data collected during the 9th Annual Groundwater Sampling Event in an effort to determine if the analytical results signify a release from the landfill to the groundwater surrounding the slurry wall or if groundwater is infiltrating either the slurry wall or engineered cap. The revised M&M Plan stipulates that data evaluation must be performed to determine the likelihood of a release occurring from the landfill to the surrounding groundwater for site-regulated analytes detected in monitoring wells, but not the background monitoring well. The GA EPD has determined that Type 5 standards apply to the Site, and that Type 1 RRS are to be met outside of the boundary of engineering controls. The performance criteria used to evaluate the remedial controls are provided in the Type 1 RRS of the Georgia Hazardous Site Response Regulations, Chapter 391-3-19-.07(6) (GA EPD 2003b). Furthermore, compliance with Chapter 391-3-19-.07(6) stipulates that concentrations of regulated substances shall not exceed the background or detection limit concentration (GA EPD 2003b).

4.1 Analytical Data Validation and Tabulation

See Enclosure 7 for evaluation of data quality validation and tabulation of data received from the laboratory.

4.2 Outlier Evaluation

Outliers are described as the extreme (high or low) values that are widely divergent from the main body of data, and may arise from mistakes such as transcription, data-coding errors, instrument breakdown, calibration problems, and power failures (GA EPD 2005). In general, outliers are obvious mistakes that must be corrected, when possible.

Tetra Tech does not believe that the concentrations of regulated analytes detected above reporting limits for samples collected during the 9th Annual Groundwater Sampling Event are outliers. Evidence for this statement is supported by similar concentrations of similar constituents in the three previous (6th Annual [December 2011] 7th Annual [December 2012] and 8th Annual [December 2013]) sampling events. Naphthalene was detected in MM-03, and fluoranthene was detected in MWC-1A. Furthermore, the two wells are relatively close to each other and their screened intervals are near the top of the groundwater table. No contaminants were detected in monitoring wells MWC-1B or MWC-1C. Although both wells are located very close to Monitoring well MWC-1A, the screened intervals for MWC-1B and MWC-1C are deeper than the screened interval for MWC-1A. The screening interval for MWC-1B is 46 to 55.68 feet below ground surface (bgs) and the screening interval for MWC-1C is 67 to 76.45 feet bgs (Table 5, Tetra Tech 2001a).

In general, PAH constituents are dense non-aqueous phase liquid (DNAPL) meaning they tend to sink when in water. Detections of these constituents in the upper aquifer in two wells within close proximity of the slurry wall (north and northeast portion of the site), combined with the observed northwesterly groundwater flow direction, suggest these contaminants likely originated outside the slurry wall.

4.3 Statistical Tests

Statistical tests cannot be performed on the given data set because the regulated analytes detected in monitoring wells MM-03 and MWC-1A were not detected in background monitoring well MM-04. In accordance with the revised M&M Plan, professional judgment was used to assess the data set without the use of statistical calculations because these calculations contain little value when detections below reporting limits are included.

4.4 Professional Judgment

Tetra Tech believes the detection of regulated analytes are not outliers or statistical anomalies. Tetra Tech conducted quarterly groundwater level gauging events in September 2013, December 2013, March 2014, and June 2014 in an effort to better establish groundwater trends. A review of potentiometric contour maps generated from data collected during these events indicates groundwater consistently flowed in a northwesterly direction across the site. Furthermore, the average fluctuation in levels for all site wells from September 2013 to June 2014 was observed to be 0.70 feet, with the greatest fluctuation occurring in MM-02 (a difference of 2.19 feet).

An unknown source of PAH detections observed during three previous sampling events (6th Annual [December 2011] 7th Annual [December 2012] and 8th Annual [December 2013]), and Tetra Tech therefore recommended quarterly monitoring of wells MM-03 and MWC-1A. This recommendation was made to assist with determining if the PAHs detected in these wells were due to an off-site release unrelated to the Northside Drive Landfill by collecting data on seasonal groundwater level trends and contaminant concentrations. On May 9, 2013, Tetra Tech received correspondence from the GA EPD which approved quarterly monitoring of wells MM-03 and MWC-1A. Quarterly monitoring and limited sampling was initiated in September 2013 and continued through June 2014. During this quarterly monitoring and limited sampling period, fluoranthene, phenanthrene, and napthalene were detected in MM-03 and fluoranthene and pyrene were detected in MWC-1A.

Analytical results and groundwater trends for the quarterly events indicate that site contaminants are detected most frequently in winter and spring, when groundwater levels are at or near annual highs. In addition, the

groundwater consistently flows to the northwest, which indicates that the contaminants in wells MM-03 and MWC-1A likely originated from a source outside the landfill.

Tetra Tech also reviewed the quarterly dewatering well water levels within the landfill slurry wall and cap partition. The groundwater trend indicates that the groundwater level within the slurry wall in the vicinity of the dewatering well is below six feet from the top of the slurry wall at its lowest point (the northwest corner, near the dewatering well) and does not indicate any problems with the physical integrity of the slurry wall. Since the historical dewatering well levels inside the slurry wall have remained fairly steady, the surface flow from the overlying parking lot does not appear to be penetrating through the landfill cap. A constant dewatering well level inside the slurry wall also suggests that groundwater is not permeating through the slurry wall and the cap and slurry wall remain intact in the vicinity of the dewatering well. Additional information regarding the 2013-2014 quarterly gauging and sampling event is provided in the Quarterly Groundwater Gauging and Limited Sampling Report dated August 8, 2014 (Tetra Tech, 2014).

4.5 Potential Causes for Elevated Concentrations

Tetra Tech also reviewed potential causes which may have contributed to the detection of concentrations of regulated substances above PQLs in monitoring wells MM-03 and MWC-1A. Site features have changed from previous years when no contaminants were detected. The most notable change to site features involves the demolition and removal of Herndon Homes, formerly located just north of the landfill, which may have affected groundwater flow patterns (both horizontally and vertically). Furthermore, a review of historical quarterly groundwater elevations indicates a varying upward and downward change in water levels in the northeastern corner where detections have recently been observed. Data collected during annual sampling events during the months of December and January (from 2006 to the current reporting period) suggest water levels measured in wells in the northeastern corner have remained fairly static, with little change regarding upward and downward migration.

The groundwater level within the slurry wall was assessed, to the extent possible, near the dewatering well to verify that the groundwater level inside the slurry wall would not make the slurry wall susceptible to breach. Groundwater elevations inside and outside the slurry wall were compared to the surrounding ground level and bedrock as outlined from Tetra Tech's design specifications (Tetra Tech 2001b).

The groundwater level within the slurry wall, measured in the dewatering well, has remained at 936.18 feet ± 0.9 foot since December 2004, and the level does not appear to be steadily increasing or decreasing. The water level within the dewatering well is greater than six feet under the top of the slurry wall at its lowest point in

the northwestern corner of the landfill. These findings suggest that because the dewatering well level within the slurry wall has remained constant, the cap and slurry wall remain intact in the vicinity of the dewatering well.

5.0 NON-RESIDENTIAL USAGE OF PROPERTY

As stipulated in the revised M&M Plan, any use of the landfill must preserve the integrity and effectiveness of the soil cap and liner system of the landfill. Currently, the landfill site is only used for non-residential purposes. A parking lot has been constructed on top of the landfill, and the associated features also extend to the east and to the south of the landfill. To the north of the landfill, the former Herndon Homes have been demolished and the property is currently a fenced-in, unoccupied grassy area containing clusters of trees. These features ensure the landfill use remains non-residential. Although the parking lot may act as a staging area for events on occasion, at no time will GWCC allow the staging activities to penetrate the asphalt cover, concrete cap, the soil cap, or soil-bentonite slurry wall.

5.1 Non-Residential Use Inspection Results

The quarterly engineering inspections performed during 2014 by the Tetra Tech Professional Engineer verified that the use of the landfill remained non-residential. Tetra Tech reviewed existing contracts and lease agreements, and Tetra Tech spoke to the GWCC Maintenance/Physical Plant Manager to verify that the use of the property has remained non-residential. Currently, the conservation easement is in place and the uses of the property conform to the restrictions placed on the property. The signed certification signifying the veracity of the statements made in this section is included in the page following the cover page of this document.

6.0 CONCLUSIONS AND RECOMMENDATIONS

During the 9th Annual Groundwater Sampling Event, naphthalene was detected at 2.52 µg/L and 1.93 µg/L (duplicate sample) in monitoring well MM-03. The type 1 RRS is 20 µg/L for naphthalene. Additionally, in monitoring well MWC-1A, fluoranthene was detected at 0.330 µg/L. The Type 1 RRS for fluoranthene is 1,000 µg/L. No constituents were detected above PQLs in background monitoring well MM-04.

Review of the dewatering well level within the landfill slurry wall and cap partition indicates that the groundwater level within the slurry wall in the vicinity of the dewatering well is below six feet from the top of the slurry wall at its lowest point (the northwest corner, near the dewatering well) and does not appear to pose a threat of release in this area. Since the historical dewatering well levels inside the slurry wall have remained fairly steady, the surface flow from the overlying parking lot is not believed to be penetrating through the landfill cap. A constant dewatering well level inside the slurry wall also suggests that groundwater is not permeating through the slurry wall and the cap and slurry wall remain intact near the dewatering well.

In addition, as required by the revised M&M Plan, please note the contact information below.

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7.0 DEVIATIONS FROM THE M&M PLAN/GA EPD COMMENTS

This section was added to the report to describe any deviations from the revised M&M Plan that occurred during the current sampling event. This section will serve as an official record for any such deviations.

1. The dewatering well was not sampled; therefore, field parameters were not measured at this location as described in Section 3.1.2 of the revised M&M Plan: "The groundwater monitoring plan will consist of the following activities: Measurements of field parameters…for all groundwater monitoring wells and the dewatering well…"
2. In correspondence with GA EPD dated December 11, 2014, GA EPD requested that Method 6020 and Method 6010 be analyzed on at least one of the samples. Tetra Tech was unable to comply because the laboratory did not support Method 6010. Tetra Tech contacted several other local laboratories; however, they have phased out that method as well.
3. The 9th Annual Groundwater Sampling Event was originally conducted on December 17 and 18, 2014; however, laboratory reporting limits were not reported as requested. Tetra Tech immediately contacted the laboratory to resolve the issue; however, the samples had exceeded extraction holding times. To ensure optimum data quality, Tetra Tech recommended resampling all wells associated with the Northside Drive Landfill Site annual sampling event. GA EPD agreed with Tetra Tech's recommendation in correspondence dated January 15, 2015 and all site wells were resampled on January 19 and 20, 2015. Additionally, GA EPD granted an extension for submission of the 9th Annual Groundwater Sampling Event report until March 16, 2015.

8.0 REFERENCES

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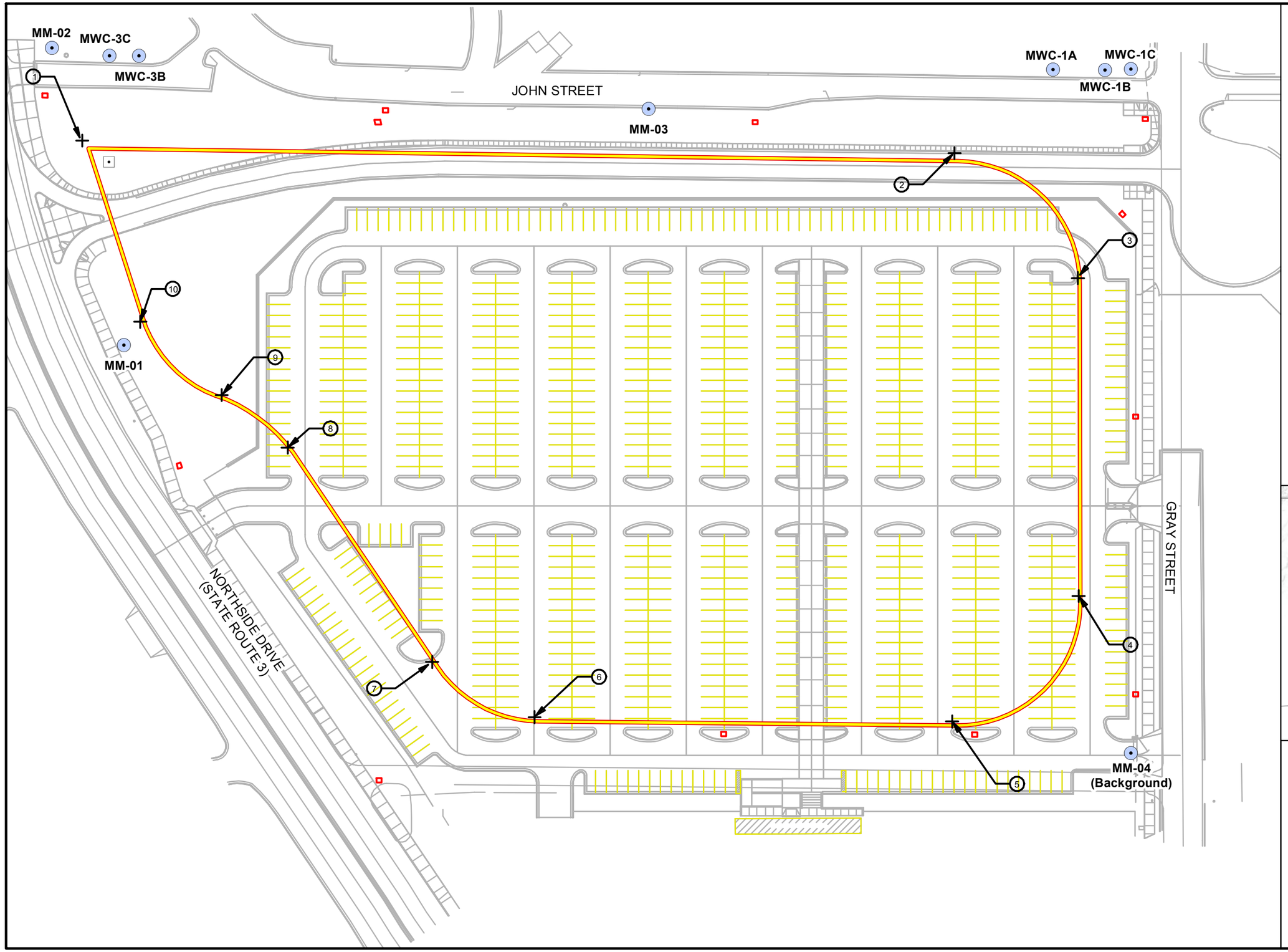
ENCLOSURE 1

FIGURES

(Four Pages)



Legend

- Dewatering Well
- Existing Monitoring Well
- Property Monument
- Slurry wall
- (#) Reference Points

N
W E
S

0 40 80
Feet

Map Source:
Modified from Williams-Russell & Johnson, Inc.

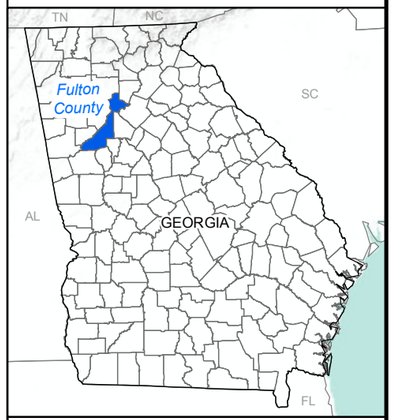


FIGURE 1

Site Location and Layout

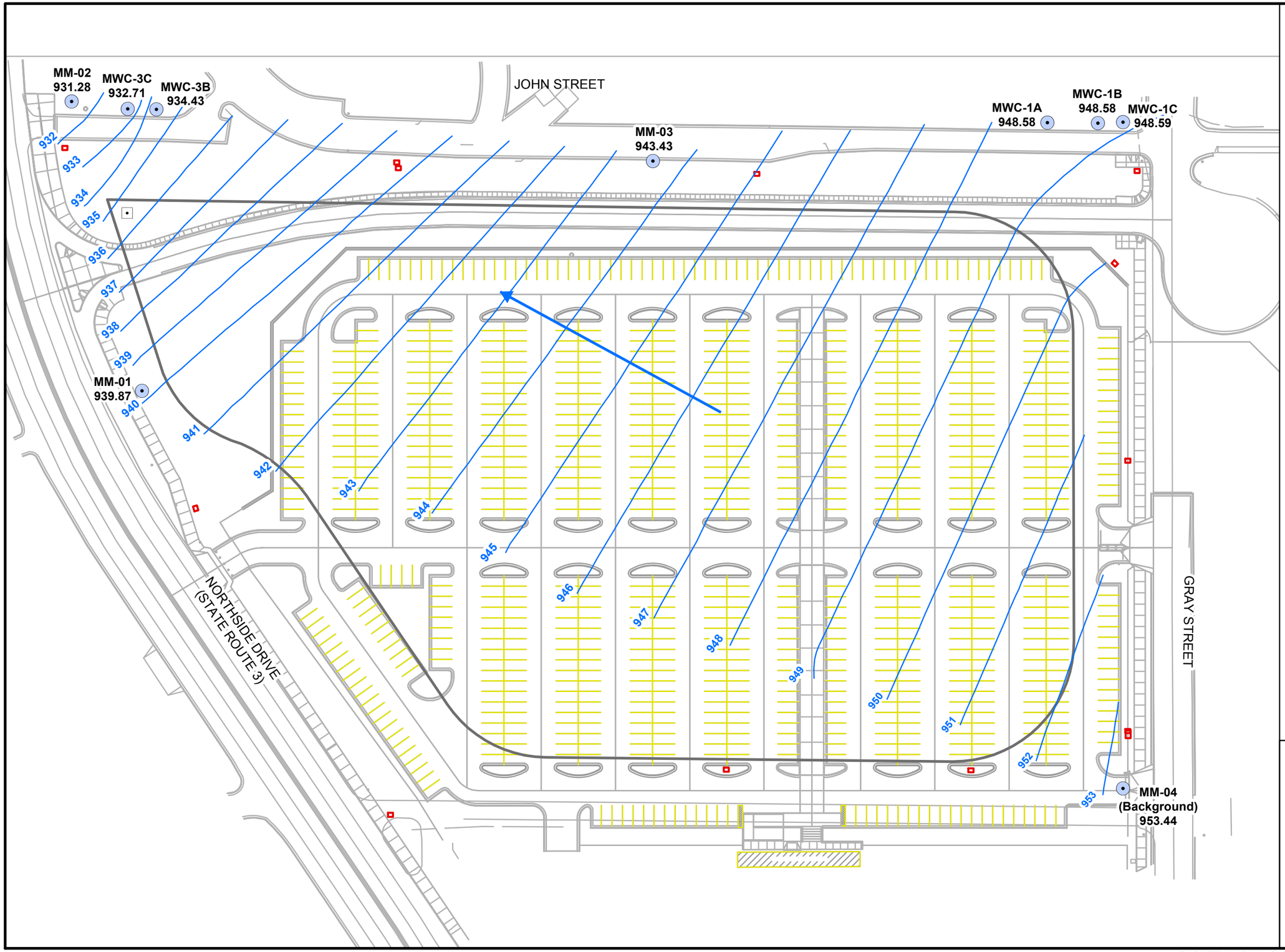
Proj. Name: 9th Annual Groundwater Sampling Event
January 19-20, 2015
Northside Drive Landfill Site

Client: Georgia World Congress Center

City: Atlanta
County: Fulton
State: Georgia

TETRA TECH

Date: 2/9/2014
Analyst: dale.vonbusch



Legend

- Dewatering Well
- Existing Monitoring Well
- Groundwater Contour
- Groundwater Flow Direction
- Property Monument
- Slurry wall
- 932 — Groundwater elevations according to height above mean sea level, measured from the well top of casing

N
W E
S

0 40 80
Feet

Map Source:
Modified from Williams-Russell & Johnson, Inc.

FIGURE 2

Potentiometric Map

Proj. Name: 9th Annual Groundwater Sampling Event
January 19-20, 2015
Northside Drive Landfill Site

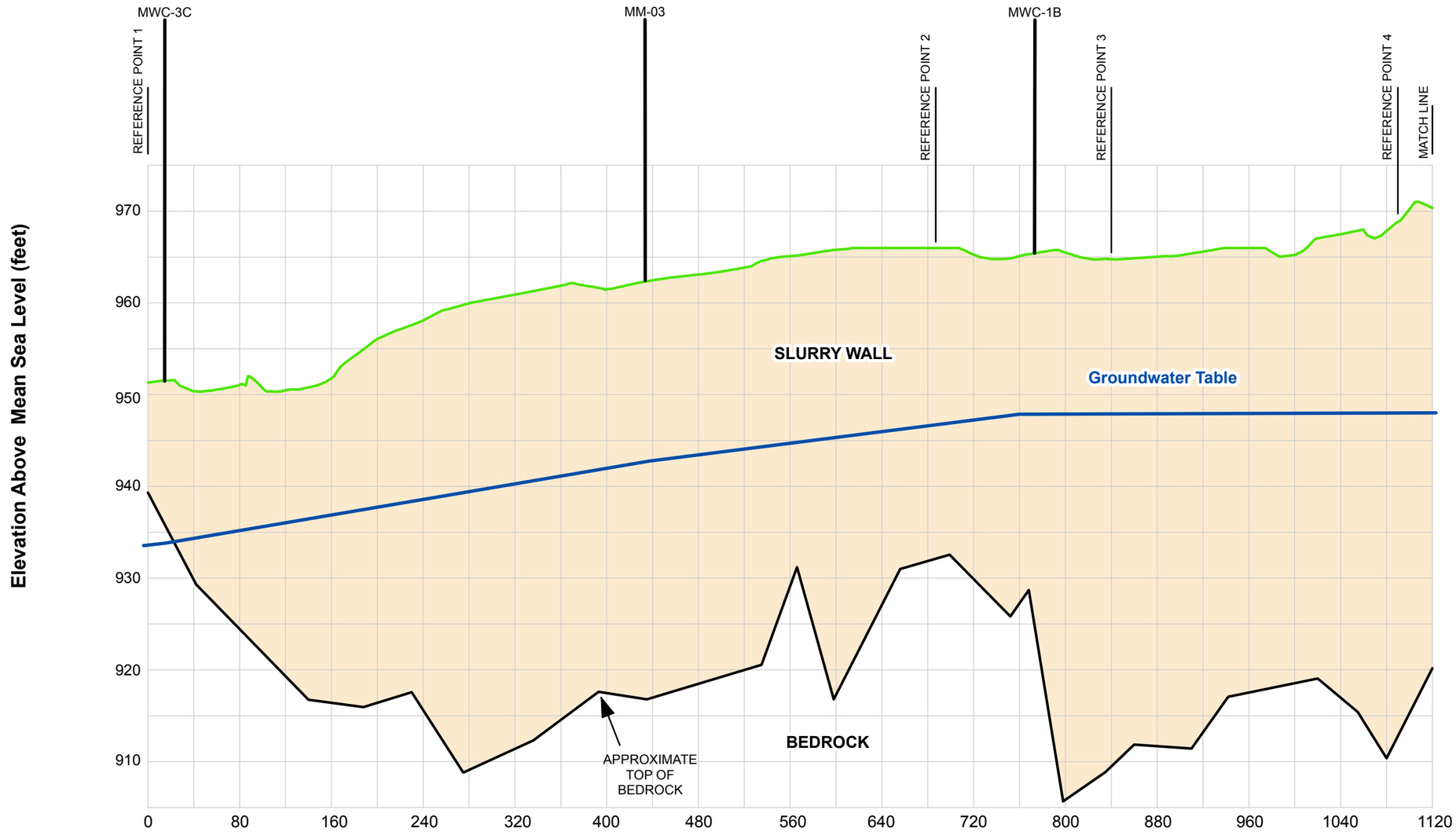
Client: Georgia World Congress Center

City: Atlanta
County: Fulton
State: Georgia

TETRA TECH

Date: 1/03/2013
Analyst: Helen.Mayoral

File: C:\X\TTEMI-103Z202801_GWCC\GIS\MXDs\Potentiometric_Maps\GWCC_Figure_2_POT_Map_Jan2015.mxd



Legend

- Approximate top of bedrock
- Groundwater table outside slurry wall
- Approximate top of slurry wall

Note:
Reference points located on Figure 1

N
W E
S

Scale located on axes

Map Source:
Modified from Tetra Tech 2001
Elevations from drawing specifications, not As-Builts

FIGURE 3
Subsurface Cross Section of Slurry Wall Perimeter

Proj. Name: 9th Annual Groundwater Sampling Event
January 19-20, 2015
Northside Drive Landfill Site

Client: Georgia World Congress Center

City: Atlanta
County: Fulton
State: Georgia

TETRA TECH

Date: 3/12/2015
Analyst: Helen.Mayoral

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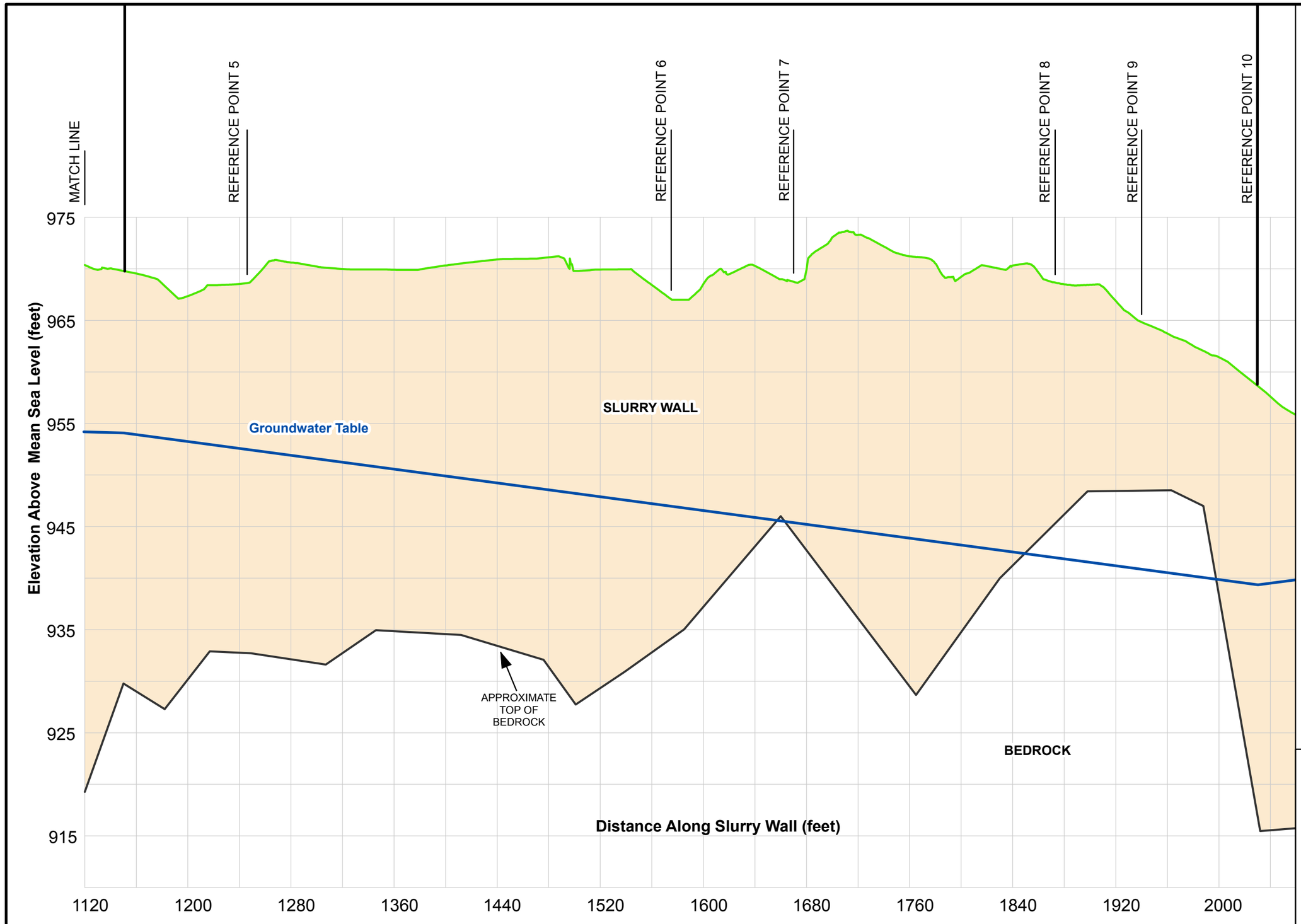

Legend

- Approximate top of bedrock
- Groundwater table outside slurry wall
- Approximate top of slurry wall

Note:
Reference points located on Figure 1

N
W E
S

Scale located on axes

Map Source:
Modified from Tetra Tech 2001
Elevations from drawing specifications, not As-Builts

FIGURE 4
Subsurface Cross Section of Slurry Wall Perimeter

Proj. Name: 9th Annual Groundwater Sampling Event
January 19-20, 2015
Northside Drive Landfill Site

Client: Georgia World Congress Center

City: Atlanta
County: Fulton
State: Georgia

TETRA TECH

Date: 3/12/2015
Analyst: Helen.Mayoral

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ENCLOSURE 2

TABLES

(9 Pages)

TABLE 1
9TH ANNUAL GROUNDWATER SAMPLING REPORT
REGULATED SUBSTANCES FOR GROUNDWATER
NORTHSIDE DRIVE LANDFILL SITE

Regulated Substance	Frequency of Groundwater Monitoring[1]	Type 1 RRS (mg/L)	Analytical Method[2]
Organics			
Acenaphthene	Quarterly for 2 years, then annually	2	SW-846 8270D
Acenaphthylene	Quarterly for 2 years, then annually	PQL[a]: 0.023	SW-846 8270D
Anthracene	Quarterly for 2 years, then annually	PQL[a]: 0.0066	SW-846 8270D
Benzo(a)anthracene	Quarterly for 2 years, then annually	0.00013	SW-846 8270D
Benzo(a)pyrene	Quarterly for 2 years, then annually	0.00023	SW-846 8270D
Benzo(b)fluoranthene	Quarterly for 2 years, then annually	0.0002	SW-846 8270D
Benzo(k)fluoranthene	Quarterly for 2 years, then annually	PQL[a]: 0.00017	SW-846 8270D
Benzo(g,h,i)perylene	Quarterly for 2 years, then annually	PQL[a]: 0.00076	SW-846 8270D
Chrysene	Quarterly for 2 years, then annually	0.0002[b]	SW-846 8270D
Dibenz(a,h)anthracene	Quarterly for 2 years, then annually	0.0003	SW-846 8270D
Fluoranthene	Quarterly for 2 years, then annually	1	SW-846 8270D
Fluorene	Quarterly for 2 years, then annually	1	SW-846 8270D
Indeno(1,2,3-cd)pyrene	Quarterly for 2 years, then annually	0.00043	SW-846 8270D
Naphthalene	Quarterly for 2 years, then annually	0.02	SW-846 8270D
Phenanthrene	Quarterly for 2 years, then annually	PQL[a]: 0.0064	SW-846 8270D
Pyrene	Quarterly for 2 years, then annually	1	SW-846 8270D
Metals			
Beryllium	Quarterly for 2 years, then annually	0.004	SW-846 6020A
Lead	Quarterly for 2 years, then annually	0.015	SW-846 6020A
Mercury	Quarterly for 2 years, then annually	0.002	SW-846 7470A

Notes:

[1] Frequency of groundwater monitoring may be modified only upon receipt of EPD's approval.

[2] During laboratory procurement activities for the 9th Annual Groundwater Sampling Event, Tetra Tech learned that analytical laboratories are phasing out the 8310 PAH method and 6010C for metals analysis. These methods are being replaced with Method 8270D SIM for PAHs and Method 6020A for metals. In correspondence dated December 11, 2014, GA EPD accepted the change in analytical methods for PAHs and metals on the condition that laboratory reporting limits remain unchanged from previous reports.

[a] The PQL presented is the value provided in EPA SW-846 Method 8310 for a typical groundwater matrix in the absence of interference. Interference may cause the PQL value to increase. As such, this PQL value is provided for guidance and may not always be achieved. Note that although the analytical method changed beginning with the 9th Annual Groundwater Sampling Event, PQL values remain as provided by the original analytical method.

[b] The health based drinking water criterion for this substance/analyte is lower than the lowest currently achievable and available detection limit. According to Rule 391-3-19.07(4)(e), the detection limit or background must be the Type I groundwater concentration criterion for this substance/analyte.

mg/L Milligrams per liter

PQL Practical quantitation limit

RRS Georgia Environmental Protection Division Risk Reduction Standards

SW-846 U.S. EPA. Test Methods for Evaluating Solid Waste, Physical/Chemical Methods. Including updates I, II, IIA, IIB, III, and IIIA to the Third Edition. September 1986 through 1998.

TABLE 2
9TH ANNUAL GROUNDWATER SAMPLING REPORT
SUMMARY OF GROUNDWATER FIELD PARAMETERS
NORTHSIDE DRIVE LANDFILL SITE

Well ID	Annual Sampling Event Date	TOC Elevation (ft)	Depth to Well Bottom (ft)	Depth to GW (ft)	GW Elevation (ft)	Depth to Sample Intake (ft)	pH (s.u.)	Conductivity (mS/cm)	Temp (°C)	Turbidity (NTU)
MM-04 (Background)	Dec. 28-30, 2004	970.75	45.37	17.72	953.03	NR	6.10	0.196	19.52	NA
	Dec. 20-21, 2005	970.75	45.42	18.25	952.50	NR	5.91	0.279	19.03	0.26
	Dec. 05-06, 2006	970.75	45.35	18.81	951.94	NR	5.94	0.261	19.59	0.50
	Dec. 04-05, 2007	970.75	45.10	19.76	950.99	NR	5.77	0.269	19.61	0.00
	Dec. 18-19, 2008	970.75	45.35	19.78	950.97	NR	5.59	0.246	20.07	1.15
	Dec. 16-17, 2009	970.75	45.35	17.47	953.28	NR	5.42	0.14	20.11	24
	Dec. 13-14, 2010	970.75	45.35	17.01	953.74	NR	5.93	0.153	20.30	19.8
	Dec. 14-15, 2011	970.75	45.35	16.60	954.15	35.00	5.84	0.108	21.60	0.00
	Dec. 12-13, 2012	970.75	45.35	17.84	952.91	40.00	5.37	0.155	20.90	0.61
	Dec. 10-11, 2013	970.75	45.35	17.11	953.64	21.94	6.07	0.120	18.01	0.06
	Jan. 19-20, 2015	970.75	45.35	17.31	953.44	18.00	5.78	0.114	19.30	0.00
MM-01	Dec. 28-30, 2004	953.52	NS	NS	NS	NS	NS	NS	NS	NS
	Dec. 20-21, 2005	957.52	27.57	17.81	939.71	NR	5.71	0.584	19.24	0.90
	Dec. 05-06, 2006	957.52	27.59	18.78	938.74	NR	5.88	0.341	19.42	4.30
	Dec. 04-05, 2007	957.52	27.31	19.57	937.95	NR	5.48	0.415	19.51	5.00
	Dec. 18-19, 2008	957.52	27.53	19.95	937.57	NR	5.87	0.142	19.43	21.2
	Dec. 16-17, 2009	957.52	27.53	18.42	939.10	NR	5.91	0.112	19.31	196
	Dec. 13-14, 2010	957.52	27.53	18.16	939.36	NR	6.16	0.339	19.60	104
	Dec. 14-15, 2011	957.52	27.53	18.48	939.04	20.00	5.81	0.294	19.70	1.95
	Dec. 12-13, 2012	957.52	27.53	19.38	938.14	22.00	5.28	0.804	19.33	0.57
	Dec. 10-11, 2013	957.52	27.53	17.18	940.34	23.00	6.03	0.254	18.15	4.45
	Jan. 19-20, 2015	957.52	27.53	17.65	939.87	19.40	5.73	0.118	19.18	8.94
MM-02	Dec. 28-30, 2004	941.72	16.68	10.49	931.23	NR	7.20	0.489	20.63	10.00
	Dec. 20-21, 2005	941.72	16.95	10.68	931.04	NR	6.30	0.635	21.17	0.70
	Dec. 05-06, 2006	941.72	16.91	10.88	930.84	NR	6.42	0.632	22.22	0.50
	Dec. 04-05, 2007	941.72	16.72	11.28	930.44	NR	6.31	0.611	22.71	0.00
	Dec. 18-19, 2008	941.72	16.90	11.32	930.40	NR	6.25	0.529	21.62	0.00
	Dec. 16-17, 2009	941.72	16.90	10.36	931.36	NR	6.26	0.359	20.80	158
	Dec. 13-14, 2010	941.72	16.90	10.63	931.09	NR	6.49	0.574	20.00	12.2
	Dec. 14-15, 2011	941.72	16.90	10.84	930.88	13.00	6.31	0.402	19.90	0.05
	Dec. 12-13, 2012	941.72	16.90	11.54	930.18	12.00	6.21	0.426	20.14	0.00
	Dec. 10-11, 2013	941.72	16.90	12.50	929.22	12.50	6.45	0.399	19.20	0.00
	Jan. 19-20, 2015	941.72	16.90	10.44	931.28	11.40	5.79	0.424	18.22	0.12
MWC-3C	Dec. 28-30, 2004	943.12	29.07	10.31	932.81	NR	7.44	0.483	18.70	9.70
	Dec. 20-21, 2005	943.12	16.95	10.80	932.32	NR	6.50	0.735	19.60	0.00
	Dec. 05-06, 2006	943.12	29.31	10.90	932.22	NR	6.57	0.686	20.51	0.50
	Dec. 04-05, 2007	943.12	29.12	11.56	931.56	NR	6.44	0.694	19.90	0.00
	Dec. 18-19, 2008	943.12	29.30	11.54	931.58	NR	6.36	0.613	20.24	0.00
	Dec. 16-17, 2009	943.12	29.30	10.81	932.31	NR	6.41	0.402	19.74	106
	Dec. 13-14, 2010	943.12	29.30	10.76	932.36	NR	6.57	0.665	17.60	121
	Dec. 14-15, 2011	943.12	29.30	10.91	932.21	21.00	6.40	0.588	19.70	0.00
	Dec. 12-13, 2012	943.12	29.30	11.76	931.36	24.00	6.32	0.677	19.74	0.71
	Dec. 10-11, 2013	943.12	29.30	10.51	932.61	13.00	6.63	0.557	19.01	0.00
	Jan. 19-20, 2015	943.12	29.30	10.41	932.71	11.50	6.07	0.639	18.63	0.12
MWC-3B	Dec. 28-30, 2004	944.8	24.68	10.29	934.51	NR	7.85	0.616	19.53	10.00
	Dec. 20-21, 2005	944.8	24.93	10.62	934.18	NR	6.82	0.856	20.02	0.36
	Dec. 05-06, 2006	944.8	24.91	11.04	933.76	NR	6.93	0.781	20.87	0.50
	Dec. 04-05, 2007	944.8	24.65	11.55	933.25	NR	6.80	0.810	20.64	0.50
	Dec. 18-19, 2008	944.8	24.88	11.54	933.26	NR	6.77	0.708	20.98	0.00
	Dec. 16-17, 2009	944.8	24.88	10.78	934.02	NR	6.80	0.465	20.40	119
	Dec. 13-14, 2010	944.8	24.88	10.80	934.00	NR	7.01	0.739	19.60	5.00
	Dec. 14-15, 2011	944.8	24.88	10.77	934.03	18.00	6.89	0.547	20.20	0.22
	Dec. 12-13, 2012	944.8	24.88	11.86	932.94	20.00	6.88	0.549	20.33	0.71
	Dec. 10-11, 2013	944.8	24.88	10.45	934.35	13.00	7.03	0.599	19.29	0.59
	Jan. 19-20, 2015	944.8	24.88	10.37	934.43	12.00	6.58	0.770	18.37	0.59
MM-03 & MM-03-DUP	Dec. 28-30, 2004	957.92	30.00	14.45	943.47	NR	7.71	0.344	18.42	7.60
	Dec. 20-21, 2005	957.92	30.28	14.90	943.02	NR	5.86	0.398	19.11	0.00
	Dec. 05-06, 2006	957.92	30.22	14.79	943.13	NR	6.01	0.394	19.99	0.50
	Dec. 04-05, 2007	957.92	29.95	15.81	942.11	NR	5.86	0.372	20.00	0.00
	Dec. 18-19, 2008	957.92	30.20	16.04	941.88	NR	5.76	0.347	20.32	0.00
	Dec. 16-17, 2009	957.92	30.20	15.51	942.41	NR	5.67	0.185	19.84	101
	Dec. 13-14, 2010	957.92	30.20	15.78	942.14	NR	6.01	0.273	19.80	7.70
	Dec. 14-15, 2011	957.92	30.20	14.09	943.83	24.00	5.89	0.324	19.90	0.53
	Dec. 12-13, 2012	957.92	30.20	16.13	941.79	25.00	5.70	0.362	20.06	1.10
	Dec. 10-11, 2013	957.92	30.20	14.93	942.99	17.00	6.03	0.224	20.00	0.41
	Jan. 19-20, 2015	957.92	30.20	14.49	943.43	16.50	4.92	0.228	19.84	0.15

TABLE 2
9TH ANNUAL GROUNDWATER SAMPLING REPORT
SUMMARY OF GROUNDWATER FIELD PARAMETERS
NORTHSIDE DRIVE LANDFILL SITE

Well ID	Annual Sampling Event Date	TOC Elevation (ft)	Depth to Well Bottom (ft)	Depth to GW (ft)	GW Elevation (ft)	Depth to Sample Intake (ft)	pH (s.u.)	Conductivity (mS/cm)	Temp (°C)	Turbidity (NTU)
MWC-1A	Dec. 28-30, 2004	961.1	18.53	11.83	949.27	NR	8.40	0.231	19.90	7.80
	Dec. 20-21, 2005	961.1	18.81	12.38	948.72	NR	5.62	0.299	19.66	0.23
	Dec. 05-06, 2006	961.1	12.51	11.99	949.11	NR	5.97	0.285	19.39	5.98
	Dec. 04-05, 2007	961.1	12.51	Not sampled due to insufficient water						
	Dec. 18-19, 2008	961.1	12.51	Not sampled due to insufficient water						
	Dec. 16-17, 2009	961.1	12.51	Not sampled due to insufficient water						
	Dec. 13-14, 2010	961.1	13.99	Not sampled due to insufficient water						
	Dec. 14-15, 2011	961.1	13.99	13.26	947.84	13.60	5.54	0.224	19.4	0.04
	Dec. 12-13, 2012	961.1	18.42	13.60	947.50	13.00	5.25	0.279	19.2	0.31
	Dec. 10-11, 2013	961.1	18.42	12.75	948.35	15.00	5.91	0.199	18.48	0.31
	Jan. 19-20, 2015	961.1	18.42	12.52	948.58	13.50	5.01	0.203	18.18	0.98
MWC-1B	Dec. 28-30, 2004	960.77	55.46	11.52	949.25	NR	6.27	0.280	19.02	5.90
	Dec. 20-21, 2005	960.77	55.74	12.08	948.69	NR	5.79	0.372	18.77	0.50
	Dec. 05-06, 2006	960.77	55.72	11.90	948.87	NR	5.97	0.370	19.55	0.00
	Dec. 04-05, 2007	960.77	55.45	13.00	947.77	NR	5.80	0.393	19.03	0.00
	Dec. 18-19, 2008	960.77	55.68	12.93	947.84	NR	5.70	0.361	19.90	0.00
	Dec. 16-17, 2009	960.77	55.68	12.06	948.71	NR	5.73	0.227	19.75	31.0
	Dec. 13-14, 2010	960.77	55.68	12.84	947.93	NR	5.89	0.006	20.40	0.50
	Dec. 14-15, 2011	960.77	55.68	13.00	947.77	51.00	5.36	0.419	20.80	1.94
	Dec. 12-13, 2012	960.77	55.68	13.42	947.35	50.00	5.62	0.595	19.92	0.85
	Dec. 10-11, 2013	960.77	55.68	12.45	948.32	19.87	5.90	0.396	18.83	1.59
	Jan. 19-20, 2015	960.77	55.68	12.19	948.58	15.60	4.85	0.404	18.84	0.19
MWC-1C	Dec. 28-30, 2004	960.38	77.23	11.00	949.38	NR	7.33	0.462	19.63	8.00
	Dec. 20-21, 2005	960.38	77.50	11.35	949.03	NR	6.01	0.603	19.26	2.14
	Dec. 05-06, 2006	960.38	77.51	11.46	948.92	NR	6.20	0.589	19.11	0.00
	Dec. 04-05, 2007	960.38	77.23	14.27	946.11	NR	5.99	0.612	20.75	0.00
	Dec. 18-19, 2008	960.38	76.45	12.87	947.51	NR	5.87	0.556	20.13	0.00
	Dec. 16-17, 2009	960.38	76.45	11.86	948.52	NR	6.08	0.339	20.99	7.00
	Dec. 13-14, 2010	960.38	76.45	12.30	948.08	NR	5.89	0.617	20.70	0.30
	Dec. 14-15, 2011	960.38	76.45	12.45	947.93	71.00	5.73	0.561	20.60	0.00
	Dec. 12-13, 2012	960.38	76.45	13.08	947.30	71.00	5.79	0.787	20.21	0.16
	Dec. 10-11, 2013	960.38	76.45	11.94	948.44	36.02	6.17	0.591	19.07	0.19
	Jan. 19-20, 2015	960.38	76.45	11.79	948.59	25.00	5.13	0.571	19.27	0.37
DWW	Dec. 28-30, 2004	949.3	NR	12.95	936.35	NA	NA	NA	NA	NA
	Dec. 20-21, 2005	951.3	18.93	14.69	936.61	NA	NA	NA	NA	NA
	Dec. 05-06, 2006	951.3	18.89	15.32	935.98	NA	NA	NA	NA	NA
	Dec. 04-05, 2007	951.3	18.70	16.01	935.29	NA	NA	NA	NA	NA
	Dec. 18-19, 2008	951.3	18.90	16.06	935.24	NA	NA	NA	NA	NA
	Dec. 16-17, 2009	951.3	18.90	14.85	936.45	NA	NA	NA	NA	NA
	Dec. 13-14, 2010	951.3	18.90	14.91	936.39	NA	NA	NA	NA	NA
	Dec. 14-15, 2011	951.3	18.90	14.95	936.35	NA	NA	NA	NA	NA
	Dec. 12-13, 2012	951.3	18.90	15.98	935.32	NA	NA	NA	NA	NA
	Dec. 10-11, 2013	951.3	18.90	14.41	936.89	NA	NA	NA	NA	NA
	Jan. 19-20, 2015	951.3	18.90	14.24	937.06	NA	NA	NA	NA	NA

Notes:

°C	Degree Celsius
Ft	Feet
GW	Groundwater
ID	Identification
mS/cm	Millisiemens per centimeter
NA	Not analyzed
NR	Not recorded
NS	Not sampled; in 2004 MM-01 was covered with approximately 9 feet of soil and debris
NTU	Nephelometric Turbidity Units
s.u.	standard units
Temp	Temperature
TOC	Top of casing, relative to corrected elevation above mean sea level.
	Parameters collected during relevant annual sampling event.

