

APPENDIX J
ICON EXPERT REPORT



Environmental Services, Inc

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**Subject: Expert Report and Restoration Plan for the Landowners
August J. Levert, Jr. Family, LLC, et al v BP America Production
Company; Docket No. 78953; 18th JDC, Division “A”; Grand River
Field, Iberville Parish, Louisiana**

Dear Mr. Huddell,

ICON Environmental Services, Inc. (ICON) is pleased to present this report that summarizes the results of environmental assessment at the subject property, and includes a restoration plan to address contaminated soil and groundwater. For your convenience, please find attached to this letter:

- Figure 1 Site Location Map
- Figure 2 NRCS Soil Map
- Figure 3 Geologic Map
- Figure 4 USFWS Wetlands Map
- Figure 5 Topographic LIDAR Elevation Contours
- Figure 6 Cross Section Diagram
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QUALIFICATIONS, AREAS OF EXPERTISE, AND COMPENSATION

Gregory Miller obtained a bachelor of science in geology from the University of Southwestern Louisiana in 1982, and has been employed as a professional geologist since 1983. He worked in the oil and gas industry as a core and log analyst from 1983 to 1986. Since that time, he has worked in the environmental industry in the northeast United States from 1986 to 1990, and in the Gulf Coast since 1990. Mr. Miller has been recognized in State and Federal courts as an expert in the fields of geology, hydrogeology, site assessment, implementation of the Louisiana RECAP protocol, regulatory compliance, and remediation. Mr. Miller is the president and an owner of ICON Environmental Services, Inc. (ICON), and holds the State License Board of Contractor's License #35504 for ICON with specialization in hazardous materials site remediation. Mr. Miller holds License Number 939 from the Louisiana Board of Professional Geoscientists. ICON holds License #4001 from the Louisiana Professional Engineering and Land Surveying Board to provide professional engineering services in the State of Louisiana.



Mr. Wayne Prejean, P.E. obtained a bachelor of science in environmental engineering from Louisiana State University in 1999, and has worked as an environmental consultant since 1999. Mr. Prejean has been recognized in State courts as an expert in the fields of environmental engineering, environmental site assessment and remediation. Mr. Prejean is currently senior engineer at ICON Environmental Services, Inc. (ICON), and holds license #32502 to provide professional engineering services in Louisiana.

Mr. Jason Sills obtained a bachelor of science in environmental engineering from Louisiana State University in 2000, and has worked as an environmental consultant since 2000. Mr. Sills is currently senior engineer at ICON Environmental Services, Inc and holds certification as Engineering Intern with EI No. 20568. Mr. Sills has been recognized in State court as an expert in the fields of site assessment and remediation.

A copy of resumes and list of testimony experience is included in **Appendix D**.

ASSESSMENT OVERVIEW

Assessment activities included the following tasks:

- Public files available at the Louisiana Department of Natural Resources, Office of Conservation (LDNR-OC) were reviewed, including oil and gas files.
- Historical aerial photographs were reviewed.
- Data from previous assessment at the adjacent property were reviewed and incorporated into the current assessment. That data was included in the report entitled: “*Report of Environmental Assessment and Remediation Plan, State of Louisiana and Iberville Parish School Board v BP America Production Company, et al; Docket No. 72605, 28th JDC, Division “A”; Grand River Field, Iberville Parish, LA, December 1, 2015*”.
- Terrain conductivity survey was performed in June through August 2019 using a Geophex GEM-2 variable frequency conductivity meter. The instrument utilizes a transmitter coil and a receiver coil separated by about 5.5 feet, and contains a third “bucking coil” that removes the primary field from the receiver coil. The instrument utilizes a programmable variable frequency transmitter. In general, the instrument has a deeper effective depth of investigation at lower frequencies (1170 hz), and a relatively shallower depth of investigation at higher frequencies (13590 hz). The instrument was programmed to collect data at a time constant of approximately one second. The primary data are recorded as part per million (ppm) ratio of the secondary magnetic field to the primary magnetic field in phase and quadrature mode. Computer software is used to convert ppm data to apparent conductivity, based on the assumption that the earth below the sensor is represented by a homogeneous and isotropic half-space. The algorithm used for conversion is based on the Hankel transformation integration of a first-order Bessel function. The resulting apparent conductivity data are in units of millisiemens/meter.

The instrument concurrently logs coordinates obtained from a GPS receiver, and all data are stored into an on-board computer. Data were imported into a Surfer contouring program used to plot transects of the surveys (**Figure 18**), and contours for each frequency calculated using the kriging algorithm. Resulting maps were imported into an AutoCAD basemap of the site, and scaled to real dimensions and superimposed onto a scaled aerial photograph included as **Figure 19** for the deeper lower frequency, and **Figure 20** for the shallower high frequency. The anomalies of greatest magnitude were seen at the former offsite two-celled production pit feature; central tank battery that straddles the IPSB property and the Levert property; and west of the Schwing-Levert #2 (sn123040) location.

- Soil and groundwater samples were collected using hand auger equipment or a hydraulic push rig from August 2019 through June 2022, and included the following tasks:
 - Soil samples were collected using a hand auger and/or a Geoprobe hydraulic direct-push rig mounted tracked rig, advancing a Geoprobe Dual-Tube Core Sampling system with dedicated liner. The dual tube system simultaneously advances an outer casing and an inner core barrel with an acetate liner for soil sample recovery in four-foot lengths. Once the base of the cored interval is reached, the core barrel with sample and liner are withdrawn while leaving the outer casing in place. A new liner is inserted in the core barrel and lowered to the base of the outer casing, and both strings are advanced another four feet. Thus, the coring process proceeds through a cased hole, allowing soil sampling through perched groundwater or unconsolidated zones, and prevents downward cross-contamination from previously sampled intervals. Samples were submitted to Element Laboratories, Inc, Lafayette, LA for laboratory analysis of heavy metals, TPH-Diesel and TPH-Oil (Method 8015b), electrical conductivity (29B), ESP, SAR, CEC, leachate chloride, HEM Oil & Grease, and percent moisture. The data is summarized in **Table 2**. Boring Logs are included in **Appendix A**.
 - Groundwater samples were collected in September 2019 and June 2022 from ¾-inch diameter PVC wells incorporating 5 or 10-foot long screens, installed by pushing the well within a barrel with an expendable tip to the desired interval and withdrawing the barrel while keeping the well in place. A clean commercial filter sock was placed over the screened portion of the well. Groundwater samples were collected using a peristaltic pump with dedicated polyethylene tubing. Wells were purged prior to sampling using the same dedicated tubing used for purging. Field parameters were measured while purging (specific conductance, temperature, pH, oxidation-reduction potential and turbidity). Once field parameters stabilized, the well was sampled within a 24-hour period by pumping with the peristaltic pump at a low flow rate. Groundwater samples were collected in laboratory-supplied containers with appropriate preservative, and were chilled in an ice chest during storage and shipment. Samples were submitted to Element Laboratories, Inc., Lafayette, LA for analysis of TPH-Gasoline, TPH-Diesel and TPH-Oil (Method

8015b), BTEX (Method 8021), dissolved metals, chlorides, inorganic cations/anions, alkalinity, total dissolved solids (TDS); and to Pace Laboratories, Greensburg, Pennsylvania for radionuclide analysis. Each temporary well was plugged and abandoned after sampling groundwater. The data is summarized in **Table 4**.

- Selected monitoring wells on IPSB property were slug tested by pouring potable water into the well and monitoring head equilibration using a pressure transducer and data logger. Data were evaluated using a computer program using the Bouwer & Rice and Hvorslev methods. Slug test data can be found in **Appendix G**.

OPINIONS RELATED TO SOURCES AND MIGRATION OF CONTAMINATION

Documents relating to environmental conditions and contamination at the property (including historical aerial images, documents provided from discovery responses and obtained from regulatory agencies and available from public sources such as the USGS, and data from nearby ICON projects of a similar nature) were evaluated and were relied on in forming the opinions that follow.

1. The subject property is owned by August J. Levert, Jr. Family LLC, et al (Levert), and is comprised of approximately 55 acres in Section 15 T10S R11E in Iberville Parish, Louisiana and is depicted on Figure 1. The property is accessed via the Gulf Intracoastal Waterway, approximately one mile south of Jack Miller's Landing thence approximately two miles northwest via oilfield canals. The property lies within the Atchafalaya River Flood Basin and is subject to periodic seasonal flooding. A central gathering production facility with storage tank batteries was located on the Iberville Parish School Board (IPSB) property (Section 16) and approximately half of this facility extended offsite to the east onto the Levert property.

The topography across most of the property is flat with an elevation ranging from +3 to +4 feet NGVD with spoil bank piles exceeding +12 feet NAVD-88 (**Figure 2** – LIDAR Contours). Surficial drainage is southeasterly through the Upper Grand River within the Atchafalaya East Watershed. This drainage has been designated by the Louisiana Department of Environmental Quality (LDEQ), Water Quality Regulations (LAC 33:IX.1123) as Segment 120107 (Upper Grand River and Lower Flat River – Headwaters to Intracoastal Waterway) with designated uses of: a) primary contact recreation, b) secondary contact recreation, and c) propagation of fish and wildlife. Water quality criteria of this segment includes a limit of 250 mg/L for chlorides and 500 mg/L for total dissolved solids.

2. The NRCS maps the soils on the property shown on **Figure 2**, with the following soil type:

- Dowling Association (DO): Very poorly drained formed from clayey alluvium in fluvial meander scars that is frequently flooded.
3. A geologic map presented in **Figure 3** was prepared by the USGS/Louisiana Geological Society and maps the entire property as Hb: Holocene deposits of the Mississippi and Atchafalaya rivers, consisting of fine grained, usually clayey and often organically rich sediments that underlie flood basins between the meander belts. The area surrounding the property was mapped as Had: Distributary complex of the Atchafalaya River comprised of silty to sandy natural levee deposits.
 4. The U.S. Fish and Wildlife Service (USFWS) wetlands map indicates that entire property is wetlands. As shown on **Figure 4**, these wetlands are mapped as:
 - PF01C: Palustrine System (P) including nontidal wetlands dominated by trees and shrubs where salinity due to ocean derived salts is below 0.5 ppt, the class is (FO) forested characterized by (1) broad leaved deciduous woody angiosperms (trees or shrubs) with relatively wide flat leaves that are shed during the cold season; and water regime (C) which is seasonally flooded (surface water is present for extended periods especially early in the growing season, but is absent by the end of the growing season in most years) and special modifier.
 - PFO1/2C: Palustrine system of forested nontidal wetlands, with (1) broad-leaved deciduous trees and (2) needle-leaved deciduous trees (cypress), and water regime (C) that is seasonally flooded where surface water is present for extended periods especially early in the growing season but is absent by the end of the growing season most years.
 - PEM1F: Palustrine System (P) including nontidal wetlands dominated by trees and shrubs where salinity due to ocean derived salts is below 0.5 ppt, the class is (EM) Emergent characterized by erect, rooted, herbaceous hydrophytes which is present for most of the growing season in most years, usually dominated by perennial plants; Subclass (1) Persistent, with species that normally remain standing at least until the beginning of the next growing season; and water regime (F) that is semi-permanently flooded where surface water persists throughout the growing season in most years. When surface water is absent, the water table is usually at or very near the land surface.
 5. Site-specific boring data, geophysical logs and published sources show the following geology at the site (see **Figure 6** for cross section diagram):
 - 0 to ~12 feet below land surface – Surface CLAY and Silty CLAY with common zones of wood and organics
 - ~12 to to ~20 feet bls – Silty sand, sandy silt, silt, clayey silt, and silty clay, comprising a groundwater-bearing stratum herein termed the “*Shallow Aquifer*”. This stratum was likely deposited along a distributary of the Atchafalaya River system. A second groundwater-bearing silt was encountered between ~25 and ~33 feet bls that is likely in the same hydrostratigraphic unit as

the "Shallow Aquifer", and is separated by medium-stiff clay with wood layers.

- Gray medium stiff Clay with rootlets - A confining stratum of the Atchafalaya Aquifer (that is reported to be in hydraulic communication with the Mississippi River Alluvial Aquifer to the east and with the Chicot Aquifer to the west).
- ~100 feet bls - Atchafalaya Aquifer – Sand and gravel, comprising the principal aquifer utilized for water supply in the region. The top of the Atchafalaya Aquifer occurs at approximately 100 feet bls in this area, as reported in "*Technical Report S- 74-5, Geological Investigation of the Lower Red River – Atchafalaya Basin Area, by Smith and Russ, USCOE, July 1974, Lake Chicot Plate and Cross Sections*".

The base of the underground source of drinking water (USDW), defined by groundwater containing less than 10,000 mg/L total dissolved solids (TDS), was reported to occur at an approximate depth of 800 feet below land surface in the April 1969 Midwest SWD#1 permit application for the former IPSB#1 dry hole (sn89806).

2. Aquifer testing (slug test) on IPSB property was performed in wells SB1, SB9, and SB24 by rapidly introducing potable water into the well, and measuring the rate of head equilibration using a data logger. Hydraulic conductivity for the slug test was calculated using two methods: Hvorslev method and Bouwer and Rice method, with the aid of a computer program ("Super Slug"). Slug tests performed at the subject property yielded a geometric mean of hydraulic conductivity of 0.401 ft/day (**Table 6**).
6. Exploration for oil and gas on the subject property began with the Schwing-Levert No.1 well (sn120453) by Midwest Oil Corporation in 1967. The 1952 historical aerial image (**Figure 7**) shows the property before any oilfield canals had been constructed. The property is forested on this date with drainage features connecting to Sullivan's Lake, which extends onto the Levert property from the south.
7. A brief description of historical E&P operations is discussed as follows:
 - There are two well locations (Schwing-Levert #1 (sn120453) and the Schwing-Levert #2 (sn123040)) that were drilled on the property currently owned by the plaintiffs. The #1 well was perforated at 12,090-12,108' and had an initial production of 484 barrels per day of oil and 4,375 million cubic feet per day of gas. The #1 was dual completed in September 1967 (#1D sn121454). The dual completed #1D was perforated at 11,310-11,315' and initially produced 200 barrels a day oil and 167 million cubic feet per day of gas. The #1 and #1D were plugged and abandoned by Sun Resources, Inc. in August 1996. The #2 was drilled in February 1968 by Midwest Oil Corporation. The #2 was perforated at 11,809-11,811' and initially produced 420 barrels a day oil and 1,436 million cubic feet per day of gas. The #2 was plugged and abandoned by Sun Resources, Inc. in September 1997.
 - The general operator history for the property included the following companies:

- Midwest Oil Corporation drilled first well in 1967.
- Amoco Production Company in June 1974.
- Dazet Oil & Gas in January 1985.
- W & T Oil Properties, Inc. in September 1985.
- W & T Offshore, Inc. in December 1989.
- Houston Oil & Gas Company, Inc. in November 1991.
- Sunchase Exploration, Inc. in September 1992.
- Sun Resources, Inc. in January 1996.
- Historical aerial photographs show the following:
 - **1968 Aerial Image (Figure 8)**: This image shows oilfield access canals to the Schwing-Levert #1, #1D, and #2 well locations. Pits are visible west of the #1 and southwest of the #2 locations.
 - **1973 Aerial Image (Figure 9)**: A central gathering production facility is visible with the tank batteries located on IPSB property and extending onto the Levert property to the east. A two-celled pit is visible southwest of the tank battery on IPSB property. Flowlines are visible from producing wells to the central gathering facility. Vegetative stress is visible immediately south of the tank battery. A second pit is visible west of the Schwing-Levert #2 well.
 - **September 1973 Aerial Image (Figure 10)** This image shows features consistent with **Figure 9**, but a much larger area of vegetative stress is visible extending from the tank battery and production pit towards the IPSB #3 well (sn123767).
 - **1978 Aerial Image (Figure 11)**: This relatively poor quality image shows area of vegetative stress that extends east and south from tank battery.
 - **1980 Aerial Image (Figure 12)**: This image clearly shows the two-celled pit and area of vegetative stress south and southwest of the tank battery.
 - **1985 Aerial Image (Figure 13)**: A new slip has been dredged south of the production pit to allow drilling of the IPSB #1 well (sn199089), in an area that previously exhibited vegetative stress. This relatively poor quality image shows an area of stressed vegetation on IPSB and the Levert properties, extending south from the production facility and east of the production pit that is visible on the image.
 - **1989 Aerial Image (Figure 14)**: The pit next to tank battery is no longer visible and appears to have been backfilled recently. There is still an area south of the tank battery that has stressed vegetation.
 - **1998 Aerial Image (Figure 15)**: This image shows the area of vegetative stress that has been visible south of the tank battery is now flooded.

- **2004 Aerial Image (Figure 16):** The tank battery is no longer visible. The area of vegetative stress and other portions of the property exhibit open water areas where the tree canopy no longer exists.
 - **2014 Aerial Image (Figure 17):** This image shows features consistent with current site conditions. The open-water patches in areas of vegetative stress continue to persist in the image.
8. Groundwater flow direction in the Shallow Aquifer was determined using potentiometric map prepared using density-corrected head data (**Table 5**). Groundwater flow was determined by measuring depth to static groundwater level relative to the surveyed top of well casing elevation. Because of the presence of elevated concentrations of contamination by produced water, potentiometric data were corrected for density effects to properly evaluate groundwater flow. Hydraulic head is the measured depth to water in a well, and is a function of elevation head and pressure head. The pressure head of the water level in a well is a function of the density of the water and the gravitational constant. In lay terms, in an instance of two wells with the same potentiometric surface, the measured depth to water in a well with highly saline water will be greater as compared to the depth to fresh water in the other well. In order to properly evaluate groundwater flow potential, a groundwater flow regimen of variable density can be normalized using a reference density typically called the fresh water head (the imaginary equivalent column of water of equal density for all wells). Corrections were based on methods included in the publication "*Using Hydraulic Head Measurements in Variable-Density Ground Water Flow Analyses, Post, Kooi and Simmons, GROUND WATER, Vol 45, No.6, Nov-Dec 2007, Pp 664-671*", and corrected head is presented in units of equivalent fresh water head – EFWH). Groundwater flow in the shallow aquifer at the IPSB property was evaluated for one measurement date of September 30, 2015 (**Figure 23**), showing overall groundwater flow to the east. The hydraulic head at the former offsite production pit area (+1.09 feet at MW2) is similar to the surface water elevation (+1.90 feet), indicating a high likelihood of hydraulic connection between the Shallow Aquifer and surface water.
9. Results of ICON's soil and groundwater sampling at this site showed contamination by heavy metals, petroleum hydrocarbons and salt constituents that are caused by historical oil and gas exploration and production activities.
10. Soil constituents were compared to a calculated background value (applicable to lease restoration). Soil background values were calculated using sampling data collected from onsite and offsite locations. The offsite property which is also owned by the Levert family is located approximately 1.5 miles north of the subject property. The locations used to calculate background (LT-4, LT-5, LT-7, LT-8, and LT-9) are shown on **Figure 22**. Twenty-eight (28) soil samples from five (5) borings were used to calculate a background concentration for salinity and fourteen (14) soil samples were used to calculate background for heavy metals and sodicity (**Table 1**). Background was calculated as the arithmetic mean concentration plus two standard deviations, which

represents a 95% confidence interval for a normal distribution. Background values are included in the header and exceedances of these standards are shaded on **Table 2**. **Table 2** header also includes 29B Wetlands and RECAP Screening Standards but no concentrations were shaded when comparing to these additional standards.

11. The US EPA Soil Screening Guidance Technical Background Document (EPA 1996) provides the basis for evaluating the potential for contaminants to leach from soil to groundwater, and describe "*Migration of contaminants from soil to ground water can be envisioned as a two-stage process: 1) release of contaminant in soil leachate and 2) transport of the contaminant through the underlying soil and aquifer to a receptor well.*" The document discusses EPA's approach to modeling those processes as follows (pg 29 of EPA 1996):

- a. A standard linear equilibrium soil/water partition equation to estimate contaminant release in soil leachate (Equation 10: Soil Screening Level Partitioning Equation for Migration to Ground Water). This is used to calculate total soil concentrations (C_t) corresponding to soil leachate concentrations (C_w) using the equation included on Figure X. Using the EPA default assumptions for water filled porosity (0.3), dimensionless Henry's law constant (assumed zero for inorganics), and dry bulk density (1.5 kg/L); and a Kd for chloride of 0.1 ml/g ("*US EPA recommended using the RESRAD model [Derivation of Matrix Soil Standards for Salt under the BC Contaminated Sites Regulation, Addendum B: Protocol for the Estimation of Site-Specific Adsorption Coefficients, Doug Bright PhD, Royal Roads University Applied Research Division, February 18, 2002.]*"), the equation indicates that a soil chloride concentration of 75 mg/kg equates to a leachate concentration (C_w) of 250 mg/L (surface water quality limit for this area).
- b. The second part of the evaluation is a simple water-balance equation that calculates a dilution and attenuation factor (DAF) to account for dilution of soil leachate in an aquifer as it migrates to a receptor well, and a default DAF of 20 was selected by EPA for an AOI that is up to 0.5 acres in size. Therefore, applying this DAF results in a C_w of 5000 mg/L (250 mg/L*20) which corresponds to a soil chloride concentration of 1500 mg/kg.

Using the crossplot and regression equation in **Figure 31** indicates that 1500 mg/kg correlates to a soil EC of 6.0 mmhos/cm. This indicates that soil with an EC greater than 6.0 mmhos/cm represents a threat for leaching salts at unacceptable concentrations to underlying groundwater. Soils that represent a threat for leaching salts to the underlying aquifer are shown shaded in light red on **Figure 6**.

12. Sources of soil contamination consist of historical pits and surface discharges. The proposed soil restoration areas are shown on **Figure 32**.
13. Groundwater analysis results were compared to background constituent concentrations. Data from monitoring wells LT-4, LT-8, and LT-9 were used to represent background values for the Shallow Aquifer. Background was calculated as the arithmetic mean

concentration plus two standard deviations, which represents a 95% confidence interval for a normal distribution (**Table 3**). Background values are included in the header and exceedances of these standards are shaded on **Table 4**. **Table 4** header also includes RECAP Screening Standards, Secondary MCL, and USEPA Human Health Screening levels but no concentrations were shaded when comparing to these additional standards.

14. Groundwater exceedances of the calculated background limit are summarized as follows:
Background exceedances in the shallow aquifer include salts including TDS and Chlorides (**Figure 24**); petroleum hydrocarbons including TPH-Gasoline (**Figure 25**), TPH-Diesel (**Figure 26**), and TPH-Oil (**Figure 27**); heavy metals including barium (**Figure 28**), strontium (**Figure 29**), iron, manganese, sodium, zinc; and Radium 226-228 (**Figure30**).

RESTORATION PLAN

This plan is based on currently available data and was formulated to address:

- Restoration of soil by excavation (to a maximum depth of 8 feet below ground surface (bgs), to background standards for constituents of concern to satisfy expressed or implied lease obligations. The calculated background soil salinity was 1.00 mmhos/cm.
- Restoration of groundwater in the shallow aquifer (two options):
 - Restoration to background groundwater concentrations to meet expressed or implied lease obligations.
 - Restoration of groundwater chloride concentrations to 250 mg/L to meet surface water quality criteria.

Two versions of these options were considered: one considering offsite disposal of wastewater and one considering onsite disposal of wastewater in saltwater disposal wells (SWDs).

Methods to remediate soil and groundwater in the areas of investigation identified at the subject properties include the following elements:

Soil Restoration (Excavation)

The volume of impacted soil was calculated using soil sample laboratory data and areas were calculated using an engineering design computer program (AutoCadd). Soil restoration includes the following elements:

- Site preparation and access improvements for restoration activities, including clearing of trees and stumps, and grubbing of brush where needed.
- Sheet Piling will be used during excavation activities to help with any infiltration of surface waters and soil stability.
- Excavate any clean (compliant) overburden to stockpile. Excavate contaminated soil with marsh excavator into barges for offsite disposal. If water accumulates in

the excavation, dewatering will occur by digging a sump that is 2 feet deeper than the maximum planned excavation depth and pumping accumulated water into a holding tank.

- Barge transportation of material to an offsite commercial facility for disposal.
- Backfilling of excavated areas to land surface using stockpiled clean soils and/or clean soil from an offsite location.

Groundwater Restoration

Costs for restoration were developed for the groundwater remediation area associated with groundwater plume shown on the **Figures 24 through 30**. The restoration plan for contaminated groundwater in the shallow aquifer at this site includes pumping contaminated water to the target remedial standards, and treating recovered contaminated groundwater by volume reduction using a treatment train that includes air stripping, physical filtration, chemical dosing, anti-scaling, pH adjustment, and RO to remove chlorides, TDS, metals and to concentrate the volume (the estimate for the RO treatment systems were prepared using specifications provided by Pure Aqua, Inc., for a similar project.). The RO systems are designed to operate at 30% recovery; approximately 30% of the recovered groundwater volume will be discharged onsite for soil flushing. Super-concentrated wastewater, or retentate, (approximately 70% of the original feed volume) from RO treatment will be stored in tanks onsite, pending disposal. Disposal costs were developed considering onsite injection of retentate into two saltwater disposal wells (SWD's). Costs to remediate groundwater were evaluated as follows:

- The average contaminant concentration in groundwater was used as the initial concentration for modeling.
- The yield, radius of influence and drainage area for recovery wells was calculated to arrive at an optimum well spacing, recovery rate and number of recovery wells applicable to the geometry of the aquifer and site. The Theis non-equilibrium equation was used to predict yield and radius of influence from a 4-inch diameter recovery well using:
 - The average aquifer thickness within each plume,
 - The site-wide average hydraulic conductivity, based on the geometric mean of slug test data.
 - A storativity of 0.1.
 - The average available drawdown within each plume

The radius of influence was read from the Theis sheets at the approximate 0.5 ft drawdown distance. The resulting calculations are included on the summary sheets in **Appendix G**.

- A sensitivity analysis was performed to calculate the number of aquifer pore volume flushes required to achieve remedial goals, based on the volume of the plume, the groundwater recovery rate, and starting and ending contaminant

concentration. Pore volume flushing calculations were based on algorithms presented in EPA's "*Design Guidelines for Conventional Pump-and-Treat Systems, EPA/540/S-97/504, September 1997*". The time required to achieve target remedial goals at the site was then derived based on the number of pore volumes required to achieve remedial goals and the groundwater recovery rate. This is a conservative approach, as some studies suggest that four (4) pore volume flushes are required based on the ideal advective-dispersive equation, and as many as 10 pore volume flushes may be needed in non-ideal aquifers due to the tailing effect, as interstitial clays desorb contaminants to the groundwater (*Evaluation of Simple Methods for Estimating Contaminant Removal by Flushing, Brusseau, Ground Water, Vol 34, No. 1, Jan-Feb 1996*).

This methodology is sufficient to estimate the cost of groundwater remediation for cost estimation purposes. Actual system design will be determined after installation of recovery wells, long-term (7-day) pumping tests, groundwater modeling and system engineering and optimization.

Restoration Cost Estimate

Estimated costs for site remediation were prepared assuming the following common elements:

- Disposal costs for soil and sediment were estimated based on the waste being classified as Exploration and Production Waste (E&P Waste) and considering offsite disposal at a licensed commercial E&P disposal facility (R360 Environmental Solutions in Bateman Island, LA). A soil disposal cost of \$22.00 per barrel was provided by R360. Costs for excavation, earthwork, site preparation, transportation and backfilling under this option were calculated from unit price data included in *Heavy Construction Costs with RSMeans Data, 36th Edition (2022)*, and include material, equipment and labor. The RS Means publication includes comprehensive construction cost data and is listed in the Louisiana Department of Natural Resources (LDNR) document, *Permitting Requirements and Procedures Guidance Document for Commercial Exploration and Production Waste Facilities and Transfer Stations (March 2010)* as the preferred reference for estimating closure and post-closure costs for E&P facilities. Individual unit prices (including overhead and profit) for each task were obtained from categorized tables in the RS Means publication and summarized to provide a unit rate for this estimate. Barge transportation rates were obtained from Zealous Energy Services in Breaux Bridge, LA. Costs are itemized on tables in **Appendix E**.
- Estimated costs associated with groundwater remediation include recovery well installation, operation and maintenance of the RO systems, installation of two

saltwater disposal wells (SWD's), and operation and maintenance of the SWD's. Unit costs are based on vendor estimates provided for similar estimates, and from unit price data included in *Heavy Construction Costs with RSMeans Data, 36th Edition (2022)*. Costs are itemized on tables in **Appendix F**.

Itemized costs for site remediation of each area of investigation under each remediation plan are included in the following tables:

REMEDICATION OF SOIL AND GROUNDWATER TO BACKGROUND STANDARDS

	Volume Reduction w/offsite disposal of water	Volume Reduction w/onsite disposal of water
Soil Remediation (to 8' bls)	\$4,009,842	\$4,009,842
Groundwater Remediation	\$28,068,409	\$10,604,436
RO Unit Capital and O&M costs	\$5,003,106	\$5,003,106
SWD Capital and O&M costs	----	\$11,910,924
TOTAL	\$37,081,357	\$31,528,308

REMEDICATION OF SOIL TO BACKGROUND AND GROUNDWATER TO 250 MG/L CHLORIDE

	Volume Reduction w/offsite disposal of water	Volume Reduction w/onsite disposal of water
Soil Remediation (to 8' bls)	\$4,009,842	\$4,009,842
Groundwater Remediation	\$17,887,232	\$7,574,737
RO Unit Capital and O&M costs	\$4,337,827	\$4,337,827
SWD Capital and O&M costs	----	\$11,002,266
TOTAL	\$26,234,901	\$26,924,672

IMPLEMENTATION PLAN FOR REMEDIATION

Site remediation will be implemented in phases according to the following schedule:

Phase 1

- Excavation, offsite disposal of impacted soils
- Confirmation sampling, backfilling
- Pilot Testing/treatment system optimization
- Data collection/ groundwater modeling/engineering design
- Groundwater recovery and monitoring well installation

Phase 2

- Full-scale groundwater remediation and groundwater monitoring

The opinions and interpretations listed herein are based on the referenced sources and are subject to change upon receipt of additional data. If you have any questions concerning this report, please feel free to contact me at (225) 344-8490.

Sincerely,
ICON Environmental Services, Inc.



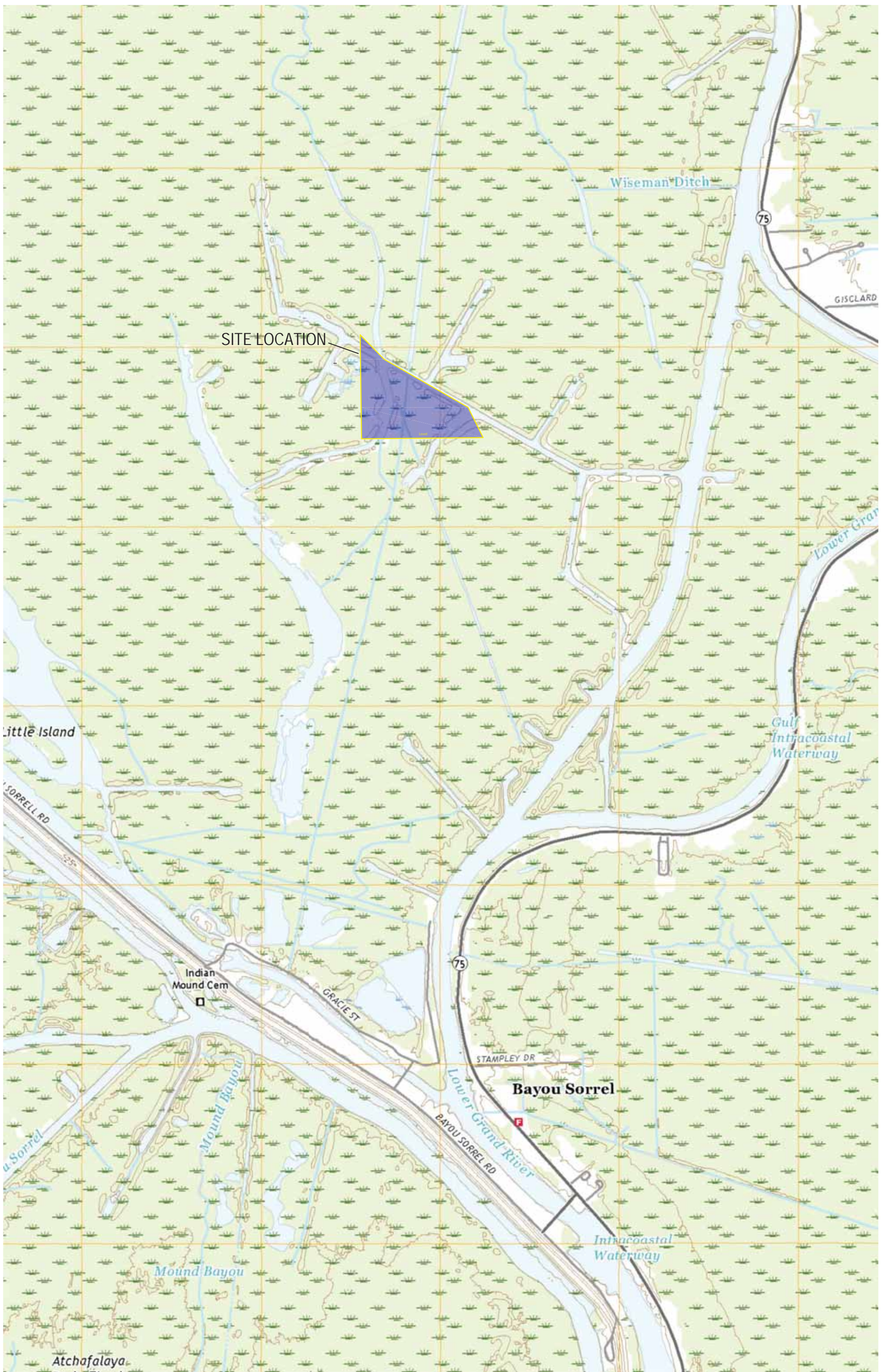
Gregory W. Miller
Principal Hydrogeologist LBPG License #939



Wayne Prejean, P.E.
Senior Engineer,
Louisiana P.E. License #32502



Jason S. Sills
Senior Engineer EI No. 20568

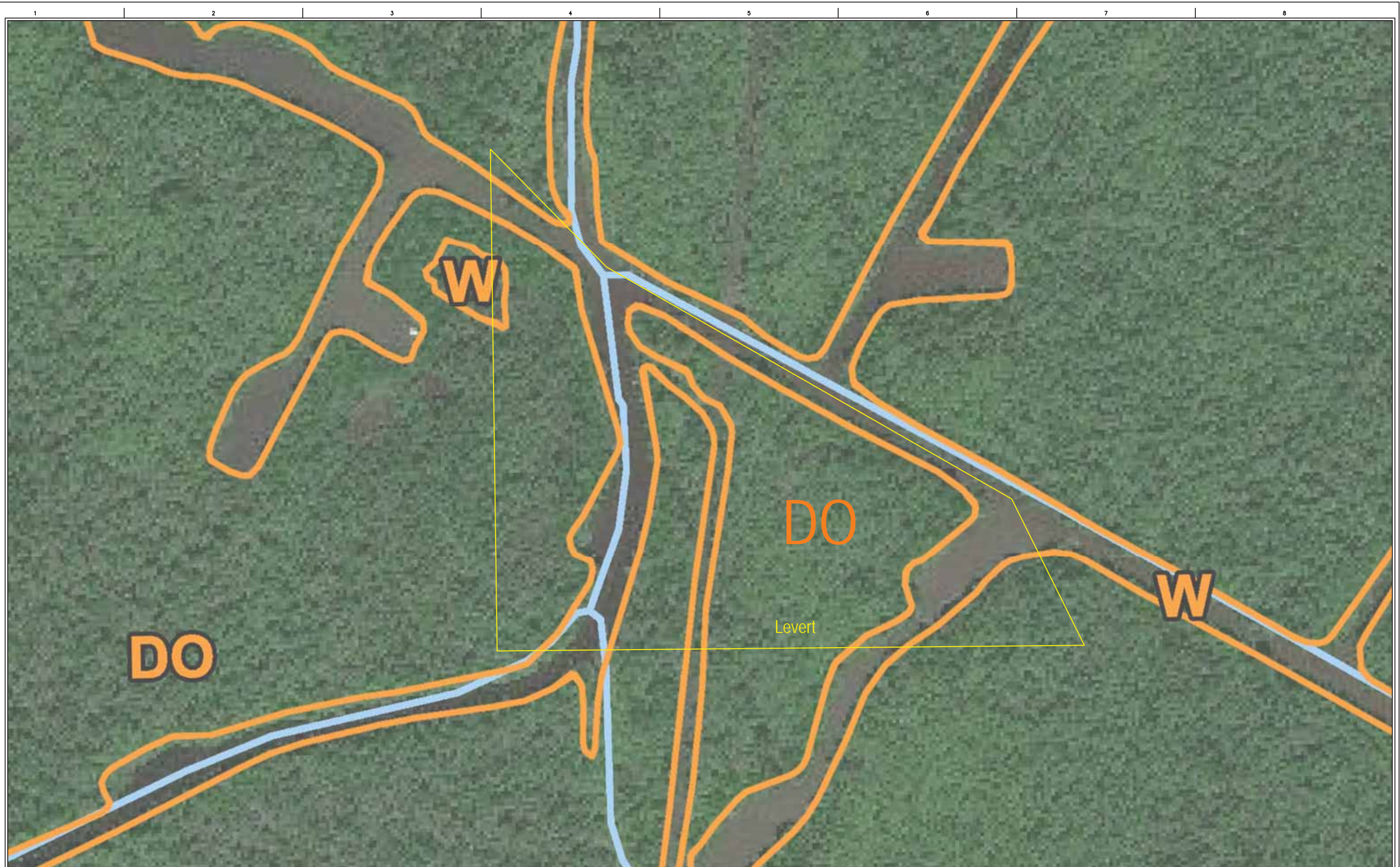


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 New Orleans, LA 70130-6004

PROPERTY LOCATION
 August J. Levert, Jr., et al v BP America Production Co; 18th JDC; Docket # 78953
 Grand River Field, Iberville Parish, LA

FIGURE NO.	NO. 1
DATE	JULY 2022
FIGURE NO.	1

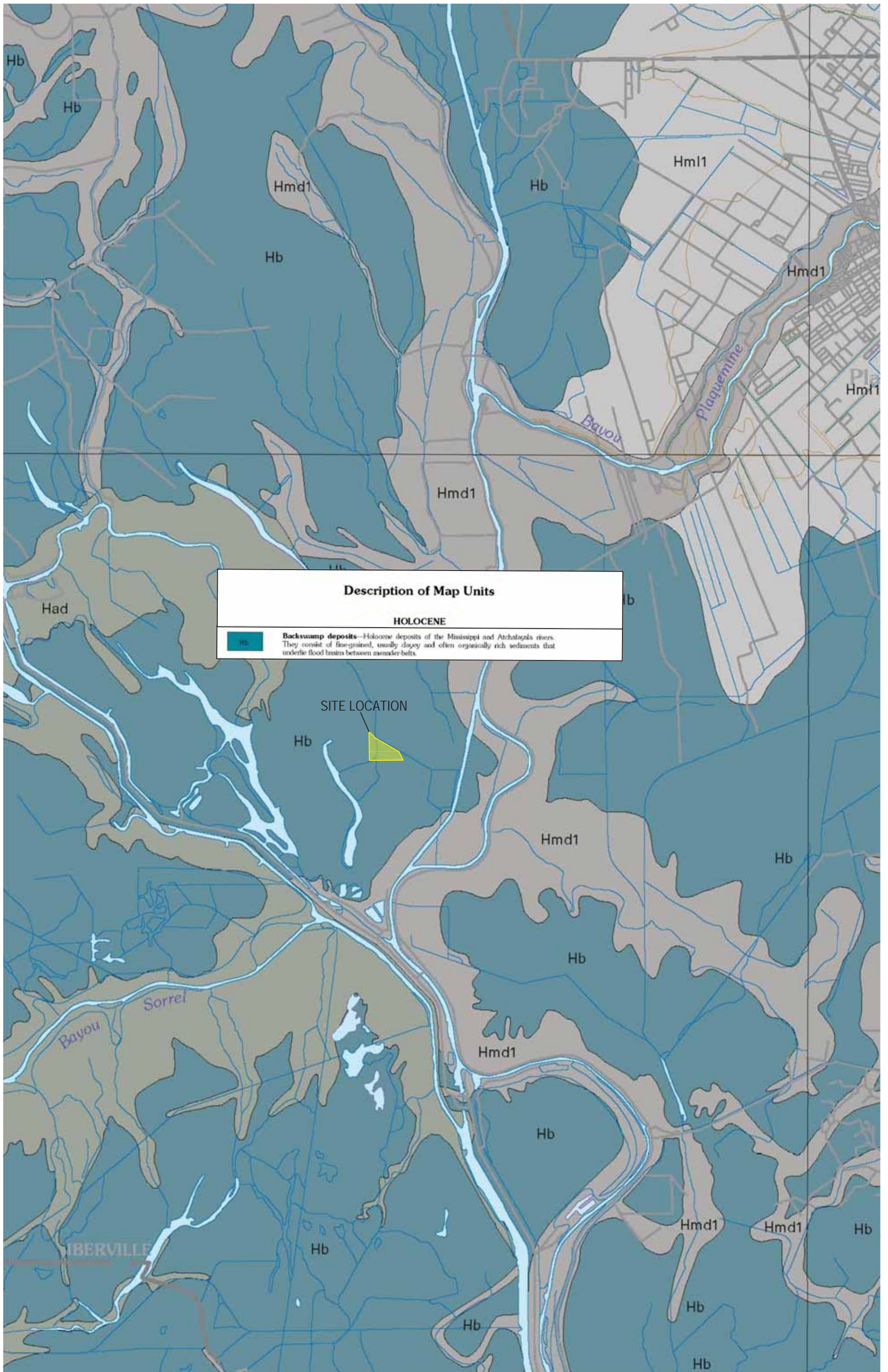


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NRCS SOIL MAP
 August J. Levert, Jr., et al v BP America Production Co; 18th JDC; Docket # 78953
 Grand River Field, Iberville Parish, LA

FILENAME	REV #
JOB NO.	DATE JULY 2022
DIRECTORY	FIGURE NO. 2



Description of Map Units

HOLOCENE

Hb	Backswamp deposits —Holocene deposits of the Mississippi and Atchafalaya rivers. They consist of fine-grained, usually clayey and often organically rich sediments that underlie flood basins between meander belts.
----	---

SITE LOCATION

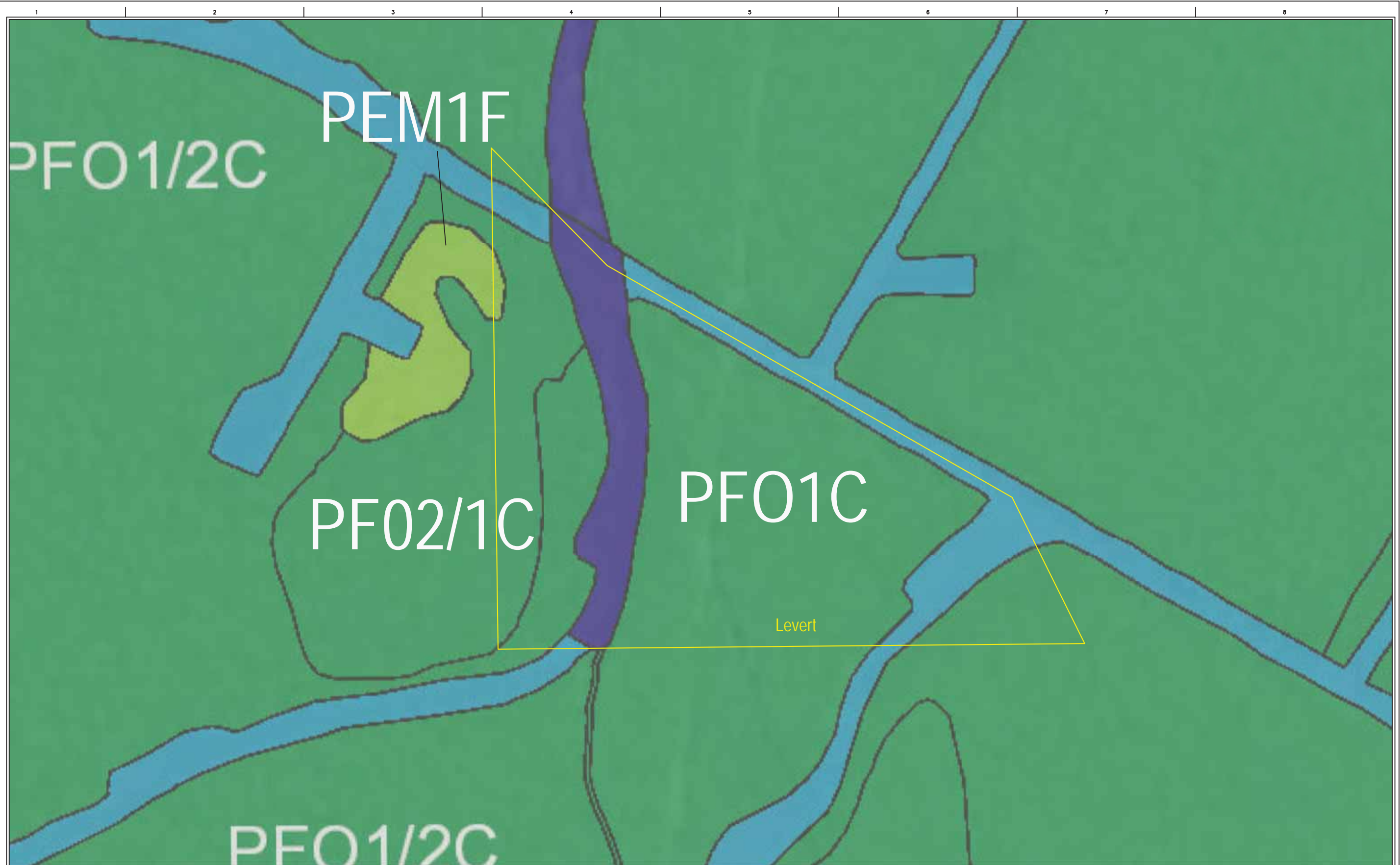


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GEOLOGIC MAP
 August J. Levert, Jr., et al v BP America Production Co; 18th JDC; Docket # 78953
 Grand River Field, Iberville Parish, LA

PLATE	NO. 1
DATE	JULY 2022
FIGURE NO.	3

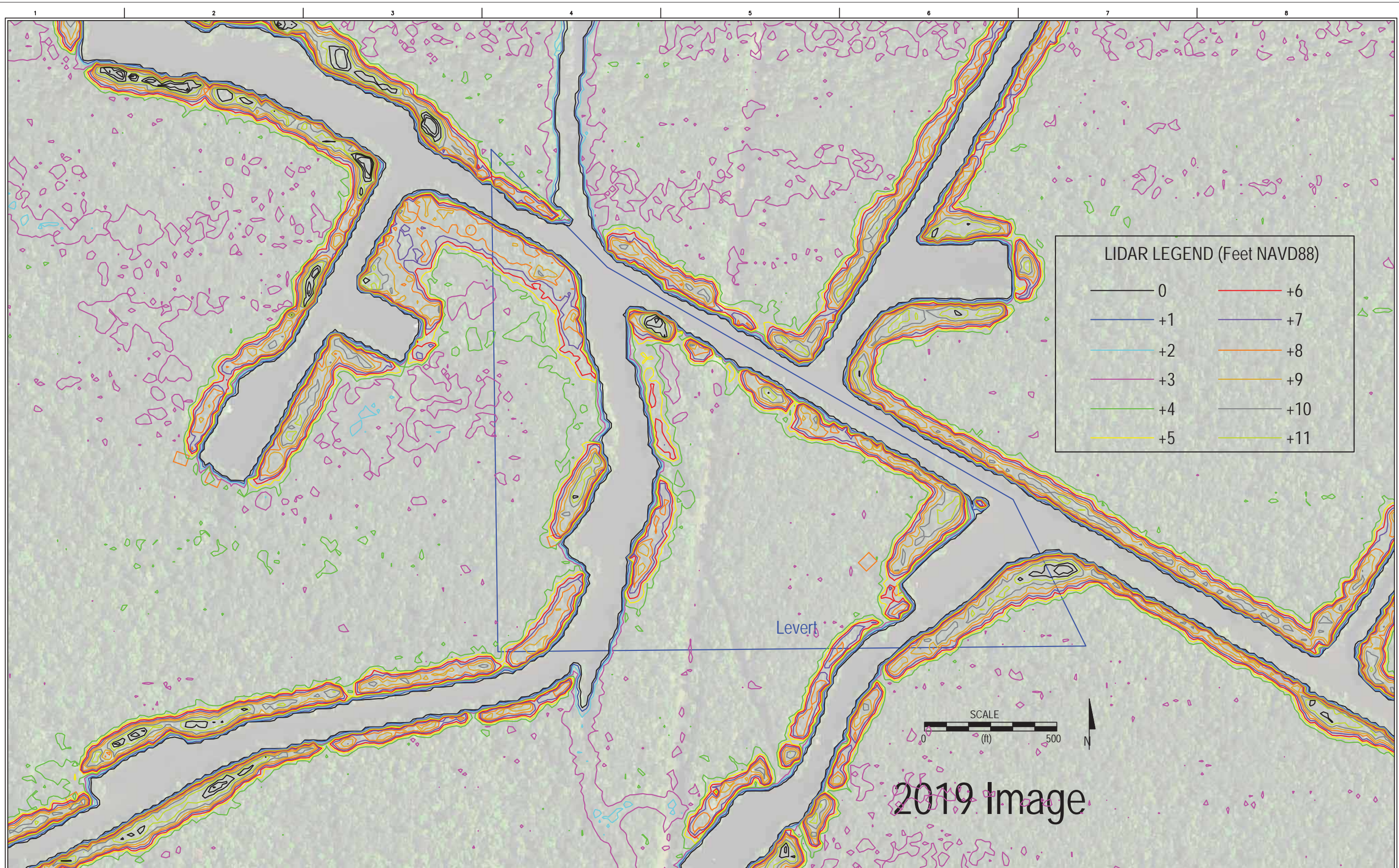


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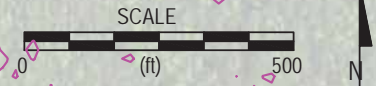
USFWS WETLANDS MAP
 August J. Levert, Jr., et al v BP America Production Co; 18th JDC; Docket # 78953
 Grand River Field, Iberville Parish, LA

FILENAME	REV #
JOB NO.	DATE JULY 2022
DIRECTORY	FIGURE NO. 4




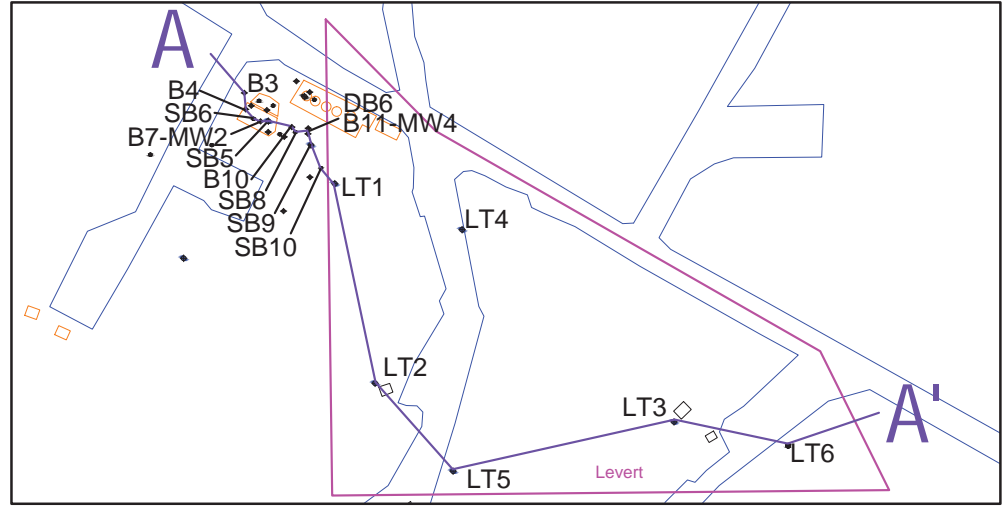
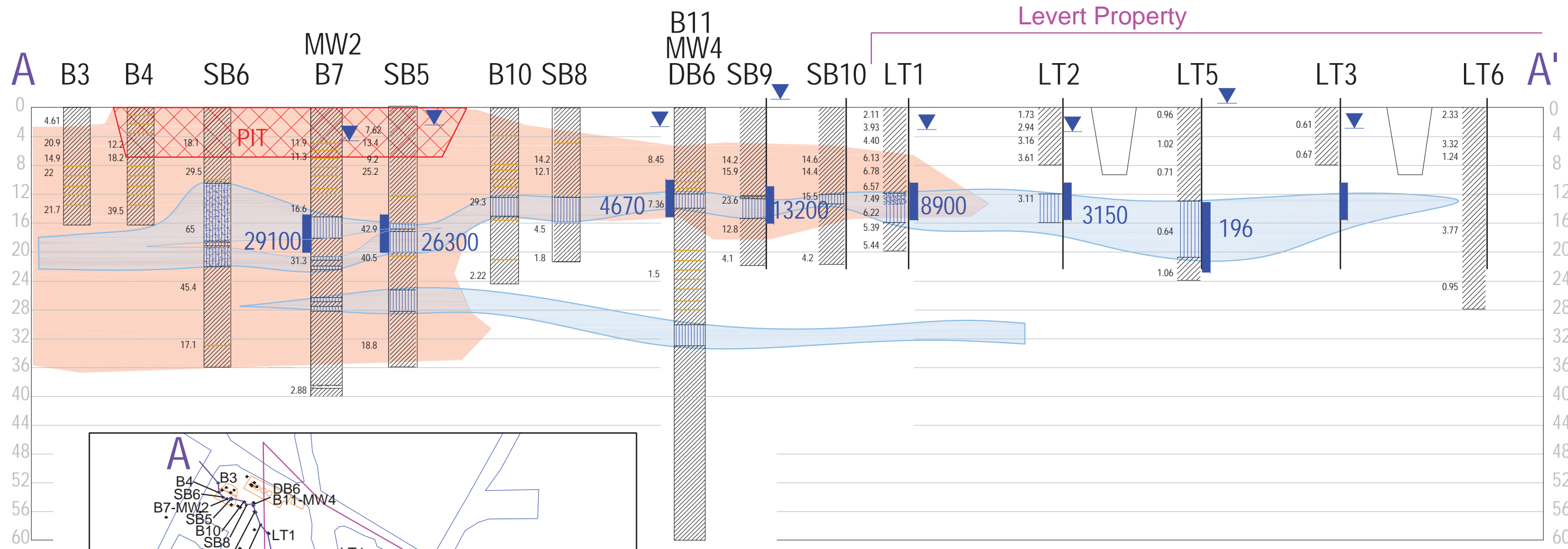
LIDAR LEGEND (Feet NAVD88)

0	+6
+1	+7
+2	+8
+3	+9
+4	+10
+5	+11



2019 Image

	PREPARED BY: ICON Environmental Services, Inc. 2049 Commercial Drive Port Allen, LA 70767	PREPARED FOR: Jones, Swanson, Huddell & Daschback LLC 601 Poydras Street, Suite 2655 New Orleans, LA 70130-6004	TOPOGRAPHIC (LIDAR) CONTOURS August J. Levert, Jr., et al v BP American Production Co; 18th JDC; Docket # 78953 Grand River Field, Iberville Parish, LA	FILENAME JOB NO. DIRECTORY	REV # DATE July 2021 FIGURE NO. 5
---	--	--	---	----------------------------------	---



Legend

- Silt/Sand (Aquifer)
- Clay/Silty Clay
- Wood
- Soil EC (mmhos/cm)
- Soil EC > 6 mmhos/cm [Leaching Threat]
- 4670 Groundwater Chlorides (mg/L)