Depths recorded are measured as depths below TOC
Well redevopment took place Nov 15-16, 2011, contributing to generally lower turbidity values

TABLE 3
9TH ANNUAL GROUNDWATER SAMPLING REPORT
SUMMARY OF METALS ANALYTICAL RESULTS
NORTHSIDE DRIVE LANDFILL SITE

Well ID	Annual Sampling Event Date	Beryllium (µg/L)	Lead (µg/L)	Mercury (µg/L)
RRS		4	15	2
MM-04 (Background)	Dec. 28-30, 2004	< 3	< 15	< 0.5
	Dec. 20-21, 2005	< 3	< 15	< 0.5
	Dec. 05-06, 2006	< 3	< 15	< 0.5
	Dec. 04-05, 2007	< 3	< 15	< 0.5
	Dec. 18-19, 2008	< 10.0	< 10.0	< 0.20
	Dec. 16-17, 2009	< 10.0	< 10.0	< 0.20
	Dec. 13-14, 2010	< 10.0	< 10.0	< 0.20
	Dec. 14-15, 2011	< 1.0	< 1.0	< 0.20
	Dec. 12-13, 2012	< 5.0	< 15	< 0.20
	Dec. 10-11, 2013	< 4.0	< 15	< 0.20
	Jan. 19-20, 2015	< 4.0	< 15	<0.20
MM-01	Dec. 28-30, 2004	NS	NS	NS
	Dec. 20-21, 2005	< 3	< 15	< 0.5
	Dec. 05-06, 2006	< 3	< 15	< 0.5
	Dec. 04-05, 2007	< 3	< 15	< 0.5
	Dec. 18-19, 2008	< 10.0	< 10.0	< 0.20
	Dec. 16-17, 2009	< 10.0	< 10.0	0.06 J
	Dec. 13-14, 2010	< 10.0	< 10.0	< 0.20
	Dec. 14-15, 2011	< 1.0	< 1.0	< 0.20
	Dec. 12-13, 2012	< 5.0	< 15	< 0.20
	Dec. 10-11, 2013	< 4.0	< 15	< 0.20
	Jan. 19-20, 2015	< 4.0	< 15	<0.20
MM-02	Dec. 28-30, 2004	< 3	< 15	< 0.5
	Dec. 20-21, 2005	< 3	< 15	< 0.5
	Dec. 05-06, 2006	< 3	< 15	< 0.5
	Dec. 04-05, 2007	< 3	< 15	< 0.5
	Dec. 18-19, 2008	< 10.0	< 10.0	< 0.20
	Dec. 16-17, 2009	< 10.0	< 10.0	< 0.20
	Dec. 13-14, 2010	< 10.0	< 10.0	< 0.20
	Dec. 14-15, 2011	< 1.0	< 1.0	< 0.20
	Dec. 12-13, 2012	< 5.0	< 15	< 0.20
	Dec. 10-11, 2013	< 4.0	< 15	< 0.20
	Jan. 19-20, 2015	< 4.0	< 15	<0.20
MWC-3C	Dec. 28-30, 2004	< 3	< 15	< 0.5
	Dec. 20-21, 2005	< 3	< 15	< 0.5
	Dec. 05-06, 2006	< 3	< 15	< 0.5
	Dec. 04-05, 2007	< 3	< 15	< 0.5
	Dec. 18-19, 2008	< 10.0	< 10.0	< 0.20
	Dec. 16-17, 2009	< 10.0	< 10.0	< 0.20
	Dec. 13-14, 2010	< 10.0	< 10.0	< 0.20
	Dec. 14-15, 2011	< 1.0	< 1.0	< 0.20
	Dec. 12-13, 2012	< 5.0	< 15	< 0.20
	Dec. 10-11, 2013	< 4.0	< 15	< 0.20
	Jan. 19-20, 2015	< 4.0	< 15	<0.20
MWC-3B	Dec. 28-30, 2004	< 3	< 15	< 0.5
	Dec. 20-21, 2005	< 3	< 15	< 0.5
	Dec. 05-06, 2006	< 3	< 15	< 0.5
	Dec. 04-05, 2007	< 3	< 15	< 0.5
	Dec. 18-19, 2008	< 10.0	< 10.0	< 0.20
	Dec. 16-17, 2009	< 10.0	< 10.0	< 0.20
	Dec. 13-14, 2010	< 10.0	< 10.0	< 0.20
	Dec. 14-15, 2011	< 1.0	< 1.0	< 0.20
	Dec. 12-13, 2012	< 5.0	< 15	< 0.20
	Dec. 10-11, 2013	< 4.0	< 15	< 0.20
	Jan. 19-20, 2015	< 4.0	< 15	<0.20

TABLE 3
9TH ANNUAL GROUNDWATER SAMPLING REPORT
SUMMARY OF METALS ANALYTICAL RESULTS
NORTHSIDE DRIVE LANDFILL SITE

Well ID	Annual Sampling Event Date	Beryllium (µg/L)	Lead (µg/L)	Mercury (µg/L)
RRS		4	15	2
MM-03	Dec. 28-30, 2004	< 3	< 15	< 0.5
	Dec. 20-21, 2005	< 3	< 15	< 0.5
	Dec. 05-06, 2006	< 3	< 15	< 0.5
	Dec. 04-05, 2007	< 3	< 15	< 0.5
	Dec. 18-19, 2008	< 10.0	< 10.0	< 0.20
	Dec. 16-17, 2009	< 10.0	< 10.0	< 0.20
	Dec. 13-14, 2010	< 10.0	< 10.0	< 0.20
	Dec. 14-15, 2011	< 1.0	< 1.0	< 0.20
	Dec. 12-13, 2012	< 5.0	< 15	< 0.20
	Dec. 10-11, 2013	< 4.0	< 15	< 0.20
	Jan. 19-20, 2015	< 4.0	< 15	<0.20
MM-03-DUP	Dec. 28-30, 2004	NS	NS	NS
	Dec. 20-21, 2005	NS	NS	NS
	Dec. 05-06, 2006	NS	NS	NS
	Dec. 04-05, 2007	NS	NS	NS
	Dec. 18-19, 2008	< 10.0	< 10.0	< 0.20
	Dec. 16-17, 2009	< 10.0	< 10.0	< 0.20
	Dec. 13-14, 2010	< 10.0	< 10.0	< 0.20
	Dec. 14-15, 2011	< 1.0	< 1.0	< 0.20
	Dec. 12-13, 2012	< 5.0	< 15	< 0.20
	Dec. 10-11, 2013	< 4.0	< 15	< 0.20
	Jan. 19-20, 2015	< 4.0	< 15	<0.20
MWC-1A	Dec. 28-30, 2004	< 3	< 15	< 0.5
	Dec. 20-21, 2005	< 3	< 15	< 0.5
	Dec. 05-06, 2006	< 3	< 15	< 0.5
	Dec. 04-05, 2007	Not sampled due to insufficient water		
	Dec. 18-19, 2008	Not sampled due to insufficient water		
	Dec. 16-17, 2009	Not sampled due to insufficient water		
	Dec. 13-14, 2010	Not sampled due to insufficient water		
	Dec. 14-15, 2011	< 1.0	< 1.0	< 0.20
	Dec. 12-13, 2012	< 5.0	< 15	< 0.20
	Dec. 10-11, 2013	< 4.0	< 15	< 0.20
	Jan. 19-20, 2015	< 4.0	< 15	<0.20
MWC-1B	Dec. 28-30, 2004	< 3	< 15	< 0.5
	Dec. 20-21, 2005	< 3	< 15	< 0.5
	Dec. 05-06, 2006	< 3	< 15	< 0.5
	Dec. 04-05, 2007	< 3	< 15	< 0.5
	Dec. 18-19, 2008	< 10.0	< 10.0	< 0.20
	Dec. 16-17, 2009	< 10.0	< 10.0	< 0.20
	Dec. 13-14, 2010	< 10.0	< 10.0	< 0.20
	Dec. 14-15, 2011	< 1.0	< 1.0	< 0.20
	Dec. 12-13, 2012	< 5.0	< 15	< 0.20
	Dec. 10-11, 2013	< 4.0	< 15	< 0.20
	Jan. 19-20, 2015	< 4.0	< 15	<0.20
MWC-1C	Dec. 28-30, 2004	< 3	< 15	< 0.5
	Dec. 20-21, 2005	< 3	< 15	< 0.5
	Dec. 05-06, 2006	< 3	< 15	< 0.5
	Dec. 04-05, 2007	< 3	< 15	< 0.5
	Dec. 18-19, 2008	< 10.0	< 10.0	< 0.20
	Dec. 16-17, 2009	< 10.0	< 10.0	0.09 J
	Dec. 13-14, 2010	< 10.0	< 10.0	< 0.20
	Dec. 14-15, 2011	< 1.0	< 1.0	< 0.20
	Dec. 12-13, 2012	< 5.0	< 15	< 0.20
	Dec. 10-11, 2013	< 4.0	< 15	< 0.20
	Jan. 19-20, 2015	< 4.0	< 15	<0.20

TABLE 3
9TH ANNUAL GROUNDWATER SAMPLING REPORT
SUMMARY OF METALS ANALYTICAL RESULTS
NORTHSIDE DRIVE LANDFILL SITE

Notes:

J	Estimated value detected below Reporting Limit
µg/L	Micrograms per liter
<	Less than
NS	Not sampled; in 2004 MM-01 was covered with approximately 9 feet of soil and debris. MM-03-DUP not collected prior to 2008.
RRS	Risk Reduction Standard
	Samples collected during relevant annual sampling event

TABLE 4
9TH ANNUAL GROUNDWATER SAMPLING REPORT
SUMMARY OF POLYNUCLEAR AROMATIC HYDROCARBONS (PAH) ANALYTICAL RESULTS
NORTHSIDE DRIVE LANDFILL SITE

Well ID	Annual Sampling Event Date	Acenaphthene (µg/L)	Acenaphthylene (µg/L)	Anthracene (µg/L)	Benzo(a) anthracene (µg/L)	Benzo(a) pyrene (µg/L)	Benzo(b) flouranthene (µg/L)	Benzo(k) flouranthene (µg/L)	Benzo(g,h,i) perylene (µg/L)	Chrysene (µg/L)	Dibenzo(a,h) anthracene (µg/L)	Fluoranthene (µg/L)	Flourene (µg/L)	Indeno(1,2,3-cd)pyrene (µg/L)	Naphthalene (µg/L)	Phenanthrene (µg/L)	Pyrene (µg/L)
RRS		**2,000**	**23**	**6.6**	**0.13**	**0.23**	**0.2**	**0.17**	**0.76**	**0.2**	**0.3**	**1,000**	**1,000**	**0.43**	**20**	**6.4**	**1,000**
MM-04 (Background)	Dec. 28-30, 2004	< 1.0	< 1.0	< 1.0	< 0.1	< 0.1	< 0.1	< 0.17	< 0.1	< 0.1	< 0.1	< 1.0	< 1.0	< 0.4	< 1.0	< 1.0	< 1.0
	Dec. 20-21, 2005	< 1.0	< 1.0	< 1.0	< 0.1	< 0.1	< 0.1	< 0.17	< 0.1	< 0.1	< 0.1	< 1.0	< 1.0	< 0.4	< 1.0	< 1.0	< 1.0
	Dec. 05-06, 2006	< 1.0	< 1.0	< 1.0	< 0.1	< 0.1	< 0.1	< 0.17	< 0.1	< 0.1	< 0.1	< 1.0	< 1.0	< 0.4	< 1.0	< 1.0	< 1.0
	Dec. 04-05, 2007	< 1.0	< 1.0	< 1.0	< 0.1	< 0.1	< 0.1	< 0.17	< 0.1	< 0.1	< 0.1	< 1.0	< 1.0	< 0.4	< 1.0	< 1.0	< 1.0
	Dec. 18-19, 2008	< 1.0	< 1.0	< 0.20	< 0.10	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.50	< 0.20	< 1.0	< 0.50	< 0.20
	Dec. 16-17, 2009	< 1.0	< 1.0	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.50	< 0.20	< 1.0	< 0.50	< 0.20
	Dec. 13-14, 2010	< 1.0	< 1.0	< 0.20	< 0.10	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.50	< 0.20	< 1.0	< 0.50	< 0.20
	Dec. 14-15, 2011	< 0.50	< 1.0	< 0.050	< 0.050	< 0.050	< 0.10	< 0.10	< 0.050	< 0.050	< 0.10	< 0.10	< 0.10	< 0.050	< 0.50	< 0.050	< 0.050
	Dec. 12-13, 2012	< 1.08	< 1.08	< 0.108	< 0.108	< 0.108	< 0.161	< 0.108	< 0.269	< 0.108	< 0.108	< 0.269	< 0.538	< 0.269	< 0.538	< 0.108	< 0.269
	Dec. 10-11, 2013	< 1.18	< 1.18	< 0.118	< 0.118	< 0.118	< 0.176	< 0.118	< 0.294	< 0.118	< 0.118	< 0.294	< 0.588	< 0.294	< 0.588	< 0.118	< 0.294
	Jan. 19-20, 2015	<1.09	<1.09	<0.109	<0.109	<0.109	<0.163	<0.109	<0.272	<0.109	<0.109	<0.272	<0.543	<0.272	<0.543	<0.109	<0.272
MM-01	Dec. 28-30, 2004	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	Dec. 20-21, 2005	< 1.0	< 1.0	< 1.0	< 0.1	< 0.1	< 0.1	< 0.17	< 0.1	< 0.1	< 0.1	< 1.0	< 1.0	< 0.4	< 1.0	< 1.0	< 1.0
	Dec. 05-06, 2006	< 1.0	< 1.0	< 1.0	< 0.1	< 0.1	< 0.1	< 0.17	< 0.1	< 0.1	< 0.1	< 1.0	< 1.0	< 0.4	< 1.0	< 1.0	< 1.0
	Dec. 04-05, 2007	< 1.0	< 1.0	< 1.0	< 0.1	< 0.1	< 0.1	< 0.17	< 0.1	< 0.1	< 0.1	< 1.0	< 1.0	< 0.4	< 1.0	< 1.0	< 1.0
	Dec. 18-19, 2008	< 1.0	< 1.0	< 0.20	< 0.10	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.50	< 0.20	< 1.0	< 0.50	< 0.20
	Dec. 16-17, 2009	< 1.0	< 1.0	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.50	< 0.20	< 1.0	< 0.50	< 0.20
	Dec. 13-14, 2010	< 1.0	< 1.0	< 0.20	< 0.10	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.50	< 0.20	< 1.0	< 0.50	< 0.20
	Dec. 14-15, 2011	< 0.50	< 1.0	< 0.050	< 0.050	< 0.050	< 0.10	< 0.10	< 0.050	< 0.050	< 0.10	< 0.10	< 0.10	< 0.050	< 0.50	< 0.050	< 0.050
	Dec. 12-13, 2012	< 1.08	< 1.08	< 0.108	< 0.108	< 0.108	< 0.161	< 0.108	< 0.269	< 0.108	< 0.108	< 0.269	< 0.538	< 0.269	< 0.538	< 0.108	< 0.269
	Dec. 10-11, 2013	< 1.25	< 1.25	< 0.125	< 0.125	< 0.125	< 0.188	< 0.125	< 0.313	< 0.125	< 0.125	< 0.313	< 0.625	< 0.313	< 0.625	< 0.125	< 0.313
	Jan. 19-20, 2015	<1.11	<1.11	<0.111	<0.111	<0.111	<0.163	<0.111	<0.278	<0.111	<0.111	<0.278	<0.556	<0.278	<0.556	<0.111	<0.278
MM-02	Dec. 28-30, 2004	< 1.0	< 1.0	< 1.0	< 0.1	< 0.1	< 0.1	< 0.17	< 0.1	< 0.1	< 0.1	< 1.0	< 1.0	< 0.4	< 1.0	< 1.0	< 1.0
	Dec. 20-21, 2005	< 1.0	< 1.0	< 1.0	< 0.1	< 0.1	< 0.1	< 0.17	< 0.1	< 0.1	< 0.1	< 1.0	< 1.0	< 0.4	< 1.0	< 1.0	< 1.0
	Dec. 05-06, 2006	< 1.0	< 1.0	< 1.0	< 0.1	< 0.1	< 0.1	< 0.17	< 0.1	< 0.1	< 0.1	< 1.0	< 1.0	< 0.4	< 1.0	< 1.0	< 1.0
	Dec. 04-05, 2007	< 1.0	< 1.0	< 1.0	< 0.1	< 0.1	< 0.1	< 0.17	< 0.1	< 0.1	< 0.1	< 1.0	< 1.0	< 0.4	< 1.0	< 1.0	< 1.0
	Dec. 18-19, 2008	< 1.0	< 1.0	< 0.20	< 0.10	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.50	< 0.20	< 1.0	< 0.50	< 0.20
	Dec. 16-17, 2009	< 1.0	< 1.0	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.50	< 0.20	< 1.0	< 0.50	< 0.20
	Dec. 13-14, 2010	< 1.0	< 1.0	< 0.20	< 0.10	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.50	< 0.20	< 1.0	< 0.50	< 0.20
	Dec. 14-15, 2011	< 0.50	< 1.0	< 0.050	< 0.050	< 0.050	< 0.10	< 0.10	< 0.050	< 0.050	< 0.10	< 0.10	< 0.10	< 0.050	< 0.50	< 0.050	< 0.050
	Dec. 12-13, 2012	< 1.06	< 1.06	< 0.106	< 0.106	< 0.106	< 0.160	< 0.106	< 0.266	< 0.106	< 0.106	< 0.266	< 0.532	< 0.266	< 0.532	< 0.106	< 0.266
	Dec. 10-11, 2013	< 1.05	< 1.05	< 0.105	< 0.105	< 0.105	< 0.158	< 0.105	< 0.263	< 0.105	< 0.105	< 0.263	< 0.526	< 0.263	< 0.526	< 0.105	< 0.263
	Jan. 19-20, 2015	<1.09	<1.09	<0.109	<0.109	<0.109	<0.163	<0.109	<0.272	<0.109	<0.109	<0.272	<0.543	<0.272	<0.543	<0.109	<0.272
MWC-3C	Dec. 28-30, 2004	< 1.0	< 1.0	< 1.0	< 0.1	< 0.1	< 0.1	< 0.17	< 0.1	< 0.1	< 0.1	< 1.0	< 1.0	< 0.4	< 1.0	< 1.0	< 1.0
	Dec. 20-21, 2005	< 1.0	< 1.0	< 1.0	< 0.1	< 0.1	< 0.1	< 0.17	< 0.1	< 0.1	< 0.1	< 1.0	< 1.0	< 0.4	< 1.0	< 1.0	< 1.0
	Dec. 05-06, 2006	< 1.0	< 1.0	< 1.0	< 0.1	< 0.1	< 0.1	< 0.17	< 0.1	< 0.1	< 0.1	< 1.0	< 1.0	< 0.4	< 1.0	< 1.0	< 1.0
	Dec. 04-05, 2007	< 1.0	< 1.0	< 1.0	< 0.1	< 0.1	< 0.1	< 0.17	< 0.1	< 0.1	< 0.1	< 1.0	< 1.0	< 0.4	< 1.0	< 1.0	< 1.0
	Dec. 18-19, 2008	< 1.0	< 1.0	< 0.20	< 0.10	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.50	< 0.20	< 1.0	< 0.50	< 0.20
	Dec. 16-17, 2009	< 1.0	< 1.0	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.50	< 0.20	< 1.0	< 0.50	< 0.20
	Dec. 13-14, 2010	< 1.0	< 1.0	< 0.20	< 0.10	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.50	< 0.20	< 1.0	< 0.50	< 0.20
	Dec. 14-15, 2011	< 0.50	< 1.0	< 0.050	< 0.050	< 0.050	< 0.10	< 0.10	< 0.050	< 0.050	< 0.10	< 0.10	< 0.10	< 0.050	< 0.50	< 0.050	< 0.050
	Dec. 12-13, 2012	< 1.06	< 1.06	< 0.106	< 0.106	< 0.106	< 0.160	< 0.106	< 0.266	< 0.106	< 0.106	< 0.266	< 0.532	< 0.266	< 0.532	< 0.106	< 0.266
	Dec. 10-11, 2013	< 1.11	< 1.11	< 0.111	< 0.111	< 0.111	< 0.167	< 0.111	< 0.278	< 0.111	< 0.111	< 0.278	< 0.556	< 0.278	< 0.556	< 0.111	< 0.278
	Jan. 19-20, 2015	<1.09	<1.09	<0.109	<0.109	<0.109	<0.163	<0.109	<0.272	<0.109	<0.109	<0.272	<0.543	<0.272	<0.543	<0.109	<0.272
MWC-3B	Dec. 28-30, 2004	< 1.0	< 1.0	< 1.0	< 0.1	< 0.1	< 0.1	< 0.17	< 0.1	< 0.1	< 0.1	< 1.0	< 1.0	< 0.4	< 1.0	< 1.0	< 1.0
	Dec. 20-21, 2005	< 1.0	< 1.0	< 1.0	< 0.1	< 0.1	< 0.1	< 0.17	< 0.1	< 0.1	< 0.1	< 1.0	< 1.0	< 0.4	< 1.0	< 1.0	< 1.0
	Dec. 05-06, 2006	< 1.0	< 1.0	< 1.0	< 0.1	< 0.1	< 0.1	< 0.17	< 0.1	< 0.1	< 0.1	< 1.0	< 1.0	< 0.4	< 1.0	< 1.0	< 1.0
	Dec. 04-05, 2007	< 1.0	< 1.0	< 1.0	< 0.1	< 0.1	< 0.1	< 0.17	< 0.1	< 0.1	< 0.1	< 1.0	< 1.0	< 0.4	< 1.0	< 1.0	< 1.0
	Dec. 18-19, 2008	< 1.0	< 1.0	< 0.20	< 0.10	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.50	< 0.20	< 1.0	< 0.50	< 0.20
	Dec. 16-17, 2009	< 1.0	< 1.0	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.50	< 0.20	< 1.0	< 0.50	< 0.20
	Dec. 13-14, 2010	< 1.0	< 1.0	< 0.20	< 0.10	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.50	< 0.20	< 1.0	< 0.50	< 0.20
	Dec. 14-15, 2011	< 0.50	< 1.0	< 0.050	< 0.050	< 0.050	< 0.10	< 0.10	< 0.050	< 0.050	< 0.10	< 0.10	< 0.10	< 0.050	< 0.50	< 0.050	< 0.050
	Dec. 12-13, 2012	< 1.08	< 1.08	< 0.108	< 0.108	< 0.108	< 0.161	< 0.108	< 0.269	< 0.108	< 0.108	< 0.269	< 0.538	< 0.269	< 0.538	< 0.108	< 0.269
	Dec. 10-11, 2013	< 1.18	< 1.18	< 0.118	< 0.118	< 0.118	< 0.176	< 0.118	< 0.294	< 0.118	< 0.118	< 0.294	< 0.588	< 0.294	< 0.588	< 0.118	< 0.294
	Jan. 19-20, 2015	<1.11	<1.11	<0.111	<0.111	<0.111	<0.167	<0.111	<0.278	<0.111	<0.111	<0.278	<0.556	<0.278	<0.556	<0.111	<0.278

TABLE 4
9TH ANNUAL GROUNDWATER SAMPLING REPORT
SUMMARY OF POLYNUCLEAR AROMATIC HYDROCARBONS (PAH) ANALYTICAL RESULTS
NORTHSIDE DRIVE LANDFILL SITE

Well ID	Annual Sampling Event Date	Acenaphthene (µg/L)	Acenaphthylene (µg/L)	Anthracene (µg/L)	Benzo(a) anthracene (µg/L)	Benzo(a) pyrene (µg/L)	Benzo(b) flouranthene (µg/L)	Benzo(k) flouranthene (µg/L)	Benzo(g,h,i) perylene (µg/L)	Chrysene (µg/L)	Dibenzo(a,h) anthracene (µg/L)	Fluoranthene (µg/L)	Flourene (µg/L)	Indeno(1,2,3-cd)pyrene (µg/L)	Naphthalene (µg/L)	Phenanthrene (µg/L)	Pyrene (µg/L)
RRS		**2,000**	**23**	**6.6**	**0.13**	**0.23**	**0.2**	**0.17**	**0.76**	**0.2**	**0.3**	**1,000**	**1,000**	**0.43**	**20**	**6.4**	**1,000**
MM-03	Dec. 28-30, 2004	< 1.0	< 1.0	< 1.0	< 0.1	< 0.1	< 0.1	< 0.17	< 0.1	< 0.1	< 0.1	< 1.0	< 1.0	< 0.4	< 1.0	< 1.0	< 1.0
	Dec. 20-21, 2005	< 1.0	< 1.0	< 1.0	< 0.1	< 0.1	< 0.1	< 0.17	< 0.1	< 0.1	< 0.1	< 1.0	< 1.0	< 0.4	< 1.0	< 1.0	< 1.0
	Dec. 05-06, 2006	< 1.0	< 1.0	< 1.0	< 0.1	< 0.1	< 0.1	< 0.17	< 0.1	< 0.1	< 0.1	< 1.0	< 1.0	< 0.4	< 1.0	< 1.0	< 1.0
	Dec. 04-05, 2007	< 1.0	< 1.0	< 1.0	< 0.1	< 0.1	< 0.1	< 0.17	< 0.1	< 0.1	< 0.1	< 1.0	< 1.0	< 0.4	< 1.0	< 1.0	< 1.0
	Dec. 18-19, 2008	< 1.0	< 1.0	< 0.20	< 0.10	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.50	< 0.20	< 1.0	< 0.50	< 0.20
	Dec. 16-17, 2009	< 1.0	< 1.0	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.50	< 0.20	< 1.0	< 0.50	< 0.20
	Dec. 13-14, 2010	< 1.0	< 1.0	< 0.20	< 0.10	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.50	< 0.20	< 1.0	< 0.50	< 0.20
	Dec. 14-15, 2011	< 0.50	< 1.0	< 0.050	< 0.050	< 0.050	< 0.10	< 0.10	< 0.050	< 0.050	< 0.10	< 0.10	**0.20**	< 0.050	**4.4**	**0.31**	< 0.050
	Dec. 12-13, 2012	< 1.09	< 1.09	< 0.109	< 0.109	< 0.109	< 0.163	< 0.109	< 0.272	< 0.109	< 0.109	< 0.272	**< 0.543**	< 0.272	**2.93 J**	**0.302 J**	< 0.272
	Dec. 10-11, 2013	< 1.18	< 1.18	< 0.118	< 0.118	< 0.118	< 0.176	< 0.118	< 0.294	< 0.118	< 0.118	**0.638**	< 0.588	< 0.294	**1.76**	**0.43**	< 0.294
	Jan. 19-20, 2015	<1.09	<1.09	<0.109	<0.109	<0.109	<0.163	<0.109	<0.272	<0.109	<0.109	<0.272	<0.543	<0.272	**2.52**	<0.109	<0.272
MM-03-DUP	Dec. 28-30, 2004	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	Dec. 20-21, 2005	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	Dec. 05-06, 2006	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	Dec. 04-05, 2007	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	Dec. 18-19, 2008	< 1.0	< 1.0	< 0.20	< 0.10	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.50	< 0.20	< 1.0	< 0.50	< 0.20
	Dec. 16-17, 2009	< 1.0	< 1.0	< 0.20	< 0.10	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.50	< 0.20	< 1.0	< 0.50	< 0.20
	Dec. 13-14, 2010	< 1.0	< 1.0	< 0.20	< 0.10	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.50	< 0.20	< 1.0	< 0.50	< 0.20
	Dec. 14-15, 2011	< 0.50	< 1.0	< 0.050	< 0.050	< 0.050	< 0.10	< 0.10	< 0.050	< 0.050	< 0.10	< 0.10	**0.18**	< 0.050	**4.3**	**0.31**	< 0.050
	Dec. 12-13, 2012	< 1.06	< 1.06	< 0.106	< 0.106	< 0.106	< 0.160	< 0.106	< 0.266	< 0.106	< 0.106	< 0.266	**< 0.532**	< 0.266	**< 0.532 J**	**< 0.106 J**	< 0.266
	Dec. 10-11, 2013	< 1.11	< 1.11	< 0.111	< 0.111	< 0.111	< 0.167	< 0.111	< 0.278	< 0.111	< 0.111	**0.556**	< 0.556	< 0.278	**1.58**	**0.414**	< 0.278
	Jan. 19-20, 2015	<1.11	<1.11	<0.111	<0.111	<0.111	<0.167	<0.111	<0.278	<0.111	<0.111	<0.278	<0.556	<0.278	**1.93**	<0.111	<0.278
MWC-1A	Dec. 28-30, 2004	< 1.0	< 1.0	< 1.0	< 0.1	< 0.1	< 0.1	< 0.17	< 0.1	< 0.1	< 0.1	< 1.0	< 1.0	< 0.4	< 1.0	< 1.0	< 1.0
	Dec. 20-21, 2005	< 1.0	< 1.0	< 1.0	< 0.1	< 0.1	< 0.1	< 0.17	< 0.1	< 0.1	< 0.1	< 1.0	< 1.0	< 0.4	< 1.0	< 1.0	< 1.0
	Dec. 05-06, 2006	< 1.0	< 1.0	< 1.0	< 0.1	< 0.1	< 0.1	< 0.17	< 0.1	< 0.1	< 0.1	< 1.0	< 1.0	< 0.4	< 1.0	< 1.0	< 1.0
	Dec. 04-05, 2007	Not sampled due to insufficient water															
	Dec. 18-19, 2008	Not sampled due to insufficient water															
	Dec. 16-17, 2009	Not sampled due to insufficient water															
	Dec. 13-14, 2010	Not sampled due to insufficient water															
	Dec. 14-15, 2011	< 0.50	< 1.0	< 0.050	< 0.050	< 0.050	< 0.10	< 0.10	< 0.050	< 0.050	< 0.10	**3.0**	< 0.10	< 0.050	< 0.50	**0.051**	**1.8**
	Dec. 12-13, 2012	< 1.06	< 1.06	< 0.106	< 0.106	< 0.106	< 0.160	< 0.106	< 0.266	< 0.106	< 0.106	**3.3**	< 0.532	< 0.266	< 0.532	**< 0.106**	**1.62**
	Dec. 10-11, 2013	< 1.18	< 1.18	< 0.118	< 0.118	< 0.118	< 0.176	< 0.118	< 0.294	< 0.118	< 0.118	**0.675**	< 0.588	< 0.294	< 0.588	< 0.118	**0.406**
	Jan. 19-20, 2015	<1.09	<1.09	<0.109	<0.109	<0.109	<0.163	<0.109	<0.272	<0.109	<0.109	**0.330**	<0.543	<0.272	<0.543	<0.109	<0.272
MWC-1B	Dec. 28-30, 2004	< 1.0	< 1.0	< 1.0	< 0.1	< 0.1	< 0.1	< 0.17	< 0.1	< 0.1	< 0.1	< 1.0	< 1.0	< 0.4	< 1.0	< 1.0	< 1.0
	Dec. 20-21, 2005	< 1.0	< 1.0	< 1.0	< 0.1	< 0.1	< 0.1	< 0.17	< 0.1	< 0.1	< 0.1	< 1.0	< 1.0	< 0.4	< 1.0	< 1.0	< 1.0
	Dec. 05-06, 2006	< 1.0	< 1.0	< 1.0	< 0.1	< 0.1	< 0.1	< 0.17	< 0.1	< 0.1	< 0.1	< 1.0	< 1.0	< 0.4	< 1.0	< 1.0	< 1.0
	Dec. 04-05, 2007	< 1.0	< 1.0	< 1.0	< 0.1	< 0.1	< 0.1	< 0.17	< 0.1	< 0.1	< 0.1	< 1.0	< 1.0	< 0.4	< 1.0	< 1.0	< 1.0
	Dec. 18-19, 2008	< 1.0	< 1.0	< 0.20	< 0.10	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.50	< 0.20	< 1.0	< 0.50	< 0.20
	Dec. 16-17, 2009	< 1.0	< 1.0	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.50	< 0.20	< 1.0	< 0.50	< 0.20
	Dec. 13-14, 2010	< 1.0	< 1.0	< 0.20	< 0.10	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.50	< 0.20	< 1.0	< 0.50	< 0.20
	Dec. 14-15, 2011	< 0.50	< 1.0	< 0.050	< 0.050	< 0.050	< 0.10	< 0.10	< 0.050	< 0.050	< 0.10	< 0.10	< 0.10	< 0.050	< 0.50	< 0.050	< 0.050
	Dec. 12-13, 2012	< 1.05	< 1.05	< 0.105	< 0.105	< 0.105	< 0.158	< 0.105	< 0.263	< 0.105	< 0.105	< 0.263	< 0.526	< 0.263	< 0.526	< 0.105	< 0.263
	Dec. 10-11, 2013	< 1.11	< 1.11	< 0.111	< 0.111	< 0.111	< 0.167	< 0.111	< 0.278	< 0.111	< 0.111	< 0.278	< 0.556	< 0.278	< 0.556	< 0.111	< 0.278
	Jan. 19-20, 2015	<1.11	<1.11	<0.111	<0.111	<0.111	<0.167	<0.111	<0.278	<0.111	<0.111	<0.278	<0.556	<0.278	<0.556	<0.111	<0.278
MWC-1C	Dec. 28-30, 2004	< 1.0	< 1.0	< 1.0	< 0.1	< 0.1	< 0.1	< 0.17	< 0.1	< 0.1	< 0.1	< 1.0	< 1.0	< 0.4	< 1.0	< 1.0	< 1.0
	Dec. 20-21, 2005	< 1.0	< 1.0	< 1.0	< 0.1	< 0.1	< 0.1	< 0.17	< 0.1	< 0.1	< 0.1	< 1.0	< 1.0	< 0.4	< 1.0	< 1.0	< 1.0
	Dec. 05-06, 2006	< 1.0	< 1.0	< 1.0	< 0.1	< 0.1	< 0.1	< 0.17	< 0.1	< 0.1	< 0.1	< 1.0	< 1.0	< 0.4	< 1.0	< 1.0	< 1.0
	Dec. 04-05, 2007	< 1.0	< 1.0	< 1.0	< 0.1	< 0.1	< 0.1	< 0.17	< 0.1	< 0.1	< 0.1	< 1.0	< 1.0	< 0.4	< 1.0	< 1.0	< 1.0
	Dec. 18-19, 2008	< 1.0	< 1.0	< 0.20	< 0.10	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.50	< 0.20	< 1.0	< 0.50	< 0.20
	Dec. 16-17, 2009	< 1.0	< 1.0	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.50	< 0.20	< 1.0	< 0.50	< 0.20
	Dec. 13-14, 2010	< 1.0	< 1.0	< 0.20	< 0.10	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.50	< 0.20	< 1.0	< 0.50	< 0.20
	Dec. 14-15, 2011	< 0.50	< 1.0	< 0.050	< 0.050	< 0.050	< 0.10	< 0.10	< 0.050	< 0.050	< 0.10	< 0.10	< 0.10	< 0.050	< 0.50	< 0.050	< 0.050
	Dec. 12-13, 2012	< 1.09	< 1.09	< 0.109	< 0.109	< 0.109	< 0.163	< 0.109	< 0.272	< 0.109	< 0.109	< 0.272	< 0.543	< 0.272	< 0.543	< 0.109	< 0.272
	Dec. 10-11, 2013	< 1.11	< 1.11	< 0.111	< 0.111	< 0.111	< 0.167	< 0.111	< 0.278	< 0.111	< 0.111	< 0.278	< 0.556	< 0.278	< 0.556	< 0.111	< 0.278
	Jan. 19-20, 2015	<1.09	<1.09	<0.109	<0.109	<0.109	<0.163	<0.109	<0.272	<0.109	<0.109	<0.272	<0.543	<0.272	<0.543	<0.109	<0.272

TABLE 4

9TH ANNUAL GROUNDWATER SAMPLING REPORT
SUMMARY OF POLYNUCLEAR AROMATIC HYDROCARBONS (PAH) ANALYTICAL RESULTS
NORTHSIDE DRIVE LANDFILL SITE

Notes:

J	The analyte was positively identified; the associated value is the approximate concentration of the analyte in the sample
RRS	Risk Reduction Standard
µg/L	Micrograms per liter
NS	Not sampled; in 2004 MM-01 was covered with approximately 9 feet of soil and debris. MM-03-DUP not collected prior to 2008.
<	Less than
BOLD	Analytical results above analytical method's practical quantitation limit
	Samples collected during relevant annual sampling event

ENCLOSURE 3

LOGBOOK NOTES

(Two Pages)

Location GWCC Date 1-19-15

Project / Client Annual #9 Resampling event. (Dec. 2014)

Weather: Sunny, high of 60°F

Scope: Resample MW's associated w/ the Annual #9 sampling event.

0800 Arrive onsite (C. Jones and L. Shaver).

- Open wells then gauge water level after equilibrated.

Well	DTW	TD	PID (BZ)	PID (WH)
MM-04	17.0	45.35	0.0	0.0
MM-01	17.65	27.53	0.0	0.0
MM-02	10.44	16.9	0.0	0.0
MWC-3C	10.41	29.3	0.0	0.0
MWC-3B	10.37	24.88	0.0	~~0.8~~ 0.0
MM-03	14.49	30.2	0.0	~~0.0~~ 0.8
MWC-1A	12.52	18.4	0.0	0.0
MWC-1B	12.19	55.68	0.0	0.0
MWC-1C	11.79	76.45	0.0	0.0
DWW	14.24			

* Instruments calibrated on 1-16-15

Perform bump test.

FID reading w/ in 5% of cal gas (489 w/ 500 ppm cal gas)

YSI-556: sp Cond reading 1.413 w/ 1.413 mS/cm solution.

pH reading 4.02 w/ 4.0 solution

Location GWCC Date 1-19-15

Project / Client Annual #9 Resampling

and 6.90 w/ 7.0 solution

- Well data and water quality recorded on well data sheets. Sample info provided below.

Well	Begin Purging	Sample time
MM-04	0933	1135
MM-01	1217	1335
MM-02	1416	1505
MWC-1B	1017	1545
MWC-3C	1612	1730

1745 Sampling complete for the day, clean up, dump purged water in on site drums.

1800 Offsite.

Location GWCC Date 1/20/15

Project / Client Annual #9 Resampling

Weather: Sunny, high of 67°F

Scope: Complete groundwater sampling for Annual #9 (resampling).

0800 Tetra Tech arrives on site.

- Set up on MWC-1C
- Well data and water quality recorded on well data sheets. Sample info provided below.

Well	Begin Purging	Sample time
MWC-1C	0830	1440
MWC-3B	0858	1025
MH-03	1057	1235
MH-03-Dup	—	1245
MWC-1A	1311	1410
GWCC-FB	—	1455
GWCC-EB	—	1505

1515 Sampling complete, clean up, process samples, and seal 5.4L drums w/ purged water.

1600 Off site.

Location Date

Project / Client

ENCLOSURE 4

GROUNDWATER SAMPLING DATA SHEETS

(18 Pages)

GROUNDWATER SAMPLING DATA SHEET
Georgia World Congress Center (GWCC)
9th Annual Sampling Event (January 2015)

Date: 1-14-15 Purge Start Time: 0933 Time of Sample Collection: 1135

Sample ID/ Well Number: MW-04 Watertight Locking Cap Condition: Fair - provides a seal but rubber worn,

Wells securely locked? Yes

Total Depth (TD): 45.35 ft below top of casing (TOC)

Length of Screening Interval: _____ ft

Initial Depth to Water (DTW): 17.00 ft below TOC

DTW Prior to Sampling: 17.31 ft below TOC

Depth to Sample Intake (DTI): 18.0 ft below TOC

Method of purging: ✓ Peristaltic Pump

_____ Bladder Pump

_____ Submersible Pump

_____ Bailer

Three Well Volumes: 13.86 Gallons

Total Volume Purged: 14.00 Gallons

Actual Purge Rate: 0.11 Gallons/min

Well Remarks (Sediment Accumulation, Grout/Concrete Present?) NA

Well Calculations

3 Well Volumes:

TD – DTW = Water Column Length

45.35 - 17.0 = 28.35

Water Column Length * Well Diameter Constant = Well Volume

28.35 * 0.163 = 4.62

3 * Well Volume = 3 Well Volumes

3 * 4.62 = 13.86

PHYSIO-CHEMICAL PARAMETERS DURING PURGING

Measurement Criterion	Initial Reading										Stabilization Criteria
Time		1123	1128	1133							-
Breathing Zone FID Reading	0.0										
Well head FID Reading	0.0	-	-	-	-	-	-	-	-	-	-
pH		5.82	5.80	5.78							± 0.1
Temperature (°C)		19.26	19.33	19.30							-
Specific Conductivity (mS/cm)		0.114	0.114	0.114							± 5 %
Turbidity (NTU)		0.25	0.48	0.25							< 10
Depth to Water (ft)		17.30	17.31	17.31							-
Each Volume Purged (Gal)		13.0	0.5	0.5							-
Total Gallons Purged		13.0	13.5	14.0							-

GROUNDWATER SAMPLING DATA SHEET
Georgia World Congress Center (GWCC)
9th Annual Sampling Event (January 2015)

Duplicate Sample Collected? Yes (No) (Sample ID of Duplicate): _____

(Sample Time of Duplicate): _____

MS/MSD Sample Collected? (Yes) No

Purged water appearance (Odors, Colors, Sediment): Clear, no odor

Comments: _____

Sample(s) Collected By: CJ / LS

Analytical method to be written on COC: Metals / PAH

GROUNDWATER SAMPLING DATA SHEET
Georgia World Congress Center (GWCC)
9th Annual Sampling Event (January 2015)

Date: 1/19/15 Purge Start Time: 1017 Time of Sample Collection: 1545

Sample ID/ Well Number: MWC - 1B Watertight Locking Cap Condition: good

Wells securely locked? yes

Total Depth (TD): 55.68 ft below top of casing (TOC)

Length of Screening Interval: _____ ft

Initial Depth to Water (DTW): 12.19 ft below TOC

DTW Prior to Sampling: 13.22 ft below TOC

Depth to Sample Intake (DTI): 15.6 ft below TOC

(should be center of screened interval, if possible)

Method of purging: ✓ Peristaltic Pump

_____ Bladder Pump

_____ Submersible Pump

_____ Bailer

Three Well Volumes: 21.26 Gallons

Total Volume Purged: 25.0 Gallons

Actual Purge Rate: 0.07 Gallons/min

Well Remarks (Sediment Accumulation, Grout/Concrete Present?) NA

Well Calculations

3 Well Volumes:

TD – DTW = Water Column Length

55.68 - 12.19 = 43.49

Water Column Length * Well Diameter Constant = Well Volume

0.163 * 43.49 = 7.08

3 * Well Volume = 3 Well Volumes

3 * 7.08 = 21.26

PHYSIO-CHEMICAL PARAMETERS DURING PURGING

Measurement Criterion	Initial Reading										Stabilization Criteria
Time		1521	1526	1531	1536	1541					-
Breathing Zone FID Reading	0.0										
Well head FID Reading	0.0	-	-	-	-	-	-	-	-	-	-
pH		5.02	4.98	4.85	4.85	4.85					± 0.1
Temperature (°C)		18.80	18.73	18.88	18.77	18.84					-
Specific Conductivity (mS/cm)		0.405	0.404	0.403	0.404	0.404					± 5 %
Turbidity (NTU)		0.11	0.26	0.17	0.24	0.19					< 10
Depth to Water (ft)		13.20	13.21	13.22	13.22	13.22					-
Each Volume Purged (Gal)			0.5	0.5	0.5	0.5					-
Total Gallons Purged		23.0	23.5	24.0	24.5	25.0					-

GROUNDWATER SAMPLING DATA SHEET
Georgia World Congress Center (GWCC)
9th Annual Sampling Event (January 2015)

Duplicate Sample Collected? Yes (No) (Sample ID of Duplicate): _____

(Sample Time of Duplicate): _____

MS/MSD Sample Collected? Yes (No)

Purged water appearance (Odors, Colors, Sediment): clear, no odor

Comments: —

Sample(s) Collected By: LS/CS

Analytical method to be written on COC: Metals/PAHs

GROUNDWATER SAMPLING DATA SHEET
Georgia World Congress Center (GWCC)
9th Annual Sampling Event (January 2015)

Date: 1-19-15 Purge Start Time: 1217 Time of Sample Collection: 1355

Sample ID/ Well Number: MM-01 Watertight Locking Cap Condition: Good

Wells securely locked? Yes

Total Depth (TD): 27.53 ft below top of casing (TOC)

Length of Screening Interval: _____ ft

Initial Depth to Water (DTW): 17.65 ft below TOC

DTW Prior to Sampling: 19.39 ft below TOC

Depth to Sample Intake (DTI): 19.4 ft below TOC

Method of purging: ✓ Peristaltic Pump

_____ Bladder Pump

_____ Submersible Pump

_____ Bailer

Three Well Volumes: 4.8 Gallons

Total Volume Purged: 5.5 Gallons

Actual Purge Rate: 0.06 Gallons/min

Well Remarks (Sediment Accumulation, Grout/Concrete Present?) NA

Well Calculations

3 Well Volumes:

TD – DTW = Water Column Length

27.53 - 17.65 = 9.88

Water Column Length * Well Diameter Constant = Well Volume

9.88 * 0.163 = 1.6

3 * Well Volume = 3 Well Volumes

3 * 1.6 = 4.83

PHYSIO-CHEMICAL PARAMETERS DURING PURGING

Measurement Criterion	Initial Reading										Stabilization Criteria
Time		1336	1341	1346	1351						-
Breathing Zone FID Reading	0.0										
Well head FID Reading	0.0	-	-	-	-	-	-	-	-	-	-
pH		5.65	5.75	5.81	5.73						± 0.1
Temperature (°C)		19.29	19.21	19.15	19.18						-
Specific Conductivity (mS/cm)		0.125	0.122	0.120	0.118						± 5 %
Turbidity (NTU)		6.00	9.00	9.14	8.94						< 10
Depth to Water (ft)		19.36	19.37	19.38	19.39						-
Each Volume Purged (Gal)											-
Total Gallons Purged		4.75	5.00	5.25	5.50						-

GROUNDWATER SAMPLING DATA SHEET
Georgia World Congress Center (GWCC)
9th Annual Sampling Event (January 2015)

Duplicate Sample Collected? Yes (No) (Sample ID of Duplicate): _____

(Sample Time of Duplicate): _____

MS/MSD Sample Collected? Yes (No)

Purged water appearance (Odors, Colors, Sediment): No odor, clear water w/ brownish tint.

Comments: _____

Sample(s) Collected By: CT / LS

Analytical method to be written on COC: Metals / PAH

GROUNDWATER SAMPLING DATA SHEET
Georgia World Congress Center (GWCC)
9th Annual Sampling Event (January 2015)

Date: 1/19/15 Purge Start Time: 1416 Time of Sample Collection: 1505

Sample ID/ Well Number: MM-02 Watertight Locking Cap Condition: Good

Wells securely locked? yes

Total Depth (TD): 16.9 ft below top of casing (TOC)

Length of Screening Interval: _____ ft

Initial Depth to Water (DTW): 10.44 ft below TOC

DTW Prior to Sampling: 10.69 ft below TOC

Depth to Sample Intake (DTI): 11.4 ft below TOC

(should be center of screened interval, if possible)

Method of purging: ✓ Peristaltic Pump

_____ Bladder Pump

_____ Submersible Pump

_____ Bailer

Three Well Volumes: 3.15 Gallons

Total Volume Purged: 4.0 Gallons

Actual Purge Rate: 0.07 Gallons/min

Well Remarks (Sediment Accumulation, Grout/Concrete Present?) NA

Well Calculations

3 Well Volumes:

TD – DTW = Water Column Length

16.9 - 10.44 = 6.46

Water Column Length * Well Diameter Constant = Well Volume

6.46 * 0.163 = 1.05

3 * Well Volume = 3 Well Volumes

3 * 1.05 = 3.15

PHYSIO-CHEMICAL PARAMETERS DURING PURGING

Measurement Criterion	Initial Reading										Stabilization Criteria
Time		1450	1455	1500							-
Breathing Zone FID Reading	0.0										
Well head FID Reading	0.0	-	-	-	-	-	-	-	-	-	-
pH		5.83	5.81	5.79							± 0.1
Temperature (°C)		18.29	18.25	18.22							-
Specific Conductivity (mS/cm)		0.425	0.426	0.424							± 5 %
Turbidity (NTU)		0.26	0.19	0.12							< 10
Depth to Water (ft)		10.68	10.69	10.69							-
Each Volume Purged (Gal)			0.5	0.5							-
Total Gallons Purged		3.0	3.5	4.0							-

GROUNDWATER SAMPLING DATA SHEET
Georgia World Congress Center (GWCC)
9th Annual Sampling Event (January 2015)

Duplicate Sample Collected? Yes (No) (Sample ID of Duplicate): _____

(Sample Time of Duplicate): _____

MS/MSD Sample Collected? Yes (No)

Purged water appearance (Odors, Colors, Sediment): clear, no odor

Comments: —

Sample(s) Collected By: CT & LS

Analytical method to be written on COC: metals / PAHs

GROUNDWATER SAMPLING DATA SHEET
Georgia World Congress Center (GWCC)
9th Annual Sampling Event (January 2015)

Date: 1/19/15 Purge Start Time: 1612 Time of Sample Collection: 1730

Sample ID/ Well Number: MWC-3C Watertight Locking Cap Condition: Good

Wells securely locked? yes

Total Depth (TD): 29.3 ft below top of casing (TOC)

Length of Screening Interval: _____ ft

Initial Depth to Water (DTW): 10.41 ft below TOC

DTW Prior to Sampling: 11.21 ft below TOC

Depth to Sample Intake (DTI): 11.5 ft below TOC

Method of purging: X Peristaltic Pump

____ Bladder Pump

____ Submersible Pump

____ Bailer

Three Well Volumes: 9.24 Gallons

Total Volume Purged: 9.3 Gallons

Actual Purge Rate: 0.12 Gallons/min

Well Remarks (Sediment Accumulation, Grout/Concrete Present?) NA

Well Calculations

3 Well Volumes:

TD – DTW = Water Column Length

29.3 - 10.41 = 18.89

Water Column Length * Well Diameter Constant = Well Volume

18.89 * 0.163 = 3.079

3 * Well Volume = 3 Well Volumes

3 * 3.07 = 9.24

PHYSIO-CHEMICAL PARAMETERS DURING PURGING

Measurement Criterion	Initial Reading										Stabilization Criteria
Time		1717	1722	1727							-
Breathing Zone FID Reading	0.0										
Well head FID Reading	0.0	-	-	-	-	-	-	-	-	-	-
pH		6.10	6.13	6.07							± 0.1
Temperature (°C)		18.66	18.66	18.63							-
Specific Conductivity (mS/cm)		0.641	0.635	0.635							± 5 %
Turbidity (NTU)		0.18	0.15	0.12							< 10
Depth to Water (ft)		11.19	11.20	11.21							-
Each Volume Purged (Gal)		-	0.5	0.5							-
Total Gallons Purged		8.3	8.8	9.3							-

GROUNDWATER SAMPLING DATA SHEET
Georgia World Congress Center (GWCC)
9th Annual Sampling Event (January 2015)

Duplicate Sample Collected? Yes (No) (Sample ID of Duplicate): _____

(Sample Time of Duplicate): _____

MS/MSD Sample Collected? Yes (No)

Purged water appearance (Odors, Colors, Sediment): clear, no odor

Comments: —

Sample(s) Collected By: CS/LS

Analytical method to be written on COC: metals, PAHs

GROUNDWATER SAMPLING DATA SHEET
Georgia World Congress Center (GWCC)
9th Annual Sampling Event (January 2015)

Date: 1/20/15 Purge Start Time: 0830 Time of Sample Collection: 1446

Sample ID/ Well Number: MWC-1C Watertight Locking Cap Condition: Good

Wells securely locked? Yes

Total Depth (TD): 76.45 ft below top of casing (TOC)

Length of Screening Interval: _____ ft

Initial Depth to Water (DTW): 11.79 ft below TOC

DTW Prior to Sampling: 18.73 ft below TOC

Depth to Sample Intake (DTI): 25.0 ft below TOC

(should be center of screened interval, if possible)

Method of purging: ✓ Peristaltic Pump

_____ Bladder Pump

_____ Submersible Pump

_____ Bailer

Three Well Volumes: 31.6 Gallons

Total Volume Purged: 32.0 Gallons

Actual Purge Rate: 0.08 Gallons/min

Well Remarks (Sediment Accumulation, Grout/Concrete Present?) NA

Well Calculations

3 Well Volumes:

TD – DTW = Water Column Length

76.45 - 11.79 = 64.66

Water Column Length * Well Diameter Constant = Well Volume

64.66 * 0.163 = 10.54

3 * Well Volume = 3 Well Volumes

3 * 10.54 = 31.6

PHYSIO-CHEMICAL PARAMETERS DURING PURGING

Measurement Criterion	Initial Reading										Stabilization Criteria
Time		1422	1427	1432							-
Breathing Zone FID Reading	0.0										
Well head FID Reading	0.0	-	-	-	-	-	-	-	-	-	-
pH		5.15	5.16	5.13							± 0.1
Temperature (°C)		19.32	19.05	19.27							-
Specific Conductivity (mS/cm)		0.568	0.572	0.571							± 5 %
Turbidity (NTU)		0.38	0.70	0.37							< 10
Depth to Water (ft)		18.76	18.76	18.73							-
Each Volume Purged (Gal)		0	0.5	0.5							-
Total Gallons Purged		31.0	31.5	32.0							-

GROUNDWATER SAMPLING DATA SHEET
Georgia World Congress Center (GWCC)
9th Annual Sampling Event (January 2015)

Duplicate Sample Collected? Yes (No) (Sample ID of Duplicate): _____

(Sample Time of Duplicate): _____

MS/MSD Sample Collected? Yes (No)

Purged water appearance (Odors, Colors, Sediment): slight sulfur like odor, turbid

Comments: water color was yellowish-brown, then became clear at almost end of purge

Sample(s) Collected By: LS/CJ

Analytical method to be written on COC: metals/PAHs

GROUNDWATER SAMPLING DATA SHEET
Georgia World Congress Center (GWCC)
9th Annual Sampling Event (January 2015)

Date: 1/20/15 Purge Start Time: 0958 Time of Sample Collection: 1025

Sample ID/ Well Number: MWC-3B Watertight Locking Cap Condition: Good

Wells securely locked? YES

Total Depth (TD): 24.88 ft below top of casing (TOC)

Length of Screening Interval: _____ ft

Initial Depth to Water (DTW): 10.37 ft below TOC

DTW Prior to Sampling: 11.08 ft below TOC

Depth to Sample Intake (DTI): 12.0 ft below TOC

Method of purging: ✓ Peristaltic Pump

_____ Bladder Pump

_____ Submersible Pump

_____ Bailer

Three Well Volumes: 7.1 Gallons

Total Volume Purged: 7.75 Gallons

Actual Purge Rate: 0.09 Gallons/min

Well Calculations

3 Well Volumes:

TD – DTW = Water Column Length

24.88 - 10.37 = 14.51

Water Column Length * Well Diameter Constant = Well Volume

14.51 * 0.163 = 2.36

3 * Well Volume = 3 Well Volumes

3 * 2.36 = 7.1

Well Remarks (Sediment Accumulation, Grout/Concrete Present?) NA

PHYSIO-CHEMICAL PARAMETERS DURING PURGING

Measurement Criterion	Initial Reading										Stabilization Criteria
Time		1009	1014	1019	1024						-
Breathing Zone FID Reading	0.0										
Well head FID Reading	0.0	-	-	-	-	-	-	-	-	-	-
pH		6.76	6.67	6.61	6.58						± 0.1
Temperature (°C)		18.24	18.33	18.34	18.37						-
Specific Conductivity (mS/cm)		0.771	0.771	0.771	0.770						± 5 %
Turbidity (NTU)		0.14	0.13	0.08	0.09						< 10
Depth to Water (ft)		11.08	11.08	11.08	11.08						-
Each Volume Purged (Gal)		✓	0.5	0.5	0.5						-
Total Gallons Purged		6.25	6.75	7.25	7.75						-

GROUNDWATER SAMPLING DATA SHEET
Georgia World Congress Center (GWCC)
9th Annual Sampling Event (January 2015)

Duplicate Sample Collected? Yes (No) (Sample ID of Duplicate): _____

(Sample Time of Duplicate): _____

MS/MSD Sample Collected? Yes (No)

Purged water appearance (Odors, Colors, Sediment): clear, no odor

Comments: _____

Sample(s) Collected By: CS/LS

Analytical method to be written on COC: metals, PAHs

GROUNDWATER SAMPLING DATA SHEET
Georgia World Congress Center (GWCC)
9th Annual Sampling Event (January 2015)

Date: 1/20/15 Purge Start Time: 1057 Time of Sample Collection: 1235

Sample ID/ Well Number: MW03 Watertight Locking Cap Condition: Fair, rubber becoming weathered

Wells securely locked? yes

Total Depth (TD): 30.2 ft below top of casing (TOC)

Length of Screening Interval: _____ ft

Initial Depth to Water (DTW): 14.49 ft below TOC

DTW Prior to Sampling: 15.38 ft below TOC

Depth to Sample Intake (DTI): 16.5 ft below TOC

(should be center of screened interval, if possible)

Method of purging: ✓ Peristaltic Pump

_____ Bladder Pump

_____ Submersible Pump

_____ Bailer

Three Well Volumes: 7.68 Gallons

Total Volume Purged: 7.5 Gallons

Actual Purge Rate: 0.07 Gallons/min

Well Remarks (Sediment Accumulation, Grout/Concrete Present?) NA

Well Calculations

3 Well Volumes:

TD – DTW = Water Column Length

30.2 - 14.49 = 15.71

Water Column Length * Well Diameter Constant = Well Volume

15.71 * 0.163 = 2.56

3 * Well Volume = 3 Well Volumes

3 * 2.56 = 7.68

PHYSIO-CHEMICAL PARAMETERS DURING PURGING

Measurement Criterion	Initial Reading										Stabilization Criteria
Time		1221	1226	1231							-
Breathing Zone FID Reading	0.0										
Well head FID Reading	0.8	-	-	-	-	-	-	-	-	-	-
pH		4.98	4.97	4.92							± 0.1
Temperature (°C)		19.81	19.82	19.84							-
Specific Conductivity (mS/cm)		0.220	0.226	0.228							± 5 %
Turbidity (NTU)		0.25	0.18	0.15							< 10
Depth to Water (ft)		15.38	15.38	15.38							-
Each Volume Purged (Gal)			0.25	0.25							-
Total Gallons Purged		7.0	7.25	7.5							-

GROUNDWATER SAMPLING DATA SHEET
Georgia World Congress Center (GWCC)
9th Annual Sampling Event (January 2015)

Duplicate Sample Collected? (Yes) No (Sample ID of Duplicate): MM-03-DUP

(Sample Time of Duplicate): 1245

MS/MSD Sample Collected? Yes (No)

Purged water appearance (Odors, Colors, Sediment): clear, no odor

Comments: _____

Sample(s) Collected By: CJ/LS

Analytical method to be written on COC: metals/PAHs

GROUNDWATER SAMPLING DATA SHEET
Georgia World Congress Center (GWCC)
9th Annual Sampling Event (January 2015)

Date: 1/20/15 Purge Start Time: 1311 Time of Sample Collection: 1410

Sample ID/ Well Number: MWC-1A Watertight Locking Cap Condition: fair; slightly loose but still has lock.

Wells securely locked? yes

Total Depth (TD): 18.4 ft below top of casing (TOC)

Length of Screening Interval: _____ ft

Initial Depth to Water (DTW): 12.52 ft below TOC

DTW Prior to Sampling: 13.04 ft below TOC

Depth to Sample Intake (DTI): 13.5 ft below TOC

(should be center of screened interval, if possible)

Method of purging: ✓ Peristaltic Pump

_____ Bladder Pump

_____ Submersible Pump

_____ Bailer

Three Well Volumes: 2.87 Gallons

Total Volume Purged: 4.0 Gallons

Actual Purge Rate: 0.07 Gallons/min

Well Remarks (Sediment Accumulation, Grout/Concrete Present?) NA

Well Calculations

3 Well Volumes:

TD – DTW = Water Column Length

18.4 - 12.52 = 5.88

Water Column Length * Well Diameter Constant = Well Volume

0.163 * 5.88 = 0.96

3 * Well Volume = 3 Well Volumes

3 * 0.96 = 2.87

PHYSIO-CHEMICAL PARAMETERS DURING PURGING

Measurement Criterion	Initial Reading										Stabilization Criteria
Time		1355	1400	1405							-
Breathing Zone FID Reading	0.0										
Well head FID Reading	0.0	-	-	-	-	-	-	-	-	-	-
pH		5.05	5.02	5.01							± 0.1
Temperature (°C)		18.41	18.48	18.18							-
Specific Conductivity (mS/cm)		0.204	0.203	0.203							± 5 %
Turbidity (NTU)		0.57	0.83	0.98							< 10
Depth to Water (ft)		13.03	13.04	13.04							-
Each Volume Purged (Gal)		~~1.0~~ 0.5	0.5	0.5							-
Total Gallons Purged		3.0	3.5	4.0							-

GROUNDWATER SAMPLING DATA SHEET
Georgia World Congress Center (GWCC)
9th Annual Sampling Event (January 2015)

Duplicate Sample Collected? Yes (No) (Sample ID of Duplicate): _____

(Sample Time of Duplicate): _____

MS/MSD Sample Collected? Yes (No)

Purged water appearance (Odors, Colors, Sediment): Clear, no odor

Comments: —

Sample(s) Collected By: LS/CS

Analytical method to be written on COC: metals / PAHs

ENCLOSURE 5

DECEMBER 2014 QUARTERLY INSPECTION PHOTOGRAPHIC LOG

(43 Pages)

OFFICIAL PHOTOGRAPH NO. 1
TETRA TECH

Subject:	Granite plaque located on the east, southeast side of the north parking lot perimeter.
Site:	Northside Drive Landfill Site (GWCC – 15) Fulton County Atlanta, Georgia
Date:	December 30, 2014 **Orientation:** Aerial
Photographer:	Tim Bricker, PE Tetra Tech

OFFICIAL PHOTOGRAPH NO. 2
TETRA TECH

Subject: Background monitoring well, MM-04.

Site: Northside Drive Landfill Site (GWCC – 15)
Fulton County
Atlanta, Georgia

Date: December 30, 2014 **Orientation:** Aerial

Photographer: Tim Bricker, PE
Tetra Tech

OFFICIAL PHOTOGRAPH NO. 3
TETRA TECH

Subject: Granite plaque on the southeast corner of the property.

Site: Northside Drive Landfill Site (GWCC – 15)
Fulton County
Atlanta, Georgia

Date: December 30, 2014 **Orientation:** Aerial

Photographer: Tim Bricker, PE
Tetra Tech

OFFICIAL PHOTOGRAPH NO. 4
TETRA TECH

Subject: Granite plaque on the south side of the property.

Site: Northside Drive Landfill Site (GWCC – 15)
Fulton County
Atlanta, Georgia

Date: December 30, 2014 **Orientation:** Aerial

Photographer: Tim Bricker, PE
Tetra Tech

OFFICIAL PHOTOGRAPH NO. 5
TETRA TECH

Subject: Eastern portion of the lot looking northeast.

Site: Northside Drive Landfill Site (GWCC – 15)
Fulton County
Atlanta, Georgia

Date: December 30, 2014 **Orientation:** Northeast

Photographer: Tim Bricker, PE
Tetra Tech

OFFICIAL PHOTOGRAPH NO. 6
TETRA TECH

Subject: Granite plaque on the northeastern perimeter of the property.

Site: Northside Drive Landfill Site (GWCC – 15)
Fulton County
Atlanta, Georgia

Date: December 30, 2014 **Orientation:** Aerial

Photographer: Tim Bricker, PE
Tetra Tech

OFFICIAL PHOTOGRAPH NO. 7
TETRA TECH

Subject: Monitoring well, MM-01.

Site: Northside Drive Landfill Site (GWCC – 15)
Fulton County
Atlanta, Georgia

Date: December 30, 2014 **Orientation:** Aerial

Photographer: Tim Bricker, PE
Tetra Tech

OFFICIAL PHOTOGRAPH NO. 8
TETRA TECH

Subject: Granite plaque on the western perimeter of the property.

Site: Northside Drive Landfill Site (GWCC – 15)
Fulton County
Atlanta, Georgia

Date: December 30, 2014 **Orientation:** Aerial

Photographer: Tim Bricker, PE
Tetra Tech

OFFICIAL PHOTOGRAPH NO. 9
TETRA TECH

Subject: Granite plaque on the southwestern perimeter of lot.

Site: Northside Drive Landfill Site (GWCC – 15)
Fulton County
Atlanta, Georgia

Date: December 30, 2014 **Orientation:** Aerial

Photographer: Tim Bricker, PE
Tetra Tech

OFFICIAL PHOTOGRAPH NO. 10
TETRA TECH

Subject: Dewatering well at the northwest perimeter of the property.

Site: Northside Drive Landfill Site (GWCC – 15)
Fulton County
Atlanta, Georgia

Date: December 30, 2014 **Orientation:** Aerial

Photographer: Tim Bricker, PE
Tetra Tech

OFFICIAL PHOTOGRAPH NO. 11
TETRA TECH

Subject:	Monitoring well, MM-02 at the corner of John Street and Northside Drive.
Site:	Northside Drive Landfill Site (GWCC – 15) Fulton County Atlanta, Georgia
Date:	December 30, 2014 **Orientation:** Aerial
Photographer:	Tim Bricker, PE Tetra Tech

OFFICIAL PHOTOGRAPH NO. 12
TETRA TECH

Subject:	Monitoring well, MWC-3C at the corner of John Street and Northside Drive.
Site:	Northside Drive Landfill Site (GWCC – 15) Fulton County Atlanta, Georgia
Date:	December 30, 2014 **Orientation:** Aerial
Photographer:	Tim Bricker, PE Tetra Tech

OFFICIAL PHOTOGRAPH NO. 13
TETRA TECH

Subject: Monitoring well, MWC-3B at the corner of John Street and Northside Drive.

Site: Northside Drive Landfill Site (GWCC – 15)
Fulton County
Atlanta, Georgia

Date: December 30, 2014 **Orientation:** Aerial

Photographer: Tim Bricker, PE
Tetra Tech

OFFICIAL PHOTOGRAPH NO. 14
TETRA TECH

Subject: Granite plaque on the northwestern perimeter of the property.

Site: Northside Drive Landfill Site (GWCC – 15)
Fulton County
Atlanta, Georgia

Date: December 30, 2014 **Orientation:** Aerial

Photographer: Tim Bricker, PE
Tetra Tech

OFFICIAL PHOTOGRAPH NO. 15
TETRA TECH

Subject: Monitoring well, MM-03.

Site: Northside Drive Landfill Site (GWCC – 15)
Fulton County
Atlanta, Georgia

Date: December 30, 2014 **Orientation:** Aerial

Photographer: Tim Bricker, PE
Tetra Tech

OFFICIAL PHOTOGRAPH NO. 16
TETRA TECH

Subject: Monitoring well, MWC-1A at the corner of John Street and Gray Street.

Site: Northside Drive Landfill Site (GWCC – 15)
Fulton County
Atlanta, Georgia

Date: December 30, 2014 **Orientation:** Aerial

Photographer: Tim Bricker, PE
Tetra Tech

OFFICIAL PHOTOGRAPH NO. 17
TETRA TECH

Subject: Monitoring well, MWC-1B at the corner of John Street and Gray Street.

Site: Northside Drive Landfill Site (GWCC – 15)
Fulton County
Atlanta, Georgia

Date: December 30, 2014 **Orientation:** Aerial

Photographer: Tim Bricker, PE
Tetra Tech

OFFICIAL PHOTOGRAPH NO. 18
TETRA TECH

Subject:	Monitoring well, MWC-1C at the corner of John Street and Gray Street.
Site:	Northside Drive Landfill Site (GWCC – 15) Fulton County Atlanta, Georgia
Date:	December 30, 2014 **Orientation:** Aerial
Photographer:	Tim Bricker, PE Tetra Tech

OFFICIAL PHOTOGRAPH NO. 19
TETRA TECH

Subject: Granite plaque on the north perimeter of the property.

Site: Northside Drive Landfill Site (GWCC – 15)
Fulton County
Atlanta, Georgia

Date: December 30, 2014 **Orientation:** Aerial

Photographer: Tim Bricker, PE
Tetra Tech

OFFICIAL PHOTOGRAPH NO. 20
TETRA TECH

Subject: Granite plaque on the northeastern corner of the property.

Site: Northside Drive Landfill Site (GWCC – 15)
Fulton County
Atlanta, Georgia

Date: December 30, 2014 **Orientation:** Aerial

Photographer: Tim Bricker, PE
Tetra Tech

OFFICIAL PHOTOGRAPH NO. 21
TETRA TECH

Subject: Concrete median at the intersection of Northside Drive and John Street.

Site: Northside Drive Landfill Site (GWCC – 15)
Fulton County
Atlanta, Georgia

Date: December 30, 2014 **Orientation:** Southeast

Photographer: Tim Bricker, PE
Tetra Tech

OFFICIAL PHOTOGRAPH NO. 22
TETRA TECH

Subject: Granite plaque on the eastern perimeter of the property.

Site: Northside Drive Landfill Site (GWCC – 15)
Fulton County
Atlanta, Georgia

Date: December 30, 2014 **Orientation:** Aerial

Photographer: Tim Bricker, PE
Tetra Tech

OFFICIAL PHOTOGRAPH NO. 23
TETRA TECH

Subject: Stormwater drains located at the eastern parking lot perimeter. The existing crack was still present, but had not increased in size.

Site: Northside Drive Landfill Site (GWCC – 15)
Fulton County
Atlanta, Georgia

Date: December 30, 2014 **Orientation:** East

Photographer: Tim Bricker, PE
Tetra Tech

OFFICIAL PHOTOGRAPH NO. 24
TETRA TECH

Subject: Stormwater drains located at the northwest parking lot perimeter.

Site: Northside Drive Landfill Site (GWCC – 15)
Fulton County
Atlanta, Georgia

Date: December 30, 2014 **Orientation:** Northwest

Photographer: Tim Bricker, PE
Tetra Tech

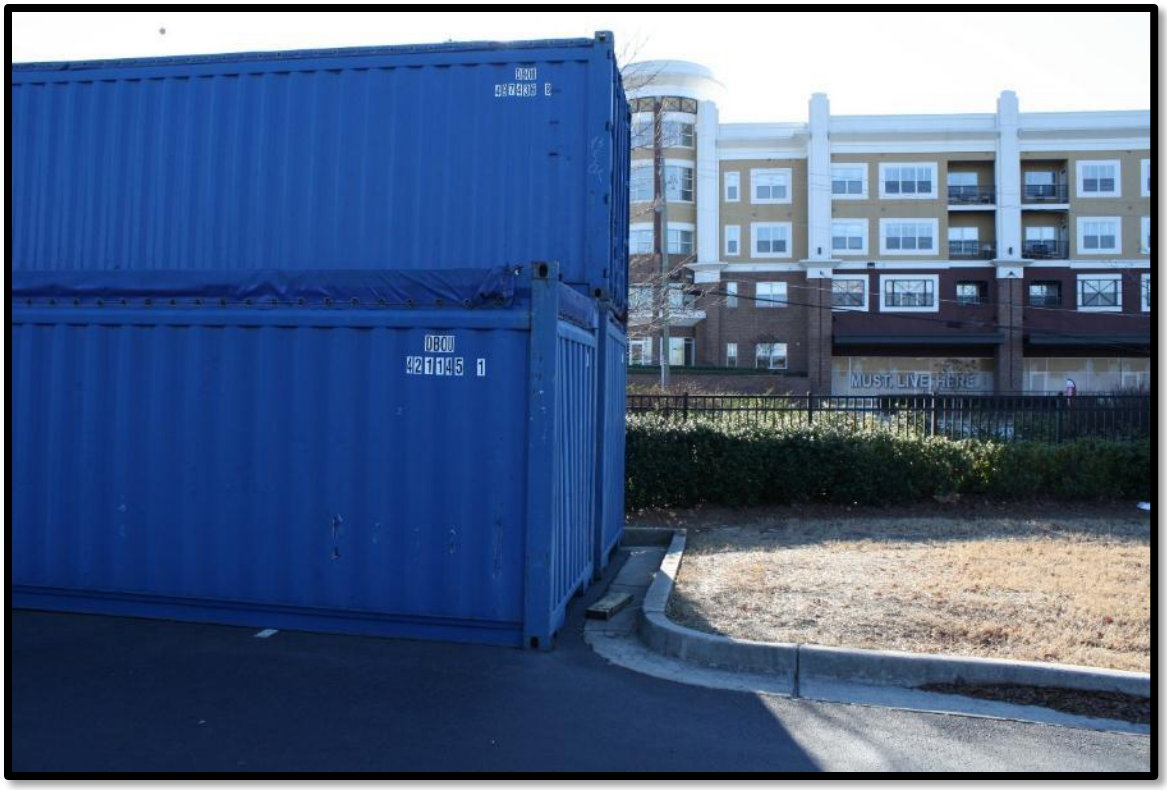
OFFICIAL PHOTOGRAPH NO. 25
TETRA TECH

Subject: Stormwater drain located at the northwest parking lot perimeter.

Site: Northside Drive Landfill Site (GWCC – 15)
Fulton County
Atlanta, Georgia

Date: December 30, 2014 **Orientation:** North

Photographer: Tim Bricker, PE
Tetra Tech



OFFICIAL PHOTOGRAPH NO. 26
TETRA TECH

Subject: Location of stormwater drain on the west side of the parking lot perimeter. A cargo container is being stored in front of the drain.

Site: Northside Drive Landfill Site (GWCC – 15)
Fulton County
Atlanta, Georgia

Date: December 30, 2014 **Orientation:** Southwest

Photographer: Tim Bricker, PE
Tetra Tech

OFFICIAL PHOTOGRAPH NO. 26A
TETRA TECH

Subject: Closeup of the stormwater drain located behind the cargo container stored along the west side of the parking lot perimeter.

Site: Northside Drive Landfill Site (GWCC – 15)
Fulton County
Atlanta, Georgia

Date: December 30, 2014 **Orientation:** South

Photographer: Tim Bricker, PE
Tetra Tech

OFFICIAL PHOTOGRAPH NO. 27
TETRA TECH

Subject: A small crack in the asphalt leading to the stormwater drains on the eastern side of the parking lot. Stormwater flows in this low point of the parking lot, which has caused minor staining. The crack is estimated to be approximately 200 feet long, ¼ inch wide and ¼ inch deep. The existing crack was still present, but had not increased in size.

Site: Northside Drive Landfill Site (GWCC – 15)
Fulton County
Atlanta, Georgia

Date: December 30, 2014 **Orientation:** Northeast

Photographer: Tim Bricker, PE
Tetra Tech

OFFICIAL PHOTOGRAPH NO. 28
TETRA TECH

Subject: Example of another crack which runs east to west on the main entrance/exit roadway. Like the previously observed crack, it is no larger than ¼ inch wide and ¼ inch deep. This crack traverses almost the entire length of the entrance/exit roadway. The existing crack was still present, but had not increased in size.

Site: Northside Drive Landfill Site (GWCC – 15)
Fulton County
Atlanta, Georgia

Date: December 30, 2014 **Orientation:** East

Photographer: Tim Bricker, PE
Tetra Tech

OFFICIAL PHOTOGRAPH NO. 29
TETRA TECH

Subject: Example of another crack which runs east to west on the entrance way of the parking lot row. Over half of the rows have cracks similar to this one. They occur where the asphalt seams are joined. Like the previously observed crack, it is no larger than ¼ inch wide and ¼ inch deep. The existing crack was still present, but had not increased in size.

Site: Northside Drive Landfill Site (GWCC – 15)
Fulton County
Atlanta, Georgia

Date: December 30, 2014 **Orientation:** East

Photographer: Tim Bricker, PE
Tetra Tech

OFFICIAL PHOTOGRAPH NO. 30
TETRA TECH

Subject: Example of another crack, which runs north to south on the western most row of the north parking lot. A standard pen is used to show the approximate width of the crack. The width of this crack is typical of all cracks observed in the asphalt of the north parking lot. The existing crack was still present, but had not increased in size.

Site: Northside Drive Landfill Site (GWCC – 15)
Fulton County
Atlanta, Georgia

Date: December 30, 2014 **Orientation:** Aerial

Photographer: Tim Bricker, PE
Tetra Tech

OFFICIAL PHOTOGRAPH NO. 31
TETRA TECH

Subject: Example of another crack which runs east to west. This crack is located on the northern portion of the parking lot and traverses the entire parking lot west of the north/south walkway. Once again, this crack occurs where the asphalt seams are joined. Like the previously observed cracks, it is no larger than ¼ inch wide and ¼ inch deep. The existing crack was still present, but had not increased in size.

Site: Northside Drive Landfill Site (GWCC – 15)
Fulton County
Atlanta, Georgia

Date: December 30, 2014 **Orientation:** East

Photographer: Tim Bricker, PE
Tetra Tech

OFFICIAL PHOTOGRAPH NO. 32
TETRA TECH

Subject: Monitoring wells, MM-02, MWC-3B and MWC-3C are inside the fence line between the trees.

Site: Northside Drive Landfill Site (GWCC – 15)
Fulton County
Atlanta, Georgia

Date: December 30, 2014 **Orientation:** East

Photographer: Tim Bricker, PE
Tetra Tech

OFFICIAL PHOTOGRAPH NO. 33
TETRA TECH

Subject: Monitoring wells, MW-1A, MW-1B and MW-1C at the corner of John Street and Gray Street.

Site: Northside Drive Landfill Site (GWCC – 15)
Fulton County
Atlanta, Georgia

Date: December 30, 2014 **Orientation:** West

Photographer: Tim Bricker, PE
Tetra Tech

OFFICIAL PHOTOGRAPH NO. 34
TETRA TECH

Subject: Granite plaque on the northern perimeter of the property. This plaque was noted to be missing in previous inspections due to overgrown brush.

Site: Northside Drive Landfill Site (GWCC – 15)
Fulton County
Atlanta, Georgia

Date: December 30, 2014 **Orientation:** Aerial

Photographer: Tim Bricker, PE
Tetra Tech

OFFICIAL PHOTOGRAPH NO. 35
TETRA TECH

Subject: Restored asphalt patch for direct push location DP-30, located in the northwest part of the parking lot.

Site: Northside Drive Landfill Site (GWCC – 15)
Fulton County
Atlanta, Georgia

Date: December 30, 2014 **Orientation:** East

Photographer: Tim Bricker, PE
Tetra Tech

OFFICIAL PHOTOGRAPH NO. 36
TETRA TECH

Subject: Restored asphalt patch for direct push location DP-31, located in the north part of the parking lot.

.

Site: Northside Drive Landfill Site (GWCC – 15)
Fulton County
Atlanta, Georgia

Date: December 30, 2014 **Orientation:** East

Photographer: Tim Bricker, PE
Tetra Tech

OFFICIAL PHOTOGRAPH NO. 37
TETRA TECH

Subject: Restored asphalt patch for direct push location DP-32, located in the northeast part of the parking lot.

.

Site: Northside Drive Landfill Site (GWCC – 15)
Fulton County
Atlanta, Georgia

Date: December 30, 2014 **Orientation:** East

Photographer: Tim Bricker, PE
Tetra Tech

OFFICIAL PHOTOGRAPH NO. 38
TETRA TECH

Subject: Restored asphalt patch for direct push location DP-33, located in the southwest part of the parking lot.

.

Site: Northside Drive Landfill Site (GWCC – 15)
Fulton County
Atlanta, Georgia

Date: December 30, 2014 **Orientation:** East

Photographer: Tim Bricker, PE
Tetra Tech

OFFICIAL PHOTOGRAPH NO. 39
TETRA TECH

Subject: Restored asphalt patch for direct push location DP-34, located in the south part of the parking lot.

.

Site: Northside Drive Landfill Site (GWCC – 15)
Fulton County
Atlanta, Georgia

Date: December 30, 2014 **Orientation:** East

Photographer: Tim Bricker, PE
Tetra Tech

OFFICIAL PHOTOGRAPH NO. 40
TETRA TECH

Subject: Restored asphalt patch for direct push location DP-35, located in the southeast part of the parking lot.

.

Site: Northside Drive Landfill Site (GWCC – 15)
Fulton County
Atlanta, Georgia

Date: December 30, 2014 **Orientation:** East

Photographer: Tim Bricker, PE
Tetra Tech

OFFICIAL PHOTOGRAPH NO. 41
TETRA TECH

Subject: Eroded soil along sidewalk south of John Street.
.

Site: Northside Drive Landfill Site (GWCC – 15)
Fulton County
Atlanta, Georgia

Date: December 30, 2014 **Orientation:** East

Photographer: Tim Bricker, PE
Tetra Tech

OFFICIAL PHOTOGRAPH NO. 42
TETRA TECH

Subject: Broken fence along Northside Drive.
.

Site: Northside Drive Landfill Site (GWCC – 15)
Fulton County
Atlanta, Georgia

Date: December 30, 2014 **Orientation:** East

Photographer: Tim Bricker, PE
Tetra Tech

ENCLOSURE 6

CHAIN OF CUSTODY FORM

(One Pages)

GCAL

ANALYTICAL LABORATORIES, LLC

7979 Innovation Park Dr., Baton Rouge, LA 70820-7402
Phone: 225.769.4900 • Fax: 225.767.5717 • www.gcal.com

CHAIN OF CUSTODY RECORD

GCAL USE ONLY

Report to:
Client: Tetra Tech
Address: 1955 Evergreen Blvd
Duluth, Ga 30096
Contact: Jessica Vickers
Phone: 662-681-5727
E-mail: Jessica.Vickers@tetratech.com

Bill to:
Client: Tetra Tech
Address:
Contact:
Phone:
E-mail:

P.O. Number:
Project Name/Number: GWCC
Sampled By: Chris Jones / Leslie Shaver

GCAL use only:
Custody Seal
used ❑ yes ❑ no
intact ❑ yes ❑ no
Temperature °C

❑ Dissolved Analysis Requested
❑ Field filtered
❑ Lab filtered

Matrix[1]	Date	Time (2400)	Comp	Grab	Sample Description	No Containers	PAH 8270 SIM	TAL Metals 6020	Preservative
W	1-19-15	1135		X	MM-04	9	X	X	MS/MSD
		1335			MM-01	3	X	X	
		1505			MM-02	3	X	X	
		1730			MWC-3C	3	X	X	
	1-20-15	1025			MWC-3B	3	X	X	
		1235			MM-03	3	X	X	
		1245			MM-03-Dup	3	X	X	
		1410			MWC-1A	3	X	X	
	1-19-15	1545			MWC-1B	3	X	X	
	1-20-15	1440			MWC-1C	3	X	X	
		1505			GWCC-EB	3	X	X	
		1455			GWCC-FB	3	X	X	

Air Bill No:

Turn Around Time (Business Days): ❑ 24h* ❑ 48h* ❑ 3 days* ❑ 1 week* ☑ Standard (Per Contract/Quote)

Relinquished by: (Signature)	Date:	Time:	Received by: (Signature)	Date:	Time:
[signature]	1/19/15	9:25	AUTHORIZED	1/21/15	9:25
Relinquished by: (Signature)	Date:	Time:	Received by: (Signature)	Date:	Time:
Relinquished by: (Signature)	Date:	Time:	Received by: (Signature)	Date:	Time:

Note: Please achieve requested reporting limits

By submitting these samples, you agree to GCAL's terms and conditions contained in our most recent schedule of services.

Matrix[1]: W = water, S = solid, L = liquid, T = tissue

*Requires prior approval, rush charges may apply.

We cannot accept verbal changes. Please email written changes to your PM.

WHITE: CLIENT FINAL REPORT - CANARY: CLIENT

ENCLOSURE 7

DATA VALIDATION REPORTS

(Five Pages)

Site Name:	Georgia World Congress Center (GWCC) – 9th Annual Groundwater Sampling Event
Laboratory:	Gulf Coast Analytical Laboratories (GCAL), Baton Rouge, Louisiana
Data Reviewer:	Jessica Vickers, Tetra Tech, Inc.
Analyses:	Polynuclear Aromatic Hydrocarbons (PAHs), Total Target Analyte List (TAL) Metals
Report Date:	March 6, 2015

Report Number	Matrix	Sample ID
215012217	Groundwater	MM-01, MM-02, field duplicate pair MM-03/MM-03-DUP, MM-04, MWC-1A, MWC-1B, MWC-1C, MWC-3B, MWC-3C, GWCC-EB, and GWCC-FB

Data validation was performed on the analytical data for ten groundwater and two quality control (QC) samples were collected by Tetra Tech, Inc. (Tetra Tech) from nine monitoring wells at the GWCC site during the 9th annual sampling event conducted on January 25, 2015. The samples were analyzed under report number 215012217 by Gulf Coast Analytical Laboratories, Inc. (GCAL), Baton Rouge, Louisiana. GCAL analyzed all samples for PAHs by SW-846 Method 8270D with selected ion monitoring, and total TAL metals by SW-846 Methods 6020A and 7470A (mercury only).

Data were evaluated in general accordance with the U.S. Environmental Protection Agency National Functional Guidelines (NFGs) for Organic Data Review and Inorganic Data Review. The analytical methods that were used by the laboratory during this project provide guidance on procedures and method acceptance criteria that, in some areas, differ from that given in the NFGs. Where differences exist between the method and the NFGs, the data validator followed the acceptance criteria given in the method. In addition, if the laboratory data package presented laboratory-derived acceptance criteria, these criteria were used to evaluate the data, unless the criteria were considered inadequate. Based on a comment received from Ms. Alexandra Cleary of the Georgia Department of Natural Resources, non-detect results were presented as "<reporting limit" rather than using the "U" qualifier used in the NFG. The qualifier used for this project's data validation are listed below:

J The analyte was positively identified; the associated value is the approximate concentration of the analyte in the sample.
J- The analyte was positively identified; the associated value is the approximate concentration of the analyte in the sample and may be biased low.

Data evaluation consisted of a cursory review of the data package and focused on the presence of serious analytical problems. The following list details the parameters evaluated in this data validation.

- Data Completeness
- Holding Times and Preservation
- Method Blank Results
- Surrogate Recoveries *
- Matrix Spike/Matrix Spike Duplicate Recovery *

- Field and Rinsate Blank Results
- Field Duplicate Results *
- Laboratory Control Samples

* QC criteria were not met for this evaluated parameter as discussed below.

Matrix Spike/Matrix Spike Duplicate Results

The surrogate recovery for 2-fluorobiphenyl in sample MM-04 was above the 53 to 106 percent acceptance criteria. No qualification was necessary because the associated results were non-detect.

Matrix Spike/Matrix Spike Duplicate Results

The matrix spike and/or matrix spike duplicate recoveries for acenaphthene, benzo(a)anthracene, benzo(k)fluoranthene, chrysene, fluoranthene, and fluorene were below the associated QC acceptance criteria. Therefore, these results for sample MM-04 were qualified as estimated with a possible low bias (flagged "J-").

Field Duplicate Results

The relative percent differences (RPDs) exceeded the QC criteria of 25 percent for 1-methylnaphthalene, 2-methylnaphthalene, and naphthalene. Therefore, these results for samples MM-03 and MM-03-DUP were qualified as estimated (flagged "J").

Overall

The overall quality of this data package was acceptable. A few results required qualification as indicated above. The enclosed table summarizes the qualified analytical results (see Attachment 1).