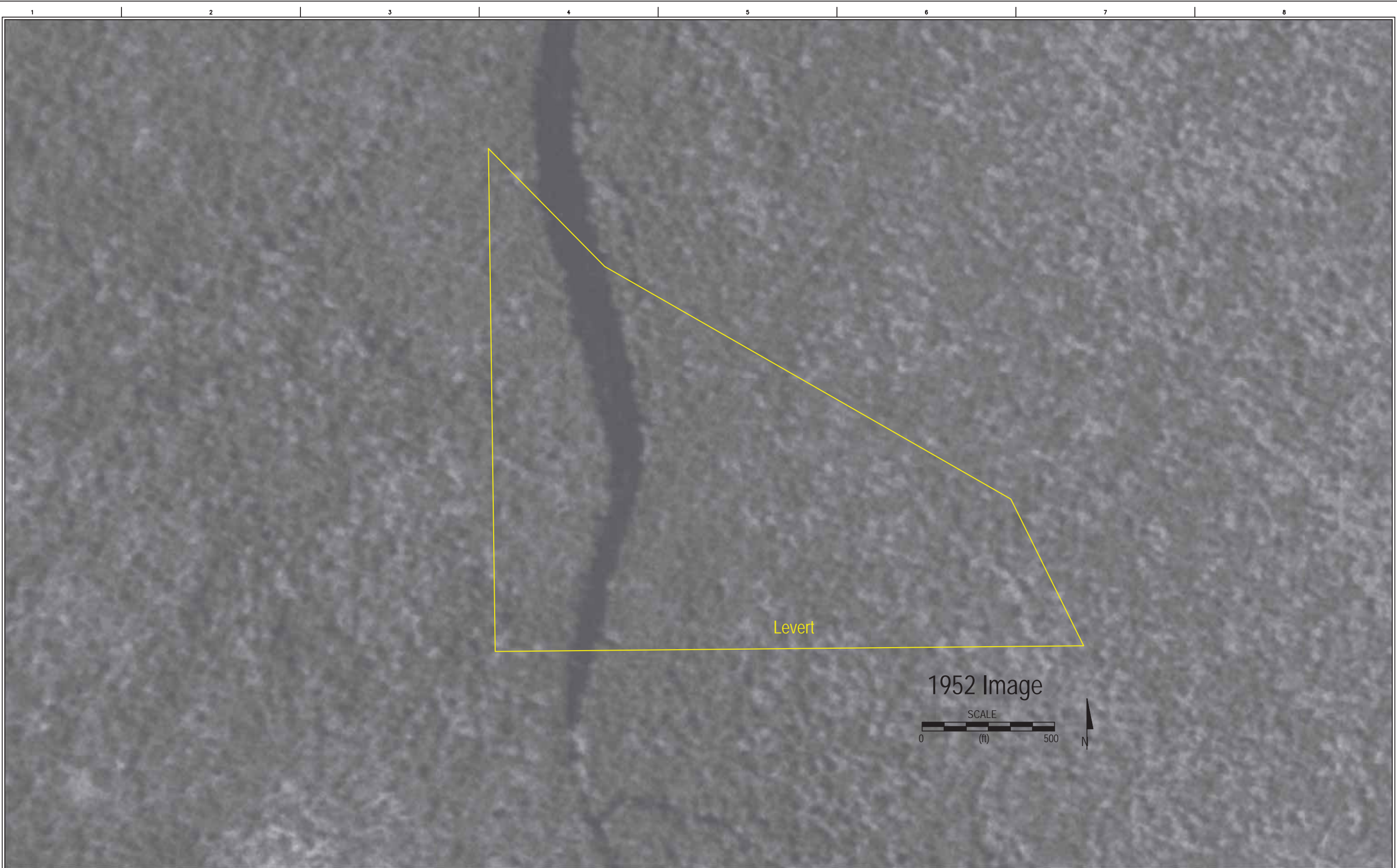



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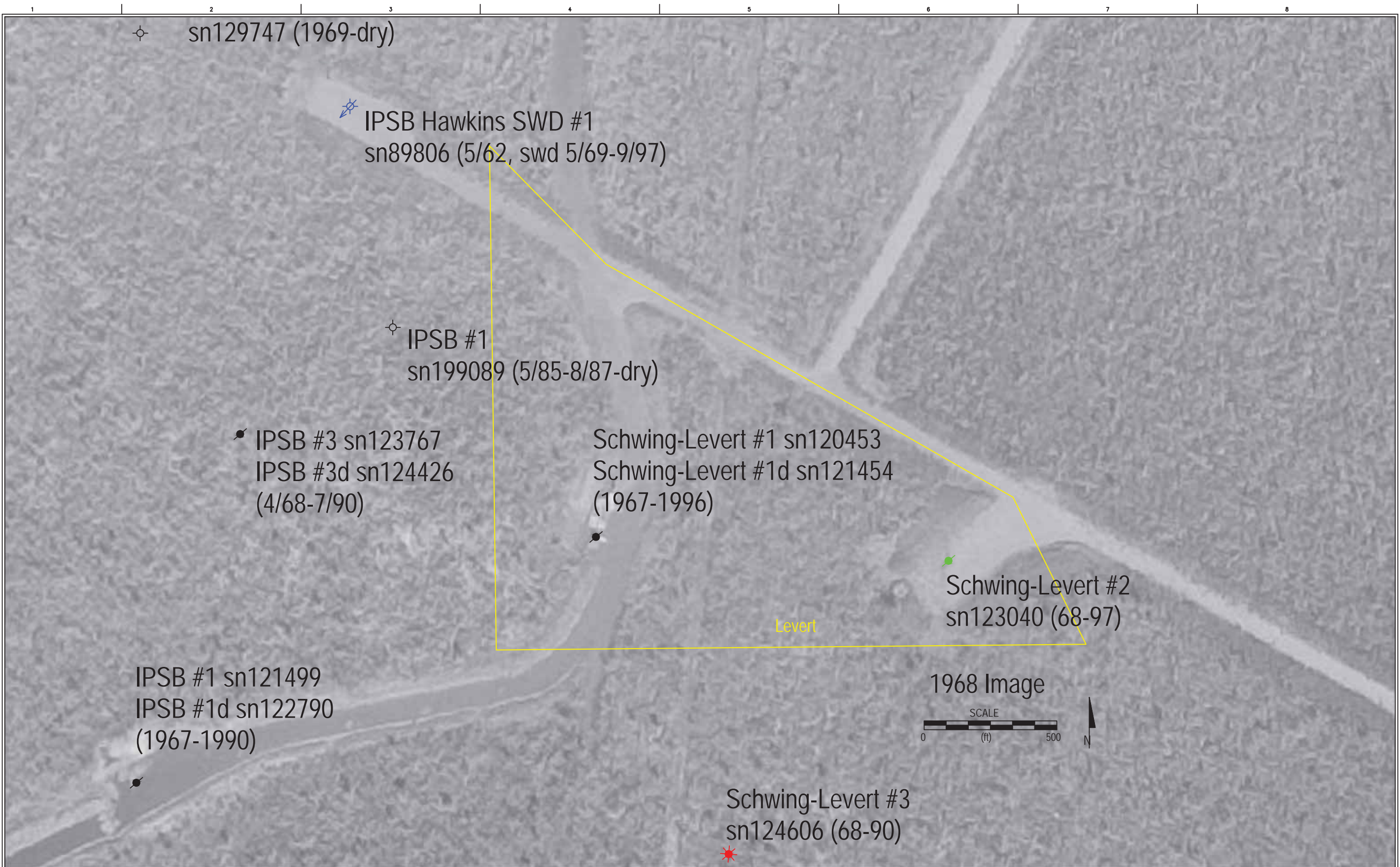
PREPARED FOR:
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 New Orleans, LA 70130-6004


CROSS SECTION DIAGRAM
 August J. Levert, Jr., et al v BP American Production Co; 18th JDC; Docket # 78953
 Grand River Field, Iberville Parish, LA

FILENAME	REV #
JOB NO.	DATE July 2021
DIRECTORY	FIGURE NO. 6



	PREPARED BY: ICON Environmental Services, Inc. 2049 Commercial Drive Port Allen, LA 70767	PREPARED FOR: Jones, Swanson, Huddell & Daschbach LLC 601 Poydras Street, Suite 2655 New Orleans, LA 70130-6004	1952 AERIAL IMAGE August J. Levert, Jr., et al v BP America Production Co; 18th JDC; Docket # 78953 Grand River Field, Iberville Parish, LA	FILENAME JOB NO. DIRECTORY	REV # DATE FIGURE NO.	
						7



	PREPARED BY: ICON Environmental Services, Inc. 2049 Commercial Drive Port Allen, LA 70767	PREPARED FOR: Jones, Swanson, Huddell & Daschbach LLC 601 Poydras Street, Suite 2655 New Orleans, LA 70130-6004	1968 AERIAL IMAGE WITH OIL AND GAS WELL LOCATIONS August J. Levert, Jr., et al v BP America Production Co; 18th JDC; Docket # 78953 Grand River Field, Iberville Parish, LA	FILENAME JOB NO. DIRECTORY	REV # DATE FIGURE NO.	
						8

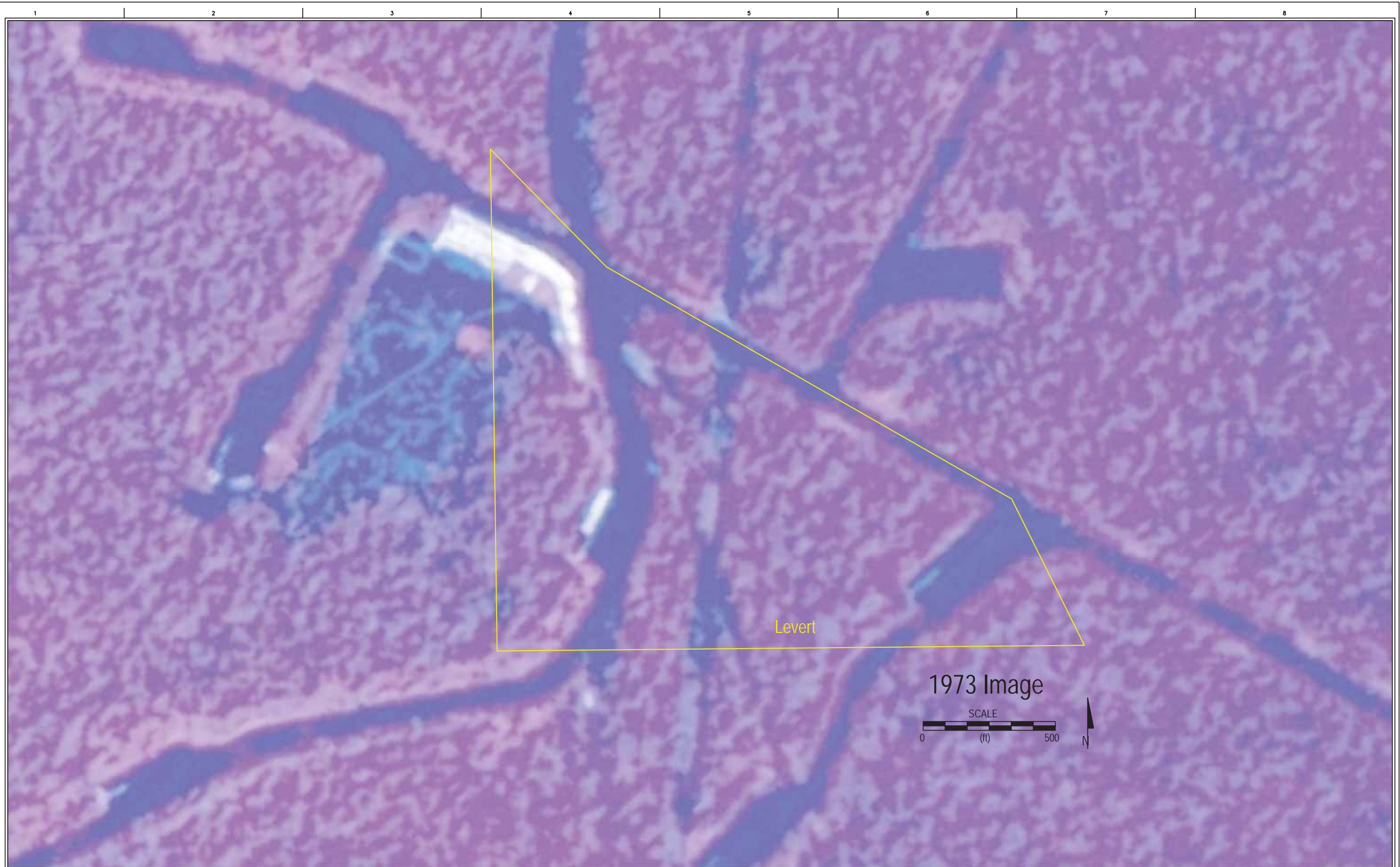


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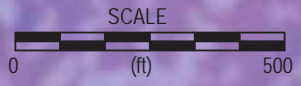
1973 AERIAL IMAGE WITH OIL AND GAS WELL LOCATIONS
 August J. Levert, Jr., et al v BP America Production Co; 18th JDC; Docket # 78953
 Grand River Field, Iberville Parish, LA

FILENAME	REV #
JOB NO.	DATE JULY 2022
DIRECTORY	FIGURE NO. 9



Levert

1973 Image

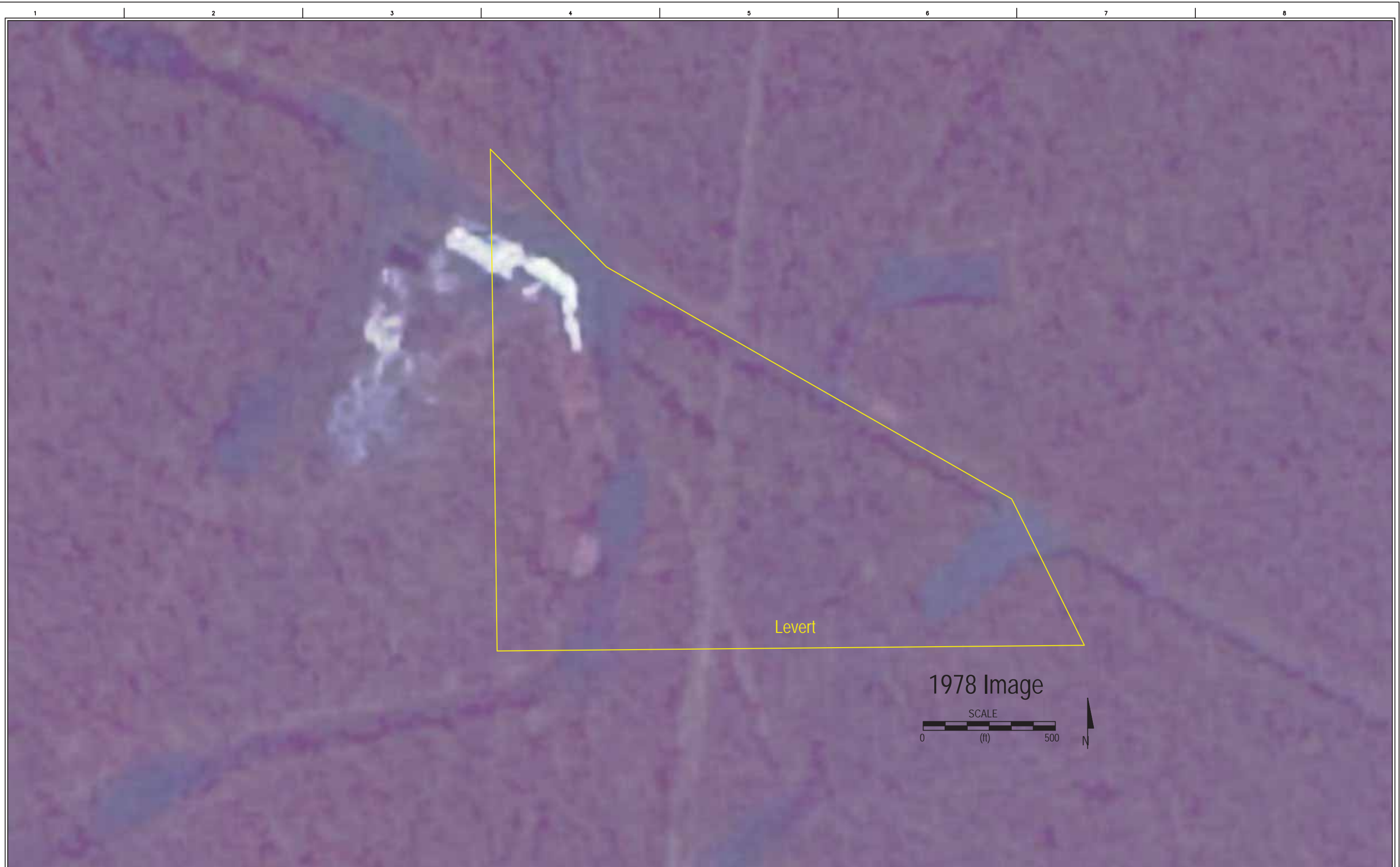


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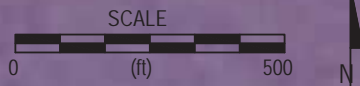
SEPTEMBER 1973 AERIAL IMAGE
August J. Levert, Jr., et al v BP America Production Co; 18th JDC; Docket # 78953
Grand River Field, Iberville Parish, LA

FILENAME	REV #
JOB NO.	DATE JULY 2022
DIRECTORY	FIGURE NO. 10



Levert

1978 Image



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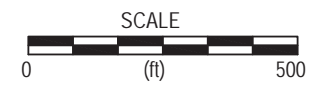
1978 AERIAL IMAGE
 August J. Levert, Jr., et al v BP America Production Co; 18th JDC; Docket # 78953
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FILENAME	REV #
JOB NO.	DATE JULY 2022
DIRECTORY	FIGURE NO. 11



Levert

1980 Image



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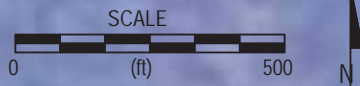
1980 AERIAL IMAGE
August J. Levert, Jr., et al v BP America Production Co; 18th JDC; Docket # 78953
Grand River Field, Iberville Parish, LA

FILENAME	REV #
JOB NO.	DATE JULY 2022
DIRECTORY	FIGURE NO. 12



Levert

1985 Image

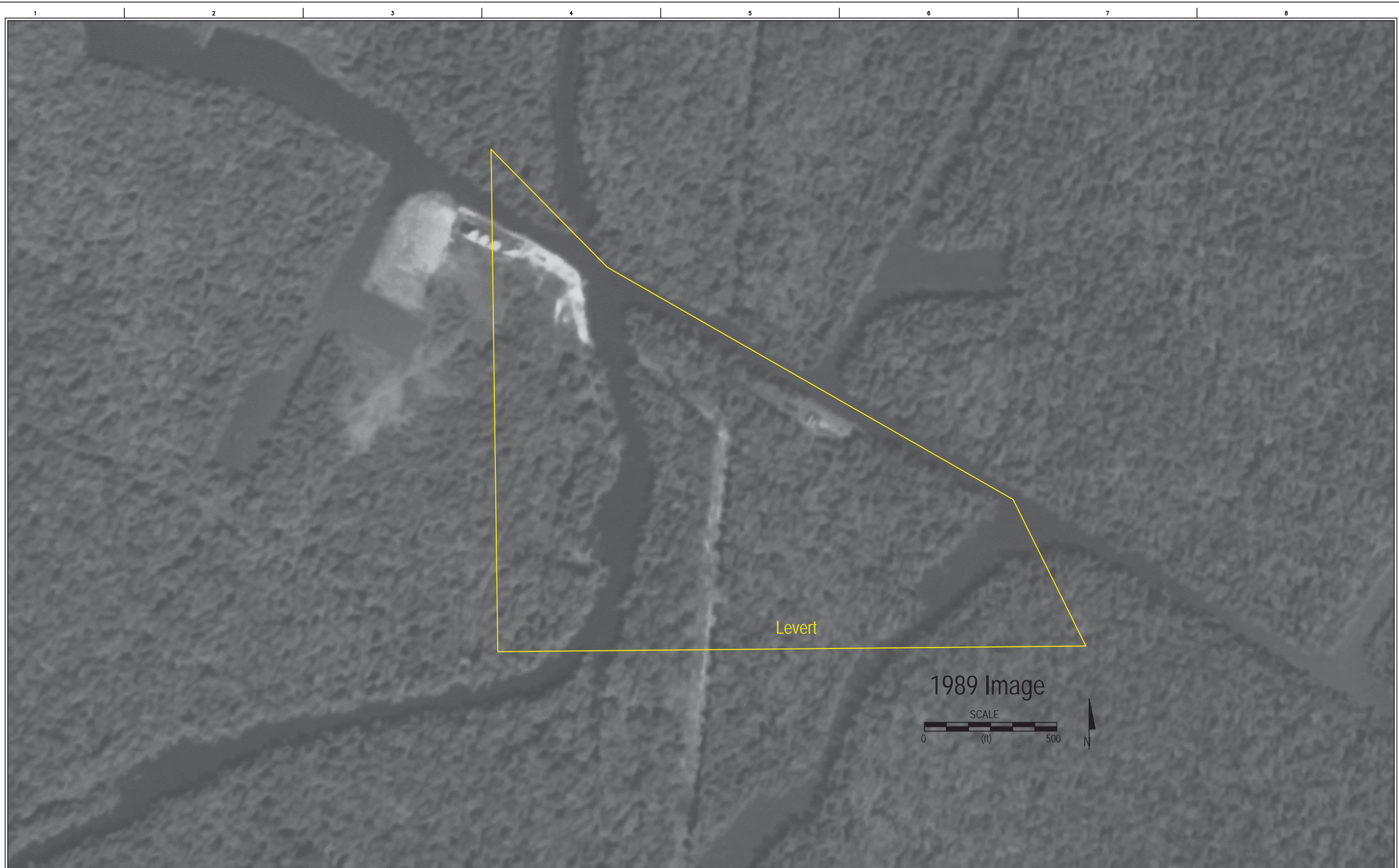


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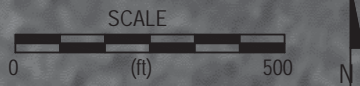
1985 AERIAL IMAGE
 August J. Levert, Jr., et al v BP America Production Co; 18th JDC; Docket # 78953
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FILENAME	REV #
JOB NO.	DATE JULY 2022
DIRECTORY	FIGURE NO. 13



Levert

1989 Image



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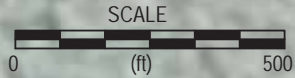
1989 AERIAL IMAGE
 August J. Levert, Jr., et al v BP America Production Co; 18th JDC; Docket # 78953
 Grand River Field, Iberville Parish, LA

FILENAME	REV #
JOB NO.	DATE JULY 2022
DIRECTORY	FIGURE NO. 14



Levert

1998 Image

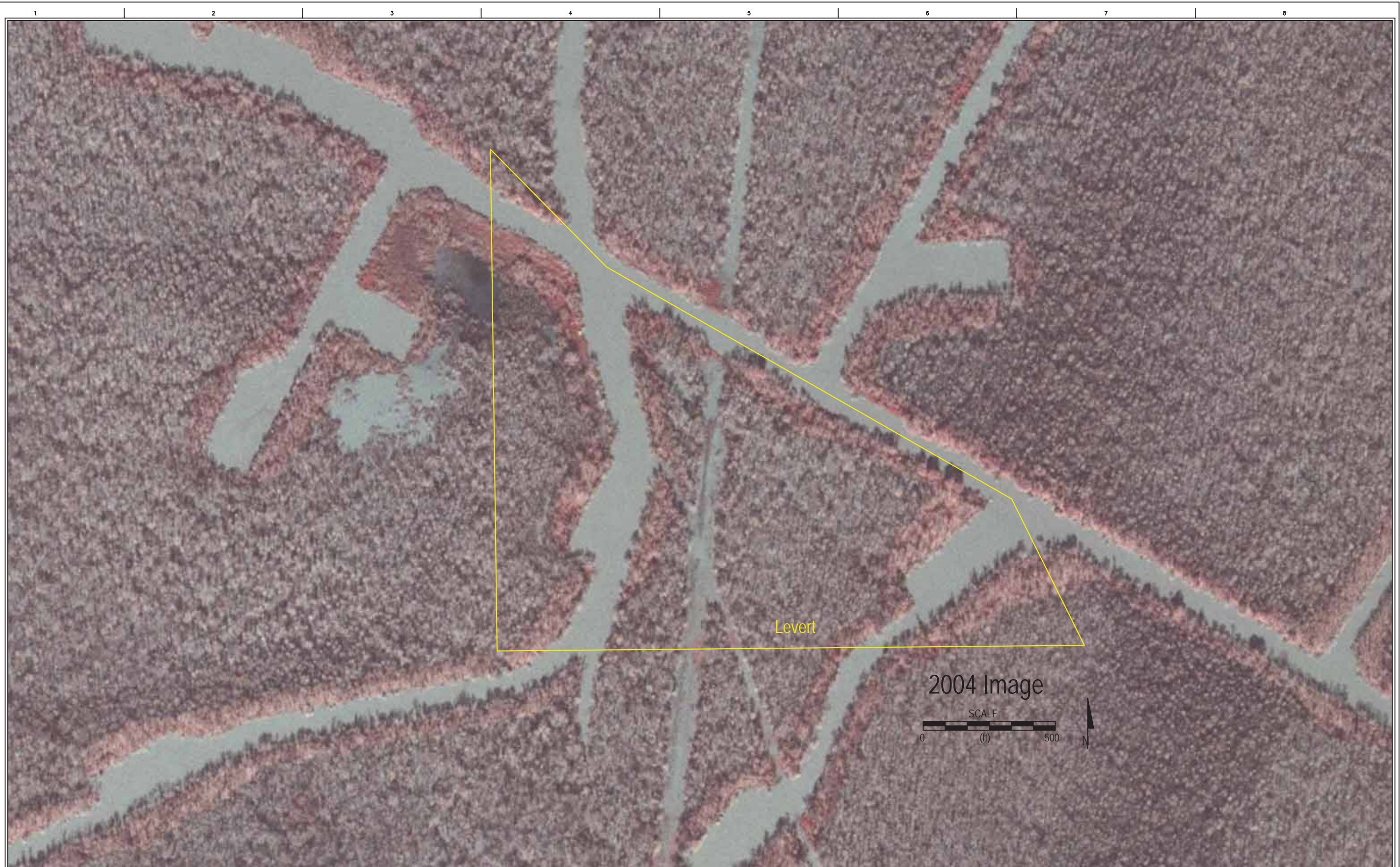


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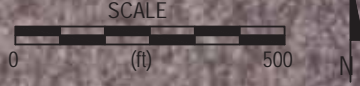
1998 AERIAL IMAGE
 August J. Levert, Jr., et al v BP America Production Co; 18th JDC; Docket # 78953
 Grand River Field, Iberville Parish, LA

FILENAME	REV #
JOB NO.	DATE JULY 2022
DIRECTORY	FIGURE NO. 15



Levert

2004 Image

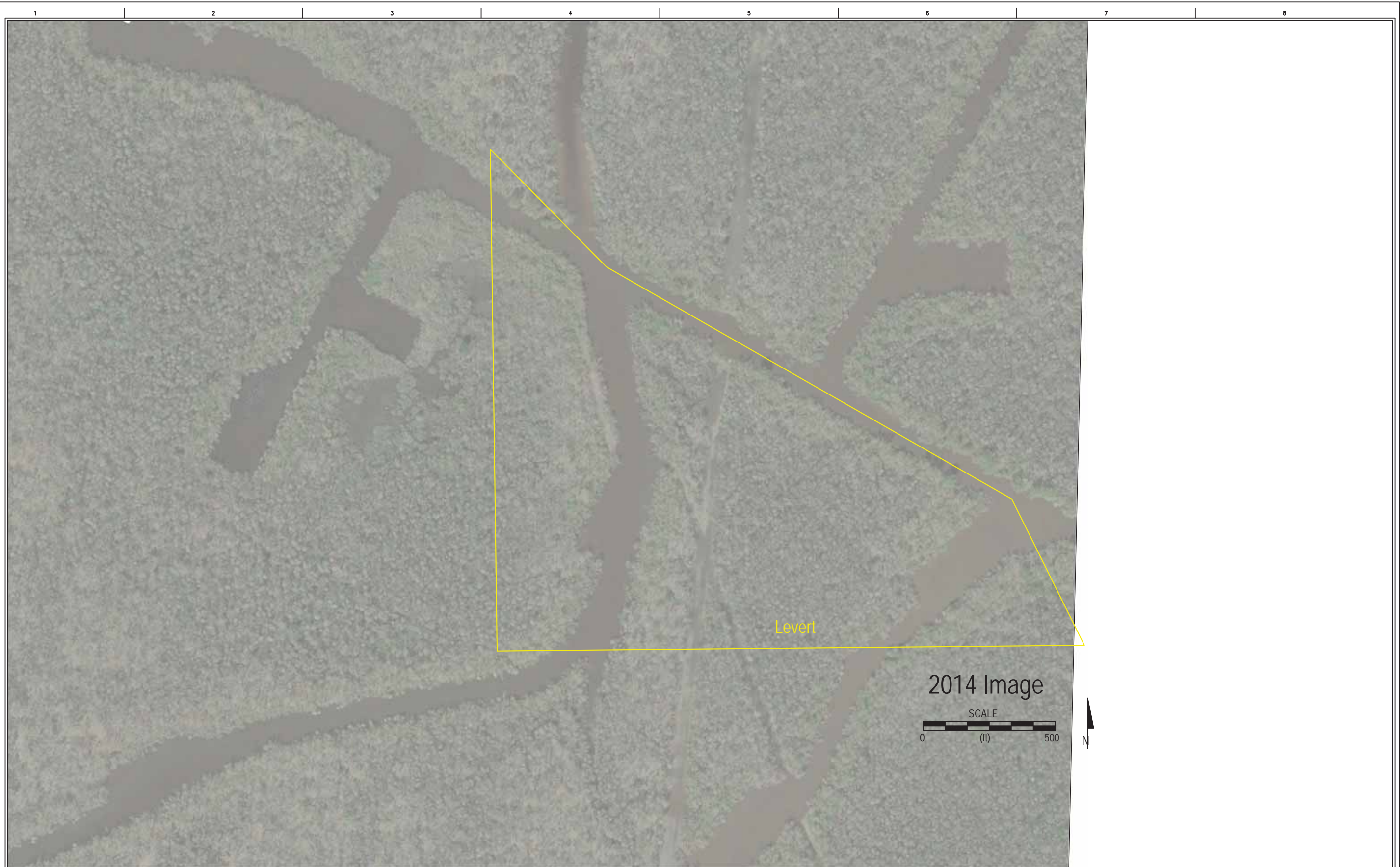


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2004 AERIAL IMAGE
 August J. Levert, Jr., et al v BP America Production Co; 18th JDC; Docket # 78953
 Grand River Field, Iberville Parish, LA

FILENAME	REV #
JOB NO.	DATE JULY 2022
DIRECTORY	FIGURE NO. 16



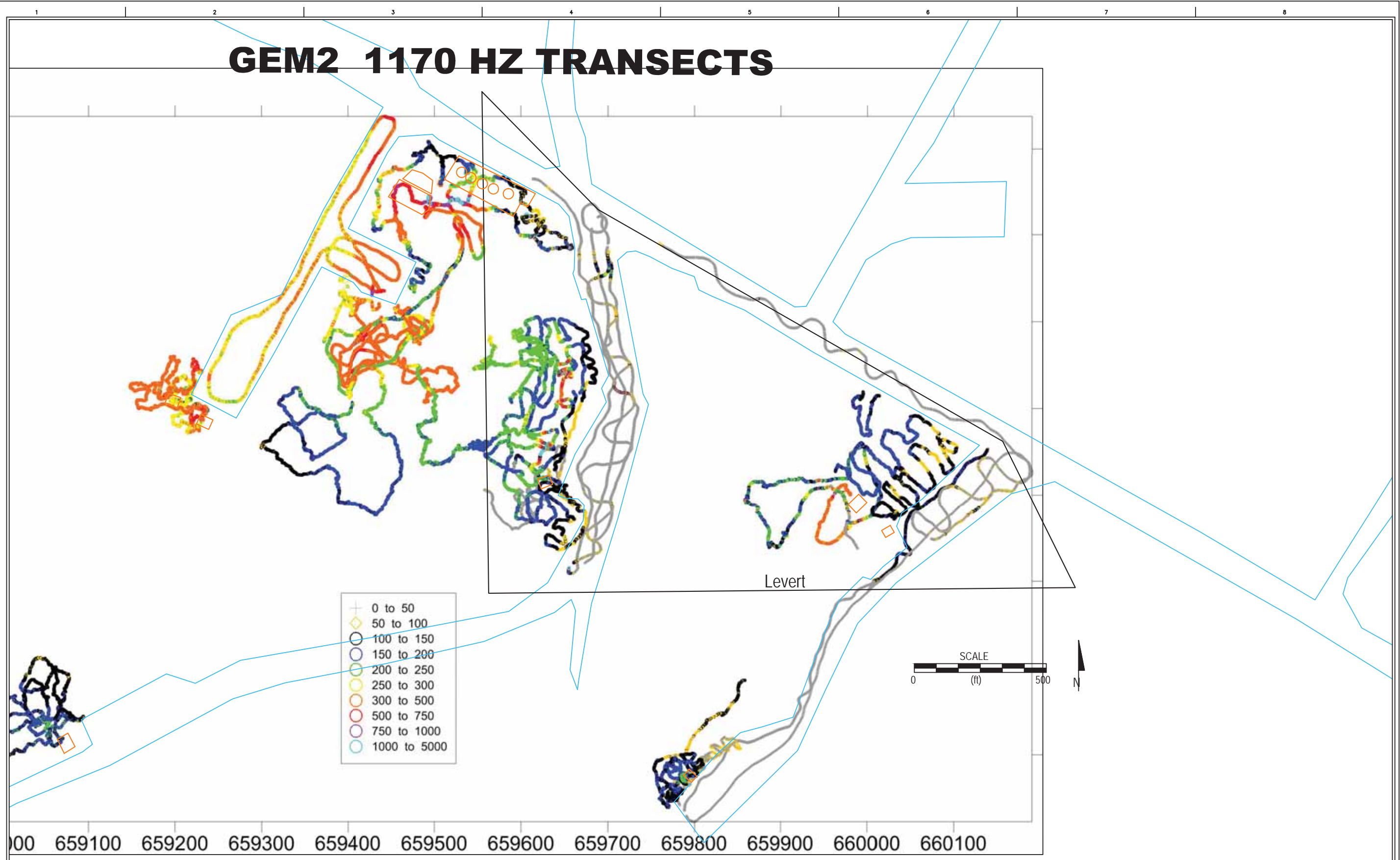
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2014 AERIAL IMAGE
 August J. Levert, Jr., et al v BP America Production Co; 18th JDC; Docket # 78953
 Grand River Field, Iberville Parish, LA

FILENAME	REV #
JOB NO.	DATE JULY 2022
DIRECTORY	FIGURE NO. 17

GEM2 1170 HZ TRANSECTS



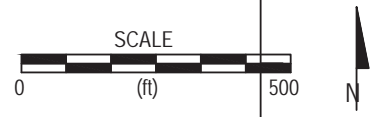
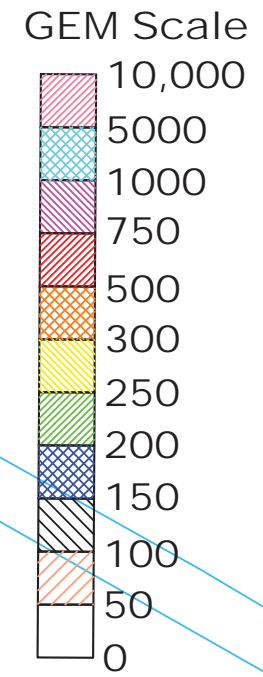
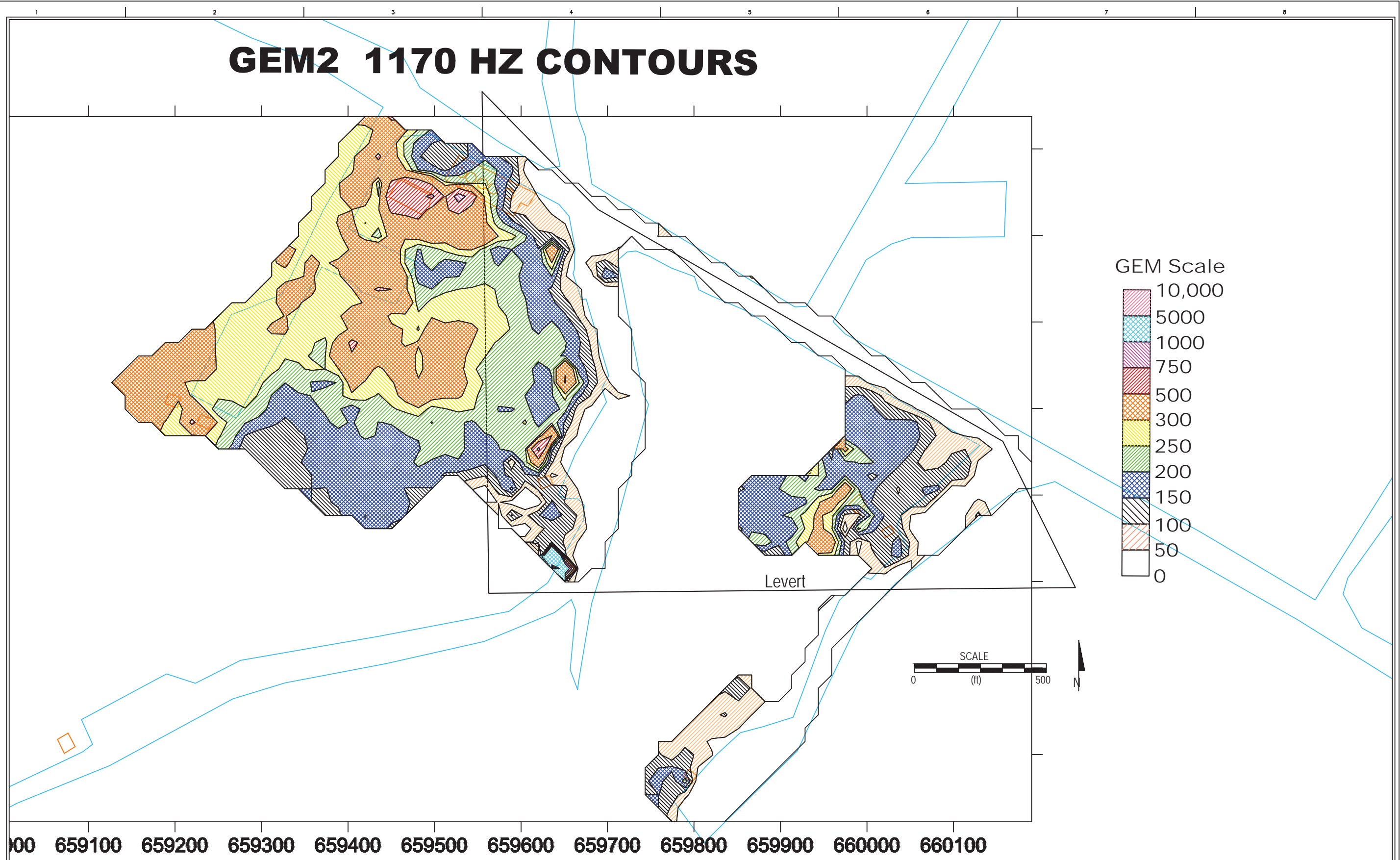
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TERRAIN CONDUCTIVITY TRANSECTS (1170HZ)
 August J. Levert, Jr., et al v BP America Production Co; 18th JDC; Docket # 78953
 Grand River Field, Iberville Parish, LA

FILENAME	REV #
JOB NO.	DATE JULY 2022
DIRECTORY	FIGURE NO. 18

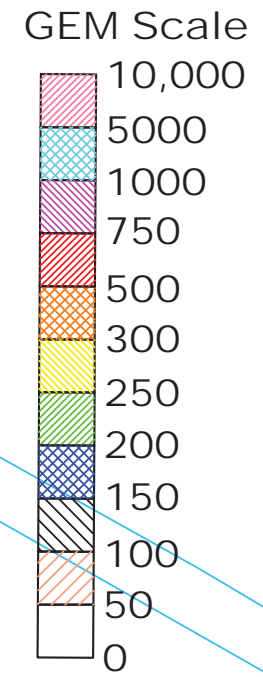
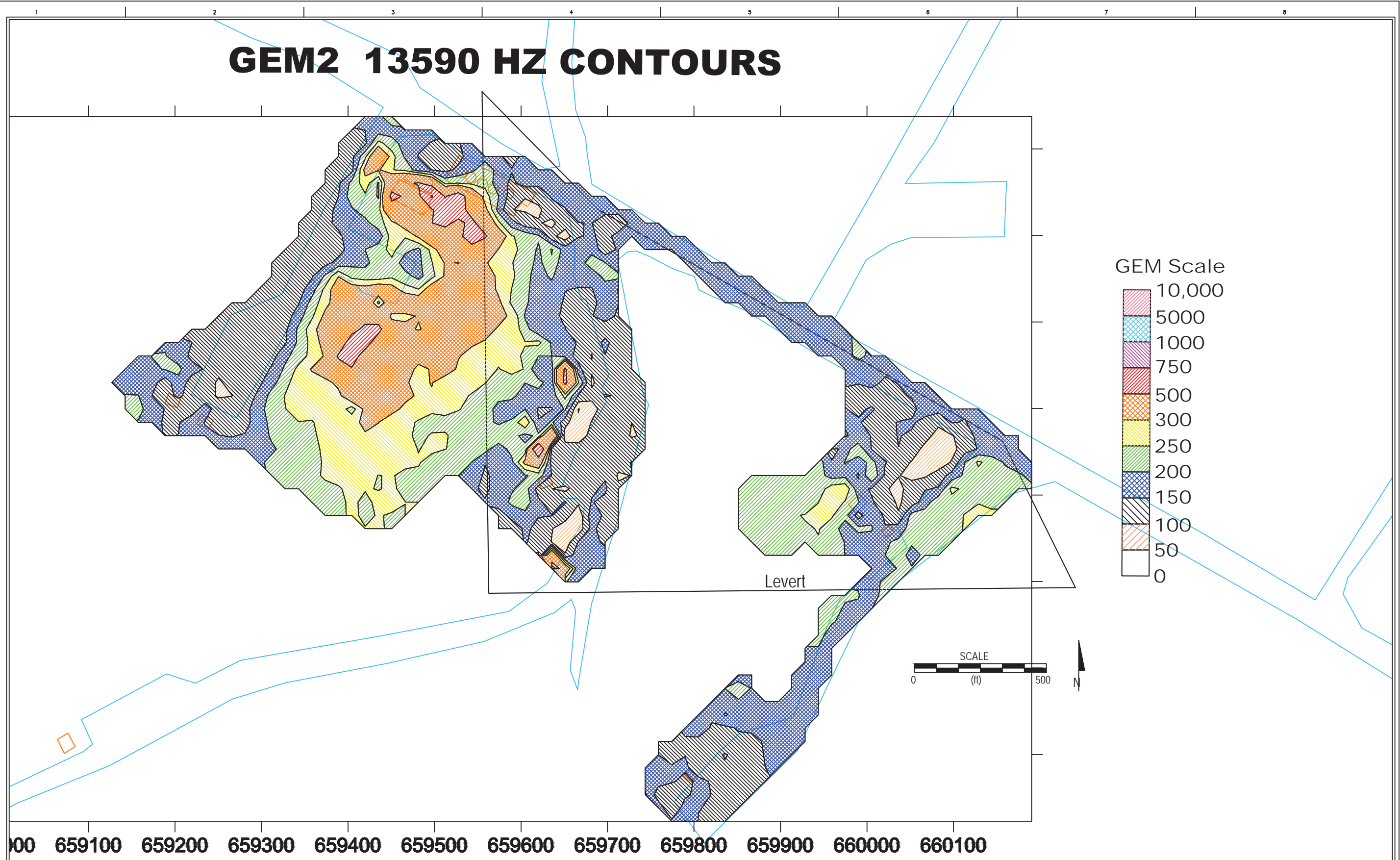
GEM2 1170 HZ CONTOURS



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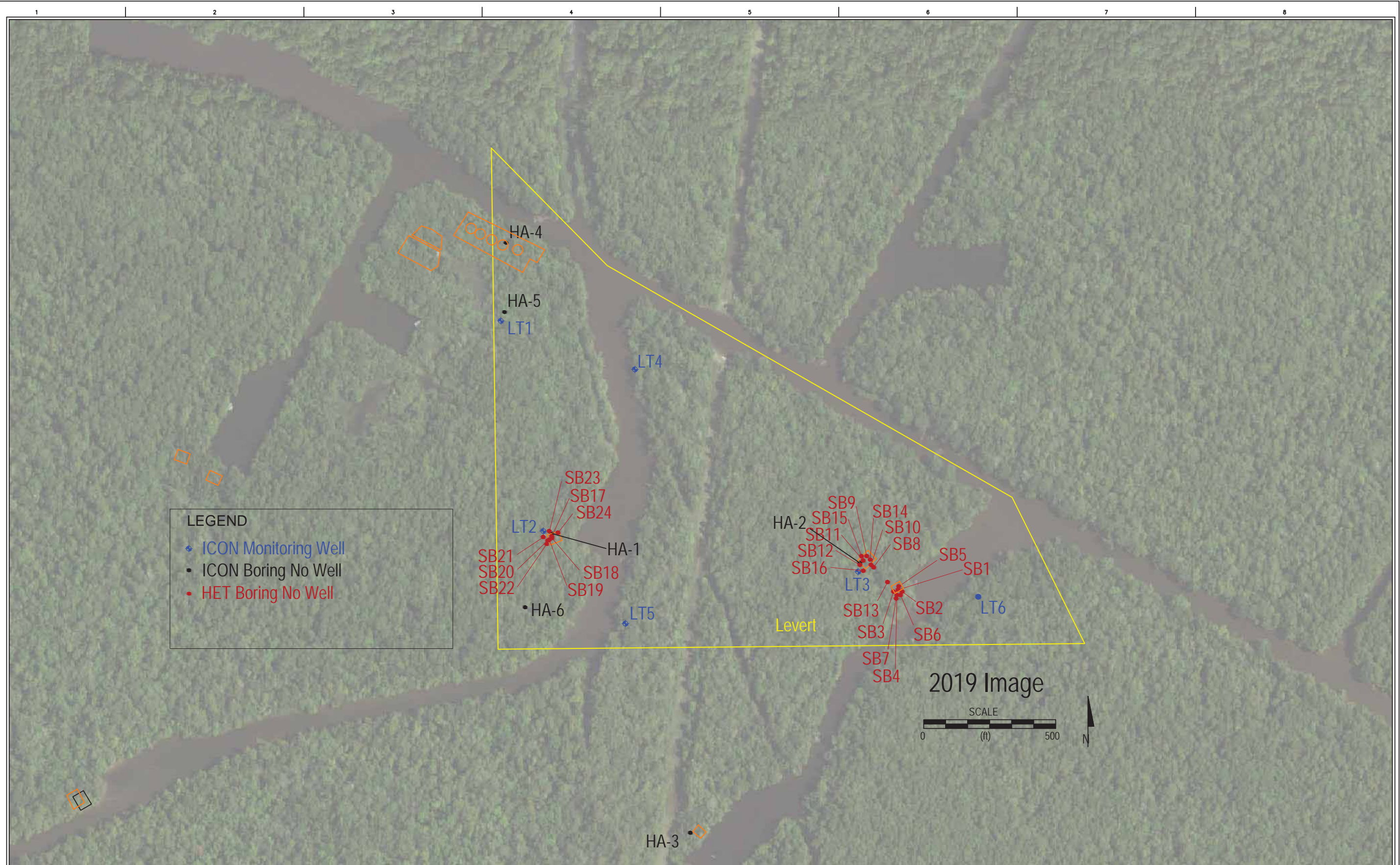
	PREPARED BY: ICON Environmental Services, Inc. 2049 Commercial Drive Port Allen, LA 70767	PREPARED FOR: Jones, Swanson, Huddell & Daschbach LLC 601 Poydras Street, Suite 2655 New Orleans, LA 70130-6004	TERRAIN CONDUCTIVITY CONTOURS-DEEP (1170HZ) FREQUENCY August J. Levert, Jr., et al v BP America Production Co; 18th JDC; Docket # 78953 Grand River Field, Iberville Parish, LA	FILENAME JOB NO. DIRECTORY	REV # DATE FIGURE NO.
					JULY 2022

GEM2 13590 HZ CONTOURS



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						20

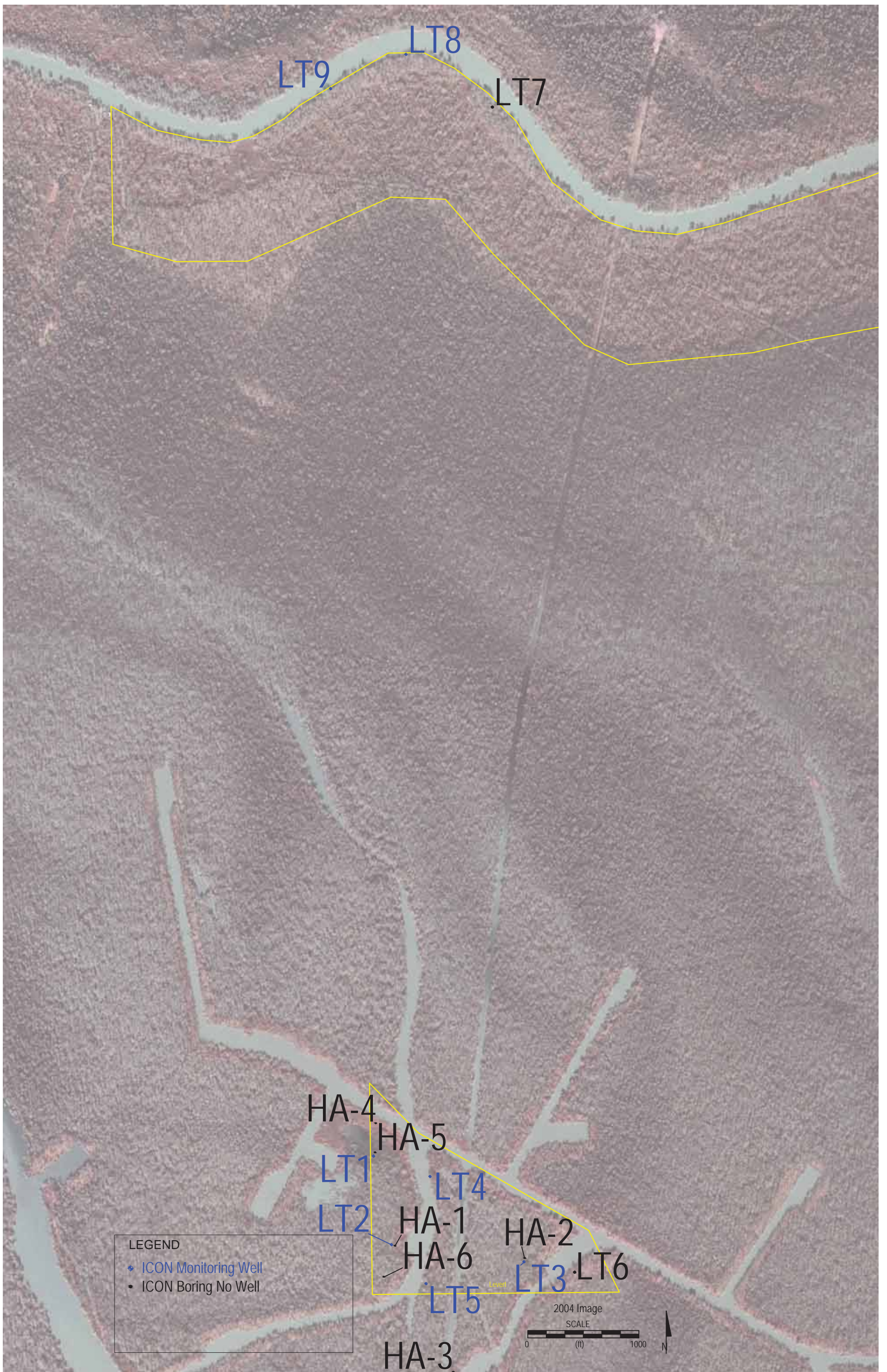


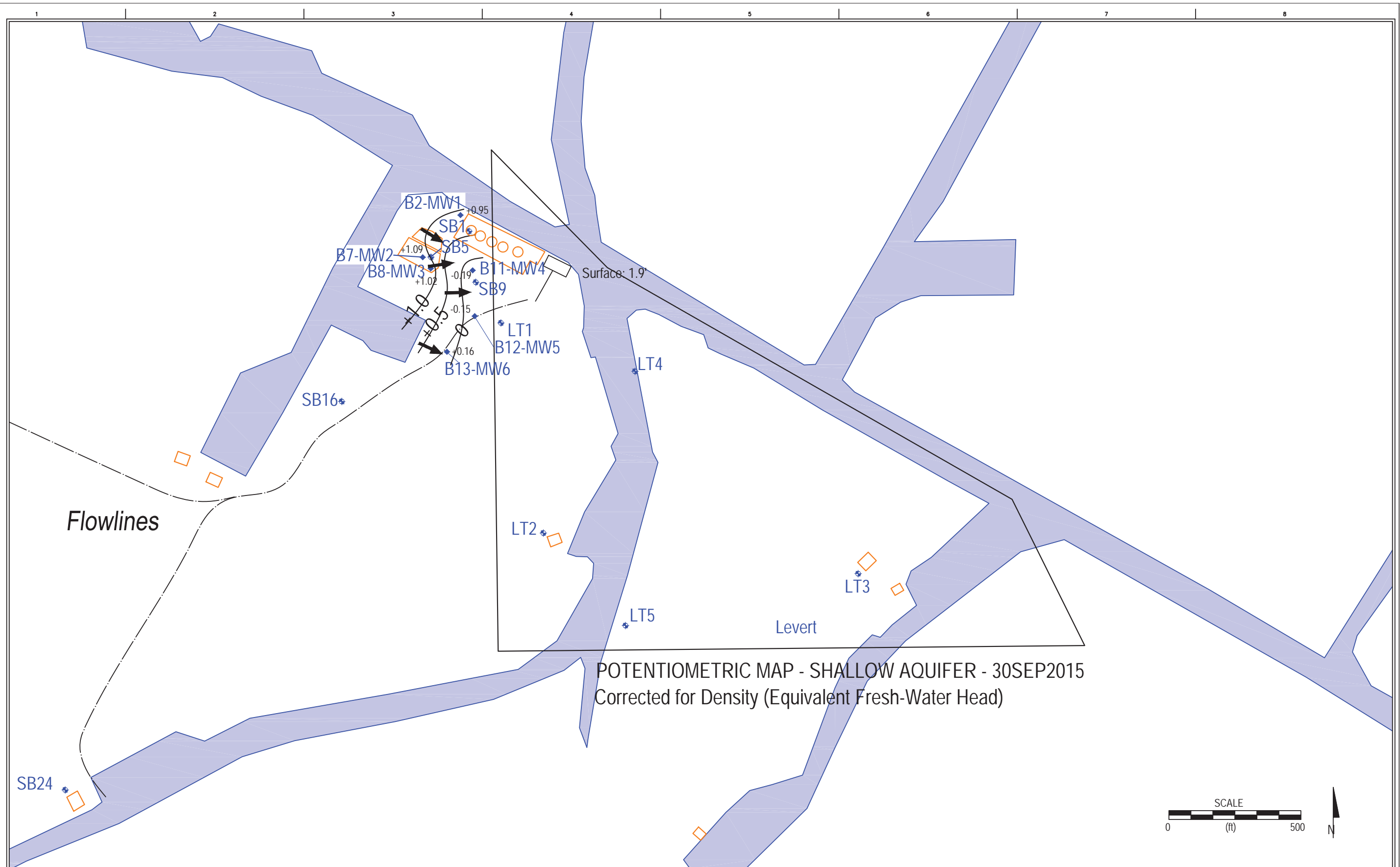
LEGEND

- ◆ ICON Monitoring Well
- ICON Boring No Well
- HET Boring No Well



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					JULY 2022 21





POTENTIOMETRIC MAP - SHALLOW AQUIFER - 30SEP2015
Corrected for Density (Equivalent Fresh-Water Head)

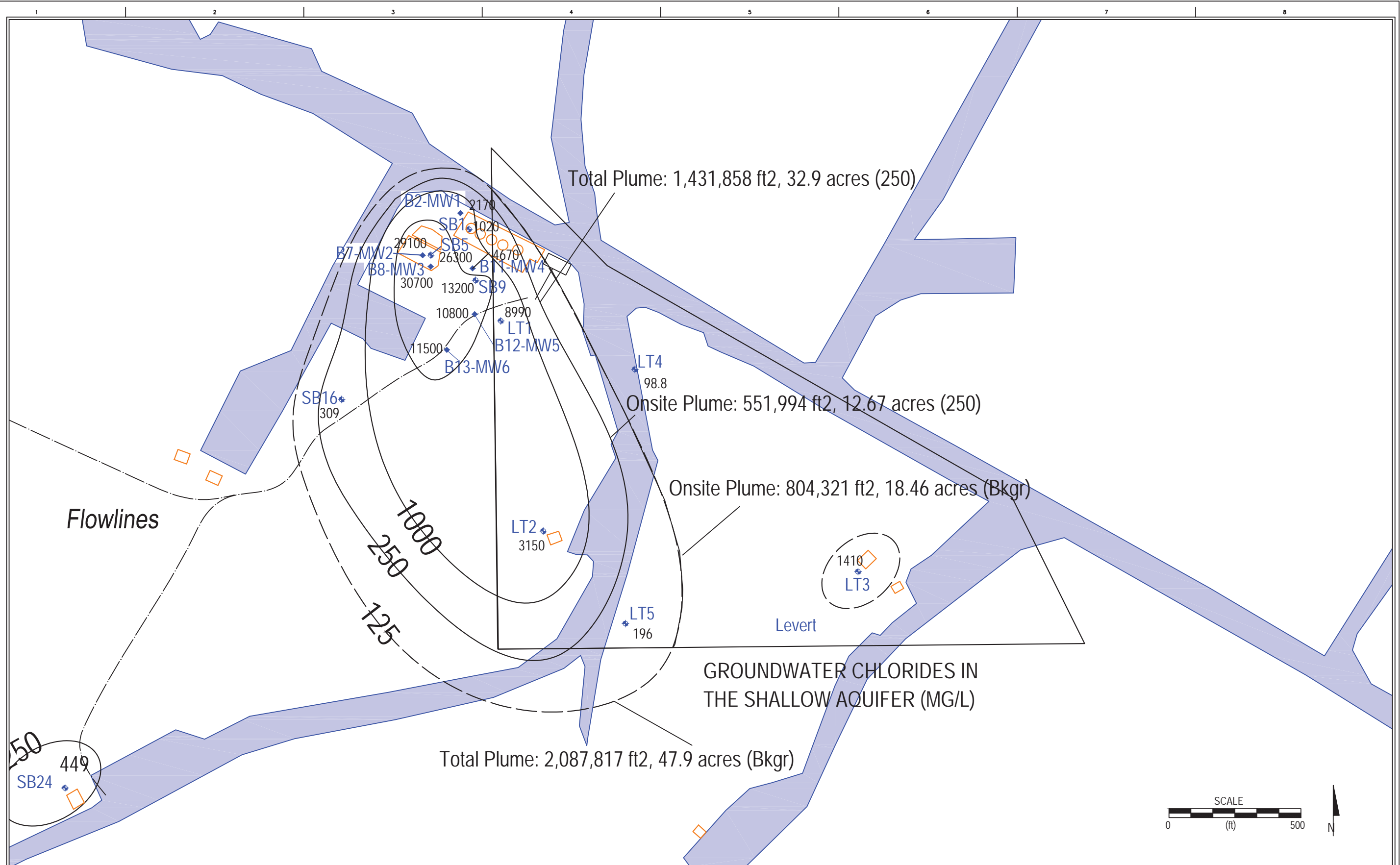


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POTENTIOMETRIC MAP OF THE SHALLOW AQUIFER - 30SEP2015
August J. Levert, Jr., et al v BP American Production Co; 18th JDC; Docket # 78953
Grand River Field, Iberville Parish, LA