ATTACHMENT 1

QUALIFIED DATA SUMMARY TABLE

(Two Pages)

Table 1
Validated Analytical Results
9th Annual Groundwater Sampling Event - GWCC

Parameter	Sample Identification					
	MM-01	MM-02	MM-03	MM-03-DUP	MM-04	MWC-1A
PAHs (µg/L)						
1-Methylnaphthalene	<1.11	<1.09	1.84 J	1.42 J	<1.09	<1.09
2-Methylnaphthalene	<1.11	<1.09	1.75 J	<1.11 J	<1.09	<1.09
Acenaphthene	<1.11	<1.09	<1.09	<1.11	<1.09 J-	<1.09
Acenaphthylene	<1.11	<1.09	<1.09	<1.11	<1.09	<1.09
Anthracene	<0.111	<0.109	<0.109	<0.111	<0.109	<0.109
Benzo(a)anthracene	<0.111	<0.109	<0.109	<0.111	<0.109 J-	<0.109
Benzo(a)pyrene	<0.111	<0.109	<0.109	<0.111	<0.109	<0.109
Benzo(b)fluoranthene	<0.167	<0.163	<0.163	<0.167	<0.163	<0.163
Benzo(k)fluoranthene	<0.278	<0.272	<0.272	<0.278	<0.272 J-	<0.272
Benzo(g,h,i)perylene	<0.111	<0.109	<0.109	<0.111	<0.109	<0.109
Chrysene	<0.111	<0.109	<0.109	<0.111	<0.109 J-	<0.109
Dibenzo(a,h)anthracene	<0.111	<0.109	<0.109	<0.111	<0.109	<0.109
Fluoranthene	<0.278	<0.272	<0.272	<0.278	<0.272 J-	0.330
Fluorene	<0.556	<0.543	<0.543	<0.556	<0.543 J-	<0.543
Indeno(1,2,3-cd)pyrene	<0.278	<0.272	<0.272	<0.278	<0.272	<0.272
Naphthalene	<0.556	<0.543	2.52 J	1.93 J	<0.543	<0.543
Phenanthrene	<0.111	<0.109	<0.109	<0.111	<0.109	<0.109
Pyrene	<0.278	<0.272	<0.272	<0.278	<0.272	<0.272
Metals, Total (mg/L)						
Aluminum	0.27	<0.20	<0.20	<0.20	<0.20	<0.20
Antimony	<0.060	<0.060	<0.060	<0.060	<0.060	<0.060
Arsenic	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020
Barium	0.014	0.084	0.11	0.11	0.022	0.052
Beryllium	<0.0040	<0.0040	<0.0040	<0.0040	<0.0040	<0.0040
Cadmium	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
Calcium	13.7	46.7	26.8	26.3	7.85	27.0
Chromium	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
Cobalt	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
Copper	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020
Iron	2.99	<0.20	<0.20	<0.20	<0.20	<0.20
Lead	<0.015	<0.015	<0.015	<0.015	<0.015	<0.015
Magnesium	1.31	12.8	5.55	5.35	1.83	3.87
Manganese	0.27	0.22	0.31	0.29	<0.015	0.84
Mercury	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020
Molybdenum	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030
Nickel	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040
Potassium	6.51	7.29	2.78	2.68	1.75	1.84
Selenium	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040
Silver	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
Sodium	1.91	23.2	12.7	13.8	11.9	8.61
Thallium	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020
Vanadium	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020
Zinc	0.17	<0.020	0.020	0.020	<0.020	<0.020

Notes:

J = The analyte was positively identified; the associated value is the approximate concentration of the analyte in the sample.

J- = The analyte was positively identified; the associated value is the approximate concentration of the analyte in the sample and may be biased low.

µg/L = Micrograms per liter

mg/L = Milligrams per liter

PAHs = Polycyclic aromatic hydrocarbons

Table 1
Validated Analytical Results
9th Annual Groundwater Sampling Event - GWCC

Parameter	Sample Identification					
	MWC-1B	MWC-1C	MWC-3B	MWC-3C	GWCC-EB	GWCC-FB
PAHs (µg/L)						
1-Methylnaphthalene	<1.11	<1.09	<1.11	<1.09	<1.09	<1.14
2-Methylnaphthalene	<1.11	<1.09	<1.11	<1.09	<1.09	<1.14
Acenaphthene	<1.11	<1.09	<1.11	<1.09	<1.09	<1.14
Acenaphthylene	<1.11	<1.09	<1.11	<1.09	<1.09	<1.14
Anthracene	<0.111	<0.109	<0.111	<0.109	<0.109	<0.114
Benzo(a)anthracene	<0.111	<0.109	<0.111	<0.109	<0.109	<0.114
Benzo(a)pyrene	<0.111	<0.109	<0.111	<0.109	<0.109	<0.114
Benzo(b)fluoranthene	<0.167	<0.163	<0.167	<0.163	<0.164	<0.170
Benzo(k)fluoranthene	<0.278	<0.272	<0.278	<0.272	<0.273	<0.284
Benzo(g,h,i)perylene	<0.111	<0.109	<0.111	<0.109	<0.109	<0.114
Chrysene	<0.111	<0.109	<0.111	<0.109	<0.109	<0.114
Dibenzo(a,h)anthracene	<0.111	<0.109	<0.111	<0.109	<0.109	<0.114
Fluoranthene	<0.278	<0.272	<0.278	<0.272	<0.273	<0.284
Fluorene	<0.556	<0.543	<0.556	<0.543	<0.546	<0.568
Indeno(1,2,3-cd)pyrene	<0.278	<0.272	<0.278	<0.272	<0.273	<0.284
Naphthalene	<0.556	<0.543	<0.556	<0.543	<0.546	<0.568
Phenanthrene	<0.111	<0.109	<0.111	<0.109	<0.109	<0.114
Pyrene	<0.278	<0.272	<0.278	<0.272	<0.273	<0.284
Metals, Total (mg/L)						
Aluminum	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Antimony	<0.060	<0.060	<0.060	<0.060	<0.060	<0.060
Arsenic	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020
Barium	0.097	0.11	0.13	0.056	<0.010	<0.010
Beryllium	<0.0040	<0.0040	<0.0040	<0.0040	<0.0040	<0.0040
Cadmium	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
Calcium	45.0	77.6	108	75.6	<0.80	<0.80
Chromium	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
Cobalt	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
Copper	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020
Iron	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Lead	<0.015	<0.015	<0.015	<0.015	<0.015	<0.015
Magnesium	6.93	15.7	35.5	23.9	<0.10	<0.10
Manganese	<0.015	0.016	3.95	0.83	<0.015	<0.015
Mercury	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020
Molybdenum	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030
Nickel	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040
Potassium	3.85	6.19	8.67	4.97	<0.50	<0.50
Selenium	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040
Silver	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
Sodium	21.8	23.7	33.9	30.4	<1.00	<1.00
Thallium	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020
Vanadium	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020
Zinc	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020

Notes:

J = The analyte was positively identified; the associated value is the approximate concentration of the analyte in the sample.

J- = The analyte was positively identified; the associated value is the approximate concentration of the analyte in the sample and may be biased low.

µg/L = Micrograms per liter

mg/L = Milligrams per liter

PAHs = Polycyclic aromatic hydrocarbons

ATTACHMENT A

LABORATORY ANALYTICAL RESULTS

(38 Pages)

ANALYTICAL RESULTS

PERFORMED BY

GCAL, LLC
7979 Innovation Park Dr.
Baton Rouge, LA 70820

Report Date 03/05/2015

GCAL Report 215012217

Deliver To	Tetra Tech EMI 950 S. Fourth St. Baldwyn, MS 38824 662-681-5727
Attn	Jessica Vickers

Project GWCC

Laboratory Endorsement

Sample analysis was performed in accordance with approved methodologies provided by the Environmental Protection Agency or other recognized agencies. The samples and their corresponding extracts will be maintained for a period of 30 days unless otherwise arranged. Following this retention period the samples will be disposed in accordance with GCAL's Standard Operating Procedures.

Common Abbreviations that may be Utilized in this Report

ND	Indicates the result was Not Detected at the specified reporting limit
DO	Indicates the result was Diluted Out
MI	Indicates the result was subject to Matrix Interference
TNTC	Indicates the result was Too Numerous To Count
SUBC	Indicates the analysis was Sub-Contracted
FLD	Indicates the analysis was performed in the Field
MDL	Method Detection Limit
LOD	Limit of Detection
LOQ	Limit of Quantitation
RE	Re-analysis
DL	Dilution
N	Metals Matrix Spike or Matrix Spike Duplicate Recovery is outside control limits
00:00	Reported as a time equivalent to 12:00 AM

Reporting Flags that may be Utilized in this Report

J or I	Indicates the result is between the MDL and LOQ
U	Indicates the compound was analyzed for but not detected
B	Indicates the analyte was detected in the associated Method Blank
Q	Indicates a non-compliant QC Result (See Q Flag Application Report)
*****	Indicates a non-compliant or not applicable QC recovery or RPD

Sample receipt at GCAL is documented through the attached chain of custody. In accordance with NELAC, this report shall be reproduced only in full and with the written permission of GCAL. The results contained within this report relate only to the samples reported. The documented results are presented within this report.

This report pertains only to the samples listed in the Report Sample Summary and should be retained as a permanent record thereof. The results contained within this report are intended for the use of the client. Any unauthorized use of the information contained in this report is prohibited.

I certify that this data package is in compliance with the NELAC standard and terms and conditions of the contract and Statement of Work both technically and for completeness, for other than the conditions in the case narrative. Release of the data contained in this hardcopy data package and in the computer readable data submitted has been authorized by the Quality Assurance Manager or his/her designee, as verified by the following signature.

Estimated uncertainty of measurement is available upon request. This report is in compliance with the DOD QSM as specified in the contract if applicable.

Authorized Signature
GCAL Report 215012217

Case Narrative

Client: Tetra Tech **Report:** 215012217

Gulf Coast Analytical Laboratories received and analyzed the sample(s) listed on the Report Sample Summary page of this report. Receipt of the sample(s) is documented by the attached chain of custody. This applies only to the sample(s) listed in this report. No sample integrity or quality control exceptions were identified unless noted below.

This report was revised on 03/05/15. The EPA 6020A reporting limits were changed (elevated) to project specific limits as requested by the client. The results were revised to report in mg/L. Molydenum was added to the EPA 6020A reportable analyte list. All instrument and batch QC is acceptable for this additional analyte.

This report was revised on 02/17/15. The EPA 8270C SIM reporting limits for most analytes were changed (elevated) to project specific limits as requested by the client.

SEMI-VOLATILES MASS SPECTROMETRY

In the EPA 8270C SIM analysis, sample 21501221701 (MM-04) had one surrogate recovery outside control limits in the base-neutral fraction. The surrogate solution was inadvertantly spiked at half the amount as normally spiked, however the amount was adjusted in the LIMS to reflect this.

In the EPA 8270C SIM analysis for prep batch 549779, the MS/MSD exhibited recovery failures. The LCS/LCSD recoveries are acceptable.

METALS

In the EPA 6020A analysis, samples 21501221701 (MM-04), 21501221702 (MM-04 MS), 21501221703 (MM-04 MSD), 21501221705 (MM-02), 21501221706 (MWC-3C), 21501221707 (MWC-3B), 21501221708 (MM-03), 21501221709 (MM-03 DUP), 21501221710 (MWC-1A), 21501221711 (MWC-1B) and 21501221712 (MWC-1C) had to be diluted in order to bracket the concentration within the calibration range of the instrument. This is reflected in the elevated reporting limits.

Report Sample Summary

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21501221701	MM-04	Water	01/19/2015 11:35	01/22/2015 10:20
21501221702	MM-04 MS	Water	01/19/2015 11:35	01/22/2015 10:20
21501221703	MM-04 MSD	Water	01/19/2015 11:35	01/22/2015 10:20
21501221704	MM-01	Water	01/19/2015 13:35	01/22/2015 10:20
21501221705	MM-02	Water	01/19/2015 15:05	01/22/2015 10:20
21501221706	MWC-3C	Water	01/19/2015 17:30	01/22/2015 10:20
21501221707	MWC-3B	Water	01/20/2015 10:25	01/22/2015 10:20
21501221708	MM-03	Water	01/20/2015 12:35	01/22/2015 10:20
21501221709	MM-03 DUP	Water	01/20/2015 12:45	01/22/2015 10:20
21501221710	MWC-1A	Water	01/20/2015 14:10	01/22/2015 10:20
21501221711	MWC-1B	Water	01/19/2015 15:45	01/22/2015 10:20
21501221712	MWC-1C	Water	01/20/2015 14:40	01/22/2015 10:20
21501221713	GWCC-EB	Water	01/20/2015 15:05	01/22/2015 10:20
21501221714	GWCC-FB	Water	01/20/2015 14:55	01/22/2015 10:20

Summary of Compounds Detected

MM-04

Collect Date 01/19/2015 11:35 **GCAL ID** 21501221701
Receive Date 01/22/2015 10:20 **Matrix** Water

EPA 6020A

CAS#	Parameter	Result	LOQ	Units
7440-39-3	Barium	0.022	0.010	mg/L
7440-70-2	Calcium	7.85	0.80	mg/L
7439-95-4	Magnesium	1.83	0.10	mg/L
7440-09-7	Potassium	1.75	0.50	mg/L
7440-23-5	Sodium	11.9	5.00	mg/L

MM-04 MS

Collect Date 01/19/2015 11:35 **GCAL ID** 21501221702
Receive Date 01/22/2015 10:20 **Matrix** Water

EPA 8270C SIM

CAS#	Parameter	Result	LOQ	Units
90-12-0	1-Methylnaphthalene	2.49	1.09	ug/L
91-57-6	2-Methylnaphthalene	2.54	1.09	ug/L
83-32-9	Acenaphthene	2.40	1.09	ug/L
208-96-8	Acenaphthylene	2.67	1.09	ug/L
120-12-7	Anthracene	3.14	0.109	ug/L
56-55-3	Benzo(a)anthracene	2.64	0.109	ug/L
50-32-8	Benzo(a)pyrene	3.07	0.109	ug/L
205-99-2	Benzo(b)fluoranthene	3.02	0.163	ug/L
191-24-2	Benzo(g,h,i)perylene	2.70	0.272	ug/L
207-08-9	Benzo(k)fluoranthene	2.70	0.109	ug/L
218-01-9	Chrysene	2.50	0.109	ug/L
53-70-3	Dibenz(a,h)anthracene	2.69	0.109	ug/L
206-44-0	Fluoranthene	3.12	0.272	ug/L
86-73-7	Fluorene	2.59	0.543	ug/L
193-39-5	Indeno(1,2,3-cd)pyrene	2.93	0.272	ug/L
91-20-3	Naphthalene	2.46	0.543	ug/L
85-01-8	Phenanthrene	3.16	0.109	ug/L
129-00-0	Pyrene	3.01	0.272	ug/L

EPA 6020A

CAS#	Parameter	Result	LOQ	Units
7429-90-5	Aluminum	1.03	0.20	mg/L
7440-36-0	Antimony	0.11	0.060	mg/L
7440-38-2	Arsenic	0.048	0.020	mg/L
7440-39-3	Barium	0.071	0.010	mg/L
7440-41-7	Beryllium	0.050	0.0040	mg/L
7440-43-9	Cadmium	0.049	0.0050	mg/L
7440-70-2	Calcium	33.0	0.80	mg/L
7440-47-3	Chromium	0.049	0.010	mg/L
7440-48-4	Cobalt	0.053	0.010	mg/L
7440-50-8	Copper	0.055	0.020	mg/L
7439-89-6	Iron	5.30	0.20	mg/L
7439-92-1	Lead	0.052	0.015	mg/L

Summary of Compounds Detected

MM-04 MS

Collect Date: 01/19/2015 11:35
Receive Date: 01/22/2015 10:20
GCAL ID: 21501221702
Matrix: Water

EPA 6020A (Continued)

CAS#	Parameter	Result	LOQ	Units
7439-95-4	Magnesium	6.89	0.10	mg/L
7439-96-5	Manganese	0.054	0.015	mg/L
7439-98-7	Molybdenum	0.052	0.030	mg/L
7440-02-0	Nickel	0.11	0.040	mg/L
7440-09-7	Potassium	6.71	0.50	mg/L
7440-22-4	Silver	0.052	0.010	mg/L
7440-23-5	Sodium	17.1	5.00	mg/L
7440-28-0	Thallium	0.048	0.020	mg/L
7440-62-2	Vanadium	0.054	0.020	mg/L
7440-66-6	Zinc	1.02	0.020	mg/L

EPA 7470A

CAS#	Parameter	Result	LOQ	Units
7439-97-6	Mercury	0.0058	0.00020	mg/L

MM-04 MSD

Collect Date: 01/19/2015 11:35
Receive Date: 01/22/2015 10:20
GCAL ID: 21501221703
Matrix: Water

EPA 8270C SIM

CAS#	Parameter	Result	LOQ	Units
90-12-0	1-Methylnaphthalene	2.43	1.09	ug/L
91-57-6	2-Methylnaphthalene	2.48	1.09	ug/L
83-32-9	Acenaphthene	2.38	1.09	ug/L
208-96-8	Acenaphthylene	2.63	1.09	ug/L
120-12-7	Anthracene	3.09	0.109	ug/L
56-55-3	Benzo(a)anthracene	2.52	0.109	ug/L
50-32-8	Benzo(a)pyrene	2.92	0.109	ug/L
205-99-2	Benzo(b)fluoranthene	2.87	0.163	ug/L
191-24-2	Benzo(g,h,i)perylene	2.57	0.272	ug/L
207-08-9	Benzo(k)fluoranthene	2.68	0.109	ug/L
218-01-9	Chrysene	2.39	0.109	ug/L
53-70-3	Dibenz(a,h)anthracene	2.57	0.109	ug/L
206-44-0	Fluoranthene	3.05	0.272	ug/L
86-73-7	Fluorene	2.55	0.543	ug/L
193-39-5	Indeno(1,2,3-cd)pyrene	2.80	0.272	ug/L
91-20-3	Naphthalene	2.40	0.543	ug/L
85-01-8	Phenanthrene	3.02	0.109	ug/L
129-00-0	Pyrene	2.89	0.272	ug/L

EPA 6020A

CAS#	Parameter	Result	LOQ	Units
7429-90-5	Aluminum	0.98	0.20	mg/L
7440-36-0	Antimony	0.10	0.060	mg/L

Summary of Compounds Detected

MM-04 MSD

Collect Date: 01/19/2015 11:35
Receive Date: 01/22/2015 10:20
GCAL ID: 21501221703
Matrix: Water

EPA 6020A (Continued)

CAS#	Parameter	Result	LOQ	Units
7440-38-2	Arsenic	0.046	0.020	mg/L
7440-39-3	Barium	0.067	0.010	mg/L
7440-41-7	Beryllium	0.049	0.0040	mg/L
7440-43-9	Cadmium	0.046	0.0050	mg/L
7440-70-2	Calcium	31.6	0.80	mg/L
7440-47-3	Chromium	0.047	0.010	mg/L
7440-48-4	Cobalt	0.051	0.010	mg/L
7440-50-8	Copper	0.053	0.020	mg/L
7439-89-6	Iron	5.05	0.20	mg/L
7439-92-1	Lead	0.049	0.015	mg/L
7439-95-4	Magnesium	6.57	0.10	mg/L
7439-96-5	Manganese	0.052	0.015	mg/L
7439-98-7	Molybdenum	0.049	0.030	mg/L
7440-02-0	Nickel	0.10	0.040	mg/L
7440-09-7	Potassium	6.39	0.50	mg/L
7440-22-4	Silver	0.049	0.010	mg/L
7440-23-5	Sodium	16.6	5.00	mg/L
7440-28-0	Thallium	0.046	0.020	mg/L
7440-62-2	Vanadium	0.052	0.020	mg/L
7440-66-6	Zinc	0.97	0.020	mg/L

EPA 7470A

CAS#	Parameter	Result	LOQ	Units
7439-97-6	Mercury	0.0052	0.00020	mg/L

MM-01

Collect Date: 01/19/2015 13:35
Receive Date: 01/22/2015 10:20
GCAL ID: 21501221704
Matrix: Water

EPA 6020A

CAS#	Parameter	Result	LOQ	Units
7429-90-5	Aluminum	0.27	0.20	mg/L
7440-39-3	Barium	0.014	0.010	mg/L
7440-70-2	Calcium	13.7	0.80	mg/L
7439-89-6	Iron	2.99	0.20	mg/L
7439-95-4	Magnesium	1.31	0.10	mg/L
7439-96-5	Manganese	0.27	0.015	mg/L
7440-09-7	Potassium	6.51	0.50	mg/L
7440-23-5	Sodium	1.91	1.00	mg/L
7440-66-6	Zinc	0.17	0.020	mg/L

Summary of Compounds Detected

MM-02

Collect Date 01/19/2015 15:05 **GCAL ID** 21501221705
Receive Date 01/22/2015 10:20 **Matrix** Water

EPA 6020A

CAS#	Parameter	Result	LOQ	Units
7440-39-3	Barium	0.084	0.010	mg/L
7440-70-2	Calcium	46.7	0.80	mg/L
7439-95-4	Magnesium	12.8	0.50	mg/L
7439-96-5	Manganese	0.22	0.015	mg/L
7440-09-7	Potassium	7.29	0.50	mg/L
7440-23-5	Sodium	23.2	5.00	mg/L

MWC-3C

Collect Date 01/19/2015 17:30 **GCAL ID** 21501221706
Receive Date 01/22/2015 10:20 **Matrix** Water

EPA 6020A

CAS#	Parameter	Result	LOQ	Units
7440-39-3	Barium	0.056	0.010	mg/L
7440-70-2	Calcium	75.6	4.00	mg/L
7439-95-4	Magnesium	23.9	0.50	mg/L
7439-96-5	Manganese	0.83	0.075	mg/L
7440-09-7	Potassium	4.97	0.50	mg/L
7440-23-5	Sodium	30.4	5.00	mg/L

MWC-3B

Collect Date 01/20/2015 10:25 **GCAL ID** 21501221707
Receive Date 01/22/2015 10:20 **Matrix** Water

EPA 6020A

CAS#	Parameter	Result	LOQ	Units
7440-39-3	Barium	0.13	0.010	mg/L
7440-70-2	Calcium	108	8.00	mg/L
7439-95-4	Magnesium	35.5	1.00	mg/L
7439-96-5	Manganese	3.92	0.15	mg/L
7440-09-7	Potassium	8.67	0.50	mg/L
7440-23-5	Sodium	33.9	10.0	mg/L

MM-03

Collect Date 01/20/2015 12:35 **GCAL ID** 21501221708
Receive Date 01/22/2015 10:20 **Matrix** Water

EPA 8270C SIM

CAS#	Parameter	Result	LOQ	Units
90-12-0	1-Methylnaphthalene	1.84	1.09	ug/L
91-57-6	2-Methylnaphthalene	1.75	1.09	ug/L
91-20-3	Naphthalene	2.52	0.543	ug/L

Summary of Compounds Detected

MM-03

Collect Date 01/20/2015 12:35 **GCAL ID** 21501221708
Receive Date 01/22/2015 10:20 **Matrix** Water

EPA 6020A

CAS#	Parameter	Result	LOQ	Units
7440-39-3	Barium	0.11	0.010	mg/L
7440-70-2	Calcium	26.8	0.80	mg/L
7439-95-4	Magnesium	5.55	0.10	mg/L
7439-96-5	Manganese	0.31	0.015	mg/L
7440-09-7	Potassium	2.78	0.50	mg/L
7440-23-5	Sodium	12.7	5.00	mg/L
7440-66-6	Zinc	0.020	0.020	mg/L

MM-03 DUP

Collect Date 01/20/2015 12:45 **GCAL ID** 21501221709
Receive Date 01/22/2015 10:20 **Matrix** Water

EPA 8270C SIM

CAS#	Parameter	Result	LOQ	Units
90-12-0	1-Methylnaphthalene	1.42	1.11	ug/L
91-20-3	Naphthalene	1.93	0.556	ug/L

EPA 6020A

CAS#	Parameter	Result	LOQ	Units
7440-39-3	Barium	0.11	0.010	mg/L
7440-70-2	Calcium	26.3	0.80	mg/L
7439-95-4	Magnesium	5.35	0.10	mg/L
7439-96-5	Manganese	0.29	0.015	mg/L
7440-09-7	Potassium	2.68	0.50	mg/L
7440-23-5	Sodium	13.8	5.00	mg/L
7440-66-6	Zinc	0.020	0.020	mg/L

MWC-1A

Collect Date 01/20/2015 14:10 **GCAL ID** 21501221710
Receive Date 01/22/2015 10:20 **Matrix** Water

EPA 8270C SIM

CAS#	Parameter	Result	LOQ	Units
206-44-0	Fluoranthene	0.330	0.272	ug/L

EPA 6020A

CAS#	Parameter	Result	LOQ	Units
7440-39-3	Barium	0.052	0.010	mg/L
7440-70-2	Calcium	27.0	0.80	mg/L
7439-95-4	Magnesium	3.87	0.10	mg/L

Summary of Compounds Detected

MWC-1A

Collect Date 01/20/2015 14:10 **GCAL ID** 21501221710
Receive Date 01/22/2015 10:20 **Matrix** Water

EPA 6020A (Continued)

CAS#	Parameter	Result	LOQ	Units
7439-96-5	Manganese	0.84	0.075	mg/L
7440-09-7	Potassium	1.84	0.50	mg/L
7440-23-5	Sodium	8.61	1.00	mg/L

MWC-1B

Collect Date 01/19/2015 15:45 **GCAL ID** 21501221711
Receive Date 01/22/2015 10:20 **Matrix** Water

EPA 6020A

CAS#	Parameter	Result	LOQ	Units
7440-39-3	Barium	0.097	0.010	mg/L
7440-70-2	Calcium	45.0	0.80	mg/L
7439-95-4	Magnesium	6.93	0.10	mg/L
7440-09-7	Potassium	3.85	0.50	mg/L
7440-23-5	Sodium	21.8	5.00	mg/L

MWC-1C

Collect Date 01/20/2015 14:40 **GCAL ID** 21501221712
Receive Date 01/22/2015 10:20 **Matrix** Water

EPA 6020A

CAS#	Parameter	Result	LOQ	Units
7440-39-3	Barium	0.11	0.010	mg/L
7440-70-2	Calcium	77.6	4.00	mg/L
7439-95-4	Magnesium	15.7	0.50	mg/L
7439-96-5	Manganese	0.016	0.015	mg/L
7440-09-7	Potassium	6.19	0.50	mg/L
7440-23-5	Sodium	23.7	5.00	mg/L

Sample Results

MM-04

Collect Date	01/19/2015 11:35	**GCAL ID**	21501221701
Receive Date	01/22/2015 10:20	**Matrix**	Water

EPA 8270C SIM

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
01/23/2015 22:45	549779	EPA 3510C	1	01/25/2015 08:12	DLB	549872

CAS#	Parameter	Result	LOQ	Units
90-12-0	1-Methylnaphthalene	ND	1.09	ug/L
91-57-6	2-Methylnaphthalene	ND	1.09	ug/L
83-32-9	Acenaphthene	ND	1.09	ug/L
208-96-8	Acenaphthylene	ND	1.09	ug/L
120-12-7	Anthracene	ND	0.109	ug/L
56-55-3	Benzo(a)anthracene	ND	0.109	ug/L
50-32-8	Benzo(a)pyrene	ND	0.109	ug/L
205-99-2	Benzo(b)fluoranthene	ND	0.163	ug/L
191-24-2	Benzo(g,h,i)perylene	ND	0.272	ug/L
207-08-9	Benzo(k)fluoranthene	ND	0.109	ug/L
218-01-9	Chrysene	ND	0.109	ug/L
53-70-3	Dibenz(a,h)anthracene	ND	0.109	ug/L
206-44-0	Fluoranthene	ND	0.272	ug/L
86-73-7	Fluorene	ND	0.543	ug/L
193-39-5	Indeno(1,2,3-cd)pyrene	ND	0.272	ug/L
91-20-3	Naphthalene	ND	0.543	ug/L
85-01-8	Phenanthrene	ND	0.109	ug/L
129-00-0	Pyrene	ND	0.272	ug/L

CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Recovery	Rec Limits
4165-60-0	Nitrobenzene-d5	2.72	2.53	ug/L	93	55 - 111
321-60-8	2-Fluorobiphenyl	2.72	2.97	ug/L	**109***	53 - 106
1718-51-0	Terphenyl-d14	2.72	2.61	ug/L	96	58 - 132

EPA 6020A

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
01/22/2015 17:00	549704	EPA 3010A	1	01/26/2015 17:58	JBW2	549961

CAS#	Parameter	Result	LOQ	Units
7429-90-5	Aluminum	ND	0.20	mg/L
7440-36-0	Antimony	ND	0.060	mg/L
7440-38-2	Arsenic	ND	0.020	mg/L
7440-39-3	**Barium**	**0.022**	**0.010**	**mg/L**
7440-41-7	Beryllium	ND	0.0040	mg/L
7440-43-9	Cadmium	ND	0.0050	mg/L
7440-70-2	**Calcium**	**7.85**	**0.80**	**mg/L**
7440-47-3	Chromium	ND	0.010	mg/L
7440-48-4	Cobalt	ND	0.010	mg/L
7440-50-8	Copper	ND	0.020	mg/L
7439-89-6	Iron	ND	0.20	mg/L
7439-92-1	Lead	ND	0.015	mg/L
7439-95-4	**Magnesium**	**1.83**	**0.10**	**mg/L**
7439-96-5	Manganese	ND	0.015	mg/L
7439-98-7	Molybdenum	ND	0.030	mg/L
7440-02-0	Nickel	ND	0.040	mg/L
7440-09-7	**Potassium**	**1.75**	**0.50**	**mg/L**
7782-49-2	Selenium	ND	0.040	mg/L
7440-22-4	Silver	ND	0.010	mg/L

Sample Results

MM-04

Collect Date	01/19/2015 11:35	**GCAL ID**	21501221701
Receive Date	01/22/2015 10:20	**Matrix**	Water

EPA 6020A (Continued)

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
01/22/2015 17:00	549704	EPA 3010A	1	01/26/2015 17:58	JBW2	549961

CAS#	Parameter	Result	LOQ	Units
7440-28-0	Thallium	ND	0.020	mg/L
7440-62-2	Vanadium	ND	0.020	mg/L
7440-66-6	Zinc	ND	0.020	mg/L

EPA 6020A

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
01/22/2015 17:00	549704	EPA 3010A	5	01/27/2015 21:07	JBW2	550054

CAS#	Parameter	Result	LOQ	Units
7440-23-5	**Sodium**	**11.9**	**5.00**	**mg/L**

EPA 7470A

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
01/22/2015 17:00	549705	EPA 7470A	1	01/23/2015 11:13	JBW2	549765

CAS#	Parameter	Result	LOQ	Units
7439-97-6	Mercury	ND	0.00020	mg/L

MM-04 MS

Collect Date	01/19/2015 11:35	**GCAL ID**	21501221702
Receive Date	01/22/2015 10:20	**Matrix**	Water

EPA 8270C SIM

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
01/23/2015 22:45	549779	EPA 3510C	1	01/25/2015 08:31	DLB	549872

CAS#	Parameter	Result	LOQ	Units
90-12-0	**1-Methylnaphthalene**	**2.49**	**1.09**	**ug/L**
91-57-6	**2-Methylnaphthalene**	**2.54**	**1.09**	**ug/L**
83-32-9	**Acenaphthene**	**2.40**	**1.09**	**ug/L**
208-96-8	**Acenaphthylene**	**2.67**	**1.09**	**ug/L**
120-12-7	**Anthracene**	**3.14**	**0.109**	**ug/L**
56-55-3	**Benzo(a)anthracene**	**2.64**	**0.109**	**ug/L**
50-32-8	**Benzo(a)pyrene**	**3.07**	**0.109**	**ug/L**
205-99-2	**Benzo(b)fluoranthene**	**3.02**	**0.163**	**ug/L**
191-24-2	**Benzo(g,h,i)perylene**	**2.70**	**0.272**	**ug/L**
207-08-9	**Benzo(k)fluoranthene**	**2.70**	**0.109**	**ug/L**
218-01-9	**Chrysene**	**2.50**	**0.109**	**ug/L**
53-70-3	**Dibenz(a,h)anthracene**	**2.69**	**0.109**	**ug/L**
206-44-0	**Fluoranthene**	**3.12**	**0.272**	**ug/L**
86-73-7	**Fluorene**	**2.59**	**0.543**	**ug/L**

Sample Results

MM-04 MS	**Collect Date**	01/19/2015 11:35	**GCAL ID**	21501221702
	Receive Date	01/22/2015 10:20	**Matrix**	Water

EPA 8270C SIM (Continued)

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
01/23/2015 22:45	549779	EPA 3510C	1	01/25/2015 08:31	DLB	549872

CAS#	Parameter	Result	LOQ	Units
193-39-5	**Indeno(1,2,3-cd)pyrene**	**2.93**	**0.272**	**ug/L**
91-20-3	**Naphthalene**	**2.46**	**0.543**	**ug/L**
85-01-8	**Phenanthrene**	**3.16**	**0.109**	**ug/L**
129-00-0	**Pyrene**	**3.01**	**0.272**	**ug/L**

CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Recovery	Rec Limits
4165-60-0	Nitrobenzene-d5	5.43	4.14	ug/L	76	55 - 111
321-60-8	2-Fluorobiphenyl	5.43	5.02	ug/L	92	53 - 106
1718-51-0	Terphenyl-d14	5.43	4.14	ug/L	76	58 - 132

EPA 6020A

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
01/22/2015 17:00	549704	EPA 3010A	1	01/26/2015 18:06	JBW2	549961

CAS#	Parameter	Result	LOQ	Units
7429-90-5	**Aluminum**	**1.03**	**0.20**	**mg/L**
7440-36-0	**Antimony**	**0.11**	**0.060**	**mg/L**
7440-38-2	**Arsenic**	**0.048**	**0.020**	**mg/L**
7440-39-3	**Barium**	**0.071**	**0.010**	**mg/L**
7440-41-7	**Beryllium**	**0.050**	**0.0040**	**mg/L**
7440-43-9	**Cadmium**	**0.049**	**0.0050**	**mg/L**
7440-70-2	**Calcium**	**33.0**	**0.80**	**mg/L**
7440-47-3	**Chromium**	**0.049**	**0.010**	**mg/L**
7440-48-4	**Cobalt**	**0.053**	**0.010**	**mg/L**
7440-50-8	**Copper**	**0.055**	**0.020**	**mg/L**
7439-89-6	**Iron**	**5.30**	**0.20**	**mg/L**
7439-92-1	**Lead**	**0.052**	**0.015**	**mg/L**
7439-95-4	**Magnesium**	**6.89**	**0.10**	**mg/L**
7439-96-5	**Manganese**	**0.054**	**0.015**	**mg/L**
7439-98-7	**Molybdenum**	**0.052**	**0.030**	**mg/L**
7440-02-0	**Nickel**	**0.11**	**0.040**	**mg/L**
7440-09-7	**Potassium**	**6.71**	**0.50**	**mg/L**
7782-49-2	Selenium	ND	0.040	mg/L
7440-22-4	**Silver**	**0.052**	**0.010**	**mg/L**
7440-28-0	**Thallium**	**0.048**	**0.020**	**mg/L**
7440-62-2	**Vanadium**	**0.054**	**0.020**	**mg/L**
7440-66-6	**Zinc**	**1.02**	**0.020**	**mg/L**

Sample Results

MM-04 MS

Collect Date 01/19/2015 11:35 **GCAL ID** 21501221702
Receive Date 01/22/2015 10:20 **Matrix** Water

EPA 6020A

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
01/22/2015 17:00	549704	EPA 3010A	5	01/27/2015 21:14	JBW2	550054

CAS#	Parameter	Result	LOQ	Units
7440-23-5	Sodium	17.1	5.00	mg/L

EPA 7470A

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
01/22/2015 17:00	549705	EPA 7470A	1	01/23/2015 11:15	JBW2	549765

CAS#	Parameter	Result	LOQ	Units
7439-97-6	Mercury	0.0058	0.00020	mg/L

MM-04 MSD

Collect Date 01/19/2015 11:35 **GCAL ID** 21501221703
Receive Date 01/22/2015 10:20 **Matrix** Water

EPA 8270C SIM

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
01/23/2015 22:45	549779	EPA 3510C	1	01/25/2015 08:50	DLB	549872

CAS#	Parameter	Result	LOQ	Units
90-12-0	1-Methylnaphthalene	2.43	1.09	ug/L
91-57-6	2-Methylnaphthalene	2.48	1.09	ug/L
83-32-9	Acenaphthene	2.38	1.09	ug/L
208-96-8	Acenaphthylene	2.63	1.09	ug/L
120-12-7	Anthracene	3.09	0.109	ug/L
56-55-3	Benzo(a)anthracene	2.52	0.109	ug/L
50-32-8	Benzo(a)pyrene	2.92	0.109	ug/L
205-99-2	Benzo(b)fluoranthene	2.87	0.163	ug/L
191-24-2	Benzo(g,h,i)perylene	2.57	0.272	ug/L
207-08-9	Benzo(k)fluoranthene	2.68	0.109	ug/L
218-01-9	Chrysene	2.39	0.109	ug/L
53-70-3	Dibenz(a,h)anthracene	2.57	0.109	ug/L
206-44-0	Fluoranthene	3.05	0.272	ug/L
86-73-7	Fluorene	2.55	0.543	ug/L
193-39-5	Indeno(1,2,3-cd)pyrene	2.80	0.272	ug/L
91-20-3	Naphthalene	2.40	0.543	ug/L
85-01-8	Phenanthrene	3.02	0.109	ug/L
129-00-0	Pyrene	2.89	0.272	ug/L

CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Recovery	Rec Limits
4165-60-0	Nitrobenzene-d5	5.43	4.05	ug/L	75	55 - 111
321-60-8	2-Fluorobiphenyl	5.43	4.82	ug/L	89	53 - 106
1718-51-0	Terphenyl-d14	5.43	3.97	ug/L	73	58 - 132

Sample Results

MM-04 MSD	**Collect Date**	01/19/2015 11:35	**GCAL ID**	21501221703
	Receive Date	01/22/2015 10:20	**Matrix**	Water

EPA 6020A

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
01/22/2015 17:00	549704	EPA 3010A	1	01/26/2015 18:13	JBW2	549961

CAS#	Parameter	Result	LOQ	Units
7429-90-5	Aluminum	0.98	0.20	mg/L
7440-36-0	Antimony	0.10	0.060	mg/L
7440-38-2	Arsenic	0.046	0.020	mg/L
7440-39-3	Barium	0.067	0.010	mg/L
7440-41-7	Beryllium	0.049	0.0040	mg/L
7440-43-9	Cadmium	0.046	0.0050	mg/L
7440-70-2	Calcium	31.6	0.80	mg/L
7440-47-3	Chromium	0.047	0.010	mg/L
7440-48-4	Cobalt	0.051	0.010	mg/L
7440-50-8	Copper	0.053	0.020	mg/L
7439-89-6	Iron	5.05	0.20	mg/L
7439-92-1	Lead	0.049	0.015	mg/L
7439-95-4	Magnesium	6.57	0.10	mg/L
7439-96-5	Manganese	0.052	0.015	mg/L
7439-98-7	Molybdenum	0.049	0.030	mg/L
7440-02-0	Nickel	0.10	0.040	mg/L
7440-09-7	Potassium	6.39	0.50	mg/L
7782-49-2	Selenium	ND	0.040	mg/L
7440-22-4	Silver	0.049	0.010	mg/L
7440-28-0	Thallium	0.046	0.020	mg/L
7440-62-2	Vanadium	0.052	0.020	mg/L
7440-66-6	Zinc	0.97	0.020	mg/L

EPA 6020A

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
01/22/2015 17:00	549704	EPA 3010A	5	01/27/2015 21:22	JBW2	550054

CAS#	Parameter	Result	LOQ	Units
7440-23-5	Sodium	16.6	5.00	mg/L

EPA 7470A

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
01/22/2015 17:00	549705	EPA 7470A	1	01/23/2015 11:17	JBW2	549765

CAS#	Parameter	Result	LOQ	Units
7439-97-6	Mercury	0.0052	0.00020	mg/L

Sample Results

MM-01				
	Collect Date	01/19/2015 13:35	GCAL ID	21501221704
	Receive Date	01/22/2015 10:20	Matrix	Water

EPA 8270C SIM

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
01/23/2015 22:45	549779	EPA 3510C	1	01/25/2015 09:08	DLB	549872

CAS#	Parameter	Result	LOQ	Units
90-12-0	1-Methylnaphthalene	ND	1.11	ug/L
91-57-6	2-Methylnaphthalene	ND	1.11	ug/L
83-32-9	Acenaphthene	ND	1.11	ug/L
208-96-8	Acenaphthylene	ND	1.11	ug/L
120-12-7	Anthracene	ND	0.111	ug/L
56-55-3	Benzo(a)anthracene	ND	0.111	ug/L
50-32-8	Benzo(a)pyrene	ND	0.111	ug/L
205-99-2	Benzo(b)fluoranthene	ND	0.167	ug/L
191-24-2	Benzo(g,h,i)perylene	ND	0.278	ug/L
207-08-9	Benzo(k)fluoranthene	ND	0.111	ug/L
218-01-9	Chrysene	ND	0.111	ug/L
53-70-3	Dibenz(a,h)anthracene	ND	0.111	ug/L
206-44-0	Fluoranthene	ND	0.278	ug/L
86-73-7	Fluorene	ND	0.556	ug/L
193-39-5	Indeno(1,2,3-cd)pyrene	ND	0.278	ug/L
91-20-3	Naphthalene	ND	0.556	ug/L
85-01-8	Phenanthrene	ND	0.111	ug/L
129-00-0	Pyrene	ND	0.278	ug/L

CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Recovery	Rec Limits
4165-60-0	Nitrobenzene-d5	5.56	4.25	ug/L	77	55 - 111
321-60-8	2-Fluorobiphenyl	5.56	5.07	ug/L	91	53 - 106
1718-51-0	Terphenyl-d14	5.56	4.35	ug/L	78	58 - 132

EPA 6020A

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
01/22/2015 17:00	549704	EPA 3010A	1	01/26/2015 18:36	JBW2	549961

CAS#	Parameter	Result	LOQ	Units
7429-90-5	**Aluminum**	**0.27**	**0.20**	**mg/L**
7440-36-0	Antimony	ND	0.060	mg/L
7440-38-2	Arsenic	ND	0.020	mg/L
7440-39-3	**Barium**	**0.014**	**0.010**	**mg/L**
7440-41-7	Beryllium	ND	0.0040	mg/L
7440-43-9	Cadmium	ND	0.0050	mg/L
7440-70-2	**Calcium**	**13.7**	**0.80**	**mg/L**
7440-47-3	Chromium	ND	0.010	mg/L
7440-48-4	Cobalt	ND	0.010	mg/L
7440-50-8	Copper	ND	0.020	mg/L
7439-89-6	**Iron**	**2.99**	**0.20**	**mg/L**
7439-92-1	Lead	ND	0.015	mg/L
7439-95-4	**Magnesium**	**1.31**	**0.10**	**mg/L**
7439-96-5	**Manganese**	**0.27**	**0.015**	**mg/L**
7439-98-7	Molybdenum	ND	0.030	mg/L
7440-02-0	Nickel	ND	0.040	mg/L
7440-09-7	**Potassium**	**6.51**	**0.50**	**mg/L**
7782-49-2	Selenium	ND	0.040	mg/L
7440-22-4	Silver	ND	0.010	mg/L

Sample Results

MM-01

Collect Date	01/19/2015 13:35	**GCAL ID**	21501221704
Receive Date	01/22/2015 10:20	**Matrix**	Water

EPA 6020A (Continued)

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
01/22/2015 17:00	549704	EPA 3010A	1	01/26/2015 18:36	JBW2	549961

CAS#	Parameter	Result	LOQ	Units
7440-23-5	**Sodium**	**1.91**	**1.00**	**mg/L**
7440-28-0	Thallium	ND	0.020	mg/L
7440-62-2	Vanadium	ND	0.020	mg/L
7440-66-6	**Zinc**	**0.17**	**0.020**	**mg/L**

EPA 7470A

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
01/22/2015 17:00	549705	EPA 7470A	1	01/23/2015 11:23	JBW2	549765

CAS#	Parameter	Result	LOQ	Units
7439-97-6	Mercury	ND	0.00020	mg/L

MM-02

Collect Date	01/19/2015 15:05	**GCAL ID**	21501221705
Receive Date	01/22/2015 10:20	**Matrix**	Water

EPA 8270C SIM

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
01/23/2015 22:45	549779	EPA 3510C	1	01/25/2015 09:27	DLB	549872

CAS#	Parameter	Result	LOQ	Units
90-12-0	1-Methylnaphthalene	ND	1.09	ug/L
91-57-6	2-Methylnaphthalene	ND	1.09	ug/L
83-32-9	Acenaphthene	ND	1.09	ug/L
208-96-8	Acenaphthylene	ND	1.09	ug/L
120-12-7	Anthracene	ND	0.109	ug/L
56-55-3	Benzo(a)anthracene	ND	0.109	ug/L
50-32-8	Benzo(a)pyrene	ND	0.109	ug/L
205-99-2	Benzo(b)fluoranthene	ND	0.163	ug/L
191-24-2	Benzo(g,h,i)perylene	ND	0.272	ug/L
207-08-9	Benzo(k)fluoranthene	ND	0.109	ug/L
218-01-9	Chrysene	ND	0.109	ug/L
53-70-3	Dibenz(a,h)anthracene	ND	0.109	ug/L
206-44-0	Fluoranthene	ND	0.272	ug/L
86-73-7	Fluorene	ND	0.543	ug/L
193-39-5	Indeno(1,2,3-cd)pyrene	ND	0.272	ug/L
91-20-3	Naphthalene	ND	0.543	ug/L
85-01-8	Phenanthrene	ND	0.109	ug/L

Sample Results

MM-02				
	Collect Date	01/19/2015 15:05	GCAL ID	21501221705
	Receive Date	01/22/2015 10:20	Matrix	Water

EPA 8270C SIM (Continued)

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
01/23/2015 22:45	549779	EPA 3510C	1	01/25/2015 09:27	DLB	549872

CAS#	Parameter	Result	LOQ	Units
129-00-0	Pyrene	ND	0.272	ug/L

CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Recovery	Rec Limits
4165-60-0	Nitrobenzene-d5	5.43	3.97	ug/L	73	55 - 111
321-60-8	2-Fluorobiphenyl	5.43	4.84	ug/L	89	53 - 106
1718-51-0	Terphenyl-d14	5.43	3.87	ug/L	71	58 - 132

EPA 6020A

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
01/22/2015 17:00	549704	EPA 3010A	1	01/26/2015 18:44	JBW2	549961

CAS#	Parameter	Result	LOQ	Units
7429-90-5	Aluminum	ND	0.20	mg/L
7440-36-0	Antimony	ND	0.060	mg/L
7440-38-2	Arsenic	ND	0.020	mg/L
7440-39-3	**Barium**	**0.084**	**0.010**	**mg/L**
7440-41-7	Beryllium	ND	0.0040	mg/L
7440-43-9	Cadmium	ND	0.0050	mg/L
7440-70-2	**Calcium**	**46.7**	**0.80**	**mg/L**
7440-47-3	Chromium	ND	0.010	mg/L
7440-48-4	Cobalt	ND	0.010	mg/L
7440-50-8	Copper	ND	0.020	mg/L
7439-89-6	Iron	ND	0.20	mg/L
7439-92-1	Lead	ND	0.015	mg/L
7439-96-5	**Manganese**	**0.22**	**0.015**	**mg/L**
7439-98-7	Molybdenum	ND	0.030	mg/L
7440-02-0	Nickel	ND	0.040	mg/L
7440-09-7	**Potassium**	**7.29**	**0.50**	**mg/L**
7782-49-2	Selenium	ND	0.040	mg/L
7440-22-4	Silver	ND	0.010	mg/L
7440-28-0	Thallium	ND	0.020	mg/L
7440-62-2	Vanadium	ND	0.020	mg/L
7440-66-6	Zinc	ND	0.020	mg/L

EPA 6020A

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
01/22/2015 17:00	549704	EPA 3010A	5	01/27/2015 21:45	JBW2	550054

CAS#	Parameter	Result	LOQ	Units
7439-95-4	**Magnesium**	**12.8**	**0.50**	**mg/L**
7440-23-5	**Sodium**	**23.2**	**5.00**	**mg/L**

Sample Results

MM-02

Collect Date	01/19/2015 15:05	**GCAL ID**	21501221705
Receive Date	01/22/2015 10:20	**Matrix**	Water

EPA 7470A

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
01/22/2015 17:00	549705	EPA 7470A	1	01/23/2015 11:25	JBW2	549765

CAS#	Parameter	Result	LOQ	Units
7439-97-6	Mercury	ND	0.00020	mg/L

MWC-3C

Collect Date	01/19/2015 17:30	**GCAL ID**	21501221706
Receive Date	01/22/2015 10:20	**Matrix**	Water

EPA 8270C SIM

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
01/23/2015 22:45	549779	EPA 3510C	1	01/25/2015 09:46	DLB	549872

CAS#	Parameter	Result	LOQ	Units
90-12-0	1-Methylnaphthalene	ND	1.09	ug/L
91-57-6	2-Methylnaphthalene	ND	1.09	ug/L
83-32-9	Acenaphthene	ND	1.09	ug/L
208-96-8	Acenaphthylene	ND	1.09	ug/L
120-12-7	Anthracene	ND	0.109	ug/L
56-55-3	Benzo(a)anthracene	ND	0.109	ug/L
50-32-8	Benzo(a)pyrene	ND	0.109	ug/L
205-99-2	Benzo(b)fluoranthene	ND	0.163	ug/L
191-24-2	Benzo(g,h,i)perylene	ND	0.272	ug/L
207-08-9	Benzo(k)fluoranthene	ND	0.109	ug/L
218-01-9	Chrysene	ND	0.109	ug/L
53-70-3	Dibenz(a,h)anthracene	ND	0.109	ug/L
206-44-0	Fluoranthene	ND	0.272	ug/L
86-73-7	Fluorene	ND	0.543	ug/L
193-39-5	Indeno(1,2,3-cd)pyrene	ND	0.272	ug/L
91-20-3	Naphthalene	ND	0.543	ug/L
85-01-8	Phenanthrene	ND	0.109	ug/L
129-00-0	Pyrene	ND	0.272	ug/L

CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Recovery	Rec Limits
4165-60-0	Nitrobenzene-d5	5.43	4.05	ug/L	75	55 - 111
321-60-8	2-Fluorobiphenyl	5.43	4.81	ug/L	89	53 - 106
1718-51-0	Terphenyl-d14	5.43	3.87	ug/L	71	58 - 132

EPA 6020A

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
01/22/2015 17:00	549704	EPA 3010A	1	01/26/2015 18:51	JBW2	549961

CAS#	Parameter	Result	LOQ	Units
7429-90-5	Aluminum	ND	0.20	mg/L
7440-36-0	Antimony	ND	0.060	mg/L
7440-38-2	Arsenic	ND	0.020	mg/L
7440-39-3	**Barium**	**0.056**	**0.010**	**mg/L**

Sample Results

MWC-3C	**Collect Date**	01/19/2015 17:30	**GCAL ID**	21501221706
	Receive Date	01/22/2015 10:20	**Matrix**	Water

EPA 6020A (Continued)

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
01/22/2015 17:00	549704	EPA 3010A	1	01/26/2015 18:51	JBW2	549961

CAS#	Parameter	Result	LOQ	Units
7440-41-7	Beryllium	ND	0.0040	mg/L
7440-43-9	Cadmium	ND	0.0050	mg/L
7440-47-3	Chromium	ND	0.010	mg/L
7440-48-4	Cobalt	ND	0.010	mg/L
7440-50-8	Copper	ND	0.020	mg/L
7439-89-6	Iron	ND	0.20	mg/L
7439-92-1	Lead	ND	0.015	mg/L
7439-98-7	Molybdenum	ND	0.030	mg/L
7440-02-0	Nickel	ND	0.040	mg/L
7440-09-7	**Potassium**	**4.97**	**0.50**	**mg/L**
7782-49-2	Selenium	ND	0.040	mg/L
7440-22-4	Silver	ND	0.010	mg/L
7440-28-0	Thallium	ND	0.020	mg/L
7440-62-2	Vanadium	ND	0.020	mg/L
7440-66-6	Zinc	ND	0.020	mg/L

EPA 6020A

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
01/22/2015 17:00	549704	EPA 3010A	5	01/27/2015 21:52	JBW2	550054

CAS#	Parameter	Result	LOQ	Units
7440-70-2	**Calcium**	**75.6**	**4.00**	**mg/L**
7439-95-4	**Magnesium**	**23.9**	**0.50**	**mg/L**
7439-96-5	**Manganese**	**0.83**	**0.075**	**mg/L**
7440-23-5	**Sodium**	**30.4**	**5.00**	**mg/L**

EPA 7470A

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
01/22/2015 17:00	549705	EPA 7470A	1	01/23/2015 11:27	JBW2	549765

CAS#	Parameter	Result	LOQ	Units
7439-97-6	Mercury	ND	0.00020	mg/L

Sample Results

MWC-3B	**Collect Date**	01/20/2015 10:25	**GCAL ID**	21501221707
	Receive Date	01/22/2015 10:20	**Matrix**	Water

EPA 8270C SIM

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
01/23/2015 22:45	549779	EPA 3510C	1	01/25/2015 10:05	DLB	549872

CAS#	Parameter	Result	LOQ	Units
90-12-0	1-Methylnaphthalene	ND	1.11	ug/L
91-57-6	2-Methylnaphthalene	ND	1.11	ug/L
83-32-9	Acenaphthene	ND	1.11	ug/L
208-96-8	Acenaphthylene	ND	1.11	ug/L
120-12-7	Anthracene	ND	0.111	ug/L
56-55-3	Benzo(a)anthracene	ND	0.111	ug/L
50-32-8	Benzo(a)pyrene	ND	0.111	ug/L
205-99-2	Benzo(b)fluoranthene	ND	0.167	ug/L
191-24-2	Benzo(g,h,i)perylene	ND	0.278	ug/L
207-08-9	Benzo(k)fluoranthene	ND	0.111	ug/L
218-01-9	Chrysene	ND	0.111	ug/L
53-70-3	Dibenz(a,h)anthracene	ND	0.111	ug/L
206-44-0	Fluoranthene	ND	0.278	ug/L
86-73-7	Fluorene	ND	0.556	ug/L
193-39-5	Indeno(1,2,3-cd)pyrene	ND	0.278	ug/L
91-20-3	Naphthalene	ND	0.556	ug/L
85-01-8	Phenanthrene	ND	0.111	ug/L
129-00-0	Pyrene	ND	0.278	ug/L

CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Recovery	Rec Limits
4165-60-0	Nitrobenzene-d5	5.56	4.26	ug/L	77	55 - 111
321-60-8	2-Fluorobiphenyl	5.56	5.16	ug/L	93	53 - 106
1718-51-0	Terphenyl-d14	5.56	3.9	ug/L	70	58 - 132

EPA 6020A

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
01/22/2015 17:00	549704	EPA 3010A	1	01/26/2015 18:59	JBW2	549961

CAS#	Parameter	Result	LOQ	Units
7429-90-5	Aluminum	ND	0.20	mg/L
7440-36-0	Antimony	ND	0.060	mg/L
7440-38-2	Arsenic	ND	0.020	mg/L
7440-39-3	**Barium**	**0.13**	**0.010**	**mg/L**
7440-41-7	Beryllium	ND	0.0040	mg/L
7440-43-9	Cadmium	ND	0.0050	mg/L
7440-47-3	Chromium	ND	0.010	mg/L
7440-48-4	Cobalt	ND	0.010	mg/L
7440-50-8	Copper	ND	0.020	mg/L
7439-89-6	Iron	ND	0.20	mg/L
7439-92-1	Lead	ND	0.015	mg/L
7439-98-7	Molybdenum	ND	0.030	mg/L
7440-02-0	Nickel	ND	0.040	mg/L
7440-09-7	**Potassium**	**8.67**	**0.50**	**mg/L**
7782-49-2	Selenium	ND	0.040	mg/L
7440-22-4	Silver	ND	0.010	mg/L
7440-28-0	Thallium	ND	0.020	mg/L
7440-62-2	Vanadium	ND	0.020	mg/L

Sample Results

MWC-3B

Collect Date 01/20/2015 10:25 | GCAL ID 21501221707
Receive Date 01/22/2015 10:20 | Matrix Water

EPA 6020A (Continued)

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
01/22/2015 17:00	549704	EPA 3010A	1	01/26/2015 18:59	JBW2	549961

CAS#	Parameter	Result	LOQ	Units
7440-66-6	Zinc	ND	0.020	mg/L

EPA 6020A

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
01/22/2015 17:00	549704	EPA 3010A	10	01/27/2015 22:00	JBW2	550054

CAS#	Parameter	Result	LOQ	Units
7440-70-2	**Calcium**	**108**	**8.00**	**mg/L**
7439-95-4	**Magnesium**	**35.5**	**1.00**	**mg/L**
7439-96-5	**Manganese**	**3.92**	**0.15**	**mg/L**
7440-23-5	**Sodium**	**33.9**	**10.0**	**mg/L**

EPA 7470A

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
01/22/2015 17:00	549705	EPA 7470A	1	01/23/2015 11:29	JBW2	549765

CAS#	Parameter	Result	LOQ	Units
7439-97-6	Mercury	ND	0.00020	mg/L

MM-03

Collect Date 01/20/2015 12:35 | GCAL ID 21501221708
Receive Date 01/22/2015 10:20 | Matrix Water

EPA 8270C SIM

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
01/23/2015 22:45	549779	EPA 3510C	1	01/25/2015 10:23	DLB	549872

CAS#	Parameter	Result	LOQ	Units
90-12-0	**1-Methylnaphthalene**	**1.84**	**1.09**	**ug/L**
91-57-6	**2-Methylnaphthalene**	**1.75**	**1.09**	**ug/L**
83-32-9	Acenaphthene	ND	1.09	ug/L
208-96-8	Acenaphthylene	ND	1.09	ug/L
120-12-7	Anthracene	ND	0.109	ug/L
56-55-3	Benzo(a)anthracene	ND	0.109	ug/L
50-32-8	Benzo(a)pyrene	ND	0.109	ug/L
205-99-2	Benzo(b)fluoranthene	ND	0.163	ug/L
191-24-2	Benzo(g,h,i)perylene	ND	0.272	ug/L
207-08-9	Benzo(k)fluoranthene	ND	0.109	ug/L
218-01-9	Chrysene	ND	0.109	ug/L
53-70-3	Dibenz(a,h)anthracene	ND	0.109	ug/L
206-44-0	Fluoranthene	ND	0.272	ug/L

Sample Results

MM-03	**Collect Date**	01/20/2015 12:35	**GCAL ID**	21501221708
	Receive Date	01/22/2015 10:20	**Matrix**	Water

EPA 8270C SIM (Continued)

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
01/23/2015 22:45	549779	EPA 3510C	1	01/25/2015 10:23	DLB	549872

CAS#	Parameter	Result	LOQ	Units
86-73-7	Fluorene	ND	0.543	ug/L
193-39-5	Indeno(1,2,3-cd)pyrene	ND	0.272	ug/L
91-20-3	**Naphthalene**	**2.52**	**0.543**	**ug/L**
85-01-8	Phenanthrene	ND	0.109	ug/L
129-00-0	Pyrene	ND	0.272	ug/L

CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Recovery	Rec Limits
4165-60-0	Nitrobenzene-d5	5.43	4.09	ug/L	75	55 - 111
321-60-8	2-Fluorobiphenyl	5.43	4.97	ug/L	91	53 - 106
1718-51-0	Terphenyl-d14	5.43	3.8	ug/L	70	58 - 132

EPA 6020A

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
01/22/2015 17:00	549704	EPA 3010A	1	01/26/2015 19:06	JBW2	549961

CAS#	Parameter	Result	LOQ	Units
7429-90-5	Aluminum	ND	0.20	mg/L
7440-36-0	Antimony	ND	0.060	mg/L
7440-38-2	Arsenic	ND	0.020	mg/L
7440-39-3	**Barium**	**0.11**	**0.010**	**mg/L**
7440-41-7	Beryllium	ND	0.0040	mg/L
7440-43-9	Cadmium	ND	0.0050	mg/L
7440-70-2	**Calcium**	**26.8**	**0.80**	**mg/L**
7440-47-3	Chromium	ND	0.010	mg/L
7440-48-4	Cobalt	ND	0.010	mg/L
7440-50-8	Copper	ND	0.020	mg/L
7439-89-6	Iron	ND	0.20	mg/L
7439-92-1	Lead	ND	0.015	mg/L
7439-95-4	**Magnesium**	**5.55**	**0.10**	**mg/L**
7439-96-5	**Manganese**	**0.31**	**0.015**	**mg/L**
7439-98-7	Molybdenum	ND	0.030	mg/L
7440-02-0	Nickel	ND	0.040	mg/L
7440-09-7	**Potassium**	**2.78**	**0.50**	**mg/L**
7782-49-2	Selenium	ND	0.040	mg/L
7440-22-4	Silver	ND	0.010	mg/L
7440-28-0	Thallium	ND	0.020	mg/L
7440-62-2	Vanadium	ND	0.020	mg/L
7440-66-6	**Zinc**	**0.020**	**0.020**	**mg/L**

Sample Results

MM-03

Collect Date	01/20/2015 12:35	**GCAL ID**	21501221708
Receive Date	01/22/2015 10:20	**Matrix**	Water

EPA 6020A

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
01/22/2015 17:00	549704	EPA 3010A	5	01/27/2015 22:08	JBW2	550054

CAS#	Parameter	Result	LOQ	Units
7440-23-5	**Sodium**	**12.7**	**5.00**	**mg/L**

EPA 7470A

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
01/22/2015 17:00	549705	EPA 7470A	1	01/23/2015 11:31	JBW2	549765

CAS#	Parameter	Result	LOQ	Units
7439-97-6	Mercury	ND	0.00020	mg/L

MM-03 DUP

Collect Date	01/20/2015 12:45	**GCAL ID**	21501221709
Receive Date	01/22/2015 10:20	**Matrix**	Water

EPA 8270C SIM

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
01/23/2015 22:45	549779	EPA 3510C	1	01/25/2015 10:42	DLB	549872

CAS#	Parameter	Result	LOQ	Units
90-12-0	**1-Methylnaphthalene**	**1.42**	**1.11**	**ug/L**
91-57-6	2-Methylnaphthalene	ND	1.11	ug/L
83-32-9	Acenaphthene	ND	1.11	ug/L
208-96-8	Acenaphthylene	ND	1.11	ug/L
120-12-7	Anthracene	ND	0.111	ug/L
56-55-3	Benzo(a)anthracene	ND	0.111	ug/L
50-32-8	Benzo(a)pyrene	ND	0.111	ug/L
205-99-2	Benzo(b)fluoranthene	ND	0.167	ug/L
191-24-2	Benzo(g,h,i)perylene	ND	0.278	ug/L
207-08-9	Benzo(k)fluoranthene	ND	0.111	ug/L
218-01-9	Chrysene	ND	0.111	ug/L
53-70-3	Dibenz(a,h)anthracene	ND	0.111	ug/L
206-44-0	Fluoranthene	ND	0.278	ug/L
86-73-7	Fluorene	ND	0.556	ug/L
193-39-5	Indeno(1,2,3-cd)pyrene	ND	0.278	ug/L
91-20-3	**Naphthalene**	**1.93**	**0.556**	**ug/L**
85-01-8	Phenanthrene	ND	0.111	ug/L
129-00-0	Pyrene	ND	0.278	ug/L

CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Recovery	Rec Limits
4165-60-0	Nitrobenzene-d5	5.56	3.7	ug/L	67	55 - 111
321-60-8	2-Fluorobiphenyl	5.56	4.79	ug/L	86	53 - 106
1718-51-0	Terphenyl-d14	5.56	4.17	ug/L	75	58 - 132

Sample Results

MM-03 DUP	**Collect Date**	01/20/2015 12:45	**GCAL ID**	21501221709
	Receive Date	01/22/2015 10:20	**Matrix**	Water

EPA 6020A

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
01/22/2015 17:00	549704	EPA 3010A	1	01/26/2015 19:14	JBW2	549961

CAS#	Parameter	Result	LOQ	Units
7429-90-5	Aluminum	ND	0.20	mg/L
7440-36-0	Antimony	ND	0.060	mg/L
7440-38-2	Arsenic	ND	0.020	mg/L
7440-39-3	**Barium**	**0.11**	**0.010**	**mg/L**
7440-41-7	Beryllium	ND	0.0040	mg/L
7440-43-9	Cadmium	ND	0.0050	mg/L
7440-70-2	**Calcium**	**26.3**	**0.80**	**mg/L**
7440-47-3	Chromium	ND	0.010	mg/L
7440-48-4	Cobalt	ND	0.010	mg/L
7440-50-8	Copper	ND	0.020	mg/L
7439-89-6	Iron	ND	0.20	mg/L
7439-92-1	Lead	ND	0.015	mg/L
7439-95-4	**Magnesium**	**5.35**	**0.10**	**mg/L**
7439-96-5	**Manganese**	**0.29**	**0.015**	**mg/L**
7439-98-7	Molybdenum	ND	0.030	mg/L
7440-02-0	Nickel	ND	0.040	mg/L
7440-09-7	**Potassium**	**2.68**	**0.50**	**mg/L**
7782-49-2	Selenium	ND	0.040	mg/L
7440-22-4	Silver	ND	0.010	mg/L
7440-28-0	Thallium	ND	0.020	mg/L
7440-62-2	Vanadium	ND	0.020	mg/L
7440-66-6	**Zinc**	**0.020**	**0.020**	**mg/L**

EPA 6020A

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
01/22/2015 17:00	549704	EPA 3010A	5	01/27/2015 22:15	JBW2	550054

CAS#	Parameter	Result	LOQ	Units
7440-23-5	**Sodium**	**13.8**	**5.00**	**mg/L**

EPA 7470A

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
01/22/2015 17:00	549705	EPA 7470A	1	01/23/2015 11:33	JBW2	549765

CAS#	Parameter	Result	LOQ	Units
7439-97-6	Mercury	ND	0.00020	mg/L

Sample Results

MWC-1A				
	Collect Date	01/20/2015 14:10	GCAL ID	21501221710
	Receive Date	01/22/2015 10:20	Matrix	Water

EPA 8270C SIM

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
01/23/2015 22:45	549779	EPA 3510C	1	01/25/2015 11:01	DLB	549872

CAS#	Parameter	Result	LOQ	Units
90-12-0	1-Methylnaphthalene	ND	1.09	ug/L
91-57-6	2-Methylnaphthalene	ND	1.09	ug/L
83-32-9	Acenaphthene	ND	1.09	ug/L
208-96-8	Acenaphthylene	ND	1.09	ug/L
120-12-7	Anthracene	ND	0.109	ug/L
56-55-3	Benzo(a)anthracene	ND	0.109	ug/L
50-32-8	Benzo(a)pyrene	ND	0.109	ug/L
205-99-2	Benzo(b)fluoranthene	ND	0.163	ug/L
191-24-2	Benzo(g,h,i)perylene	ND	0.272	ug/L
207-08-9	Benzo(k)fluoranthene	ND	0.109	ug/L
218-01-9	Chrysene	ND	0.109	ug/L
53-70-3	Dibenz(a,h)anthracene	ND	0.109	ug/L
206-44-0	**Fluoranthene**	**0.330**	**0.272**	**ug/L**
86-73-7	Fluorene	ND	0.543	ug/L
193-39-5	Indeno(1,2,3-cd)pyrene	ND	0.272	ug/L
91-20-3	Naphthalene	ND	0.543	ug/L
85-01-8	Phenanthrene	ND	0.109	ug/L
129-00-0	Pyrene	ND	0.272	ug/L

CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Recovery	Rec Limits
4165-60-0	Nitrobenzene-d5	5.43	4.01	ug/L	74	55 - 111
321-60-8	2-Fluorobiphenyl	5.43	4.98	ug/L	92	53 - 106
1718-51-0	Terphenyl-d14	5.43	3.9	ug/L	72	58 - 132

EPA 6020A

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
01/22/2015 17:00	549704	EPA 3010A	1	01/26/2015 19:22	JBW2	549961

CAS#	Parameter	Result	LOQ	Units
7429-90-5	Aluminum	ND	0.20	mg/L
7440-36-0	Antimony	ND	0.060	mg/L
7440-38-2	Arsenic	ND	0.020	mg/L
7440-39-3	**Barium**	**0.052**	**0.010**	**mg/L**
7440-41-7	Beryllium	ND	0.0040	mg/L
7440-43-9	Cadmium	ND	0.0050	mg/L
7440-70-2	**Calcium**	**27.0**	**0.80**	**mg/L**
7440-47-3	Chromium	ND	0.010	mg/L
7440-48-4	Cobalt	ND	0.010	mg/L
7440-50-8	Copper	ND	0.020	mg/L
7439-89-6	Iron	ND	0.20	mg/L
7439-92-1	Lead	ND	0.015	mg/L
7439-95-4	**Magnesium**	**3.87**	**0.10**	**mg/L**
7439-98-7	Molybdenum	ND	0.030	mg/L
7440-02-0	Nickel	ND	0.040	mg/L
7440-09-7	**Potassium**	**1.84**	**0.50**	**mg/L**
7782-49-2	Selenium	ND	0.040	mg/L
7440-22-4	Silver	ND	0.010	mg/L
7440-23-5	**Sodium**	**8.61**	**1.00**	**mg/L**

Sample Results

MWC-1A

Collect Date	01/20/2015 14:10	**GCAL ID**	21501221710
Receive Date	01/22/2015 10:20	**Matrix**	Water

EPA 6020A (Continued)

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
01/22/2015 17:00	549704	EPA 3010A	1	01/26/2015 19:22	JBW2	549961

CAS#	Parameter	Result	LOQ	Units
7440-28-0	Thallium	ND	0.020	mg/L
7440-62-2	Vanadium	ND	0.020	mg/L
7440-66-6	Zinc	ND	0.020	mg/L

EPA 6020A

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
01/22/2015 17:00	549704	EPA 3010A	5	01/27/2015 22:23	JBW2	550054

CAS#	Parameter	Result	LOQ	Units
7439-96-5	**Manganese**	**0.84**	**0.075**	**mg/L**

EPA 7470A

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
01/22/2015 17:00	549705	EPA 7470A	1	01/23/2015 11:34	JBW2	549765

CAS#	Parameter	Result	LOQ	Units
7439-97-6	Mercury	ND	0.00020	mg/L

MWC-1B

Collect Date	01/19/2015 15:45	**GCAL ID**	21501221711
Receive Date	01/22/2015 10:20	**Matrix**	Water

EPA 8270C SIM

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
01/23/2015 22:45	549779	EPA 3510C	1	01/25/2015 11:20	DLB	549872

CAS#	Parameter	Result	LOQ	Units
90-12-0	1-Methylnaphthalene	ND	1.11	ug/L
91-57-6	2-Methylnaphthalene	ND	1.11	ug/L
83-32-9	Acenaphthene	ND	1.11	ug/L
208-96-8	Acenaphthylene	ND	1.11	ug/L
120-12-7	Anthracene	ND	0.111	ug/L
56-55-3	Benzo(a)anthracene	ND	0.111	ug/L
50-32-8	Benzo(a)pyrene	ND	0.111	ug/L
205-99-2	Benzo(b)fluoranthene	ND	0.167	ug/L
191-24-2	Benzo(g,h,i)perylene	ND	0.278	ug/L
207-08-9	Benzo(k)fluoranthene	ND	0.111	ug/L
218-01-9	Chrysene	ND	0.111	ug/L
53-70-3	Dibenz(a,h)anthracene	ND	0.111	ug/L
206-44-0	Fluoranthene	ND	0.278	ug/L
86-73-7	Fluorene	ND	0.556	ug/L

Sample Results

MWC-1B	**Collect Date**	01/19/2015 15:45	**GCAL ID**	21501221711
	Receive Date	01/22/2015 10:20	**Matrix**	Water

EPA 8270C SIM (Continued)

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
01/23/2015 22:45	549779	EPA 3510C	1	01/25/2015 11:20	DLB	549872

CAS#	Parameter	Result	LOQ	Units
193-39-5	Indeno(1,2,3-cd)pyrene	ND	0.278	ug/L
91-20-3	Naphthalene	ND	0.556	ug/L
85-01-8	Phenanthrene	ND	0.111	ug/L
129-00-0	Pyrene	ND	0.278	ug/L

CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Recovery	Rec Limits
4165-60-0	Nitrobenzene-d5	5.56	4.2	ug/L	76	55 - 111
321-60-8	2-Fluorobiphenyl	5.56	5.38	ug/L	97	53 - 106
1718-51-0	Terphenyl-d14	5.56	4.21	ug/L	76	58 - 132

EPA 6020A

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
01/22/2015 17:00	549704	EPA 3010A	1	01/26/2015 19:52	JBW2	549961

CAS#	Parameter	Result	LOQ	Units
7429-90-5	Aluminum	ND	0.20	mg/L
7440-36-0	Antimony	ND	0.060	mg/L
7440-38-2	Arsenic	ND	0.020	mg/L
7440-39-3	**Barium**	**0.097**	**0.010**	**mg/L**
7440-41-7	Beryllium	ND	0.0040	mg/L
7440-43-9	Cadmium	ND	0.0050	mg/L
7440-70-2	**Calcium**	**45.0**	**0.80**	**mg/L**
7440-47-3	Chromium	ND	0.010	mg/L
7440-48-4	Cobalt	ND	0.010	mg/L
7440-50-8	Copper	ND	0.020	mg/L
7439-89-6	Iron	ND	0.20	mg/L
7439-92-1	Lead	ND	0.015	mg/L
7439-95-4	**Magnesium**	**6.93**	**0.10**	**mg/L**
7439-96-5	Manganese	ND	0.015	mg/L
7439-98-7	Molybdenum	ND	0.030	mg/L
7440-02-0	Nickel	ND	0.040	mg/L
7440-09-7	**Potassium**	**3.85**	**0.50**	**mg/L**
7782-49-2	Selenium	ND	0.040	mg/L
7440-22-4	Silver	ND	0.010	mg/L
7440-28-0	Thallium	ND	0.020	mg/L
7440-62-2	Vanadium	ND	0.020	mg/L
7440-66-6	Zinc	ND	0.020	mg/L

Sample Results

MWC-1B

Collect Date	01/19/2015 15:45	**GCAL ID**	21501221711
Receive Date	01/22/2015 10:20	**Matrix**	Water

EPA 6020A

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
01/22/2015 17:00	549704	EPA 3010A	5	01/27/2015 22:53	JBW2	550054

CAS#	Parameter	Result	LOQ	Units
7440-23-5	**Sodium**	**21.8**	**5.00**	**mg/L**

EPA 7470A

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
01/22/2015 17:00	549705	EPA 7470A	1	01/23/2015 11:36	JBW2	549765

CAS#	Parameter	Result	LOQ	Units
7439-97-6	Mercury	ND	0.00020	mg/L

MWC-1C

Collect Date	01/20/2015 14:40	**GCAL ID**	21501221712
Receive Date	01/22/2015 10:20	**Matrix**	Water

EPA 8270C SIM

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
01/23/2015 22:45	549779	EPA 3510C	1	01/25/2015 11:39	DLB	549872

CAS#	Parameter	Result	LOQ	Units
90-12-0	1-Methylnaphthalene	ND	1.09	ug/L
91-57-6	2-Methylnaphthalene	ND	1.09	ug/L
83-32-9	Acenaphthene	ND	1.09	ug/L
208-96-8	Acenaphthylene	ND	1.09	ug/L
120-12-7	Anthracene	ND	0.109	ug/L
56-55-3	Benzo(a)anthracene	ND	0.109	ug/L
50-32-8	Benzo(a)pyrene	ND	0.109	ug/L
205-99-2	Benzo(b)fluoranthene	ND	0.163	ug/L
191-24-2	Benzo(g,h,i)perylene	ND	0.272	ug/L
207-08-9	Benzo(k)fluoranthene	ND	0.109	ug/L
218-01-9	Chrysene	ND	0.109	ug/L
53-70-3	Dibenz(a,h)anthracene	ND	0.109	ug/L
206-44-0	Fluoranthene	ND	0.272	ug/L
86-73-7	Fluorene	ND	0.543	ug/L
193-39-5	Indeno(1,2,3-cd)pyrene	ND	0.272	ug/L
91-20-3	Naphthalene	ND	0.543	ug/L
85-01-8	Phenanthrene	ND	0.109	ug/L
129-00-0	Pyrene	ND	0.272	ug/L

CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Recovery	Rec Limits
4165-60-0	Nitrobenzene-d5	5.43	3.83	ug/L	70	55 - 111
321-60-8	2-Fluorobiphenyl	5.43	4.68	ug/L	86	53 - 106
1718-51-0	Terphenyl-d14	5.43	3.66	ug/L	67	58 - 132

Sample Results

MWC-1C				
	Collect Date	01/20/2015 14:40	GCAL ID	21501221712
	Receive Date	01/22/2015 10:20	Matrix	Water

EPA 6020A

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
01/22/2015 17:00	549704	EPA 3010A	1	01/26/2015 20:00	JBW2	549961

CAS#	Parameter	Result	LOQ	Units
7429-90-5	Aluminum	ND	0.20	mg/L
7440-36-0	Antimony	ND	0.060	mg/L
7440-38-2	Arsenic	ND	0.020	mg/L
7440-39-3	**Barium**	**0.11**	**0.010**	**mg/L**
7440-41-7	Beryllium	ND	0.0040	mg/L
7440-43-9	Cadmium	ND	0.0050	mg/L
7440-47-3	Chromium	ND	0.010	mg/L
7440-48-4	Cobalt	ND	0.010	mg/L
7440-50-8	Copper	ND	0.020	mg/L
7439-89-6	Iron	ND	0.20	mg/L
7439-92-1	Lead	ND	0.015	mg/L
7439-96-5	**Manganese**	**0.016**	**0.015**	**mg/L**
7439-98-7	Molybdenum	ND	0.030	mg/L
7440-02-0	Nickel	ND	0.040	mg/L
7440-09-7	**Potassium**	**6.19**	**0.50**	**mg/L**
7782-49-2	Selenium	ND	0.040	mg/L
7440-22-4	Silver	ND	0.010	mg/L
7440-28-0	Thallium	ND	0.020	mg/L
7440-62-2	Vanadium	ND	0.020	mg/L
7440-66-6	Zinc	ND	0.020	mg/L

EPA 6020A

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
01/22/2015 17:00	549704	EPA 3010A	5	01/27/2015 23:01	JBW2	550054

CAS#	Parameter	Result	LOQ	Units
7440-70-2	**Calcium**	**77.6**	**4.00**	**mg/L**
7439-95-4	**Magnesium**	**15.7**	**0.50**	**mg/L**
7440-23-5	**Sodium**	**23.7**	**5.00**	**mg/L**

EPA 7470A

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
01/22/2015 17:00	549705	EPA 7470A	1	01/23/2015 11:38	JBW2	549765

CAS#	Parameter	Result	LOQ	Units
7439-97-6	Mercury	ND	0.00020	mg/L

Sample Results

GWCC-EB

Collect Date	01/20/2015 15:05	**GCAL ID**	21501221713
Receive Date	01/22/2015 10:20	**Matrix**	Water

EPA 8270C SIM

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
01/23/2015 22:45	549779	EPA 3510C	1	01/25/2015 11:58	DLB	549872

CAS#	Parameter	Result	LOQ	Units
90-12-0	1-Methylnaphthalene	ND	1.09	ug/L
91-57-6	2-Methylnaphthalene	ND	1.09	ug/L
83-32-9	Acenaphthene	ND	1.09	ug/L
208-96-8	Acenaphthylene	ND	1.09	ug/L
120-12-7	Anthracene	ND	0.109	ug/L
56-55-3	Benzo(a)anthracene	ND	0.109	ug/L
50-32-8	Benzo(a)pyrene	ND	0.109	ug/L
205-99-2	Benzo(b)fluoranthene	ND	0.164	ug/L
191-24-2	Benzo(g,h,i)perylene	ND	0.273	ug/L
207-08-9	Benzo(k)fluoranthene	ND	0.109	ug/L
218-01-9	Chrysene	ND	0.109	ug/L
53-70-3	Dibenz(a,h)anthracene	ND	0.109	ug/L
206-44-0	Fluoranthene	ND	0.273	ug/L
86-73-7	Fluorene	ND	0.546	ug/L
193-39-5	Indeno(1,2,3-cd)pyrene	ND	0.273	ug/L
91-20-3	Naphthalene	ND	0.546	ug/L
85-01-8	Phenanthrene	ND	0.109	ug/L
129-00-0	Pyrene	ND	0.273	ug/L

CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Recovery	Rec Limits
4165-60-0	Nitrobenzene-d5	5.46	3.54	ug/L	65	55 - 111
321-60-8	2-Fluorobiphenyl	5.46	4.52	ug/L	83	53 - 106
1718-51-0	Terphenyl-d14	5.46	3.86	ug/L	71	58 - 132

EPA 6020A

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
01/22/2015 17:00	549704	EPA 3010A	1	01/26/2015 20:08	JBW2	549961

CAS#	Parameter	Result	LOQ	Units
7429-90-5	Aluminum	ND	0.20	mg/L
7440-36-0	Antimony	ND	0.060	mg/L
7440-38-2	Arsenic	ND	0.020	mg/L
7440-39-3	Barium	ND	0.010	mg/L
7440-41-7	Beryllium	ND	0.0040	mg/L
7440-43-9	Cadmium	ND	0.0050	mg/L
7440-70-2	Calcium	ND	0.80	mg/L
7440-47-3	Chromium	ND	0.010	mg/L
7440-48-4	Cobalt	ND	0.010	mg/L
7440-50-8	Copper	ND	0.020	mg/L
7439-89-6	Iron	ND	0.20	mg/L
7439-92-1	Lead	ND	0.015	mg/L
7439-95-4	Magnesium	ND	0.10	mg/L
7439-96-5	Manganese	ND	0.015	mg/L
7439-98-7	Molybdenum	ND	0.030	mg/L
7440-02-0	Nickel	ND	0.040	mg/L
7440-09-7	Potassium	ND	0.50	mg/L
7782-49-2	Selenium	ND	0.040	mg/L
7440-22-4	Silver	ND	0.010	mg/L

Sample Results

GWCC-EB

Collect Date 01/20/2015 15:05 | GCAL ID 21501221713
Receive Date 01/22/2015 10:20 | Matrix Water

EPA 6020A (Continued)

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
01/22/2015 17:00	549704	EPA 3010A	1	01/26/2015 20:08	JBW2	549961

CAS#	Parameter	Result	LOQ	Units
7440-23-5	Sodium	ND	1.00	mg/L
7440-28-0	Thallium	ND	0.020	mg/L
7440-62-2	Vanadium	ND	0.020	mg/L
7440-66-6	Zinc	ND	0.020	mg/L

EPA 7470A

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
01/22/2015 17:00	549705	EPA 7470A	1	01/23/2015 11:40	JBW2	549765

CAS#	Parameter	Result	LOQ	Units
7439-97-6	Mercury	ND	0.00020	mg/L

GWCC-FB

Collect Date 01/20/2015 14:55 | GCAL ID 21501221714
Receive Date 01/22/2015 10:20 | Matrix Water

EPA 8270C SIM

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
01/23/2015 22:45	549779	EPA 3510C	1	01/25/2015 12:16	DLB	549872

CAS#	Parameter	Result	LOQ	Units
90-12-0	1-Methylnaphthalene	ND	1.14	ug/L
91-57-6	2-Methylnaphthalene	ND	1.14	ug/L
83-32-9	Acenaphthene	ND	1.14	ug/L
208-96-8	Acenaphthylene	ND	1.14	ug/L
120-12-7	Anthracene	ND	0.114	ug/L
56-55-3	Benzo(a)anthracene	ND	0.114	ug/L
50-32-8	Benzo(a)pyrene	ND	0.114	ug/L
205-99-2	Benzo(b)fluoranthene	ND	0.170	ug/L
191-24-2	Benzo(g,h,i)perylene	ND	0.284	ug/L
207-08-9	Benzo(k)fluoranthene	ND	0.114	ug/L
218-01-9	Chrysene	ND	0.114	ug/L
53-70-3	Dibenz(a,h)anthracene	ND	0.114	ug/L
206-44-0	Fluoranthene	ND	0.284	ug/L
86-73-7	Fluorene	ND	0.568	ug/L
193-39-5	Indeno(1,2,3-cd)pyrene	ND	0.284	ug/L
91-20-3	Naphthalene	ND	0.568	ug/L
85-01-8	Phenanthrene	ND	0.114	ug/L

Sample Results

GWCC-FB	**Collect Date**	01/20/2015 14:55	**GCAL ID**	21501221714
	Receive Date	01/22/2015 10:20	**Matrix**	Water

EPA 8270C SIM (Continued)

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
01/23/2015 22:45	549779	EPA 3510C	1	01/25/2015 12:16	DLB	549872

CAS#	Parameter	Result	LOQ	Units
129-00-0	Pyrene	ND	0.284	ug/L

CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Recovery	Rec Limits
4165-60-0	Nitrobenzene-d5	5.68	4.36	ug/L	77	55 - 111
321-60-8	2-Fluorobiphenyl	5.68	5.57	ug/L	98	53 - 106
1718-51-0	Terphenyl-d14	5.68	4.71	ug/L	83	58 - 132

EPA 6020A

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
01/22/2015 17:00	549704	EPA 3010A	1	01/26/2015 20:15	JBW2	549961

CAS#	Parameter	Result	LOQ	Units
7429-90-5	Aluminum	ND	0.20	mg/L
7440-36-0	Antimony	ND	0.060	mg/L
7440-38-2	Arsenic	ND	0.020	mg/L
7440-39-3	Barium	ND	0.010	mg/L
7440-41-7	Beryllium	ND	0.0040	mg/L
7440-43-9	Cadmium	ND	0.0050	mg/L
7440-70-2	Calcium	ND	0.80	mg/L
7440-47-3	Chromium	ND	0.010	mg/L
7440-48-4	Cobalt	ND	0.010	mg/L
7440-50-8	Copper	ND	0.020	mg/L
7439-89-6	Iron	ND	0.20	mg/L
7439-92-1	Lead	ND	0.015	mg/L
7439-95-4	Magnesium	ND	0.10	mg/L
7439-96-5	Manganese	ND	0.015	mg/L
7439-98-7	Molybdenum	ND	0.030	mg/L
7440-02-0	Nickel	ND	0.040	mg/L
7440-09-7	Potassium	ND	0.50	mg/L
7782-49-2	Selenium	ND	0.040	mg/L
7440-22-4	Silver	ND	0.010	mg/L
7440-23-5	Sodium	ND	1.00	mg/L
7440-28-0	Thallium	ND	0.020	mg/L
7440-62-2	Vanadium	ND	0.020	mg/L
7440-66-6	Zinc	ND	0.020	mg/L

EPA 7470A

Prep Date	Prep Batch	Prep Method	Dilution	Analysis Date	By	Analytical Batch
01/22/2015 17:00	549705	EPA 7470A	1	01/23/2015 11:46	JBW2	549765

CAS#	Parameter	Result	LOQ	Units
7439-97-6	Mercury	ND	0.00020	mg/L

GC/MS Semi-Volatiles Quality Control Summary

Analytical Batch	Client ID	MB549779	LCS549779	LCSD549779
549872	GCAL ID	1403251	1403252	1403253
Prep Batch	Sample Type	MB	LCS	LCSD
549779	Prep Date	01/23/2015 22:45	01/23/2015 22:45	01/23/2015 22:45
Prep Method	Analysis Date	01/25/2015 07:16	01/25/2015 07:34	01/25/2015 07:53
EPA 3510C	Matrix	Water	Water	Water

EPA 8270C SIM		Units Result	ug/L LOQ	Spike Added	Result	%R	Control Limits%R	Spike Added	Result	%R	RPD	RPD Limit
1-Methylnaphthalene	90-12-0	ND	1.00	5.00	3.58	72	41 - 115	5.00	3.76	75	5	30
2-Methylnaphthalene	91-57-6	ND	1.00	5.00	3.62	72	39 - 114	5.00	3.79	76	5	30
Acenaphthene	83-32-9	ND	1.00	5.00	3.59	72	48 - 114	5.00	3.71	74	3	30
Acenaphthylene	208-96-8	ND	1.00	5.00	4.00	80	35 - 121	5.00	4.17	83	4	30
Anthracene	120-12-7	ND	0.100	5.00	5.51	110	53 - 119	5.00	5.19	104	6	30
Benzo(a)anthracene	56-55-3	ND	0.100	5.00	4.93	99	59 - 120	5.00	4.26	85	15	30
Benzo(a)pyrene	50-32-8	ND	0.100	5.00	5.83	117	53 - 120	5.00	4.94	99	17	30
Benzo(b)fluoranthene	205-99-2	ND	0.150	5.00	5.87	117	53 - 126	5.00	4.92	98	18	30
Benzo(g,h,i)perylene	191-24-2	ND	0.250	5.00	5.20	104	44 - 128	5.00	4.39	88	17	30
Benzo(k)fluoranthene	207-08-9	ND	0.100	5.00	5.51	110	54 - 125	5.00	4.52	90	20	30
Chrysene	218-01-9	ND	0.100	5.00	4.62	92	57 - 120	5.00	4.01	80	14	30
Dibenz(a,h)anthracene	53-70-3	ND	0.100	5.00	5.14	103	44 - 131	5.00	4.28	86	18	30
Fluoranthene	206-44-0	ND	0.250	5.00	5.63	113	58 - 120	5.00	5.26	105	7	30
Fluorene	86-73-7	ND	0.500	5.00	3.95	79	50 - 118	5.00	4.02	80	2	30
Indeno(1,2,3-cd)pyrene	193-39-5	ND	0.250	5.00	5.54	111	48 - 130	5.00	4.65	93	17	30
Naphthalene	91-20-3	ND	0.500	5.00	3.52	70	43 - 114	5.00	3.71	74	5	30
Phenanthrene	85-01-8	ND	0.100	5.00	5.20	104	53 - 115	5.00	5.07	101	3	30
Pyrene	129-00-0	ND	0.250	5.00	5.36	107	53 - 121	5.00	4.95	99	8	30
Surrogate												
2-Fluorobiphenyl	321-60-8	5.12	102	5	4.43	89	53 - 106	5	4.71	94	6	NA
Nitrobenzene-d5	4165-60-0	4.29	86	5	3.77	75	55 - 111	5	3.9	78	3	NA
Terphenyl-d14	1718-51-0	4.4	88	5	4.01	80	58 - 132	5	4.15	83	3	NA