FILENAME	REV #
JOB NO.	DATE July 2021
DIRECTORY	FIGURE NO. 23

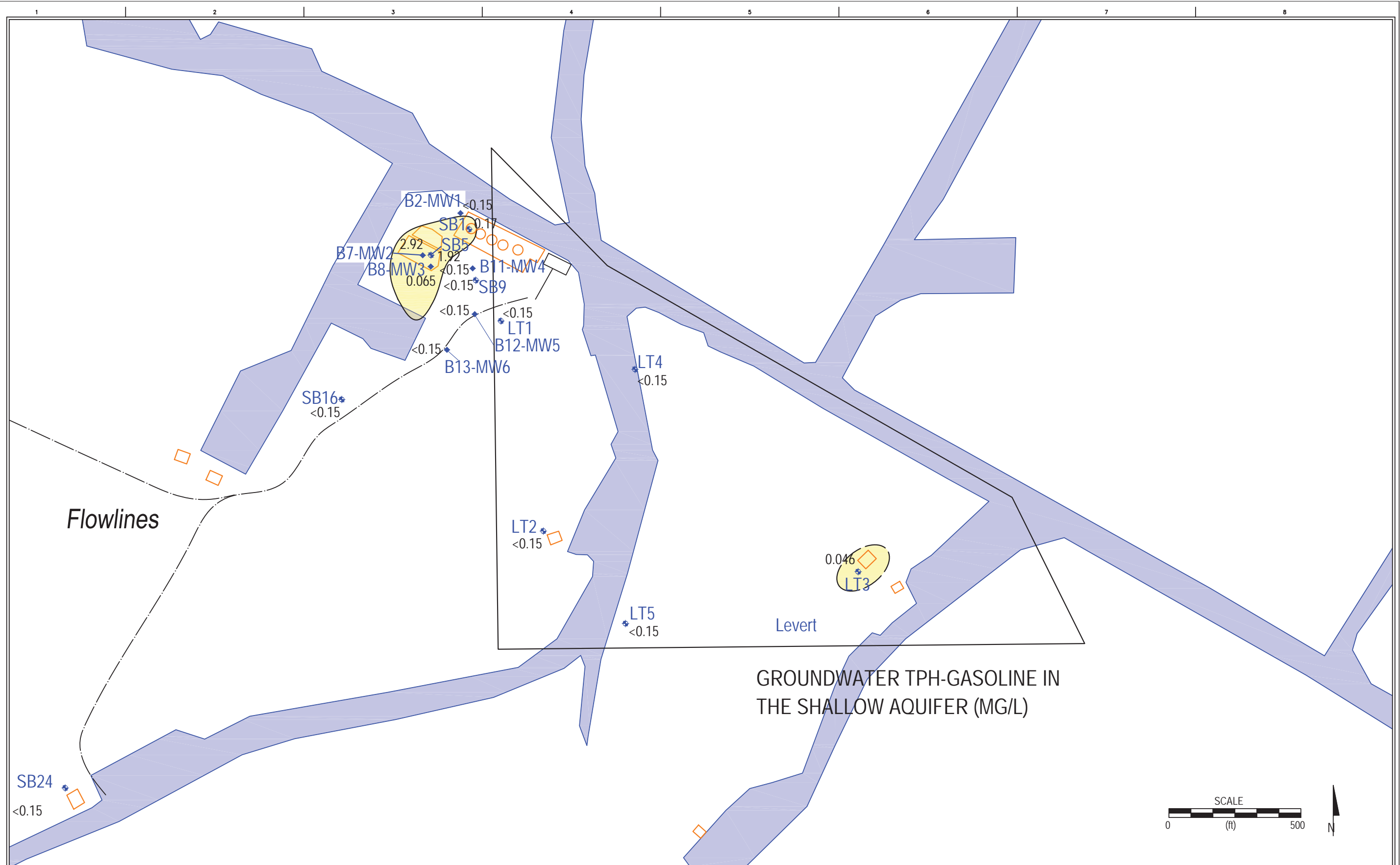



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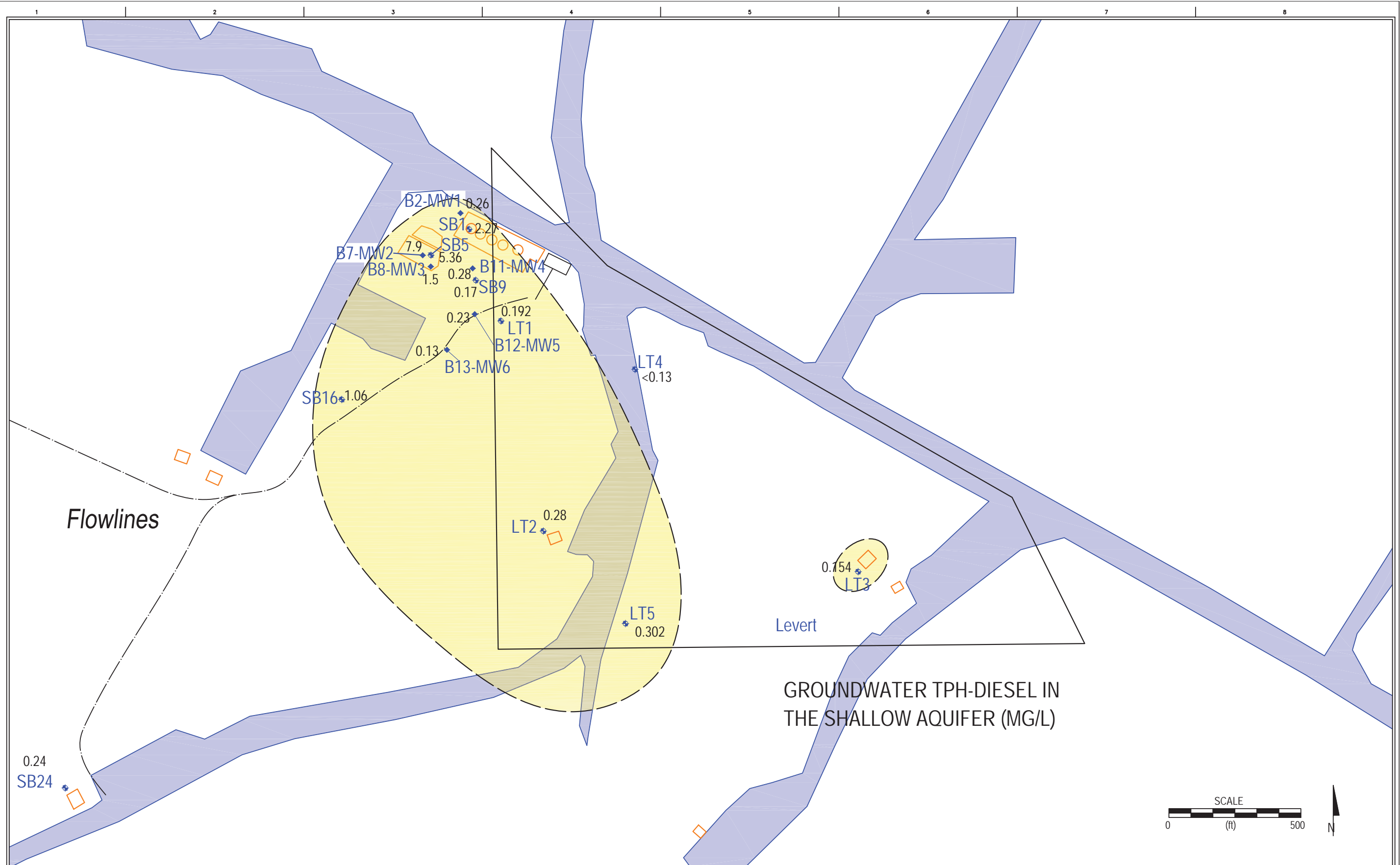
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GROUNDWATER CHLORIDES
 August J. Levert, Jr., et al v BP American Production Co; 18th JDC; Docket # 78953
 Grand River Field, Iberville Parish, LA

FILENAME	REV #
JOB NO.	DATE July 2021
DIRECTORY	FIGURE NO. 24



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	FILENAME	REV #								
	JOB NO.	DATE July 2021								
	DIRECTORY	FIGURE NO. 25								




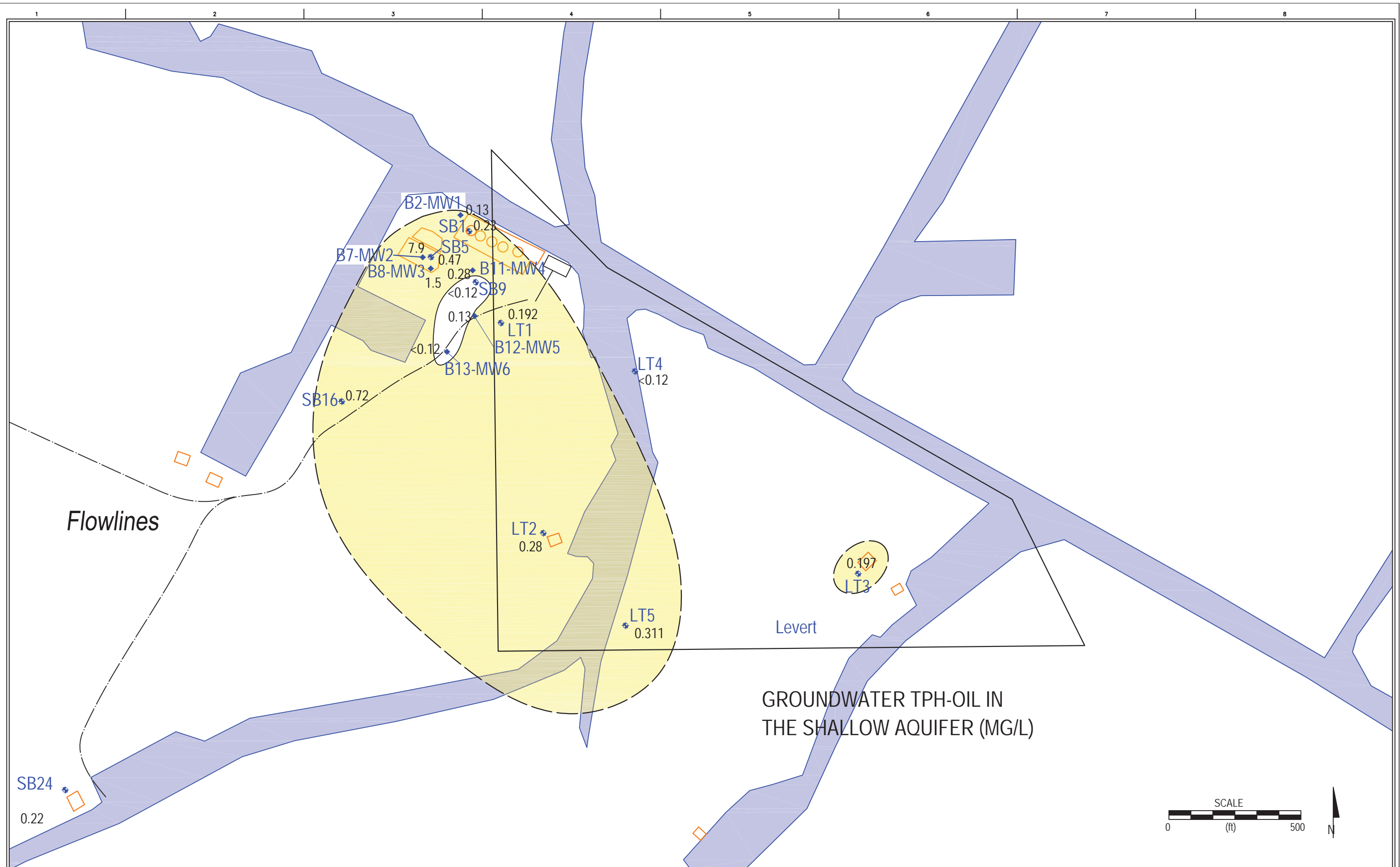
Flowlines

Levert

GROUNDWATER TPH-DIESEL IN THE SHALLOW AQUIFER (MG/L)



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GROUNDWATER TPH-OIL IN THE SHALLOW AQUIFER (MG/L)

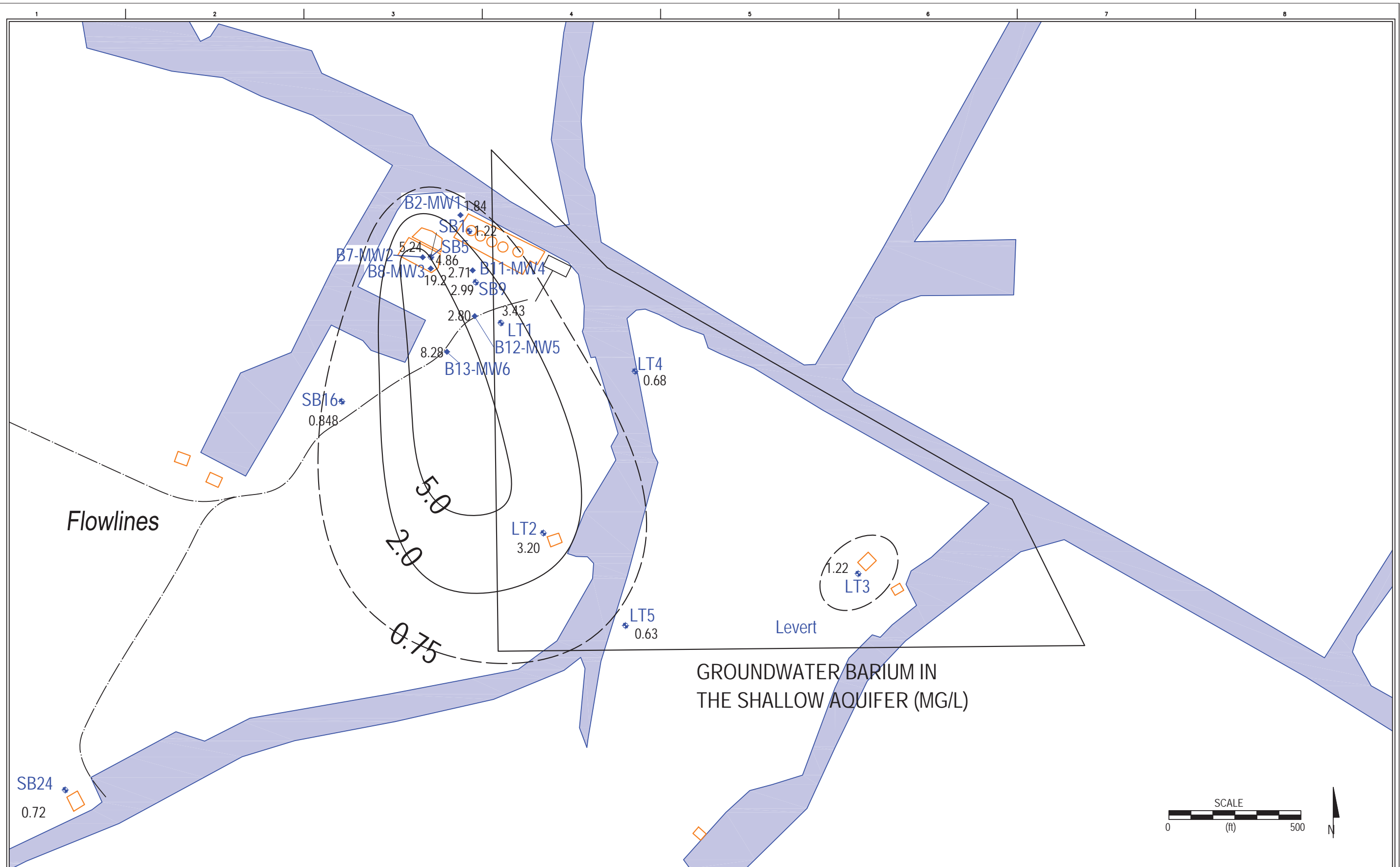


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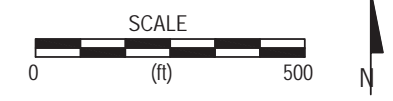
PREPARED FOR:
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GROUNDWATER TPH-OIL RANGE ORGANICS
 August J. Levert, Jr., et al v BP American Production Co; 18th JDC; Docket # 78953
 Grand River Field, Iberville Parish, LA

FILENAME	REV #
JOB NO.	DATE July 2021
DIRECTORY	FIGURE NO. 27



GROUNDWATER BARIUM IN THE SHALLOW AQUIFER (MG/L)

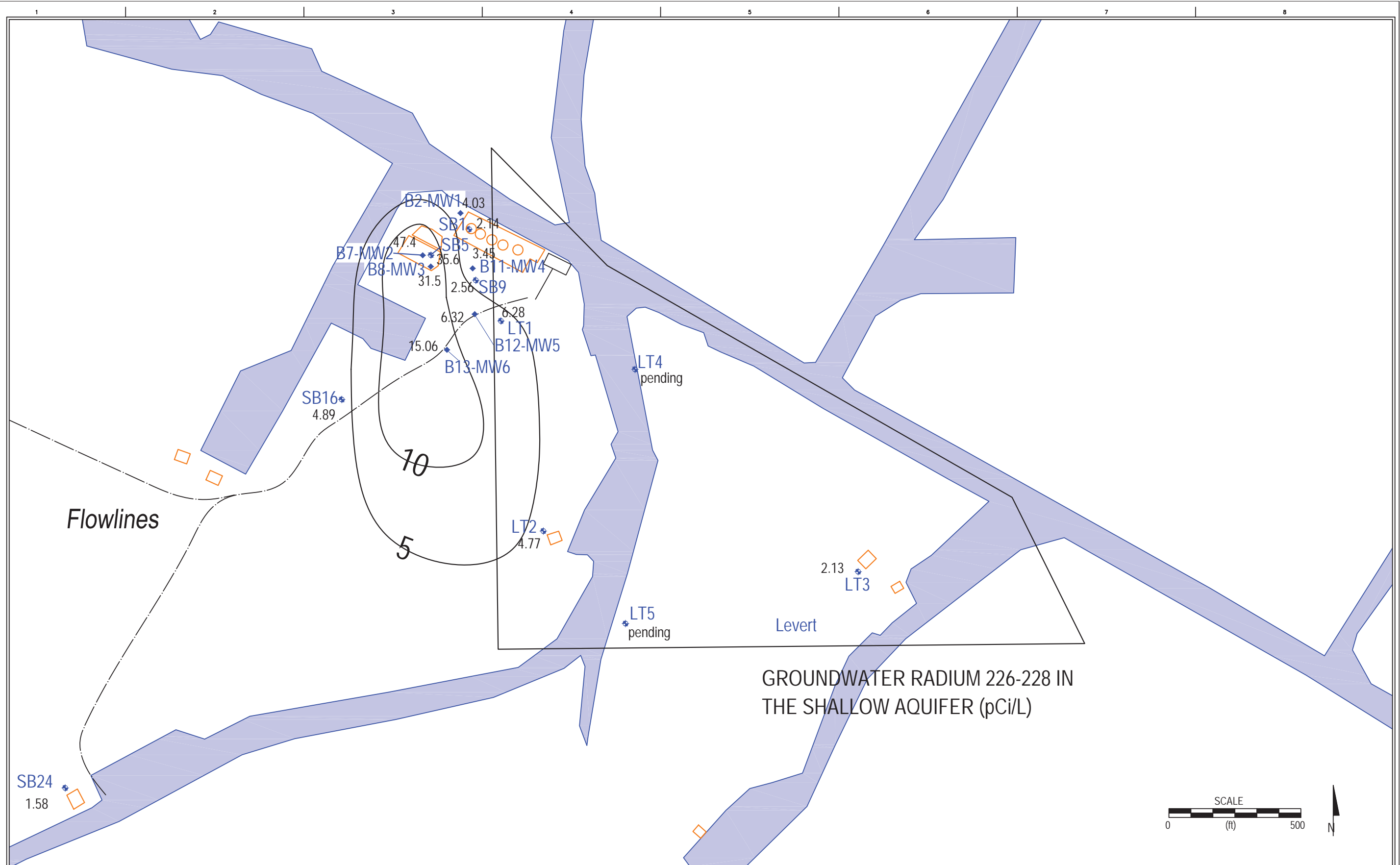


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GROUNDWATER BARIUM
August J. Levert, Jr., et al v BP American Production Co; 18th JDC; Docket # 78953
Grand River Field, Iberville Parish, LA

FILENAME	REV #
JOB NO.	DATE July 2021
DIRECTORY	FIGURE NO. 28



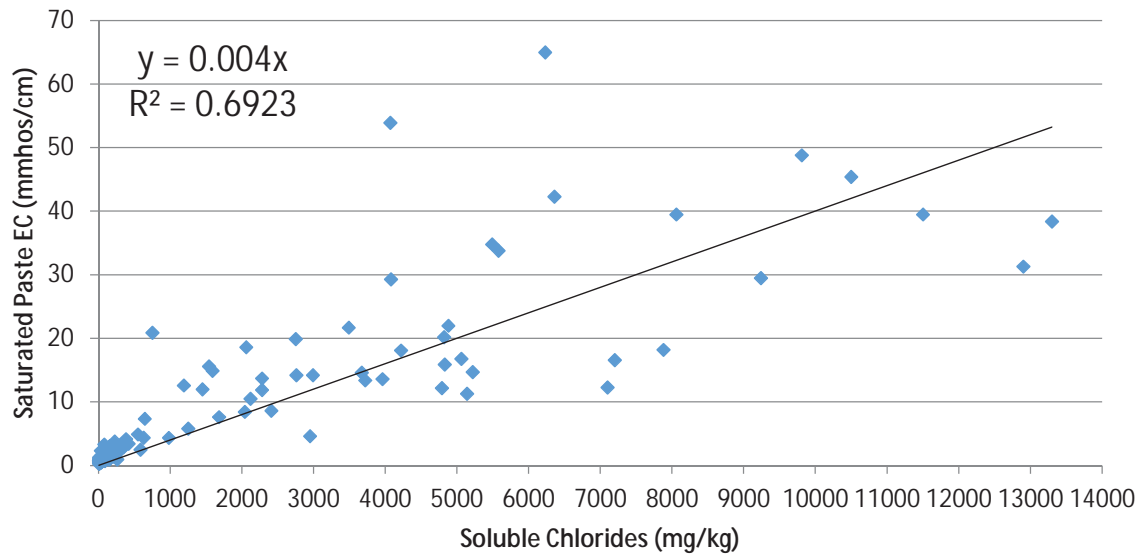
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GROUNDWATER RADIUM 226-228
 August J. Levert, Jr., et al v BP American Production Co; 18th JDC; Docket # 78953
 Grand River Field, Iberville Parish, LA

FILENAME	REV #
JOB NO.	DATE July 2021
DIRECTORY	FIGURE NO. 30

Figure 31 EC v Soluble CL



x y
1500 6.000

US EPA Soil Screening Guidance Leaching Equation		
C _w	GW Criterion	250 mg/L
DAF		20
K _d	Distribution coeff	0.1 L/kg
O _w	water filled n	0.3
O _a	Air filled n	0.18
H'	Henry law Constant	0
P _b	bulk dens	1.5 kg/L

GW Criterion = Surface Wtr Criterion (250 mg/L)

Soil Screening Level = 1500 mg/kg

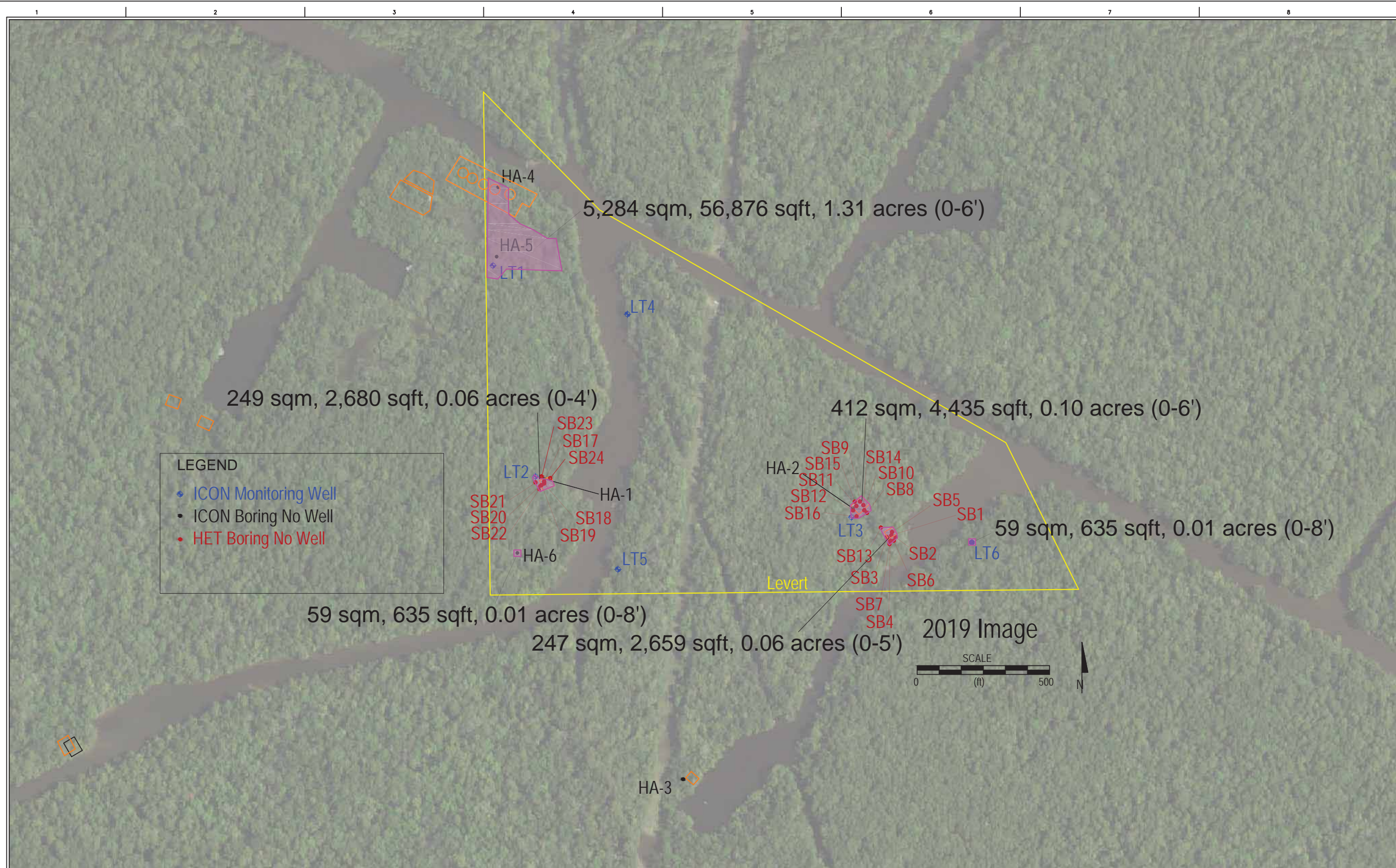
Equation 10: Soil Screening Level Partitioning Equation for Migration to Ground Water

$$\text{Screening Level in Soil (mg/kg)} = C_w \left[K_d + \frac{(\theta_w + \theta_a H')}{\rho_b} \right]$$

Parameter/Definition (units)	Default
C _w /target soil leachate concentration (mg/L)	nonzero MCLG, MCL, or HBL ^a × dilution factor
K _d /soil-water partition coefficient (L/kg)	chemical-specific ^b
K _{oc} /soil organic carbon/water partition coefficient (L/kg)	K _{oc} × f _{oc} (organics) chemical-specific ^b
f _{oc} /fraction organic carbon in soil (g/g)	0.002 (0.2%)
θ _w /water-filled soil porosity (L _{water} /L _{soil})	0.3
θ _a /air-filled soil porosity (L _{air} /L _{soil})	n - θ _w
ρ _b /dry soil bulk density (kg/L)	1.5
n/soil porosity (L _{pore} /L _{soil})	1-(ρ _b /ρ _s)
ρ _s /soil particle density (kg/L)	2.65
H'/dimensionless Henry's law constant	chemical-specific ^b (assume to be zero for inorganic contaminants except mercury)

^aChemical-specific (see Attachment D).

^bSee Attachment C.



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SOIL REMEDIATION AREAS
 August J. Levert, Jr., et al v BP America Production Co; 18th JDC; Docket # 78953
 Grand River Field, Iberville Parish, LA

FILENAME	REV #
JOB NO.	DATE JULY 2022
DIRECTORY	FIGURE NO. 32

**TABLE 1
BACKGROUND SOIL DATA SUMMARY**
August J. Levert Jr et al v BP America Production Co; 18th JDC; Docket #78953
Grand River Field, Iberville Parish, La
Prepared for Jones, Swanson, Huddell & Daschback LLC

Boring ID	Depth	METHOD USED FOR SAMPLE	Date	Metals (dry-mg/kg)										CEC (meq/100g)	Electrical Conductivity (mmhos/cm)	Sodicity					TPH (mg/kg)		HEM Oil & Grease (%)	Percent Moisture (%)			
				Arsenic	Barium	True Total Barium	Cadmium	Chromium	Lead	Selenium	Strontium	Zinc	Mercury			ESP (%)	SAR (meq)	Soluble Calcium (meq)	Soluble Magnesium (meq)	Soluble Sodium (meq)	Leachate Chloride	Soluble Chloride			TPH-DRO	TPH-ORO	
LT-4	8-10'	Marshmaster	22-Jun-22	2.18	192	375	<0.496	14.0	12.1	<3.97	39.2	48.0	<0.0998	68.3	0.72	1.02	1.14	2.79	1.40	1.66	83.8	na	na	na	na	42.2	
LT-4	12-14'	Marshmaster	22-Jun-22	4.06	265	409	<0.498	11.2	9.42	<3.98	35.9	45.0	<0.0946	na	0.81	na	na	na	na	na	33.6	na	na	na	na	28.9	
LT-4	16-18'	Marshmaster	22-Jun-22	na	na	na	na	na	na	na	na	na	na	na	0.67	na	na	na	na	na	34.4	na	na	na	na	26.8	
LT-4	20-22'	Marshmaster	22-Jun-22	na	na	na	na	na	na	na	na	na	na	na	0.77	na	na	na	na	na	21.6	49.7	na	na	na	41.5	
LT-5	0-2'	Marshmaster	23-Jun-22	4.38	166	411	<0.497	16.0	14.2	<3.97	32.4	58.7	<0.104	71.6	0.96	2.24	1.96	2.82	1.71	2.96	na	146	na	na	na	28.3	
LT-5	4-6'	Marshmaster	23-Jun-22	5.67	200	341	<0.498	16.4	15.3	<3.99	41.9	65.0	<0.0962	81.2	1.02	1.72	1.57	3.43	1.94	2.57	na	153	na	na	na	37.4	
LT-5	8-10'	Marshmaster	23-Jun-22	4.36	447	691	<0.478	12.5	11.6	<3.83	44.3	50.5	<0.0947	51.3	0.71	1.26	1.19	2.28	1.34	1.61	na	88.7	na	na	na	32.7	
LT-5	16-18'	Marshmaster	23-Jun-22	na	na	na	na	na	na	na	na	na	na	na	0.64	na	na	na	na	na	na	39.8	na	na	na	20.6	
LT-5	22-24'	Marshmaster	23-Jun-22	na	na	na	na	na	na	na	na	na	na	na	1.06	na	na	na	na	na	28.0	77.7	na	na	na	31.7	
LT-7	0-2'	Marshmaster	27-Jun-22	4.47	144	234	<0.500	12.2	9.71	<4.00	26.7	48.0	<0.104	29.4	0.52	1.24	0.52	2.81	1.18	0.74	4.84	17.5	na	na	na	17.4	
LT-7	4-6'	Marshmaster	27-Jun-22	4.79	141	220	<0.494	9.62	7.58	<3.95	28.7	35.4	<0.0991	20.7	0.24	1.28	0.44	1.21	0.52	0.41	2.47	7.83	na	na	na	24.2	
LT-7	8-10'	Marshmaster	27-Jun-22	4.06	160	270	<0.486	12.5	10.3	<3.89	36.0	50.2	<0.106	27.8	0.47	1.30	0.50	2.15	0.97	0.63	na	8.98	na	na	na	25.6	
LT-7	16-18'	Marshmaster	27-Jun-22	na	na	na	na	na	na	na	na	na	na	na	0.62	na	na	na	na	na	na	40.3	na	na	na	40.7	
LT-7	20-22'	Marshmaster	27-Jun-22	na	na	na	na	na	na	na	na	na	na	na	0.58	na	na	na	na	na	na	43.2	na	na	na	41.5	
LT-7	24-26'	Marshmaster	27-Jun-22	na	na	na	na	na	na	na	na	na	na	na	0.60	na	na	na	na	na	na	13.9	35.6	na	na	na	35.4
LT-7	36-38'	Marshmaster	27-Jun-22	na	na	na	na	na	na	na	na	na	na	na	0.82	na	na	na	na	na	na	16.1	36.3	na	na	na	39.0
LT-8	0-2'	Marshmaster	28-Jun-22	2.61	119	208	<0.500	9.35	7.02	<4.00	25.7	35.3	<0.107	18.8	0.40	1.46	0.47	1.96	0.80	0.56	2.79	10.1	na	na	na	25.7	
LT-8	4-6'	Marshmaster	28-Jun-22	3.96	133	203	<0.496	9.68	6.76	<3.97	26.0	34.6	<0.0928	16.2	0.48	1.55	0.60	2.26	0.92	0.76	1.84	7.00	na	na	na	24.9	
LT-8	8-10'	Marshmaster	28-Jun-22	4.16	147	261	<0.491	10.9	8.18	<3.93	31.4	41.9	<0.104	21.3	0.42	1.50	0.81	1.53	0.66	0.85	na	17.4	na	na	na	27.4	
LT-8	16-18'	Marshmaster	28-Jun-22	na	na	na	na	na	na	na	na	na	na	na	0.50	na	na	na	na	na	na	25.3	na	na	na	26.1	
LT-8	20-22'	Marshmaster	28-Jun-22	na	na	na	na	na	na	na	na	na	na	na	0.34	na	na	na	na	na	na	14.6	na	na	na	22.7	
LT-8	24-26'	Marshmaster	28-Jun-22	na	na	na	na	na	na	na	na	na	na	na	0.44	na	na	na	na	na	na	11.9	17.7	na	na	na	29.6
LT-8	36-38'	Marshmaster	28-Jun-22	na	na	na	na	na	na	na	na	na	na	na	0.56	na	na	na	na	na	na	12.6	43.2	na	na	na	28.7
LT-9	0-2'	Marshmaster	28-Jun-22	5.08	137	196	<0.494	10.5	8.00	<3.95	26.5	41.6	<0.0935	24.5	0.39	1.20	0.54	1.93	0.84	0.63	na	10.2	na	na	na	25.9	
LT-9	4-6'	Marshmaster	28-Jun-22	3.89	156	245	<0.489	11.5	9.44	<3.91	32.5	46.0	<0.105	25.5	0.41	1.41	0.62	1.87	0.79	0.72	na	8.15	na	na	na	26.6	
LT-9	8-10'	Marshmaster	28-Jun-22	5.61	149	180	<0.497	10.4	9.01	<3.98	35.1	44.1	<0.0949	24.3	0.49	1.25	0.70	1.78	0.77	0.79	na	25.6	na	na	na	25.4	
LT-9	12-14'	Marshmaster	28-Jun-22	na	na	na	na	na	na	na	na	na	na	na	0.48	na	na	na	na	na	na	31.8	na	na	na	26.4	
LT-9	20-22'	Marshmaster	28-Jun-22	na	na	na	na	na	na	na	na	na	na	na	0.43	na	na	na	na	na	na	18.9	na	na	na	28.3	

Mean 4.23 183 303 11.9 9.90 33.0 46.0 0.591 1.42 0.877
 Stdev 0.968 84.5 137 2.23 2.59 6.03 8.62 0.206 0.305 0.489
 Mean +2 Stdev 6.17 352 577 16.4 15.1 45.1 63.3 1.00 2.03 1.85

TABLE 2
SOIL DATA SUMMARY

August J. Levert Jr et al v BP America Production Co; 18th JDC; Docket #78953
Grand River Field, Iberville Parish, La
Prepared for Jones, Swanson, Huddell & Daschback LLC

Boring ID	Depth	METHOD USED FOR SAMPLE	Date	Metals (dry-mg/kg)									CEC (meq/100g)	Electrical Conductivity (mmhos/cm)	Sodicity					TPH (mg/kg)		HEM Oil & Grease (%)	Percent Moisture (%)			
				Arsenic	Barium	True Total Barium	Cadmium	Chromium	Lead	Selenium	Strontium	Zinc			Mercury	ESP (%)	SAR (meq)	Soluble Calcium (meq)	Soluble Magnesium (meq)	Soluble Sodium (meq)	Leachate Chloride			Soluble Chloride	TPH-DRO	TPH-ORO
		LDEQ RECAP Standard		12	550	-	3.9	100	100	20	-	2300	2.3	-	-	-	-	-	-	-	-	65	150	-	-	
		29B Elevated Wetland Std		10	-	20,000	10	500	500	10	-	500	10	-	8	25	14	-	-	-	500	-	-	-	1	-
		Background Standards		6.17	352	577	-	16.4	15.1	-	45.1	63.3	-	-	1.00	2.03	1.85	-	-	-	-	65	180	-	-	
HA-1	0-2'	Hand Auger	29-Aug-19	5.90	228	539	0.658	17.9	21.5	<3.87	251	80.3	<0.107	56.5	1.31	3.66	5.40	2.59	1.32	7.54	na	na	14,000	16,400	9.36	45.7
HA-1	2-4'	Hand Auger	29-Aug-19	8.61	345	573	0.633	21.0	17.2	<3.96	262	71.0	<0.0996	55.3	1.55	8.85	13.0	1.03	0.520	11.4	na	na	103	139	0.160	37.7
HA-2	0-2'	Hand Auger	29-Aug-19	23.4	3,630	265,000	7.52	435	707	<3.69	336	1,350	2.08	35.7	0.94	1.62	3.01	3.15	1.30	4.49	na	na	13,900	16,600	12.4	42.6
HA-2	2-4'	Hand Auger	29-Aug-19	7.57	1,030	3,900	0.741	19.8	20.5	<3.85	263	67.5	<0.0984	65.5	1.46	8.11	10.8	1.44	0.720	11.2	na	na	1,800	2,330	2.13	48.4
HA-4	0-2'	Hand Auger	30-Aug-19	12.1	384	754	0.770	12.7	13.9	<3.71	372	153	<0.108	44.1	0.57	1.15	0.850	4.10	0.620	1.30	na	na	na	na	na	21.8
HA-4	2-4'	Hand Auger	30-Aug-19	8.67	236	408	0.575	13.2	13.7	<3.90	90.4	65.4	<0.107	48.6	3.67	11.3	12.9	5.96	2.61	26.8	na	na	na	na	na	30.6
HA-4	4-6'	Hand Auger	30-Aug-19	10.2	210	285	0.544	11.8	12.4	<3.75	52.3	54.6	<0.104	33.3	6.23	12.9	15.5	10.2	5.59	43.7	352	na	na	na	na	28.0
HA-4	6-8'	Hand Auger	30-Aug-19	6.49	243	431	0.794	19.2	17.5	<3.83	54.5	78.9	<0.108	51.3	6.54	7.54	8.55	17.9	10.1	32.0	515	na	na	na	na	34.5
HA-5	0-2'	Hand Auger	30-Aug-19	6.44	207	337	0.528	19.7	18.2	<3.71	60.2	82.2	<0.106	59.3	2.94	4.74	5.94	7.81	4.47	14.7	na	na	na	na	na	35.8
HA-5	2-4'	Hand Auger	30-Aug-19	6.09	263	425	0.570	22.6	17.6	<3.93	62.1	92.3	<0.104	61.6	2.83	5.35	6.02	7.28	4.06	14.3	na	na	na	na	na	33.3
HA-5	4-6'	Hand Auger	30-Aug-19	3.99	397	892	0.519	20.1	18.9	<3.84	64.5	78.4	<0.101	56.6	3.52	6.05	5.85	9.80	5.37	16.1	334	na	na	na	na	35.6
HA-5	6-7'	Hand Auger	30-Aug-19	8.22	267	402	<0.472	18.1	14.1	<3.77	68.2	66.5	<0.107	66.0	6.12	5.33	6.37	20.0	11.2	25.2	699	na	na	na	na	44.9
HA-6	0-2'	Hand Auger	27-Sep-19	7.37	257	365	<0.479	23.7	23.9	<3.83	54.9	101	<0.106	74.1	0.490	0.580	1.12	1.94	1.29	1.43	na	na	na	na	na	39.6
HA-6	2-4'	Hand Auger	27-Sep-19	7.69	336	486	<0.498	26.1	20.8	<3.98	59.1	98.6	<0.0998	78.2	0.770	1.11	1.75	2.7	1.74	2.60	na	na	na	na	na	39.3
HA-6	4-6'	Hand Auger	27-Sep-19	6.42	460	614	0.482	20.1	20.4	<3.78	61.3	86.0	<0.103	73.4	1.16	1.62	2.41	3.85	2.24	4.21	na	na	na	na	na	42.0
LT-1	0-4'	Marshmaster	25-Sep-19	10.4	247	394	0.628	21.6	19.2	<3.92	93.8	88.0	<0.103	70.5	2.08	5.29	7.87	3.46	1.99	13.0	na	na	na	na	na	33.1
LT-1	6-8'	Marshmaster	25-Sep-19	5.05	353	408	<0.480	21.6	17.1	<3.84	82.0	76.0	<0.109	84.5	6.58	7.82	12.0	13.3	7.02	38.2	632	na	na	na	na	38.1
LT-1	12-14'	Marshmaster	25-Sep-19	na	na	na	na	na	na	na	na	na	na	17.2	na	na	na	na	na	na	na	na	na	na	na	21.5
LT-2	0-4'	Marshmaster	26-Sep-19	8.90	249	360	<0.489	22.7	19.9	<3.91	94.0	90.7	<0.103	109	1.25	6.28	8.51	1.33	0.870	8.93	na	na	na	na	na	33.1
LT-2	4-8'	Marshmaster	26-Sep-19	5.77	277	365	0.697	17.2	17.4	<3.93	94.5	68.2	<0.101	135	2.62	7.38	11.1	3.27	1.81	17.7	152	na	na	na	na	42.9
LT-2	12-16'	Marshmaster	26-Sep-19	na	na	na	na	na	na	na	na	na	na	6.01	na	na	na	na	na	na	na	na	na	na	na	31.1
LT-3	0-4'	Marshmaster	26-Sep-19	7.15	245	361	<0.465	35.5	18.8	<3.72	76.9	85.0	<0.101	86.1	0.610	6.11	6.05	0.680	0.430	4.52	na	na	na	na	na	31.6
LT-3	4-8'	Marshmaster	26-Sep-19	8.59	573	1,240	<0.490	21.9	18.7	<3.92	97.0	77.1	<0.106	72.7	0.670	6.81	6.94	0.610	0.400	4.92	37.9	na	na	na	na	38.3
LT-4	8-10'	Marshmaster	22-Jun-22	2.18	192	375	<0.496	14.0	12.1	<3.97	39.2	48.0	<0.0998	68.3	0.720	1.02	1.14	2.79	1.40	1.66	83.8	na	na	na	na	42.2
LT-4	12-14'	Marshmaster	22-Jun-22	4.06	265	409	<0.498	11.2	9.42	<3.98	35.9	45.0	<0.0946	na	0.810	na	na	na	na	na	33.6	na	na	na	na	28.9
LT-4	16-18'	Marshmaster	22-Jun-22	na	na	na	na	na	na	na	na	na	na	0.670	na	na	na	na	na	na	34.4	na	na	na	na	26.8
LT-4	20-22'	Marshmaster	22-Jun-22	na	na	na	na	na	na	na	na	na	na	0.770	na	na	na	na	na	na	21.6	49.7	na	na	na	41.5
LT-5	0-2'	Marshmaster	23-Jun-22	4.38	166	411	<0.497	16.0	14.2	<3.97	32.4	58.7	<0.104	71.6	0.960	2.24	1.96	2.82	1.71	2.96	na	146	na	na	na	28.3
LT-5	4-6'	Marshmaster	23-Jun-22	5.67	200	341	<0.498	16.4	15.3	<3.99	41.9	65.0	<0.0962	81.2	1.02	1.72	1.57	3.43	1.94	2.57	na	153	na	na	na	37.4
LT-5	8-10'	Marshmaster	23-Jun-22	4.36	447	691	<0.478	12.5	11.6	<3.83	44.3	50.5	<0.0947	51.3	0.710	1.26	1.19	2.28	1.34	1.61	na	88.7	na	na	na	32.7
LT-5	16-18'	Marshmaster	23-Jun-22	na	na	na	na	na	na	na	na	na	na	0.640	na	na	na	na	na	na	na	39.8	na	na	na	20.6
LT-5	22-24'	Marshmaster	23-Jun-22	na	na	na	na	na	na	na	na	na	na	1.06	na	na	na	na	na	na	28.0	77.7	na	na	na	31.7
LT-6	0-2'	Marshmaster	23-Jun-22	5.58	213	356	<0.499	17.6	16.6	<3.99	38.3	73.2	<0.103	70.8	2.33	0.490	0.380	15.2	6.52	1.27	na	30.8	na	na	na	25.6
LT-6	4-6'	Marshmaster	23-Jun-22	4.91	181	418	<0.485	19.7	16.5	<3.88	43.8	74.4	<0.105	77.6	3.32	1.34	0.870	18.6	12.1	3.43	na	78.7	na	na	na	28.8
LT-6	6-8'	Marshmaster	23-Jun-22	4.96	161	430	<0.499	18.9	15.4	<3.99	40.0	76.8	<0.106	73.0	1.24	1.50	1.28	4.99	2.70	2.50	na	95.5	na	na	na	33.4
LT-6	16-18'	Marshmaster	23-Jun-22	na	na	na	na	na	na	na	na	na	na	3.77	na	na	na	na	na	na	na	364	na	na	na	51.7
LT-6	24-26'	Marshmaster	23-Jun-22	na	na	na	na	na	na	na	na	na	na	0.950	na	na	na	na	na	na	59.3	259	na	na	na	33.2
LT-7	0-2'	Marshmaster	27-Jun-22	4.47	144	234	<0.500	12.2	9.71	<4.00	26.7	48.0	<0.104	29.4	0.520	1.24	0.520	2.81	1.18	0.74	4.84	17.5	na	na	na	17.4
LT-7	4-6'	Marshmaster	27-Jun-22	4.79	141	220	<0.494	9.62	7.58	<3.95	28.7	35.4	<0.0991	20.7	0.240	1.28	0.440	1.21	0.52	0.41	2.47	7.83	na	na	na	24.2

TABLE 2
SOIL DATA SUMMARY
 August J. Levert Jr et al v BP America Production Co; 18th JDC; Docket #78953
 Grand River Field, Iberville Parish, La
 Prepared for Jones, Swanson, Huddell & Daschback LLC

Boring ID	Depth	METHOD USED FOR SAMPLE	Date	Metals (dry-mg/kg)										CEC (meq/100g)	Electrical Conductivity (mmhos/cm)	Sodicity					TPH (mg/kg)		HEM Oil & Grease (%)	Percent Moisture (%)			
				Arsenic	Barium	True Total Barium	Cadmium	Chromium	Lead	Selenium	Strontium	Zinc	Mercury			ESP (%)	SAR (meq)	Soluble Calcium (meq)	Soluble Magnesium (meq)	Soluble Sodium (meq)	Leachate Chloride	Soluble Chloride			TPH-DRO	TPH-ORO	
LDEQ RECAP Standard				12	550	-	3.9	100	100	20	-	2300	2.3	-	-	-	-	-	-	-	-	65	150	-	-		
29B Elevated Wetland Std				10	-	20,000	10	500	500	10	-	500	10	-	8	25	14	-	-	-	500	-	-	-	1	-	
Background Standards				6.17	352	577	-	16.4	15.1	-	45.1	63.3	-	-	1.00	2.03	1.85	-	-	-	-	-	65	180	-	-	
LT-7	8-10'	Marshmaster	27-Jun-22	4.06	160	270	<0.486	12.5	10.3	<3.89	36.0	50.2	<0.106	27.8	0.470	1.30	0.500	2.15	0.97	0.63	na	8.98	na	na	na	25.6	
LT-7	16-18'	Marshmaster	27-Jun-22	na	na	na	na	na	na	na	na	na	na	na	0.620	na	na	na	na	na	na	40.3	na	na	na	40.7	
LT-7	20-22'	Marshmaster	27-Jun-22	na	na	na	na	na	na	na	na	na	na	na	0.580	na	na	na	na	na	na	43.2	na	na	na	41.5	
LT-7	24-26'	Marshmaster	27-Jun-22	na	na	na	na	na	na	na	na	na	na	na	0.600	na	na	na	na	na	na	13.9	35.6	na	na	35.4	
LT-7	36-38'	Marshmaster	27-Jun-22	na	na	na	na	na	na	na	na	na	na	na	0.820	na	na	na	na	na	na	16.1	36.3	na	na	39.0	
LT-8	0-2'	Marshmaster	28-Jun-22	2.61	119	208	<0.500	9.35	7.02	<4.00	25.7	35.3	<0.107	18.8	0.400	1.46	0.47	1.96	0.80	0.56	2.79	10.1	na	na	na	25.7	
LT-8	4-6'	Marshmaster	28-Jun-22	3.96	133	203	<0.496	9.68	6.76	<3.97	26.0	34.6	<0.0928	16.2	0.480	1.55	0.60	2.26	0.92	0.76	1.84	7.00	na	na	na	24.9	
LT-8	8-10'	Marshmaster	28-Jun-22	4.16	147	261	<0.491	10.9	8.18	<3.93	31.4	41.9	<0.104	21.3	0.420	1.50	0.81	1.53	0.66	0.85	na	17.4	na	na	na	27.4	
LT-8	16-18'	Marshmaster	28-Jun-22	na	na	na	na	na	na	na	na	na	na	na	0.500	na	na	na	na	na	na	25.3	na	na	na	26.1	
LT-8	20-22'	Marshmaster	28-Jun-22	na	na	na	na	na	na	na	na	na	na	na	0.340	na	na	na	na	na	na	14.6	na	na	na	22.7	
LT-8	24-26'	Marshmaster	28-Jun-22	na	na	na	na	na	na	na	na	na	na	na	0.440	na	na	na	na	na	na	11.9	17.7	na	na	29.6	
LT-8	36-38'	Marshmaster	28-Jun-22	na	na	na	na	na	na	na	na	na	na	na	0.560	na	na	na	na	na	na	12.6	43.2	na	na	28.7	
LT-9	0-2'	Marshmaster	28-Jun-22	5.08	137	196	<0.494	10.5	8.00	<3.95	26.5	41.6	<0.0935	24.5	0.390	1.20	0.540	1.93	0.84	0.63	na	10.2	na	na	na	25.9	
LT-9	4-6'	Marshmaster	28-Jun-22	3.89	156	245	<0.489	11.5	9.44	<3.91	32.5	46.0	<0.105	25.5	0.410	1.41	0.620	1.87	0.79	0.72	na	8.15	na	na	na	26.6	
LT-9	8-10'	Marshmaster	28-Jun-22	5.61	149	180	<0.497	10.4	9.01	<3.98	35.1	44.1	<0.0949	24.3	0.490	1.25	0.700	1.78	0.77	0.79	na	25.6	na	na	na	25.4	
LT-9	12-14'	Marshmaster	28-Jun-22	na	na	na	na	na	na	na	na	na	na	na	0.480	na	na	na	na	na	na	31.8	na	na	na	26.4	
LT-9	20-22'	Marshmaster	28-Jun-22	na	na	na	na	na	na	na	na	na	na	na	0.430	na	na	na	na	na	na	18.9	na	na	na	28.3	
HET Oversight																											
SB-1	0-2'	Marshmaster	21-Jun-22	3.85	3,050	51,900	na	na	na	na	na	na	na	74.3	0.520	0.77	1.13	2.06	1.03	1.40	na	na	na	na	na	41.2	
SB-1	2-4'	Marshmaster	21-Jun-22	6.57	2,600	33,700	na	na	na	na	na	na	na	77.4	1.14	1.62	1.99	4.68	2.27	3.71	na	na	na	na	na	44.2	
SB-3	0-2'	Marshmaster	21-Jun-22	12.0	4,510	412,000	0.654	481	302	na	219	207	1.12	25.8	0.780	1.11	1.22	3.70	1.62	1.99	na	na	1,430	229	na	33.7	
SB-3	2-4'	Marshmaster	21-Jun-22	3.22	1,110	12,100	<0.495	17.7	14.8	na	53.8	61.1	<0.106	60.5	0.590	2.56	2.45	1.60	0.81	2.69	na	na	10.4	13.8	na	36.9	
SB-4	0-2'	Marshmaster	21-Jun-22	13.3	4,230	439,000	0.611	220	266	na	200	186	1.24	7.91	0.640	1.38	1.07	2.87	1.17	1.52	na	na	771	121	na	23.5	
SB-4	2-4'	Marshmaster	21-Jun-22	9.00	3,610	434,000	0.496	67.4	146	na	112	127	0.548	29.0	0.730	2.37	2.71	1.99	1.03	3.33	na	na	1,350	234	na	28.3	
SB-5	2-4'	Marshmaster	21-Jun-22	4.73	4,460	116,000	na	na	na	na	na	na	na	63.1	0.340	0.90	1.02	1.41	0.73	1.05	na	na	na	na	na	33.4	
SB-5	4-6'	Marshmaster	21-Jun-22	3.41	2,580	16,900	na	na	na	na	na	na	na	66.6	0.320	1.52	1.14	1.10	0.59	1.05	na	na	na	na	na	34.4	
SB-6	2-4'	Marshmaster	21-Jun-22	4.71	692	3,770	na	na	na	na	na	na	na	79.0	1.45	1.57	1.34	6.86	4.05	3.14	na	na	na	na	na	26.2	
SB-6	4-6'	Marshmaster	21-Jun-22	3.69	700	5,430	na	na	na	na	na	na	na	70.4	1.38	2.16	1.66	6.14	3.18	3.59	na	na	na	na	na	34.1	
SB-7	2-4'	Marshmaster	21-Jun-22	4.13	295	1,840	na	na	na	na	na	na	na	65.2	0.720	1.44	1.67	2.59	1.45	2.38	na	na	na	na	na	34.9	
SB-8	0-2'	Marshmaster	21-Jun-22	3.96	1,350	42,200	na	na	na	na	na	na	na	74.5	0.630	0.73	1.06	3.01	1.57	1.61	na	na	na	na	na	33.2	
SB-8	2-4'	Marshmaster	21-Jun-22	4.22	245	1,390	na	na	na	na	na	na	na	70.1	0.310	1.01	1.16	1.13	0.60	1.08	na	na	na	na	na	33.9	
SB-9	2-4'	Marshmaster	22-Jun-22	12.7	3,570	160,000	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	1,210	632	na	39.6	
SB-10	0-2'	Marshmaster	22-Jun-22	6.35	3,370	21,600	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	142	157	na	59.8	
SB-10	2-4'	Marshmaster	22-Jun-22	4.22	2,320	64,500	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	4,800	4,800	na	44.0	
SB-10	4-6'	Marshmaster	22-Jun-22	5.92	485	2,620	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	149	149	na	51.5	
SB-11	0-2'	Marshmaster	22-Jun-22	8.47	3,740	102,000	1.65	196	122	na	223	273	0.523	na	na	na	na	na	na	na	na	na	141	123	<0.05	61.9	
SB-11	2-4'	Marshmaster	22-Jun-22	28.1	2,040	320,000	8.98	327	779	na	449	1,390	2.10	na	na	na	na	na	na	na	na	na	7,870	4,560	0.14	44.1	
SB-12	0-2'	Marshmaster	22-Jun-22	5.34	1,350	6,510	0.844	22.3	23.2	na	99.6	109	<0.109	na	na	na	na	na	na	na	na	na	29.2	85.3	<0.05	65.8	
SB-12	2-4'	Marshmaster	22-Jun-22	61.3	1,470	323,000	12.9	172	1,060	na	505	2,080	2.06	na	na	na	na	na	na	na	na	na	4,920	1,440	0.21	22.8	

TABLE 2
SOIL DATA SUMMARY

August J. Levert Jr et al v BP America Production Co; 18th JDC; Docket #78953
Grand River Field, Iberville Parish, La
Prepared for Jones, Swanson, Huddell & Daschback LLC

Boring ID	Depth	METHOD USED FOR SAMPLE	Date	Metals (dry-mg/kg)									CEC (meq/100g)	Electrical Conductivity (mmhos/cm)	Sodicity						TPH (mg/kg)		HEM Oil & Grease (%)	Percent Moisture (%)			
				Arsenic	Barium	True Total Barium	Cadmium	Chromium	Lead	Selenium	Strontium	Zinc			Mercury	ESP (%)	SAR (meq)	Soluble Calcium (meq)	Soluble Magnesium (meq)	Soluble Sodium (meq)	Leachate Chloride	Soluble Chloride			TPH-DRO	TPH-ORO	
LDEQ RECAP Standard				12	550	-	3.9	100	100	20	-	2300	2.3	-	-	-	-	-	-	-	-	-	65	150	-	-	
29B Elevated Wetland Std				10	-	20,000	10	500	500	10	-	500	10	-	8	25	14	-	-	-	-	500	-	-	-	1	-
Background Standards				6.17	352	577	-	16.4	15.1	-	45.1	63.3	-	1.00	2.03	1.85	-	-	-	-	-	65	180	-	-		
SB-13	0-2'	Marshmaster	22-Jun-22	6.65	408	3,990	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	42.5	
SB-13	2-4'	Marshmaster	22-Jun-22	5.14	197	1,390	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	38.0	
SB-14	0-2'	Marshmaster	23-Jun-22	3.38	247	4,050	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	39.2	
SB-14	2-4'	Marshmaster	23-Jun-22	5.17	929	6,640	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	36.7	
SB-14	6-8'	Marshmaster	23-Jun-22	4.46	530	3,360	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	53.3	
SB-15	0-2'	Marshmaster	23-Jun-22	5.65	258	762	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	34.3	
SB-15	2-4'	Marshmaster	23-Jun-22	4.99	297	1,470	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	34.1	
SB-15	6-8'	Marshmaster	23-Jun-22	6.07	217	618	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	41.6	
SB-16	0-2'	Marshmaster	23-Jun-22	7.06	1,010	4,960	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	39.8	
SB-16	2-4'	Marshmaster	23-Jun-22	4.76	350	723	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	37.0	
SB-16	6-8'	Marshmaster	23-Jun-22	4.23	438	1,170	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	46.5	
SB-17	0-2'	Marshmaster	23-Jun-22	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	5,440	5,290	2.20	na
SB-21	0-2'	Marshmaster	23-Jun-22	5.58	1,370	6,910	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	31.7	
SB-22	0-2'	Marshmaster	23-Jun-22	6.92	546	3,150	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	35.6	
SB-23	0-2'	Marshmaster	23-Jun-22	4.30	202	492	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	34.2	
SB-24	0-2'	Marshmaster	23-Jun-22	3.21	179	537	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	34.9	

TABLE 3
BACKGROUND GROUNDWATER DATA SUMMARY
 August J. Levert Jr et al v BP America Production Co; 18th JDC; Docket #78953
 Grand River Field, Iberville Parish, La
 Prepared for Jones, Swanson, Huddell & Daschback LLC

Boring ID	Date	Screened Interval (ft bls)	Metals (mg/L)										Cations				TDS (mg/L)	Chlorides (mg/L)	Sulfate	Petroleum Hydrocarbons (mg/L)			BTEX (uG/L)				Alkalinity			Radionuclides (pCi/L)			Field Parameters			
			Arsenic	Barium	Chromium	Cadmium	Iron	Lead	Manganese	Mercury	Strontium	Zinc	Calcium	Magnesium	Potassium	Sodium				TPH-DRO	TPH-ORO	TPH-GRO	Benzene	Ethylbenzene	Toluene	Xylenes	Bicarbonate	Carbonate	Total	RADIUM 226	RADIUM 228	COMBINED 226/228	Field Spec. Cond. (uS/cm)	Turbidity (NTU)	Temp (oC)	Field pH (std units)
LT-4	22-Jun-22	13-18'	0.0164	0.680	0.010	0.005	33.2	0.010	1.46	0.0002	0.99	0.0116	150	51.2	5	52.4	875	98.8	<0.250	<0.127	<0.117	<0.150	<5	<5	<10	<50	485	<20.0	485	pend	pend	pend	1,291	15	22.7	6.13
LT-8	28-Jun-22	14-24'	0.301	0.729	0.010	0.005	36.1	0.010	0.761	0.0002	1.41	0.01	220	63	10.1	46.0	920	58.0	<0.250	<0.131	<0.121	<0.15	<5	<5	<10	<50	808	<20.0	808	pend	pend	pend	1,634	12	22.3	6.40
LT-9	28-Jun-22	8-18'	0.281	0.696	0.010	0.005	36.7	0.010	0.788	0.0002	1.31	0.0117	212	58.2	9.63	44.9	965	88.7	<0.250	<0.131	<0.121	<0.15	<5	<5	<10	<50	780	<20.0	780	pend	pend	pend	1,670	17	22.6	6.52
Mean			0.199	0.702	0.010	0.005	35.3	0.010	1.00	0.0002	1.24	0.012	194.0	57.5	9.87	47.8	920	81.8																		
Stdev			0.159	0.025	0.000	0.000	1.9	0.000	0.40	0.0000	0.22	0.000	38	5.9	0.33	4.1	45	21.2																		
Mean +2 Stdev			0.517	0.752	0.010	0.005	39.1	0.010	1.80	0.0002	1.67	0.012	271	69.3	10.53	55.9	1,010	124.3																		

RL used as proxy for value.