Analytical Batch	Client ID	MM-04	MM-04 MS	MM-04 MSD
549872	GCAL ID	21501221701	21501221702	21501221703
Prep Batch	Sample Type	SAMPLE	MS	MSD
549779	Prep Date	01/23/2015 22:45	01/23/2015 22:45	01/23/2015 22:45
Prep Method	Analysis Date	01/25/2015 08:12	01/25/2015 08:31	01/25/2015 08:50
EPA 3510C	Matrix	Water	Water	Water

EPA 8270C SIM		Units Result	ug/L LOQ	Spike Added	Result	%R	Control Limits%R	Spike Added	Result	%R	RPD	RPD Limit
1-Methylnaphthalene	90-12-0	0.00	1.09	5.43	2.49	46	41 - 115	5.43	2.43	45	2	30
2-Methylnaphthalene	91-57-6	0.00	1.09	5.43	2.54	47	39 - 114	5.43	2.48	46	2	30
Acenaphthene	83-32-9	0.00	1.09	5.43	2.40	44*	48 - 114	5.43	2.38	44*	1	30
Acenaphthylene	208-96-8	0.00	1.09	5.43	2.67	49	35 - 121	5.43	2.63	48	2	30
Anthracene	120-12-7	0.00	0.109	5.43	3.14	58	53 - 119	5.43	3.09	57	2	30
Benzo(a)anthracene	56-55-3	0.00	0.109	5.43	2.64	49*	59 - 120	5.43	2.52	46*	5	30
Benzo(a)pyrene	50-32-8	0.00	0.109	5.43	3.07	56	53 - 120	5.43	2.92	54	5	30
Benzo(b)fluoranthene	205-99-2	0.00	0.163	5.43	3.02	56	53 - 126	5.43	2.87	53	5	30
Benzo(g,h,i)perylene	191-24-2	0.00	0.272	5.43	2.70	50	44 - 128	5.43	2.57	47	5	30
Benzo(k)fluoranthene	207-08-9	0.00	0.109	5.43	2.70	50*	54 - 125	5.43	2.68	49*	1	30
Chrysene	218-01-9	0.00	0.109	5.43	2.50	46*	57 - 120	5.43	2.39	44*	4	30
Dibenz(a,h)anthracene	53-70-3	0.00	0.109	5.43	2.69	49	44 - 131	5.43	2.57	47	5	30
Fluoranthene	206-44-0	0.00	0.272	5.43	3.12	57*	58 - 120	5.43	3.05	56*	2	30
Fluorene	86-73-7	0.00	0.543	5.43	2.59	48*	50 - 118	5.43	2.55	47*	2	30
Indeno(1,2,3-cd)pyrene	193-39-5	0.00	0.272	5.43	2.93	54	48 - 130	5.43	2.80	52	5	30
Naphthalene	91-20-3	0.00	0.543	5.43	2.46	45	43 - 114	5.43	2.40	44	2	30
Phenanthrene	85-01-8	0.00	0.109	5.43	3.16	58	53 - 115	5.43	3.02	56	5	30
Pyrene	129-00-0	0.00	0.272	5.43	3.01	55	53 - 121	5.43	2.89	53	4	30
Surrogate												
2-Fluorobiphenyl	321-60-8	2.97	109*	5.43	5.02	92	53 - 106	5.43	4.82	89	4	NA
Nitrobenzene-d5	4165-60-0	2.53	93	5.43	4.14	76	55 - 111	5.43	4.05	75	2	NA
Terphenyl-d14	1718-51-0	2.61	96	5.43	4.14	76	58 - 132	5.43	3.97	73	4	NA

Inorganics Quality Control Summary

Analytical Batch		Client ID	MB549705		LCS549705			
549765		GCAL ID	1402805		1402806			
Prep Batch		Sample Type	MB		LCS			
549705		Prep Date	01/22/2015 17:00		01/22/2015 17:00			
Prep Method		Analysis Date	01/23/2015 11:10		01/23/2015 11:12			
EPA 7470A		Matrix	Water		Water			
EPA 7470A		Units Result	mg/L LOQ	Spike Added	Result	%R	Control Limits%R	
Mercury	7439-97-6	ND	0.00020	0.0050	0.0051	102	80 - 120	

Analytical Batch		Client ID	MM-04	MM-04 MS				MM-04 MSD				
549765		GCAL ID	21501221701	21501221702				21501221703				
Prep Batch		Sample Type	SAMPLE	MS				MSD				
549705		Prep Date	01/22/2015 17:00	01/22/2015 17:00				01/22/2015 17:00				
Prep Method		Analysis Date	01/23/2015 11:13	01/23/2015 11:15				01/23/2015 11:17				
EPA 7470A		Matrix	Water	Water				Water				
EPA 7470A		Units Result	mg/L LOQ	Spike Added	Result	%R	Control Limits%R	Spike Added	Result	%R	RPD	RPD Limit
Mercury	7439-97-6	0.0	0.00020	0.0050	0.0058	116	80 - 120	0.0050	0.0052	104	11	20

Analytical Batch		Client ID	MB549704		LCS549704			
549810		GCAL ID	1402803		1402804			
Prep Batch		Sample Type	MB		LCS			
549704		Prep Date	01/22/2015 17:00		01/22/2015 17:00			
Prep Method		Analysis Date	01/24/2015 08:52		01/24/2015 08:59			
EPA 3010A		Matrix	Water		Water			
EPA 6020A		Units Result	mg/L LOQ	Spike Added	Result	%R	Control Limits%R	
Aluminum	7429-90-5	ND	0.20	1.00	0.96	96	80 - 120	
Antimony	7440-36-0	ND	0.060	0.10	0.094	94	80 - 120	
Arsenic	7440-38-2	ND	0.020	0.050	0.046	91	80 - 120	
Barium	7440-39-3	ND	0.010	0.050	0.049	98	80 - 120	
Beryllium	7440-41-7	ND	0.0040	0.050	0.046	92	80 - 120	
Cadmium	7440-43-9	ND	0.0050	0.050	0.047	93	80 - 120	
Calcium	7440-70-2	ND	0.80	25.0	24.0	96	80 - 120	
Chromium	7440-47-3	ND	0.010	0.050	0.047	95	80 - 120	
Cobalt	7440-48-4	ND	0.010	0.050	0.049	98	80 - 120	
Copper	7440-50-8	ND	0.020	0.050	0.054	108	80 - 120	
Iron	7439-89-6	ND	0.20	5.00	4.77	95	80 - 120	
Lead	7439-92-1	ND	0.015	0.050	0.049	97	80 - 120	
Magnesium	7439-95-4	ND	0.10	5.00	4.84	97	80 - 120	
Manganese	7439-96-5	ND	0.015	0.050	0.049	98	80 - 120	
Molybdenum	7439-98-7	ND	0.030	0.050	0.047	95	80 - 120	
Nickel	7440-02-0	ND	0.040	0.10	0.097	97	80 - 120	
Potassium	7440-09-7	ND	0.50	5.00	4.85	97	80 - 120	
Selenium	7782-49-2	ND	0.040	0.010	0.0088	88	80 - 120	
Silver	7440-22-4	ND	0.010	0.050	0.046	93	80 - 120	
Sodium	7440-23-5	ND	1.00	5.00	4.68	94	80 - 120	
Thallium	7440-28-0	ND	0.020	0.050	0.046	92	80 - 120	
Vanadium	7440-62-2	ND	0.020	0.050	0.048	96	80 - 120	
Zinc	7440-66-6	ND	0.020	1.00	0.95	95	80 - 120	

Inorganics Quality Control Summary

Analytical Batch	Client ID	MM-04	MM-04 MS	MM-04 MSD
549961	GCAL ID	21501221701	21501221702	21501221703
Prep Batch	Sample Type	SAMPLE	MS	MSD
549704	Prep Date	01/22/2015 17:00	01/22/2015 17:00	01/22/2015 17:00
Prep Method	Analysis Date	01/26/2015 17:58	01/26/2015 18:06	01/26/2015 18:13
EPA 3010A	Matrix	Water	Water	Water

EPA 6020A		Units Result	mg/L LOQ	Spike Added	Result	%R	Control Limits%R	Spike Added	Result	%R	RPD	RPD Limit
Aluminum	7429-90-5	0.0095	0.20	1.00	1.03	102	80 - 120	1.00	0.98	97	5	20
Antimony	7440-36-0	0.0	0.060	0.10	0.11	106	80 - 120	0.10	0.10	100	10	20
Arsenic	7440-38-2	0.0	0.020	0.050	0.048	96	80 - 120	0.050	0.046	92	4	20
Barium	7440-39-3	0.022	0.010	0.050	0.071	98	80 - 120	0.050	0.067	90	6	20
Beryllium	7440-41-7	0.0	0.0040	0.050	0.050	99	80 - 120	0.050	0.049	97	2	20
Cadmium	7440-43-9	0.0	0.0050	0.050	0.049	98	80 - 120	0.050	0.046	92	6	20
Calcium	7440-70-2	7.85	0.80	25.0	33.0	100	80 - 120	25.0	31.6	95	4	20
Chromium	7440-47-3	0.00058	0.010	0.050	0.049	97	80 - 120	0.050	0.047	92	4	20
Cobalt	7440-48-4	0.0	0.010	0.050	0.053	106	80 - 120	0.050	0.051	102	4	20
Copper	7440-50-8	0.0023	0.020	0.050	0.055	106	80 - 120	0.050	0.053	102	4	20
Iron	7439-89-6	0.0	0.20	5.00	5.30	106	80 - 120	5.00	5.05	101	5	20
Lead	7439-92-1	0.0	0.015	0.050	0.052	104	80 - 120	0.050	0.049	99	6	20
Magnesium	7439-95-4	1.83	0.10	5.00	6.89	101	80 - 120	5.00	6.57	95	5	20
Manganese	7439-96-5	0.0020	0.015	0.050	0.054	103	80 - 120	0.050	0.052	99	4	20
Molybdenum	7439-98-7	0.00016	0.030	0.050	0.052	105	80 - 120	0.050	0.049	98	6	20
Nickel	7440-02-0	0.0	0.040	0.10	0.11	107	80 - 120	0.10	0.10	102	10	20
Potassium	7440-09-7	1.75	0.50	5.00	6.71	99	80 - 120	5.00	6.39	93	5	20
Selenium	7782-49-2	0.00034	0.040	0.010	0.0095	92	80 - 120	0.010	0.0094	91	1	20
Silver	7440-22-4	0.0	0.010	0.050	0.052	103	80 - 120	0.050	0.049	98	6	20
Thallium	7440-28-0	0.0	0.020	0.050	0.048	97	80 - 120	0.050	0.046	93	4	20
Vanadium	7440-62-2	0.0023	0.020	0.050	0.054	104	80 - 120	0.050	0.052	100	4	20
Zinc	7440-66-6	0.0077	0.020	1.00	1.02	101	80 - 120	1.00	0.97	96	5	20

Analytical Batch	Client ID	MM-04	MM-04 MS	MM-04 MSD
550054	GCAL ID	21501221701	21501221702	21501221703
Prep Batch	Sample Type	SAMPLE	MS	MSD
549704	Prep Date	01/22/2015 17:00	01/22/2015 17:00	01/22/2015 17:00
Prep Method	Analysis Date	01/27/2015 21:07	01/27/2015 21:14	01/27/2015 21:22
EPA 3010A	Matrix	Water	Water	Water

EPA 6020A		Units Result	mg/L LOQ	Spike Added	Result	%R	Control Limits%R	Spike Added	Result	%R	RPD	RPD Limit
Sodium	7440-23-5	11.9	5.00	5.00	17.1	104	80 - 120	5.00	16.6	95	3	20

GCAL ANALYTICAL LABORATORIES, LLC

7979 Innovation Park Dr., Baton Rouge, LA 70820-7402
Phone: 225.769.4900 • Fax: 225.767.5717 • www.gcal.com

CHAIN OF CUSTODY RECORD

Client ID: 4449 - Tetra Tech
SDG: 215012217
Due Date: 01/29/15

Report to:	Bill to:
Client: Tetra Tech	Client: Tetra Tech
Address: 1955 Evergreen Blvd Duluth Ga 30096	Address:
Contact: Jessica Vickers	Contact:
Phone: 662-681-5727	Phone:
E-mail: Jessica.Vickers@tetratech.com	E-mail:

P.O. Number:
Project Name/Number: GWCC

Sampled By: Chris Jones / Leslie Shaver

Analytical Requests & Method: PAH 8270 SIM; TAL Metals 6020

GCAL use only:
Custody Seal: used ☑ yes ☐ no; intact ☑ yes ☐ no
Temperature °C 1.0, 1.4, 0.3 E24

☐ Dissolved Analysis Requested
☐ Field filtered
☐ Lab filtered

Matrix[1]	Date	Time (2400)	Comp	Grab	Sample Description	No Containers	PAH	Metals	Preservative
W	1-19-15	1135		X	MM-04	9	X	X	MS/MSD 1 2 3
		1335			MM-01	3	X	X	4
		1505			MM-02	3	X	X	5
		1730			MWC-3C	3	X	X	10
	1-20-15	1025			MWC-3B	3	X	X	7
		1235			MM-03	3	X	X	8
		1245			MM-03-Dup	3	X	X	9
		1410			MWC-1A	3	X	X	10
	1-19-15	1545			MWC-1B	3	X	X	11 12
	1-20-15	1440			MWC-1C	3	X	X	12 13
		1505			GWCC-EB	3	X	X	13 14
		1455			GWCC-FB	3	X	X	14 15

Air Bill No: 7720 5486 7316

Turn Around Time (Business Days): ☐ 24h* ☐ 48h* ☐ 3 days* ☐ 1 week* ☒ Standard (Per Contract/Quote)

Relinquished by: (Signature)	Date:	Time:	Received by: (Signature)	Date:	Time:
Leslie Shaver	1/21/15	9:25	Hugo Alvez	1/21/15	9:25
Hugo Alvez	1/21/15	16:30	FedEx	1/21/15	1030
FedEx	1/22/15	1020	Courier	1/22/15	1020

Note: Please achieve requested reporting limits.

By submitting these samples, you agree to GCAL's terms and conditions contained in our most recent schedule of services.

Matrix[1]: W = water, S = solid, L = liquid, T = tissue
*Requires prior approval, rush charges may apply.
We cannot accept verbal changes. Please email written changes to your PM.

WHITE: CLIENT FINAL REPORT - CANARY: CLIENT

GCAL ANALYTICAL LABORATORIES, LLC

SAMPLE RECEIVING CHECKLIST

215012217

SAMPLE DELIVERY GROUP 215012217	
Client *4449 - Tetra Tech*	**Transport Method** FEDEX
Profile Number 237642	**Received By** Saucier, Charlotte M.
Line Item(s) 1 - Water	**Receive Date(s)** 01/22/15

CHECKLIST	YES	NO	NA
Were all samples received using proper thermal preservation?	☑	☐	☐
When used, were all custody seals intact?	☑	☐	☐
Were all samples received in proper containers?	☑	☐	☐
Were all samples received using proper chemical preservation?	☑	☐	☐
Was preservative added to any container at the lab?	☐	☑	☐
Were all containers received in good condition?	☑	☐	☐
Were all VOA vials received with no head space?	☐	☐	☑
Do all sample labels match the Chain of Custody?	☑	☐	☐
Did the Chain of Custody list the sampling technician?	☑	☐	☐
Was the COC maintained i.e. all signatures, dates and time of receipt included?	☑	☐	☐

COOLERS

Airbill	Thermometer ID: E24	Temp(°C)
7726 5486 7316		1.0
		1.4
		0.3

DISCREPANCIES

None

LAB PRESERVATIONS

None

NOTES

Revision 1.4

Page 1 of 1

ATTACHMENT B

LABORATORY CERTIFICATION SHEET

(One Page)

March 5, 2015

GCAL, LLC
7979 Innovation Park Drive
Baton Rouge, LA 70820

Stipulation of Approval for Commercial Laboratories

According to Georgia State Law (O.C.G.A. 12-2-9) Commercial Rules for Commercial Laboratory Accreditation, any person submitting data to EPD prepared by a commercial laboratory shall stipulate the laboratory is approved (Chapter 391-3-26-05). The following information is provided as requested.

Laboratory:	Gulf Coast Analytical Laboratories 7979 Innovation Park Drive Baton Rouge, LA 70820 (225)769-4900
Primary Accrediting Authority:	Louisiana Department of Environmental Quality
Accreditation ID:	01955
Scope:	CWA: Metals, General Chemistry, Volatile Organics, Extractable Organics, Pesticides, Herbicides, PCBs Solid and Chemical Materials: Metals, General Chemistry, Volatile Organics, Extractable Organics, Pesticides, Herbicides, PCBs Biological Tissues: Metals, Volatile Organics, Extractable Organics, Pesticides, Herbicides, PCBs
Effective:	July 1, 2014
Expiration:	June 30, 2015

Any question regarding this stipulation of approval may be directed to GCAL at (225)769-4900. Thank you for your business and do not hesitate to contact me if I can be of further assistance.

Sincerely,

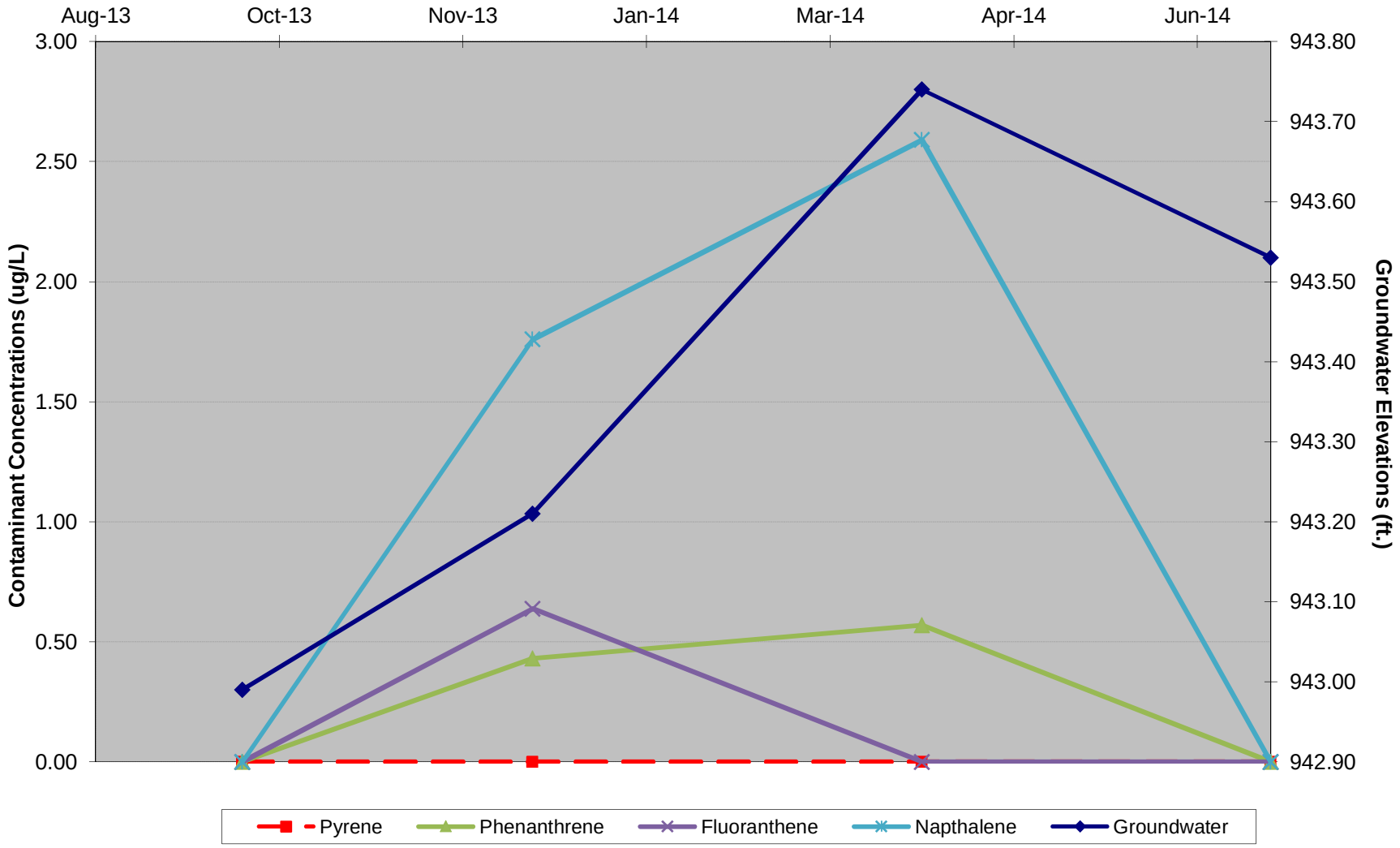
Allison Naquin, Director of Quality and Technical Services

ATTACHMENT C

REVISED FIGURE 5A AND QUARTERLY GROUNDWATER MONITORING ANALYTICAL RESULTS FOR WELLS MM-03 AND MWC-01

(65 Pages)

FIGURE 5A
LIMITED GROUNDWATER SAMPLING REPORT
SUMMARY OF DETECTED POLYNUCLEAR AROMATIC HYDROCARBONS
AND GROUNDWATER TRENDS FOR MM-03
NORTHSIDE DRIVE LANDFILL SITE



TETRA TECH

Geogia World Congress Center
August 2014

Quarterly Groundwater Monitoring
Wells MM-03 and MWC-1A
September 2013 Analytical Data Package
And Chain-of-Custody

NELAP CERTIFICATE NUMBER 01955
DOD ELAP CERTIFICATE NUMBER L13-190

ANALYTICAL RESULTS

PERFORMED BY

GULF COAST ANALYTICAL LABORATORIES, INC.
7979 GSRI Avenue
Baton Rouge, LA 70820

Report Date 10/02/2013

GCAL Report 213092616

Deliver To	Tetra Tech EMI 1955 Evergreen Blvd. Bldg. 200, Ste. 300 Duluth, GA 30096 678-775-3104
Attn	Jessica Vickers

Project GWCC

CASE NARRATIVE

Client: Tetra Tech **Report:** 213092616

Gulf Coast Analytical Laboratories received and analyzed the sample(s) listed on the sample cross-reference page of this report. Receipt of the sample(s) is documented by the attached chain of custody. This applies only to the sample(s) listed in this report. No sample integrity or quality control exceptions were identified unless noted below.

HIGH PERFORMANCE LIQUID CHROMATOGRAPHY

In the SW-846 8310 analysis for prep batch 516555, the MS/MSD exhibited numerous recovery and RPD failures. This is attributed to matrix interference. The recovery for the surrogate is outside control limits for the MSD. All LCS/LCSD recoveries and RPDs are acceptable.

METALS

In the SW-846 6010C analysis for prep batch 516531, the MS and/or MSD recovery is outside the control limits for Manganese. The LCS recovery is within control limits. This indicates the analysis is in control and the sample is affected by matrix interference. A post-digestion spike was performed on the QC sample for this batch with a recovery of 95%. The MS/MSD recoveries are not applicable for Calcium because the sample concentration is greater than four times the spike concentration.

Laboratory Endorsement

Sample analysis was performed in accordance with approved methodologies provided by the Environmental Protection Agency or other recognized agencies. The samples and their corresponding extracts will be maintained for a period of 30 days unless otherwise arranged. Following this retention period the samples will be disposed in accordance with GCAL's Standard Operating Procedures.

Common Abbreviations Utilized in this Report

ND	Indicates the result was Not Detected at the specified RDL
DO	Indicates the result was Diluted Out
MI	Indicates the result was subject to Matrix Interference
TNTC	Indicates the result was Too Numerous To Count
SUBC	Indicates the analysis was Sub-Contracted
FLD	Indicates the analysis was performed in the Field
PQL	Practical Quantitation Limit
MDL	Method Detection Limit
RDL	Reporting Detection Limit
00:00	Reported as a time equivalent to 12:00 AM

Reporting Flags Utilized in this Report

J	Indicates the result is between the MDL and RDL
U	Indicates the compound was analyzed for but not detected
B	Indicates the analyte was detected in the associated Method Blank

Sample receipt at GCAL is documented through the attached chain of custody. In accordance with NELAC, this report shall be reproduced only in full and with the written permission of GCAL. The results contained within this report relate only to the samples reported. The documented results are presented within this report.

This report pertains only to the samples listed in the Report Sample Summary and should be retained as a permanent record thereof. The results contained within this report are intended for the use of the client. Any unauthorized use of the information contained in this report is prohibited.

I certify that this data package is in compliance with the NELAC standard and terms and conditions of the contract and Statement of Work both technically and for completeness, for other than the conditions in the case narrative. Release of the data contained in this hardcopy data package and in the computer-readable data submitted has been authorized by the Quality Assurance Manager or his/her designee, as verified by the following signature.

Estimated uncertainty of measurement is available upon request. This report is in compliance with the DOD QSM as specified in the contract if applicable.

Robyn Migues/Director Data Del

Authorized Signature
GCAL REPORT 213092616

Report Sample Summary

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21309261601	MM-03	Water	09/23/2013 15:37	09/26/2013 10:30
21309261602	MM-03-DUP	Water	09/23/2013 15:50	09/26/2013 10:30
21309261603	MWC-1A	Water	09/23/2013 16:57	09/26/2013 10:30
21309261604	MWC-1A MS	Water	09/23/2013 16:57	09/26/2013 10:30
21309261605	MWC-1A MSD	Water	09/23/2013 16:57	09/26/2013 10:30

Summary of Compounds Detected

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21309261601	**MM-03**	Water	09/23/2013 15:37	09/26/2013 10:30

EPA 6010C

CAS#	Parameter	Result	RDL	REG LIMIT	Units
7429-90-5	Aluminum	0.43	0.20		mg/L
7440-39-3	Barium	0.10	0.010		mg/L
7440-70-2	Calcium	22.5	0.80		mg/L
7439-95-4	Magnesium	4.65	0.20		mg/L
7439-96-5	Manganese	0.35	0.015		mg/L
7440-09-7	Potassium	2.58	0.50		mg/L
7440-23-5	Sodium	10.8	1.00		mg/L
7440-66-6	Zinc	0.022	0.020		mg/L

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21309261602	**MM-03-DUP**	Water	09/23/2013 15:50	09/26/2013 10:30

EPA 6010C

CAS#	Parameter	Result	RDL	REG LIMIT	Units
7440-39-3	Barium	0.10	0.010		mg/L
7440-70-2	Calcium	27.6	0.80		mg/L
7439-95-4	Magnesium	5.54	0.20		mg/L
7439-96-5	Manganese	0.25	0.015		mg/L
7440-09-7	Potassium	2.84	0.50		mg/L
7440-23-5	Sodium	14.2	1.00		mg/L

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21309261603	**MWC-1A**	Water	09/23/2013 16:57	09/26/2013 10:30

EPA 6010C

CAS#	Parameter	Result	RDL	REG LIMIT	Units
7440-39-3	Barium	0.054	0.010		mg/L
7440-70-2	Calcium	31.2	0.80		mg/L
7439-95-4	Magnesium	4.68	0.20		mg/L
7439-96-5	Manganese	0.97	0.015		mg/L
7440-09-7	Potassium	2.20	0.50		mg/L
7440-23-5	Sodium	9.53	1.00		mg/L

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21309261604	**MWC-1A MS**	Water	09/23/2013 16:57	09/26/2013 10:30

EPA 6010C

CAS#	Parameter	Result	RDL	REG LIMIT	Units
7429-90-5	Aluminum	4.92	0.20		mg/L
7440-36-0	Antimony	0.50	0.060		mg/L
7440-38-2	Arsenic	0.50	0.020		mg/L
7440-39-3	Barium	0.52	0.010		mg/L
7440-41-7	Beryllium	0.48	0.0040		mg/L

Summary of Compounds Detected (con't)

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21309261604	**MWC-1A MS**	Water	09/23/2013 16:57	09/26/2013 10:30

EPA 6010C

CAS#	Parameter	Result	RDL	REG LIMIT	Units
7440-43-9	Cadmium	0.46	0.0050		mg/L
7440-70-2	Calcium	33.4	0.80		mg/L
7440-47-3	Chromium	0.48	0.010		mg/L
7440-48-4	Cobalt	0.47	0.010		mg/L
7440-50-8	Copper	0.46	0.020		mg/L
7439-89-6	Iron	4.91	0.20		mg/L
7439-92-1	Lead	0.48	0.015		mg/L
7439-95-4	Magnesium	9.20	0.20		mg/L
7439-96-5	Manganese	1.37	0.015		mg/L
7439-98-7	Molybdenum	0.50	0.030		mg/L
7440-02-0	Nickel	0.47	0.040		mg/L
7440-09-7	Potassium	11.8	0.50		mg/L
7782-49-2	Selenium	0.46	0.040		mg/L
7440-22-4	Silver	0.50	0.010		mg/L
7440-23-5	Sodium	28.6	1.00		mg/L
7440-28-0	Thallium	0.49	0.020		mg/L
7440-62-2	Vanadium	0.48	0.020		mg/L
7440-66-6	Zinc	0.47	0.020		mg/L

EPA 7470A

CAS#	Parameter	Result	RDL	REG LIMIT	Units
7439-97-6	Mercury	0.0047	0.00020		mg/L

EPA 8310

CAS#	Parameter	Result	RDL	REG LIMIT	Units
90-12-0	1-Methylnaphthalene	1.99	1.18		ug/L
91-57-6	2-Methylnaphthalene	1.93	1.18		ug/L
83-32-9	Acenaphthene	1.77	1.18		ug/L
208-96-8	Acenaphthylene	1.20	1.18		ug/L
120-12-7	Anthracene	3.23	0.118		ug/L
56-55-3	Benzo(a)anthracene	5.21	0.118		ug/L
50-32-8	Benzo(a)pyrene	4.61	0.118		ug/L
205-99-2	Benzo(b)fluoranthene	5.05	0.176		ug/L
191-24-2	Benzo(g,h,i)perylene	5.20	0.294		ug/L
207-08-9	Benzo(k)fluoranthene	5.43	0.118		ug/L
218-01-9	Chrysene	4.59	0.118		ug/L
53-70-3	Dibenz(a,h)anthracene	4.87	0.118		ug/L
206-44-0	Fluoranthene	3.62	0.294		ug/L
86-73-7	Fluorene	1.35	0.588		ug/L
193-39-5	Indeno(1,2,3-cd)pyrene	5.22	0.294		ug/L
91-20-3	Naphthalene	1.91	0.588		ug/L
85-01-8	Phenanthrene	2.62	0.118		ug/L
129-00-0	Pyrene	4.17	0.294		ug/L

Summary of Compounds Detected (con't)

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21309261605	**MWC-1A MSD**	Water	09/23/2013 16:57	09/26/2013 10:30

EPA 7470A

CAS#	Parameter	Result	RDL	REG LIMIT	Units
7439-97-6	Mercury	0.0045	0.00020		mg/L

EPA 6010C

CAS#	Parameter	Result	RDL	REG LIMIT	Units
7429-90-5	Aluminum	5.20	0.20		mg/L
7440-36-0	Antimony	0.53	0.060		mg/L
7440-38-2	Arsenic	0.54	0.020		mg/L
7440-39-3	Barium	0.57	0.010		mg/L
7440-41-7	Beryllium	0.52	0.0040		mg/L
7440-43-9	Cadmium	0.50	0.0050		mg/L
7440-70-2	Calcium	36.0	0.80		mg/L
7440-47-3	Chromium	0.51	0.010		mg/L
7440-48-4	Cobalt	0.51	0.010		mg/L
7440-50-8	Copper	0.50	0.020		mg/L
7439-89-6	Iron	5.19	0.20		mg/L
7439-92-1	Lead	0.52	0.015		mg/L
7439-95-4	Magnesium	9.80	0.20		mg/L
7439-96-5	Manganese	1.49	0.015		mg/L
7439-98-7	Molybdenum	0.54	0.030		mg/L
7440-02-0	Nickel	0.50	0.040		mg/L
7440-09-7	Potassium	12.6	0.50		mg/L
7782-49-2	Selenium	0.49	0.040		mg/L
7440-22-4	Silver	0.53	0.010		mg/L
7440-23-5	Sodium	30.6	1.00		mg/L
7440-28-0	Thallium	0.53	0.020		mg/L
7440-62-2	Vanadium	0.52	0.020		mg/L
7440-66-6	Zinc	0.50	0.020		mg/L

EPA 8310

CAS#	Parameter	Result	RDL	REG LIMIT	Units
90-12-0	1-Methylnaphthalene	1.23	1.18		ug/L
91-57-6	2-Methylnaphthalene	1.23	1.18		ug/L
120-12-7	Anthracene	2.22	0.118		ug/L
56-55-3	Benzo(a)anthracene	3.09	0.118		ug/L
50-32-8	Benzo(a)pyrene	2.94	0.118		ug/L
205-99-2	Benzo(b)fluoranthene	2.94	0.176		ug/L
191-24-2	Benzo(g,h,i)perylene	2.93	0.294		ug/L
207-08-9	Benzo(k)fluoranthene	3.11	0.118		ug/L
218-01-9	Chrysene	2.93	0.118		ug/L
53-70-3	Dibenz(a,h)anthracene	2.80	0.118		ug/L
206-44-0	Fluoranthene	2.38	0.294		ug/L
86-73-7	Fluorene	0.985	0.588		ug/L
193-39-5	Indeno(1,2,3-cd)pyrene	2.93	0.294		ug/L
91-20-3	Naphthalene	0.932	0.588		ug/L
85-01-8	Phenanthrene	1.84	0.118		ug/L
129-00-0	Pyrene	2.80	0.294		ug/L

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21309261601	**MM-03**	Water	09/23/2013 15:37	09/26/2013 10:30

EPA 8310

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
09/27/2013 15:00	516555	EPA 8310	1	10/01/2013 12:38	DLB	516905

CAS#	Parameter	Result	RDL	REG LIMIT	Units
90-12-0	1-Methylnaphthalene	ND	1.18		ug/L
91-57-6	2-Methylnaphthalene	ND	1.18		ug/L
83-32-9	Acenaphthene	ND	1.18		ug/L
208-96-8	Acenaphthylene	ND	1.18		ug/L
120-12-7	Anthracene	ND	0.118		ug/L
56-55-3	Benzo(a)anthracene	ND	0.118		ug/L
50-32-8	Benzo(a)pyrene	ND	0.118		ug/L
205-99-2	Benzo(b)fluoranthene	ND	0.176		ug/L
191-24-2	Benzo(g,h,i)perylene	ND	0.294		ug/L
207-08-9	Benzo(k)fluoranthene	ND	0.118		ug/L
218-01-9	Chrysene	ND	0.118		ug/L
53-70-3	Dibenz(a,h)anthracene	ND	0.118		ug/L
206-44-0	Fluoranthene	ND	0.294		ug/L
86-73-7	Fluorene	ND	0.588		ug/L
193-39-5	Indeno(1,2,3-cd)pyrene	ND	0.294		ug/L
91-20-3	Naphthalene	ND	0.588		ug/L
85-01-8	Phenanthrene	ND	0.118		ug/L
129-00-0	Pyrene	ND	0.294		ug/L

CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Recovery	Rec Limits
92-94-4	p-Terphenyl	4.71	2.24	ug/L	48	40 - 115

EPA 7470A

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
09/26/2013 15:00	516526	EPA 7470A	1	09/27/2013 17:45	BAM	516582

CAS#	Parameter	Result	RDL	REG LIMIT	Units
7439-97-6	Mercury	ND	0.00020		mg/L

EPA 6010C

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
09/26/2013 15:00	516531	EPA 3010A	1	09/30/2013 15:49	AWG	516716

CAS#	Parameter	Result	RDL	REG LIMIT	Units
7429-90-5	**Aluminum**	**0.43**	**0.20**		**mg/L**
7440-36-0	Antimony	ND	0.060		mg/L
7440-38-2	Arsenic	ND	0.020		mg/L
7440-39-3	**Barium**	**0.10**	**0.010**		**mg/L**
7440-41-7	Beryllium	ND	0.0040		mg/L
7440-43-9	Cadmium	ND	0.0050		mg/L
7440-70-2	**Calcium**	**22.5**	**0.80**		**mg/L**
7440-47-3	Chromium	ND	0.010		mg/L
7440-48-4	Cobalt	ND	0.010		mg/L
7440-50-8	Copper	ND	0.020		mg/L
7439-89-6	Iron	ND	0.20		mg/L

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21309261601	**MM-03**	Water	09/23/2013 15:37	09/26/2013 10:30

EPA 6010C

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
09/26/2013 15:00	516531	EPA 3010A	1	09/30/2013 15:49	AWG	516716

CAS#	Parameter	Result	RDL	REG LIMIT	Units
7439-92-1	Lead	ND	0.015		mg/L
7439-95-4	**Magnesium**	**4.65**	**0.20**		**mg/L**
7439-96-5	**Manganese**	**0.35**	**0.015**		**mg/L**
7439-98-7	Molybdenum	ND	0.030		mg/L
7440-02-0	Nickel	ND	0.040		mg/L
7440-09-7	**Potassium**	**2.58**	**0.50**		**mg/L**
7782-49-2	Selenium	ND	0.040		mg/L
7440-22-4	Silver	ND	0.010		mg/L
7440-23-5	**Sodium**	**10.8**	**1.00**		**mg/L**
7440-28-0	Thallium	ND	0.020		mg/L
7440-62-2	Vanadium	ND	0.020		mg/L
7440-66-6	**Zinc**	**0.022**	**0.020**		**mg/L**

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21309261602	**MM-03-DUP**	Water	09/23/2013 15:50	09/26/2013 10:30

EPA 8310

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
09/27/2013 15:00	516555	EPA 8310	1	10/01/2013 12:56	DLB	516905

CAS#	Parameter	Result	RDL	REG LIMIT	Units
90-12-0	1-Methylnaphthalene	ND	1.18		ug/L
91-57-6	2-Methylnaphthalene	ND	1.18		ug/L
83-32-9	Acenaphthene	ND	1.18		ug/L
208-96-8	Acenaphthylene	ND	1.18		ug/L
120-12-7	Anthracene	ND	0.118		ug/L
56-55-3	Benzo(a)anthracene	ND	0.118		ug/L
50-32-8	Benzo(a)pyrene	ND	0.118		ug/L
205-99-2	Benzo(b)fluoranthene	ND	0.176		ug/L
191-24-2	Benzo(g,h,i)perylene	ND	0.294		ug/L
207-08-9	Benzo(k)fluoranthene	ND	0.118		ug/L
218-01-9	Chrysene	ND	0.118		ug/L
53-70-3	Dibenz(a,h)anthracene	ND	0.118		ug/L
206-44-0	Fluoranthene	ND	0.294		ug/L
86-73-7	Fluorene	ND	0.588		ug/L
193-39-5	Indeno(1,2,3-cd)pyrene	ND	0.294		ug/L
91-20-3	Naphthalene	ND	0.588		ug/L
85-01-8	Phenanthrene	ND	0.118		ug/L
129-00-0	Pyrene	ND	0.294		ug/L

CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Recovery	Rec Limits
92-94-4	p-Terphenyl	4.71	3.71	ug/L	79	40 - 115

EPA 7470A

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
09/26/2013 15:00	516526	EPA 7470A	1	09/27/2013 17:47	BAM	516582

CAS#	Parameter	Result	RDL	REG LIMIT	Units
7439-97-6	Mercury	ND	0.00020		mg/L

EPA 6010C

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
09/26/2013 15:00	516531	EPA 3010A	1	09/30/2013 15:55	AWG	516716

CAS#	Parameter	Result	RDL	REG LIMIT	Units
7429-90-5	Aluminum	ND	0.20		mg/L
7440-36-0	Antimony	ND	0.060		mg/L
7440-38-2	Arsenic	ND	0.020		mg/L
7440-39-3	**Barium**	**0.10**	**0.010**		**mg/L**
7440-41-7	Beryllium	ND	0.0040		mg/L
7440-43-9	Cadmium	ND	0.0050		mg/L
7440-70-2	**Calcium**	**27.6**	**0.80**		**mg/L**
7440-47-3	Chromium	ND	0.010		mg/L
7440-48-4	Cobalt	ND	0.010		mg/L
7440-50-8	Copper	ND	0.020		mg/L
7439-89-6	Iron	ND	0.20		mg/L

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21309261602	**MM-03-DUP**	Water	09/23/2013 15:50	09/26/2013 10:30

EPA 6010C

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
09/26/2013 15:00	516531	EPA 3010A	1	09/30/2013 15:55	AWG	516716

CAS#	Parameter	Result	RDL	REG LIMIT	Units
7439-92-1	Lead	ND	0.015		mg/L
7439-95-4	**Magnesium**	**5.54**	**0.20**		**mg/L**
7439-96-5	**Manganese**	**0.25**	**0.015**		**mg/L**
7439-98-7	Molybdenum	ND	0.030		mg/L
7440-02-0	Nickel	ND	0.040		mg/L
7440-09-7	**Potassium**	**2.84**	**0.50**		**mg/L**
7782-49-2	Selenium	ND	0.040		mg/L
7440-22-4	Silver	ND	0.010		mg/L
7440-23-5	**Sodium**	**14.2**	**1.00**		**mg/L**
7440-28-0	Thallium	ND	0.020		mg/L
7440-62-2	Vanadium	ND	0.020		mg/L
7440-66-6	Zinc	ND	0.020		mg/L

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21309261603	**MWC-1A**	Water	09/23/2013 16:57	09/26/2013 10:30

EPA 8310

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
09/27/2013 15:00	516555	EPA 8310	1	10/01/2013 13:15	DLB	516905

CAS#	Parameter	Result	RDL	REG LIMIT	Units
90-12-0	1-Methylnaphthalene	ND	1.18		ug/L
91-57-6	2-Methylnaphthalene	ND	1.18		ug/L
83-32-9	Acenaphthene	ND	1.18		ug/L
208-96-8	Acenaphthylene	ND	1.18		ug/L
120-12-7	Anthracene	ND	0.118		ug/L
56-55-3	Benzo(a)anthracene	ND	0.118		ug/L
50-32-8	Benzo(a)pyrene	ND	0.118		ug/L
205-99-2	Benzo(b)fluoranthene	ND	0.176		ug/L
191-24-2	Benzo(g,h,i)perylene	ND	0.294		ug/L
207-08-9	Benzo(k)fluoranthene	ND	0.118		ug/L
218-01-9	Chrysene	ND	0.118		ug/L
53-70-3	Dibenz(a,h)anthracene	ND	0.118		ug/L
206-44-0	Fluoranthene	ND	0.294		ug/L
86-73-7	Fluorene	ND	0.588		ug/L
193-39-5	Indeno(1,2,3-cd)pyrene	ND	0.294		ug/L
91-20-3	Naphthalene	ND	0.588		ug/L
85-01-8	Phenanthrene	ND	0.118		ug/L
129-00-0	Pyrene	ND	0.294		ug/L

CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Recovery	Rec Limits
92-94-4	p-Terphenyl	4.71	2.54	ug/L	54	40 - 115

EPA 7470A

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
09/26/2013 15:00	516526	EPA 7470A	1	09/27/2013 17:27	BAM	516582

CAS#	Parameter	Result	RDL	REG LIMIT	Units
7439-97-6	Mercury	ND	0.00020		mg/L

EPA 6010C

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
09/26/2013 15:00	516531	EPA 3010A	1	09/30/2013 15:09	AWG	516716

CAS#	Parameter	Result	RDL	REG LIMIT	Units
7429-90-5	Aluminum	ND	0.20		mg/L
7440-36-0	Antimony	ND	0.060		mg/L
7440-38-2	Arsenic	ND	0.020		mg/L
7440-39-3	**Barium**	**0.054**	**0.010**		**mg/L**
7440-41-7	Beryllium	ND	0.0040		mg/L
7440-43-9	Cadmium	ND	0.0050		mg/L
7440-70-2	**Calcium**	**31.2**	**0.80**		**mg/L**
7440-47-3	Chromium	ND	0.010		mg/L
7440-48-4	Cobalt	ND	0.010		mg/L
7440-50-8	Copper	ND	0.020		mg/L
7439-89-6	Iron	ND	0.20		mg/L

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21309261603	**MWC-1A**	Water	09/23/2013 16:57	09/26/2013 10:30