TABLE 4
GROUNDWATER DATA SUMMARY
 August J. Levert Jr et al v BP America Production Co; 18th JDC; Docket #78953
 Grand River Field, Iberville Parish, La
 Prepared for Jones, Swanson, Huddell & Daschback LLC

Boring ID	Date	Screened Interval (ft bls)	Metals (mg/L)									Cations				TDS (mg/L)	Chlorides (mg/L)	Sulfate	Petroleum Hydrocarbons (mg/L)			BTEX (ug/L)				Alkalinity			Radionuclides (pCi/L)			Field Parameters						
			Arsenic	Barium	Chromium	Cadmium	Iron	Lead	Manganese	Mercury	Strontium	Zinc	Calcium	Magnesium	Potassium				Sodium	TPH-DRO	TPH-ORO	TPH-GRO	Benzene	Ethylbenzene	Toluene	Xylenes	Bicarbonate	Carbonate	Total	RADIUM 226	RADIUM 228	COMBINED 226/228	Field Spec. Cond. (uS/cm)	Turbidity (NTU)	Temp (oC)	Field pH (std units)		
RECAP SS			0.010^A	2^A	0.1^A	0.005^A		0.015^A		0.002^A	22^C	1.1^A			500^B	250^B		0.15^A	0.15^A	0.15^A	5^A	700^A	1000^A	10,000^A							5.0^B							
Background			0.517	0.752	0.01	0.005	39.1	0.01	1.8	0.0002	1.67	0.012	271	69.3	10.53	55.9	1010	124.3		0.15^A	0.15^A	0.15^A	5	5	10	50	1049	10	1049	pend	pend	pend						
LT-1	25-Sep-19	11-16'	<0.0025	3.43	<0.01	<0.005	102	<0.01	7.79	<0.0002	13.3	0.017	1,660	575	15.1	2,890	18,800	8,990	187	<0.134	0.192	<0.15	<5	<5	<10	<50	802	<10.0	802	2.65	3.63	6.28	25,300	3.11	24.0	6.43		
LT-2	26-Sep-19	11-16'	0.019	3.20	<0.01	<0.005	82.0	<0.01	6.34	<0.0002	6.42	<0.01	892	326	7.20	781	7,380	3,150	<5.00	0.529	0.280	<0.15	<5	<5	<10	<50	610	<10.0	610	3.2	1.57	4.77	9,977	85.5	22.3	6.37		
Dup (LT-2)	26-Sep-19	11-16'	0.018	2.74	<0.01	<0.005	70.3	<0.01	5.69	<0.0002	5.57	0.011	775	282	7.06	717	8,350	3,140	<5.00	<0.132	0.168	<0.15	<5	<5	<10	<50	575	<10.0	575	3.26	1.58	4.84	na	na	na	na		
LT-3	27-Sep-19	11-16'	<0.0025	1.22	<0.01	<0.005	5.64	<0.01	2.09	<0.0002	2.04	<0.01	282	98.4	<5.00	602	3,260	1,410	5	0.154	0.197	0.046	<5	<5	<10	<50	520	<10.0	520	1.06	1.07	2.13	5,470	OR	22.2	6.88		
LT-4	22-Jun-22	13-18'	0.0164	0.68	<0.01	<0.005	33.2	<0.01	1.46	<0.0002	0.99	0.0116	150	51.2	<5.00	52.4	875	98.8	<0.250	<0.127	<0.117	<0.150	<5	<5	<10	<50	485	<20.0	485	pend	pend	pend	1,291	15	22.7	6.13		
LT-5	22-Jun-22	13-23'	0.0280	0.63	<0.01	<0.005	28.4	<0.01	1.96	<0.0002	1.18	0.0172	167	60.7	<5.00	72.1	925	196	<0.250	0.302	0.311	<0.150	<5	<5	<10	<50	465	<20.0	465	pend	pend	pend	1,544	15	23.5	6.33		
LT-8	28-Jun-22	14-24'	0.301	0.729	<0.01	<0.005	36.1	<0.01	0.761	<0.0002	1.41	<0.01	220	63	10.1	46.0	920	58.0	<0.250	<0.131	<0.121	<0.15	<5	<5	<10	<50	808	<20.0	808	pend	pend	pend	1,634	12	22.3	6.40		
LT-9	28-Jun-22	8-18'	0.281	0.696	<0.01	<0.005	36.7	<0.01	0.788	<0.0002	1.31	0.0117	212	58.2	9.63	44.9	965	88.7	<0.250	<0.131	<0.121	<0.15	<5	<5	<10	<50	780	<20.0	780	pend	pend	pend	1,670	17	22.6	6.52		
DATA FROM ADJACENT IPSB PROPERTY																																						
SB-1	8-Jun-15	18-28'	0.017	1.22	<0.01	<0.005	67.8	<0.01	3.81	<0.0002	3.43	0.012	523	195	<5	273	3,480	1,020	<1.25	2.27	0.23	0.17	50	<5	<10	<50	1340	<20	1340	1.09	1.05	2.14	5,140	28	25.4	6.87		
SB-5	4-Jun-15	15-20'	<0.01	4.86	<0.01	<0.005	57.4	<0.01	4.08	<0.0002	159	0.039	1400	268	61	15400	40,000	26,300	<25	5.36	0.47	1.92	376	74	<10	<50	880	<10	880	27.1	8.49	35.59	63,200	6.8	21.6	6.94		
SB-9	11-Jun-15	11-16'	<0.01	2.99	<0.01	<0.005	327	<0.01	20.4	<0.0002	18.6	0.052	2620	863	11.4	2980	24,000	13,200	439	0.17	<0.12	<0.15	<5	<5	<10	<50	615	<20	615	1.27	1.29	2.56	30,800	6	23.8	6.36		
SB-16	17-Jun-15	28-38'	0.090	2.04	0.120	<0.005	122	0.062	3.49	0.000	2.01	0.449	353	135	23.4	135	1,540	309	0.8	1.06	0.72	<0.15	<5	<5	<10	<50	745	<10	745	1.81	3.08	4.89	2,337	NA	24.9	7.16		
SB-16 (Filtered)	17-Jun-15	28-38'	0.060	0.848	<0.010	<0.005	13	<0.01	0.424	<0.0002	1.64	<0.010	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na		
SB-24	23-Jun-15	12-22'	<0.01	0.72	<0.01	<0.005	14.3	<0.01	3.52	<0.0002	1.80	0.077	313	105	7.23	186	1,880	449	90	0.24	0.22	<0.15	<5	<5	<10	<50	848	<10	848	0.522	1.06	1.58	3,068	3	21.6	6.87		
SB-26	26-Jun-15	12-22'	0.020	0.894	0.010	<0.005	20.8	<0.01	2.92	<0.0002	1.23	0.027	196	69.6	5.45	71.7	950	160	1.8	0.26	0.21	<0.15	<5	<5	<10	<50	783	<10	783	0.898	1.22	2.12	1,824	7	21.9	6.87		
SB-27	29-Jun-15	14-24'	0.199	0.68	<0.1	0.007	21.6	<0.01	2.03	<0.0002	1.26	<0.01	188	71.4	<5	80.7	950	142	<0.25	0.20	0.16	<0.15	<5	<5	<10	<50	772	<10	772	1.36	0.442	1.80	1,815	3.19	22.6	6.92		
MW1	8-Oct-15	20-25'	<0.01	1.84	<0.01	<0.005	40.9	<0.01	5.11	<0.0002	5.16	0.066	760	283	<5	383	4,820	2,170	17.7	0.26	0.13	<0.15	<5	<5	<10	<50	1,110	<10	1110	2.04	1.99	4.03	7,700	NM	25.9	6.40		
MW2	8-Oct-15	15-20'	0.048	5.24	<0.01	<0.005	51.8	<0.01	3.59	<0.0002	136	<0.01	1500	281	64.8	15500	50,800	29,100	<25	7.92	2.73	2.92	422	118	<10	297	858	<10	858	31.7	15.7	47.4	66,400	NM	23	6.10		
MW3	7-Oct-15	15-20'	0.015	19.2	0.017	<0.005	116.0	<0.01	15.8	<0.0002	93.0	0.052	2230	622	19.7	15400	52,600	30,700	<50	1.5	0.26	<0.15	<5	<5	<10	<50	735	<10	735	16.9	14.6	31.5	70,400	NM	24.3	5.72		
MW4	7-Oct-15	10-15'	<0.01	2.71	<0.01	<0.005	39.4	<0.1	8.96	<0.0002	7.44	0.023	990	342	<5	1360	9,100	4,670	25.0	0.28	0.21	<0.15	<5	<5	<10	<50	768	<10	768	0.627	2.82	3.45	13,510	NM	24.7	5.85		
MW5	6-Oct-15	10-15'	<0.01	2.80	<0.01	<0.005	97.8	<0.01	13.8	<0.0002	17.2	0.011	1840	612	5.49	3540	21,600	10,800	138.0	0.23	0.13	<0.15	<5	<5	<10	<50	983	<10	983	2.43	3.89	6.32	27,580	0.73	22.1	5.79		
MW6	6-Oct-15	12-17'	<0.01	8.28	<0.01	<0.005	154.0	<0.01	13.0	<0.0002	17.8	0.013	2050	704	6.81	3460	23,900	11,500	11.0	<0.13	<0.12	<0.15	<5	<5	<10	<50	835	<10	835	6.52	8.54	15.06	28,080	NM	21.0	5.74		

NOTES: A - RECAP SS
 B- MCL

C-US EPA Region IV Human Health Medium-Specific Screening Level Table

TABLE 5**GROUNDWATER POTENTIOMETRIC DATA**

August J. Levert Jr et al v BP America Production Co; 18th JDC; Docket #78953

Grand River Field, Iberville Parish, La

Prepared for Jones, Swanson, Huddell & Daschback LLC

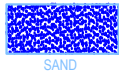
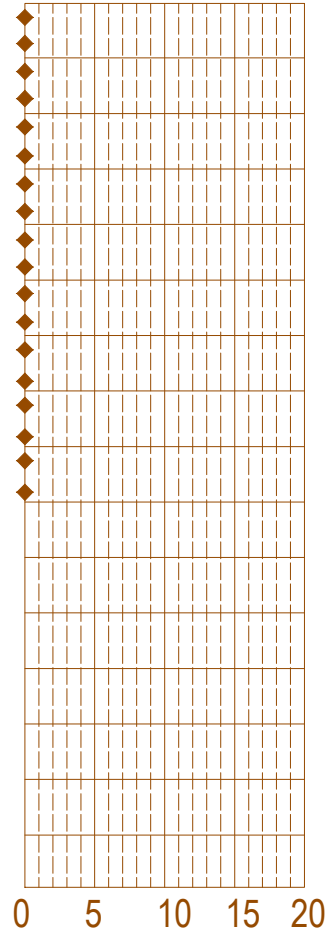
Boring ID	Top Screened Interval (ft. bgs)	Bott Screened Interval (ft. bgs)	Grnd Elev (ft NAVD88)	TOC Elev (ft NAVD88)	Top Screen Elev (ft.MSL)	Bott Screened Elev (ft.MSL)	Mid Screen Elev (ft.MSL)	TDS (mg/L)	30-Sep-15		
									DTW (ft btoc)	Wtr Elev	EFWH
MW1	20	25	6.72	9.93	-13.28	-18.28	-15.78	4,820	9.01	0.92	ed
MW2	15	20	5.35	8.64	-9.65	-14.65	-12.15	50,800	7.98	0.66	1.09
MW3	15	20	5.04	8.02	-9.96	-14.96	-12.46	52,600	7.45	0.57	1.02
MW4	10	15	2.25	4.9	-7.75	-12.75	-10.25	9,100	5.14	-0.24	-0.19
MW5	10	15	2.09	5.13	-7.91	-12.91	-10.41	21,600	5.41	-0.28	-0.15
MW6	12	17	2.12	5.32	-9.88	-14.88	-12.38	23,900	5.34	-0.02	0.16

TABLE 6
SLUG TEST DATA SUMMARY
IBERVILLE PARISH SCHOOL BOARD PROPERTY
GRAND RIVER FIELD, IBERVILLE PARISH, LA
PREPARED FOR GOODELL LAW FIRM AND MURRAY LAW FIRM

Well	Hvorslev (ft/day)	Bouwer & Rice (ft/day)	Arithmetic Average (cm/sec)	Arithmetic Average (ft/day)	Arithmetic Average (m/day)
SB-1 Falling Head #1	0.2532	0.1846			
SB-1 Falling Head #2	0.2441	0.1793			
SB-1 Falling Head #3	<u>0.2490</u>	<u>0.1836</u>			
Arith Avg:	0.2488	0.1825	7.609E-05	0.2156	0.0657
SB-9 Falling Head #1	1.9090	0.7842			
SB-9 Falling Head #2	2.0490	0.7185			
SB-9 Falling Head #3	<u>2.0990</u>	<u>0.7046</u>			
Arith Avg:	2.0190	0.7358	4.860E-04	1.3774	0.4198
SB-24 Falling Head #1	0.2752	0.1906			
SB-24 Falling Head #2	0.2452	0.1762			
SB-24 Falling Head #3	<u>0.2423</u>	<u>0.1765</u>			
Arith Avg:	0.2542	0.1811	7.681E-05	0.2177	0.0663
Geometric Mean:			1.416E-04	0.401	1.223E-01

APPENDIX A
BORING LOGS

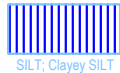
Soil Field EC (mmhos/cm)



SAND



Silty SAND; Sandy SILT



SILT; Clayey SILT



Silty CLAY; CLAY

LT-1

Interpreted Lithology	Well Construction	EC (mmhos/cm)	SAR (meq)	ESP (%)	PID (ppm)	Core Recovery	
		2.11	xx	xx			0
		3.93					4
		4.40					8
		6.13	xx	xx			12
		6.78					16
		6.57					20
		7.49	xx	xx			24
		6.22					28
		5.39					32
		5.44					36
							40
							44
							48
							52
							56
							60
							64

Sample to 20' bgs.

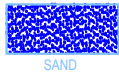
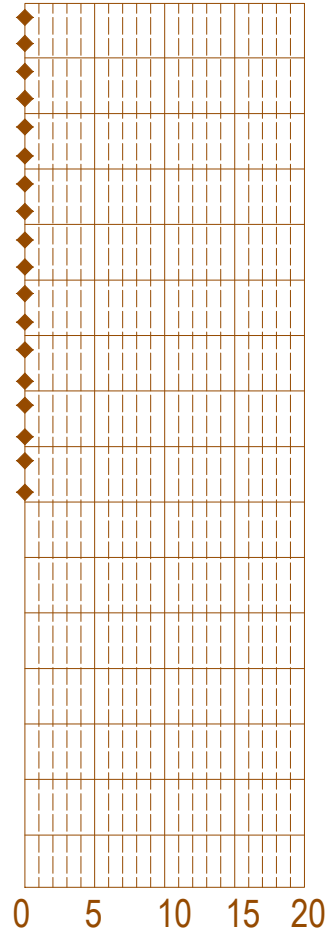
Set temporary 3/4" pvc well to 16' bgs. Screened 11-16' bgs. Filter sock over screen.
Casing at 11' while sampling.



SOIL CONDUCTIVITY PROBE / BORING LOG DIAGRAM

Project No.	9326-025-0100	Location (UTM NAD83):	15R E 0659566 N 3341866
Cond Log Date	-	MONITORING WELL DATA	Riser Stickup: 4.88'
Core Sample Date	25Sep19	TD (BGS): 20.85'	Screened Interval (BGS): 11-16'

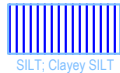
Soil Field EC (mmhos/cm)



SAND



Silty SAND; Sandy SILT



SILT; Clayey SILT



Silty CLAY; CLAY

LT-2

Interpreted Lithology	Well Construction	EC (mmhos/cm)	SAR (meq)	ESP (%)	PID (ppm)	Core Recovery		
		1.73					0	
		2.94	xx	xx			4	
		3.16						8
		3.61	xx	xx				12
						NO RECOVERY	16	
		3.11	xx	xx			20	
							24	
							28	
							32	
							36	
							40	
							44	
							48	
							52	
							56	
							60	
							64	

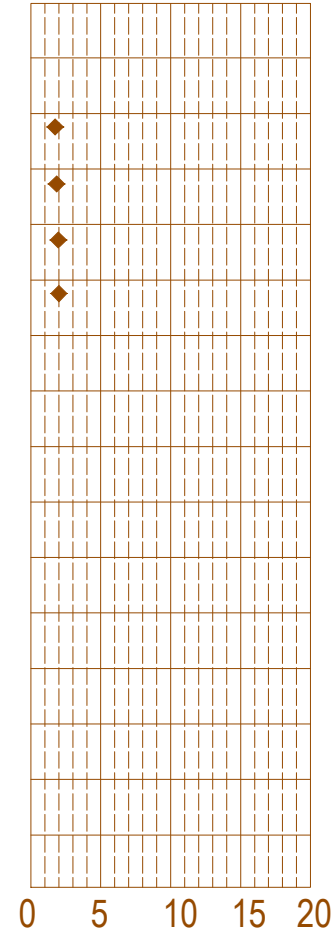
Sample to 20' bgs.

Set temporary 3/4" pvc well to 16' bgs. Screened 11-16' bgs. Filter sock over screen.

Casing at 11' while sampling.

ICON		SOIL CONDUCTIVITY PROBE / BORING LOG DIAGRAM	
Project No.	9326-025-0100	Location (UTM NAD83):	15R E 0659615 N 3341623
Cond Log Date	-	MONITORING WELL DATA	Riser Stickup: 4.01'
Core Sample Date	26Sep19	TD (BGS): 20.90'	Screened Interval (BGS): 11-16'

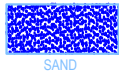
Soil Field EC (mmhos/cm)



LT-4

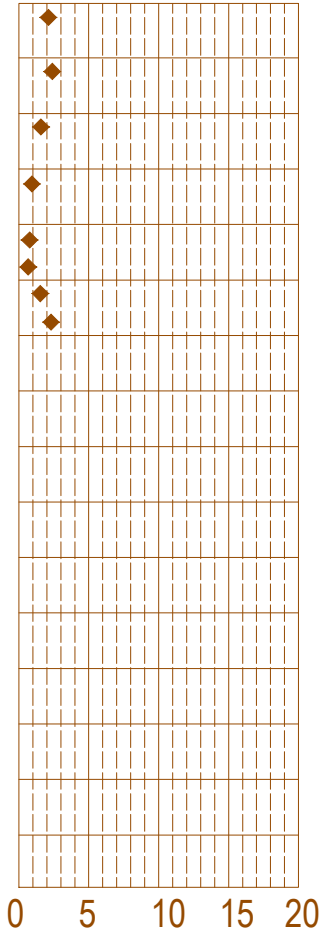
Interpreted Lithology	Well Construction	EC (mmhos/cm)	SAR (meq)	ESP (%)	Field EC (mS/cm)	PID (ppm)	Core Recovery	Depth (ft)
		xx	xx	xx			No Recovery	0
		xx	xx	xx			No Recovery	4
					1.74	0.0	CLAY, grey, soft, wood at 8.6'	8
					1.84	0.0	CLAY/Silty CLAY (12-13.3'), grey, soft; Clayey SILT (13.3-13.9'), grey, moist to wet; SILT (13.9-14.3'), grey, wet	12
					1.97	0.0	Clayey SILT (16-17.3'), grey, moist to wet; CLAY (17.3-18.3'), grey, firm	16
					2.01	0.0	CLAY, grey, firm, wood fragments throughout	20
								24
								28
								32
								36
								40
								44
								48
								52
								56
								60
								64

Sample to 24' bgs.
 Set temporary 3/4" pvc well to 18' bgs. Screened 13-18' bgs. Filter sock over screen.
 Casing at 12' while sampling.



SOIL CONDUCTIVITY PROBE / BORING LOG DIAGRAM	
Project No. 9326-025-0100	Location (UTM NAD83): 15R E 0659721 N 3341810
Cond Log Date -	MONITORING WELL DATA
Core Sample Date 22JUN22	Riser Stickup: xx' Screened Interval (BGS): 13-18'
	TD (BGS): 18'

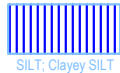
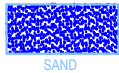
Soil Field EC (mmhos/cm)



LT-5

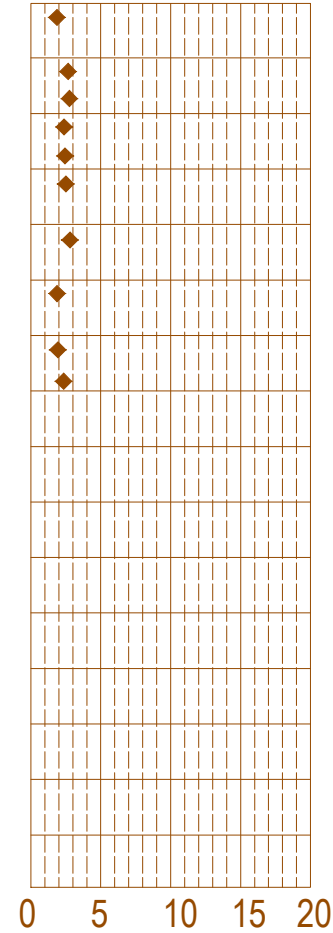
Interpreted Lithology	Well Construction	EC (mmhos/cm)	SAR (meq)	ESP (%)	Field EC (mS/cm)	PID (ppm)	Core Recovery	
		0.96	1.96	2.24	2.11	0.0		0
		1.02	1.57	1.72	2.39	0.0	CLAY, grey, firm, orange staining	4
		0.71	1.57	1.26	1.58	0.0	CLAY, grey, firm, orange staining, wood (5.3-5.5')	8
							Wood (8-8.2'), CLAY, grey, soft	12
					0.94	0.0	Silty CLAY (12-13'), grey, soft; Clayey SILT (13-13.7'), grey, wet; SILT, grey, wet	16
		0.64			0.77	0.0	SILT, grey, wet	20
					0.67	0.0		24
		1.06			1.54	0.0	Clayey SILT (20-20.8'), grey, moist; CLAY, grey, soft to firm	28
					2.30	0.0		32
								36
								40
								44
								48
								52
								56
								60
								64

Sample to 24' bgs.
 Set temporary 3/4" pvc well to 23' bgs. Screened 12-23' bgs. Filter sock over screen.
 Casing at 12' while sampling.



ICON		SOIL CONDUCTIVITY PROBE / BORING LOG DIAGRAM	
Project No.	9326-025-0100	Location (UTM NAD83):	15R E 0659710 N 3341516
Cond Log Date	-	MONITORING WELL DATA	Riser Stickup: 5.40'
Core Sample Date	23JUN22	TD (BGS): 23'	Screened Interval (BGS): 13-23'

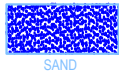
Soil Field EC (mmhos/cm)



LT-6

Interpreted Lithology	Well Construction	EC (mmhos/cm)	SAR (meq)	ESP (%)	Field EC (mS/cm)	PID (ppm)	Core Recovery	
		2.33	0.38	0.49	1.86	0.0		0
		3.32	0.87	1.34	2.66	0.0		4
		1.24	1.28	1.50	2.76	0.0		8
					2.38	0.0		12
					2.45	0.0		16
					2.50	0.0		20
		3.77			2.80	0.0		24
					1.88	0.0		28
		0.95			1.93	0.0		32
					2.34	0.0		36
								40
								44
								48
								52
							56	
							60	
							64	

Sample to 28' bgs.
NO WELL SET



SAND



Silty SAND; Sandy SILT



SILT; Clayey SILT



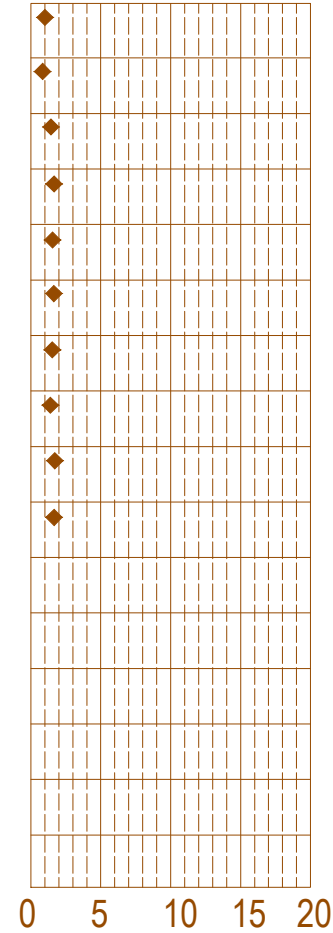
Silty CLAY; CLAY



SOIL CONDUCTIVITY PROBE / BORING LOG DIAGRAM

Project No.	9326-025-0100	Location (UTM NAD83):	15R E 0660118 N 3341547
Cond Log Date	-	MONITORING WELL DATA	Riser Stickup: na
Core Sample Date	23JUN22	TD (BGS): na	Screened Interval (BGS): na

Soil Field EC (mmhos/cm)

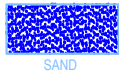


LT-7

Interpreted Lithology	Well Construction (DRY)	EC (mmhos/cm)	SAR (meq)	ESP (%)	Field EC (mS/cm)	PID (ppm)	Core Recovery	
		xx	xx	1.01	0.0			0
		xx	xx	0.84	0.0			4
				1.44	0.0			8
				1.66	0.0			12
				1.55	0.0			16
				1.65	0.0			20
				1.54	0.0			24
				1.40	0.0			28
				1.72	0.0			32
				1.66	0.0			36
								40
								44
								48
								52
								56
								60
								64

Sample to 40' bgs.

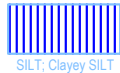
Attempted to set well 4-9' bgs. Well did not produce enough water. Grouted



SAND



Silty SAND; Sandy SILT



SILT; Clayey SILT



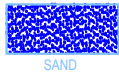
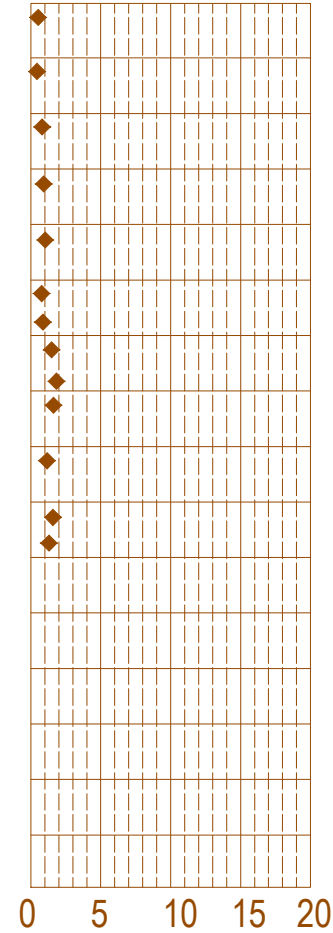
Silty CLAY; CLAY



SOIL CONDUCTIVITY PROBE / BORING LOG DIAGRAM

Project No.	9326-025-0100	Location (UTM NAD83):	15R E 0659892 N 3344744
Cond Log Date	-	MONITORING WELL DATA	Riser Stickup: na Screened Interval (BGS): na
Core Sample Date	27JUN22	TD (BGS):	na

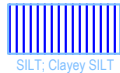
Soil Field EC (mmhos/cm)



SAND



Silty SAND; Sandy SILT



SILT; Clayey SILT



Silty CLAY; CLAY

LT-8

Interpreted Lithology	Well Construction	EC (mmhos/cm)	SAR (meq)	ESP (%)	Field EC (mS/cm)	PID (ppm)	Core Recovery	
			xx	xx	0.52	0.0		0
			xx	xx	0.44	0.0		4
					0.81	0.0		8
					0.92	0.0		12
					1.03	0.0		16
					0.77	0.0		20
					0.86	0.0		24
					1.48	0.0		28
					1.83	0.0		32
					1.62	0.0		36
					1.16	0.0		40
					1.58	0.0		44
					1.29	0.0		48
								52
								56
								60
								64

Sample to 40' bgs.

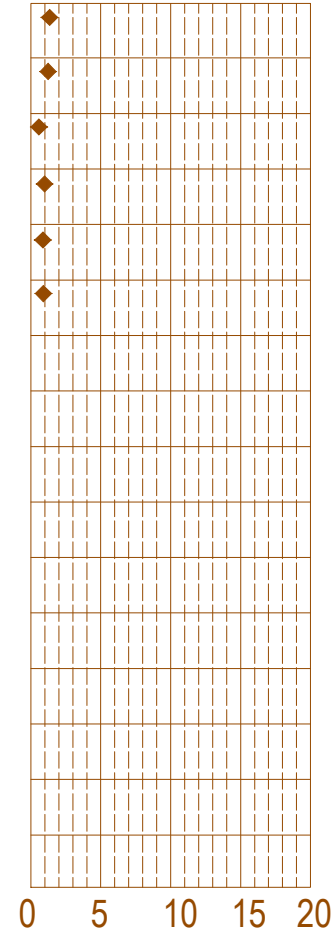
Set temporary 3/4" pvc well to 14-24' bgs. Screened 14-24' bgs. Filter sock over screen.
Casing at 12' while sampling.



SOIL CONDUCTIVITY PROBE / BORING LOG DIAGRAM

Project No.	9326-025-0100	Location (UTM NAD83):	15R E 0659655 N 3344889
Cond Log Date	-	MONITORING WELL DATA	Riser Stickup: 3.5'
Core Sample Date	28JUN22	TD (BGS): 24'	Screened Interval (BGS): 14-24'

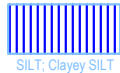
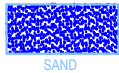
Soil Field EC (mmhos/cm)



LT-9

Interpreted Lithology	Well Construction	EC (mmhos/cm)	SAR (meq)	ESP (%)	Field EC (mS/cm)	PID (ppm)	Core Recovery	
			xx	xx	1.34	0.0		0
			xx	xx	1.23	0.0		4
					0.58	0.0		8
					0.98	0.0		12
					0.86	0.0		16
					0.90	0.0		20
								24
								28
								32
								36
								40
								44
								48
								52
								56
								60
								64

Sample to 24' bgs.
 Set temporary 3/4" pvc well to 18' bgs. Screened 8-18' bgs. Filter sock over screen.
 Casing at 8' while sampling.



SOIL CONDUCTIVITY PROBE / BORING LOG DIAGRAM	
Project No. 9326-025-0100	Location (UTM NAD83): 15R E 0659448 N 3344795
Cond Log Date -	MONITORING WELL DATA
Core Sample Date 28JUN22	Riser Stickup: 4.45' Screened Interval (BGS): 8-18'

APPENDIX B
LOGBOOKS

Levert - Grand River

9326-024-0100



Rite in the Rain.

ALL-WEATHER

LEVEL

Nº 310

Book #1

Jones Swanson

Mike M. Andrews 4/20/19
Mason J. to GEM
survey

910 Arrive at back Miller's boat
way. Put in floats to travel
3 miles to site.

935 Mobilize at dock

955 Travel to initial site.

1008 depth sounding in canal
near ex-facility.

Initial
GEM readings
(3.03×10^3 (13590 Hz)
(1.06×10^3 (3930 Hz)
(420 (1170 Hz))

1020 Set up GEM 2-482 in canoe
behind boat

1024 Start logging by boat

Line 085 8' water

- checking water depth occas-
sionally

Line 1 9' water (delay in
switching), canal middle

Line 2 10' (around water at
canal junction)

Line 3 7' water (oppos. bank)

Line 4 Variable depth (8' ave.)

1058 Sounding other canal.
30' from bank: 9' deep
30' from east bank: 7' deep
(10' in middle)

1110 Start sound 3rd canal
North bank: 5'-6' (35' out)
Middle:
Line 546 along North bank
- variable ~ 7'-8' further
south

1130 Line 6 (middle of canal;
head NE)

Line 7 variable depth, zig-zag
pattern. Survey middle
of west-trending canal.

1150 End GEM survey

1200 Tie up for lunch

1235 Finish lunch

1245 Start canoe survey

1315 End survey File: 176d-20n-
240
Kate M. Rain

File: 175-d-20jn-04a

6/20/19

Line 0: 8' Line 4: 8' ave.
Line 1: 10' Line 5: 5'-8' (6.5' ave.)
Line 2: 10' Line 6: 9'
Line 3: 7' Line 7: 9' (Rig-Tag)

Group 5: Line 044
Line 142
Line 3
Line 5 Line 647

1330 Download (GRT) 6/20/19
data

1350 Move to near pit located
at 0659994 3341276

1355 Start survey (water depth
1440 End survey = 3'-4')

File: 177-d-20jn-046

1505 Paddle to 3rd pit area

1515 Start canal survey

1538 End survey

- mostly shallow water
& walked is hand; saw
rounded small pit (did
not actually get to pit
middle, but canoe
over deep water (5') in

Plot on the Plan

6/20/19
pit) File: 178-d-20jn-0a5

1600 Travel to dock
1620 leave site.

8-29-19

ICON: AE, DW, MM

MET: DW

Air Boat: Dale Winick

OFFICE: AC 0600 start getting ready

left: 0800

Doc P: 0830 Load up

left Dock: 0900

site: 1060

Setup: MM went Gen

AE, DW + HA

HA-1

6591625, 3341626

30' 030'

77+

DTW: 2.5'

D	ST	EC	Description
0			Clayey SILT roots HC odor Sheen
	1100	1.15	soft in crumbly sand
	X2		
2	P16		Silty CHAY
	1105		Silty CHAY gray stiff roots
4	X2	2.35	@ 6m HC odor
	P16	1.15	

70% refusal roots

4 gal gravel

0-2, 2-4 Full set.

8.29.19

227-d-29au-12c

File number: 229-D - ~~mm~~ - Gen

End ~~File~~ File 1100

File number - 208-D (file not used; tool intermittent)

HA-2

659981, 3341586 DTW = 2.5'

D	ST	EC	Description
0			Clayey SILT lit gray sl HC odor
	1315	1.36	Blk crumbly sand rocks
2	X2		HC odor soft
	1310		Crumbly sand rocks HC odor Blk
4	X2	1.81	to Silty CHAY roots @ 5m

70% refusal roots

4 gal gravel

1220 Start GEM survey

1305 End survey

Files: 230-d-23au-27c

(file 231 & 232 not used)

*Tool stopped; was intermittent

finally. Shut tool down.

1400 Start GEM survey (AOI 3)

1430 End survey File 233-d-23au-27c

8

8.29.19

HA-3

659785, 3341274

Dw: 4"

D	ST	EC	Description
0			Silty CHAY w/ roots grey
1	1440	2.25	w/ mottles
2	X2		
4	1445	2.89	Silty CHAY w/ roots Blk staining @ 5m HC odor
4	X2		
6	1450	4.00	SAA
6	X2		
8	1455	4.03	SAA shear rainbow HC odor
8	X2		

4 gal grant

left site 1530

Doch 1615

offine 1730

left offine 1800

8.30.19

I am NE, m, m, D⁹

offine: 630

left: 8:10

down: 0830

900 becoming

HA-4
659572, 3341956

D	ST	EC	Description
0		0.96	Silty CHAY w/ shells
1	1025		dark brown w/ roots dry
2	X1		orange mottles
4	1030	4.11	Silty CHAY grey w/ orange mottles stiff dry
4	X1		
6	1035	4.79	Silty CHAY grey soft w/ Brk stain
6	X1		
8	1040	5.01	Silty CHAY grey soft dry
8	X1		

ID@B

4 gal grant

HA-5

659570, 3341876
Dw 31"

D	ST	EC	Description
0			Silty CHAY brk roots soft
1	1135	3.35	mott
2	X1		
4	1140	4.02	Silty CHAY grey stiff dry
4	X1		
6	1145	4.40	SAA
6	X1		
8	1150	5.03	SAA
8	X1		

Rite in the Rain

10 8.30.19

HA-5

4 gal grant

1200 moving to HA-2 location
Continue some south + North Trans.
w/ GEM.

1210 mm on survey, IDW HC Prep
Boat for lunch.

1330 ~~mm~~ leaving.

GEM Survey Notes

1200 Warm up GEM 2-482

1210 Check operations with
perpito cylinder.

1212 Start GEM survey
w/ A023 to supplement
data from file 233.

1300 End GEM survey
file: 234-d-300a-03c
*walked both west to
canal's edge + east of
yesterday's survey.

17 AUG 1969

Jack Gress

9.25.19 11

- 0740 @ Jack Miller's landing
- transfer equipment - to boat
- float marsh nest - to location

UTM: 0659566

LT-1 NAD83: 3341866

Lth	Rc	E.C	
0	/	1.8'	2.11 CLAY, gray w/ cong, med soft
4	/		3.93
8	/	2.2'	4.40 SAA w/ wood
	/		6.13
12	/	0.8'	6.78 Silty CLAY, gray, med soft, wood
	/		6.57
16	/	2.8'	7.49 Sandy SILT top 1.5', gray, wet; clayey
	/		6.22 SILT, gray, wet, bottom 1.3'
20	/	2.5'	5.39 CLAY, gray, stiff
	/		5.44

Tim.	Sample	LT-1 set (temp)
1105	0-4	SCREEN: 11-11'
1115	6-8 L	REFR: 15'
1130	12-A	barrils: 11'

1150 - Pull sample barrils; frame to 20'
in sample hd.

Rite in the Rain

GAM, SC
12
HEF: PL

9.25.19

- Enter adjacent to sample hole w/ E tip to 16'
- Insert PVC w/ filter sock & bottom cap
- Pull barrels to 11'

LT-1

DTW: 7.79'

ID: 20.85'

Sw: 4.88'

Time	Temp	Cond	pH	ORP	IDS	Turb	Vol
1255	30.1	25.44	6.44	-44	23.27	-	initial
1300	24.1	25.20	6.42	-88	23.13	54.5	0.5
1306	23.3	25.26	6.43	-95	23.13	12.1	0.75
1310	23.0	25.37	6.41	-95	23.23	10.7	1.09
1325	24.0	25.29	6.43	-96	23.22	3.11	2.04

1330 sample time

- 1430 - pull barrels & well, frame to 16'
- Grant to surface in both holes
- 1500 - Decen, Unload marsh crate
- float MM to next location
- load MM
- 1600 - truck to next location
- 1610 - head back to boat launch

9.26.19¹³

0650 @ Jack Millers landing
UTM: 0659615
LT-2 NADES: 334-K23

0	/ 1.8	1.73	CLAY, gray w/ orange, med soft
4	/	2.94	
8	/ 1.8	3.16	CLAY, gray, med soft, wood, cm
	/	3.61	
12			NR
16	/ 0.8	3.11	clayey SILT, gray, wet

Time	Sample	Depth	P.P.M
0825	0-4	0-4	0.6
0835	4-8	4-8	0.9
0855	12-16	12-16	1.5

- 0910 - Pull sample barrels; re-enter sample hole w/ E. tip to 16'
- Insert PVC w/ filter sock & bottom cap

(temp)
LT-2 set (temp)
SCREEN: 11-16'
RISER: 15'
Barrels: 11'

Rite in the Rain

GAM, SC
 HET: RL

9.26.19

LT-2
 DTW: 7.41' ID: 20.90' Su: 4.01

Time	temp	Cond	pH	ORP	TDS	Turb	Vel
0955	25.1	9463	6.83	-45	7474	-	intal
1001	22.5	9843	6.52	-65	7815	94	0.5g
1007	22.1	9928	6.45	-73	7874	85	1.2g
1016	22.2	9953	6.42	-79	7908	84	1.5g
1021	21.0	9926	6.46	-62	7885	OR	2.0g
1030	22.3	9177	6.37	-78	7932	85.5	2.5g

11035 Sample time / BLIND DUP

- Dissolved / field filtered

- 1210 - pull well & barrels
- form to 16'
- grant to surface
- Decen
- unbad MM
- float MM to next location

9.26.19

WTM: 0659479
 LT-3 VADBS: 33A1576

Depth	Time	Temp	Description
4'	1.6'	1.69	CLAY, gray w/ orange, med soft
		2.20	
8'	1.6'	2.29	SAA w/ wood
		1.99	
12'			NR
16'			NR

Time	Sample
1630	4-8
1630	8-12

- pull sample barrels; re-enter sample hole to 16'
- Insert PVC w/ Filter sock & bottom cap
- pull barrels to 11'

LT-3 (temp)
 SCREEN: 11-16'
 RESER: 15'
 BARRELS: 11'

1630 - Leaving Jack Millers

Put in the Rain

GAM. 56
16 HET: RL

9.27.19

0730 → launch

LT-3

DTW: 7.86 ID: 20.73 SU: 4.85

Time	Temp	Cond	DTH	ORP	PDS	Turb	Vol
0900	23.5	7463	6.64	56	5730	-	in/d
0905	22.1	6228	7.12	-61	4719	OR	0.5
0911	22.0	5760	7.00	-77	4205	OR	1.0g
0924	22.2	5470	6.88	-84	4089	OR	1.5g

Dry

0930 Sample time / Dissolved (Field filtered)

1030 - FWD

- pull barrels & well
- frame to 16'
- Grout to surface

1130 - Unload marsh meters; help Jake float marsh meter

1220 - Going to HA location

9.27.19

WTM: 0659594

HA-C NADSI: 3341535

F.C

0	1.1A	CLAY, grey w/ orange, med soft, rootlets
2	2.02	CLAY, grey, stiff, no odor
4	2.25	SAA

Time	Sample
1230	0-2
1235	2-4
1240	4-C

1250 - Used cuttings to fill sample hole

1330 - Leaving dock

(7AM

Rite in the Rain

CS

6-14-22

830 Launch Boat, oversight

930 HET - Don Watts
Launch boats1015 At site,
HET spawning locations - old Iron sites
Water levels normal
Pro

1130 Leave site

1200 Leave launch

6-20-22 19

1130 CS on site,

Don/HET bringing Marshmaster to site

1330 Leave site

900 At launch, Oversight

Don, Todd, Ken, Marcus/HET
Soil Sampling

Unloading equipment to boats

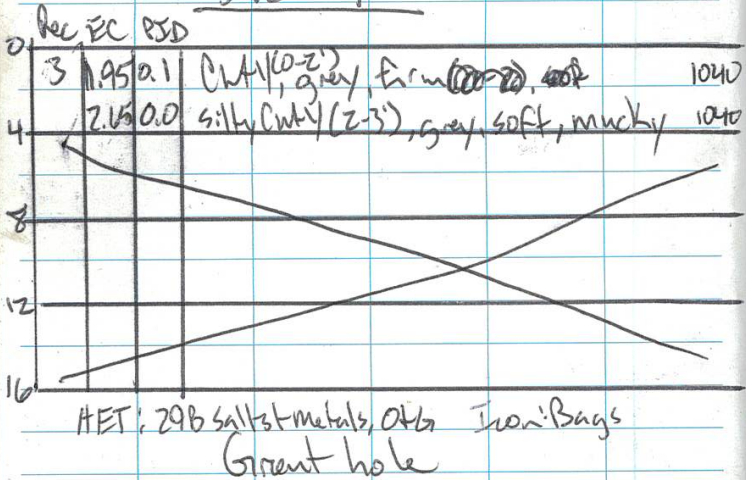
1000 At site, GPR locations
Unload equipment

* AOI - 1 defining a pit feature

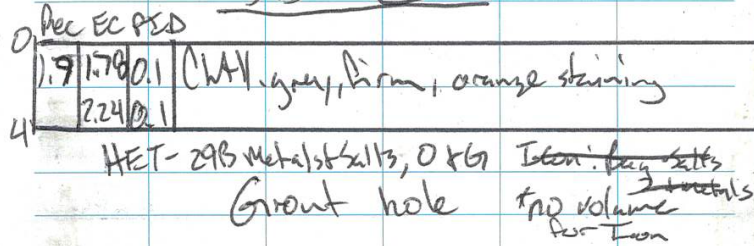
1030

SB-1

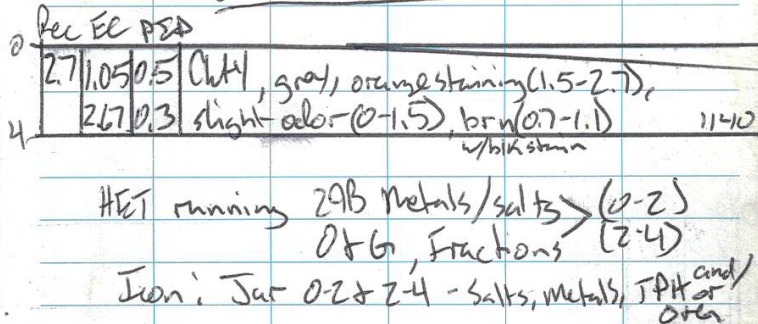
660025
3341555



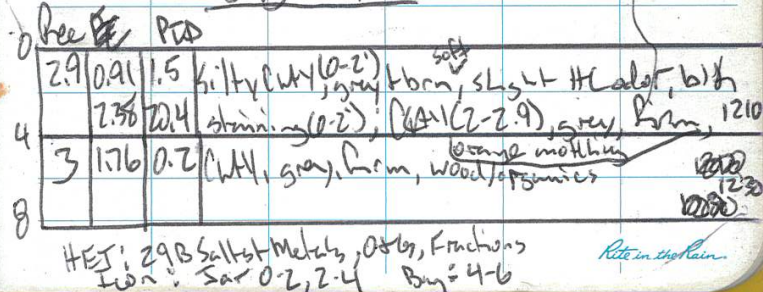
SB-2 660030
3341553



SB-3 660020
3341553



SB-4 660024
3341550



6-21-22

1245 Lunch
SB-5-8 on levee

1400

SB-5

660026
3341554

Rec Ec PSD

0	3.4	1.85	0	CLAY, grey, orange staining, firm	
		2.11	0		1410
4	3	2.14	0	CLAY, grey, orange staining, firm,	
8		2.15	0	wood/organics (2.3-3)	1420

HET: 29B, Oth, Fractions 2-4, 4-6

Iron: Bags 2-4, 4-6

Grout hole

SB-6

660028
3341549

Rec Ec PSD

0	2.3	1.39	0	CLAY, brn/grey, firm, orange staining	
		2.46	0		1450
4	3.3	2.98	2.1	CLAY, grey, firm, orange staining <td></td>	
8		2.94	2.1		1455

HET: 29B, Oth, Fractions 2-4, 4-6

Iron: Bags 2-4, 4-6

Grout hole

6-21-22 23

SB-7

660023
3341545

Rec Ec PSD

0	3	1.38	0	CLAY, brn, orange mottling (1-3), firm	
		1.48 <th>0</th> <td></td> <td>1525</td>	0		1525
4	2.4	1.41	0	CLAY, grey, soft (4-4.5), firm, wood (4.5-5)	
8		1.97	0		1530

HET: 29B, Oth, Fractions

Iron: Bags, 2-4 no volume 4-6

Grout hole

SB-8

660013
3341564

Rec Ec PSD

0	2	1.15	0	CLAY, grey/brn, firm	
		1.54	0		1550
4					
8					1550

HET: 29B, Oth, Fractions 0-2, 2-4

Iron: Bags

1600 Levee site

6-22-22

800 at launch

Todd w/HIT oversight

Bryce w/ABS

Load equipment onto boats

Launch

CI bring KB to oversight job

Hole in Marsh master, troubleshooting

1030 Start float to site

1145 @ site

Setup marsh master

LT-4

659721
3341810

Dec	Ec	PID		
2	1.74	0	Clay, grey, soft, wood @ 0-8'	1230
4	-	-	* NO recovery * 2 attempts	
8	-	-	* no recovery * 2 attempts	
12	1.3	1.74	0 Clay, grey, soft, wood @ 8, 6'	1230
16	2.3	1.84	0 Clay/silt/clay (12-13.3), grey soft; clay silt (13.3-13.9), grey, moist to wet; silt (13.9-14.3), wet	1235
20	2.3	1.97	0 Clay/silt (16-17.3), grey, moist to wet;	1230
24	-	-	Clay (17.3-18.3), grey, firm	1230

LT-4

Dec	Ec	PID		
2	2.01	0	Clay, grey, firm, wood frags throughout	1235
4	-	-		

* no recovery 0-8' on first push

New hole adjacent to sample 0-8' after set well in original hole

Set LT-4 well

Pull sample pipe, reenter w/exp tip to 18'

Set 3/4" temporary PVC well w/Filter

sock Screen 13-18'

Native

Sand

Bent

Set LT-4 temp well

Pull sample pipe, reenter w/exp tip to 18'

Set 3/4" PVC temp well w/Filter sock

Screen 13-18' Pull Barrels to 12'

Barrels 12'

CS to truck to get water sampling equipment

CI

Rite in the Rain

6-22-22

1413

LT-4 (Temp)

DTW - 8.99' bloc
TD - 25.09' bloc
stick - 7.10

Time	DTW	Gral	Temp	pH	Cond	(ds)	ORP	TAS	Turb
1418	13.94	1/2	23.3	5.85	1277	-5	926.5	-	-
1423	13.75	1	23.1	5.95	1287	-41	918.6	1115	-
1428	13.95	1 1/2	23.1	6.03	1292	-57	922.7	-	-
1433	14.15	2	22.9	6.13	1286	-55	919.4	40	-
1438	14.24	2 1/2	22.9	6.09	1291	-55	921.8	40	-
1443	14.38	3	22.7	6.19	1292	-77	922.2	33	-
1448	14.49	3 1/2	23.1	6.20	1288	-48	920.2	15	-
1453	14.59	4	22.7	6.08	1292	-52	923.7	19	-
1458	14.69	4 1/2	22.7	6.13	1291	-54	922.7	14	-
1500	Sample Time		Turb Before Metals: 15						

1545 Granting holes

1615 Mob M.M to next location

1645 leave site

1700 At launch, unloading boat equip

~~1715~~

1730 leave for shop

CJ, DW, MS

6-23-22 27

800 @ Launch

Boyce w/ ABS

Tald w/ HET

Wood boats

Launch

845 At site,

400 start drilling

LT-5

654710
3341516

0	see EC MD				
2.2	2.11	0	CLAY, grey, firm, orange staining	905	
4	2.39	0	CLAY, grey, firm, orange staining, wood (5.3-5.5)	910	
8	1.58	0	Wood (8-8.2); CLAY, grey, soft	915	
12	2.5	0.94	0	Silty CLAY (12-13), grey, soft; Clayey SILT (13-13.2), grey, wet; SILT, grey, wet	920
16	4	0.77	0	SILT, grey, wet;	925
20		0.67	0		930
24	4	1.54	0	Clayey SILT (20-20.8), grey, moist;	935
		2.39	0	CLAY, grey, soft to firm	940

6-23-22

1000

LT-5 well

Pull sample pipe, reenter w/exp tip to 23'
 Set 3/4" temp PVC well w/Biltrock
 screen 13-23'
 Burrells @ 12'

1036

LT-5

DTW - 5.00' bto c
 175
 stick - 5.40'

Time	Gal	DTW	Temp	pH	Cond	DAP	TDS	Turb
1041	1/2	15.20	23.6	5.67	1508	93	1089	-
1047	1	16.99	23.0	6.09	1491	0	1073	17
1053	1 1/2	18.24	23.0	6.17	1494	-29	1078	12
1100	2	18.85	22.8	6.20	1495	-48	1077	12
1107	2 1/2	18.90	23.1	6.22	1493	-56	1076	11
1113	3	20.15	23.5	6.33	1544	-47	1118	18

3/2 x water level meter inconsistent around
 3 gal, maybe reaching condensation from tubing

1120 Sample Time

Turb before metals: 15

1215 Pull Well, grant hole

1245 Mob to next location

1330 Lunch

1400

LT-6

660118
 3341547

located on high spoil bank

0	Rec	Ec	PSD		
1.8	1.56	0		CLAY, brn/grey, orange staining, very firm	
4	3.1	2.66	0	CLAY, grey, very firm, orange staining (4-6)	1415
8		2.76	0		1420
12	3.3	2.38	0	CLAY, grey, firm, wood @ 9+10.2	1430
16		2.45	0		1435
20	1.8	2.50	0	CLAY, grey, soft, wood @ 12.3, 12.9, 13.2	1440
24		-			
28	1.1	2.80	0	CLAY, grey, soft, wood/organics	1445
32	2.4	1.88	0	CLAY, grey, soft to firm, wood @ top	1450
36	4	1.93	0	CLAY, grey, firm	1455
40		2.71	0		1500

1500

Pull pipe, grant hole

~~pull pipe, grant hole~~
 CS

1530 Take inventory for Monday

1545 Leave site

CS, DW, m J

6-27-22

745 at launch
Brycen/ABS, Todd Durrill w/HEI

~~830~~
830 At site,

Re-push 16-20' to check for
water zone

LT-6 cont

16' loc

1.5 | CLAY, grey, organics, firm

20'

920 no zone, great hole

load up equipment to boats

1000 Mob/Float marsh markers
separate area back up river

6-27-22

115 at next area

LT-7

659892
3344744

0	Rec	EC	PID		
0	2.6	1.01	0	SILT (0-2.9), brn, dry; CLAY (0.9-2.1), brn/grey Rim, orange mottling; Clayey SILT, grey/brn, damp	1130
4	2.0	0.84	0	Silty (CLAY) (4-4.6), lt brn, soft; Clayey SILT, grey, moist to wet, orange staining	1135
8	1.5	1.44	0	CLAY, grey, soft; (Clayey SILT (8-28.5), grey, wet, wood (9.2-9.5))	1140
12	0.7	1.66	0	CLAY, grey, soft to firm	1145
16	1.8	1.55	0	CLAY, grey, soft to firm, wood (16.2-14)	1150
20	1.6	1.65	0	CLAY, brn, soft to firm	1155
24	2.2	1.74	0	SAA	1200
28	2.5	1.40	0	SAA, grey (30-30.5)	1250
32	1.8	1.72	0	CLAY, grey, soft to firm	1255
36	2.3	1.66	0	CLAY, grey, firm	1315
40					

*1230 to truck to get 3 more pipes

Rite in the Rain

32 # samples 0-2, 4-6, 8-10, 16-18, 20-22, 24-26, 36-38

~~1300~~
 Pull sample pipe, 36-40 stuck
 in pipes
 Grant hole
 Move adjacent, set temp well
 set LT-7 well

set 3/4" PVC temp well w/ R/B sock
 Screen 4-9'
 Pipes @ 4'

1345 lunch.

LT-7 DTW - 11.42 to shoe
 TD - 12.95'
 stick - 4.45'

Time Gal Temp pH Cond OHP TDS Turb

* Insufficient Water Volume Recharge

1445 Pull well, grant hole
 Wash pipe
 Load up equipment to boats

1515 Mob to next location
 * On Bank too steep at next locations,
 will have to drill on silt bars.
 Cannot leave m.m. there, mob it back to LT-7
 start next location in a.m.

DW, CI, MS 6-28-22 33

800 at launch
 Todd + Decoy / AET
 Bryce / ABS

830 at Marshmaster, mob/float to next location

~~845~~
 800 setup on LT-8 location,
 on silt bank

LT-8 659655
 3344884

0	Pre	EC	PRO		
1	2.052	0		Clayey SILT, grey, wet	900
4	0.44	0		SAND (4.4-5), SILT (4.4-5), grey, wet	905
8	2.3081	0		SILT (8-9.9), grey, wet; CLAY (9.9-10.3), grey, soft	910
12	1.3092	0		Silty CLAY, grey, soft, damp to moist	915
16	2.6103	0		Clayey SILT / Silty CLAY (16-17), grey, moist; ALT CLAY / SILT (2.3' each), soft, grey, wet	920
20	4.011	0		SILT, grey, wet	925
24	0.86	0			925
28	1.48	0		Silty CLAY (24-24.6), grey, soft;	930
28	1.83	0		CLAY, grey, for m; SILT (2.6-2.8), grey, soft	930

Rite in the Rain

6-28-22

LT-8 cont

Spec	EC	P.D		
20	2.5	1.62	0	CMV, grey, Arm
30	2.6	1.16	0	SAA
36	2.8	1.58	0	SAA
40		1.29	0	

Samples: 0-2, 4-6, 8-10, 16-18, 20-22, 24-26, ~~28-30~~ 36-38

1000 Pull sample pipe, grout hole

1035 set LT-8 temp well

Move adjacent, set 3/4" PVC well w/ filter sock,
Screen 14-24"
Barnells 12

6-28-22

LT-8

DTU-5.45 blue
TD-28.05 blue
stick-3.5'

Time	Gal	Temp	pH	Cond(us)	ORP	TDS(ppm)	Turb
1114	1/2	22.6	6.23	1635	-72	1186	39
1121	1	22.7	6.33	1635	-87	1189	31
1128	1 1/2	22.8	6.42	1633	-90	1189	15
1136	2	22.6	6.44	1637	-90	1190	10
1143	2 1/2	22.3	6.40	1634	-97	1188	12

1145 Sample Time

1230 Finish sampling
Pull well, grout hole

1300 Wash/load pipe to boats

1315 Mob/float to next location

Unload pipe to m.m.

6-28-22

1320

LT-9

659448
3344795

grey, moist

Ree	EL	PVA		
0	1.4	1.34	0	1330
4	1.7	1.23	0	1335
8	2	0.58	0	1340
12	2.5	0.98	0	1345
16	3.8	0.86	0	1350
20	2.4	0.90	0	1355
24				

Samples 0-2, 4 to, ~~8~~ 10, 12-14, 20-22

Pull sample pipe, Reenter w/exp tip
to 18'
set 3/4" PVC temp well w/filter
sock
Screen 8-18'
Barrels: 8'

6-28-22 37

• 1445

LT-9

DTW - 4.580 blue
TD - 22.0 blue
shd - 4.45'

Time	Gal	Temp	pH	Concl (us)	ORP	TAS	Turb
1446	1/2	24.1	6.56	1685	-69	1225	-
1451	1	23.1	6.56	1674	-43	1219	826
1456	1 1/2	22.6	6.67	1668	-93	1213	34
1501	2	22.4	6.51	1668	-97	1212	20
1506	2 1/2	22.6	6.52	1670	-700	1214	17

1510 Sample Time

1545 Pull Well, grout hole

1600 CS dump water, Drum: 659778
Mob/Float to launch 3341806
~ 15 gal

1700 leve bench

LEVERT - Grand River

2

9326-025-0100



Rite in the Rain

ALL-WEATHER
JOURNAL

Nº 391FX

KB
88° F, Sunny

6.22.22

0800 On site @ Jack Miller's landing
- Loading boats

0945 Arrived @ SB-9 through
SB-16 area

Oversight: KB

HET: Don Watts

Marcus Jackson

Darryl Carroll

Ken Champagne

Trent - MM2 operator

Donald - Boat Captn.

1020 Setting up on SB-9 w/ geoprobe
mounted on MM2

- used 3.25" DT

SB-9 utm: 659989
NAD83 3341594

Lith Rec

0	1.6	Silty Muck w/ rocks or metal, wet;
1135	1.7	CLAY @ 0.5', grey, organics, soft, odor
1200	1.7	CLAY, grey, organics/peat, md soft, sl. odor at top, no odor at btm
8		

1630

0	2	Silty/cl. MUCK. CLAY @ 0.3', grey, v. soft; SAND @ 1.7', grey, saturated, odor
8		Refusal

6.22.22

PID	Interval
0.2	0-2'
1.2	2-4'

time	samples	CON
1030	0-2'	No split *
1030	2-4'	(14 oz jar)

SB-10 utm: 659994
NAD83 3341584

Lith Rec

0	1.6	Silty Muck w/ rocks or metal, wet;
1135	1.7	CLAY @ 0.5', grey, organics, soft, odor
1200	1.7	CLAY, grey, organics/peat, md soft, sl. odor at top, no odor at btm
8		

time	samples	CON
1135	0-2'	jar
1135	2-4'	
1200	4-6'	No split *
1200	6-8'	
PID	Sample	
0.2	0-2'	
0.8	2-4'	
0.7	4-6'	
0.2	6-8'	

Ret. in 200 Rain.

KB

6.22.22

1218 LUNCH

1315 HET back on site

SB-11 ^{with: 659985}
NA083 3341589

Lith Rec

0	2.8	CLAY, grey, organics, md soft, peat & blk stain @ 2' - btm, odor throughout & light grease
4		— Refusal —

time	sample
1345	0-2'
1345	2-4'
	} 16 oz jar
PID	sample
1.6	0-2'
140	2-4'

SB-12 ^{with: 659981}
NA083 3341584

Lith Rec

0	2	Silty/cl. MUCK, dk grey, wet, v. soft, odor, grease. CLAY @ 0.4', soft, odor & grease.
4		— Refusal —

6.22.22

time	samples
1430	0-2'
1430	2-4'

PID	sample
4.2	0-2'
24.2	2-4'

SB-9 ^{with: SAME}
NA083 AS before

Lith Rec

0	2	CLAY, grey, wood 0.4'-0.8' & 0.5'-0.8', md. soft
8		

time	samples	ICON *
1515	4-6'	} No split
1515	6-8'	

PID	sample
0	4-6'
0	6-8'

Ret in the Rain

6 KB

6.22.22

SB-13 UTM: 659997
NA083 3341581

Lith Rec

2.5	CLAY, grey w/ orange stain, md soft, wood throughout, no odor
1.5	CLAY, grey w/ orange stain, md soft, odor, peat @ btm 1"

time	samples
1530	0-2' P
1530	2-4' P
1550	4-6' } 1 con *
1550	6-8' } No split *

PID	samples
0	0-2'
0	2-4'
0.3	4-6'
0.2	6-8'

1630 Heading back to boat launch

1700 Leaving site

KB

6.23.22

0800 On site as oversight
1000 Arrived @ SB-14 to sample

SB-14 UTM: 659993
NA083 3341590

Lith Rec PID

8.6	0	CLAY, grey & brn, organics top 3", md stiff, no odor
2.7	0	CLAY, grey, wood, peat @ 1.8'-2.4', md stiff, no odor

time	sample
1015	0-2' }
1015	2-4' }
1030	4-6' } P
1030	6-8' }

SB-15 UTM: 659983
NA083 3341594

Lith Rec PID

3	0.1	CLAY, grey w/ minor orange stain, no odor
	0.1	organics top 4", wood @ 2.1', md stiff
2.3	0	CLAY, grey w/ minor orange stain, md stiff, peat @ btm 2"

Rite in the rain

8 KB

6.23.22

time	sample
1040	0-2'
1040	2-4'
1100	4-6'
1100	6-8'

SB-16 wtm: 659985
NA083 3341577

Lith Rec PID

0	23	0	peat/organics, CLAY @ 0.4", no odors
4		0.1	grey w/ minor orange stain, md stiff
	3	0.1	CLAY, grey, peat & wood @ 1.7'
8		0.1	md stiff to soft @ btm 1', no odor

time	sample
1120	0-2'
1120	2-4'
1135	4-6'
1135	6-8'

Moving &
1218 Setting up on next location
1230 LUNCH
1345 Setting up to probe

6.23.22

SB-17

wtm: 659625
NA083 3341617

Lith Rec PID

0	1.5	1.75	peat/Organics w/ some Clay, grey to dk grey, strong odor, greasy
2			

time	sample
1415	0-2' G

SB-18

wtm: 659625
NA083 3341615

Lith Rec PID

0	1.2	1.4	Peat w/ some Clay, grey to blk, soft, strong odor & grease
2			

time	sample
1425	0-2' G *ICON No split

SB-19

wtm: 659622
NA083 3341613

Lith Rec PID

0	1.2	30.7	Peat w/ some Clay, grey & blk, soft, strong odor & grease
2			

time	sample
1435	0-2' *ICON No split

kitten in the rain

6.23.22
 SB-20 UTM: 659620
 NA083 3341612

Lith Rec PID

0	0.9	2.1	Clay, grey w/ peat & wood, blk
2			@ Btm 3', strong odor & grease

time	samples
1445	0-2' *1CON No split

HA-1R

*already logged previously

time	sample
1455	2-4' *1CON NO split

*HET running
SAR only

6.23.22
 SB-21 UTM: 659615
 NA083 3341616

Lith Rec PID

0	2.1	0	CLAY, grey, wood throughout minor orange stain, md stiff, no odor
2			

time	samples
1510	0-2' P

SB-22 UTM: 659619
 NA083 3341608

Lith Rec PID

0	1.8	0	CLAY, grey, wood throughout, md stiff, no odor
2			

time	sample
1520	0-2' P

SB-23 UTM: 659622
 NA083 3341623

Lith Rec PID

0	3.1	0	CLAY, grey w/ minor orange/brown stain, stiff, organics, no odor
2			

time	sample
1525	0-2' P Rite in the Rain

SB-24 with NA083 (KB) 6.23.22
659632
3341621

0	Lith Rec PID
1	3:40
2	CLAY, grey w/ minor orange/brn stain, med stiff

time	sample
1530	0-2' P

* Actually is 4-8' interval, probed from top of level & called 4-8' push 0-2'

1550 Heading back to boat launch
1630 Leaving site

KB

APPENDIX C
ANALYTICAL LABORATORY REPORTS
w/CHAIN-OF-CUSTODY RECORDS



Element Materials Technology Lafayette
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Website: www.element.com

September 20, 2019

Greg Miller
ICON Environmental Services
2049 Commercial Drive
Port Allen, LA 70767
TEL: (225) 344-8490
FAX (225) 344-6654

RE: Grand River Levert/9326-025-0100

Order No.: 19081522

Dear Greg Miller:

Element Materials Technology Lafayette received 16 sample(s) on 8/30/2019 for the analyses presented in the following report.

In accordance with your instructions Element Lafayette conducted the analysis shown on the following pages on samples submitted by your company. The results related only to the items tested. Unless otherwise noted, all analyses were conducted using EPA approved methodologies and all test results meet all requirements of TNI. All relevant sampling information is on the attached Chain-of-Custody form.

All soil data, except for 29-B, are on a wet-weight basis unless otherwise indicated in the units field as –dry.

LELAP Certification No.: 01997. TCEQ Certification No.: T104704261. LDHH Certification No.: LA180028. ISDH Certification No.: C-LA-01. A scope of accredited parameters is available upon request. A "#" by the test method or analyte indicates this parameter is outside the scope of accreditation.

Estimated uncertainty is available upon request. This report shall not be reproduced except in full, without the written approval of the laboratory.

If you have any questions regarding these test results, please feel free to call.

A handwritten signature in blue ink that reads 'Cristina Thibeaux'.

Cristina Thibeaux
Customer Service Supervisor
2417 W. Pinhook Road
Lafayette, LA 70508-3344



Element Materials Technology Lafayette
2417 W. Pinhook Road
Lafayette, LA 70508-3344
TEL: (337) 235-0483 FAX: (337) 233-6540
Website: www.element.com

Case Narrative

WO#: 19081522
Date: 9/20/2019

CLIENT: ICON Environmental Services
Project: Grand River Levert/9326-025-0100

Unless specified by the client, a duplicate or MS/MSD, wherever applicable, is randomly selected and analyzed from each analytical batch provided sample volume is sufficient. The sample chosen for duplicate or MS/MSD may or may not be a sample submitted in this workorder. A method blank and/or a lab control sample (LCS)/lab control sample duplicate (LCSD), wherever applicable, are processed as a quality control check for each analytical batch. When the matrix QC data is not available due to insufficient sample volume or when the results indicate possible matrix effect, the validity of the batch is determined by the method blank and LCS/LCSD.

The results of the laboratory internal quality control data are provided in the QC Summary Report section of the report for your review. Laboratory-related QC exceptions that may impact the validity of data are discussed in the case narrative. Sample-related QC exceptions are flagged either in the results page(s) or in the QC report page(s). End users should consider QC exceptions when evaluating sample data against data quality objectives.

Any other exceptions associated with this report will be footnoted in the results page(s) or the QC summary page(s).



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Analytical Report

(consolidated)

WO#: 19081522

Date Reported 9/20/2019

CLIENT: ICON Environmental Services **Collection Date:** 8/29/2019 11:00:00 AM
Project: Grand River Levert/9326-025-0100
Lab ID: 19081522-001 **Matrix:** SOIL
Client Sample ID HA-1 (0-2')

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
29B SALTS						
CATION EXCHANGE CAPACITY						
Cation Exchange Capacity	56.5	0.100		meq/100g	1	9/13/2019
					LDNR 29-B	LDNR 29-B Analyst: MRM
29B SALTS						
ELECTRICAL CONDUCTIVITY @ SATURATION						
Electrical Conductivity	1.31	0.10		mmhos/cm	1	9/10/2019 1:51:00 PM
					LDNR 29-B	Analyst: BXL
29B SALTS						
EXCHANGEABLE SODIUM PERCENTAGE						
Exchangeable Sodium %	3.66	0.10		%	1	9/13/2019
					LDNR 29-B	LDNR 29-B Analyst: MRM
HEM, OIL & GREASE						
					SW9071B	Analyst: BXL
HEM, Oil & Grease	9.36	0.05		% dry wt	1	9/4/2019 10:21:00 AM
NOTES:						
Note - Constant weight could not be attained for the Oil & Grease residue in the sample analysis.						
29B SALTS						
SODIUM ADSORPTION RATIO						
Sodium Adsorption Ratio	5.40	0.10			1	9/13/2019
Soluble Calcium	2.59	0.02		meq/L	1	9/13/2019
Soluble Magnesium	1.32	0.05		meq/L	1	9/13/2019
Soluble Sodium	7.54	0.25		meq/L	1	9/13/2019
					LDNR 29-B	LDNR 29-B Analyst: STS
TPH-D/O IN SOIL BY SW8015						
TPH DRO/ORO IN SOIL BY SW8015						
TPH (Diesel Range)	14,000	1,000		mg/Kg	20	9/9/2019 11:11:00 PM
TPH (Oil Range)	16,400	1,000		mg/Kg	20	9/9/2019 11:11:00 PM
Surr: 4-Terphenyl-d14	0	33 - 152	SD	%Rec	20	9/9/2019 11:11:00 PM
NOTES:						
SD - Surrogate diluted out due to dilution.						
					SW8015B	SW3550C Analyst: AB
29B METALS						
MERCURY IN SOIL OR SLUDGE						
Mercury	< 0.107	0.107		mg/Kg-dry	1	9/10/2019 7:36:39 AM

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	H	Holding times for preparation or analysis exceeded
	M	Matrix Interference	ND	Not Detected at the Reporting Limit
	R	RPD outside accepted recovery limits	RL	Reporting Limit
	S	Spike Recovery outside accepted recovery limits	SDL	Sample detection limit
	U	Analyte not detected	W	Sample container temperature is out of limit as specified at testcode



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Analytical Report

(consolidated)

WO#: **19081522**

Date Reported **9/20/2019**

CLIENT: ICON Environmental Services **Collection Date:** 8/29/2019 11:00:00 AM
Project: Grand River Levert/9326-025-0100
Lab ID: 19081522-001 **Matrix:** SOIL
Client Sample ID HA-1 (0-2')

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
29B METALS					SW6010B	SW3050B
METALS IN SOIL OR SLUDGE BY ICP						Analyst: STS
Arsenic	5.90	1.93		mg/Kg-dry	1	9/12/2019 6:23:50 PM
Barium	228	9.67		mg/Kg-dry	10	9/12/2019 6:33:59 PM
Cadmium	0.658	0.484		mg/Kg-dry	1	9/12/2019 6:23:50 PM
Chromium	17.9	0.967		mg/Kg-dry	1	9/12/2019 6:23:50 PM
Lead	21.5	0.967		mg/Kg-dry	1	9/12/2019 6:23:50 PM
Selenium	< 3.87	3.87		mg/Kg-dry	1	9/12/2019 6:23:50 PM
Strontium	251	9.67		mg/Kg-dry	10	9/12/2019 6:33:59 PM
Zinc	80.3	0.967		mg/Kg-dry	1	9/12/2019 6:23:50 PM
29B METALS					LDNR 29-B	Analyst: STS
TRUE TOTAL BARIUM						
True Total Barium	539	47.2		mg/Kg-dry	1	9/12/2019 9:51:56 PM
PERCENT MOISTURE					LDNR 29-B	Analyst: ASR
Percent Moisture	45.7	1.00		wt%	1	9/3/2019 11:05:00 AM

Qualifiers:	* Value exceeds Maximum Contaminant Level.	H Holding times for preparation or analysis exceeded
M	Matrix Interference	ND Not Detected at the Reporting Limit
R	RPD outside accepted recovery limits	RL Reporting Limit
S	Spike Recovery outside accepted recovery limits	SDL Sample detection limit
U	Analyte not detected	W Sample container temperature is out of limit as specified at testcode



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Analytical Report

(consolidated)

WO#: 19081522

Date Reported 9/20/2019

CLIENT: ICON Environmental Services **Collection Date:** 8/29/2019 11:05:00 AM
Project: Grand River Levert/9326-025-0100
Lab ID: 19081522-002 **Matrix:** SOIL
Client Sample ID HA-1 (2-4')

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
29B SALTS						
CATION EXCHANGE CAPACITY						
Cation Exchange Capacity	55.3	0.100		meq/100g	1	9/13/2019
29B SALTS						
ELECTRICAL CONDUCTIVITY @ SATURATION						
Electrical Conductivity	1.55	0.10		mmhos/cm	1	9/10/2019 1:51:00 PM
29B SALTS						
EXCHANGEABLE SODIUM PERCENTAGE						
Exchangeable Sodium %	8.85	0.10		%	1	9/13/2019
HEM, OIL & GREASE						
SW9071B						
HEM, Oil & Grease	0.16	0.05		% dry wt	1	9/4/2019 10:21:00 AM
29B SALTS						
SODIUM ADSORPTION RATIO						
Sodium Adsorption Ratio	13.0	0.10	*		1	9/13/2019
Soluble Calcium	1.03	0.02		meq/L	1	9/13/2019
Soluble Magnesium	0.52	0.05		meq/L	1	9/13/2019
Soluble Sodium	11.4	0.25		meq/L	1	9/13/2019
TPH-D/O IN SOIL BY SW8015						
TPH DRO/ORO IN SOIL BY SW8015						
TPH (Diesel Range)	103	50.0		mg/Kg	1	9/10/2019 2:44:00 AM
TPH (Oil Range)	139	50.0		mg/Kg	1	9/10/2019 2:44:00 AM
Surr: 4-Terphenyl-d14	111	33 - 152		%Rec	1	9/10/2019 2:44:00 AM
29B METALS						
MERCURY IN SOIL OR SLUDGE						
Mercury	< 0.0996	0.0996		mg/Kg-dry	1	9/10/2019 7:38:57 AM
29B METALS						
METALS IN SOIL OR SLUDGE BY ICP						
SW6010B SW3050B						
Analyst: STS						

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	H	Holding times for preparation or analysis exceeded
	M	Matrix Interference	ND	Not Detected at the Reporting Limit
	R	RPD outside accepted recovery limits	RL	Reporting Limit
	S	Spike Recovery outside accepted recovery limits	SDL	Sample detection limit
	U	Analyte not detected	W	Sample container temperature is out of limit as specified at testcode



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Analytical Report

(consolidated)

WO#: **19081522**

Date Reported **9/20/2019**

CLIENT: ICON Environmental Services **Collection Date:** 8/29/2019 11:05:00 AM
Project: Grand River Levert/9326-025-0100
Lab ID: 19081522-002 **Matrix:** SOIL
Client Sample ID HA-1 (2-4')

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
29B METALS					SW6010B	SW3050B
METALS IN SOIL OR SLUDGE BY ICP						Analyst: STS
Arsenic	8.61	1.98		mg/Kg-dry	1	9/12/2019 6:47:26 PM
Barium	345	9.89		mg/Kg-dry	10	9/12/2019 6:44:02 PM
Cadmium	0.633	0.494		mg/Kg-dry	1	9/12/2019 6:47:26 PM
Chromium	21.0	0.989		mg/Kg-dry	1	9/12/2019 6:47:26 PM
Lead	17.2	0.989		mg/Kg-dry	1	9/12/2019 6:47:26 PM
Selenium	< 3.96	3.96		mg/Kg-dry	1	9/12/2019 6:47:26 PM
Strontium	262	9.89		mg/Kg-dry	10	9/12/2019 6:44:02 PM
Zinc	71.0	0.989		mg/Kg-dry	1	9/12/2019 6:47:26 PM
29B METALS					LDNR 29-B	Analyst: STS
TRUE TOTAL BARIUM						
True Total Barium	573	47.7		mg/Kg-dry	1	9/19/2019 10:52:16 PM
PERCENT MOISTURE					LDNR 29-B	Analyst: ASR
Percent Moisture	37.7	1.00		wt%	1	9/3/2019 11:05:00 AM

Qualifiers:	* Value exceeds Maximum Contaminant Level.	H Holding times for preparation or analysis exceeded
M	Matrix Interference	ND Not Detected at the Reporting Limit
R	RPD outside accepted recovery limits	RL Reporting Limit
S	Spike Recovery outside accepted recovery limits	SDL Sample detection limit
U	Analyte not detected	W Sample container temperature is out of limit as specified at testcode



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Analytical Report

(consolidated)

WO#: 19081522

Date Reported 9/20/2019

CLIENT: ICON Environmental Services **Collection Date:** 8/29/2019 1:15:00 PM
Project: Grand River Levert/9326-025-0100
Lab ID: 19081522-003 **Matrix:** SOIL
Client Sample ID HA-2 (0-2')

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
29B SALTS						
CATION EXCHANGE CAPACITY						
Cation Exchange Capacity	35.7	0.100		meq/100g	1	9/13/2019
					LDNR 29-B	LDNR 29-B Analyst: MRM
29B SALTS						
ELECTRICAL CONDUCTIVITY @ SATURATION						
Electrical Conductivity	0.94	0.10		mmhos/cm	1	9/10/2019 1:51:00 PM
					LDNR 29-B	Analyst: BXL
29B SALTS						
EXCHANGEABLE SODIUM PERCENTAGE						
Exchangeable Sodium %	1.62	0.10		%	1	9/13/2019
					LDNR 29-B	LDNR 29-B Analyst: MRM
HEM, OIL & GREASE						
					SW9071B	Analyst: BXL
HEM, Oil & Grease	12.4	0.05		% dry wt	1	9/4/2019 10:21:00 AM
29B SALTS						
SODIUM ADSORPTION RATIO						
Sodium Adsorption Ratio	3.01	0.10			1	9/13/2019
Soluble Calcium	3.15	0.02		meq/L	1	9/13/2019
Soluble Magnesium	1.30	0.05		meq/L	1	9/13/2019
Soluble Sodium	4.49	0.25		meq/L	1	9/13/2019
					LDNR 29-B	LDNR 29-B Analyst: STS
TPH-D/O IN SOIL BY SW8015						
TPH DRO/ORO IN SOIL BY SW8015						
TPH (Diesel Range)	13,900	1,000		mg/Kg	20	9/9/2019 11:28:00 PM
TPH (Oil Range)	16,600	1,000		mg/Kg	20	9/9/2019 11:28:00 PM
Surr: 4-Terphenyl-d14	0	33 - 152	SD	%Rec	20	9/9/2019 11:28:00 PM
NOTES:						
SD - Surrogate diluted out due to dilution.						
29B METALS						
MERCURY IN SOIL OR SLUDGE						
Mercury	2.08	0.107		mg/Kg-dry	1	9/10/2019 7:41:15 AM
					29B/SW7471A	SW7471A Analyst: BXB

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	H	Holding times for preparation or analysis exceeded
	M	Matrix Interference	ND	Not Detected at the Reporting Limit
	R	RPD outside accepted recovery limits	RL	Reporting Limit
	S	Spike Recovery outside accepted recovery limits	SDL	Sample detection limit
	U	Analyte not detected	W	Sample container temperature is out of limit as specified at testcode



Element Materials Technology Lafayette
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Analytical Report

(consolidated)

WO#: **19081522**

Date Reported **9/20/2019**

CLIENT: ICON Environmental Services **Collection Date:** 8/29/2019 1:15:00 PM
Project: Grand River Levert/9326-025-0100
Lab ID: 19081522-003 **Matrix:** SOIL
Client Sample ID HA-2 (0-2')

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
29B METALS					SW6010B	SW3050B
METALS IN SOIL OR SLUDGE BY ICP						Analyst: STS
Arsenic	23.4	1.85	*	mg/Kg-dry	1	9/12/2019 6:50:37 PM
Barium	3,630	9.23		mg/Kg-dry	10	9/12/2019 6:53:57 PM
Cadmium	7.52	0.462		mg/Kg-dry	1	9/12/2019 6:50:37 PM
Chromium	435	9.23		mg/Kg-dry	10	9/12/2019 6:53:57 PM
Lead	707	9.23	*	mg/Kg-dry	10	9/12/2019 6:53:57 PM
Selenium	< 3.69	3.69		mg/Kg-dry	1	9/12/2019 6:50:37 PM
Strontium	336	9.23		mg/Kg-dry	10	9/12/2019 6:53:57 PM
Zinc	1,350	9.23	*	mg/Kg-dry	10	9/12/2019 6:53:57 PM
29B METALS					LDNR 29-B	Analyst: STS
TRUE TOTAL BARIUM						
True Total Barium	265,000	48.7	*	mg/Kg-dry	1	9/12/2019 10:06:27 PM
PERCENT MOISTURE					LDNR 29-B	Analyst: ASR
Percent Moisture	42.6	1.00		wt%	1	9/3/2019 11:05:00 AM

Qualifiers:	* Value exceeds Maximum Contaminant Level.	H Holding times for preparation or analysis exceeded
M	Matrix Interference	ND Not Detected at the Reporting Limit
R	RPD outside accepted recovery limits	RL Reporting Limit
S	Spike Recovery outside accepted recovery limits	SDL Sample detection limit
U	Analyte not detected	W Sample container temperature is out of limit as specified at testcode



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WO#: 19081522

Date Reported 9/20/2019

CLIENT: ICON Environmental Services **Collection Date:** 8/29/2019 1:20:00 PM
Project: Grand River Levert/9326-025-0100
Lab ID: 19081522-004 **Matrix:** SOIL
Client Sample ID HA-2 (2-4')

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
29B SALTS						
CATION EXCHANGE CAPACITY						
Cation Exchange Capacity	65.5	0.100		meq/100g	1	9/13/2019
					LDNR 29-B	LDNR 29-B Analyst: MRM
29B SALTS						
ELECTRICAL CONDUCTIVITY @ SATURATION						
Electrical Conductivity	1.46	0.10		mmhos/cm	1	9/10/2019 1:51:00 PM
					LDNR 29-B	Analyst: BXL
29B SALTS						
EXCHANGEABLE SODIUM PERCENTAGE						
Exchangeable Sodium %	8.11	0.10		%	1	9/13/2019
					LDNR 29-B	LDNR 29-B Analyst: MRM
HEM, OIL & GREASE						
					SW9071B	Analyst: BXL
HEM, Oil & Grease	2.13	0.05		% dry wt	1	9/4/2019 10:21:00 AM
29B SALTS						
SODIUM ADSORPTION RATIO						
Sodium Adsorption Ratio	10.8	0.10			1	9/13/2019
Soluble Calcium	1.44	0.02		meq/L	1	9/13/2019
Soluble Magnesium	0.72	0.05		meq/L	1	9/13/2019
Soluble Sodium	11.2	0.25		meq/L	1	9/13/2019
					LDNR 29-B	LDNR 29-B Analyst: STS
TPH-D/O IN SOIL BY SW8015						
TPH DRO/ORO IN SOIL BY SW8015						
TPH (Diesel Range)	1,800	250		mg/Kg	5	9/9/2019 11:44:00 PM
TPH (Oil Range)	2,330	250		mg/Kg	5	9/9/2019 11:44:00 PM
Surr: 4-Terphenyl-d14	0	33 - 152	SD	%Rec	5	9/9/2019 11:44:00 PM
NOTES:						
SD - Surrogate diluted out due to dilution.						
29B METALS						
MERCURY IN SOIL OR SLUDGE						
Mercury	< 0.0984	0.0984		mg/Kg-dry	1	9/10/2019 7:43:54 AM
					29B/SW7471A	SW7471A Analyst: BXB

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	H	Holding times for preparation or analysis exceeded
	M	Matrix Interference	ND	Not Detected at the Reporting Limit
	R	RPD outside accepted recovery limits	RL	Reporting Limit
	S	Spike Recovery outside accepted recovery limits	SDL	Sample detection limit
	U	Analyte not detected	W	Sample container temperature is out of limit as specified at testcode



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Analytical Report

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WO#: **19081522**

Date Reported **9/20/2019**

CLIENT: ICON Environmental Services **Collection Date:** 8/29/2019 1:20:00 PM
Project: Grand River Levert/9326-025-0100
Lab ID: 19081522-004 **Matrix:** SOIL
Client Sample ID HA-2 (2-4')

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
29B METALS					SW6010B	SW3050B
METALS IN SOIL OR SLUDGE BY ICP						Analyst: STS
Arsenic	7.57	1.92		mg/Kg-dry	1	9/12/2019 7:05:44 PM
Barium	1,030	9.62		mg/Kg-dry	10	9/12/2019 7:09:00 PM
Cadmium	0.741	0.481		mg/Kg-dry	1	9/12/2019 7:05:44 PM
Chromium	19.8	0.962		mg/Kg-dry	1	9/12/2019 7:05:44 PM
Lead	20.5	0.962		mg/Kg-dry	1	9/12/2019 7:05:44 PM
Selenium	< 3.85	3.85		mg/Kg-dry	1	9/12/2019 7:05:44 PM
Strontium	263	9.62		mg/Kg-dry	10	9/12/2019 7:09:00 PM
Zinc	67.5	0.962		mg/Kg-dry	1	9/12/2019 7:05:44 PM
29B METALS					LDNR 29-B	Analyst: STS
TRUE TOTAL BARIUM						
True Total Barium	3,900	48.4		mg/Kg-dry	1	9/12/2019 10:19:21 PM
PERCENT MOISTURE					LDNR 29-B	Analyst: ASR
Percent Moisture	48.4	1.00		wt%	1	9/3/2019 11:05:00 AM

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	H	Holding times for preparation or analysis exceeded
M	Matrix Interference	ND	Not Detected at the Reporting Limit
R	RPD outside accepted recovery limits	RL	Reporting Limit
S	Spike Recovery outside accepted recovery limits	SDL	Sample detection limit
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WO#: 19081522

Date Reported 9/20/2019

CLIENT: ICON Environmental Services **Collection Date:** 8/29/2019 2:40:00 PM
Project: Grand River Levert/9326-025-0100
Lab ID: 19081522-005 **Matrix:** SOIL
Client Sample ID HA-3 (0-2')

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
29B SALTS						
CATION EXCHANGE CAPACITY					LDNR 29-B	LDNR 29-B Analyst: MRM
Cation Exchange Capacity	64.2	0.100		meq/100g	1	9/13/2019
29B SALTS						
ELECTRICAL CONDUCTIVITY @ SATURATION					LDNR 29-B	Analyst: BXL
Electrical Conductivity	0.56	0.10		mmhos/cm	1	9/10/2019 1:51:00 PM
29B SALTS						
EXCHANGEABLE SODIUM PERCENTAGE					LDNR 29-B	LDNR 29-B Analyst: MRM
Exchangeable Sodium %	1.89	0.10		%	1	9/13/2019
HEM, OIL & GREASE						
					SW9071B	Analyst: BXL
HEM, Oil & Grease	0.11	0.05		% dry wt	1	9/4/2019 10:21:00 AM
29B SALTS						
SODIUM ADSORPTION RATIO					LDNR 29-B	LDNR 29-B Analyst: STS
Sodium Adsorption Ratio	2.65	0.10			1	9/13/2019
Soluble Calcium	1.59	0.02		meq/L	1	9/13/2019
Soluble Magnesium	0.75	0.05		meq/L	1	9/13/2019
Soluble Sodium	2.87	0.25		meq/L	1	9/13/2019
TPH-D/O IN SOIL BY SW8015						
TPH DRO/ORO IN SOIL BY SW8015					SW8015B	SW3550C Analyst: AB
TPH (Diesel Range)	101	50.0		mg/Kg	1	9/10/2019 3:01:00 AM
TPH (Oil Range)	199	50.0		mg/Kg	1	9/10/2019 3:01:00 AM
Surr: 4-Terphenyl-d14	99.6	33 - 152		%Rec	1	9/10/2019 3:01:00 AM
29B METALS						
MERCURY IN SOIL OR SLUDGE					29B/SW7471A	SW7471A Analyst: BXB
Mercury	0.135	0.109		mg/Kg-dry	1	9/10/2019 7:46:33 AM
29B METALS						
METALS IN SOIL OR SLUDGE BY ICP					SW6010B	SW3050B Analyst: STS

Qualifiers:	* Value exceeds Maximum Contaminant Level.	H Holding times for preparation or analysis exceeded
M	Matrix Interference	ND Not Detected at the Reporting Limit
R	RPD outside accepted recovery limits	RL Reporting Limit
S	Spike Recovery outside accepted recovery limits	SDL Sample detection limit
U	Analyte not detected	W Sample container temperature is out of limit as specified at testcode



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Analytical Report

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WO#: **19081522**

Date Reported **9/20/2019**

CLIENT: ICON Environmental Services **Collection Date:** 8/29/2019 2:40:00 PM
Project: Grand River Levert/9326-025-0100
Lab ID: 19081522-005 **Matrix:** SOIL
Client Sample ID HA-3 (0-2')

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
29B METALS					SW6010B	SW3050B
METALS IN SOIL OR SLUDGE BY ICP						Analyst: STS
Arsenic	13.8	1.95	*	mg/Kg-dry	1	9/12/2019 7:12:42 PM
Barium	4,250	0.973		mg/Kg-dry	1	9/12/2019 7:12:42 PM
Cadmium	0.817	0.486		mg/Kg-dry	1	9/12/2019 7:12:42 PM
Chromium	33.1	0.973		mg/Kg-dry	1	9/12/2019 7:12:42 PM
Lead	47.2	0.973		mg/Kg-dry	1	9/12/2019 7:12:42 PM
Selenium	< 3.89	3.89		mg/Kg-dry	1	9/12/2019 7:12:42 PM
Strontium	175	0.973		mg/Kg-dry	1	9/12/2019 7:12:42 PM
Zinc	90.5	0.973		mg/Kg-dry	1	9/12/2019 7:12:42 PM
29B METALS					LDNR 29-B	Analyst: STS
TRUE TOTAL BARIUM						
True Total Barium	16,700	45.9		mg/Kg-dry	1	9/19/2019 11:13:11 PM
PERCENT MOISTURE					LDNR 29-B	Analyst: ASR
Percent Moisture	37.2	1.00		wt%	1	9/3/2019 11:05:00 AM

Qualifiers:	* Value exceeds Maximum Contaminant Level.	H Holding times for preparation or analysis exceeded
M	Matrix Interference	ND Not Detected at the Reporting Limit
R	RPD outside accepted recovery limits	RL Reporting Limit
S	Spike Recovery outside accepted recovery limits	SDL Sample detection limit
U	Analyte not detected	W Sample container temperature is out of limit as specified at testcode



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WO#: 19081522

Date Reported 9/20/2019

CLIENT: ICON Environmental Services **Collection Date:** 8/29/2019 2:45:00 PM
Project: Grand River Levert/9326-025-0100
Lab ID: 19081522-006 **Matrix:** SOIL
Client Sample ID HA-3 (2-4')

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
29B SALTS						
CATION EXCHANGE CAPACITY					LDNR 29-B	LDNR 29-B Analyst: MRM
Cation Exchange Capacity	56.7	0.100		meq/100g	1	9/13/2019
29B SALTS						
ELECTRICAL CONDUCTIVITY @ SATURATION					LDNR 29-B	Analyst: BXL
Electrical Conductivity	1.66	0.10		mmhos/cm	1	9/10/2019 1:51:00 PM
29B SALTS						
EXCHANGEABLE SODIUM PERCENTAGE					LDNR 29-B	LDNR 29-B Analyst: MRM
Exchangeable Sodium %	7.67	0.10		%	1	9/13/2019
HEM, OIL & GREASE						
					SW9071B	Analyst: BXL
HEM, Oil & Grease	0.60	0.05		% dry wt	1	9/4/2019 10:21:00 AM
29B SALTS						
SODIUM ADSORPTION RATIO					LDNR 29-B	LDNR 29-B Analyst: STS
Sodium Adsorption Ratio	8.27	0.10			1	9/13/2019
Soluble Calcium	2.34	0.02		meq/L	1	9/13/2019
Soluble Magnesium	1.15	0.05		meq/L	1	9/13/2019
Soluble Sodium	10.9	0.25		meq/L	1	9/13/2019
TPH-D/O IN SOIL BY SW8015						
TPH DRO/ORO IN SOIL BY SW8015					SW8015B	SW3550C Analyst: AB
TPH (Diesel Range)	109	50.0		mg/Kg	1	9/10/2019 3:17:00 AM
TPH (Oil Range)	152	50.0		mg/Kg	1	9/10/2019 3:17:00 AM
Surr: 4-Terphenyl-d14	114	33 - 152		%Rec	1	9/10/2019 3:17:00 AM
29B METALS						
MERCURY IN SOIL OR SLUDGE					29B/SW7471A	SW7471A Analyst: BXB
Mercury	< 0.107	0.107		mg/Kg-dry	1	9/10/2019 7:49:13 AM
29B METALS						
METALS IN SOIL OR SLUDGE BY ICP					SW6010B	SW3050B Analyst: STS

Qualifiers:	* Value exceeds Maximum Contaminant Level.	H Holding times for preparation or analysis exceeded
M	Matrix Interference	ND Not Detected at the Reporting Limit
R	RPD outside accepted recovery limits	RL Reporting Limit
S	Spike Recovery outside accepted recovery limits	SDL Sample detection limit
U	Analyte not detected	W Sample container temperature is out of limit as specified at testcode



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Analytical Report

(consolidated)

WO#: **19081522**

Date Reported **9/20/2019**

CLIENT: ICON Environmental Services **Collection Date:** 8/29/2019 2:45:00 PM
Project: Grand River Levert/9326-025-0100
Lab ID: 19081522-006 **Matrix:** SOIL
Client Sample ID HA-3 (2-4')

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
29B METALS					SW6010B	SW3050B
METALS IN SOIL OR SLUDGE BY ICP						Analyst: STS
Arsenic	4.62	1.82		mg/Kg-dry	1	9/12/2019 7:16:14 PM
Barium	951	0.912		mg/Kg-dry	1	9/12/2019 7:16:14 PM
Cadmium	< 0.456	0.456		mg/Kg-dry	1	9/12/2019 7:16:14 PM
Chromium	17.1	0.912		mg/Kg-dry	1	9/12/2019 7:16:14 PM
Lead	18.5	0.912		mg/Kg-dry	1	9/12/2019 7:16:14 PM
Selenium	< 3.65	3.65		mg/Kg-dry	1	9/12/2019 7:16:14 PM
Strontium	79.5	0.912		mg/Kg-dry	1	9/12/2019 7:16:14 PM
Zinc	69.9	0.912		mg/Kg-dry	1	9/12/2019 7:16:14 PM
29B METALS					LDNR 29-B	Analyst: STS
TRUE TOTAL BARIUM						
True Total Barium	2,260	49.7		mg/Kg-dry	1	9/12/2019 10:26:18 PM
PERCENT MOISTURE					LDNR 29-B	Analyst: ASR
Percent Moisture	38.3	1.00		wt%	1	9/3/2019 11:05:00 AM

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	H	Holding times for preparation or analysis exceeded
M	Matrix Interference	ND	Not Detected at the Reporting Limit
R	RPD outside accepted recovery limits	RL	Reporting Limit
S	Spike Recovery outside accepted recovery limits	SDL	Sample detection limit
U	Analyte not detected	W	Sample container temperature is out of limit as specified at testcode



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Analytical Report

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WO#: 19081522

Date Reported 9/20/2019

CLIENT: ICON Environmental Services **Collection Date:** 8/29/2019 2:50:00 PM
Project: Grand River Levert/9326-025-0100
Lab ID: 19081522-007 **Matrix:** SOIL
Client Sample ID HA-3 (4-6')

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
29B SALTS						
CATION EXCHANGE CAPACITY						
Cation Exchange Capacity	50.3	0.100		meq/100g	1	9/13/2019
29B SALTS						
ELECTRICAL CONDUCTIVITY @ SATURATION						
Electrical Conductivity	2.83	0.10		mmhos/cm	1	9/10/2019 1:51:00 PM
29B SALTS						
EXCHANGEABLE SODIUM PERCENTAGE						
Exchangeable Sodium %	13.8	0.10		%	1	9/13/2019
HEM, OIL & GREASE						
SW9071B						
HEM, Oil & Grease	0.09	0.05		% dry wt	1	9/4/2019 10:21:00 AM
29B SALTS						
SODIUM ADSORPTION RATIO						
Sodium Adsorption Ratio	15.1	0.10	*		1	9/13/2019
Soluble Calcium	2.46	0.02		meq/L	1	9/13/2019
Soluble Magnesium	1.28	0.05		meq/L	1	9/13/2019
Soluble Sodium	20.6	0.25		meq/L	1	9/13/2019
TPH-D/O IN SOIL BY SW8015						
TPH DRO/ORO IN SOIL BY SW8015						
TPH (Diesel Range)	< 50.0	50.0		mg/Kg	1	9/10/2019 3:34:00 AM
TPH (Oil Range)	61.4	50.0		mg/Kg	1	9/10/2019 3:34:00 AM
Surr: 4-Terphenyl-d14	148	33 - 152		%Rec	1	9/10/2019 3:34:00 AM
29B METALS						
MERCURY IN SOIL OR SLUDGE						
Mercury	< 0.105	0.105		mg/Kg-dry	1	9/10/2019 8:45:28 AM
29B METALS						
METALS IN SOIL OR SLUDGE BY ICP						
SW6010B SW3050B						
Analyst: STS						

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	H	Holding times for preparation or analysis exceeded
	M	Matrix Interference	ND	Not Detected at the Reporting Limit
	R	RPD outside accepted recovery limits	RL	Reporting Limit
	S	Spike Recovery outside accepted recovery limits	SDL	Sample detection limit
	U	Analyte not detected	W	Sample container temperature is out of limit as specified at testcode



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Analytical Report

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WO#: **19081522**

Date Reported **9/20/2019**

CLIENT: ICON Environmental Services **Collection Date:** 8/29/2019 2:50:00 PM
Project: Grand River Levert/9326-025-0100
Lab ID: 19081522-007 **Matrix:** SOIL
Client Sample ID HA-3 (4-6')

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
29B METALS					SW6010B	SW3050B
METALS IN SOIL OR SLUDGE BY ICP						Analyst: STS
Arsenic	4.40	1.82		mg/Kg-dry	1	9/12/2019 7:19:44 PM
Barium	314	0.910		mg/Kg-dry	1	9/12/2019 7:19:44 PM
Cadmium	0.501	0.455		mg/Kg-dry	1	9/12/2019 7:19:44 PM
Chromium	18.5	0.910		mg/Kg-dry	1	9/12/2019 7:19:44 PM
Lead	17.9	0.910		mg/Kg-dry	1	9/12/2019 7:19:44 PM
Selenium	< 3.64	3.64		mg/Kg-dry	1	9/12/2019 7:19:44 PM
Strontium	61.0	0.910		mg/Kg-dry	1	9/12/2019 7:19:44 PM
Zinc	72.6	0.910		mg/Kg-dry	1	9/12/2019 7:19:44 PM
29B METALS					LDNR 29-B	Analyst: STS
TRUE TOTAL BARIUM						
True Total Barium	490	48.3		mg/Kg-dry	1	9/12/2019 10:29:41 PM
PERCENT MOISTURE					LDNR 29-B	Analyst: ASR
Percent Moisture	37.3	1.00		wt%	1	9/3/2019 11:05:00 AM

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	H	Holding times for preparation or analysis exceeded
M	Matrix Interference	ND	Not Detected at the Reporting Limit
R	RPD outside accepted recovery limits	RL	Reporting Limit
S	Spike Recovery outside accepted recovery limits	SDL	Sample detection limit
U	Analyte not detected	W	Sample container temperature is out of limit as specified at testcode



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Analytical Report

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WO#: 19081522

Date Reported 9/20/2019

CLIENT: ICON Environmental Services **Collection Date:** 8/29/2019 2:55:00 PM
Project: Grand River Levert/9326-025-0100
Lab ID: 19081522-008 **Matrix:** SOIL
Client Sample ID HA-3 (6-8')

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
29B SALTS						
CATION EXCHANGE CAPACITY					LDNR 29-B	LDNR 29-B Analyst: MRM
Cation Exchange Capacity	52.8	0.100		meq/100g	1	9/13/2019
29B SALTS						
ELECTRICAL CONDUCTIVITY @ SATURATION					LDNR 29-B	Analyst: BXL
Electrical Conductivity	3.62	0.10		mmhos/cm	1	9/10/2019 1:51:00 PM
29B SALTS						
EXCHANGEABLE SODIUM PERCENTAGE					LDNR 29-B	LDNR 29-B Analyst: MRM
Exchangeable Sodium %	11.0	0.10		%	1	9/13/2019
HEM, OIL & GREASE						
					SW9071B	Analyst: BXL
HEM, Oil & Grease	0.07	0.05		% dry wt	1	9/4/2019 10:21:00 AM
29B SALTS						
SODIUM ADSORPTION RATIO					LDNR 29-B	LDNR 29-B Analyst: STS
Sodium Adsorption Ratio	12.9	0.10	*		1	9/13/2019
Soluble Calcium	4.48	0.02		meq/L	1	9/13/2019
Soluble Magnesium	2.54	0.05		meq/L	1	9/13/2019
Soluble Sodium	24.2	0.25		meq/L	1	9/13/2019
TPH-D/O IN SOIL BY SW8015						
TPH DRO/ORO IN SOIL BY SW8015					SW8015B	SW3550C Analyst: AB
TPH (Diesel Range)	145	50.0		mg/Kg	1	9/10/2019 3:50:00 AM
TPH (Oil Range)	110	50.0		mg/Kg	1	9/10/2019 3:50:00 AM
Surr: 4-Terphenyl-d14	121	33 - 152		%Rec	1	9/10/2019 3:50:00 AM
29B METALS						
MERCURY IN SOIL OR SLUDGE					29B/SW7471A	SW7471A Analyst: BXB
Mercury	< 0.101	0.101		mg/Kg-dry	1	9/10/2019 8:47:47 AM
INORGANIC ANIONS IN LEACHATE BY IC						
					SW9056A	Analyst: SGP

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	H	Holding times for preparation or analysis exceeded
	M	Matrix Interference	ND	Not Detected at the Reporting Limit
	R	RPD outside accepted recovery limits	RL	Reporting Limit
	S	SPD Recovery outside accepted recovery limits	SDL	Sample detection limit
	U	Analyte not detected	W	Sample container temperature is out of limit as specified at testcode



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Analytical Report

(consolidated)

WO#: 19081522

Date Reported 9/20/2019

CLIENT: ICON Environmental Services **Collection Date:** 8/29/2019 2:55:00 PM
Project: Grand River Levert/9326-025-0100
Lab ID: 19081522-008 **Matrix:** SOIL
Client Sample ID HA-3 (6-8')

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
INORGANIC ANIONS IN LEACHATE BY IC				SW9056A	Analyst: SGP	
Chloride	321	5.00		mg/L	20	9/12/2019 10:33:31 AM
29B METALS METALS IN SOIL OR SLUDGE BY ICP				SW6010B	SW3050B	Analyst: STS
Arsenic	8.77	1.85		mg/Kg-dry	1	9/12/2019 7:23:44 PM
Barium	535	0.925		mg/Kg-dry	1	9/12/2019 7:23:44 PM
Cadmium	0.546	0.462		mg/Kg-dry	1	9/12/2019 7:23:44 PM
Chromium	17.6	0.925		mg/Kg-dry	1	9/12/2019 7:23:44 PM
Lead	15.8	0.925		mg/Kg-dry	1	9/12/2019 7:23:44 PM
Selenium	< 3.70	3.70		mg/Kg-dry	1	9/12/2019 7:23:44 PM
Strontium	56.5	0.925		mg/Kg-dry	1	9/12/2019 7:23:44 PM
Zinc	64.8	0.925		mg/Kg-dry	1	9/12/2019 7:23:44 PM
29B METALS TRUE TOTAL BARIUM				LDNR 29-B	Analyst: STS	
True Total Barium	821	46.4		mg/Kg-dry	1	9/12/2019 10:33:34 PM
PERCENT MOISTURE				LDNR 29-B	Analyst: ASR	
Percent Moisture	37.9	1.00		wt%	1	9/3/2019 11:05:00 AM

Qualifiers:	* Value exceeds Maximum Contaminant Level.	H Holding times for preparation or analysis exceeded
M	Matrix Interference	ND Not Detected at the Reporting Limit
R	RPD outside accepted recovery limits	RL Reporting Limit
S	Spike Recovery outside accepted recovery limits	SDL Sample detection limit
U	Analyte not detected	W Sample container temperature is out of limit as specified at testcode



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Analytical Report

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WO#: 19081522

Date Reported 9/20/2019

CLIENT: ICON Environmental Services
Project: Grand River Levert/9326-025-0100
Lab ID: 19081522-009
Client Sample ID HA-4 (0-2')

Collection Date: 8/30/2019 10:25:00 AM

Matrix: SOIL

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	
29B SALTS							
CATION EXCHANGE CAPACITY					LDNR 29-B	LDNR 29-B	Analyst: MRM
Cation Exchange Capacity	44.1	0.100		meq/100g	1	9/13/2019	
29B SALTS							
ELECTRICAL CONDUCTIVITY @ SATURATION					LDNR 29-B		Analyst: BXL
Electrical Conductivity	0.57	0.10		mmhos/cm	1	9/10/2019 1:51:00 PM	
29B SALTS							
EXCHANGEABLE SODIUM PERCENTAGE					LDNR 29-B	LDNR 29-B	Analyst: MRM
Exchangeable Sodium %	1.15	0.10		%	1	9/13/2019	
29B SALTS							
SODIUM ADSORPTION RATIO					LDNR 29-B	LDNR 29-B	Analyst: STS
Sodium Adsorption Ratio	0.85	0.10			1	9/13/2019	
Soluble Calcium	4.10	0.02		meq/L	1	9/13/2019	
Soluble Magnesium	0.62	0.05		meq/L	1	9/13/2019	
Soluble Sodium	1.30	0.25		meq/L	1	9/13/2019	
29B METALS							
MERCURY IN SOIL OR SLUDGE					29B/SW7471A	SW7471A	Analyst: BXB
Mercury	< 0.108	0.108		mg/Kg-dry	1	9/10/2019 8:57:47 AM	
29B METALS							
METALS IN SOIL OR SLUDGE BY ICP					SW6010B	SW3050B	Analyst: STS
Arsenic	12.1	1.86	*	mg/Kg-dry	1	9/12/2019 7:26:56 PM	
Barium	384	9.28		mg/Kg-dry	10	9/12/2019 7:30:18 PM	
Cadmium	0.770	0.464		mg/Kg-dry	1	9/12/2019 7:26:56 PM	
Chromium	12.7	0.928		mg/Kg-dry	1	9/12/2019 7:26:56 PM	
Lead	13.9	0.928		mg/Kg-dry	1	9/12/2019 7:26:56 PM	
Selenium	< 3.71	3.71		mg/Kg-dry	1	9/12/2019 7:26:56 PM	
Strontium	372	9.28		mg/Kg-dry	10	9/12/2019 7:30:18 PM	
Zinc	153	9.28		mg/Kg-dry	10	9/12/2019 7:30:18 PM	
29B METALS							
TRUE TOTAL BARIUM					LDNR 29-B		Analyst: STS

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	H	Holding times for preparation or analysis exceeded
	M	Matrix Interference	ND	Not Detected at the Reporting Limit
	R	RPD outside accepted recovery limits	RL	Reporting Limit
	S	Spike Recovery outside accepted recovery limits	SDL	Sample detection limit
	U	Analyte not detected	W	Sample container temperature is out of limit as specified at testcode



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Analytical Report

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WO#: **19081522**

Date Reported **9/20/2019**

CLIENT: ICON Environmental Services **Collection Date:** 8/30/2019 10:25:00 AM
Project: Grand River Levert/9326-025-0100
Lab ID: 19081522-009 **Matrix:** SOIL
Client Sample ID HA-4 (0-2')

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
29B METALS				LDNR 29-B		Analyst: STS
TRUE TOTAL BARIUM						
True Total Barium	754	47.3		mg/Kg-dry	1	9/12/2019 10:37:38 PM
PERCENT MOISTURE				LDNR 29-B		Analyst: ASR
Percent Moisture	21.8	1.00		wt%	1	9/3/2019 11:05:00 AM

Qualifiers:	* Value exceeds Maximum Contaminant Level.	H Holding times for preparation or analysis exceeded
M	Matrix Interference	ND Not Detected at the Reporting Limit
R	RPD outside accepted recovery limits	RL Reporting Limit
S	Spike Recovery outside accepted recovery limits	SDL Sample detection limit
U	Analyte not detected	W Sample container temperature is out of limit as specified at testcode



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Analytical Report

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WO#: 19081522

Date Reported 9/20/2019

CLIENT: ICON Environmental Services
Project: Grand River Levert/9326-025-0100
Lab ID: 19081522-010
Client Sample ID HA-4 (2-4')

Collection Date: 8/30/2019 10:30:00 AM

Matrix: SOIL

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	
29B SALTS							
CATION EXCHANGE CAPACITY					LDNR 29-B	LDNR 29-B	Analyst: MRM
Cation Exchange Capacity	48.6	0.100		meq/100g	1	9/13/2019	
29B SALTS							
ELECTRICAL CONDUCTIVITY @ SATURATION					LDNR 29-B		Analyst: BXL
Electrical Conductivity	3.67	0.10		mmhos/cm	1	9/10/2019 1:51:00 PM	
29B SALTS							
EXCHANGEABLE SODIUM PERCENTAGE					LDNR 29-B	LDNR 29-B	Analyst: MRM
Exchangeable Sodium %	11.3	0.10		%	1	9/13/2019	
29B SALTS							
SODIUM ADSORPTION RATIO					LDNR 29-B	LDNR 29-B	Analyst: STS
Sodium Adsorption Ratio	12.9	0.10	*		1	9/13/2019	
Soluble Calcium	5.96	0.02		meq/L	1	9/13/2019	
Soluble Magnesium	2.61	0.05		meq/L	1	9/13/2019	
Soluble Sodium	26.8	0.25		meq/L	1	9/13/2019	
29B METALS							
MERCURY IN SOIL OR SLUDGE					29B/SW7471A	SW7471A	Analyst: BXB
Mercury	< 0.107	0.107		mg/Kg-dry	1	9/10/2019 9:05:20 AM	
29B METALS							
METALS IN SOIL OR SLUDGE BY ICP					SW6010B	SW3050B	Analyst: STS
Arsenic	8.67	1.95		mg/Kg-dry	1	9/12/2019 7:33:50 PM	
Barium	236	0.975		mg/Kg-dry	1	9/12/2019 7:33:50 PM	
Cadmium	0.575	0.487		mg/Kg-dry	1	9/12/2019 7:33:50 PM	
Chromium	13.2	0.975		mg/Kg-dry	1	9/12/2019 7:33:50 PM	
Lead	13.7	0.975		mg/Kg-dry	1	9/12/2019 7:33:50 PM	
Selenium	< 3.90	3.90		mg/Kg-dry	1	9/12/2019 7:33:50 PM	
Strontium	90.4	0.975		mg/Kg-dry	1	9/12/2019 7:33:50 PM	
Zinc	65.4	0.975		mg/Kg-dry	1	9/12/2019 7:33:50 PM	
29B METALS							
TRUE TOTAL BARIUM					LDNR 29-B		Analyst: STS

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	H	Holding times for preparation or analysis exceeded
	M	Matrix Interference	ND	Not Detected at the Reporting Limit
	R	RPD outside accepted recovery limits	RL	Reporting Limit
	S	Spike Recovery outside accepted recovery limits	SDL	Sample detection limit
	U	Analyte not detected	W	Sample container temperature is out of limit as specified at testcode



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Analytical Report

(consolidated)

WO#: **19081522**

Date Reported **9/20/2019**

CLIENT: ICON Environmental Services **Collection Date:** 8/30/2019 10:30:00 AM
Project: Grand River Levert/9326-025-0100
Lab ID: 19081522-010 **Matrix:** SOIL
Client Sample ID HA-4 (2-4')

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
29B METALS				LDNR 29-B		Analyst: STS
TRUE TOTAL BARIUM						
True Total Barium	408	49.6		mg/Kg-dry	1	9/12/2019 10:41:43 PM
PERCENT MOISTURE				LDNR 29-B		Analyst: ASR
Percent Moisture	30.6	1.00		wt%	1	9/3/2019 11:05:00 AM

Qualifiers:	* Value exceeds Maximum Contaminant Level.	H Holding times for preparation or analysis exceeded
M	Matrix Interference	ND Not Detected at the Reporting Limit
R	RPD outside accepted recovery limits	RL Reporting Limit
S	Spike Recovery outside accepted recovery limits	SDL Sample detection limit
U	Analyte not detected	W Sample container temperature is out of limit as specified at testcode



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WO#: 19081522

Date Reported 9/20/2019

CLIENT: ICON Environmental Services
Project: Grand River Levert/9326-025-0100
Lab ID: 19081522-011
Client Sample ID HA-4 (4-6')

Collection Date: 8/30/2019 10:35:00 AM

Matrix: SOIL

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
29B SALTS						
CATION EXCHANGE CAPACITY					LDNR 29-B	LDNR 29-B Analyst: MRM
Cation Exchange Capacity	33.3	0.100		meq/100g	1	9/13/2019
29B SALTS						
ELECTRICAL CONDUCTIVITY @ SATURATION					LDNR 29-B	Analyst: BXL
Electrical Conductivity	6.23	0.10	*	mmhos/cm	1	9/10/2019 1:51:00 PM
29B SALTS						
EXCHANGEABLE SODIUM PERCENTAGE					LDNR 29-B	LDNR 29-B Analyst: MRM
Exchangeable Sodium %	12.9	0.10		%	1	9/13/2019
29B SALTS						
SODIUM ADSORPTION RATIO					LDNR 29-B	LDNR 29-B Analyst: STS
Sodium Adsorption Ratio	15.5	0.10	*		1	9/13/2019
Soluble Calcium	10.2	0.02		meq/L	1	9/13/2019
Soluble Magnesium	5.59	0.05		meq/L	1	9/13/2019
Soluble Sodium	43.7	0.25		meq/L	1	9/13/2019
29B METALS						
MERCURY IN SOIL OR SLUDGE					29B/SW7471A	SW7471A Analyst: BXB
Mercury	< 0.104	0.104		mg/Kg-dry	1	9/10/2019 9:07:39 AM
INORGANIC ANIONS IN LEACHATE BY IC						
					SW9056A	Analyst: SGP
Chloride	352	12.5		mg/L	50	9/12/2019 10:47:14 AM
29B METALS						
METALS IN SOIL OR SLUDGE BY ICP					SW6010B	SW3050B Analyst: STS
Arsenic	10.2	1.88	*	mg/Kg-dry	1	9/12/2019 7:47:29 PM
Barium	210	0.938		mg/Kg-dry	1	9/12/2019 7:47:29 PM
Cadmium	0.544	0.469		mg/Kg-dry	1	9/12/2019 7:47:29 PM
Chromium	11.8	0.938		mg/Kg-dry	1	9/12/2019 7:47:29 PM
Lead	12.4	0.938		mg/Kg-dry	1	9/12/2019 7:47:29 PM
Selenium	< 3.75	3.75		mg/Kg-dry	1	9/12/2019 7:47:29 PM
Strontium	52.3	0.938		mg/Kg-dry	1	9/12/2019 7:47:29 PM

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	H	Holding times for preparation or analysis exceeded
	M	Matrix Interference	ND	Not Detected at the Reporting Limit
	R	RPD outside accepted recovery limits	RL	Reporting Limit
	S	Spike Recovery outside accepted recovery limits	SDL	Sample detection limit
	U	Analyte not detected	W	Sample container temperature is out of limit as specified at testcode



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Analytical Report

(consolidated)

WO#: **19081522**

Date Reported **9/20/2019**

CLIENT: ICON Environmental Services **Collection Date:** 8/30/2019 10:35:00 AM
Project: Grand River Levert/9326-025-0100
Lab ID: 19081522-011 **Matrix:** SOIL
Client Sample ID HA-4 (4-6')

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
29B METALS					SW6010B	SW3050B Analyst: STS
METALS IN SOIL OR SLUDGE BY ICP						
Zinc	54.6	0.938		mg/Kg-dry	1	9/12/2019 7:47:29 PM
29B METALS					LDNR 29-B	Analyst: STS
TRUE TOTAL BARIUM						
True Total Barium	285	47.7		mg/Kg-dry	1	9/12/2019 10:45:37 PM
PERCENT MOISTURE					LDNR 29-B	Analyst: ASR
Percent Moisture	28.0	1.00		wt%	1	9/3/2019 11:05:00 AM