EPA 6010C

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
09/26/2013 15:00	516531	EPA 3010A	1	09/30/2013 15:09	AWG	516716

CAS#	Parameter	Result	RDL	REG LIMIT	Units
7439-92-1	Lead	ND	0.015		mg/L
7439-95-4	**Magnesium**	**4.68**	**0.20**		**mg/L**
7439-96-5	**Manganese**	**0.97**	**0.015**		**mg/L**
7439-98-7	Molybdenum	ND	0.030		mg/L
7440-02-0	Nickel	ND	0.040		mg/L
7440-09-7	**Potassium**	**2.20**	**0.50**		**mg/L**
7782-49-2	Selenium	ND	0.040		mg/L
7440-22-4	Silver	ND	0.010		mg/L
7440-23-5	**Sodium**	**9.53**	**1.00**		**mg/L**
7440-28-0	Thallium	ND	0.020		mg/L
7440-62-2	Vanadium	ND	0.020		mg/L
7440-66-6	Zinc	ND	0.020		mg/L

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21309261604	**MWC-1A MS**	Water	09/23/2013 16:57	09/26/2013 10:30

EPA 8310

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
09/27/2013 15:00	516555	EPA 8310	1	10/01/2013 13:34	DLB	516905

CAS#	Parameter	Result	RDL	REG LIMIT	Units
90-12-0	1-Methylnaphthalene	1.99	1.18		ug/L
91-57-6	2-Methylnaphthalene	1.93	1.18		ug/L
83-32-9	Acenaphthene	1.77	1.18		ug/L
208-96-8	Acenaphthylene	1.20	1.18		ug/L
120-12-7	Anthracene	3.23	0.118		ug/L
56-55-3	Benzo(a)anthracene	5.21	0.118		ug/L
50-32-8	Benzo(a)pyrene	4.61	0.118		ug/L
205-99-2	Benzo(b)fluoranthene	5.05	0.176		ug/L
191-24-2	Benzo(g,h,i)perylene	5.20	0.294		ug/L
207-08-9	Benzo(k)fluoranthene	5.43	0.118		ug/L
218-01-9	Chrysene	4.59	0.118		ug/L
53-70-3	Dibenz(a,h)anthracene	4.87	0.118		ug/L
206-44-0	Fluoranthene	3.62	0.294		ug/L
86-73-7	Fluorene	1.35	0.588		ug/L
193-39-5	Indeno(1,2,3-cd)pyrene	5.22	0.294		ug/L
91-20-3	Naphthalene	1.91	0.588		ug/L
85-01-8	Phenanthrene	2.62	0.118		ug/L
129-00-0	Pyrene	4.17	0.294		ug/L

CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Recovery	Rec Limits
92-94-4	p-Terphenyl	4.71	3.2	ug/L	68	40 - 115

EPA 7470A

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
09/26/2013 15:00	516526	EPA 7470A	1	09/27/2013 17:29	BAM	516582

CAS#	Parameter	Result	RDL	REG LIMIT	Units
7439-97-6	Mercury	0.0047	0.00020		mg/L

EPA 6010C

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
09/26/2013 15:00	516531	EPA 3010A	1	09/30/2013 15:16	AWG	516716

CAS#	Parameter	Result	RDL	REG LIMIT	Units
7429-90-5	Aluminum	4.92	0.20		mg/L
7440-36-0	Antimony	0.50	0.060		mg/L
7440-38-2	Arsenic	0.50	0.020		mg/L
7440-39-3	Barium	0.52	0.010		mg/L
7440-41-7	Beryllium	0.48	0.0040		mg/L
7440-43-9	Cadmium	0.46	0.0050		mg/L
7440-70-2	Calcium	33.4	0.80		mg/L
7440-47-3	Chromium	0.48	0.010		mg/L
7440-48-4	Cobalt	0.47	0.010		mg/L
7440-50-8	Copper	0.46	0.020		mg/L
7439-89-6	Iron	4.91	0.20		mg/L

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21309261604	**MWC-1A MS**	Water	09/23/2013 16:57	09/26/2013 10:30

EPA 6010C

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
09/26/2013 15:00	516531	EPA 3010A	1	09/30/2013 15:16	AWG	516716

CAS#	Parameter	Result	RDL	REG LIMIT	Units
7439-92-1	Lead	0.48	0.015		mg/L
7439-95-4	Magnesium	9.20	0.20		mg/L
7439-96-5	Manganese	1.37	0.015		mg/L
7439-98-7	Molybdenum	0.50	0.030		mg/L
7440-02-0	Nickel	0.47	0.040		mg/L
7440-09-7	Potassium	11.8	0.50		mg/L
7782-49-2	Selenium	0.46	0.040		mg/L
7440-22-4	Silver	0.50	0.010		mg/L
7440-23-5	Sodium	28.6	1.00		mg/L
7440-28-0	Thallium	0.49	0.020		mg/L
7440-62-2	Vanadium	0.48	0.020		mg/L
7440-66-6	Zinc	0.47	0.020		mg/L

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21309261605	**MWC-1A MSD**	Water	09/23/2013 16:57	09/26/2013 10:30

EPA 8310

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
09/27/2013 15:00	516555	EPA 8310	1	10/01/2013 13:53	DLB	516905

CAS#	Parameter	Result	RDL	REG LIMIT	Units
90-12-0	**1-Methylnaphthalene**	**1.23**	**1.18**		**ug/L**
91-57-6	**2-Methylnaphthalene**	**1.23**	**1.18**		**ug/L**
83-32-9	Acenaphthene	ND	1.18		ug/L
208-96-8	Acenaphthylene	ND	1.18		ug/L
120-12-7	**Anthracene**	**2.22**	**0.118**		**ug/L**
56-55-3	**Benzo(a)anthracene**	**3.09**	**0.118**		**ug/L**
50-32-8	**Benzo(a)pyrene**	**2.94**	**0.118**		**ug/L**
205-99-2	**Benzo(b)fluoranthene**	**2.94**	**0.176**		**ug/L**
191-24-2	**Benzo(g,h,i)perylene**	**2.93**	**0.294**		**ug/L**
207-08-9	**Benzo(k)fluoranthene**	**3.11**	**0.118**		**ug/L**
218-01-9	**Chrysene**	**2.93**	**0.118**		**ug/L**
53-70-3	**Dibenz(a,h)anthracene**	**2.80**	**0.118**		**ug/L**
206-44-0	**Fluoranthene**	**2.38**	**0.294**		**ug/L**
86-73-7	**Fluorene**	**0.985**	**0.588**		**ug/L**
193-39-5	**Indeno(1,2,3-cd)pyrene**	**2.93**	**0.294**		**ug/L**
91-20-3	**Naphthalene**	**0.932**	**0.588**		**ug/L**
85-01-8	**Phenanthrene**	**1.84**	**0.118**		**ug/L**
129-00-0	**Pyrene**	**2.80**	**0.294**		**ug/L**

CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Recovery	Rec Limits
92-94-4	p-Terphenyl	4.71	1.78	ug/L	**38***	40 - 115

EPA 7470A

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
09/26/2013 15:00	516526	EPA 7470A	1	09/27/2013 17:31	BAM	516582

CAS#	Parameter	Result	RDL	REG LIMIT	Units
7439-97-6	**Mercury**	**0.0045**	**0.00020**		**mg/L**

EPA 6010C

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
09/26/2013 15:00	516531	EPA 3010A	1	09/30/2013 15:22	AWG	516716

CAS#	Parameter	Result	RDL	REG LIMIT	Units
7429-90-5	**Aluminum**	**5.20**	**0.20**		**mg/L**
7440-36-0	**Antimony**	**0.53**	**0.060**		**mg/L**
7440-38-2	**Arsenic**	**0.54**	**0.020**		**mg/L**
7440-39-3	**Barium**	**0.57**	**0.010**		**mg/L**
7440-41-7	**Beryllium**	**0.52**	**0.0040**		**mg/L**
7440-43-9	**Cadmium**	**0.50**	**0.0050**		**mg/L**
7440-70-2	**Calcium**	**36.0**	**0.80**		**mg/L**
7440-47-3	**Chromium**	**0.51**	**0.010**		**mg/L**
7440-48-4	**Cobalt**	**0.51**	**0.010**		**mg/L**
7440-50-8	**Copper**	**0.50**	**0.020**		**mg/L**
7439-89-6	**Iron**	**5.19**	**0.20**		**mg/L**

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21309261605	**MWC-1A MSD**	Water	09/23/2013 16:57	09/26/2013 10:30

EPA 6010C

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
09/26/2013 15:00	516531	EPA 3010A	1	09/30/2013 15:22	AWG	516716

CAS#	Parameter	Result	RDL	REG LIMIT	Units
7439-92-1	Lead	0.52	0.015		mg/L
7439-95-4	Magnesium	9.80	0.20		mg/L
7439-96-5	Manganese	1.49	0.015		mg/L
7439-98-7	Molybdenum	0.54	0.030		mg/L
7440-02-0	Nickel	0.50	0.040		mg/L
7440-09-7	Potassium	12.6	0.50		mg/L
7782-49-2	Selenium	0.49	0.040		mg/L
7440-22-4	Silver	0.53	0.010		mg/L
7440-23-5	Sodium	30.6	1.00		mg/L
7440-28-0	Thallium	0.53	0.020		mg/L
7440-62-2	Vanadium	0.52	0.020		mg/L
7440-66-6	Zinc	0.50	0.020		mg/L

General Chromatography Quality Control Summary

Analytical Batch	516905	**Client ID**	MB516555	LCS516555	
Prep Batch	516555	**GCAL ID**	1237264	1237265	
Prep Method	EPA 8310	**Sample Type**	Method Blank	LCS	
		Prep Date	09/27/2013 15:00	09/27/2013 15:00	
		Analytical Date	10/01/2013 11:41	10/01/2013 12:00	
		Matrix	Water	Water	

EPA 8310		**Units**	ug/L	**Spike**	**Result**		**Control**
		Result	**RDL**	**Added**		**% R**	**Limits % R**
83-32-9	Acenaphthene	ND	1.00	5.00	2.92	58	23 - 153
208-96-8	Acenaphthylene	ND	1.00	5.00	3.08	62	50 - 125
120-12-7	Anthracene	ND	0.100	5.00	3.70	74	54 - 124
56-55-3	Benzo(a)anthracene	ND	0.100	5.00	4.86	97	55 - 130
205-99-2	Benzo(b)fluoranthene	ND	0.150	5.00	4.64	93	58 - 129
207-08-9	Benzo(k)fluoranthene	ND	0.100	5.00	4.63	93	54 - 140
191-24-2	Benzo(g,h,i)perylene	ND	0.250	5.00	4.65	93	51 - 120
50-32-8	Benzo(a)pyrene	ND	0.100	5.00	4.48	90	59 - 120
218-01-9	Chrysene	ND	0.100	5.00	4.51	90	61 - 133
53-70-3	Dibenz(a,h)anthracene	ND	0.100	5.00	4.59	92	47 - 120
206-44-0	Fluoranthene	ND	0.250	5.00	3.79	76	57 - 125
86-73-7	Fluorene	ND	0.500	5.00	2.50	50	34 - 129
193-39-5	Indeno(1,2,3-cd)pyrene	ND	0.250	5.00	4.68	94	58 - 120
91-20-3	Naphthalene	ND	0.500	5.00	2.86	57	28 - 155
85-01-8	Phenanthrene	ND	0.100	5.00	3.21	64	55 - 123
129-00-0	Pyrene	ND	0.250	5.00	4.08	82	60 - 137
90-12-0	1-Methylnaphthalene	ND	1.00	5.00	3.87	77	44 - 130
91-57-6	2-Methylnaphthalene	ND	1.00	5.00	3.28	66	42 - 120
Surrogate							
92-94-4	p-Terphenyl	3.3	83	4	3.02	76	40 - 115

Analytical Batch	516905	**Client ID**	MWC-1A	MWC-1A MS	MWC-1A MSD
Prep Batch	516555	**GCAL ID**	21309261603	21309261604	21309261605
Prep Method	EPA 8310	**Sample Type**	SAMPLE	MS	MSD
		Prep Date	09/27/2013 15:00	09/27/2013 15:00	09/27/2013 15:00
		Analytical Date	10/01/2013 13:15	10/01/2013 13:34	10/01/2013 13:53
		Matrix	Water	Water	Water

EPA 8310		**Units**	ug/L	**Spike**	**Result**		**Control**	**Result**			**RPD**
		Result	**RDL**	**Added**		**% R**	**Limits % R**		**% R**	**RPD**	**Limit**
90-12-0	1-Methylnaphthalene	0.00	1.18	5.88	1.99	**34***	44 - 130	1.23	**21***	**47***	30
91-57-6	2-Methylnaphthalene	0.00	1.18	5.88	1.93	**33***	42 - 120	1.23	**21***	**44***	30

General Chromatography Quality Control Summary

Analytical Batch	516905	**Client ID**	MWC-1A	MWC-1A MS	MWC-1A MSD
Prep Batch	516555	**GCAL ID**	21309261603	21309261604	21309261605
Prep Method	EPA 8310	**Sample Type**	SAMPLE	MS	MSD
		Prep Date	09/27/2013 15:00	09/27/2013 15:00	09/27/2013 15:00
		Analytical Date	10/01/2013 13:15	10/01/2013 13:34	10/01/2013 13:53
		Matrix	Water	Water	Water

EPA 8310		**Units**	ug/L	**Spike**			**Control**				**RPD**
		Result	**RDL**	**Added**	**Result**	**% R**	**Limits % R**	**Result**	**% R**	**RPD**	**Limit**
83-32-9	Acenaphthene	0.00	1.18	5.88	1.77	30	23 - 153	1.16	**20***	**42***	30
208-96-8	Acenaphthylene	0.00	1.18	5.88	1.20	**20***	50 - 125	0.935	**16***	25	30
120-12-7	Anthracene	0.00	0.118	5.88	3.23	55	54 - 124	2.22	**38***	**37***	30
56-55-3	Benzo(a)anthracene	0.00	0.118	5.88	5.21	89	55 - 130	3.09	**53***	**51***	30
50-32-8	Benzo(a)pyrene	0.00	0.118	5.88	4.61	78	59 - 120	2.94	**50***	**44***	30
205-99-2	Benzo(b)fluoranthene	0.00	0.176	5.88	5.05	86	58 - 129	2.94	**50***	**53***	30
191-24-2	Benzo(g,h,i)perylene	0.00	0.294	5.88	5.20	88	51 - 120	2.93	**50***	**56***	30
207-08-9	Benzo(k)fluoranthene	0.00	0.118	5.88	5.43	92	54 - 140	3.11	**53***	**54***	30
218-01-9	Chrysene	0.00	0.118	5.88	4.59	78	61 - 133	2.93	**50***	**44***	30
53-70-3	Dibenz(a,h)anthracene	0.00	0.118	5.88	4.87	83	47 - 120	2.80	48	**54***	30
206-44-0	Fluoranthene	0.00	0.294	5.88	3.62	62	57 - 125	2.38	**40***	**41***	30
86-73-7	Fluorene	0.00	0.588	5.88	1.35	**23***	34 - 129	0.985	**17***	**31***	30
193-39-5	Indeno(1,2,3-cd)pyrene	0.00	0.294	5.88	5.22	89	58 - 120	2.93	**50***	**56***	30
91-20-3	Naphthalene	0.00	0.588	5.88	1.91	32	28 - 155	0.932	**16***	**69***	30
85-01-8	Phenanthrene	0.00	0.118	5.88	2.62	**45***	55 - 123	1.84	**31***	**35***	30
129-00-0	Pyrene	0.00	0.294	5.88	4.17	71	60 - 137	2.80	**48***	**39***	30
Surrogate											
92-94-4	p-Terphenyl	2.54	54	4.71	3.2	68	40 - 115	1.78	**38***		

Inorganics Quality Control Summary

Analytical Batch	516582	**Client ID**	MB516526			LCS516526		
Prep Batch	516526	**GCAL ID**	1237070			1237071		
Prep Method	EPA 7470A	**Sample Type**	Method Blank			LCS		
		Prep Date	09/26/2013 15:00			09/26/2013 15:00		
		Analytical Date	09/27/2013 17:24			09/27/2013 17:26		
		Matrix	Water			Water		
EPA 7470A		**Units**	mg/L	**Spike**	**Result**		**Control**	
		Result	**RDL**	**Added**		**% R**	**Limits % R**	
7439-97-6	Mercury	ND	0.00020	0.0050	0.0048	96	80 - 120	

Analytical Batch	516582	**Client ID**	MWC-1A			MWC-1A MS			MWC-1A MSD			
Prep Batch	516526	**GCAL ID**	21309261603			21309261604			21309261605			
Prep Method	EPA 7470A	**Sample Type**	SAMPLE			MS			MSD			
		Prep Date	09/26/2013 15:00			09/26/2013 15:00			09/26/2013 15:00			
		Analytical Date	09/27/2013 17:27			09/27/2013 17:29			09/27/2013 17:31			
		Matrix	Water			Water			Water			
EPA 7470A		**Units**	mg/L	**Spike**	**Result**		**Control**	**Result**			**RPD**	
		Result	**RDL**	**Added**		**% R**	**Limits % R**		**% R**	**RPD**	**Limit**	
7439-97-6	Mercury	0.0	0.00020	0.0050	0.0047	95	80 - 120	0.0045	90	4	20	

Inorganics Quality Control Summary

Analytical Batch 516716	**Client ID**	MB516531		LCS516531
Prep Batch 516531	**GCAL ID**	1237109		1237110
Prep Method EPA 3010A	**Sample Type**	Method Blank		LCS
	Prep Date	09/26/2013 15:00		09/26/2013 15:00
	Analytical Date	09/30/2013 14:55		09/30/2013 15:02
	Matrix	Water		Water

EPA 6010C		**Units**	mg/L	**Spike**	**Result**		**Control**
		Result	**RDL**	**Added**		**% R**	**Limits % R**
7429-90-5	Aluminum	ND	0.20	5.00	5.12	102	80 - 120
7440-36-0	Antimony	ND	0.060	0.50	0.50	101	80 - 120
7440-38-2	Arsenic	ND	0.020	0.50	0.50	100	80 - 120
7440-39-3	Barium	ND	0.010	0.50	0.50	101	80 - 120
7440-41-7	Beryllium	ND	0.0040	0.50	0.50	100	80 - 120
7440-43-9	Cadmium	ND	0.0050	0.50	0.49	98	80 - 120
7440-70-2	Calcium	ND	0.80	5.00	5.12	102	80 - 120
7440-47-3	Chromium	ND	0.010	0.50	0.50	100	80 - 120
7440-48-4	Cobalt	ND	0.010	0.50	0.50	100	80 - 120
7440-50-8	Copper	ND	0.020	0.50	0.50	99	80 - 120
7439-89-6	Iron	ND	0.20	5.00	5.01	100	80 - 120
7439-92-1	Lead	ND	0.015	0.50	0.50	101	80 - 120
7439-95-4	Magnesium	ND	0.20	5.00	5.11	102	80 - 120
7439-96-5	Manganese	ND	0.015	0.50	0.50	101	80 - 120
7439-98-7	Molybdenum	ND	0.030	0.50	0.51	102	80 - 120
7440-02-0	Nickel	ND	0.040	0.50	0.50	101	80 - 120
7440-09-7	Potassium	ND	0.50	10.0	10.1	101	80 - 120
7782-49-2	Selenium	ND	0.040	0.50	0.49	97	80 - 120
7440-22-4	Silver	ND	0.010	0.50	0.52	104	80 - 120
7440-23-5	Sodium	ND	1.00	20.0	20.8	104	80 - 120
7440-28-0	Thallium	ND	0.020	0.50	0.51	102	80 - 120
7440-62-2	Vanadium	ND	0.020	0.50	0.50	100	80 - 120
7440-66-6	Zinc	ND	0.020	0.50	0.49	98	80 - 120

Inorganics Quality Control Summary

Analytical Batch 516716	**Client ID**	MWC-1A	MWC-1A MS	MWC-1A MSD	
Prep Batch 516531	**GCAL ID**	21309261603	21309261604	21309261605	
Prep Method EPA 3010A	**Sample Type**	SAMPLE	MS	MSD	
	Prep Date	09/26/2013 15:00	09/26/2013 15:00	09/26/2013 15:00	
	Analytical Date	09/30/2013 15:09	09/30/2013 15:16	09/30/2013 15:22	
	Matrix	Water	Water	Water	

EPA 6010C		**Units**	mg/L	**Spike**			**Control**				**RPD**
		Result	**RDL**	**Added**	**Result**	**% R**	**Limits % R**	**Result**	**% R**	**RPD**	**Limit**
7429-90-5	Aluminum	0.0	0.20	5.00	4.92	98	80 - 120	5.20	104	6	20
7440-36-0	Antimony	0.0	0.060	0.50	0.50	100	80 - 120	0.53	106	6	20
7440-38-2	Arsenic	0.0	0.020	0.50	0.50	100	80 - 120	0.54	107	8	20
7440-39-3	Barium	0.054	0.010	0.50	0.52	94	80 - 120	0.57	103	9	20
7440-41-7	Beryllium	0.0	0.0040	0.50	0.48	97	80 - 120	0.52	103	8	20
7440-43-9	Cadmium	0.0	0.0050	0.50	0.46	93	80 - 120	0.50	100	8	20
7440-70-2	Calcium	31.2	0.80	5.00	33.4	**45***	80 - 120	36.0	96	7	20
7440-47-3	Chromium	0.0	0.010	0.50	0.48	95	80 - 120	0.51	103	6	20
7440-48-4	Cobalt	0.0	0.010	0.50	0.47	94	80 - 120	0.51	101	8	20
7440-50-8	Copper	0.0	0.020	0.50	0.46	93	80 - 120	0.50	100	8	20
7439-89-6	Iron	0.0	0.20	5.00	4.91	98	80 - 120	5.19	104	6	20
7439-92-1	Lead	0.0	0.015	0.50	0.48	96	80 - 120	0.52	103	8	20
7439-95-4	Magnesium	4.68	0.20	5.00	9.20	90	80 - 120	9.80	102	6	20
7439-96-5	Manganese	0.97	0.015	0.50	1.37	**79***	80 - 120	1.49	104	8	20
7439-98-7	Molybdenum	0.0	0.030	0.50	0.50	99	80 - 120	0.54	107	8	20
7440-02-0	Nickel	0.0	0.040	0.50	0.47	93	80 - 120	0.50	101	6	20
7440-09-7	Potassium	2.20	0.50	10.0	11.8	96	80 - 120	12.6	104	7	20
7782-49-2	Selenium	0.0	0.040	0.50	0.46	91	80 - 120	0.49	98	6	20
7440-22-4	Silver	0.0	0.010	0.50	0.50	99	80 - 120	0.53	107	6	20
7440-23-5	Sodium	9.53	1.00	20.0	28.6	95	80 - 120	30.6	105	7	20
7440-28-0	Thallium	0.0	0.020	0.50	0.49	98	80 - 120	0.53	106	8	20
7440-62-2	Vanadium	0.0	0.020	0.50	0.48	96	80 - 120	0.52	104	8	20
7440-66-6	Zinc	0.0	0.020	0.50	0.47	93	80 - 120	0.50	101	6	20

GCAL ANALYTICAL LABORATORIES, LLC

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Phone: 225.769.4900 • Fax: 225.767.5717 • www.gcal.com

CHAIN OF CUSTODY RECORD

Client ID: 4449 - Tetra Tech
SDG: 213092616
Due Date: 10/03/13

GCAL USE ONLY

Report to:
Client: Tetra Tech
Address: 1955 Evergreen Blvd
Bld 200, ste 300
Contact: Jessica Vickers
Phone: 678-775-3104
E-mail: Jessica.Vickers@tetratech.com

Bill to:
Client: Tetra Tech
Address:
Contact:
Phone:
E-mail:

P.O. Number

Project Name/Number: Georgia World Congress Center

Sampled By: Chris Jones

Analytical Requests & Method: PAH; TAL Metals

GCAL use only:
Custody Seal used ☐ yes ☐ no
intact ☐ yes ☐ no
Temperature °C 5.7 ~~EJJ~~

☐ Dissolved Analysis Requested
☐ Field filtered
☐ Lab filtered

Matrix[1]	Date	Time (2400)	Comp	Grab	Sample Description	No Containers	NA	HNO3	Preservative
W	9/23	1537		X	MM-03	3	✓	✓	1
W	↓	1550		X	MM-03-Dup	3	✓	✓	2
W	↓	1657		X	MWC-1A	6	✓	✓	MS/MSD 3,4,5
~~W~~					~~Trip Blank~~	2			EJ

Air Bill No: 7967 6876 7539

Turn Around Time (Business Days): ☐ 24h* ☐ 48h* ☐ 3 days* ☐ 1 week* ☒ Standard (Per Contract/Quote)

Relinquished by: (Signature)	Date:	Time:	Received by: (Signature)	Date:	Time:
[signature]	9/25/13	0830	[signature]	9/25/13	13:59
Relinquished by: (Signature)	Date:	Time:	Received by: (Signature)	Date:	Time:
Relinquished by: (Signature)	Date: 092613	Time: 1030	Received by: (Signature)	Date: 092613	Time: 1032

Note:

By submitting these samples, you agree to GCAL's terms and conditions contained in our most recent schedule of services.

Matrix[1]: W = water, S = solid, L = liquid, T = tissue

*Requires prior approval, rush charges may apply.

We cannot accept verbal changes. Please email written changes to your PM.

WHITE: CLIENT FINAL REPORT - CANARY: CLIENT

GCAL ANALYTICAL LABORATORIES, LLC

SAMPLE RECEIVING CHECKLIST

213092616

SAMPLE DELIVERY GROUP 213092616	
Client 4449 - Tetra Tech	**Transport Method** FEDEX
Profile Number 237642	**Received By** Saucier, Charlotte
Line Item(s) 1 - Water	**Receive Date(s)** 09/26/13

CHECKLIST	YES	NO	NA
Were all samples received using proper thermal preservation?	☑	☐	☐
When used, were all custody seals intact?	☑	☐	☐
Were all samples received in proper containers?	☑	☐	☐
Were all samples received using proper chemical preservation?	☑	☐	☐
Was preservative added to any container at the lab?	☐	☑	☐
Were all containers received in good condition?	☑	☐	☐
Were all VOA vials received with no head space?	☐	☐	☑
Do all sample labels match the Chain of Custody?	☑	☐	☐
Did the Chain of Custody list the sampling technician?	☑	☐	☐
Was the COC maintained i.e. all signatures, dates and time of receipt included?	☑	☐	☐

COOLERS

Airbill	Thermometer ID: E22	Temp(°C)
7967 6876 7539		5.7

DISCREPANCIES

None

LAB PRESERVATIONS

None

NOTES

Quarterly Groundwater Monitoring
Wells MM-03 and MWC-1A
March 2014 Analytical Data Package
And Chain-of-Custody

NELAP CERTIFICATE NUMBER 01955
DOD ELAP CERTIFICATE NUMBER L13-190

ANALYTICAL RESULTS

PERFORMED BY

GULF COAST ANALYTICAL LABORATORIES, INC.
7979 Innovation Park Dr.
Baton Rouge, LA 70820

Report Date 04/11/2014

GCAL Report 214033107

Deliver To	Tetra Tech EMI 950 S. Fourth St. Baldwyn, MS 38824 678-775-3104
Attn	Jessica Vickers

Project GWCC

CASE NARRATIVE

Client: Tetra Tech **Report:** 214033107

Gulf Coast Analytical Laboratories received and analyzed the sample(s) listed on the sample cross-reference page of this report. Receipt of the sample(s) is documented by the attached chain of custody. This applies only to the sample(s) listed in this report. No sample integrity or quality control exceptions were identified unless noted below.

SEMI-VOLATILES GAS CHROMATOGRAPHY

In the HPLC-8310 analysis of sample 21403310701 (MM 03), confirmation was done by historical data in place of a second detector.

METALS

In the EPA 7470A analysis for prep batch 528803, the MS and/or MSD recovery is outside the control limits for Mercury. The LCS recovery is within the control limits. This indicates the analysis is in control and the sample is affected by matrix interference.

Laboratory Endorsement

Sample analysis was performed in accordance with approved methodologies provided by the Environmental Protection Agency or other recognized agencies. The samples and their corresponding extracts will be maintained for a period of 30 days unless otherwise arranged. Following this retention period the samples will be disposed in accordance with GCAL's Standard Operating Procedures.

Common Abbreviations Utilized in this Report

ND	Indicates the result was Not Detected at the specified RDL
DO	Indicates the result was Diluted Out
MI	Indicates the result was subject to Matrix Interference
TNTC	Indicates the result was Too Numerous To Count
SUBC	Indicates the analysis was Sub-Contracted
FLD	Indicates the analysis was performed in the Field
PQL	Practical Quantitation Limit
MDL	Method Detection Limit
RDL	Reporting Detection Limit
00:00	Reported as a time equivalent to 12:00 AM

Reporting Flags Utilized in this Report

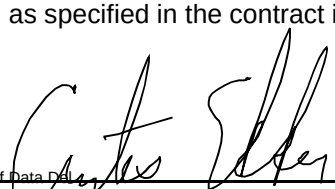
J	Indicates the result is between the MDL and RDL
U	Indicates the compound was analyzed for but not detected
B	Indicates the analyte was detected in the associated Method Blank

Sample receipt at GCAL is documented through the attached chain of custody. In accordance with NELAC, this report shall be reproduced only in full and with the written permission of GCAL. The results contained within this report relate only to the samples reported. The documented results are presented within this report.

This report pertains only to the samples listed in the Report Sample Summary and should be retained as a permanent record thereof. The results contained within this report are intended for the use of the client. Any unauthorized use of the information contained in this report is prohibited.

I certify that this data package is in compliance with the NELAC standard and terms and conditions of the contract and Statement of Work both technically and for completeness, for other than the conditions in the case narrative. Release of the data contained in this hardcopy data package and in the computer-readable data submitted has been authorized by the Quality Assurance Manager or his/her designee, as verified by the following signature.

Estimated uncertainty of measurement is available upon request. This report is in compliance with the DOD QSM as specified in the contract if applicable.



Curtis Ekker/Mgr of Data Del

Authorized Signature

GCAL REPORT 214033107

Report Sample Summary

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21403310701	MM-03	Water	03/27/2014 14:30	03/29/2014 09:40
21403310702	MWC-1A	Water	03/27/2014 15:30	03/29/2014 09:40

Summary of Compounds Detected

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21403310701	**MM-03**	Water	03/27/2014 14:30	03/29/2014 09:40

EPA 6010C

CAS#	Parameter	Result	RDL	REG LIMIT	Units
7440-39-3	Barium	0.11	0.010		mg/L
7440-70-2	Calcium	27.1	0.80		mg/L
7440-48-4	Cobalt	0.019	0.010		mg/L
7439-89-6	Iron	0.23	0.20		mg/L
7439-95-4	Magnesium	5.46	0.20		mg/L
7439-96-5	Manganese	0.23	0.015		mg/L
7440-09-7	Potassium	2.68	0.50		mg/L
7440-23-5	Sodium	12.2	1.00		mg/L
7440-66-6	Zinc	0.075	0.020		mg/L

EPA 8310

CAS#	Parameter	Result	RDL	REG LIMIT	Units
90-12-0	1-Methylnaphthalene	1.83	1.22		ug/L
91-20-3	Naphthalene	2.59	0.610		ug/L
85-01-8	Phenanthrene	0.569	0.122		ug/L

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21403310702	**MWC-1A**	Water	03/27/2014 15:30	03/29/2014 09:40

EPA 6010C

CAS#	Parameter	Result	RDL	REG LIMIT	Units
7440-39-3	Barium	0.046	0.010		mg/L
7440-70-2	Calcium	34.5	0.80		mg/L
7439-95-4	Magnesium	5.18	0.20		mg/L
7439-96-5	Manganese	0.84	0.015		mg/L
7440-09-7	Potassium	1.76	0.50		mg/L
7440-23-5	Sodium	10.2	1.00		mg/L
7440-66-6	Zinc	0.040	0.020		mg/L

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21403310701	**MM-03**	Water	03/27/2014 14:30	03/29/2014 09:40

EPA 8310

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
04/01/2014 10:50	528883	EPA 8310	1	04/03/2014 04:29	HCP	528575

CAS#	Parameter	Result	RDL	REG LIMIT	Units
90-12-0	**1-Methylnaphthalene**	**1.83**	**1.22**		**ug/L**
91-57-6	2-Methylnaphthalene	ND	1.22		ug/L
83-32-9	Acenaphthene	ND	1.22		ug/L
208-96-8	Acenaphthylene	ND	1.22		ug/L
120-12-7	Anthracene	ND	0.122		ug/L
56-55-3	Benzo(a)anthracene	ND	0.122		ug/L
50-32-8	Benzo(a)pyrene	ND	0.122		ug/L
205-99-2	Benzo(b)fluoranthene	ND	0.183		ug/L
191-24-2	Benzo(g,h,i)perylene	ND	0.305		ug/L
207-08-9	Benzo(k)fluoranthene	ND	0.122		ug/L
218-01-9	Chrysene	ND	0.122		ug/L
53-70-3	Dibenz(a,h)anthracene	ND	0.122		ug/L
206-44-0	Fluoranthene	ND	0.305		ug/L
86-73-7	Fluorene	ND	0.610		ug/L
193-39-5	Indeno(1,2,3-cd)pyrene	ND	0.305		ug/L
91-20-3	**Naphthalene**	**2.59**	**0.610**		**ug/L**
85-01-8	**Phenanthrene**	**0.569**	**0.122**		**ug/L**
129-00-0	Pyrene	ND	0.305		ug/L

CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Recovery	Rec Limits
92-94-4	p-Terphenyl	4.88	4.36	ug/L	89	40 - 115

EPA 7470A

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
03/31/2014 14:40	528803	EPA 7470A	1	04/02/2014 14:19	PJS	529047

CAS#	Parameter	Result	RDL	REG LIMIT	Units
7439-97-6	Mercury	ND	0.00020		mg/L

EPA 6010C

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
03/31/2014 14:40	528832	EPA 3010A	1	04/04/2014 18:55	AWG	529299

CAS#	Parameter	Result	RDL	REG LIMIT	Units
7429-90-5	Aluminum	ND	0.20		mg/L
7440-36-0	Antimony	ND	0.060		mg/L
7440-38-2	Arsenic	ND	0.020		mg/L
7440-39-3	**Barium**	**0.11**	**0.010**		**mg/L**
7440-41-7	Beryllium	ND	0.0040		mg/L
7440-43-9	Cadmium	ND	0.0050		mg/L
7440-70-2	**Calcium**	**27.1**	**0.80**		**mg/L**
7440-47-3	Chromium	ND	0.010		mg/L
7440-48-4	**Cobalt**	**0.019**	**0.010**		**mg/L**
7440-50-8	Copper	ND	0.020		mg/L
7439-89-6	**Iron**	**0.23**	**0.20**		**mg/L**

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21403310701	**MM-03**	Water	03/27/2014 14:30	03/29/2014 09:40

EPA 6010C

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
03/31/2014 14:40	528832	EPA 3010A	1	04/04/2014 18:55	AWG	529299

CAS#	Parameter	Result	RDL	REG LIMIT	Units
7439-92-1	Lead	ND	0.015		mg/L
7439-95-4	**Magnesium**	**5.46**	**0.20**		**mg/L**
7439-96-5	**Manganese**	**0.23**	**0.015**		**mg/L**
7439-98-7	Molybdenum	ND	0.030		mg/L
7440-02-0	Nickel	ND	0.040		mg/L
7440-09-7	**Potassium**	**2.68**	**0.50**		**mg/L**
7782-49-2	Selenium	ND	0.040		mg/L
7440-22-4	Silver	ND	0.010		mg/L
7440-23-5	**Sodium**	**12.2**	**1.00**		**mg/L**
7440-28-0	Thallium	ND	0.020		mg/L
7440-62-2	Vanadium	ND	0.020		mg/L
7440-66-6	**Zinc**	**0.075**	**0.020**		**mg/L**

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21403310702	**MWC-1A**	Water	03/27/2014 15:30	03/29/2014 09:40

EPA 8310

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
04/01/2014 10:50	528883	EPA 8310	1	04/03/2014 04:49	HCP	528575

CAS#	Parameter	Result	RDL	REG LIMIT	Units
90-12-0	1-Methylnaphthalene	ND	1.22		ug/L
91-57-6	2-Methylnaphthalene	ND	1.22		ug/L
83-32-9	Acenaphthene	ND	1.22		ug/L
208-96-8	Acenaphthylene	ND	1.22		ug/L
120-12-7	Anthracene	ND	0.122		ug/L
56-55-3	Benzo(a)anthracene	ND	0.122		ug/L
50-32-8	Benzo(a)pyrene	ND	0.122		ug/L
205-99-2	Benzo(b)fluoranthene	ND	0.183		ug/L
191-24-2	Benzo(g,h,i)perylene	ND	0.305		ug/L
207-08-9	Benzo(k)fluoranthene	ND	0.122		ug/L
218-01-9	Chrysene	ND	0.122		ug/L
53-70-3	Dibenz(a,h)anthracene	ND	0.122		ug/L
206-44-0	Fluoranthene	ND	0.305		ug/L
86-73-7	Fluorene	ND	0.610		ug/L
193-39-5	Indeno(1,2,3-cd)pyrene	ND	0.305		ug/L
91-20-3	Naphthalene	ND	0.610		ug/L
85-01-8	Phenanthrene	ND	0.122		ug/L
129-00-0	Pyrene	ND	0.305		ug/L

CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Recovery	Rec Limits
92-94-4	p-Terphenyl	4.88	3.86	ug/L	79	40 - 115

EPA 7470A

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
03/31/2014 14:40	528803	EPA 7470A	1	04/02/2014 14:21	PJS	529047

CAS#	Parameter	Result	RDL	REG LIMIT	Units
7439-97-6	Mercury	ND	0.00020		mg/L

EPA 6010C

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
03/31/2014 14:40	528832	EPA 3010A	1	04/04/2014 19:01	AWG	529299

CAS#	Parameter	Result	RDL	REG LIMIT	Units
7429-90-5	Aluminum	ND	0.20		mg/L
7440-36-0	Antimony	ND	0.060		mg/L
7440-38-2	Arsenic	ND	0.020		mg/L
7440-39-3	**Barium**	**0.046**	**0.010**		**mg/L**
7440-41-7	Beryllium	ND	0.0040		mg/L
7440-43-9	Cadmium	ND	0.0050		mg/L
7440-70-2	**Calcium**	**34.5**	**0.80**		**mg/L**
7440-47-3	Chromium	ND	0.010		mg/L
7440-48-4	Cobalt	ND	0.010		mg/L
7440-50-8	Copper	ND	0.020		mg/L
7439-89-6	Iron	ND	0.20		mg/L

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21403310702	**MWC-1A**	Water	03/27/2014 15:30	03/29/2014 09:40

EPA 6010C

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
03/31/2014 14:40	528832	EPA 3010A	1	04/04/2014 19:01	AWG	529299

CAS#	Parameter	Result	RDL	REG LIMIT	Units
7439-92-1	Lead	ND	0.015		mg/L
7439-95-4	**Magnesium**	**5.18**	**0.20**		**mg/L**
7439-96-5	**Manganese**	**0.84**	**0.015**		**mg/L**
7439-98-7	Molybdenum	ND	0.030		mg/L
7440-02-0	Nickel	ND	0.040		mg/L
7440-09-7	**Potassium**	**1.76**	**0.50**		**mg/L**
7782-49-2	Selenium	ND	0.040		mg/L
7440-22-4	Silver	ND	0.010		mg/L
7440-23-5	**Sodium**	**10.2**	**1.00**		**mg/L**
7440-28-0	Thallium	ND	0.020		mg/L
7440-62-2	Vanadium	ND	0.020		mg/L
7440-66-6	**Zinc**	**0.040**	**0.020**		**mg/L**

General Chromatography Quality Control Summary

Analytical Batch	528575	**Client ID**	MB528883	LCS528883	LCSD528883
Prep Batch	528883	**GCAL ID**	1299204	1299205	1299206
Prep Method	EPA 8310	**Sample Type**	Method Blank	LCS	LCSD
		Prep Date	04/01/2014 10:50	04/01/2014 10:50	04/01/2014 10:50
		Analytical Date	04/03/2014 03:30	04/03/2014 03:50	04/03/2014 04:09
		Matrix	Water	Water	Water

EPA 8310		**Units**	ug/L	**Spike**	**Result**		**Control**	**Result**			**RPD**
		Result	**RDL**	**Added**		**% R**	**Limits % R**		**% R**	**RPD**	**Limit**
83-32-9	Acenaphthene	ND	1.00	5.00	3.54	71	23 - 153	3.60	72	2	30
208-96-8	Acenaphthylene	ND	1.00	5.00	3.39	68	50 - 125	3.34	67	1	30
120-12-7	Anthracene	ND	0.100	5.00	3.84	77	54 - 124	3.81	76	1	30
56-55-3	Benzo(a)anthracene	ND	0.100	5.00	4.44	89	55 - 130	4.36	87	2	30
205-99-2	Benzo(b)fluoranthene	ND	0.150	5.00	4.12	82	58 - 129	4.01	80	3	30
207-08-9	Benzo(k)fluoranthene	ND	0.100	5.00	4.02	80	54 - 140	3.91	78	3	30
191-24-2	Benzo(g,h,i)perylene	ND	0.250	5.00	3.55	71	51 - 120	3.37	67	5	30
50-32-8	Benzo(a)pyrene	ND	0.100	5.00	3.81	76	59 - 120	3.69	74	3	30
218-01-9	Chrysene	ND	0.100	5.00	4.06	81	61 - 133	3.98	80	2	30
53-70-3	Dibenz(a,h)anthracene	ND	0.100	5.00	3.27	65	47 - 120	3.13	63	4	30
206-44-0	Fluoranthene	ND	0.250	5.00	4.20	84	57 - 125	3.97	79	6	30
86-73-7	Fluorene	ND	0.500	5.00	3.42	68	34 - 129	3.47	69	1	30
193-39-5	Indeno(1,2,3-cd)pyrene	ND	0.250	5.00	3.92	78	58 - 120	3.78	76	4	30
91-20-3	Naphthalene	ND	0.500	5.00	3.07	61	28 - 155	3.04	61	1	30
85-01-8	Phenanthrene	ND	0.100	5.00	3.83	77	55 - 123	3.80	76	1	30
129-00-0	Pyrene	ND	0.250	5.00	3.96	79	60 - 137	3.69	74	7	30
90-12-0	1-Methylnaphthalene	ND	1.00	5.00	3.48	70	44 - 130	3.46	69	1	30
91-57-6	2-Methylnaphthalene	ND	1.00	5.00	3.35	67	42 - 120	3.39	68	1	30
Surrogate											
92-94-4	p-Terphenyl	3.37	84	4	3.3	83	40 - 115	3.27	82		

Inorganics Quality Control Summary

Analytical Batch	529047	**Client ID**	MB528803			LCS528803		
Prep Batch	528803	**GCAL ID**	1298886			1298887		
Prep Method	EPA 7470A	**Sample Type**	Method Blank			LCS		
		Prep Date	03/31/2014 14:40			03/31/2014 14:40		
		Analytical Date	04/02/2014 14:07			04/02/2014 14:09		
		Matrix	Water			Water		
EPA 7470A		**Units**	mg/L	**Spike**	**Result**		**Control**	
		Result	**RDL**	**Added**		**% R**	**Limits % R**	
7439-97-6	Mercury	ND	0.00020	0.0050	0.0044	89	80 - 120	

Analytical Batch	529047	**Client ID**	MOLECULAR SIEVE (TCLP)			1298366MS			1298366MSD			
Prep Batch	528803	**GCAL ID**	21403284301			1298888			1298889			
Prep Method	EPA 7470A	**Sample Type**	SAMPLE			MS			MSD			
		Prep Date	03/31/2014 14:40			03/31/2014 14:40			03/31/2014 14:40			
		Analytical Date	04/02/2014 14:11			04/02/2014 14:12			04/02/2014 14:14			
		Matrix	Solid			Solid			Solid			
EPA 7470A		**Units**	mg/L	**Spike**	**Result**		**Control**	**Result**			**RPD**	
		Result	**RDL**	**Added**		**% R**	**Limits % R**		**% R**	**RPD**	**Limit**	
7439-97-6	Mercury	0.00012	0.00020	0.0050	0.0033	**64***	80 - 120	0.0032	**62***	3	20	

Inorganics Quality Control Summary

Analytical Batch 529230	**Client ID**	MB528832		LCS528832
Prep Batch 528832	**GCAL ID**	1298993		1298994
Prep Method EPA 3010A	**Sample Type**	Method Blank		LCS
	Prep Date	03/31/2014 14:40		03/31/2014 14:40
	Analytical Date	04/04/2014 13:16		04/04/2014 13:24
	Matrix	Water		Water