Qualifiers:	* Value exceeds Maximum Contaminant Level.	H Holding times for preparation or analysis exceeded
M	Matrix Interference	ND Not Detected at the Reporting Limit
R	RPD outside accepted recovery limits	RL Reporting Limit
S	Spike Recovery outside accepted recovery limits	SDL Sample detection limit
U	Analyte not detected	W Sample container temperature is out of limit as specified at testcode



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Analytical Report

(consolidated)

WO#: 19081522

Date Reported 9/20/2019

CLIENT: ICON Environmental Services **Collection Date:** 8/30/2019 10:40:00 AM
Project: Grand River Levert/9326-025-0100
Lab ID: 19081522-012 **Matrix:** SOIL
Client Sample ID HA-4 (6-8')

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	
29B SALTS							
CATION EXCHANGE CAPACITY					LDNR 29-B	LDNR 29-B	Analyst: MRM
Cation Exchange Capacity	51.3	0.100		meq/100g	1	9/13/2019	
29B SALTS							
ELECTRICAL CONDUCTIVITY @ SATURATION					LDNR 29-B		Analyst: BXL
Electrical Conductivity	6.54	0.10	*	mmhos/cm	1	9/10/2019 1:51:00 PM	
29B SALTS							
EXCHANGEABLE SODIUM PERCENTAGE					LDNR 29-B	LDNR 29-B	Analyst: MRM
Exchangeable Sodium %	7.54	0.10		%	1	9/13/2019	
29B SALTS							
SODIUM ADSORPTION RATIO					LDNR 29-B	LDNR 29-B	Analyst: STS
Sodium Adsorption Ratio	8.55	0.10			1	9/13/2019	
Soluble Calcium	17.9	0.02		meq/L	1	9/13/2019	
Soluble Magnesium	10.1	0.05		meq/L	1	9/13/2019	
Soluble Sodium	32.0	0.25		meq/L	1	9/13/2019	
29B METALS							
MERCURY IN SOIL OR SLUDGE					29B/SW7471A	SW7471A	Analyst: BXB
Mercury	< 0.108	0.108		mg/Kg-dry	1	9/10/2019 9:17:46 AM	
INORGANIC ANIONS IN LEACHATE BY IC							
					SW9056A		Analyst: SGP
Chloride	515	12.5		mg/L	50	9/12/2019 11:00:58 AM	
29B METALS							
METALS IN SOIL OR SLUDGE BY ICP					SW6010B	SW3050B	Analyst: STS
Arsenic	6.49	1.91		mg/Kg-dry	1	9/12/2019 7:50:59 PM	
Barium	243	0.957		mg/Kg-dry	1	9/12/2019 7:50:59 PM	
Cadmium	0.794	0.478		mg/Kg-dry	1	9/12/2019 7:50:59 PM	
Chromium	19.2	0.957		mg/Kg-dry	1	9/12/2019 7:50:59 PM	
Lead	17.5	0.957		mg/Kg-dry	1	9/12/2019 7:50:59 PM	
Selenium	< 3.83	3.83		mg/Kg-dry	1	9/12/2019 7:50:59 PM	
Strontium	54.5	0.957		mg/Kg-dry	1	9/12/2019 7:50:59 PM	

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	H	Holding times for preparation or analysis exceeded
	M	Matrix Interference	ND	Not Detected at the Reporting Limit
	R	RPD outside accepted recovery limits	RL	Reporting Limit
	S	Spike Recovery outside accepted recovery limits	SDL	Sample detection limit
	U	Analyte not detected	W	Sample container temperature is out of limit as specified at testcode



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Analytical Report

(consolidated)

WO#: **19081522**

Date Reported **9/20/2019**

CLIENT: ICON Environmental Services **Collection Date:** 8/30/2019 10:40:00 AM
Project: Grand River Levert/9326-025-0100
Lab ID: 19081522-012 **Matrix:** SOIL
Client Sample ID HA-4 (6-8')

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
29B METALS METALS IN SOIL OR SLUDGE BY ICP					SW6010B	SW3050B Analyst: STS
Zinc	78.9	0.957		mg/Kg-dry	1	9/12/2019 7:50:59 PM
29B METALS TRUE TOTAL BARIUM					LDNR 29-B	Analyst: STS
True Total Barium	431	48.4		mg/Kg-dry	1	9/12/2019 10:49:22 PM
PERCENT MOISTURE					LDNR 29-B	Analyst: ASR
Percent Moisture	34.5	1.00		wt%	1	9/3/2019 11:05:00 AM

Qualifiers:	* Value exceeds Maximum Contaminant Level.	H Holding times for preparation or analysis exceeded
M	Matrix Interference	ND Not Detected at the Reporting Limit
R	RPD outside accepted recovery limits	RL Reporting Limit
S	Spike Recovery outside accepted recovery limits	SDL Sample detection limit
U	Analyte not detected	W Sample container temperature is out of limit as specified at testcode



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Analytical Report

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WO#: 19081522

Date Reported 9/20/2019

CLIENT: ICON Environmental Services
Project: Grand River Levert/9326-025-0100
Lab ID: 19081522-013
Client Sample ID HA-5 (0-2')

Collection Date: 8/30/2019 11:35:00 AM

Matrix: SOIL

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	
29B SALTS							
CATION EXCHANGE CAPACITY					LDNR 29-B	LDNR 29-B	Analyst: MRM
Cation Exchange Capacity	59.3	0.100		meq/100g	1	9/13/2019	
29B SALTS							
ELECTRICAL CONDUCTIVITY @ SATURATION					LDNR 29-B		Analyst: BXL
Electrical Conductivity	2.94	0.10		mmhos/cm	1	9/10/2019 1:51:00 PM	
29B SALTS							
EXCHANGEABLE SODIUM PERCENTAGE					LDNR 29-B	LDNR 29-B	Analyst: MRM
Exchangeable Sodium %	4.74	0.10		%	1	9/13/2019	
29B SALTS							
SODIUM ADSORPTION RATIO					LDNR 29-B	LDNR 29-B	Analyst: STS
Sodium Adsorption Ratio	5.94	0.10			1	9/13/2019	
Soluble Calcium	7.81	0.02		meq/L	1	9/13/2019	
Soluble Magnesium	4.47	0.05		meq/L	1	9/13/2019	
Soluble Sodium	14.7	0.25		meq/L	1	9/13/2019	
29B METALS							
MERCURY IN SOIL OR SLUDGE					29B/SW7471A	SW7471A	Analyst: BXB
Mercury	< 0.106	0.106		mg/Kg-dry	1	9/10/2019 9:20:04 AM	
29B METALS							
METALS IN SOIL OR SLUDGE BY ICP					SW6010B	SW3050B	Analyst: STS
Arsenic	6.44	1.85		mg/Kg-dry	1	9/12/2019 7:54:27 PM	
Barium	207	0.927		mg/Kg-dry	1	9/12/2019 7:54:27 PM	
Cadmium	0.528	0.463		mg/Kg-dry	1	9/12/2019 7:54:27 PM	
Chromium	19.7	0.927		mg/Kg-dry	1	9/12/2019 7:54:27 PM	
Lead	18.2	0.927		mg/Kg-dry	1	9/12/2019 7:54:27 PM	
Selenium	< 3.71	3.71		mg/Kg-dry	1	9/12/2019 7:54:27 PM	
Strontium	60.2	0.927		mg/Kg-dry	1	9/12/2019 7:54:27 PM	
Zinc	82.2	0.927		mg/Kg-dry	1	9/12/2019 7:54:27 PM	
29B METALS							
TRUE TOTAL BARIUM					LDNR 29-B		Analyst: STS

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	H	Holding times for preparation or analysis exceeded
	M	Matrix Interference	ND	Not Detected at the Reporting Limit
	R	RPD outside accepted recovery limits	RL	Reporting Limit
	S	Spike Recovery outside accepted recovery limits	SDL	Sample detection limit
	U	Analyte not detected	W	Sample container temperature is out of limit as specified at testcode



Element Materials Technology Lafayette
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 Website: www.element.com

Analytical Report

(consolidated)

WO#: **19081522**

Date Reported **9/20/2019**

CLIENT: ICON Environmental Services **Collection Date:** 8/30/2019 11:35:00 AM
Project: Grand River Levert/9326-025-0100
Lab ID: 19081522-013 **Matrix:** SOIL
Client Sample ID HA-5 (0-2')

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
29B METALS				LDNR 29-B		Analyst: STS
TRUE TOTAL BARIUM						
True Total Barium	337	48.5		mg/Kg-dry	1	9/12/2019 10:53:18 PM
PERCENT MOISTURE				LDNR 29-B		Analyst: ASR
Percent Moisture	35.8	1.00		wt%	1	9/3/2019 11:05:00 AM

Qualifiers:	* Value exceeds Maximum Contaminant Level.	H Holding times for preparation or analysis exceeded
M	Matrix Interference	ND Not Detected at the Reporting Limit
R	RPD outside accepted recovery limits	RL Reporting Limit
S	Spike Recovery outside accepted recovery limits	SDL Sample detection limit
U	Analyte not detected	W Sample container temperature is out of limit as specified at testcode



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Analytical Report

(consolidated)

WO#: 19081522

Date Reported 9/20/2019

CLIENT: ICON Environmental Services
Project: Grand River Levert/9326-025-0100
Lab ID: 19081522-014
Client Sample ID HA-5 (2-4')

Collection Date: 8/30/2019 11:40:00 AM

Matrix: SOIL

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	
29B SALTS							
CATION EXCHANGE CAPACITY					LDNR 29-B	LDNR 29-B	Analyst: MRM
Cation Exchange Capacity	61.6	0.100		meq/100g	1	9/13/2019	
29B SALTS							
ELECTRICAL CONDUCTIVITY @ SATURATION					LDNR 29-B		Analyst: BXL
Electrical Conductivity	2.83	0.10		mmhos/cm	1	9/10/2019 1:51:00 PM	
29B SALTS							
EXCHANGEABLE SODIUM PERCENTAGE					LDNR 29-B	LDNR 29-B	Analyst: MRM
Exchangeable Sodium %	5.35	0.10		%	1	9/13/2019	
29B SALTS							
SODIUM ADSORPTION RATIO					LDNR 29-B	LDNR 29-B	Analyst: STS
Sodium Adsorption Ratio	6.02	0.10			1	9/13/2019	
Soluble Calcium	7.28	0.02		meq/L	1	9/13/2019	
Soluble Magnesium	4.06	0.05		meq/L	1	9/13/2019	
Soluble Sodium	14.3	0.25		meq/L	1	9/13/2019	
29B METALS							
MERCURY IN SOIL OR SLUDGE					29B/SW7471A	SW7471A	Analyst: BXB
Mercury	< 0.104	0.104		mg/Kg-dry	1	9/10/2019 9:22:22 AM	
29B METALS							
METALS IN SOIL OR SLUDGE BY ICP					SW6010B	SW3050B	Analyst: STS
Arsenic	6.09	1.96		mg/Kg-dry	1	9/12/2019 7:57:56 PM	
Barium	263	0.982		mg/Kg-dry	1	9/12/2019 7:57:56 PM	
Cadmium	0.570	0.491		mg/Kg-dry	1	9/12/2019 7:57:56 PM	
Chromium	22.6	0.982		mg/Kg-dry	1	9/12/2019 7:57:56 PM	
Lead	17.6	0.982		mg/Kg-dry	1	9/12/2019 7:57:56 PM	
Selenium	< 3.93	3.93		mg/Kg-dry	1	9/12/2019 7:57:56 PM	
Strontium	62.1	0.982		mg/Kg-dry	1	9/12/2019 7:57:56 PM	
Zinc	92.3	0.982		mg/Kg-dry	1	9/12/2019 7:57:56 PM	
29B METALS							
TRUE TOTAL BARIUM					LDNR 29-B		Analyst: STS

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	H	Holding times for preparation or analysis exceeded
	M	Matrix Interference	ND	Not Detected at the Reporting Limit
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	S	Spike Recovery outside accepted recovery limits	SDL	Sample detection limit
	U	Analyte not detected	W	Sample container temperature is out of limit as specified at testcode



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Analytical Report

(consolidated)

WO#: **19081522**

Date Reported **9/20/2019**

CLIENT: ICON Environmental Services **Collection Date:** 8/30/2019 11:40:00 AM
Project: Grand River Levert/9326-025-0100
Lab ID: 19081522-014 **Matrix:** SOIL
Client Sample ID HA-5 (2-4')

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
29B METALS				LDNR 29-B		Analyst: STS
TRUE TOTAL BARIUM						
True Total Barium	425	49.6		mg/Kg-dry	1	9/12/2019 11:05:01 PM
PERCENT MOISTURE				LDNR 29-B		Analyst: ASR
Percent Moisture	33.3	1.00		wt%	1	9/3/2019 11:05:00 AM

Qualifiers:	* Value exceeds Maximum Contaminant Level.	H Holding times for preparation or analysis exceeded
M	Matrix Interference	ND Not Detected at the Reporting Limit
R	RPD outside accepted recovery limits	RL Reporting Limit
S	Spike Recovery outside accepted recovery limits	SDL Sample detection limit
U	Analyte not detected	W Sample container temperature is out of limit as specified at testcode



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Analytical Report

(consolidated)

WO#: 19081522

Date Reported 9/20/2019

CLIENT: ICON Environmental Services **Collection Date:** 8/30/2019 11:45:00 AM
Project: Grand River Levert/9326-025-0100
Lab ID: 19081522-015 **Matrix:** SOIL
Client Sample ID HA-5 (4-6')

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
29B SALTS						
CATION EXCHANGE CAPACITY						
Cation Exchange Capacity	56.6	0.100		meq/100g	1	9/13/2019
					LDNR 29-B	LDNR 29-B Analyst: MRM
29B SALTS						
ELECTRICAL CONDUCTIVITY @ SATURATION						
Electrical Conductivity	3.52	0.10		mmhos/cm	1	9/10/2019 1:51:00 PM
					LDNR 29-B	Analyst: BXL
29B SALTS						
EXCHANGEABLE SODIUM PERCENTAGE						
Exchangeable Sodium %	6.05	0.10		%	1	9/13/2019
					LDNR 29-B	LDNR 29-B Analyst: MRM
29B SALTS						
SODIUM ADSORPTION RATIO						
Sodium Adsorption Ratio	5.85	0.10			1	9/13/2019
Soluble Calcium	9.80	0.02		meq/L	1	9/13/2019
Soluble Magnesium	5.37	0.05		meq/L	1	9/13/2019
Soluble Sodium	16.1	0.25		meq/L	1	9/13/2019
29B METALS						
MERCURY IN SOIL OR SLUDGE						
Mercury	< 0.101	0.101		mg/Kg-dry	1	9/10/2019 9:24:41 AM
					29B/SW7471A	SW7471A Analyst: BXB
INORGANIC ANIONS IN LEACHATE BY IC						
					SW9056A	Analyst: SGP
Chloride	334	5.00		mg/L	20	9/12/2019 11:14:43 AM
29B METALS						
METALS IN SOIL OR SLUDGE BY ICP						
Arsenic	3.99	1.92		mg/Kg-dry	1	9/12/2019 8:01:24 PM
Barium	397	0.960		mg/Kg-dry	1	9/12/2019 8:01:24 PM
Cadmium	0.519	0.480		mg/Kg-dry	1	9/12/2019 8:01:24 PM
Chromium	20.1	0.960		mg/Kg-dry	1	9/12/2019 8:01:24 PM
Lead	18.9	0.960		mg/Kg-dry	1	9/12/2019 8:01:24 PM
Selenium	< 3.84	3.84		mg/Kg-dry	1	9/12/2019 8:01:24 PM
Strontium	64.5	0.960		mg/Kg-dry	1	9/12/2019 8:01:24 PM

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	H	Holding times for preparation or analysis exceeded
	M	Matrix Interference	ND	Not Detected at the Reporting Limit
	R	RPD outside accepted recovery limits	RL	Reporting Limit
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	U	Analyte not detected	W	Sample container temperature is out of limit as specified at testcode



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Analytical Report

(consolidated)

WO#: **19081522**

Date Reported **9/20/2019**

CLIENT: ICON Environmental Services **Collection Date:** 8/30/2019 11:45:00 AM
Project: Grand River Levert/9326-025-0100
Lab ID: 19081522-015 **Matrix:** SOIL
Client Sample ID HA-5 (4-6')

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
29B METALS METALS IN SOIL OR SLUDGE BY ICP					SW6010B	SW3050B Analyst: STS
Zinc	78.4	0.960		mg/Kg-dry	1	9/12/2019 8:01:24 PM
29B METALS TRUE TOTAL BARIUM					LDNR 29-B	Analyst: STS
True Total Barium	892	49.7		mg/Kg-dry	1	9/12/2019 11:09:15 PM
PERCENT MOISTURE					LDNR 29-B	Analyst: ASR
Percent Moisture	35.6	1.00		wt%	1	9/3/2019 11:05:00 AM

Qualifiers:	* Value exceeds Maximum Contaminant Level.	H Holding times for preparation or analysis exceeded
M	Matrix Interference	ND Not Detected at the Reporting Limit
R	RPD outside accepted recovery limits	RL Reporting Limit
S	Spike Recovery outside accepted recovery limits	SDL Sample detection limit
U	Analyte not detected	W Sample container temperature is out of limit as specified at testcode



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Analytical Report

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WO#: 19081522

Date Reported 9/20/2019

CLIENT: ICON Environmental Services **Collection Date:** 8/30/2019 11:50:00 AM
Project: Grand River Levert/9326-025-0100
Lab ID: 19081522-016 **Matrix:** SOIL
Client Sample ID HA-5 (6-7')

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
29B SALTS						
CATION EXCHANGE CAPACITY						
Cation Exchange Capacity	66.0	0.100		meq/100g	1	9/13/2019
					LDNR 29-B	LDNR 29-B Analyst: MRM
29B SALTS						
ELECTRICAL CONDUCTIVITY @ SATURATION						
Electrical Conductivity	6.12	0.10	*	mmhos/cm	1	9/10/2019 1:51:00 PM
					LDNR 29-B	Analyst: BXL
29B SALTS						
EXCHANGEABLE SODIUM PERCENTAGE						
Exchangeable Sodium %	5.33	0.10		%	1	9/13/2019
					LDNR 29-B	LDNR 29-B Analyst: MRM
29B SALTS						
SODIUM ADSORPTION RATIO						
Sodium Adsorption Ratio	6.37	0.10			1	9/13/2019
Soluble Calcium	20.0	0.02		meq/L	1	9/13/2019
Soluble Magnesium	11.2	0.05		meq/L	1	9/13/2019
Soluble Sodium	25.2	0.25		meq/L	1	9/13/2019
					LDNR 29-B	LDNR 29-B Analyst: STS
29B METALS						
MERCURY IN SOIL OR SLUDGE						
Mercury	< 0.107	0.107		mg/Kg-dry	1	9/10/2019 9:26:59 AM
					29B/SW7471A	SW7471A Analyst: BXB
INORGANIC ANIONS IN LEACHATE BY IC						
					SW9056A	Analyst: SGP
Chloride	699	12.5		mg/L	50	9/12/2019 11:28:26 AM
29B METALS						
METALS IN SOIL OR SLUDGE BY ICP						
Arsenic	8.22	1.89		mg/Kg-dry	1	9/12/2019 8:04:50 PM
Barium	267	0.944		mg/Kg-dry	1	9/12/2019 8:04:50 PM
Cadmium	< 0.472	0.472		mg/Kg-dry	1	9/12/2019 8:04:50 PM
Chromium	18.1	0.944		mg/Kg-dry	1	9/12/2019 8:04:50 PM
Lead	14.1	0.944		mg/Kg-dry	1	9/12/2019 8:04:50 PM
Selenium	< 3.77	3.77		mg/Kg-dry	1	9/12/2019 8:04:50 PM
Strontium	68.2	0.944		mg/Kg-dry	1	9/12/2019 8:04:50 PM

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	H	Holding times for preparation or analysis exceeded
M	Matrix Interference	ND	Not Detected at the Reporting Limit
R	RPD outside accepted recovery limits	RL	Reporting Limit
S	Spike Recovery outside accepted recovery limits	SDL	Sample detection limit
U	Analyte not detected	W	Sample container temperature is out of limit as specified at testcode



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Analytical Report

(consolidated)

WO#: **19081522**

Date Reported **9/20/2019**

CLIENT: ICON Environmental Services **Collection Date:** 8/30/2019 11:50:00 AM
Project: Grand River Levert/9326-025-0100
Lab ID: 19081522-016 **Matrix:** SOIL
Client Sample ID HA-5 (6-7')

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
29B METALS METALS IN SOIL OR SLUDGE BY ICP					SW6010B	SW3050B Analyst: STS
Zinc	66.5	0.944		mg/Kg-dry	1	9/12/2019 8:04:50 PM
29B METALS TRUE TOTAL BARIUM					LDNR 29-B	Analyst: STS
True Total Barium	402	49.5		mg/Kg-dry	1	9/12/2019 11:12:49 PM
PERCENT MOISTURE					LDNR 29-B	Analyst: ASR
Percent Moisture	44.9	1.00		wt%	1	9/3/2019 11:05:00 AM

Qualifiers:	* Value exceeds Maximum Contaminant Level.	H Holding times for preparation or analysis exceeded
M	Matrix Interference	ND Not Detected at the Reporting Limit
R	RPD outside accepted recovery limits	RL Reporting Limit
S	Spike Recovery outside accepted recovery limits	SDL Sample detection limit
U	Analyte not detected	W Sample container temperature is out of limit as specified at testcode



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QC SUMMARY REPORT

WO#: 19081522

20-Sep-19

Client: ICON Environmental Services
Project: Grand River Levert/9326-025-0100

BatchID: 31449

Sample ID: LCS-D31449	SampType: LCS	TestCode: 8015_DO_S	Units: mg/Kg	Prep Date: 9/4/2019	RunNo: 81826						
Client ID: LCSS	Batch ID: 31449	TestNo: SW8015B	SW3550C	Analysis Date: 9/6/2019	SeqNo: 2050074						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

TPH (Diesel Range)
 Surr: 4-Terphenyl-d14

83.2
 3.18
 10.0
 100.0
 0
 83.2
 63.4
 109
 95.4
 33
 152

Sample ID: LCSD-D31449	SampType: LCSD	TestCode: 8015_DO_S	Units: mg/Kg	Prep Date: 9/4/2019	RunNo: 81826						
Client ID: LCSS02	Batch ID: 31449	TestNo: SW8015B	SW3550C	Analysis Date: 9/6/2019	SeqNo: 2050075						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

TPH (Diesel Range)
 Surr: 4-Terphenyl-d14

70.5
 2.83
 10.0
 100.0
 0
 70.5
 63.4
 109
 83.21
 85.1
 33
 152
 16.6
 21.9
 0
 40

Sample ID: MB-31449	SampType: MBLK	TestCode: 8015_DO_S	Units: mg/Kg	Prep Date: 9/4/2019	RunNo: 81826						
Client ID: PBS	Batch ID: 31449	TestNo: SW8015B	SW3550C	Analysis Date: 9/6/2019	SeqNo: 2050078						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

TPH (Diesel Range)
 TPH (Oil Range)
 Surr: 4-Terphenyl-d14

< 10.0
 < 10.0
 2.88
 10.0
 10.0
 3.330
 86.6
 33
 152

Sample ID: 19081453-001BMS-M	SampType: MS	TestCode: 8015_DO_S	Units: mg/Kg	Prep Date: 9/4/2019	RunNo: 81826						
Client ID: ZZZZZZ	Batch ID: 31449	TestNo: SW8015B	SW3550C	Analysis Date: 9/9/2019	SeqNo: 2051673						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Qualifiers:
 * Value exceeds Maximum Contaminant Level.
 ND Not Detected at the Reporting Limit
 S Spike Recovery outside accepted recovery limits
 W Sample container temperature is out of limit as specified at testcode

H Holding times for preparation or analysis exceeded
 R RPD outside accepted recovery limits
 SDL Sample detection limit

M Matrix Interference
 RL Reporting Limit
 U Analyte not detected



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QC SUMMARY REPORT

WO#: 19081522
 20-Sep-19

Client: ICON Environmental Services
Project: Grand River Levert/9326-025-0100

BatchID: 31449

Sample ID: 19081453-001BMS-M	SampType: MS	TestCode: 8015_DO_S	Units: mg/Kg	Prep Date: 9/4/2019	RunNo: 81826						
Client ID: ZZZZZZ	Batch ID: 31449	TestNo: SW8015B	SW3550C	Analysis Date: 9/9/2019	SeqNo: 2051673						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
TPH (Oil Range)	5,060	500	100.0	7,350	-2,290	14.5	174				SD
Surr: 4-Terphenyl-d14	0		3.330		0	33	152				SD

Sample ID: 19081453-001BMSD-	SampType: MSD	TestCode: 8015_DO_S	Units: mg/Kg	Prep Date: 9/4/2019	RunNo: 81826						
Client ID: ZZZZZZ	Batch ID: 31449	TestNo: SW8015B	SW3550C	Analysis Date: 9/9/2019	SeqNo: 2051674						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
TPH (Oil Range)	5,440	500	100.0	7,350	-1,910	14.5	174	5,064	7.13	48.8	SD
Surr: 4-Terphenyl-d14	0		3.330		0	33	152		0	40	SD

NOTES:
 SD - Surrogate and matrix spike diluted out due to dilution.

Sample ID: LCSD-M31449	SampType: LCSD	TestCode: 8015_DO_S	Units: mg/Kg	Prep Date: 9/4/2019	RunNo: 81826						
Client ID: LCSS02	Batch ID: 31449	TestNo: SW8015B	SW3550C	Analysis Date: 9/9/2019	SeqNo: 2051694						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
TPH (Oil Range)	96.5	10.0	100.0	0	96.5	63.9	120	82.11	16.1	20.7	
Surr: 4-Terphenyl-d14	3.51		3.330		105	33	152		0	40	

Sample ID: LCS-M31449	SampType: LCS	TestCode: 8015_DO_S	Units: mg/Kg	Prep Date: 9/4/2019	RunNo: 81826						
Client ID: LCSS	Batch ID: 31449	TestNo: SW8015B	SW3550C	Analysis Date: 9/9/2019	SeqNo: 2051695						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	H	Holding times for preparation or analysis exceeded	M	Matrix Interference
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	RL	Reporting Limit
S	Spike Recovery outside accepted recovery limits	SDL	Sample detection limit	U	Analyte not detected
W	Sample container temperature is out of limit as specified at testcode				



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QC SUMMARY REPORT

WO#: 19081522
 20-Sep-19

Client: ICON Environmental Services
Project: Grand River Levert/9326-025-0100

BatchID: 31449

Sample ID: LCS-M31449	SampType: LCS	TestCode: 8015_DO_S	Units: mg/Kg	Prep Date: 9/4/2019	RunNo: 81826						
Client ID: LCSS	Batch ID: 31449	TestNo: SW8015B	SW3550C	Analysis Date: 9/9/2019	SeqNo: 2051695						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
TPH (Oil Range)	82.1	10.0	100.0	0	82.1	63.9	120				
Surr: 4-Terphenyl-d14	3.36		3.330		101	33	152				

Sample ID: 19081453-001BMS-D	SampType: MS	TestCode: 8015_DO_S	Units: mg/Kg	Prep Date: 9/4/2019	RunNo: 81826						
Client ID: ZZZZZZ	Batch ID: 31449	TestNo: SW8015B	SW3550C	Analysis Date: 9/9/2019	SeqNo: 2051696						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
TPH (Diesel Range)	5,020	500	100.0	8,839	-3,820	23.4	123				SD
Surr: 4-Terphenyl-d14	0		3.330		0	33	152				SD

Sample ID: 19081453-001BMSD-	SampType: MSD	TestCode: 8015_DO_S	Units: mg/Kg	Prep Date: 9/4/2019	RunNo: 81826						
Client ID: ZZZZZZ	Batch ID: 31449	TestNo: SW8015B	SW3550C	Analysis Date: 9/9/2019	SeqNo: 2051697						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
TPH (Diesel Range)	3,730	500	100.0	8,839	-5,110	23.4	123	5,018	29.4	35.6	SD
Surr: 4-Terphenyl-d14	0		3.330		0	33	152		0	40	SD

NOTES:
 SD - Surrogate and matrix spike diluted out due to dilution.

Qualifiers:	* Value exceeds Maximum Contaminant Level.	H Holding times for preparation or analysis exceeded	M Matrix Interference
	ND Not Detected at the Reporting Limit	R RPD outside accepted recovery limits	RL Reporting Limit
	S Spike Recovery outside accepted recovery limits	SDL Sample detection limit	U Analyte not detected
	W Sample container temperature is out of limit as specified at testcode		



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QC SUMMARY REPORT

WO#: 19081522
 20-Sep-19

Client: ICON Environmental Services
Project: Grand River Levert/9326-025-0100

BatchID: 31495

Sample ID: MB-31495	SampType: MBLK	TestCode: HG_S_29B	Units: mg/Kg-dry	Prep Date: 9/9/2019	RunNo: 81873						
Client ID: PBS	Batch ID: 31495	TestNo: 29B/SW7471 SW7471A		Analysis Date: 9/10/2019	SeqNo: 2051184						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	< 0.100	0.100									

Sample ID: LCS-31495	SampType: LCS	TestCode: HG_S_29B	Units: mg/Kg-dry	Prep Date: 9/9/2019	RunNo: 81873						
Client ID: LCSS	Batch ID: 31495	TestNo: 29B/SW7471 SW7471A		Analysis Date: 9/10/2019	SeqNo: 2051185						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	0.985	0.100	0.8330	0	118	80	120				

Sample ID: LCSD-31495	SampType: LCSD	TestCode: HG_S_29B	Units: mg/Kg-dry	Prep Date: 9/9/2019	RunNo: 81873						
Client ID: LCSS02	Batch ID: 31495	TestNo: 29B/SW7471 SW7471A		Analysis Date: 9/10/2019	SeqNo: 2051186						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	0.993	0.100	0.8330	0	119	80	120	0.9848	0.861	20	

Sample ID: 19081451-001AMS	SampType: MS	TestCode: HG_S_29B	Units: mg/Kg-dry	Prep Date: 9/9/2019	RunNo: 81873						
Client ID: ZZZZZZ	Batch ID: 31495	TestNo: 29B/SW7471 SW7471A		Analysis Date: 9/10/2019	SeqNo: 2051190						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	1.07	0.105	0.8736	0.04108	117	75	125				

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	H	Holding times for preparation or analysis exceeded	M	Matrix Interference
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	RL	Reporting Limit
S	Spike Recovery outside accepted recovery limits	SDL	Sample detection limit	U	Analyte not detected
W	Sample container temperature is out of limit as specified at testcode				



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QC SUMMARY REPORT

WO#: 19081522
 20-Sep-19

Client: ICON Environmental Services
Project: Grand River Levert/9326-025-0100

BatchID: 31495

Sample ID: 19081451-001AMSD	SampType: MSD	TestCode: HG_S_29B	Units: mg/Kg-dry	Prep Date: 9/9/2019	RunNo: 81873						
Client ID: ZZZZZZ	Batch ID: 31495	TestNo: 29B/SW7471	SW7471A	Analysis Date: 9/10/2019	SeqNo: 2051191						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	1.06	0.104	0.8644	0.04108	118	75	125	1.066	0.284	20	

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	H	Holding times for preparation or analysis exceeded	M	Matrix Interference
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	RL	Reporting Limit
S	Spike Recovery outside accepted recovery limits	SDL	Sample detection limit	U	Analyte not detected
W	Sample container temperature is out of limit as specified at testcode				



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QC SUMMARY REPORT

WO#: 19081522
 20-Sep-19

Client: ICON Environmental Services
Project: Grand River Levert/9326-025-0100

BatchID: 31496

Sample ID: MB-31496	SampType: MBLK	TestCode: HG_S_29B	Units: mg/Kg-dry	Prep Date: 9/9/2019	RunNo: 81873						
Client ID: PBS	Batch ID: 31496	TestNo: 29B/SW7471 SW7471A		Analysis Date: 9/10/2019	SeqNo: 2051228						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Mercury < 0.100 0.100

Sample ID: LCS-31496	SampType: LCS	TestCode: HG_S_29B	Units: mg/Kg-dry	Prep Date: 9/9/2019	RunNo: 81873						
Client ID: LCSS	Batch ID: 31496	TestNo: 29B/SW7471 SW7471A		Analysis Date: 9/10/2019	SeqNo: 2051229						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Mercury 0.876 0.100 0.8330 0 105 80 120

Sample ID: LCSD-31496	SampType: LCSD	TestCode: HG_S_29B	Units: mg/Kg-dry	Prep Date: 9/9/2019	RunNo: 81873						
Client ID: LCSS02	Batch ID: 31496	TestNo: 29B/SW7471 SW7471A		Analysis Date: 9/10/2019	SeqNo: 2051230						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Mercury 0.878 0.100 0.8330 0 105 80 120 0.8764 0.136 20

Sample ID: 19081522-009AMS	SampType: MS	TestCode: HG_S_29B	Units: mg/Kg-dry	Prep Date: 9/9/2019	RunNo: 81873						
Client ID: HA-4 (0-2')	Batch ID: 31496	TestNo: 29B/SW7471 SW7471A		Analysis Date: 9/10/2019	SeqNo: 2051232						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Mercury 0.952 0.107 0.8895 0 107 75 125

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	H	Holding times for preparation or analysis exceeded	M	Matrix Interference
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	RL	Reporting Limit
S	Spike Recovery outside accepted recovery limits	SDL	Sample detection limit	U	Analyte not detected
W	Sample container temperature is out of limit as specified at testcode				



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QC SUMMARY REPORT

WO#: 19081522
 20-Sep-19

Client: ICON Environmental Services
Project: Grand River Levert/9326-025-0100

BatchID: 31496

Sample ID: 19081522-009AMSD	SampType: MSD	TestCode: HG_S_29B	Units: mg/Kg-dry	Prep Date: 9/9/2019	RunNo: 81873						
Client ID: HA-4 (0-2')	Batch ID: 31496	TestNo: 29B/SW7471	SW7471A	Analysis Date: 9/10/2019	SeqNo: 2051233						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	0.967	0.108	0.9009	0	107	75	125	0.9519	1.61	20	

Qualifiers:

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ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	RL	Reporting Limit
S	Spike Recovery outside accepted recovery limits	SDL	Sample detection limit	U	Analyte not detected
W	Sample container temperature is out of limit as specified at testcode				



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QC SUMMARY REPORT

WO#: 19081522
 20-Sep-19

Client: ICON Environmental Services
Project: Grand River Levert/9326-025-0100

BatchID: 31505

Sample ID: LCSS-31505	SampType: LCS	TestCode: 6010_S_29B	Units: mg/Kg-dry	Prep Date: 9/10/2019	RunNo: 81981						
Client ID: LCSS	Batch ID: 31505	TestNo: SW6010B	SW3050B	Analysis Date: 9/12/2019	SeqNo: 2053609						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	52.1	2.00	50.00	0	104	80	120				
Barium	52.2	1.00	50.00	0	104	80	120				
Cadmium	51.4	0.500	50.00	0	103	80	120				
Chromium	51.5	1.00	50.00	0	103	80	120				
Lead	51.6	1.00	50.00	0	103	80	120				
Selenium	53.4	4.00	50.00	0	107	80	120				
Strontium	52.5	1.00	50.00	0	105	80	120				
Zinc	52.0	1.00	50.00	0	104	80	120				

Sample ID: LCSD-31505	SampType: LCSD	TestCode: 6010_S_29B	Units: mg/Kg-dry	Prep Date: 9/10/2019	RunNo: 81981						
Client ID: LCSS02	Batch ID: 31505	TestNo: SW6010B	SW3050B	Analysis Date: 9/12/2019	SeqNo: 2053610						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	50.7	2.00	50.00	0	101	80	120	52.07	2.73	20	
Barium	52.1	1.00	50.00	0	104	80	120	52.25	0.287	20	
Cadmium	51.5	0.500	50.00	0	103	80	120	51.41	0.233	20	
Chromium	51.6	1.00	50.00	0	103	80	120	51.50	0.252	20	
Lead	51.1	1.00	50.00	0	102	80	120	51.57	0.896	20	
Selenium	53.4	4.00	50.00	0	107	80	120	53.44	0.112	20	
Strontium	52.4	1.00	50.00	0	105	80	120	52.49	0.0762	20	
Zinc	52.2	1.00	50.00	0	104	80	120	52.02	0.422	20	

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	H	Holding times for preparation or analysis exceeded	M	Matrix Interference
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	RL	Reporting Limit
S	Spike Recovery outside accepted recovery limits	SDL	Sample detection limit	U	Analyte not detected
W	Sample container temperature is out of limit as specified at testcode				



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QC SUMMARY REPORT

WO#: 19081522
 20-Sep-19

Client: ICON Environmental Services
Project: Grand River Levert/9326-025-0100

BatchID: 31505

Sample ID: MB-31505	SampType: MBLK	TestCode: 6010_S_29B	Units: mg/Kg-dry	Prep Date: 9/10/2019	RunNo: 81981						
Client ID: PBS	Batch ID: 31505	TestNo: SW6010B	SW3050B	Analysis Date: 9/12/2019	SeqNo: 2053611						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	< 2.00	2.00									
Barium	< 1.00	1.00									
Cadmium	< 0.500	0.500									
Chromium	< 1.00	1.00									
Lead	< 1.00	1.00									
Selenium	< 4.00	4.00									
Strontium	< 1.00	1.00									
Zinc	< 1.00	1.00									

Sample ID: 19081522-001AMS	SampType: MS	TestCode: 6010_S_29B	Units: mg/Kg-dry	Prep Date: 9/10/2019	RunNo: 81981						
Client ID: HA-1 (0-2')	Batch ID: 31505	TestNo: SW6010B	SW3050B	Analysis Date: 9/12/2019	SeqNo: 2053616						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	56.0	1.98	49.60	5.901	101	75	125				
Cadmium	48.1	0.496	49.60	0.6578	95.7	75	125				
Chromium	75.5	0.992	49.60	17.93	116	75	125				
Lead	71.2	0.992	49.60	21.53	100	75	125				
Selenium	40.3	3.97	49.60	0	81.3	75	125				
Zinc	140	0.992	49.60	80.26	121	75	125				

Qualifiers:

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ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	RL	Reporting Limit
S	Spike Recovery outside accepted recovery limits	SDL	Sample detection limit	U	Analyte not detected
W	Sample container temperature is out of limit as specified at testcode				



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QC SUMMARY REPORT

WO#: 19081522
 20-Sep-19

Client: ICON Environmental Services
Project: Grand River Levert/9326-025-0100

BatchID: 31505

Sample ID: 19081522-001AMSD	SampType: MSD	TestCode: 6010_S_29B	Units: mg/Kg-dry	Prep Date: 9/10/2019	RunNo: 81981						
Client ID: HA-1 (0-2')	Batch ID: 31505	TestNo: SW6010B	SW3050B	Analysis Date: 9/12/2019	SeqNo: 2053617						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	50.2	1.84	46.07	5.901	96.1	75	125	56.02	11.0	20	
Cadmium	43.6	0.461	46.07	0.6578	93.3	75	125	48.12	9.76	20	
Chromium	66.4	0.921	46.07	17.93	105	75	125	75.50	12.8	20	
Lead	63.6	0.921	46.07	21.53	91.4	75	125	71.23	11.3	20	
Selenium	34.7	3.69	46.07	0	75.3	75	125	40.31	14.9	20	
Zinc	123	0.921	46.07	80.26	93.6	75	125	140.1	12.7	20	

Sample ID: 19081522-001AMS	SampType: MS	TestCode: 6010_S_29B	Units: mg/Kg-dry	Prep Date: 9/10/2019	RunNo: 81981						
Client ID: HA-1 (0-2')	Batch ID: 31505	TestNo: SW6010B	SW3050B	Analysis Date: 9/12/2019	SeqNo: 2053619						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Barium	283	9.92	49.60	228.3	109	75	125				
Strontium	319	9.92	49.60	251.4	135	75	125				S

Sample ID: 19081522-001AMSD	SampType: MSD	TestCode: 6010_S_29B	Units: mg/Kg-dry	Prep Date: 9/10/2019	RunNo: 81981						
Client ID: HA-1 (0-2')	Batch ID: 31505	TestNo: SW6010B	SW3050B	Analysis Date: 9/12/2019	SeqNo: 2053620						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Barium	248	9.21	46.07	228.3	43.7	75	125	282.5	12.9	20	S
Strontium	284	9.21	46.07	251.4	70.9	75	125	318.6	11.4	20	S

NOTES:

S - Analyte concentration in native sample was too high for accurate spike recovery(ies). The method is in control as indicated by the laboratory control sample (LCS).

Qualifiers:	* Value exceeds Maximum Contaminant Level.	H Holding times for preparation or analysis exceeded	M Matrix Interference
	ND Not Detected at the Reporting Limit	R RPD outside accepted recovery limits	RL Reporting Limit
	S Spike Recovery outside accepted recovery limits	SDL Sample detection limit	U Analyte not detected
	W Sample container temperature is out of limit as specified at testcode		



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QC SUMMARY REPORT

WO#: 19081522
 20-Sep-19

Client: ICON Environmental Services
Project: Grand River Levert/9326-025-0100

BatchID: 31523

Sample ID: MB-31523	SampType: MBLK	TestCode: TTBA	Units: mg/Kg-dry	Prep Date: 9/11/2019	RunNo: 81994						
Client ID: PBS	Batch ID: 31523	TestNo: LDNR 29-B		Analysis Date: 9/12/2019	SeqNo: 2054019						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
True Total Barium	< 50.0	50.0									

Sample ID: LCS-31523	SampType: LCS	TestCode: TTBA	Units: mg/Kg-dry	Prep Date: 9/11/2019	RunNo: 81994						
Client ID: LCSS	Batch ID: 31523	TestNo: LDNR 29-B		Analysis Date: 9/12/2019	SeqNo: 2054020						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
True Total Barium	9,960	50.0	10,000	0	99.6	75	125				

Sample ID: LCSD-31523	SampType: LCSD	TestCode: TTBA	Units: mg/Kg-dry	Prep Date: 9/11/2019	RunNo: 81994						
Client ID: LCSS02	Batch ID: 31523	TestNo: LDNR 29-B		Analysis Date: 9/12/2019	SeqNo: 2054021						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
True Total Barium	10,100	50.0	10,000	0	101	75	125	9,960	1.25	20	

Sample ID: 19081522-001AMS	SampType: MS	TestCode: TTBA	Units: mg/Kg-dry	Prep Date: 9/11/2019	RunNo: 81994						
Client ID: HA-1 (0-2')	Batch ID: 31523	TestNo: LDNR 29-B		Analysis Date: 9/12/2019	SeqNo: 2054023						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
True Total Barium	10,300	47.5	9,497	538.7	103	75	125				

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	H	Holding times for preparation or analysis exceeded	M	Matrix Interference
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	RL	Reporting Limit
S	Spike Recovery outside accepted recovery limits	SDL	Sample detection limit	U	Analyte not detected
W	Sample container temperature is out of limit as specified at testcode				



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QC SUMMARY REPORT

WO#: 19081522
 20-Sep-19

Client: ICON Environmental Services
Project: Grand River Levert/9326-025-0100

BatchID: 31523

Sample ID: 19081522-001AMSD	SampType: MSD	TestCode: TTBA	Units: mg/Kg-dry	Prep Date: 9/11/2019	RunNo: 81994						
Client ID: HA-1 (0-2')	Batch ID: 31523	TestNo: LDNR 29-B		Analysis Date: 9/12/2019	SeqNo: 2054024						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
True Total Barium	9,600	45.5	9,099	538.7	99.6	75	125	10,280	6.80	20	

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	H	Holding times for preparation or analysis exceeded	M	Matrix Interference
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	RL	Reporting Limit
S	Spike Recovery outside accepted recovery limits	SDL	Sample detection limit	U	Analyte not detected
W	Sample container temperature is out of limit as specified at testcode				



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QC SUMMARY REPORT

WO#: 19081522
 20-Sep-19

Client: ICON Environmental Services
Project: Grand River Levert/9326-025-0100

BatchID: 31540

Sample ID: 19081522-010ADUP	SampType: DUP	TestCode: SAR_S	Units:	Prep Date: 9/12/2019	RunNo: 82019						
Client ID: HA-4 (2-4')	Batch ID: 31540	TestNo: LDNR 29-B	LDNR 29-B	Analysis Date: 9/13/2019	SeqNo: 2054526						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium Adsorption Ratio	12.9	0.10						12.94	0.44	20	*
Soluble Calcium	5.90	0.02						5.96	1.01	20	
Soluble Magnesium	2.61	0.05						2.61	0.06	20	
Soluble Sodium	26.6	0.25						26.79	0.80	20	

Sample ID: 19090043-003ADUP	SampType: DUP	TestCode: SAR_S	Units:	Prep Date: 9/12/2019	RunNo: 82019						
Client ID: ZZZZZZ	Batch ID: 31540	TestNo: LDNR 29-B	LDNR 29-B	Analysis Date: 9/13/2019	SeqNo: 2054536						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium Adsorption Ratio	18.1	0.10						18.07	0.02	20	*
Soluble Calcium	18.4	0.02						18.48	0.62	20	
Soluble Magnesium	7.41	0.05						7.46	0.64	20	
Soluble Sodium	64.9	0.25						65.08	0.33	20	

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	H	Holding times for preparation or analysis exceeded	M	Matrix Interference
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	RL	Reporting Limit
S	Spike Recovery outside accepted recovery limits	SDL	Sample detection limit	U	Analyte not detected
W	Sample container temperature is out of limit as specified at testcode				



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QC SUMMARY REPORT

WO#: 19081522
 20-Sep-19

Client: ICON Environmental Services
Project: Grand River Levert/9326-025-0100

BatchID: 31551

Sample ID: 19081522-010ADUP	SampType: DUP	TestCode: ESP_S	Units: %	Prep Date: 9/12/2019	RunNo: 82038						
Client ID: HA-4 (2-4')	Batch ID: 31551	TestNo: LDNR 29-B	LDNR 29-B	Analysis Date: 9/13/2019	SeqNo: 2055063						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Exchangeable Sodium %	11.5	0.10						11.33	1.40	20	

Sample ID: 19090043-003ADUP	SampType: DUP	TestCode: ESP_S	Units: %	Prep Date: 9/12/2019	RunNo: 82038						
Client ID: ZZZZZZ	Batch ID: 31551	TestNo: LDNR 29-B	LDNR 29-B	Analysis Date: 9/13/2019	SeqNo: 2055094						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Exchangeable Sodium %	20.8	0.10						23.38	11.9	20	*

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	H	Holding times for preparation or analysis exceeded	M	Matrix Interference
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	RL	Reporting Limit
S	Spike Recovery outside accepted recovery limits	SDL	Sample detection limit	U	Analyte not detected
W	Sample container temperature is out of limit as specified at testcode				



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QC SUMMARY REPORT

WO#: 19081522
 20-Sep-19

Client: ICON Environmental Services
Project: Grand River Levert/9326-025-0100

BatchID: 31552

Sample ID: 19081522-010ADUP	SampType: DUP	TestCode: CEC	Units: meq/100g	Prep Date: 9/12/2019	RunNo: 82038						
Client ID: HA-4 (2-4')	Batch ID: 31552	TestNo: LDNR 29-B	LDNR 29-B	Analysis Date: 9/13/2019	SeqNo: 2055003						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Cation Exchange Capacity	50.5	0.100						48.59	3.91	20	
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Sample ID: lcs-31552	SampType: LCS	TestCode: CEC	Units: meq/100g	Prep Date: 9/12/2019	RunNo: 82038						
Client ID: LCSS	Batch ID: 31552	TestNo: LDNR 29-B	LDNR 29-B	Analysis Date: 9/13/2019	SeqNo: 2055010						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Cation Exchange Capacity	21.5	0.100	25.00	0	86.1	76	124				
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Sample ID: lcsd-31552	SampType: LCSD	TestCode: CEC	Units: meq/100g	Prep Date: 9/12/2019	RunNo: 82038						
Client ID: LCSS02	Batch ID: 31552	TestNo: LDNR 29-B	LDNR 29-B	Analysis Date: 9/13/2019	SeqNo: 2055011						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Cation Exchange Capacity	20.8	0.100	25.00	0	83.4	76	124	21.53	3.21	20	
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Sample ID: 19090043-003ADUP	SampType: DUP	TestCode: CEC	Units: meq/100g	Prep Date: 9/12/2019	RunNo: 82038						
Client ID: ZZZZZZ	Batch ID: 31552	TestNo: LDNR 29-B	LDNR 29-B	Analysis Date: 9/13/2019	SeqNo: 2055050						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Cation Exchange Capacity	22.9	0.100						21.22	7.70	20	
--------------------------	------	-------	--	--	--	--	--	-------	------	----	--

Qualifiers:

* Value exceeds Maximum Contaminant Level.	H Holding times for preparation or analysis exceeded	M Matrix Interference
ND Not Detected at the Reporting Limit	R RPD outside accepted recovery limits	RL Reporting Limit
S Spike Recovery outside accepted recovery limits	SDL Sample detection limit	U Analyte not detected
W Sample container temperature is out of limit as specified at testcode		



Element Materials Technology Lafayette
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 TEL: (337) 235-0483 FAX: (337) 233-6540
 Website: www.element.com

QC SUMMARY REPORT

WO#: 19081522
 20-Sep-19

Client: ICON Environmental Services
Project: Grand River Levert/9326-025-0100

BatchID: 31593

Sample ID: MB-31593	SampType: MBLK	TestCode: TTBA	Units: mg/Kg-dry	Prep Date: 9/18/2019	RunNo: 82188						
Client ID: PBS	Batch ID: 31593	TestNo: LDNR 29-B		Analysis Date: 9/19/2019	SeqNo: 2058271						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
True Total Barium	< 50.0	50.0									

Sample ID: LCS-31593	SampType: LCS	TestCode: TTBA	Units: mg/Kg-dry	Prep Date: 9/18/2019	RunNo: 82188						
Client ID: LCSS	Batch ID: 31593	TestNo: LDNR 29-B		Analysis Date: 9/19/2019	SeqNo: 2058272						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
True Total Barium	10,200	50.0	10,000	0	102	75	125				

Sample ID: LCSD-31593	SampType: LCSD	TestCode: TTBA	Units: mg/Kg-dry	Prep Date: 9/18/2019	RunNo: 82188						
Client ID: LCSS02	Batch ID: 31593	TestNo: LDNR 29-B		Analysis Date: 9/19/2019	SeqNo: 2058273						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
True Total Barium	10,300	50.0	10,000	0	103	75	125	10,230	0.682	20	

Sample ID: 19090514-001AMS	SampType: MS	TestCode: TTBA	Units: mg/Kg-dry	Prep Date: 9/18/2019	RunNo: 82188						
Client ID: ZZZZZZ	Batch ID: 31593	TestNo: LDNR 29-B		Analysis Date: 9/20/2019	SeqNo: 2058294						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
True Total Barium	11,200	48.4	9,671	1,410	102	75	125				

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	H	Holding times for preparation or analysis exceeded	M	Matrix Interference
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	RL	Reporting Limit
S	Spike Recovery outside accepted recovery limits	SDL	Sample detection limit	U	Analyte not detected
W	Sample container temperature is out of limit as specified at testcode				



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QC SUMMARY REPORT

WO#: 19081522
 20-Sep-19

Client: ICON Environmental Services
Project: Grand River Levert/9326-025-0100

BatchID: 31593

Sample ID: 19090514-001AMSD	SampType: MSD	TestCode: TTBA	Units: mg/Kg-dry	Prep Date: 9/18/2019	RunNo: 82188						
Client ID: ZZZZZZ	Batch ID: 31593	TestNo: LDNR 29-B		Analysis Date: 9/20/2019	SeqNo: 2058295						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
True Total Barium	11,800	49.4	9,881	1,410	105	75	125	11,240	4.74	20	

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	H	Holding times for preparation or analysis exceeded	M	Matrix Interference
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	RL	Reporting Limit
S	Spike Recovery outside accepted recovery limits	SDL	Sample detection limit	U	Analyte not detected
W	Sample container temperature is out of limit as specified at testcode				



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QC SUMMARY REPORT

WO#: 19081522

20-Sep-19

Client: ICON Environmental Services
Project: Grand River Levert/9326-025-0100

BatchID: R81713

Sample ID: MB-R81713	SampType: MBLK	TestCode: HEM_S	Units: % dry wt	Prep Date:	RunNo: 81713						
Client ID: PBS	Batch ID: R81713	TestNo: SW9071B		Analysis Date: 9/4/2019	SeqNo: 2048710						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
HEM, Oil & Grease	< 0.05	0.05									

Sample ID: LCS-R81713	SampType: LCS	TestCode: HEM_S	Units: % dry wt	Prep Date:	RunNo: 81713						
Client ID: LCSS	Batch ID: R81713	TestNo: SW9071B		Analysis Date: 9/4/2019	SeqNo: 2048711						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
HEM, Oil & Grease	0.22	0.05	0.20	0	110	70	130				

Sample ID: LCSD-R81713	SampType: LCSD	TestCode: HEM_S	Units: % dry wt	Prep Date:	RunNo: 81713						
Client ID: LCSS02	Batch ID: R81713	TestNo: SW9071B		Analysis Date: 9/4/2019	SeqNo: 2048712						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
HEM, Oil & Grease	0.21	0.05	0.20	0	107	70	130	0.22	2.53	40	

Sample ID: 19081360-001AMS	SampType: MS	TestCode: HEM_S	Units: % dry wt	Prep Date:	RunNo: 81713						
Client ID: ZZZZZZ	Batch ID: R81713	TestNo: SW9071B		Analysis Date: 9/4/2019	SeqNo: 2048713						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
HEM, Oil & Grease	0.24	0.05	0.23	0	107	70	130				

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	H	Holding times for preparation or analysis exceeded	M	Matrix Interference
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	RL	Reporting Limit
S	Spike Recovery outside accepted recovery limits	SDL	Sample detection limit	U	Analyte not detected
W	Sample container temperature is out of limit as specified at testcode				



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QC SUMMARY REPORT

WO#: 19081522
 20-Sep-19

Client: ICON Environmental Services
Project: Grand River Levert/9326-025-0100

BatchID: R81713

Sample ID: 19081360-001ADUP	SampType: DUP	TestCode: HEM_S	Units: % dry wt	Prep Date:	RunNo: 81713						
Client ID: ZZZZZZ	Batch ID: R81713	TestNo: SW9071B		Analysis Date: 9/4/2019	SeqNo: 2048714						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
HEM, Oil & Grease	< 0.05	0.05						0	0	40	

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	H	Holding times for preparation or analysis exceeded	M	Matrix Interference
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	RL	Reporting Limit
S	Spike Recovery outside accepted recovery limits	SDL	Sample detection limit	U	Analyte not detected
W	Sample container temperature is out of limit as specified at testcode				



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QC SUMMARY REPORT

WO#: 19081522
 20-Sep-19

Client: ICON Environmental Services
Project: Grand River Levert/9326-025-0100

BatchID: R81745

Sample ID: 19081522-010ADUP	SampType: DUP	TestCode: PMOIST	Units: wt%	Prep Date:	RunNo: 81745						
Client ID: HA-4 (2-4')	Batch ID: R81745	TestNo: LDNR 29-B		Analysis Date: 9/3/2019	SeqNo: 2047229						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Percent Moisture	28.5	1.00						30.60	7.11	20	

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	H	Holding times for preparation or analysis exceeded	M	Matrix Interference
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	RL	Reporting Limit
S	Spike Recovery outside accepted recovery limits	SDL	Sample detection limit	U	Analyte not detected
W	Sample container temperature is out of limit as specified at testcode				



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QC SUMMARY REPORT

WO#: 19081522
 20-Sep-19

Client: ICON Environmental Services
Project: Grand River Levert/9326-025-0100

BatchID: R81891

Sample ID: MB-R81891	SampType: MBLK	TestCode: EC_S	Units: mmhos/cm	Prep Date:	RunNo: 81891						
Client ID: PBS	Batch ID: R81891	TestNo: LDNR 29-B		Analysis Date: 9/10/2019	SeqNo: 2051705						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Electrical Conductivity < 0.10 0.10

Sample ID: LCS1-R81891	SampType: LCS1	TestCode: EC_S	Units: mmhos/cm	Prep Date:	RunNo: 81891						
Client ID: ZZZZZ	Batch ID: R81891	TestNo: LDNR 29-B		Analysis Date: 9/10/2019	SeqNo: 2051706						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Electrical Conductivity 0.40 0.10 0.38 0 104 90.07 109.9

Sample ID: LCS2-R81891	SampType: LCS2	TestCode: EC_S	Units: mmhos/cm	Prep Date:	RunNo: 81891						
Client ID: ZZZZZ	Batch ID: R81891	TestNo: LDNR 29-B		Analysis Date: 9/10/2019	SeqNo: 2051707						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Electrical Conductivity 49.7 0.10 53.00 0 93.8 90 110

Sample ID: 19081522-010ADUP	SampType: DUP	TestCode: EC_S	Units: mmhos/cm	Prep Date:	RunNo: 81891						
Client ID: HA-4 (2-4')	Batch ID: R81891	TestNo: LDNR 29-B		Analysis Date: 9/10/2019	SeqNo: 2051718						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Electrical Conductivity 3.42 0.10 3.67 7.05 20

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	H	Holding times for preparation or analysis exceeded	M	Matrix Interference
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	RL	Reporting Limit
S	Spike Recovery outside accepted recovery limits	SDL	Sample detection limit	U	Analyte not detected
W	Sample container temperature is out of limit as specified at testcode				



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QC SUMMARY REPORT

WO#: 19081522
 20-Sep-19

Client: ICON Environmental Services
Project: Grand River Levert/9326-025-0100

BatchID: R81891

Sample ID: 19090043-003ADUP	SampType: DUP	TestCode: EC_S	Units: mmhos/cm	Prep Date:	RunNo: 81891						
Client ID: ZZZZZZ	Batch ID: R81891	TestNo: LDNR 29-B		Analysis Date: 9/10/2019	SeqNo: 2051729						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Electrical Conductivity	9.61	0.10						9.60	0.10	20	*

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	H	Holding times for preparation or analysis exceeded	M	Matrix Interference
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	RL	Reporting Limit
S	Spike Recovery outside accepted recovery limits	SDL	Sample detection limit	U	Analyte not detected
W	Sample container temperature is out of limit as specified at testcode				



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QC SUMMARY REPORT

WO#: 19081522
 20-Sep-19

Client: ICON Environmental Services
Project: Grand River Levert/9326-025-0100

BatchID: R81984

Sample ID: MBLK	SampType: MBLK	TestCode: 9056_LEACH	Units: mg/L	Prep Date:	RunNo: 81984						
Client ID: PBW	Batch ID: R81984	TestNo: SW9056A		Analysis Date: 9/12/2019	SeqNo: 2053779						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Chloride < 0.250 0.250

Sample ID: LCS	SampType: LCS	TestCode: 9056_LEACH	Units: mg/L	Prep Date:	RunNo: 81984						
Client ID: LCSW	Batch ID: R81984	TestNo: SW9056A		Analysis Date: 9/12/2019	SeqNo: 2053780						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Chloride 10.0 0.250 10.00 0 100 80 120

Sample ID: LCSD	SampType: LCSD	TestCode: 9056_LEACH	Units: mg/L	Prep Date:	RunNo: 81984						
Client ID: LCSS02	Batch ID: R81984	TestNo: SW9056A		Analysis Date: 9/12/2019	SeqNo: 2053781						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Chloride 10.0 0.250 10.00 0 100 80 120 10.01 0.0507 15

Sample ID: 19090291-003DMS	SampType: MS	TestCode: 9056_LEACH	Units: mg/L	Prep Date:	RunNo: 81984						
Client ID: ZZZZZZ	Batch ID: R81984	TestNo: SW9056A		Analysis Date: 9/12/2019	SeqNo: 2053785						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Chloride 99.9 2.50 50.00 50.84 98.2 80 120

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	H	Holding times for preparation or analysis exceeded	M	Matrix Interference
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	RL	Reporting Limit
S	Spike Recovery outside accepted recovery limits	SDL	Sample detection limit	U	Analyte not detected
W	Sample container temperature is out of limit as specified at testcode				



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QC SUMMARY REPORT

WO#: 19081522
 20-Sep-19

Client: ICON Environmental Services
Project: Grand River Levert/9326-025-0100

BatchID: R81984

Sample ID: 19090291-003DMSD	SampType: MSD	TestCode: 9056_LEACH	Units: mg/L	Prep Date:	RunNo: 81984						
Client ID: ZZZZZZ	Batch ID: R81984	TestNo: SW9056A		Analysis Date: 9/12/2019	SeqNo: 2053786						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	100	2.50	50.00	50.84	98.4	80	120	99.93	0.0998	15	

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	H	Holding times for preparation or analysis exceeded	M	Matrix Interference
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	RL	Reporting Limit
S	Spike Recovery outside accepted recovery limits	SDL	Sample detection limit	U	Analyte not detected
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Sample Log-In Check List

Client Name: **ICON_ENV** Work Order Number: **19081522** RcptNo: **1**

Logged by:	Tammy Thibodeaux	8/30/2019 4:26:00 PM	<i>Tammy Thibodeaux</i>
Completed By:	Tammy Thibodeaux	8/30/2019 5:49:31 PM	<i>Tammy Thibodeaux</i>
Reviewed By:	Caitlin Duplantis	9/16/2019 9:37:51 AM	<i>Caitlin Duplantis</i>

Chain of Custody

1. Is Chain of Custody complete? Yes No Not Present
 2. How was the sample delivered? Client

Log In

3. Coolers are present? Yes No NA
 4. Shipping container/cooler in good condition? Yes No
 Custody seals intact on shipping container/cooler? Yes No Not Present
 No. Seal Date: Signed By:
 5. Was an attempt made to cool the samples? Yes No NA
 6. Were all samples received at a temperature of >0° C to 6.0°C Yes No NA
 7. Sample(s) in proper container(s)? Yes No
 8. Sufficient sample volume for indicated test(s)? Yes No
 9. Are samples (except VOA and ONG) properly preserved? Yes No
 10. Was preservative added to bottles? Yes No NA
 11. Is the headspace in the VOA vials less than 1/4 inch or 6 mm? Yes No No VOA Vials
 12. Were any sample containers received broken? Yes No
 13. Does paperwork match bottle labels? Yes No
 (Note discrepancies on chain of custody)
 14. Are matrices correctly identified on Chain of Custody? Yes No
 15. Is it clear what analyses were requested? Yes No
 16. Were all holding times able to be met? Yes No
 (If no, notify customer for authorization.)

Special Handling (if applicable)

17. Was client notified of all discrepancies with this order? Yes No NA

Person Notified:	<input type="text"/>	Date:	<input type="text"/>
By Whom:	<input type="text"/>	Via:	<input type="checkbox"/> eMail <input type="checkbox"/> Phone <input type="checkbox"/> Fax <input type="checkbox"/> In Person
Regarding:	<input type="text"/>		
Client Instructions:	<input type="text"/>		

18. Additional remarks:
 Improper error correction(s) made by client.

Cooler Information

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	0.9	Good	Not Present			



element™

Chain of Custody

Laboratory Number: 19081522

Company Name: Contact Name: Address: City, State Zip: Phone Number: Fax Number: E-mail Address:	Client Information: Name: <u>ICON</u> Contact: <u>Jason Sills</u> Address: <u>2049 Commercial Rd</u> City, State Zip: <u>Roanoke VA 24067</u> Phone Number: <u>225-3448890</u> Ext: Fax Number: E-mail Address:	Billing Information: PO Number: Quote Number: Required QC Level: Bill Monthly: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No Ext:	Project Name/Number: <u>Grand Pines Levert</u> <u>9326-025-0100</u> Sampler's Signature: Shipping Method: <u>UPS / FedEx / NOW</u> <u>DHL / Element / Hand / Mail</u>	Page <u>1</u> of <u>2</u> Matrix Code DW = Drinking Water WW = Waste Water GW = Ground Water AQ = Aqueous OT = Other SL = Sludge SOL = Solid O = Oil SO = Soil F = Food SW = Swab NG = Natural Gas NGL = Natural Gas Liquid PW = Produced Water CF = Completion Fluid
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Which Regulations Apply:	Turn Time	Collection Information	Container	Pres.	Requested Tests										Comments
					Quantity	Type	HCl, HNO ₃ , H ₂ SO ₄ , NaOH, Na ₂ S ₂ O ₃	EC (298)	SAR (293)	ESP (98)	CEC (298)	% moisture	metals 298	TPH-D/D	
<input type="checkbox"/> RCRA <input type="checkbox"/> NPDES <input type="checkbox"/> USFDA <input type="checkbox"/> RECAP/RISC <input type="checkbox"/> Drinking Water <input type="checkbox"/> Distribution <input type="checkbox"/> Special <input type="checkbox"/> State <input type="checkbox"/> Other	<input type="checkbox"/> Standard <input checked="" type="checkbox"/> RUSH <input type="checkbox"/> 1 Day <input type="checkbox"/> 2 Day <input type="checkbox"/> Other	<input type="checkbox"/> Grab / Composite <input type="checkbox"/> Matrix	<input type="checkbox"/> P=Plastic <input type="checkbox"/> G=Glass, V=Vial	<input type="checkbox"/> HCl, HNO ₃ , H ₂ SO ₄ , NaOH, Na ₂ S ₂ O ₃	<input type="checkbox"/> EC (298) <input type="checkbox"/> SAR (293) <input type="checkbox"/> ESP (98) <input type="checkbox"/> CEC (298) <input type="checkbox"/> % moisture <input type="checkbox"/> metals 298 <input type="checkbox"/> TPH-D/D <input type="checkbox"/> HEM 06 <input type="checkbox"/> Residue CI	Metals As, Ba, TTBa Cd, Cr, Se, Sr, Pb Zn, Hg Dry weight required									
Sample ID/Description <u>HA-1 (0-2)</u> <u>HA-1 (2-4)</u> <u>HA-2 (0-2)</u> <u>HA-2 (2-4)</u> <u>HA-3 (0-2)</u> <u>HA-3 (2-4)</u> <u>HA-3 (4-6)</u> <u>HA-3 (6-8)</u> <u>HA-4 (0-2)</u>	<u>8-29-19</u> <u>8-30-19</u>	<u>1100</u> <u>1025</u>	<u>GRAB</u> 	<u>SD</u> 	<u>2</u> <u>2</u> <u>2</u> <u>2</u> <u>2</u> <u>2</u> <u>2</u> <u>1</u>	<u>P, G</u> <u>P</u>	<u>none</u> <u>X</u>	<u>X</u> <u>X</u> <u>X</u> <u>X</u> <u>X</u> <u>X</u> <u>X</u> <u>X</u>	<u>X</u> <u>X</u> <u>X</u> <u>X</u> <u>X</u> <u>X</u> <u>X</u> <u>X</u>	<u>X</u> <u>X</u> <u>X</u> <u>X</u> <u>X</u> <u>X</u> <u>X</u> <u>X</u>	 	 			

Relinquished by	Date/Time	Received by	Date/Time	Field Notes:
	<u>8/30/19 1626</u>	<u>Phibrodant</u>	<u>8/30/19 1626</u>	Received at lab on ice? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No Temp: <u>0.9</u>

All samples submitted to Element Materials Technology for analysis are accepted on a custodial basis only. Ownership of the material remains with the client submitting the samples. Element Materials Technology reserves the right to return unused sample portions.

9301 Innovation Drive, Suite 115 Daleville, IN 47334-0569 USA P 765-378-4103 F 765-378-4109	629 Washington St. Suite 300 Columbus, IN 47201-6231 USA P 812-375-0531 F 812-375-0731	2121 East Washington Boulevard Fort Wayne, IN 46803-1328 USA P 260-471-7000 F 260-471-7777	909 Executive Dr Warsaw, IN 46580-2368 USA P 574-267-3305 F 574-269-6569	3371 Cleveland Road, Suite 100A South Bend, IN 46628-9780 USA P 574-277-0707 F 574-273-5699	2417 W. Pinhook Rd Lafayette, LA 70508-3344 USA P 337-235-0483 F 337-233-6540
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Chain of Custody

Laboratory Number: **19081522**

Company Name: Contact Name: Address: City, State Zip: Phone Number: Fax Number: E-mail Address:	Client Information:	Billing Information:	PO Number:	Project Name/Number: Grand River-Levert	Page 2 of 2
	SAME Address: ILON		Quote Number:	9326-025-0100	Matrix Code DW = Drinking Water WW = Waste Water GW = Ground Water AQ = Aqueous OT = Other SL = Sludge SOL = Solid O = Oil SO = Soil F = Food SW = Swab NG = Natural Gas NGL = Natural Gas Liquid PW = Produced Water CF = Completion Fluid
	Ext: _____ Ext: _____		Required QC Level:	Sampler's Signature:	
	Phone Number: _____ Ext: _____		Bill Monthly:	Shipping Method:	
	Fax Number: _____		<input type="checkbox"/> Yes <input type="checkbox"/> No	UPS / FedEx / NOW DHL / Element / Hand Mail	
	E-mail Address: _____				

Which Regulations Apply:	Turn Time	Container	Pres.	Requested Tests							Comments				
				Quantity	Type	HCl, HNO ₃ , H ₂ SO ₄ , NaOH, Na ₂ S ₂ O ₃	EC (2+0)	SAR (2+0)	ESP (2+0)	CEC (2+0)		0.05mols/mole	(2+0) metals	Leachate Cl ⁻	
<input type="checkbox"/> RCRA <input type="checkbox"/> POTW <input type="checkbox"/> NPDES <input type="checkbox"/> USDA/FDA <input type="checkbox"/> RECAP/RISC <input type="checkbox"/> Drinking Water <input type="checkbox"/> Distribution <input type="checkbox"/> Special <input type="checkbox"/> State <input type="checkbox"/> Other	Standard RUSH <input type="checkbox"/> 1 Day <input type="checkbox"/> 2 Day <input type="checkbox"/> Other	(Rush turn times will incur a surcharge and must be pre-approved by lab.)											SAME metals page 1		
Collection Information		Matrix	Type	HCl, HNO ₃ , H ₂ SO ₄ , NaOH, Na ₂ S ₂ O ₃	EC (2+0)	SAR (2+0)	ESP (2+0)	CEC (2+0)	0.05mols/mole	(2+0) metals	Leachate Cl ⁻				
Sample ID/Description	Date											Time		Grab / Composite	
HA-4 (2-4)	8-30-19	1030	LRAP	SO	1	P	not	X	X	X	X	X		X	
HA-4 (4-6)		1035			1										X
HA-4 (6-8)		1040			1										X
HA-5 (0-2)		1135			1										X
HA-5 (2-4)		1140			1									X	
HA-5 (4-6)		1145			1									X	
HA-5 (6-7)	X	1150	X	X	1	X	X	X	X	X	X	X	X	X	

Relinquished by	Date/Time	Received by	Date/Time	Field Notes:
	8/30/19 11:26		8/30/19 11:26	
				Received at lab on ice?
				<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No Temp: 0.9

All samples submitted to Element Materials Technology for analysis are accepted on a custodial basis only. Ownership of the material remains with the client submitting the samples. Element Materials Technology reserves the right to return unused sample portions.

9301 Innovation Drive, Suite 115 Daleville, IN 47334-0569 USA P 765-378-4103 F 765-378-4109

629 Washington St. Suite 300 Columbus, IN 47201-6231 USA P 812-375-0531 F 812-375-0731

2121 East Washington Boulevard Fort Wayne, IN 46803-1328 USA P 260-471-7000 F 260-471-7777

909 Executive Dr Warsaw, IN 46580-2368 USA P 574-267-3305 F 574-269-6569

3371 Cleveland Road, Suite 100A South Bend, IN 46628-9780 USA P 574-277-0707 F 574-277-5699

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October 11, 2019

Greg Miller
ICON Environmental Services
2049 Commercial Drive
Port Allen, LA 70767
TEL: (225) 344-8490
FAX: (225) 344-6654

RE: Levert-Grand River

Order No.: 19091178

Dear Greg Miller:

Element Materials Technology Lafayette received 11 sample(s) on 9/27/2019 for the analyses presented in the following report.

In accordance with your instructions Element Lafayette conducted the analysis shown on the following pages on samples submitted by your company. The results related only to the items tested. Unless otherwise noted, all analyses were conducted using EPA approved methodologies and all test results meet all requirements of TNI. All relevant sampling information is on the attached Chain-of-Custody form.

All soil data, except for 29-B, are on a wet-weight basis unless otherwise indicated in the units field as -dry.

LELAP Certification No.: 01997. TCEQ Certification No.: T104704261. LDHH Certification No.: LA180028. ISDH Certification No.: C-LA-01. A scope of accredited parameters is available upon request. A "#" by the test method or analyte indicates this parameter is outside the scope of accreditation.

Estimated uncertainty is available upon request. This report shall not be reproduced except in full, without the written approval of the laboratory.

If you have any questions regarding these test results, please feel free to call.

A handwritten signature in blue ink that reads 'Cristina Thibeaux'.

Cristina Thibeaux
Customer Service Supervisor
2417 W. Pinhook Road
Lafayette, LA 70508-3344



Element Materials Technology Lafayette
2417 W. Pinhook Road
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Case Narrative

WO#: 19091178
Date: 10/11/2019

CLIENT: ICON Environmental Services
Project: Levert-Grand River

Unless specified by the client, a duplicate or MS/MSD, wherever applicable, is randomly selected and analyzed from each analytical batch provided sample volume is sufficient. The sample chosen for duplicate or MS/MSD may or may not be a sample submitted in this workorder. A method blank and/or a lab control sample (LCS)/lab control sample duplicate (LCSD), wherever applicable, are processed as a quality control check for each analytical batch. When the matrix QC data is not available due to insufficient sample volume or when the results indicate possible matrix effect, the validity of the batch is determined by the method blank and LCS/LCSD.

The results of the laboratory internal quality control data are provided in the QC Summary Report section of the report for your review. Laboratory-related QC exceptions that may impact the validity of data are discussed in the case narrative. Sample-related QC exceptions are flagged either in the results page(s) or in the QC report page(s). End users should consider QC exceptions when evaluating sample data against data quality objectives.

Any other exceptions associated with this report will be footnoted in the results page(s) or the QC summary page(s).

Note: Due to limited sample, the following Lab IDs were prepared for Leachate Chloride, using less than 100g of the soil (dry wt basis). The amount of the extraction fluid was proportionally reduced to yield a 1:4 sample to fluid ratio.

19091178-002A had insufficient volume for leachate. Used 44.6g

19091178-008A had insufficient volume for leachate. Used 96.2g



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Analytical Report

(consolidated)

WO#: 19091178

Date Reported: 10/11/2019

CLIENT: ICON Environmental Services **Collection Date:** 9/25/2019 11:05:00 AM
Project: Levert-Grand River
Lab ID: 19091178-001 **Matrix:** SOIL
Client Sample ID LT-1 0-4

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
29B SALTS						
CATION EXCHANGE CAPACITY						
Cation Exchange Capacity	70.5	0.100		meq/100g	1	10/9/2019
29B SALTS						
ELECTRICAL CONDUCTIVITY @ SATURATION						
Electrical Conductivity	2.08	0.10		mmhos/cm	1	10/3/2019 12:05:00 PM
29B SALTS						
EXCHANGEABLE SODIUM PERCENTAGE						
Exchangeable Sodium %	5.29	0.10		%	1	10/9/2019
29B SALTS						
SODIUM ADSORPTION RATIO						
Sodium Adsorption Ratio	7.87	0.10			1	10/5/2019
Soluble Calcium	3.46	0.02		meq/L	1	10/5/2019
Soluble Magnesium	1.99	0.05		meq/L	1	10/5/2019
Soluble Sodium	13.0	0.25		meq/L	1	10/5/2019
29B METALS						
MERCURY IN SOIL OR SLUDGE						
Mercury	< 0.103	0.103		mg/Kg-dry	1	10/7/2019 1:58:09 PM
29B METALS						
METALS IN SOIL OR SLUDGE BY ICP						
Arsenic	10.4	1.96	*	mg/Kg-dry	1	10/4/2019 8:12:44 PM
Barium	247	0.981		mg/Kg-dry	1	10/4/2019 8:12:44 PM
Cadmium	0.628	0.490		mg/Kg-dry	1	10/4/2019 8:12:44 PM
Chromium	21.6	0.981		mg/Kg-dry	1	10/4/2019 8:12:44 PM
Lead	19.2	0.981		mg/Kg-dry	1	10/4/2019 8:12:44 PM
Selenium	< 3.92	3.92		mg/Kg-dry	1	10/4/2019 8:12:44 PM
Strontium	93.8	0.981		mg/Kg-dry	1	10/4/2019 8:12:44 PM
Zinc	88.0	0.981		mg/Kg-dry	1	10/4/2019 8:12:44 PM
29B METALS						
TRUE TOTAL BARIUM						
					LDNR 29-B	Analyst: STS

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- RL Reporting Limit
- SDL Sample detection limit
- W Sample container temperature is out of limit as specified at testcode

- E Value above quantitation range
- M Matrix Interference
- R RPD outside accepted recovery limits
- S Spike Recovery outside accepted recovery limits
- U Analyte not detected



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Analytical Report

(consolidated)

WO#: 19091178

Date Reported: 10/11/2019

CLIENT: ICON Environmental Services **Collection Date:** 9/25/2019 11:05:00 AM
Project: Levert-Grand River
Lab ID: 19091178-001 **Matrix:** SOIL
Client Sample ID LT-1 0-4

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
29B METALS				LDNR 29-B		Analyst: STS
TRUE TOTAL BARIUM						
True Total Barium	394	47.8		mg/Kg-dry	1	10/4/2019 10:35:55 PM
PERCENT MOISTURE				LDNR 29-B		Analyst: BXL
Percent Moisture	33.1	1.00		wt%	1	9/30/2019 11:10:00 AM

Qualifiers:

- | | |
|---|---|
| * Value exceeds Maximum Contaminant Level. | E Value above quantitation range |
| H Holding times for preparation or analysis exceeded | M Matrix Interference |
| ND Not Detected at the Reporting Limit | R RPD outside accepted recovery limits |
| RL Reporting Limit | S Spike Recovery outside accepted recovery limits |
| SDL Sample detection limit | U Analyte not detected |
| W Sample container temperature is out of limit as specified at testcode | |



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Analytical Report

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WO#: 19091178

Date Reported: 10/11/2019

CLIENT: ICON Environmental Services **Collection Date:** 9/25/2019 11:15:00 AM
Project: Levert-Grand River
Lab ID: 19091178-002 **Matrix:** SOIL
Client Sample ID LT-1 6-8

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
29B SALTS						
CATION EXCHANGE CAPACITY						
Cation Exchange Capacity	84.5	0.100		meq/100g	1	10/9/2019
29B SALTS						
ELECTRICAL CONDUCTIVITY @ SATURATION						
Electrical Conductivity	6.58	0.10	*	mmhos/cm	1	10/3/2019 12:05:00 PM
29B SALTS						
EXCHANGEABLE SODIUM PERCENTAGE						
Exchangeable Sodium %	7.82	0.10		%	1	10/9/2019
29B SALTS						
SODIUM ADSORPTION RATIO						
Sodium Adsorption Ratio	12.0	0.10			1	10/5/2019
Soluble Calcium	13.3	0.02		meq/L	1	10/5/2019
Soluble Magnesium	7.02	0.05		meq/L	1	10/5/2019
Soluble Sodium	38.2	0.25		meq/L	1	10/5/2019
29B METALS						
MERCURY IN SOIL OR SLUDGE						
Mercury	< 0.109	0.109		mg/Kg-dry	1	10/7/2019 2:00:27 PM
INORGANIC ANIONS IN LEACHATE BY IC						
Chloride	632	12.5		mg/L	50	10/10/2019 12:16:50 PM
29B METALS						
METALS IN SOIL OR SLUDGE BY ICP						
Arsenic	5.05	1.92		mg/Kg-dry	1	10/4/2019 8:18:06 PM
Barium	353	0.959		mg/Kg-dry	1	10/4/2019 8:18:06 PM
Cadmium	< 0.480	0.480		mg/Kg-dry	1	10/4/2019 8:18:06 PM
Chromium	21.6	0.959		mg/Kg-dry	1	10/4/2019 8:18:06 PM
Lead	17.1	0.959		mg/Kg-dry	1	10/4/2019 8:18:06 PM
Selenium	< 3.84	3.84		mg/Kg-dry	1	10/4/2019 8:18:06 PM
Strontium	82.0	0.959		mg/Kg-dry	1	10/4/2019 8:18:06 PM

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- RL Reporting Limit
- SDL Sample detection limit
- W Sample container temperature is out of limit as specified at testcode

- E Value above quantitation range
- M Matrix Interference
- R RPD outside accepted recovery limits
- S Spike Recovery outside accepted recovery limits
- U Analyte not detected



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Analytical Report

(consolidated)

WO#: 19091178

Date Reported: 10/11/2019

CLIENT: ICON Environmental Services **Collection Date:** 9/25/2019 11:15:00 AM
Project: Levert-Grand River
Lab ID: 19091178-002 **Matrix:** SOIL
Client Sample ID LT-1 6-8

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
29B METALS					SW6010B	SW3050B Analyst: STS
METALS IN SOIL OR SLUDGE BY ICP						
Zinc	76.0	0.959		mg/Kg-dry	1	10/4/2019 8:18:06 PM
29B METALS					LDNR 29-B	Analyst: STS
TRUE TOTAL BARIUM						
True Total Barium	408	49.1		mg/Kg-dry	1	10/4/2019 10:40:13 PM
PERCENT MOISTURE					LDNR 29-B	Analyst: BXL
Percent Moisture	38.1	1.00		wt%	1	9/30/2019 11:10:00 AM

Qualifiers:

- | | |
|---|---|
| * Value exceeds Maximum Contaminant Level. | E Value above quantitation range |
| H Holding times for preparation or analysis exceeded | M Matrix Interference |
| ND Not Detected at the Reporting Limit | R RPD outside accepted recovery limits |
| RL Reporting Limit | S Spike Recovery outside accepted recovery limits |
| SDL Sample detection limit | U Analyte not detected |
| W Sample container temperature is out of limit as specified at testcode | |



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Analytical Report

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WO#: 19091178

Date Reported: 10/11/2019

CLIENT: ICON Environmental Services **Collection Date:** 9/25/2019 11:30:00 AM
Project: Levert-Grand River
Lab ID: 19091178-003 **Matrix:** SOIL
Client Sample ID LT-1 12-14

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
ELECTRICAL CONDUCTIVITY @ SATURATION				LDNR 29-B		Analyst: BXL
Electrical Conductivity	17.2	0.10	*	mmhos/cm	1	10/3/2019 12:05:00 PM
PERCENT MOISTURE				LDNR 29-B		Analyst: BXL
Percent Moisture	21.5	1.00		wt%	1	9/30/2019 11:10:00 AM

Qualifiers:

- | | |
|---|---|
| * Value exceeds Maximum Contaminant Level. | E Value above quantitation range |
| H Holding times for preparation or analysis exceeded | M Matrix Interference |
| ND Not Detected at the Reporting Limit | R RPD outside accepted recovery limits |
| RL Reporting Limit | S Spike Recovery outside accepted recovery limits |
| SDL Sample detection limit | U Analyte not detected |
| W Sample container temperature is out of limit as specified at testcode | |



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Analytical Report

(consolidated)

WO#: 19091178

Date Reported: 10/11/2019

CLIENT: ICON Environmental Services **Collection Date:** 9/26/2019 8:25:00 AM
Project: Levert-Grand River
Lab ID: 19091178-004 **Matrix:** SOIL
Client Sample ID LT-2 0-4

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
29B SALTS						
CATION EXCHANGE CAPACITY						
Cation Exchange Capacity	109	0.100		meq/100g	1	10/9/2019
29B SALTS						
ELECTRICAL CONDUCTIVITY @ SATURATION						
Electrical Conductivity	1.25	0.10		mmhos/cm	1	10/3/2019 12:05:00 PM
29B SALTS						
EXCHANGEABLE SODIUM PERCENTAGE						
Exchangeable Sodium %	6.28	0.10		%	1	10/9/2019
29B SALTS						
SODIUM ADSORPTION RATIO						
Sodium Adsorption Ratio	8.51	0.10			1	10/5/2019
Soluble Calcium	1.33	0.02		meq/L	1	10/5/2019
Soluble Magnesium	0.87	0.05		meq/L	1	10/5/2019
Soluble Sodium	8.93	0.25		meq/L	1	10/5/2019
29B METALS						
MERCURY IN SOIL OR SLUDGE						
Mercury	< 0.103	0.103		mg/Kg-dry	1	10/7/2019 2:02:45 PM
29B METALS						
METALS IN SOIL OR SLUDGE BY ICP						
Arsenic	8.90	1.95		mg/Kg-dry	1	10/4/2019 8:23:28 PM
Barium	249	0.977		mg/Kg-dry	1	10/4/2019 8:23:28 PM
Cadmium	< 0.489	0.489		mg/Kg-dry	1	10/4/2019 8:23:28 PM
Chromium	22.7	0.977		mg/Kg-dry	1	10/4/2019 8:23:28 PM
Lead	19.9	0.977		mg/Kg-dry	1	10/4/2019 8:23:28 PM
Selenium	< 3.91	3.91		mg/Kg-dry	1	10/4/2019 8:23:28 PM
Strontium	94.0	0.977		mg/Kg-dry	1	10/4/2019 8:23:28 PM
Zinc	90.7	0.977		mg/Kg-dry	1	10/4/2019 8:23:28 PM
29B METALS						
TRUE TOTAL BARIUM						

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
RL	Reporting Limit
SDL	Sample detection limit
W	Sample container temperature is out of limit as specified at testcode

E	Value above quantitation range
M	Matrix Interference
R	RPD outside accepted recovery limits
S	Spike Recovery outside accepted recovery limits
U	Analyte not detected



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Analytical Report

(consolidated)

WO#: 19091178

Date Reported: 10/11/2019

CLIENT: ICON Environmental Services **Collection Date:** 9/26/2019 8:25:00 AM
Project: Levert-Grand River
Lab ID: 19091178-004 **Matrix:** SOIL
Client Sample ID LT-2 0-4

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
29B METALS				LDNR 29-B		Analyst: STS
TRUE TOTAL BARIUM						
True Total Barium	360	49.7		mg/Kg-dry	1	10/4/2019 10:44:52 PM
PERCENT MOISTURE				LDNR 29-B		Analyst: BXL
Percent Moisture	33.1	1.00		wt%	1	9/30/2019 11:10:00 AM

Qualifiers:

- | | |
|---|---|
| * Value exceeds Maximum Contaminant Level. | E Value above quantitation range |
| H Holding times for preparation or analysis exceeded | M Matrix Interference |
| ND Not Detected at the Reporting Limit | R RPD outside accepted recovery limits |
| RL Reporting Limit | S Spike Recovery outside accepted recovery limits |
| SDL Sample detection limit | U Analyte not detected |
| W Sample container temperature is out of limit as specified at testcode | |



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Analytical Report

(consolidated)

WO#: 19091178

Date Reported: 10/11/2019

CLIENT: ICON Environmental Services **Collection Date:** 9/26/2019 8:35:00 AM
Project: Levert-Grand River
Lab ID: 19091178-005 **Matrix:** SOIL
Client Sample ID LT-2 4-8

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
29B SALTS						
CATION EXCHANGE CAPACITY						
Cation Exchange Capacity	135	0.100		meq/100g	1	10/9/2019
29B SALTS						
ELECTRICAL CONDUCTIVITY @ SATURATION						
Electrical Conductivity	2.62	0.10		mmhos/cm	1	10/3/2019 12:05:00 PM
29B SALTS						
EXCHANGEABLE SODIUM PERCENTAGE						
Exchangeable Sodium %	7.38	0.10		%	1	10/9/2019
29B SALTS						
SODIUM ADSORPTION RATIO						
Sodium Adsorption Ratio	11.1	0.10			1	10/5/2019
Soluble Calcium	3.27	0.02		meq/L	1	10/5/2019
Soluble Magnesium	1.81	0.05		meq/L	1	10/5/2019
Soluble Sodium	17.7	0.25		meq/L	1	10/5/2019
29B METALS						
MERCURY IN SOIL OR SLUDGE						
Mercury	< 0.101	0.101		mg/Kg-dry	1	10/7/2019 2:05:04 PM
INORGANIC ANIONS IN LEACHATE BY IC						
Chloride	152	5.00		mg/L	20	10/10/2019 12:30:34 PM
29B METALS						
METALS IN SOIL OR SLUDGE BY ICP						
Arsenic	5.77	1.96		mg/Kg-dry	1	10/4/2019 8:28:49 PM
Barium	277	0.982		mg/Kg-dry	1	10/4/2019 8:28:49 PM
Cadmium	0.697	0.491		mg/Kg-dry	1	10/4/2019 8:28:49 PM
Chromium	17.2	0.982		mg/Kg-dry	1	10/4/2019 8:28:49 PM
Lead	17.4	0.982		mg/Kg-dry	1	10/4/2019 8:28:49 PM
Selenium	< 3.93	3.93		mg/Kg-dry	1	10/4/2019 8:28:49 PM
Strontium	94.5	0.982		mg/Kg-dry	1	10/4/2019 8:28:49 PM

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- RL Reporting Limit
- SDL Sample detection limit
- W Sample container temperature is out of limit as specified at testcode

- E Value above quantitation range
- M Matrix Interference
- R RPD outside accepted recovery limits
- S Spike Recovery outside accepted recovery limits
- U Analyte not detected



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Analytical Report

(consolidated)

WO#: 19091178

Date Reported: 10/11/2019

CLIENT: ICON Environmental Services **Collection Date:** 9/26/2019 8:35:00 AM
Project: Levert-Grand River
Lab ID: 19091178-005 **Matrix:** SOIL
Client Sample ID LT-2 4-8

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
29B METALS					SW6010B	SW3050B Analyst: STS
METALS IN SOIL OR SLUDGE BY ICP						
Zinc	68.2	0.982		mg/Kg-dry	1	10/4/2019 8:28:49 PM
29B METALS					LDNR 29-B	Analyst: STS
TRUE TOTAL BARIUM						
True Total Barium	365	47.7		mg/Kg-dry	1	10/4/2019 10:49:40 PM
PERCENT MOISTURE					LDNR 29-B	Analyst: BXL
Percent Moisture	42.9	1.00		wt%	1	9/30/2019 11:10:00 AM

Qualifiers:

- | | |
|---|---|
| * Value exceeds Maximum Contaminant Level. | E Value above quantitation range |
| H Holding times for preparation or analysis exceeded | M Matrix Interference |
| ND Not Detected at the Reporting Limit | R RPD outside accepted recovery limits |
| RL Reporting Limit | S Spike Recovery outside accepted recovery limits |
| SDL Sample detection limit | U Analyte not detected |
| W Sample container temperature is out of limit as specified at testcode | |



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Analytical Report

(consolidated)

WO#: 19091178

Date Reported: 10/11/2019

CLIENT: ICON Environmental Services **Collection Date:** 9/26/2019 8:55:00 AM
Project: Levert-Grand River
Lab ID: 19091178-006 **Matrix:** SOIL
Client Sample ID LT-2 12-16

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
ELECTRICAL CONDUCTIVITY @ SATURATION				LDNR 29-B		Analyst: BXL
Electrical Conductivity	6.01	0.10	*	mmhos/cm	1	10/3/2019 12:05:00 PM
PERCENT MOISTURE				LDNR 29-B		Analyst: BXL
Percent Moisture	31.1	1.00		wt%	1	9/30/2019 11:10:00 AM

Qualifiers:

- | | |
|---|---|
| * Value exceeds Maximum Contaminant Level. | E Value above quantitation range |
| H Holding times for preparation or analysis exceeded | M Matrix Interference |
| ND Not Detected at the Reporting Limit | R RPD outside accepted recovery limits |
| RL Reporting Limit | S Spike Recovery outside accepted recovery limits |
| SDL Sample detection limit | U Analyte not detected |
| W Sample container temperature is out of limit as specified at testcode | |



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Analytical Report

(consolidated)

WO#: 19091178

Date Reported: 10/11/2019

CLIENT: ICON Environmental Services **Collection Date:** 9/26/2019 4:20:00 PM
Project: Levert-Grand River
Lab ID: 19091178-007 **Matrix:** SOIL
Client Sample ID LT-3 0-4

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
29B SALTS						
CATION EXCHANGE CAPACITY						
Cation Exchange Capacity	86.1	0.100		meq/100g	1	10/9/2019
29B SALTS						
ELECTRICAL CONDUCTIVITY @ SATURATION						
Electrical Conductivity	0.61	0.10		mmhos/cm	1	10/3/2019 12:05:00 PM
29B SALTS						
EXCHANGEABLE SODIUM PERCENTAGE						
Exchangeable Sodium %	6.11	0.10		%	1	10/9/2019
29B SALTS						
SODIUM ADSORPTION RATIO						
Sodium Adsorption Ratio	6.05	0.10			1	10/5/2019
Soluble Calcium	0.68	0.02		meq/L	1	10/5/2019
Soluble Magnesium	0.43	0.05		meq/L	1	10/5/2019
Soluble Sodium	4.52	0.25		meq/L	1	10/5/2019
29B METALS						
MERCURY IN SOIL OR SLUDGE						
Mercury	< 0.101	0.101		mg/Kg-dry	1	10/7/2019 2:07:22 PM
29B METALS						
METALS IN SOIL OR SLUDGE BY ICP						
Arsenic	7.15	1.86		mg/Kg-dry	1	10/4/2019 8:34:54 PM
Barium	245	0.929		mg/Kg-dry	1	10/4/2019 8:34:54 PM
Cadmium	< 0.465	0.465		mg/Kg-dry	1	10/4/2019 8:34:54 PM
Chromium	35.5	0.929		mg/Kg-dry	1	10/4/2019 8:34:54 PM
Lead	18.8	0.929		mg/Kg-dry	1	10/4/2019 8:34:54 PM
Selenium	< 3.72	3.72		mg/Kg-dry	1	10/4/2019 8:34:54 PM
Strontium	76.9	0.929		mg/Kg-dry	1	10/4/2019 8:34:54 PM
Zinc	85.0	0.929		mg/Kg-dry	1	10/4/2019 8:34:54 PM
29B METALS						
TRUE TOTAL BARIUM						

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- RL Reporting Limit
- SDL Sample detection limit
- W Sample container temperature is out of limit as specified at testcode

- E Value above quantitation range
- M Matrix Interference
- R RPD outside accepted recovery limits
- S Spike Recovery outside accepted recovery limits
- U Analyte not detected



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Analytical Report

(consolidated)

WO#: 19091178

Date Reported: 10/11/2019

CLIENT: ICON Environmental Services **Collection Date:** 9/26/2019 4:20:00 PM
Project: Levert-Grand River
Lab ID: 19091178-007 **Matrix:** SOIL
Client Sample ID LT-3 0-4

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
29B METALS				LDNR 29-B		Analyst: STS
TRUE TOTAL BARIUM						
True Total Barium	361	47.5		mg/Kg-dry	1	10/4/2019 10:54:28 PM
PERCENT MOISTURE				LDNR 29-B		Analyst: BXL
Percent Moisture	31.6	1.00		wt%	1	9/30/2019 11:10:00 AM

Qualifiers:

- | | |
|---|---|
| * Value exceeds Maximum Contaminant Level. | E Value above quantitation range |
| H Holding times for preparation or analysis exceeded | M Matrix Interference |
| ND Not Detected at the Reporting Limit | R RPD outside accepted recovery limits |
| RL Reporting Limit | S Spike Recovery outside accepted recovery limits |
| SDL Sample detection limit | U Analyte not detected |
| W Sample container temperature is out of limit as specified at testcode | |



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Analytical Report

(consolidated)

WO#: 19091178

Date Reported: 10/11/2019

CLIENT: ICON Environmental Services **Collection Date:** 9/26/2019 4:30:00 PM
Project: Levert-Grand River
Lab ID: 19091178-008 **Matrix:** SOIL
Client Sample ID LT-3 4-8

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
29B SALTS						
CATION EXCHANGE CAPACITY						
Cation Exchange Capacity	72.7	0.100		meq/100g	1	10/9/2019
29B SALTS						
ELECTRICAL CONDUCTIVITY @ SATURATION						
Electrical Conductivity	0.67	0.10		mmhos/cm	1	10/3/2019 12:05:00 PM
29B SALTS						
EXCHANGEABLE SODIUM PERCENTAGE						
Exchangeable Sodium %	6.81	0.10		%	1	10/9/2019
29B SALTS						
SODIUM ADSORPTION RATIO						
Sodium Adsorption Ratio	6.94	0.10			1	10/5/2019
Soluble Calcium	0.61	0.02		meq/L	1	10/5/2019
Soluble Magnesium	0.40	0.05		meq/L	1	10/5/2019
Soluble Sodium	4.92	0.25		meq/L	1	10/5/2019
29B METALS						
MERCURY IN SOIL OR SLUDGE						
Mercury	< 0.106	0.106		mg/Kg-dry	1	10/7/2019 2:14:46 PM
INORGANIC ANIONS IN LEACHATE BY IC						
Chloride	37.9	1.25		mg/L	5	10/10/2019 12:44:17 PM
29B METALS						
METALS IN SOIL OR SLUDGE BY ICP						
Arsenic	8.59	1.96		mg/Kg-dry	1	10/4/2019 8:40:16 PM
Barium	573	0.980		mg/Kg-dry	1	10/4/2019 8:40:16 PM
Cadmium	< 0.490	0.490		mg/Kg-dry	1	10/4/2019 8:40:16 PM
Chromium	21.9	0.980		mg/Kg-dry	1	10/4/2019 8:40:16 PM
Lead	18.7	0.980		mg/Kg-dry	1	10/4/2019 8:40:16 PM
Selenium	< 3.92	3.92		mg/Kg-dry	1	10/4/2019 8:40:16 PM
Strontium	97.0	0.980		mg/Kg-dry	1	10/4/2019 8:40:16 PM

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- RL Reporting Limit
- SDL Sample detection limit
- W Sample container temperature is out of limit as specified at testcode

- E Value above quantitation range
- M Matrix Interference
- R RPD outside accepted recovery limits
- S Spike Recovery outside accepted recovery limits
- U Analyte not detected



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Analytical Report

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WO#: 19091178

Date Reported: 10/11/2019

CLIENT: ICON Environmental Services **Collection Date:** 9/26/2019 4:30:00 PM
Project: Levert-Grand River
Lab ID: 19091178-008 **Matrix:** SOIL
Client Sample ID LT-3 4-8

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
29B METALS					SW6010B	SW3050B Analyst: STS
METALS IN SOIL OR SLUDGE BY ICP						
Zinc	77.1	0.980		mg/Kg-dry	1	10/4/2019 8:40:16 PM
29B METALS					LDNR 29-B	Analyst: STS
TRUE TOTAL BARIUM						
True Total Barium	1,240	48.5		mg/Kg-dry	1	10/4/2019 11:08:19 PM
PERCENT MOISTURE					LDNR 29-B	Analyst: BXL
Percent Moisture	38.3	1.00		wt%	1	9/30/2019 11:10:00 AM

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	M	Matrix Interference
	ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits
	RL	Reporting Limit	S	Spike Recovery outside accepted recovery limits
	SDL	Sample detection limit	U	Analyte not detected
	W	Sample container temperature is out of limit as specified at testcode		



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Analytical Report

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WO#: 19091178

Date Reported: 10/11/2019

CLIENT: ICON Environmental Services **Collection Date:** 9/27/2019 12:30:00 PM
Project: Levert-Grand River
Lab ID: 19091178-009 **Matrix:** SOIL
Client Sample ID HA-6 0-2

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
29B SALTS						
CATION EXCHANGE CAPACITY						
Cation Exchange Capacity	74.1	0.100		meq/100g	1	10/9/2019
29B SALTS						
ELECTRICAL CONDUCTIVITY @ SATURATION						
Electrical Conductivity	0.49	0.10		mmhos/cm	1	10/3/2019 12:05:00 PM
29B SALTS						
EXCHANGEABLE SODIUM PERCENTAGE						
Exchangeable Sodium %	0.58	0.10		%	1	10/9/2019
29B SALTS						
SODIUM ADSORPTION RATIO						
Sodium Adsorption Ratio	1.12	0.10			1	10/5/2019
Soluble Calcium	1.94	0.02		meq/L	1	10/5/2019
Soluble Magnesium	1.29	0.05		meq/L	1	10/5/2019
Soluble Sodium	1.43	0.25		meq/L	1	10/5/2019
29B METALS						
MERCURY IN SOIL OR SLUDGE						
Mercury	< 0.106	0.106		mg/Kg-dry	1	10/7/2019 2:17:05 PM
29B METALS						
METALS IN SOIL OR SLUDGE BY ICP						
Arsenic	7.37	1.91		mg/Kg-dry	1	10/4/2019 8:45:38 PM
Barium	257	0.957		mg/Kg-dry	1	10/4/2019 8:45:38 PM
Cadmium	< 0.479	0.479		mg/Kg-dry	1	10/4/2019 8:45:38 PM
Chromium	23.7	0.957		mg/Kg-dry	1	10/4/2019 8:45:38 PM
Lead	23.9	0.957		mg/Kg-dry	1	10/4/2019 8:45:38 PM
Selenium	< 3.83	3.83		mg/Kg-dry	1	10/4/2019 8:45:38 PM
Strontium	54.9	0.957		mg/Kg-dry	1	10/4/2019 8:45:38 PM
Zinc	101	0.957		mg/Kg-dry	1	10/4/2019 8:45:38 PM
29B METALS						
TRUE TOTAL BARIUM						

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
RL	Reporting Limit
SDL	Sample detection limit
W	Sample container temperature is out of limit as specified at testcode

E	Value above quantitation range
M	Matrix Interference
R	RPD outside accepted recovery limits
S	Spike Recovery outside accepted recovery limits
U	Analyte not detected



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Analytical Report

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WO#: 19091178

Date Reported: 10/11/2019

CLIENT: ICON Environmental Services **Collection Date:** 9/27/2019 12:30:00 PM
Project: Levert-Grand River
Lab ID: 19091178-009 **Matrix:** SOIL
Client Sample ID HA-6 0-2

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
29B METALS				LDNR 29-B		Analyst: STS
TRUE TOTAL BARIUM						
True Total Barium	365	45.7		mg/Kg-dry	1	10/4/2019 11:12:39 PM
PERCENT MOISTURE				LDNR 29-B		Analyst: BXL
Percent Moisture	39.6	1.00		wt%	1	9/30/2019 11:10:00 AM

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	M	Matrix Interference
	ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits
	RL	Reporting Limit	S	Spike Recovery outside accepted recovery limits
	SDL	Sample detection limit	U	Analyte not detected
	W	Sample container temperature is out of limit as specified at testcode		



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Analytical Report

(consolidated)

WO#: 19091178

Date Reported: 10/11/2019

CLIENT: ICON Environmental Services **Collection Date:** 9/27/2019 12:35:00 PM
Project: Levert-Grand River
Lab ID: 19091178-010 **Matrix:** SOIL
Client Sample ID HA-6 2-4

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
29B SALTS						
CATION EXCHANGE CAPACITY						
Cation Exchange Capacity	78.2	0.100		meq/100g	1	10/9/2019
29B SALTS						
ELECTRICAL CONDUCTIVITY @ SATURATION						
Electrical Conductivity	0.77	0.10		mmhos/cm	1	10/3/2019 12:05:00 PM
29B SALTS						
EXCHANGEABLE SODIUM PERCENTAGE						
Exchangeable Sodium %	1.11	0.10		%	1	10/9/2019
29B SALTS						
SODIUM ADSORPTION RATIO						
Sodium Adsorption Ratio	1.75	0.10			1	10/5/2019
Soluble Calcium	2.68	0.02		meq/L	1	10/5/2019
Soluble Magnesium	1.74	0.05		meq/L	1	10/5/2019
Soluble Sodium	2.60	0.25		meq/L	1	10/5/2019
29B METALS						
MERCURY IN SOIL OR SLUDGE						
Mercury	< 0.0998	0.0998		mg/Kg-dry	1	10/7/2019 2:19:46 PM
29B METALS						
METALS IN SOIL OR SLUDGE BY ICP						
Arsenic	7.69	1.99		mg/Kg-dry	1	10/4/2019 8:50:59 PM
Barium	336	0.996		mg/Kg-dry	1	10/4/2019 8:50:59 PM
Cadmium	< 0.498	0.498		mg/Kg-dry	1	10/4/2019 8:50:59 PM
Chromium	26.1	0.996		mg/Kg-dry	1	10/4/2019 8:50:59 PM
Lead	20.8	0.996		mg/Kg-dry	1	10/4/2019 8:50:59 PM
Selenium	< 3.98	3.98		mg/Kg-dry	1	10/4/2019 8:50:59 PM
Strontium	59.1	0.996		mg/Kg-dry	1	10/4/2019 8:50:59 PM
Zinc	98.6	0.996		mg/Kg-dry	1	10/4/2019 8:50:59 PM
29B METALS						
TRUE TOTAL BARIUM						

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
RL	Reporting Limit
SDL	Sample detection limit
W	Sample container temperature is out of limit as specified at testcode

E	Value above quantitation range
M	Matrix Interference
R	RPD outside accepted recovery limits
S	Spike Recovery outside accepted recovery limits
U	Analyte not detected



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Analytical Report

(consolidated)

WO#: 19091178

Date Reported: 10/11/2019

CLIENT: ICON Environmental Services **Collection Date:** 9/27/2019 12:35:00 PM
Project: Levert-Grand River
Lab ID: 19091178-010 **Matrix:** SOIL
Client Sample ID HA-6 2-4

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
29B METALS				LDNR 29-B		Analyst: STS
TRUE TOTAL BARIUM						
True Total Barium	486	46.4		mg/Kg-dry	1	10/4/2019 11:17:17 PM
PERCENT MOISTURE				LDNR 29-B		Analyst: BXL
Percent Moisture	39.3	1.00		wt%	1	9/30/2019 11:10:00 AM

Qualifiers:

- | | |
|---|---|
| * Value exceeds Maximum Contaminant Level. | E Value above quantitation range |
| H Holding times for preparation or analysis exceeded | M Matrix Interference |
| ND Not Detected at the Reporting Limit | R RPD outside accepted recovery limits |
| RL Reporting Limit | S Spike Recovery outside accepted recovery limits |
| SDL Sample detection limit | U Analyte not detected |
| W Sample container temperature is out of limit as specified at testcode | |



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Analytical Report

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WO#: 19091178

Date Reported: 10/11/2019

CLIENT: ICON Environmental Services **Collection Date:** 9/27/2019 12:40:00 PM
Project: Levert-Grand River
Lab ID: 19091178-011 **Matrix:** SOIL
Client Sample ID HA-6 4-6

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
29B SALTS						
CATION EXCHANGE CAPACITY						
Cation Exchange Capacity	73.4	0.100		meq/100g	1	10/9/2019
29B SALTS						
ELECTRICAL CONDUCTIVITY @ SATURATION						
Electrical Conductivity	1.16	0.10		mmhos/cm	1	10/3/2019 12:05:00 PM
29B SALTS						
EXCHANGEABLE SODIUM PERCENTAGE						
Exchangeable Sodium %	1.62	0.10		%	1	10/9/2019
29B SALTS						
SODIUM ADSORPTION RATIO						
Sodium Adsorption Ratio	2.41	0.10			1	10/5/2019
Soluble Calcium	3.85	0.02		meq/L	1	10/5/2019
Soluble Magnesium	2.24	0.05		meq/L	1	10/5/2019
Soluble Sodium	4.21	0.25		meq/L	1	10/5/2019
29B METALS						
MERCURY IN SOIL OR SLUDGE						
Mercury	< 0.103	0.103		mg/Kg-dry	1	10/7/2019 2:22:29 PM
29B METALS						
METALS IN SOIL OR SLUDGE BY ICP						
Arsenic	6.42	1.89		mg/Kg-dry	1	10/4/2019 8:56:20 PM
Barium	460	0.944		mg/Kg-dry	1	10/4/2019 8:56:20 PM
Cadmium	0.482	0.472		mg/Kg-dry	1	10/4/2019 8:56:20 PM
Chromium	20.1	0.944		mg/Kg-dry	1	10/4/2019 8:56:20 PM
Lead	20.4	0.944		mg/Kg-dry	1	10/4/2019 8:56:20 PM
Selenium	< 3.78	3.78		mg/Kg-dry	1	10/4/2019 8:56:20 PM
Strontium	61.3	0.944		mg/Kg-dry	1	10/4/2019 8:56:20 PM
Zinc	86.0	0.944		mg/Kg-dry	1	10/4/2019 8:56:20 PM
29B METALS						
TRUE TOTAL BARIUM						

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	M	Matrix Interference
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits
RL	Reporting Limit	S	Spike Recovery outside accepted recovery limits
SDL	Sample detection limit	U	Analyte not detected
W	Sample container temperature is out of limit as specified at testcode		



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Analytical Report

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WO#: 19091178

Date Reported: 10/11/2019

CLIENT: ICON Environmental Services **Collection Date:** 9/27/2019 12:40:00 PM
Project: Levert-Grand River
Lab ID: 19091178-011 **Matrix:** SOIL
Client Sample ID HA-6 4-6

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
29B METALS				LDNR 29-B		Analyst: STS
TRUE TOTAL BARIUM						
True Total Barium	614	47.1		mg/Kg-dry	1	10/4/2019 11:22:06 PM
PERCENT MOISTURE				LDNR 29-B		Analyst: BXL
Percent Moisture	42.0	1.00		wt%	1	9/30/2019 11:10:00 AM

Qualifiers:

- | | |
|---|---|
| * Value exceeds Maximum Contaminant Level. | E Value above quantitation range |
| H Holding times for preparation or analysis exceeded | M Matrix Interference |
| ND Not Detected at the Reporting Limit | R RPD outside accepted recovery limits |
| RL Reporting Limit | S Spike Recovery outside accepted recovery limits |
| SDL Sample detection limit | U Analyte not detected |
| W Sample container temperature is out of limit as specified at testcode | |



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QC SUMMARY REPORT

WO#: 19091178
 11-Oct-19

Client: ICON Environmental Services
Project: Levert-Grand River

BatchID: 31780

Sample ID: MB-31780	SampType: MBLK	TestCode: 6010_S_29B	Units: mg/Kg-dry	Prep Date: 10/3/2019	RunNo: 82641						
Client ID: PBS	Batch ID: 31780	TestNo: SW6010B	SW3050B	Analysis Date: 10/4/2019	SeqNo: 2068938						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Arsenic	< 2.00	2.00									
Barium	< 1.00	1.00									
Cadmium	< 0.500	0.500									
Chromium	< 1.00	1.00									
Lead	< 1.00	1.00									
Selenium	< 4.00	4.00									
Strontium	< 1.00	1.00									
Zinc	< 1.00	1.00									

Sample ID: LCS-31780	SampType: LCS	TestCode: 6010_S_29B	Units: mg/Kg-dry	Prep Date: 10/3/2019	RunNo: 82641						
Client ID: LCSS	Batch ID: 31780	TestNo: SW6010B	SW3050B	Analysis Date: 10/4/2019	SeqNo: 2068939						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Arsenic	53.2	2.00	50.00	0	106	80	120				
Barium	52.4	1.00	50.00	0	105	80	120				
Cadmium	52.0	0.500	50.00	0	104	80	120				
Chromium	52.2	1.00	50.00	0	104	80	120				
Lead	53.8	1.00	50.00	0	108	80	120				
Selenium	55.6	4.00	50.00	0	111	80	120				
Strontium	53.7	1.00	50.00	0	107	80	120				
Zinc	52.8	1.00	50.00	0	106	80	120				

Qualifiers:

* Value exceeds Maximum Contaminant Level.	E Value above quantitation range	H Holding times for preparation or analysis exceed
M Matrix Interference	ND Not Detected at the Reporting Limit	R RPD outside accepted recovery limits
RL Reporting Limit	S Spike Recovery outside accepted recovery limits	SDL Sample detection limit
U Analyte not detected	W Sample container temperature is out of limit as specified at testcode	



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QC SUMMARY REPORT

WO#: 19091178
 11-Oct-19

Client: ICON Environmental Services
Project: Levert-Grand River

BatchID: 31780

Sample ID: LCSD-31780	SampType: LCSD	TestCode: 6010_S_29B	Units: mg/Kg-dry	Prep Date: 10/3/2019	RunNo: 82641						
Client ID: LCSS02	Batch ID: 31780	TestNo: SW6010B	SW3050B	Analysis Date: 10/4/2019	SeqNo: 2068940						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	55.6	2.00	50.00	0	111	80	120	53.18	4.36	20	
Barium	53.6	1.00	50.00	0	107	80	120	52.43	2.23	20	
Cadmium	53.3	0.500	50.00	0	107	80	120	52.02	2.43	20	
Chromium	53.5	1.00	50.00	0	107	80	120	52.15	2.48	20	
Lead	53.8	1.00	50.00	0	108	80	120	53.85	0.111	20	
Selenium	55.4	4.00	50.00	0	111	80	120	55.59	0.288	20	
Strontium	53.9	1.00	50.00	0	108	80	120	53.66	0.520	20	
Zinc	54.0	1.00	50.00	0	108	80	120	52.82	2.21	20	

Sample ID: 19091162-017AMS	SampType: MS	TestCode: 6010_S_29B	Units: mg/Kg-dry	Prep Date: 10/3/2019	RunNo: 82641						
Client ID: ZZZZZ	Batch ID: 31780	TestNo: SW6010B	SW3050B	Analysis Date: 10/4/2019	SeqNo: 2068946						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	54.5	1.95	48.84	6.529	98.2	75	125				
Barium	200	0.977	48.84	142.1	118	75	125				
Cadmium	46.9	0.488	48.84	0.4684	95.0	75	125				
Chromium	69.9	0.977	48.84	16.90	108	75	125				
Lead	62.4	0.977	48.84	14.38	98.4	75	125				
Selenium	37.3	3.91	48.84	0	76.4	75	125				
Strontium	94.4	0.977	48.84	38.72	114	75	125				
Zinc	127	0.977	48.84	76.99	103	75	125				

Qualifiers:

* Value exceeds Maximum Contaminant Level.	E Value above quantitation range	H Holding times for preparation or analysis exceed
M Matrix Interference	ND Not Detected at the Reporting Limit	R RPD outside accepted recovery limits
RL Reporting Limit	S Spike Recovery outside accepted recovery limits	SDL Sample detection limit
U Analyte not detected	W Sample container temperature is out of limit as specified at testcode	



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 Website: www.element.com

QC SUMMARY REPORT

WO#: 19091178
 11-Oct-19

Client: ICON Environmental Services
Project: Levert-Grand River

BatchID: 31780

Sample ID: 19091162-017AMSD	SampType: MSD	TestCode: 6010_S_29B	Units: mg/Kg-dry	Prep Date: 10/3/2019	RunNo: 82641						
Client ID: ZZZZZZ	Batch ID: 31780	TestNo: SW6010B	SW3050B	Analysis Date: 10/4/2019	SeqNo: 2068947						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	54.6	1.99	49.77	6.529	96.5	75	125	54.48	0.137	20	
Barium	198	0.995	49.77	142.1	113	75	125	199.6	0.705	20	
Cadmium	47.9	0.498	49.77	0.4684	95.3	75	125	46.86	2.14	20	
Chromium	71.1	0.995	49.77	16.90	109	75	125	69.86	1.80	20	
Lead	64.0	0.995	49.77	14.38	99.8	75	125	62.45	2.50	20	
Selenium	36.9	3.98	49.77	0	74.2	75	125	37.32	1.02	20	S
Strontium	95.6	0.995	49.77	38.72	114	75	125	94.38	1.32	20	
Zinc	128	0.995	49.77	76.99	103	75	125	127.3	0.948	20	

NOTES:

S - Spike recovery indicates matrix interference. The method is in control as indicated by the Lab Control Sample.