EPA 6010C		**Units**	mg/L	**Spike**	**Result**		**Control**
		Result	**RDL**	**Added**		**% R**	**Limits % R**
7429-90-5	Aluminum	ND	0.20	5.00	5.36	107	80 - 120
7440-36-0	Antimony	ND	0.060	0.50	0.48	97	80 - 120
7440-38-2	Arsenic	ND	0.020	0.50	0.50	100	80 - 120
7440-39-3	Barium	ND	0.010	0.50	0.53	106	80 - 120
7440-41-7	Beryllium	ND	0.0040	0.50	0.50	100	80 - 120
7440-43-9	Cadmium	ND	0.0050	0.50	0.49	97	80 - 120
7440-70-2	Calcium	ND	0.80	5.00	5.31	106	80 - 120
7440-47-3	Chromium	ND	0.010	0.50	0.50	101	80 - 120
7440-48-4	Cobalt	ND	0.010	0.50	0.50	99	80 - 120
7440-50-8	Copper	ND	0.020	0.50	0.50	100	80 - 120
7439-89-6	Iron	ND	0.20	5.00	5.11	102	80 - 120
7439-92-1	Lead	ND	0.015	0.50	0.50	99	80 - 120
7439-95-4	Magnesium	ND	0.20	5.00	5.17	103	80 - 120
7439-96-5	Manganese	ND	0.015	0.50	0.51	101	80 - 120
7439-98-7	Molybdenum	ND	0.030	0.50	0.49	98	80 - 120
7440-02-0	Nickel	ND	0.040	0.50	0.51	102	80 - 120
7440-09-7	Potassium	ND	0.50	10.0	10.2	102	80 - 120
7782-49-2	Selenium	ND	0.040	0.50	0.50	100	80 - 120
7440-22-4	Silver	ND	0.010	0.50	0.50	100	80 - 120
7440-23-5	Sodium	ND	1.00	20.0	20.5	102	80 - 120
7440-28-0	Thallium	ND	0.020	0.50	0.50	100	80 - 120
7440-62-2	Vanadium	ND	0.020	0.50	0.50	100	80 - 120
7440-66-6	Zinc	ND	0.020	0.50	0.49	98	80 - 120

Inorganics Quality Control Summary

Analytical Batch	529230	**Client ID**	03557 MW-5	1298973MS	1298973MSD
Prep Batch	528832	**GCAL ID**	21403311802	1298995	1298996
Prep Method	EPA 3010A	**Sample Type**	SAMPLE	MS	MSD
		Prep Date	03/31/2014 14:40	03/31/2014 14:40	03/31/2014 14:40
		Analytical Date	04/04/2014 13:30	04/04/2014 13:36	04/04/2014 13:42
		Matrix	Water	Water	Water

EPA 6010C		**Units**	mg/L	**Spike**			**Control**				**RPD**
		Result	**RDL**	**Added**	**Result**	**% R**	**Limits % R**	**Result**	**% R**	**RPD**	**Limit**
7429-90-5	Aluminum	0.32	0.20	5.00	6.31	120	80 - 120	6.32	120	0	20
7440-36-0	Antimony	0.0	0.060	0.50	0.50	100	80 - 120	0.51	102	2	20
7440-38-2	Arsenic	0.0051	0.020	0.50	0.52	103	80 - 120	0.53	105	2	20
7440-39-3	Barium	0.028	0.010	0.50	0.55	104	80 - 120	0.55	105	0	20
7440-41-7	Beryllium	0.0	0.0040	0.50	0.51	103	80 - 120	0.52	104	2	20
7440-43-9	Cadmium	0.0	0.0050	0.50	0.50	100	80 - 120	0.51	101	2	20
7440-70-2	Calcium	2.70	0.80	5.00	8.07	107	80 - 120	8.20	110	2	20
7440-47-3	Chromium	0.0	0.010	0.50	0.51	103	80 - 120	0.52	104	2	20
7440-48-4	Cobalt	0.0	0.010	0.50	0.51	102	80 - 120	0.52	104	2	20
7440-50-8	Copper	0.0	0.020	0.50	0.52	103	80 - 120	0.53	105	2	20
7439-89-6	Iron	6.03	0.20	5.00	11.1	102	80 - 120	11.1	102	0	20
7439-92-1	Lead	0.0086	0.015	0.50	0.52	102	80 - 120	0.53	104	2	20
7439-95-4	Magnesium	1.30	0.20	5.00	6.58	106	80 - 120	6.58	106	0	20
7439-96-5	Manganese	0.0076	0.015	0.50	0.52	103	80 - 120	0.53	105	2	20
7439-98-7	Molybdenum	0.0	0.030	0.50	0.50	99	80 - 120	0.51	103	2	20
7440-02-0	Nickel	0.0	0.040	0.50	0.52	105	80 - 120	0.53	107	2	20
7440-09-7	Potassium	0.66	0.50	10.0	10.9	103	80 - 120	11.1	104	2	20
7782-49-2	Selenium	0.0	0.040	0.50	0.50	100	80 - 120	0.51	103	2	20
7440-22-4	Silver	0.0	0.010	0.50	0.51	102	80 - 120	0.52	103	2	20
7440-23-5	Sodium	16.4	1.00	20.0	37.3	104	80 - 120	37.6	106	1	20
7440-28-0	Thallium	0.0	0.020	0.50	0.51	102	80 - 120	0.52	104	2	20
7440-62-2	Vanadium	0.0	0.020	0.50	0.51	102	80 - 120	0.52	104	2	20
7440-66-6	Zinc	0.016	0.020	0.50	0.52	101	80 - 120	0.53	103	2	20

CHAIN OF CUSTODY RECORD

GCAL ANALYTICAL LABORATORIES, LLC
7979 Innovation Park Dr., Baton Rouge, LA 70820-7402
Phone: 225.769.4900 • Fax: 225.767.5717 • www.gcal.com

Client ID: 4449 - Tetra Tech
SDG: 214033107
Due Date: 04/07/14

Report to:
Client: Tetra Tech
Address: 1955 Evergreen Blvd
Contact: Jessica Vickers
Phone: 678-983-6655
E-mail: Jessica.Vickers@tetratech.com

Bill to:
Client: Tetra Tech
Address:
Contact:
Phone:
E-mail:

P.O. Number
Project Name/Number: GWCC
Sampled By: Chris Jones

GCAL use only:
Custody Seal used ☑ yes ☐ no
intact ☑ yes ☐ no
Temperature °C 3.7 E22

☐ Dissolved Analysis Requested
☐ Field filtered
☐ Lab filtered

Matrix[1]	Date	Time (2400)	Comp	Grab	Sample Description	No Containers	Analytical Requests & Method: TAL Metals (HNO3)	PAH (4°)	Preservative
(3) SW	3-27	1430			MH-03	3	✓	✓	2
(3) SW	3-27	1530			MW-1A	3	✓	✓	2

Air Bill No: 7983 7176 5933

Turn Around Time (Business Days): ☐ 24h* ☐ 48h* ☐ 3 days* ☐ 1 week* ☑ Standard (Per Contract/Quote)

Relinquished by: (Signature)	Date:	Time:	Received by: (Signature)	Date:	Time:
	3/28/14	1100		3/28/14	1220
Relinquished by: (Signature)	Date:	Time:	Received by: (Signature)	Date:	Time:
Relinquished by: (Signature)	Date:	Time:	Received by: (Signature)	Date:	Time:
	3/29/14	940		3/29/14	940

Note:

By submitting these samples, you agree to GCAL's terms and conditions contained in our most recent schedule of services.

Matrix[1]: W = water, S = solid, L = liquid, T = tissue

*Requires prior approval, rush charges may apply.

We cannot accept verbal changes. Please email written changes to your PM.

WHITE: CLIENT FINAL REPORT - CANARY: CLIENT

GCAL ANALYTICAL LABORATORIES, LLC

SAMPLE RECEIVING CHECKLIST

214033107

SAMPLE DELIVERY GROUP 214033107	
Client 4449 - Tetra Tech	**Transport Method** FEDEX
Profile Number 237642	**Received By** Saucier, Charlotte M.
Line Item(s) 1 - Water	**Receive Date(s)** 03/29/14

CHECKLIST	YES	NO	NA
Were all samples received using proper thermal preservation?	☑	☐	☐
When used, were all custody seals intact?	☑	☐	☐
Were all samples received in proper containers?	☑	☐	☐
Were all samples received using proper chemical preservation?	☑	☐	☐
Was preservative added to any container at the lab?	☐	☑	☐
Were all containers received in good condition?	☑	☐	☐
Were all VOA vials received with no head space?	☐	☐	☑
Do all sample labels match the Chain of Custody?	☑	☐	☐
Did the Chain of Custody list the sampling technician?	☑	☐	☐
Was the COC maintained i.e. all signatures, dates and time of receipt included?	☑	☐	☐

COOLERS

Airbill	Thermometer ID: E22	Temp(°C)
7983 7176 5933		3.2

DISCREPANCIES

None

LAB PRESERVATIONS

None

NOTES

Quarterly Groundwater Monitoring
Wells MM-03 and MWC-1A
June 2014 Analytical Data Package
And Chain-of-Custody

NELAP CERTIFICATE NUMBER 01955
DOD ELAP CERTIFICATE NUMBER L13-190

ANALYTICAL RESULTS

PERFORMED BY

GCAL, LLC
7979 Innovation Park Dr.
Baton Rouge, LA 70820

Report Date 07/18/2014

GCAL Report 214070229

Deliver To	Tetra Tech EMI 950 S. Fourth St. Baldwyn, MS 38824 662-681-5727
Attn	Jessica Vickers

Project GWCC

Case Narrative

Client: Tetra Tech **Report:** 214070229

Gulf Coast Analytical Laboratories received and analyzed the sample(s) listed on the sample cross-reference page of this report. Receipt of the sample(s) is documented by the attached chain of custody. This applies only to the sample(s) listed in this report. No sample integrity or quality control exceptions were identified unless noted below.

METALS

In the EPA 7470A analysis for prep batch 536080, the MS and/or MSD recovery is outside the control limits for Mercury. The LCS recovery is within the control limits. This indicates the analysis is in control and the sample is affected by matrix interference.

MISCELLANEOUS

See Subcontract report for any case narrative.

Laboratory Endorsement

Sample analysis was performed in accordance with approved methodologies provided by the Environmental Protection Agency or other recognized agencies. The samples and their corresponding extracts will be maintained for a period of 30 days unless otherwise arranged. Following this retention period the samples will be disposed in accordance with GCAL's Standard Operating Procedures.

Common Abbreviations Utilized in this Report

ND	Indicates the result was Not Detected at the specified RDL
DO	Indicates the result was Diluted Out
MI	Indicates the result was subject to Matrix Interference
TNTC	Indicates the result was Too Numerous To Count
SUBC	Indicates the analysis was Sub-Contracted
FLD	Indicates the analysis was performed in the Field
PQL	Practical Quantitation Limit
MDL	Method Detection Limit
RDL	Reporting Detection Limit
00:00	Reported as a time equivalent to 12:00 AM

Reporting Flags Utilized in this Report

J	Indicates the result is between the MDL and RDL
U	Indicates the compound was analyzed for but not detected
B	Indicates the analyte was detected in the associated Method Blank

Sample receipt at GCAL is documented through the attached chain of custody. In accordance with NELAC, this report shall be reproduced only in full and with the written permission of GCAL. The results contained within this report relate only to the samples reported. The documented results are presented within this report.

This report pertains only to the samples listed in the Report Sample Summary and should be retained as a permanent record thereof. The results contained within this report are intended for the use of the client. Any unauthorized use of the information contained in this report is prohibited.

I certify that this data package is in compliance with the NELAC standard and terms and conditions of the contract and Statement of Work both technically and for completeness, for other than the conditions in the case narrative. Release of the data contained in this hardcopy data package and in the computer-readable data submitted has been authorized by the Quality Assurance Manager or his/her designee, as verified by the following signature.

Estimated uncertainty of measurement is available upon request. This report is in compliance with the DOD QSM as specified in the contract if applicable.

Curtis Ekker/Mgr of Data/Del

Authorized Signature
GCAL REPORT 214070229

Report Sample Summary

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21407022901	MM-03	Water	06/30/2014 12:40	07/02/2014 11:10
21407022902	MWC-1A	Water	06/30/2014 14:20	07/02/2014 11:10

Summary of Compounds Detected

There were no detects

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21407022901	**MM-03**	Water	06/30/2014 12:40	07/02/2014 11:10

Subcontract Data

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	07/18/2014 16:04	SMH2	

CAS#	Parameter	Result	RDL	REG LIMIT	Units
SHIP-001	Ship Result	*			mg/L

EPA 8310

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
07/03/2014 09:05	536011	EPA 8310	1	07/07/2014 13:17	HCP	536260

CAS#	Parameter	Result	RDL	REG LIMIT	Units
90-12-0	1-Methylnaphthalene	ND	1.00		ug/L
91-57-6	2-Methylnaphthalene	ND	1.00		ug/L
83-32-9	Acenaphthene	ND	1.00		ug/L
208-96-8	Acenaphthylene	ND	1.00		ug/L
120-12-7	Anthracene	ND	0.100		ug/L
56-55-3	Benzo(a)anthracene	ND	0.100		ug/L
50-32-8	Benzo(a)pyrene	ND	0.100		ug/L
205-99-2	Benzo(b)fluoranthene	ND	0.150		ug/L
191-24-2	Benzo(g,h,i)perylene	ND	0.250		ug/L
207-08-9	Benzo(k)fluoranthene	ND	0.100		ug/L
218-01-9	Chrysene	ND	0.100		ug/L
53-70-3	Dibenz(a,h)anthracene	ND	0.100		ug/L
206-44-0	Fluoranthene	ND	0.250		ug/L
86-73-7	Fluorene	ND	0.500		ug/L
193-39-5	Indeno(1,2,3-cd)pyrene	ND	0.250		ug/L
91-20-3	Naphthalene	ND	0.500		ug/L
85-01-8	Phenanthrene	ND	0.100		ug/L
129-00-0	Pyrene	ND	0.250		ug/L

CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Recovery	Rec Limits
92-94-4	p-Terphenyl	4	3.99	ug/L	100	40 - 115

EPA 7470A

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
07/05/2014 08:00	536080	EPA 7470A	1	07/10/2014 10:42	PJS	536500

CAS#	Parameter	Result	RDL	REG LIMIT	Units
7439-97-6	Mercury	ND	0.00020		mg/L

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21407022902	**MWC-1A**	Water	06/30/2014 14:20	07/02/2014 11:10

Subcontract Data

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	07/18/2014 16:04	SMH2	

CAS#	Parameter	Result	RDL	REG LIMIT	Units
SHIP-001	Ship Result	*			mg/L

EPA 8310

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
07/03/2014 09:05	536011	EPA 8310	1	07/07/2014 13:37	HCP	536260

CAS#	Parameter	Result	RDL	REG LIMIT	Units
90-12-0	1-Methylnaphthalene	ND	1.00		ug/L
91-57-6	2-Methylnaphthalene	ND	1.00		ug/L
83-32-9	Acenaphthene	ND	1.00		ug/L
208-96-8	Acenaphthylene	ND	1.00		ug/L
120-12-7	Anthracene	ND	0.100		ug/L
56-55-3	Benzo(a)anthracene	ND	0.100		ug/L
50-32-8	Benzo(a)pyrene	ND	0.100		ug/L
205-99-2	Benzo(b)fluoranthene	ND	0.150		ug/L
191-24-2	Benzo(g,h,i)perylene	ND	0.250		ug/L
207-08-9	Benzo(k)fluoranthene	ND	0.100		ug/L
218-01-9	Chrysene	ND	0.100		ug/L
53-70-3	Dibenz(a,h)anthracene	ND	0.100		ug/L
206-44-0	Fluoranthene	ND	0.250		ug/L
86-73-7	Fluorene	ND	0.500		ug/L
193-39-5	Indeno(1,2,3-cd)pyrene	ND	0.250		ug/L
91-20-3	Naphthalene	ND	0.500		ug/L
85-01-8	Phenanthrene	ND	0.100		ug/L
129-00-0	Pyrene	ND	0.250		ug/L

CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Recovery	Rec Limits
92-94-4	p-Terphenyl	4	3.63	ug/L	91	40 - 115

EPA 7470A

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
07/05/2014 08:00	536080	EPA 7470A	1	07/10/2014 10:44	PJS	536500

CAS#	Parameter	Result	RDL	REG LIMIT	Units
7439-97-6	Mercury	ND	0.00020		mg/L

General Chromatography Quality Control Summary

Analytical Batch	536260	**Client ID**	MB536011	LCS536011	LCSD536011
Prep Batch	536011	**GCAL ID**	1334419	1334420	1334421
Prep Method	EPA 8310	**Sample Type**	Method Blank	LCS	LCSD
		Prep Date	07/03/2014 09:05	07/03/2014 09:05	07/03/2014 09:05
		Analytical Date	07/07/2014 13:59	07/07/2014 12:37	07/07/2014 12:57
		Matrix	Water	Water	Water

EPA 8310		**Units**	ug/L	**Spike**			**Control**			**RPD**
		Result	**RDL**	**Added**	**Result**	**% R**	**Limits % R**	**Result**	**% R**	**RPD**	**Limit**
83-32-9	Acenaphthene	ND	1.00	5.00	4.42	88	23 - 153	4.62	92	4	30
208-96-8	Acenaphthylene	ND	1.00	5.00	4.23	85	50 - 125	4.48	90	6	30
120-12-7	Anthracene	ND	0.100	5.00	4.48	90	54 - 124	4.66	93	4	30
56-55-3	Benzo(a)anthracene	ND	0.100	5.00	5.05	101	55 - 130	5.21	104	3	30
205-99-2	Benzo(b)fluoranthene	ND	0.150	5.00	4.74	95	58 - 129	4.88	98	3	30
207-08-9	Benzo(k)fluoranthene	ND	0.100	5.00	4.63	93	54 - 140	4.68	94	1	30
191-24-2	Benzo(g,h,i)perylene	ND	0.250	5.00	3.65	73	51 - 120	3.04	61	18	30
50-32-8	Benzo(a)pyrene	ND	0.100	5.00	4.36	87	59 - 120	4.45	89	2	30
218-01-9	Chrysene	ND	0.100	5.00	4.59	92	61 - 133	4.74	95	3	30
53-70-3	Dibenz(a,h)anthracene	ND	0.100	5.00	2.93	59	47 - 120	2.86	57	2	30
206-44-0	Fluoranthene	ND	0.250	5.00	4.83	97	57 - 125	5.01	100	4	30
86-73-7	Fluorene	ND	0.500	5.00	4.08	82	34 - 129	4.24	85	4	30
193-39-5	Indeno(1,2,3-cd)pyrene	ND	0.250	5.00	4.50	90	58 - 120	4.42	88	2	30
91-20-3	Naphthalene	ND	0.500	5.00	4.20	84	28 - 155	4.44	89	6	30
85-01-8	Phenanthrene	ND	0.100	5.00	4.54	91	55 - 123	4.76	95	5	30
129-00-0	Pyrene	ND	0.250	5.00	4.71	94	60 - 137	4.73	95	0	30
90-12-0	1-Methylnaphthalene	ND	1.00	5.00	4.45	89	44 - 130	4.70	94	5	30
91-57-6	2-Methylnaphthalene	ND	1.00	5.00	4.32	86	42 - 120	4.59	92	6	30
Surrogate											
92-94-4	p-Terphenyl	1.78	45	4	3.85	96	40 - 115	3.8	95		

Inorganics Quality Control Summary

Analytical Batch	536500	**Client ID**	MB536080			LCS536080		
Prep Batch	536080	**GCAL ID**	1334710			1334711		
Prep Method	EPA 7470A	**Sample Type**	Method Blank			LCS		
		Prep Date	07/05/2014 08:00			07/05/2014 08:00		
		Analytical Date	07/10/2014 10:15			07/10/2014 10:17		
		Matrix	Water			Water		
EPA 7470A		**Units**	mg/L	**Spike**	**Result**		**Control**	
		Result	**RDL**	**Added**		**% R**	**Limits % R**	
7439-97-6	Mercury	ND	0.00020	0.0050	0.0042	84	80 - 120	

Analytical Batch	536500	**Client ID**	LL-12768 (TCLP)			1334214MS			1334214MSD			
Prep Batch	536080	**GCAL ID**	21407025801			1334835			1334836			
Prep Method	EPA 7470A	**Sample Type**	SAMPLE			MS			MSD			
		Prep Date	07/05/2014 08:00			07/05/2014 08:00			07/05/2014 08:00			
		Analytical Date	07/10/2014 10:18			07/10/2014 10:20			07/10/2014 10:22			
		Matrix	Solid			Solid			Solid			
EPA 7470A		**Units**	mg/L	**Spike**	**Result**		**Control**	**Result**			**RPD**	
		Result	**RDL**	**Added**		**% R**	**Limits % R**		**% R**	**RPD**	**Limit**	
7439-97-6	Mercury	0.00078	0.00020	0.0050	0.0047	**79***	80 - 120	0.0048	81	2	20	

GCAL ANALYTICAL LABORATORIES, LLC

CHAIN OF CUSTODY RECORD

7979 Innovation Park Dr., Baton Rouge, LA 70820-7402
Phone: 225.769.4900 • Fax: 225.767.5717 • www.gcal.com

Client ID: 4449 - Tetra Tech
SDG: 214070229
Due Date: 07/10/14

GCAL USE ONLY

Report to:	**Bill to:**
Client: Tetra Tech	Client: Tetra Tech
Address: 1955 Evergreen Blvd	Address:
Contact: Jessica Vickers	Contact:
Phone: 662-681-5727	Phone:
E-mail: Jessica.Vickers@tetratech.com	E-mail:

P.O. Number

Project Name/Number: GWCC

Sampled By: Chris Jones

Analytical Requests & Method

GCAL use only:
Custody Seal used ☑ yes ☐ no
intact ☑ yes ☐ no
Temperature °C 3.5 EC

☐ Dissolved Analysis Requested
☐ Field filtered
☐ Lab filtered

Matrix[1]	Date	Time (2400)	Comp	Grab	Sample Description	No Containers	TAL Metals HWS	PAH W4	Preservative
W	6-30	1240			MM-03	3	✓	✓	1
W	6-30	1420			MWC-1A	3	✓	✓	2

Air Bill No: 7704 7693 0800

Turn Around Time (Business Days): ☐ 24h* ☐ 48h* ☐ 3 days* ☐ 1 week* ☐ Standard (Per Contract/Quote)

Relinquished by: (Signature)	Date:	Time:	Received by: (Signature)	Date:	Time:
[signature]	7/1/14		[signature] ANCT	7/1/14	12:35
[signature]		1110	[signature]	7/1/14	1110

Note:

By submitting these samples, you agree to GCAL's terms and conditions contained in our most recent schedule of services.

Matrix[1]: W = water, S = solid, L = liquid, T = tissue

*Requires prior approval, rush charges may apply.

We cannot accept verbal changes. Please email written changes to your PM.

WHITE: CLIENT FINAL REPORT - CANARY: CLIENT

GCAL ANALYTICAL LABORATORIES, LLC

SAMPLE RECEIVING CHECKLIST

214070229

SAMPLE DELIVERY GROUP 214070229	
Client 4449 - Tetra Tech	**Transport Method** FEDEX
Profile Number 237642	**Received By** Saucier, Charlotte M.
Line Item(s) 1 - Water	**Receive Date(s)** 07/02/14

CHECKLIST	YES	NO	NA
Were all samples received using proper thermal preservation?	☑	☐	☐
When used, were all custody seals intact?	☑	☐	☐
Were all samples received in proper containers?	☑	☐	☐
Were all samples received using proper chemical preservation?	☑	☐	☐
Was preservative added to any container at the lab?	☐	☑	☐
Were all containers received in good condition?	☑	☐	☐
Were all VOA vials received with no head space?	☐	☐	☑
Do all sample labels match the Chain of Custody?	☑	☐	☐
Did the Chain of Custody list the sampling technician?	☑	☐	☐
Was the COC maintained i.e. all signatures, dates and time of receipt included?	☑	☐	☐

COOLERS

Airbill	Thermometer ID: E22	Temp(°C)
7704 7693 0800		3.5

DISCREPANCIES

None

LAB PRESERVATIONS

None

NOTES

ACCUTEST GULF COAST
500 AMBASSADOR CAFFERY PARKWAY
SCOTT, LA 70583
(337) 237-4775

Case Narrative for:

GULF COAST ANALYTICAL LAB

Certificate of Analysis Number:

L0045213

Report To:		Project Name:	214070229
GULF COAST ANALYTICAL LAB		Site:	GCAL
SEAN HARDIN		Site Address:	
7979 GSRI AVE			
BATON ROUGE		PO Number:	SMH-070814
LA		State:	Louisiana
70820-		State Cert. No.:	02048
ph: (225) 769-4900	fax: (225) 767-5717	Date Reported:	7/18/2014

Matrix spike (MS) and matrix spike duplicate (MSD) samples are chosen and tested at random from an analytical batch of "like" matrix to check for possible matrix effect. The MS and MSD will provide site specific matrix data for those samples spiked by the laboratory and may be applicable to other samples of similar matrix from the site. Since the MS and MSD are chosen at random from an analytical batch, the sample chosen for spike purposes may or may not have been a sample submitted in this sample delivery group.

The validity of the analytical procedures for which data is reported in this analytical report is determined by the Laboratory Control Sample (LCS) and the Method Blank (MB). The Laboratory Control Sample (LCS) and the Method Blank (MB) are processed with the samples and the MS/MSD to ensure method criteria are achieved throughout the entire analytical process. If insufficient sample is supplied for MS/MSD, a Laboratory Control Sample (LCS) and a Laboratory Control Sample Duplicate (LCSD) are reported with the analytical batch and serve as the batch quality control (QC).

Any other exceptions associated with this report will be footnoted in the analytical result page(s) or the quality control summary page(s).

Please do not hesitate to contact us if you have any questions or comments pertaining to this data report. Please reference the above Certificate of Analysis Number.

This report shall not be reproduced except in full, without the written approval of the laboratory. The reported results are only representative of the samples submitted for testing.

Accutest Gulf Coast is pleased to be of service to you. We anticipate working with you in fulfilling all your current and future analytical needs.

Christina Larriviere

Christina Larriviere
Project Manager

7/18/2014
Date

Test results meet all requirements of NELAC, unless specified in the narrative.

Version 2.1 - Modified February 11, 2011

ACCUTEST GULF COAST
500 AMBASSADOR CAFFERY PARKWAY
SCOTT, LA 70583
(337) 237-4775

GULF COAST ANALYTICAL LAB

Certificate of Analysis Number:

L0045213

Report To: GULF COAST ANALYTICAL LAB
SEAN HARDIN
7979 GSRI AVE

BATON ROUGE
LA
70820-
ph: (225) 769-4900 fax: (225) 767-5717

Fax To:

Project Name: 214070229
Site: GCAL
Site Address:

PO Number: SMH-070814
State: Louisiana
State Cert. No.: 02048
Date Reported: 7/18/2014

Client Sample ID	Lab Sample ID	Matrix	Date Collected	Date Received	COC ID	HOLD
MM-03	L0045213-01	Water	06/30/2014 12:40	7/8/2014 3:20:00 PM		☐
MWC-1A	L0045213-02	Water	06/30/2014 14:20	7/8/2014 3:20:00 PM		☐

Christina Larriviere
Project Manager

7/18/2014
Date

Ron Benjamin
Laboratory Director

Karen Rodrigue-Varnado
Quality Assurance Officer

ACCUTEST GULF COAST
500 AMBASSADOR CAFFERY PARKWAY
SCOTT, LA 70583
(337) 237-4775

Client Sample ID: MM-03 **Collected:** 06/30/2014 12:40 **Lab Sample ID:** L0045213-01

Site: GCAL

Analyses/Method	Result	QUAL	Rep.Limit	Dil. Factor	Date Analyzed	Analyst	Seq. #
TOTAL METALS BY METHOD 6010C (WATER)				**MCL**	**SW6010C**	**Units: mg/L**	
Aluminum	ND		0.2	1	07/16/14 13:58	JNS	5636981
Antimony	ND		0.006	1	07/16/14 13:58	JNS	5636981
Arsenic	ND		0.005	1	07/16/14 13:58	JNS	5636981
Barium	0.108		0.01	1	07/16/14 13:58	JNS	5636981
Beryllium	ND		0.004	1	07/16/14 13:58	JNS	5636981
Cadmium	ND		0.004	1	07/16/14 13:58	JNS	5636981
Calcium	24.1		0.01	1	07/16/14 13:58	JNS	5636981
Chromium	ND		0.01	1	07/16/14 13:58	JNS	5636981
Cobalt	0.0135		0.01	1	07/16/14 13:58	JNS	5636981
Copper	ND		0.02	1	07/16/14 13:58	JNS	5636981
Iron	ND		0.2	1	07/16/14 13:58	JNS	5636981
Lead	ND		0.005	1	07/16/14 13:58	JNS	5636981
Magnesium	4.88		0.03	1	07/16/14 13:58	JNS	5636981
Manganese	0.235		0.015	1	07/16/14 13:58	JNS	5636981
Molybdenum	ND		0.03	1	07/16/14 13:58	JNS	5636981
Nickel	ND		0.01	1	07/16/14 13:58	JNS	5636981
Potassium	2.51		0.5	1	07/16/14 13:58	JNS	5636981
Selenium	ND		0.01	1	07/16/14 13:58	JNS	5636981
Silver	ND		0.005	1	07/16/14 13:58	JNS	5636981
Sodium	10.2		1	1	07/16/14 13:58	JNS	5636981
Thallium	ND		0.005	1	07/16/14 13:58	JNS	5636981
Vanadium	ND		0.01	1	07/16/14 13:58	JNS	5636981
Zinc	0.0235		0.02	1	07/16/14 13:58	JNS	5636981

Prep Method	Prep Date	Prep Initials	Prep Factor
SW3010A	07/09/2014 14:00	LAB	1.00

Qualifiers:

ND/U - Not Detected at the Reporting Limit
B - Analyte Detected In The Associated Method Blank
* - Surrogate Recovery Outside Advisable QC Limits
J - Estimated value between MDL and PQL
E - Estimated Value exceeds calibration curve
TNTC - Too numerous to count
>MCL - Result Over Maximum Contamination Limit(MCL)
D - Surrogate Recovery Unreportable due to Dilution
MI - Matrix Interference

ACCUTEST GULF COAST
500 AMBASSADOR CAFFERY PARKWAY
SCOTT, LA 70583
(337) 237-4775

Client Sample ID: MWC-1A **Collected:** 06/30/2014 14:20 **Lab Sample ID:** L0045213-02

Site: GCAL

Analyses/Method	Result	QUAL	Rep.Limit	Dil. Factor	Date Analyzed	Analyst	Seq. #
TOTAL METALS BY METHOD 6010C (WATER)				**MCL**	**SW6010C**	**Units: mg/L**	
Aluminum	ND		0.2	1	07/16/14 14:08	JNS	5636987
Antimony	ND		0.006	1	07/16/14 14:08	JNS	5636987
Arsenic	ND		0.005	1	07/16/14 14:08	JNS	5636987
Barium	0.0442		0.01	1	07/16/14 14:08	JNS	5636987
Beryllium	ND		0.004	1	07/16/14 14:08	JNS	5636987
Cadmium	ND		0.004	1	07/16/14 14:08	JNS	5636987
Calcium	25.7		0.8	1	07/16/14 14:08	JNS	5636987
Chromium	ND		0.01	1	07/16/14 14:08	JNS	5636987
Cobalt	ND		0.01	1	07/16/14 14:08	JNS	5636987
Copper	ND		0.02	1	07/16/14 14:08	JNS	5636987
Iron	ND		0.2	1	07/16/14 14:08	JNS	5636987
Lead	ND		0.005	1	07/16/14 14:08	JNS	5636987
Magnesium	3.63		0.2	1	07/16/14 14:08	JNS	5636987
Manganese	0.721		0.015	1	07/16/14 14:08	JNS	5636987
Molybdenum	ND		0.03	1	07/16/14 14:08	JNS	5636987
Nickel	ND		0.04	1	07/16/14 14:08	JNS	5636987
Potassium	1.61		0.5	1	07/16/14 14:08	JNS	5636987
Selenium	ND		0.01	1	07/16/14 14:08	JNS	5636987
Silver	ND		0.005	1	07/16/14 14:08	JNS	5636987
Sodium	7.73		1	1	07/16/14 14:08	JNS	5636987
Thallium	ND		0.02	1	07/16/14 14:08	JNS	5636987
Vanadium	ND		0.01	1	07/16/14 14:08	JNS	5636987
Zinc	ND		0.02	1	07/16/14 14:08	JNS	5636987

Prep Method	Prep Date	Prep Initials	Prep Factor
SW3010A	07/09/2014 14:00	LAB	1.00

Qualifiers:

ND/U - Not Detected at the Reporting Limit
B - Analyte Detected In The Associated Method Blank
* - Surrogate Recovery Outside Advisable QC Limits
J - Estimated value between MDL and PQL
E - Estimated Value exceeds calibration curve
TNTC - Too numerous to count
>MCL - Result Over Maximum Contamination Limit(MCL)
D - Surrogate Recovery Unreportable due to Dilution
MI - Matrix Interference

Quality Control Documentation

ACCUTEST GULF COAST
500 AMBASSADOR CAFFERY PARKWAY
SCOTT, LA 70583
(337) 237-4775

Quality Control Report

GULF COAST ANALYTICAL LAB

214070229

Analysis: Total Metals by Method 6010C (water) **WorkOrder:** L0045213
Method: SW6010C **Lab Batch ID:** 133320

Method Blank

RunID: ICP7300DV_140716A-5636979 Units: mg/L
Analysis Date: 07/16/2014 13:55 Analyst: JNS
Preparation Date: 07/09/2014 14:00 Prep By: LAB Method: SW3010A

Samples in Analytical Batch:

Lab Sample ID	Client Sample ID
L0045213-01A	MM-03
L0045213-02A	MWC-1A

Analyte	Result	Rep Limit
Aluminum	ND	0.2
Antimony	ND	0.006
Arsenic	ND	0.005
Barium	ND	0.01
Beryllium	ND	0.004
Cadmium	ND	0.004
Calcium	ND	0.01
Chromium	ND	0.01
Cobalt	ND	0.01
Copper	ND	0.02
Iron	ND	0.2
Lead	ND	0.005
Magnesium	ND	0.03
Manganese	ND	0.015
Molybdenum	ND	0.03
Nickel	ND	0.01
Potassium	ND	0.5
Selenium	ND	0.01
Silver	ND	0.005
Sodium	ND	1
Thallium	ND	0.005
Vanadium	ND	0.01
Zinc	ND	0.02

Laboratory Control Sample (LCS)

RunID: ICP7300DV_140716A-5636 Units: mg/L
Analysis Date: 07/16/2014 13:57 Analyst: JNS
Preparation Date: 07/09/2014 14:00 Prep By: LAB Method: SW3010A

Analyte	Spike Added	Result	Percent Recovery	Lower Limit	Upper Limit
Aluminum	1.000	0.9511	95.11	80	120
Antimony	1.000	1.011	101.1	80	120
Arsenic	1.000	1.001	100.1	80	120
Barium	1.000	1.031	103.1	80	120

Qualifiers:

ND/U - Not Detected at the Reporting Limit
B - Analyte Detected In The Associated Method Blank
J - Estimated Value Between MDL And PQL
E - Estimated Value exceeds calibration curve
MI - Matrix Interference
D - Recovery Unreportable due to Dilution
* - Recovery Outside Advisable QC Limits
N/C - Not Calculated - Sample concentration is greater than 4 times the amount of spike added. Control limits do not apply.
TNTC - Too numerous to count

QC results presented on the QC Summary Report have been rounded. RPD and percent recovery values calculated by the SPL LIMS system are derived from QC data prior to the application of rounding rules.

Version 2.1 - Modified February 11, 2011

ACCUTEST GULF COAST
500 AMBASSADOR CAFFERY PARKWAY
SCOTT, LA 70583
(337) 237-4775

Quality Control Report

GULF COAST ANALYTICAL LAB

214070229

Analysis: Total Metals by Method 6010C (water) **WorkOrder:** L0045213
Method: SW6010C **Lab Batch ID:** 133320

Laboratory Control Sample (LCS)

RunID: ICP7300DV_140716A-5636 Units: mg/L
Analysis Date: 07/16/2014 13:57 Analyst: JNS
Preparation Date: 07/09/2014 14:00 Prep By: LAB Method: SW3010A

Analyte	Spike Added	Result	Percent Recovery	Lower Limit	Upper Limit
Beryllium	1.000	0.9777	97.77	80	120
Cadmium	1.000	1.038	103.8	80	120
Calcium	1.000	1.050	105.0	80	120
Chromium	1.000	1.038	103.8	80	120
Cobalt	1.000	1.064	106.4	80	120
Copper	1.000	1.026	102.6	80	120
Iron	1.000	1.026	102.6	80	120
Lead	1.000	1.031	103.1	80	120
Magnesium	1.000	1.004	100.4	80	120
Manganese	1.000	1.019	101.9	80	120
Molybdenum	1.000	1.067	106.7	80	120
Nickel	1.000	1.049	104.9	80	120
Potassium	10.00	10.53	105.3	80	120
Selenium	1.000	1.041	104.1	80	120
Silver	1.000	1.056	105.6	80	120
Sodium	10.00	10.51	105.1	80	120
Thallium	1.000	1.009	100.9	80	120
Vanadium	1.000	1.022	102.2	80	120
Zinc	1.000	1.035	103.5	80	120

Matrix Spike (MS) / Matrix Spike Duplicate (MSD)

Sample Spiked: L0045213-01
RunID: ICP7300DV_140716A-5636 Units: mg/L
Analysis Date: 07/16/2014 14:01 Analyst: JNS
Preparation Date: 07/09/2014 14:00 Prep By: LAB Method: SW3010A

Qualifiers:

ND/U - Not Detected at the Reporting Limit
B - Analyte Detected In The Associated Method Blank
J - Estimated Value Between MDL And PQL
E - Estimated Value exceeds calibration curve
MI - Matrix Interference
D - Recovery Unreportable due to Dilution
* - Recovery Outside Advisable QC Limits
N/C - Not Calculated - Sample concentration is greater than 4 times the amount of spike added. Control limits do not apply.
TNTC - Too numerous to count

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Version 2.1 - Modified February 11, 2011

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500 AMBASSADOR CAFFERY PARKWAY
SCOTT, LA 70583
(337) 237-4775

Quality Control Report

GULF COAST ANALYTICAL LAB

214070229

Analysis: Total Metals by Method 6010C (water) **WorkOrder:** L0045213
Method: SW6010C **Lab Batch ID:** 133320

Analyte	Sample Result	MS Spike Added	MS Result	MS % Recovery	MSD Spike Added	MSD Result	MSD % Recovery	RPD	RPD Limit	Low Limit	High Limit
Aluminum	ND	1	0.9789	97.89	1	0.9543	95.43	2.551	20	75	125
Antimony	ND	1	1.050	105.0	1	1.012	101.2	3.663	20	75	125
Arsenic	ND	1	1.047	104.7	1	1.007	100.7	3.959	20	75	125
Barium	0.1083	1	1.165	105.7	1	1.133	102.5	2.843	20	75	125
Beryllium	ND	1	1.024	102.4	1	1.003	100.3	2.147	20	75	125
Cadmium	ND	1	1.057	105.7	1	1.021	102.1	3.408	20	75	125
Calcium	24.10	1	25.16	N/C	1	25.57	N/C	N/C	20	75	125
Chromium	ND	1	1.058	105.6	1	1.027	102.6	2.927	20	75	125
Cobalt	ND	1	1.103	108.9	1	1.066	105.2	3.425	20	75	125
Copper	ND	1	1.041	104.1	1	1.005	100.5	3.527	20	75	125
Iron	0.1840	1	1.243	105.9	1	1.218	103.4	2.029	20	75	125
Lead	ND	1	1.063	106.0	1	1.028	102.5	3.345	20	75	125
Magnesium	ND	1	6.079	N/C	1	5.991	N/C	N/C	20	75	125
Manganese	0.2352	1	1.286	105.1	1	1.262	102.7	1.913	20	75	125
Molybdenum	ND	1	1.079	107.8	1	1.050	104.9	2.722	20	75	125
Nickel	ND	1	1.067	106.7	1	1.038	103.8	2.747	20	75	125
Potassium	ND	10	13.86	113.5	10	13.56	110.6	2.140	20	75	125
Selenium	ND	1	1.089	108.3	1	1.053	104.7	3.377	20	75	125
Silver	ND	1	1.070	107.0	1	1.035	103.5	3.304	20	75	125
Sodium	10.15	10	20.35	101.9	10	20.45	103.0	0.4998	20	75	125
Thallium	ND	1	1.039	103.9	1	0.9954	99.54	4.290	20	75	125
Vanadium	ND	1	1.036	103.6	1	0.9990	99.90	3.644	20	75	125
Zinc	0.02345	1	1.086	106.3	1	1.057	103.3	2.753	20	75	125

Qualifiers:
ND/U - Not Detected at the Reporting Limit
B - Analyte Detected In The Associated Method Blank
J - Estimated Value Between MDL And PQL
E - Estimated Value exceeds calibration curve
MI - Matrix Interference
D - Recovery Unreportable due to Dilution
* - Recovery Outside Advisable QC Limits
N/C - Not Calculated - Sample concentration is greater than 4 times the amount of spike added. Control limits do not apply.
TNTC - Too numerous to count

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7/18/2014 1:25:47 PM

Version 2.1 - Modified February 11, 2011

Sample Receipt Checklist

And

Chain of Custody

ACCUTEST GULF COAST
500 AMBASSADOR CAFFERY PARKWAY
SCOTT, LA 70583
(337) 237-4775

Sample Receipt Checklist

Workorder:	**L0045213**	Received By:	**MAR**
Date and Time Received:	**7/8/2014 3:20:00 PM**	Carrier name:	**Client Drop Off**
Temperature:	**3.3°C**	Chilled by:	**Water Ice**

1.	**Shipping container/cooler in good condition?**	Yes	☑	No	☐	Not Present ☐
2.	**Custody seals intact on shippping container/cooler?**	Yes	☐	No	☐	Not Present ☑
3.	**Custody seals intact on sample bottles?**	Yes	☐	No	☐	Not Present ☑
4.	**Chain of custody present?**	Yes	☑	No	☐	
5.	**Chain of custody signed when relinquished and received?**	Yes	☑	No	☐	
6.	**Chain of custody agrees with sample labels?**	Yes	☑	No	☐	
7.	**Samples in proper container/bottle?**	Yes	☑	No	☐	
8.	**Sample containers intact?**	Yes	☑	No	☐	
9.	**Sufficient sample volume for indicated test?**	Yes	☑	No	☐	
10.	**All samples received within holding time?**	Yes	☑	No	☐	
11.	**Container/Temp Blank temperature in compliance?**	Yes	☑	No	☐	
12.	**Water - VOA vials have zero headspace?**	Yes	☐	No	☐	VOA Vials Not Present ☑
13.	**Water - Preservation checked upon receipt (except VOA*)?**	Yes	☑	No	☐	Not Applicable ☐

***VOA Preservation Checked After Sample Analysis**

Accutest Representative: _____ **Contact Date & Time:** _____

Client Name Contacted: _____

Non Conformance Issues: _____

Client Instructions: _____

GCAL
ANALYTICAL LABORATORIES, LLC
7979 INNOVATION PARK DR, BATON ROUGE LA 70820-7402
(225) 769-4900 FAX (225) 767-5717

L0045213

Chain of Custody Record

Submitted by
Client: Gulf Coast Analytical Labs
Address: 7979 Innovation Park Dr.
Baton Rouge LA 70820
Contact: Sean Hardin
Phone: 225-769-4900
Fax: 225-767-5717

Bill to
Client: Gulf Coast Analytical Labs
Address: 7979 Innovation Park Dr.
Baton Rouge LA 70820
Contact: Sean Hardin
Phone: 225-769-4900
Fax: 225-767-5717

P.O. Number: SMH-070814
Project Name/Number: 214070229
Sampled By:

Matrix	Date	Time (2400)	Comp	Grab	Sample Description	Pre-servatives	No. Containers	Metals by 6010C (analyte list attached)	Lab ID
W	6/30/2014	12:40		X	MM-03	HNO3	1	X	21407022901
W	6/30/2014	14:20		X	MWC-1A	HNO3	1	X	21407022902

Analysis Requested

* Our P. O. Number must appear on the Invoice.

* Our Project Number must appear on the final report.

Remarks:

Client d/o (3W)
Nocsloc Temp: 3.3 DW. 250R

Turn Around Time: 24 - 48 hrs | 3 days | 1 week | X standard | other

Relinquished by: (Signature)	Received by: (Signature)	Date:	Time:
	John Fowler	7/5/14	14:15
John Fowler	Mark Red	7.5.14	15:20

Note:
EDD Required:
Please email results to sean.hardin@gcal.com
PLEASE RETURN ICE CHESTS TO 7979 Innovation Park Dr.

Matrix: W = water, S=Soil, SD=Solid, L=Liquid, SL=Sludge, O=Oil, CT=Charcoal Tube, OVM=Organic Vapor Monitor, XT=XAD Tube, A=Air Bag, SUM=Summa Canister