Qualifiers:	* Value exceeds Maximum Contaminant Level.	E Value above quantitation range	H Holding times for preparation or analysis exceed
	M Matrix Interference	ND Not Detected at the Reporting Limit	R RPD outside accepted recovery limits
	RL Reporting Limit	S Spike Recovery outside accepted recovery limits	SDL Sample detection limit
	U Analyte not detected	W Sample container temperature is out of limit as specified at testcode	



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QC SUMMARY REPORT

WO#: 19091178
 11-Oct-19

Client: ICON Environmental Services
Project: Levert-Grand River

BatchID: 31782

Sample ID: MB-31782	SampType: MBLK	TestCode: TTBA	Units: mg/Kg-dry	Prep Date: 10/3/2019	RunNo: 82641
Client ID: PBS	Batch ID: 31782	TestNo: LDNR 29-B		Analysis Date: 10/4/2019	SeqNo: 2068971
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual

True Total Barium < 50.0 50.0

Sample ID: LCS-31782	SampType: LCS	TestCode: TTBA	Units: mg/Kg-dry	Prep Date: 10/3/2019	RunNo: 82641
Client ID: LCSS	Batch ID: 31782	TestNo: LDNR 29-B		Analysis Date: 10/4/2019	SeqNo: 2068972
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual

True Total Barium 5,500 50.0 5,000 0 110 75 125

Sample ID: LCSD-31782	SampType: LCSD	TestCode: TTBA	Units: mg/Kg-dry	Prep Date: 10/3/2019	RunNo: 82641
Client ID: LCSS02	Batch ID: 31782	TestNo: LDNR 29-B		Analysis Date: 10/4/2019	SeqNo: 2068973
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual

True Total Barium 5,460 50.0 5,000 0 109 75 125 5,495 0.639 20

Sample ID: 19091162-017AMS	SampType: MS	TestCode: TTBA	Units: mg/Kg-dry	Prep Date: 10/3/2019	RunNo: 82641
Client ID: ZZZZZ	Batch ID: 31782	TestNo: LDNR 29-B		Analysis Date: 10/4/2019	SeqNo: 2068975
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual

True Total Barium 5,590 46.3 4,625 503.9 110 75 125

Qualifiers:

* Value exceeds Maximum Contaminant Level.	E Value above quantitation range	H Holding times for preparation or analysis exceed
M Matrix Interference	ND Not Detected at the Reporting Limit	R RPD outside accepted recovery limits
RL Reporting Limit	S Spike Recovery outside accepted recovery limits	SDL Sample detection limit
U Analyte not detected	W Sample container temperature is out of limit as specified at testcode	



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QC SUMMARY REPORT

WO#: 19091178
 11-Oct-19

Client: ICON Environmental Services

Project: Levert-Grand River

BatchID: 31782

Sample ID: 19091162-017AMSD	SampType: MSD	TestCode: TTBA	Units: mg/Kg-dry	Prep Date: 10/3/2019	RunNo: 82641						
Client ID: ZZZZZZ	Batch ID: 31782	TestNo: LDNR 29-B	Analysis Date: 10/4/2019	SeqNo: 2068976							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
True Total Barium	5,740	47.2	4,717	503.9	111	75	125	5,592	2.54	20	

Qualifiers:	* Value exceeds Maximum Contaminant Level.	E Value above quantitation range	H Holding times for preparation or analysis exceed
	M Matrix Interference	ND Not Detected at the Reporting Limit	R RPD outside accepted recovery limits
	RL Reporting Limit	S Spike Recovery outside accepted recovery limits	SDL Sample detection limit
	U Analyte not detected	W Sample container temperature is out of limit as specified at testcode	



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QC SUMMARY REPORT

WO#: 19091178
 11-Oct-19

Client: ICON Environmental Services
Project: Levert-Grand River

BatchID: 31809

Sample ID: 19091177-061ADUP	SampType: DUP	TestCode: SAR_S	Units:	Prep Date: 10/4/2019	RunNo: 82687						
Client ID: ZZZZZZ	Batch ID: 31809	TestNo: LDNR 29-B	LDNR 29-B	Analysis Date: 10/5/2019	SeqNo: 2070124						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium Adsorption Ratio	3.76	0.10						3.83	1.71	20	
Soluble Calcium	9.20	0.02						9.47	2.94	20	
Soluble Magnesium	13.9	0.05						14.18	2.17	20	
Soluble Sodium	12.8	0.25						13.17	2.95	20	

Sample ID: 19091220-001ADUP	SampType: DUP	TestCode: SAR_S	Units:	Prep Date: 10/4/2019	RunNo: 82687						
Client ID: ZZZZZZ	Batch ID: 31809	TestNo: LDNR 29-B	LDNR 29-B	Analysis Date: 10/5/2019	SeqNo: 2070142						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium Adsorption Ratio	0.90	0.10						0.90	0.01	20	
Soluble Calcium	3.49	0.02						3.49	0.11	20	
Soluble Magnesium	1.29	0.05						1.30	0.51	20	
Soluble Sodium	1.39	0.25						1.39	0.13	20	

Qualifiers:

* Value exceeds Maximum Contaminant Level.	E Value above quantitation range	H Holding times for preparation or analysis exceed
M Matrix Interference	ND Not Detected at the Reporting Limit	R RPD outside accepted recovery limits
RL Reporting Limit	S Spike Recovery outside accepted recovery limits	SDL Sample detection limit
U Analyte not detected	W Sample container temperature is out of limit as specified at testcode	



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QC SUMMARY REPORT

WO#: 19091178
 11-Oct-19

Client: ICON Environmental Services
Project: Levert-Grand River

BatchID: 31817

Sample ID: MB-31817	SampType: MBLK	TestCode: HG_S_29B	Units: mg/Kg-dry	Prep Date: 10/7/2019	RunNo: 82686
Client ID: PBS	Batch ID: 31817	TestNo: 29B/SW7471 SW7471A		Analysis Date: 10/7/2019	SeqNo: 2069803
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual

Mercury < 0.100 0.100

Sample ID: LCS-31817	SampType: LCS	TestCode: HG_S_29B	Units: mg/Kg-dry	Prep Date: 10/7/2019	RunNo: 82686
Client ID: LCSS	Batch ID: 31817	TestNo: 29B/SW7471 SW7471A		Analysis Date: 10/7/2019	SeqNo: 2069804
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual

Mercury 0.933 0.100 0.8330 0 112 80 120

Sample ID: LCSD-31817	SampType: LCSD	TestCode: HG_S_29B	Units: mg/Kg-dry	Prep Date: 10/7/2019	RunNo: 82686
Client ID: LCSS02	Batch ID: 31817	TestNo: 29B/SW7471 SW7471A		Analysis Date: 10/7/2019	SeqNo: 2069805
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual

Mercury 0.932 0.100 0.8330 0 112 80 120 0.9331 0.0797 20

Sample ID: 19091162-025AMS	SampType: MS	TestCode: HG_S_29B	Units: mg/Kg-dry	Prep Date: 10/7/2019	RunNo: 82686
Client ID: ZZZZZ	Batch ID: 31817	TestNo: 29B/SW7471 SW7471A		Analysis Date: 10/7/2019	SeqNo: 2069807
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual

Mercury 1.02 0.107 0.8892 0.04077 110 75 125

Qualifiers:

* Value exceeds Maximum Contaminant Level.	E Value above quantitation range	H Holding times for preparation or analysis exceed
M Matrix Interference	ND Not Detected at the Reporting Limit	R RPD outside accepted recovery limits
RL Reporting Limit	S Spike Recovery outside accepted recovery limits	SDL Sample detection limit
U Analyte not detected	W Sample container temperature is out of limit as specified at testcode	



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QC SUMMARY REPORT

WO#: 19091178
 11-Oct-19

Client: ICON Environmental Services

Project: Levert-Grand River

BatchID: 31817

Sample ID: 19091162-025AMSD	SampType: MSD	TestCode: HG_S_29B	Units: mg/Kg-dry	Prep Date: 10/7/2019	RunNo: 82686						
Client ID: ZZZZZZ	Batch ID: 31817	TestNo: 29B/SW7471 SW7471A	Analysis Date: 10/7/2019	SeqNo: 2069808							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	1.02	0.106	0.8852	0.04077	111	75	125	1.023	0.147	20	

Qualifiers:

* Value exceeds Maximum Contaminant Level.	E Value above quantitation range	H Holding times for preparation or analysis exceed
M Matrix Interference	ND Not Detected at the Reporting Limit	R RPD outside accepted recovery limits
RL Reporting Limit	S Spike Recovery outside accepted recovery limits	SDL Sample detection limit
U Analyte not detected	W Sample container temperature is out of limit as specified at testcode	



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QC SUMMARY REPORT

WO#: 19091178
 11-Oct-19

Client: ICON Environmental Services
Project: Levert-Grand River

BatchID: 31856

Sample ID: 19091220-001ADUP	SampType: DUP	TestCode: ESP_S	Units: %	Prep Date: 10/8/2019	RunNo: 82772						
Client ID: ZZZZZZ	Batch ID: 31856	TestNo: LDNR 29-B	LDNR 29-B	Analysis Date: 10/9/2019	SeqNo: 2072697						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Exchangeable Sodium %	0.71	0.10						0.72	0.79	20	

Qualifiers:

* Value exceeds Maximum Contaminant Level.	E Value above quantitation range	H Holding times for preparation or analysis exceed
M Matrix Interference	ND Not Detected at the Reporting Limit	R RPD outside accepted recovery limits
RL Reporting Limit	S Spike Recovery outside accepted recovery limits	SDL Sample detection limit
U Analyte not detected	W Sample container temperature is out of limit as specified at testcode	



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QC SUMMARY REPORT

WO#: 19091178
 11-Oct-19

Client: ICON Environmental Services
Project: Levert-Grand River

BatchID: 31857

Sample ID: LCS-31857	SampType: LCS	TestCode: CEC	Units: meq/100g	Prep Date: 10/2/2019	RunNo: 82772						
Client ID: LCSS	Batch ID: 31857	TestNo: LDNR 29-B	LDNR 29-B	Analysis Date: 10/9/2019	SeqNo: 2072674						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Cation Exchange Capacity	20.2	0.100	25.00	0	80.7	76	124				
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Sample ID: LCSD-31857	SampType: LCSD	TestCode: CEC	Units: meq/100g	Prep Date: 10/2/2019	RunNo: 82772						
Client ID: LCSS02	Batch ID: 31857	TestNo: LDNR 29-B	LDNR 29-B	Analysis Date: 10/9/2019	SeqNo: 2072675						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Cation Exchange Capacity	20.0	0.100	25.00	0	79.9	76	124	20.18	0.997	20	
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Sample ID: 19091220-001ADUP	SampType: DUP	TestCode: CEC	Units: meq/100g	Prep Date: 10/8/2019	RunNo: 82772						
Client ID: ZZZZZ	Batch ID: 31857	TestNo: LDNR 29-B	LDNR 29-B	Analysis Date: 10/9/2019	SeqNo: 2072680						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Cation Exchange Capacity	24.2	0.100						23.65	2.33	20	
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Qualifiers:

* Value exceeds Maximum Contaminant Level.	E Value above quantitation range	H Holding times for preparation or analysis exceed
M Matrix Interference	ND Not Detected at the Reporting Limit	R RPD outside accepted recovery limits
RL Reporting Limit	S Spike Recovery outside accepted recovery limits	SDL Sample detection limit
U Analyte not detected	W Sample container temperature is out of limit as specified at testcode	



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QC SUMMARY REPORT

WO#: 19091178
 11-Oct-19

Client: ICON Environmental Services

Project: Levert-Grand River

BatchID: R82540

Sample ID: 19091177-061ADUP	SampType: DUP	TestCode: PMOIST	Units: wt%	Prep Date:	RunNo: 82540						
Client ID: ZZZZZZ	Batch ID: R82540	TestNo: LDNR 29-B		Analysis Date: 9/30/2019	SeqNo: 2066543						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Percent Moisture	20.9	1.00						20.60	1.45	20	

Qualifiers:

* Value exceeds Maximum Contaminant Level.	E Value above quantitation range	H Holding times for preparation or analysis exceed
M Matrix Interference	ND Not Detected at the Reporting Limit	R RPD outside accepted recovery limits
RL Reporting Limit	S Spike Recovery outside accepted recovery limits	SDL Sample detection limit
U Analyte not detected	W Sample container temperature is out of limit as specified at testcode	



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QC SUMMARY REPORT

WO#: 19091178
 11-Oct-19

Client: ICON Environmental Services
Project: Levert-Grand River

BatchID: R82618

Sample ID: MB-R82618	SampType: MBLK	TestCode: EC_S	Units: mmhos/cm	Prep Date:	RunNo: 82618						
Client ID: PBS	Batch ID: R82618	TestNo: LDNR 29-B		Analysis Date: 10/3/2019	SeqNo: 2068548						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Electrical Conductivity < 0.10 0.10

Sample ID: LCS1-R82618	SampType: LCS1	TestCode: EC_S	Units: mmhos/cm	Prep Date:	RunNo: 82618						
Client ID: ZZZZZ	Batch ID: R82618	TestNo: LDNR 29-B		Analysis Date: 10/3/2019	SeqNo: 2068549						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Electrical Conductivity 0.40 0.10 0.38 0 103 90.07 109.9

Sample ID: LCS2-R82618	SampType: LCS2	TestCode: EC_S	Units: mmhos/cm	Prep Date:	RunNo: 82618						
Client ID: ZZZZZ	Batch ID: R82618	TestNo: LDNR 29-B		Analysis Date: 10/3/2019	SeqNo: 2068550						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Electrical Conductivity 52.2 0.10 53.00 0 98.5 90 110

Sample ID: 19091177-061ADUP	SampType: DUP	TestCode: EC_S	Units: mmhos/cm	Prep Date:	RunNo: 82618						
Client ID: ZZZZZ	Batch ID: R82618	TestNo: LDNR 29-B		Analysis Date: 10/3/2019	SeqNo: 2068552						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Electrical Conductivity 3.76 0.10 3.83 1.84 20

Qualifiers:	* Value exceeds Maximum Contaminant Level.	E Value above quantitation range	H Holding times for preparation or analysis exceed
	M Matrix Interference	ND Not Detected at the Reporting Limit	R RPD outside accepted recovery limits
	RL Reporting Limit	S Spike Recovery outside accepted recovery limits	SDL Sample detection limit
	U Analyte not detected	W Sample container temperature is out of limit as specified at testcode	



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QC SUMMARY REPORT

WO#: 19091178
 11-Oct-19

Client: ICON Environmental Services
Project: Levert-Grand River

BatchID: R82799

Sample ID: MBLK	SampType: MBLK	TestCode: 9056_LEACH	Units: mg/L	Prep Date:	RunNo: 82799
Client ID: PBW	Batch ID: R82799	TestNo: SW9056A		Analysis Date: 10/10/2019	SeqNo: 2073868
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual

Chloride < 0.250 0.250

Sample ID: LCS	SampType: LCS	TestCode: 9056_LEACH	Units: mg/L	Prep Date:	RunNo: 82799
Client ID: LCSW	Batch ID: R82799	TestNo: SW9056A		Analysis Date: 10/10/2019	SeqNo: 2073869
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual

Chloride 9.95 0.250 10.00 0 99.5 80 120

Sample ID: LCSD	SampType: LCSD	TestCode: 9056_LEACH	Units: mg/L	Prep Date:	RunNo: 82799
Client ID: LCSS02	Batch ID: R82799	TestNo: SW9056A		Analysis Date: 10/10/2019	SeqNo: 2073870
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual

Chloride 9.89 0.250 10.00 0 98.9 80 120 9.946 0.598 15

Sample ID: 19100060-025AMS	SampType: MS	TestCode: 9056_LEACH	Units: mg/L	Prep Date:	RunNo: 82799
Client ID: ZZZZZ	Batch ID: R82799	TestNo: SW9056A		Analysis Date: 10/10/2019	SeqNo: 2073879
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual

Chloride 31.4 0.250 5.000 27.15 84.4 80 120 E

Qualifiers:

* Value exceeds Maximum Contaminant Level.	E Value above quantitation range	H Holding times for preparation or analysis exceed
M Matrix Interference	ND Not Detected at the Reporting Limit	R RPD outside accepted recovery limits
RL Reporting Limit	S Spike Recovery outside accepted recovery limits	SDL Sample detection limit
U Analyte not detected	W Sample container temperature is out of limit as specified at testcode	



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QC SUMMARY REPORT

WO#: 19091178
 11-Oct-19

Client: ICON Environmental Services
Project: Levert-Grand River

BatchID: R82799

Sample ID: 19100060-025AMSD	SampType: MSD	TestCode: 9056_LEACH	Units: mg/L	Prep Date:	RunNo: 82799						
Client ID: ZZZZZZ	Batch ID: R82799	TestNo: SW9056A	Analysis Date: 10/10/2019	SeqNo: 2073880							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	31.3	0.250	5.000	27.15	82.6	80	120	31.37	0.295	15	E

Qualifiers:

* Value exceeds Maximum Contaminant Level.	E Value above quantitation range	H Holding times for preparation or analysis exceed
M Matrix Interference	ND Not Detected at the Reporting Limit	R RPD outside accepted recovery limits
RL Reporting Limit	S Spike Recovery outside accepted recovery limits	SDL Sample detection limit
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Sample Log-In Check List

Client Name: **ICON_ENV**

Work Order Number: **19091178**

RcptNo: **1**

Logged by:	Danielle Hollier	9/27/2019 3:45:00 PM	<i>Danielle Hollier</i>
Completed By:	Danielle Hollier	9/27/2019 5:03:56 PM	<i>Danielle Hollier</i>
Reviewed By:	Caitlin Duplantis	10/11/2019 8:58:51 AM	<i>Caitlin Duplantis</i>

Chain of Custody

1. Is Chain of Custody complete? Yes No Not Present
 2. How was the sample delivered? Element

Log In

3. Coolers are present? Yes No NA
 4. Shipping container/cooler in good condition? Yes No
 Custody seals intact on shipping container/cooler? Yes No Not Present
 No. Seal Date: Signed By:
 5. Was an attempt made to cool the samples? Yes No NA
 6. Were all samples received at a temperature of >0° C to 6.0°C Yes No NA
Not required
 7. Sample(s) in proper container(s)? Yes No
 8. Sufficient sample volume for indicated test(s)? Yes No
 9. Are samples (except VOA and ONG) properly preserved? Yes No
 10. Was preservative added to bottles? Yes No NA
 11. Is the headspace in the VOA vials less than 1/4 inch or 6 mm? Yes No No VOA Vials
 12. Were any sample containers received broken? Yes No
 13. Does paperwork match bottle labels? Yes No
 (Note discrepancies on chain of custody)
 14. Are matrices correctly identified on Chain of Custody? Yes No
 15. Is it clear what analyses were requested? Yes No
 16. Were all holding times able to be met? Yes No
 (If no, notify customer for authorization.)

Special Handling (if applicable)

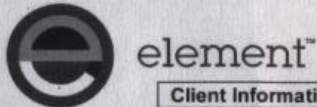
17. Was client notified of all discrepancies with this order? Yes No NA

Person Notified:	<input type="text"/>	Date:	<input type="text"/>
By Whom:	<input type="text"/>	Via:	<input type="checkbox"/> eMail <input type="checkbox"/> Phone <input type="checkbox"/> Fax <input type="checkbox"/> In Person
Regarding:	<input type="text"/>		
Client Instructions:	<input type="text"/>		

18. Additional remarks: Improper error correction(s) made by client

Cooler Information

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
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Chain of Custody

Laboratory Number: **19091178**

Client Information:		Billing Information:		PO Number:	Project Name/Number:	Page of
Company Name: ICON		Billing Information: SAME		Quote Number:	LEVERT-GRAND RIVER	Matrix Code
Address:				Required QC Level:	Sampler's Signature: <i>Jeffrey Miller</i>	DW = Drinking Water
City, State Zip:				Bill Monthly:	Shipping Method:	WW = Waste Water
Phone Number: Ext:		Ext:		<input type="checkbox"/> Yes	UPS / FedEx / NOW	GW = Ground Water
Fax Number:				<input type="checkbox"/> No	DHL / Element / Hand / Mail	AQ = Aqueous
E-mail Address:						OT = Other
						SL = Sludge SOL = Solid
						O = Oil SO = Soil
						F = Food SW = Swab
						NG = Natural Gas
						NGL = Natural Gas Liquid
						PW = Produced Water
						CF = Completion Fluid

Which Regulations Apply:		Turn Time		(Rush turn times will incur a surcharge and must be pre-approved by lab.)	Container		Pres.	Requested Tests					Comments
<input type="checkbox"/> RCRA	<input type="checkbox"/> Drinking Water	<input type="checkbox"/> Standard	<input type="checkbox"/> RUSH		Quantity	Type		HCl, HNO ₃ , H ₂ SO ₄ , NaOH, Na ₂ S ₂ O ₃	E.C	% moisture	29B Metals	CEC/ESP/SAC	
<input type="checkbox"/> POTW	<input type="checkbox"/> Distribution	<input type="checkbox"/> 1 Day	<input type="checkbox"/> 2 Day		P=Plastic, G=Glass, V=Vial								
<input type="checkbox"/> NPDES	<input type="checkbox"/> Special	<input type="checkbox"/> Other											
<input type="checkbox"/> USDA/FDA	<input type="checkbox"/> State												
<input type="checkbox"/> RECAP/RISC	<input type="checkbox"/> Other												
Sample ID/Description		Collection Information		Matrix									
Date	Time	Grab / Composite											
LT-1	0-4	9.25.19	1105	G	SO	1	P	-	X	X	X	X	
LT-1	6-8	9.25.19	1115						X	X	X	X	
LT-1	12-14	9.25.19	1130						X	X			
LT-2	0-4	9.26.19	0825						X	X	X	X	
LT-2	4-8	9.26.19	0835						X	X	X	X	
LT-2	12-16	9.26.19	0855						X	X			
LT-3	0-4	9.26.19	1620						X	X	X	X	
LT-3	4-8	9.26.19	1630	✓	✓	✓	✓	✓	X	X	X	X	

	Relinquished by	Date/Time	Received by	Date/Time	Field Notes:
1	<i>Jeffrey Miller</i>	9.27.19/1430	<i>Kate C.</i>	9.27.19/1430	
2	<i>Kate C.</i>	9.27.19/1545	<i>[Signature]</i>	9.27.19/1545	Received at lab on ice?
3					<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No Temp:

All samples submitted to Element Materials Technology for analysis are accepted on a custodial basis only. Ownership of the material remains with the client submitting the samples. Element Materials Technology reserves the right to return unused sample portions.

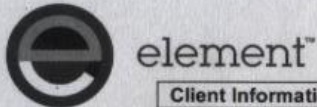
8800 North US 31
Columbus, IN
47201 USA
P 812-375-0531
F 812-375-0731

328 Ley Road, Suite 100
Fort Wayne, IN
46825 USA
P 260-471-7000
F 260-471-7777

909 Executive Dr
Warsaw, IN
46580 USA
P 574-267-3305
F 574-269-6569

3371 Cleveland Road, Suite 100A
South Bend, IN
46628 USA
P 574-277-0707
F 574-273-5699

2417 W. Pinhook Rd
Lafayette, LA
70508 USA
P 337-235-0483
F 337-233-6540



Chain of Custody

Laboratory Number: **1909 1175**

Company Name: Contact Name: Address: City, State Zip: Phone Number: Fax Number: E-mail Address:	Client Information:	Billing Information:	PO Number:	Project Name/Number:	Page of
			Quote Number:	LEVERT - GRAND RIVER	Matrix Code
			Required QC Level	Sampler's Signature	DW = Drinking Water
			Bill Monthly	<i>Jeffrey Miller</i>	WW = Waste Water
			<input type="checkbox"/> Yes	Shipping Method:	GW = Ground Water
			<input type="checkbox"/> No	UPS / FedEx / NOW	AQ = Aqueous
			DHL / Element / Hand / Mail	OT = Other	
				SL = Sludge SOL = Solid	
				O = Oil SO = Soil	
				F = Food SW = Swab	
				NG = Natural Gas	
				NGL = Natural Gas Liquid	
				PW = Produced Water	
				CF = Completion Fluid	

Which Regulations Apply:	Turn Time	(Rush turn times will incur a surcharge and must be pre-approved by lab.)	Container		Pres.	Requested Tests				Comments			
			Quantity	Type P=Plastic, G=Glass, V=Vial		HCl, HNO ₃ , H ₂ SO ₄ , NaOH, Na ₂ S ₂ O ₃	E.C.	% moisture	29B Metals		CEC/ESP/SAR		
<input type="checkbox"/> RCRA <input type="checkbox"/> Drinking Water <input type="checkbox"/> POTW <input type="checkbox"/> Distribution <input type="checkbox"/> NPDES <input type="checkbox"/> Special <input type="checkbox"/> USDA/FDA <input type="checkbox"/> State <input type="checkbox"/> RECAP/RISC <input type="checkbox"/> Other	<input type="checkbox"/> Standard <input type="checkbox"/> RUSH <input type="checkbox"/> 1 Day <input type="checkbox"/> 2 Day <input type="checkbox"/> Other												
Sample ID/Description	Collection Information		Date	Time	Grab / Composite	Matrix	Quantity	Type	Pres.	E.C.	% moisture	29B Metals	CEC/ESP/SAR
HA-G 0-2	9.27.19	1230											
HA-G 2-4	9.27.19	1235	↓	↓	↓	↓	↓	↓	X	X	X	X	
HA-C 4-6	9.27.19	1240	↓	↓	↓	↓	↓	↓	X	X	X	X	

	Relinquished by	Date/Time	Received by	Date/Time	Field Notes:
1	<i>Jeffrey Miller</i>	9.27.19/1430	<i>Kathy L.</i>	9.27.19/1430	
2	<i>Kathy L.</i>	9.27.19/1545		9.27.19 1915	Received at lab on ice?
3					<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No Temp:

All samples submitted to Element Materials Technology for analysis are accepted on a custodial basis only. Ownership of the material remains with the client submitting the samples. Element Materials Technology reserves the right to return unused sample portions.

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Element Materials Technology Lafayette
2417 W. Pinhook Road
Lafayette, LA 70508-3344
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Website: www.element.com

October 17, 2019

Greg Miller
ICON Environmental Services
2049 Commercial Drive
Port Allen, LA 70767
TEL: (225) 344-8490
FAX: (225) 344-6654

RE: Levert-Grand River 9326-025-0100

Order No.: 19091181

Dear Greg Miller:

Element Materials Technology Lafayette received 5 sample(s) on 9/27/2019 for the analyses presented in the following report.

In accordance with your instructions Element Lafayette conducted the analysis shown on the following pages on samples submitted by your company. The results related only to the items tested. Unless otherwise noted, all analyses were conducted using EPA approved methodologies and all test results meet all requirements of TNI. All relevant sampling information is on the attached Chain-of-Custody form.

All soil data, except for 29-B, are on a wet-weight basis unless otherwise indicated in the units field as -dry.

LELAP Certification No.: 01997. TCEQ Certification No.: T104704261. LDHH Certification No.: LA180028. ISDH Certification No.: C-LA-01. A scope of accredited parameters is available upon request. A "#" by the test method or analyte indicates this parameter is outside the scope of accreditation.

Estimated uncertainty is available upon request. This report shall not be reproduced except in full, without the written approval of the laboratory.

If you have any questions regarding these test results, please feel free to call.

A handwritten signature in blue ink that reads 'Cristina Thibeaux'.

Cristina Thibeaux
Customer Service Supervisor
2417 W. Pinhook Road
Lafayette, LA 70508-3344



Element Materials Technology Lafayette
2417 W. Pinhook Road
Lafayette, LA 70508-3344
TEL: (337) 235-0483 FAX: (337) 233-6540
Website: www.element.com

Case Narrative

WO#: 19091181
Date: 10/17/2019

CLIENT: ICON Environmental Services
Project: Levert-Grand River 9326-025-0100

Unless specified by the client, a duplicate or MS/MSD, wherever applicable, is randomly selected and analyzed from each analytical batch provided sample volume is sufficient. The sample chosen for duplicate or MS/MSD may or may not be a sample submitted in this workorder. A method blank and/or a lab control sample (LCS)/lab control sample duplicate (LCSD), wherever applicable, are processed as a quality control check for each analytical batch. When the matrix QC data is not available due to insufficient sample volume or when the results indicate possible matrix effect, the validity of the batch is determined by the method blank and LCS/LCSD.

The results of the laboratory internal quality control data are provided in the QC Summary Report section of the report for your review. Laboratory-related QC exceptions that may impact the validity of data are discussed in the case narrative. Sample-related QC exceptions are flagged either in the results page(s) or in the QC report page(s). End users should consider QC exceptions when evaluating sample data against data quality objectives.

Any other exceptions associated with this report will be footnoted in the results page(s) or the QC summary page(s).



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Analytical Report

(consolidated)

WO#: 19091181

Date Reported: 10/17/2019

CLIENT: ICON Environmental Services **Collection Date:** 9/25/2019 1:30:00 PM
Project: Levert-Grand River 9326-025-0100
Lab ID: 19091181-001 **Matrix:** AQUEOUS
Client Sample ID LT-1

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
TPH-D/O IN WATER BY SW8015					SW8015B	Analyst: AB
TPH DRO/ORO IN WATER BY SW8015					SW3511	
TPH (Diesel Range)	< 0.134	0.134		mg/L	1	10/1/2019 8:39:00 PM
TPH (Oil Range)	0.192	0.124		mg/L	1	10/1/2019 8:39:00 PM
Surr: 4-Terphenyl-d14	79.1	51.4 - 146		%Rec	1	10/1/2019 8:39:00 PM
BTEX/TPH-G IN WATER BY SW8021/8015					SW8015B	Analyst: AB
TPH-GRO IN WATER BY SW8015						
TPH (Gasoline Range)	< 0.150	0.150		mg/L	1	10/3/2019 10:33:00 PM
Surr: alpha, alpha, alpha-Trifluorotoluene	75.0	70 - 130		%Rec	1	10/3/2019 10:33:00 PM
BTEX/TPH-G IN WATER BY SW8021/8015					SW8021B	Analyst: AB
BTEX IN WATER BY SW8021						
Benzene	< 0.00500	0.00500		mg/L	1	10/3/2019 10:33:00 PM
Ethylbenzene	< 0.00500	0.00500		mg/L	1	10/3/2019 10:33:00 PM
Toluene	< 0.0100	0.0100		mg/L	1	10/3/2019 10:33:00 PM
Xylenes, Total	< 0.0500	0.0500		mg/L	1	10/3/2019 10:33:00 PM
Surr: alpha, alpha, alpha-Trifluorotoluene	66.6	70 - 130	SM	%Rec	1	10/3/2019 10:33:00 PM
NOTES:						
Note: Surrogate outside of control limits. Re-analysis yielded the same result, indicating a matrix effect.						
METALS IN GROUND WATER					SW7470A	Analyst: BXB
MERCURY IN GROUND WATER, TOTAL						
Mercury	< 0.000200	0.000200		mg/L	1	9/30/2019 1:34:39 PM
INORGANIC ANIONS IN WATER BY IC					SW9056A	Analyst: SGP
Chloride	8,990	125		mg/L	500	10/2/2019 11:29:11 AM
Sulfate	187	12.5		mg/L	50	10/2/2019 2:00:11 PM
METALS IN GROUND WATER					SW6010B	Analyst: STS
METALS IN WATER BY ICP, TOTALS						
Barium	3.43	0.100		mg/L	10	10/7/2019 7:31:16 PM
Cadmium	< 0.00500	0.00500		mg/L	1	10/7/2019 7:02:41 PM

Qualifiers:	H	Holding times for preparation or analysis exceeded	M	Matrix Interference
	ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits
	RL	Reporting Limit	S	Spike Recovery outside accepted recovery limits
	SDL	Sample detection limit	U	Analyte not detected
	W	Sample container temperature is out of limit as specified at testcode		



Element Materials Technology Lafayette
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 Website: www.element.com

Analytical Report

(consolidated)

WO#: 19091181

Date Reported: 10/17/2019

CLIENT: ICON Environmental Services **Collection Date:** 9/25/2019 1:30:00 PM
Project: Levert-Grand River 9326-025-0100
Lab ID: 19091181-001 **Matrix:** AQUEOUS
Client Sample ID LT-1

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
METALS IN GROUND WATER				SW6010B	Analyst: STS	
METALS IN WATER BY ICP, TOTALS						
Calcium	1,660	5.00		mg/L	10	10/7/2019 7:31:16 PM
Chromium	< 0.0100	0.0100		mg/L	1	10/7/2019 7:02:41 PM
Iron	102	0.100		mg/L	10	10/7/2019 7:31:16 PM
Lead	< 0.0100	0.0100		mg/L	1	10/7/2019 7:02:41 PM
Magnesium	575	5.00		mg/L	10	10/7/2019 7:31:16 PM
Manganese	7.79	0.100		mg/L	10	10/7/2019 7:31:16 PM
Potassium	15.1	5.00		mg/L	1	10/7/2019 7:02:41 PM
Sodium	2,890	50.0		mg/L	10	10/7/2019 7:31:16 PM
Strontium	13.3	0.100		mg/L	10	10/7/2019 7:31:16 PM
Zinc	0.0168	0.0100		mg/L	1	10/7/2019 7:02:41 PM
METALS IN WATER BY ICP-MS, TOTAL				SW6020A	Analyst: MRM	
Arsenic	< 0.00250	0.00250		mg/L	10	10/7/2019 2:07:21 PM
ALKALINITY; TOTAL, CARB, BICARB				SM2320 B	Analyst: BXB	
Alkalinity, Bicarbonate (As CaCO3)	802	10.0		mgCaCO3/L	1	10/2/2019 6:48:00 AM
Alkalinity, Carbonate (As CaCO3)	< 10.0	10.0		mgCaCO3/L	1	10/2/2019 6:48:00 AM
Alkalinity, Total (As CaCO3)	802	10.0		mgCaCO3/L	1	10/2/2019 6:48:00 AM
TOTAL DISSOLVED SOLIDS				SM2540C	Analyst: GMS	
Total Dissolved Solids (Residue, Filterable)	18,800	500		mg/L	25	9/30/2019 7:49:00 AM

Qualifiers:

H	Holding times for preparation or analysis exceeded	M	Matrix Interference
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits
RL	Reporting Limit	S	Spike Recovery outside accepted recovery limits
SDL	Sample detection limit	U	Analyte not detected
W	Sample container temperature is out of limit as specified at testcode		



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Analytical Report

(consolidated)

WO#: 19091181

Date Reported: 10/17/2019

CLIENT: ICON Environmental Services **Collection Date:** 9/26/2019 10:35:00 AM
Project: Levert-Grand River 9326-025-0100
Lab ID: 19091181-002 **Matrix:** AQUEOUS
Client Sample ID LT-2

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
TPH-D/O IN WATER BY SW8015						
TPH DRO/ORO IN WATER BY SW8015						
TPH (Diesel Range)	0.529	0.139		mg/L	1	10/16/2019 2:35:00 PM
TPH (Oil Range)	0.280	0.129		mg/L	1	10/16/2019 2:35:00 PM
Surr: 4-Terphenyl-d14	101	51.4 - 146		%Rec	1	10/16/2019 2:35:00 PM
BTEX/TPH-G IN WATER BY SW8021/8015						
TPH-GRO IN WATER BY SW8015						
TPH (Gasoline Range)	< 0.150	0.150		mg/L	1	9/28/2019 7:39:00 PM
Surr: alpha, alpha, alpha-Trifluorotoluene	81.2	70 - 130		%Rec	1	9/28/2019 7:39:00 PM
BTEX/TPH-G IN WATER BY SW8021/8015						
BTEX IN WATER BY SW8021						
Benzene	< 0.00500	0.00500		mg/L	1	9/28/2019 7:39:00 PM
Ethylbenzene	< 0.00500	0.00500		mg/L	1	9/28/2019 7:39:00 PM
Toluene	< 0.0100	0.0100		mg/L	1	9/28/2019 7:39:00 PM
Xylenes, Total	< 0.0500	0.0500		mg/L	1	9/28/2019 7:39:00 PM
Surr: alpha, alpha, alpha-Trifluorotoluene	70.6	70 - 130		%Rec	1	9/28/2019 7:39:00 PM
MERCURY IN GROUND WATER, DISSOLVED						
Mercury	< 0.000200	0.000200		mg/L	1	10/9/2019 8:22:40 AM
INORGANIC ANIONS IN WATER BY IC						
Chloride	3,150	50.0		mg/L	200	10/2/2019 11:42:54 AM
Sulfate	< 5.00	5.00		mg/L	20	10/2/2019 2:13:55 PM
NOTES:						
Note: Sample was analyzed at a dilution due to matrix interference. The reporting limit was raised accordingly.						
METALS IN WATER BY ICP, DISSOLVED						
Barium	3.20	0.100		mg/L	10	10/7/2019 9:38:15 PM
Cadmium	< 0.00500	0.00500		mg/L	1	10/7/2019 9:33:50 PM

Qualifiers:	H	Holding times for preparation or analysis exceeded	M	Matrix Interference
	ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits
	RL	Reporting Limit	S	Spike Recovery outside accepted recovery limits
	SDL	Sample detection limit	U	Analyte not detected
	W	Sample container temperature is out of limit as specified at testcode		



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Analytical Report

(consolidated)

WO#: 19091181

Date Reported: 10/17/2019

CLIENT: ICON Environmental Services **Collection Date:** 9/26/2019 10:35:00 AM
Project: Levert-Grand River 9326-025-0100
Lab ID: 19091181-002 **Matrix:** AQUEOUS
Client Sample ID LT-2

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
METALS IN WATER BY ICP, DISSOLVED				SW6010B		Analyst: STS
Calcium	892	5.00		mg/L	10	10/7/2019 9:38:15 PM
Chromium	< 0.0100	0.0100		mg/L	1	10/7/2019 9:33:50 PM
Iron	82.0	0.100		mg/L	10	10/7/2019 9:38:15 PM
Lead	< 0.0100	0.0100		mg/L	1	10/7/2019 9:33:50 PM
Magnesium	326	5.00		mg/L	10	10/7/2019 9:38:15 PM
Manganese	6.34	0.100		mg/L	10	10/7/2019 9:38:15 PM
Potassium	7.20	5.00		mg/L	1	10/7/2019 9:33:50 PM
Selenium	0.0654	0.0200		mg/L	1	10/7/2019 9:33:50 PM
Sodium	781	100		mg/L	10	10/7/2019 9:38:15 PM
Strontium	6.42	0.100		mg/L	10	10/7/2019 9:38:15 PM
Zinc	< 0.0100	0.0100		mg/L	1	10/7/2019 9:33:50 PM
METALS IN WATER BY ICP-MS, DISSOLVED				SW6020A		Analyst: MRM
Arsenic	0.0193	0.00250		mg/L	10	10/15/2019 12:19:44 PM
ALKALINITY; TOTAL, CARB, BICARB				SM2320 B		Analyst: BXB
Alkalinity, Bicarbonate (As CaCO3)	610	10.0		mgCaCO3/L	1	10/2/2019 6:48:00 AM
Alkalinity, Carbonate (As CaCO3)	< 10.0	10.0		mgCaCO3/L	1	10/2/2019 6:48:00 AM
Alkalinity, Total (As CaCO3)	610	10.0		mgCaCO3/L	1	10/2/2019 6:48:00 AM
TOTAL DISSOLVED SOLIDS				SM2540C		Analyst: GMS
Total Dissolved Solids (Residue, Filterable)	7,380	500		mg/L	25	9/30/2019 1:41:00 PM

Qualifiers:	H	Holding times for preparation or analysis exceeded	M	Matrix Interference
	ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits
	RL	Reporting Limit	S	Spike Recovery outside accepted recovery limits
	SDL	Sample detection limit	U	Analyte not detected
	W	Sample container temperature is out of limit as specified at testcode		



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Analytical Report

(consolidated)

WO#: 19091181

Date Reported: 10/17/2019

CLIENT: ICON Environmental Services **Collection Date:** 9/27/2019 9:30:00 AM
Project: Levert-Grand River 9326-025-0100
Lab ID: 19091181-003 **Matrix:** AQUEOUS
Client Sample ID LT-3

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
TPH-D/O IN WATER BY SW8015						
TPH DRO/ORO IN WATER BY SW8015						
TPH (Diesel Range)	0.154	0.133		mg/L	1	10/7/2019 1:22:00 PM
TPH (Oil Range)	0.197	0.123		mg/L	1	10/7/2019 1:22:00 PM
Surr: 4-Terphenyl-d14	64.1	51.4 - 146		%Rec	1	10/7/2019 1:22:00 PM
BTEX/TPH-G IN WATER BY SW8021/8015						
TPH-GRO IN WATER BY SW8015						
TPH (Gasoline Range)	< 0.150	0.150		mg/L	1	9/28/2019 8:06:00 PM
Surr: alpha, alpha, alpha-Trifluorotoluene	84.8	70 - 130		%Rec	1	9/28/2019 8:06:00 PM
BTEX/TPH-G IN WATER BY SW8021/8015						
BTEX IN WATER BY SW8021						
Benzene	< 0.00500	0.00500		mg/L	1	9/28/2019 8:06:00 PM
Ethylbenzene	< 0.00500	0.00500		mg/L	1	9/28/2019 8:06:00 PM
Toluene	< 0.0100	0.0100		mg/L	1	9/28/2019 8:06:00 PM
Xylenes, Total	< 0.0500	0.0500		mg/L	1	9/28/2019 8:06:00 PM
Surr: alpha, alpha, alpha-Trifluorotoluene	95.0	70 - 130		%Rec	1	9/28/2019 8:06:00 PM
MERCURY IN GROUND WATER, DISSOLVED						
Mercury	< 0.000200	0.000200		mg/L	1	10/9/2019 8:30:39 AM
INORGANIC ANIONS IN WATER BY IC						
Chloride	1,410	25.0		mg/L	100	10/2/2019 11:56:38 AM
Sulfate	4.57	1.25		mg/L	5	10/2/2019 2:27:38 PM
METALS IN WATER BY ICP, DISSOLVED						
Barium	1.22	0.100		mg/L	10	10/7/2019 9:56:05 PM
Cadmium	< 0.00500	0.00500		mg/L	1	10/7/2019 9:42:52 PM
Calcium	282	5.00		mg/L	10	10/7/2019 9:56:05 PM
Chromium	< 0.0100	0.0100		mg/L	1	10/7/2019 9:42:52 PM

Qualifiers:	H	Holding times for preparation or analysis exceeded	M	Matrix Interference
	ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits
	RL	Reporting Limit	S	Spike Recovery outside accepted recovery limits
	SDL	Sample detection limit	U	Analyte not detected
	W	Sample container temperature is out of limit as specified at testcode		



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 Website: www.element.com

Analytical Report

(consolidated)

WO#: 19091181

Date Reported: 10/17/2019

CLIENT: ICON Environmental Services **Collection Date:** 9/27/2019 9:30:00 AM
Project: Levert-Grand River 9326-025-0100
Lab ID: 19091181-003 **Matrix:** AQUEOUS
Client Sample ID LT-3

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
METALS IN WATER BY ICP, DISSOLVED			SW6010B		Analyst: STS	
Iron	5.64	0.100		mg/L	10	10/7/2019 9:56:05 PM
Lead	< 0.0100	0.0100		mg/L	1	10/7/2019 9:42:52 PM
Magnesium	98.4	0.500		mg/L	1	10/7/2019 9:42:52 PM
Manganese	2.09	0.100		mg/L	10	10/7/2019 9:56:05 PM
Potassium	< 5.00	5.00		mg/L	1	10/7/2019 9:42:52 PM
Selenium	0.0796	0.0200		mg/L	1	10/7/2019 9:42:52 PM
Sodium	602	100		mg/L	10	10/7/2019 9:56:05 PM
Strontium	2.04	0.100		mg/L	10	10/7/2019 9:56:05 PM
Zinc	< 0.0100	0.0100		mg/L	1	10/7/2019 9:42:52 PM
METALS IN WATER BY ICP-MS, DISSOLVED			SW6020A		Analyst: MRM	
Arsenic	< 0.00250	0.00250		mg/L	10	10/15/2019 12:22:32 PM
ALKALINITY; TOTAL, CARB, BICARB			SM2320 B		Analyst: BXB	
Alkalinity, Bicarbonate (As CaCO3)	520	10.0		mgCaCO3/L	1	10/2/2019 6:48:00 AM
Alkalinity, Carbonate (As CaCO3)	< 10.0	10.0		mgCaCO3/L	1	10/2/2019 6:48:00 AM
Alkalinity, Total (As CaCO3)	520	10.0		mgCaCO3/L	1	10/2/2019 6:48:00 AM
TOTAL DISSOLVED SOLIDS			SM2540C		Analyst: GMS	
Total Dissolved Solids (Residue, Filterable)	3,260	200		mg/L	10	9/30/2019 1:41:00 PM

Qualifiers:	H	Holding times for preparation or analysis exceeded	M	Matrix Interference
	ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits
	RL	Reporting Limit	S	Spike Recovery outside accepted recovery limits
	SDL	Sample detection limit	U	Analyte not detected
	W	Sample container temperature is out of limit as specified at testcode		



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Analytical Report

(consolidated)

WO#: 19091181

Date Reported: 10/17/2019

CLIENT: ICON Environmental Services **Collection Date:** 9/26/2019
Project: Levert-Grand River 9326-025-0100
Lab ID: 19091181-004 **Matrix:** AQUEOUS
Client Sample ID Blind Dup

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
TPH-D/O IN WATER BY SW8015					SW8015B	SW3511
TPH DRO/ORO IN WATER BY SW8015						Analyst: AB
TPH (Diesel Range)	< 0.132	0.132		mg/L	1	10/7/2019 1:53:00 PM
TPH (Oil Range)	0.168	0.122		mg/L	1	10/7/2019 1:53:00 PM
Surr: 4-Terphenyl-d14	54.6	51.4 - 146		%Rec	1	10/7/2019 1:53:00 PM
BTEX/TPH-G IN WATER BY SW8021/8015					SW8015B	Analyst: CRM
TPH-GRO IN WATER BY SW8015						
TPH (Gasoline Range)	< 0.150	0.150		mg/L	1	9/28/2019 8:33:00 PM
Surr: alpha, alpha, alpha-Trifluorotoluene	81.2	70 - 130		%Rec	1	9/28/2019 8:33:00 PM
BTEX/TPH-G IN WATER BY SW8021/8015					SW8021B	Analyst: CRM
BTEX IN WATER BY SW8021						
Benzene	< 0.00500	0.00500		mg/L	1	9/28/2019 8:33:00 PM
Ethylbenzene	< 0.00500	0.00500		mg/L	1	9/28/2019 8:33:00 PM
Toluene	< 0.0100	0.0100		mg/L	1	9/28/2019 8:33:00 PM
Xylenes, Total	< 0.0500	0.0500		mg/L	1	9/28/2019 8:33:00 PM
Surr: alpha, alpha, alpha-Trifluorotoluene	85.4	70 - 130		%Rec	1	9/28/2019 8:33:00 PM
MERCURY IN GROUND WATER, DISSOLVED					SW7470A	Analyst: BXB
Mercury	< 0.000200	0.000200		mg/L	1	10/9/2019 8:32:57 AM
INORGANIC ANIONS IN WATER BY IC					SW9056A	Analyst: SGP
Chloride	3,140	50.0		mg/L	200	10/2/2019 12:10:21 PM
Sulfate	< 5.00	5.00		mg/L	20	10/2/2019 2:41:23 PM
NOTES:						
Note: Sample was analyzed at a dilution due to matrix interference. The reporting limit was raised accordingly.						
METALS IN WATER BY ICP, DISSOLVED					SW6010B	Analyst: STS
Barium	2.74	0.100		mg/L	10	10/7/2019 10:28:58 PM
Cadmium	< 0.00500	0.00500		mg/L	1	10/7/2019 10:24:43 PM

Qualifiers:	H	Holding times for preparation or analysis exceeded	M	Matrix Interference
	ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits
	RL	Reporting Limit	S	Spike Recovery outside accepted recovery limits
	SDL	Sample detection limit	U	Analyte not detected
	W	Sample container temperature is out of limit as specified at testcode		



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Analytical Report

(consolidated)

WO#: 19091181

Date Reported: 10/17/2019

CLIENT: ICON Environmental Services **Collection Date:** 9/26/2019
Project: Levert-Grand River 9326-025-0100
Lab ID: 19091181-004 **Matrix:** AQUEOUS
Client Sample ID Blind Dup

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
METALS IN WATER BY ICP, DISSOLVED				SW6010B		Analyst: STS
Calcium	775	5.00		mg/L	10	10/7/2019 10:28:58 PM
Chromium	< 0.0100	0.0100		mg/L	1	10/7/2019 10:24:43 PM
Iron	70.3	0.100		mg/L	10	10/7/2019 10:28:58 PM
Lead	< 0.0100	0.0100		mg/L	1	10/7/2019 10:24:43 PM
Magnesium	282	5.00		mg/L	10	10/7/2019 10:28:58 PM
Manganese	5.69	0.100		mg/L	10	10/7/2019 10:28:58 PM
Potassium	7.06	5.00		mg/L	1	10/7/2019 10:24:43 PM
Selenium	0.0508	0.0200		mg/L	1	10/7/2019 10:24:43 PM
Sodium	717	100		mg/L	10	10/7/2019 10:28:58 PM
Strontium	5.57	0.100		mg/L	10	10/7/2019 10:28:58 PM
Zinc	0.0108	0.0100		mg/L	1	10/7/2019 10:24:43 PM
METALS IN WATER BY ICP-MS, DISSOLVED				SW6020A		Analyst: MRM
Arsenic	0.0179	0.00250		mg/L	10	10/15/2019 12:25:20 PM
ALKALINITY; TOTAL, CARB, BICARB				SM2320 B		Analyst: BXB
Alkalinity, Bicarbonate (As CaCO3)	575	10.0		mgCaCO3/L	1	10/2/2019 6:48:00 AM
Alkalinity, Carbonate (As CaCO3)	< 10.0	10.0		mgCaCO3/L	1	10/2/2019 6:48:00 AM
Alkalinity, Total (As CaCO3)	575	10.0		mgCaCO3/L	1	10/2/2019 6:48:00 AM
TOTAL DISSOLVED SOLIDS				SM2540C		Analyst: GMS
Total Dissolved Solids (Residue, Filterable)	8,350	500		mg/L	25	9/30/2019 1:41:00 PM

Qualifiers:	H	Holding times for preparation or analysis exceeded	M	Matrix Interference
	ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits
	RL	Reporting Limit	S	Spike Recovery outside accepted recovery limits
	SDL	Sample detection limit	U	Analyte not detected
	W	Sample container temperature is out of limit as specified at testcode		



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Analytical Report

(consolidated)

WO#: 19091181

Date Reported: 10/17/2019

CLIENT: ICON Environmental Services
Project: Levert-Grand River 9326-025-0100
Lab ID: 19091181-005
Client Sample ID Trip Blank

Collection Date: 9/25/2019

Matrix: AQUEOUS

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
BTEX/TPH-G IN WATER BY SW8021/8015				SW8015B	Analyst: CRM	
TPH-GRO IN WATER BY SW8015						
TPH (Gasoline Range)	< 0.150	0.150		mg/L	1	9/28/2019 9:00:00 PM
Surr: alpha, alpha, alpha-Trifluorotoluene	84.2	70 - 130		%Rec	1	9/28/2019 9:00:00 PM
BTEX/TPH-G IN WATER BY SW8021/8015				SW8021B	Analyst: CRM	
BTEX IN WATER BY SW8021						
Benzene	< 0.00500	0.00500		mg/L	1	9/28/2019 9:00:00 PM
Ethylbenzene	< 0.00500	0.00500		mg/L	1	9/28/2019 9:00:00 PM
Toluene	< 0.0100	0.0100		mg/L	1	9/28/2019 9:00:00 PM
Xylenes, Total	< 0.0500	0.0500		mg/L	1	9/28/2019 9:00:00 PM
Surr: alpha, alpha, alpha-Trifluorotoluene	93.8	70 - 130		%Rec	1	9/28/2019 9:00:00 PM

Qualifiers:	H	Holding times for preparation or analysis exceeded	M	Matrix Interference
	ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits
	RL	Reporting Limit	S	Spike Recovery outside accepted recovery limits
	SDL	Sample detection limit	U	Analyte not detected
	W	Sample container temperature is out of limit as specified at testcode		



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QC SUMMARY REPORT

WO#: 19091181
 17-Oct-19

Client: ICON Environmental Services
Project: Levert-Grand River 9326-025-0100

BatchID: 31722

Sample ID: LCSD-31722	SampType: LCSD	TestCode: HG_W_7470A	Units: mg/L	Prep Date: 9/30/2019	RunNo: 82462
Client ID: LCSS02	Batch ID: 31722	TestNo: SW7470A	Analysis Date: 9/30/2019	SeqNo: 2064311	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual

Mercury	0.0119	0.000200	0.01000	0	119	80	120	0.01174	1.05	20
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Sample ID: 19091085-018CMS	SampType: MS	TestCode: HG_W_7470A	Units: mg/L	Prep Date: 9/30/2019	RunNo: 82462
Client ID: ZZZZZZ	Batch ID: 31722	TestNo: SW7470A	Analysis Date: 9/30/2019	SeqNo: 2064318	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual

Mercury	0.0120	0.000200	0.01000	0	120	75	125
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Sample ID: 19091085-018CMSD	SampType: MSD	TestCode: HG_W_7470A	Units: mg/L	Prep Date: 9/30/2019	RunNo: 82462
Client ID: ZZZZZZ	Batch ID: 31722	TestNo: SW7470A	Analysis Date: 9/30/2019	SeqNo: 2064321	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual

Mercury	0.0120	0.000200	0.01000	0	120	75	125	0.01196	0.684	20
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Sample ID: MB-31722	SampType: MBLK	TestCode: HG_W_7470A	Units: mg/L	Prep Date: 9/30/2019	RunNo: 82462
Client ID: PBW	Batch ID: 31722	TestNo: SW7470A	Analysis Date: 9/30/2019	SeqNo: 2064333	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual

Mercury	< 0.000200	0.000200
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Qualifiers:

H	Holding times for preparation or analysis exceeded	M	Matrix Interference	ND	Not Detected at the Reporting Limit
R	RPD outside accepted recovery limits	RL	Reporting Limit	S	Spike Recovery outside accepted recovery limits
SDL	Sample detection limit	U	Analyte not detected	W	Sample container temperature is out of limit as sj



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QC SUMMARY REPORT

WO#: 19091181
 17-Oct-19

Client: ICON Environmental Services
Project: Levert-Grand River 9326-025-0100

BatchID: 31722

Sample ID: LCS-31722	SampType: LCS	TestCode: HG_W_7470A	Units: mg/L	Prep Date: 9/30/2019	RunNo: 82462						
Client ID: LCSW	Batch ID: 31722	TestNo: SW7470A	Analysis Date: 9/30/2019	SeqNo: 2064334							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	0.0117	0.000200	0.01000	0	117	80	120				

Qualifiers:

H	Holding times for preparation or analysis exceeded	M	Matrix Interference	ND	Not Detected at the Reporting Limit
R	RPD outside accepted recovery limits	RL	Reporting Limit	S	Spike Recovery outside accepted recovery limits
SDL	Sample detection limit	U	Analyte not detected	W	Sample container temperature is out of limit as sj



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QC SUMMARY REPORT

WO#: 19091181
 17-Oct-19

Client: ICON Environmental Services
Project: Levert-Grand River 9326-025-0100

BatchID: 31727

Sample ID: LCS-D31727	SampType: LCS	TestCode: 8015_DO_W_	Units: mg/L	Prep Date: 9/30/2019	RunNo: 82516						
Client ID: LCSW	Batch ID: 31727	TestNo: SW8015B	SW3511	Analysis Date: 10/1/2019	SeqNo: 2065785						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

TPH (Diesel Range)	1.70	0.138	1.824	0	93.5	70	130				
Surr: 4-Terphenyl-d14	0.0427		0.06079		70.2	51.4	146				

Sample ID: LCSD-D31727	SampType: LCSD	TestCode: 8015_DO_W_	Units: mg/L	Prep Date: 9/30/2019	RunNo: 82516						
Client ID: LCSS02	Batch ID: 31727	TestNo: SW8015B	SW3511	Analysis Date: 10/1/2019	SeqNo: 2065786						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

TPH (Diesel Range)	1.79	0.136	1.800	0	99.5	70	130	1.705	4.95	14.1	
Surr: 4-Terphenyl-d14	0.0424		0.05999		70.7	51.4	146		0	40	

Sample ID: LCSD-M31727	SampType: LCSD	TestCode: 8015_DO_W_	Units: mg/L	Prep Date: 9/30/2019	RunNo: 82516						
Client ID: LCSS02	Batch ID: 31727	TestNo: SW8015B	SW3511	Analysis Date: 10/1/2019	SeqNo: 2065787						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

TPH (Oil Range)	1.66	0.127	1.812	0	91.4	70	130	1.549	6.63	23.2	
Surr: 4-Terphenyl-d14	0.0393		0.06038		65.1	51.4	146		0	40	

Sample ID: LCS-M31727	SampType: LCS	TestCode: 8015_DO_W_	Units: mg/L	Prep Date: 9/30/2019	RunNo: 82516						
Client ID: LCSW	Batch ID: 31727	TestNo: SW8015B	SW3511	Analysis Date: 10/1/2019	SeqNo: 2065788						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

TPH (Oil Range)	1.55	0.127	1.816	0	85.3	70	130				
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Qualifiers:

H	Holding times for preparation or analysis exceeded	M	Matrix Interference	ND	Not Detected at the Reporting Limit
R	RPD outside accepted recovery limits	RL	Reporting Limit	S	Spike Recovery outside accepted recovery limits
SDL	Sample detection limit	U	Analyte not detected	W	Sample container temperature is out of limit as sj



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QC SUMMARY REPORT

WO#: 19091181
 17-Oct-19

Client: ICON Environmental Services
Project: Levert-Grand River 9326-025-0100

BatchID: 31727

Sample ID: LCS-M31727	SampType: LCS	TestCode: 8015_DO_W_	Units: mg/L	Prep Date: 9/30/2019	RunNo: 82516						
Client ID: LCSW	Batch ID: 31727	TestNo: SW8015B	SW3511	Analysis Date: 10/1/2019	SeqNo: 2065788						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Surr: 4-Terphenyl-d14 0.0393 0.06053 64.9 51.4 146

Sample ID: MB-31727	SampType: MBLK	TestCode: 8015_DO_W_	Units: mg/L	Prep Date: 9/30/2019	RunNo: 82516						
Client ID: PBW	Batch ID: 31727	TestNo: SW8015B	SW3511	Analysis Date: 10/1/2019	SeqNo: 2065789						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

TPH (Diesel Range) < 0.138 0.138
 TPH (Oil Range) < 0.127 0.127

Surr: 4-Terphenyl-d14 0.0351 0.06046 58.1 51.4 146

Qualifiers: H Holding times for preparation or analysis exceeded M Matrix Interference ND Not Detected at the Reporting Limit
 R RPD outside accepted recovery limits RL Reporting Limit S Spike Recovery outside accepted recovery limits
 SDL Sample detection limit U Analyte not detected W Sample container temperature is out of limit as sj



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QC SUMMARY REPORT

WO#: 19091181
 17-Oct-19

Client: ICON Environmental Services
Project: Levert-Grand River 9326-025-0100

BatchID: 31763

Sample ID: LCS-D31763	SampType: LCS	TestCode: 8015_DO_W_	Units: mg/L	Prep Date: 10/2/2019	RunNo: 82673						
Client ID: LCSW	Batch ID: 31763	TestNo: SW8015B	SW3511	Analysis Date: 10/4/2019	SeqNo: 2069681						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

TPH (Diesel Range)	2.03	0.136	1.794	0	113	70	130				
Surr: 4-Terphenyl-d14	0.0492		0.05979		82.3	51.4	146				

Sample ID: LCSD-D31763	SampType: LCSD	TestCode: 8015_DO_W_	Units: mg/L	Prep Date: 10/2/2019	RunNo: 82673						
Client ID: LCSS02	Batch ID: 31763	TestNo: SW8015B	SW3511	Analysis Date: 10/4/2019	SeqNo: 2069682						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

TPH (Diesel Range)	2.06	0.135	1.786	0	115	70	130	2.028	1.54	14.1	
Surr: 4-Terphenyl-d14	0.0468		0.05954		78.6	51.4	146		0	40	

Sample ID: LCSD-M31763	SampType: LCSD	TestCode: 8015_DO_W_	Units: mg/L	Prep Date: 10/2/2019	RunNo: 82673						
Client ID: LCSS02	Batch ID: 31763	TestNo: SW8015B	SW3511	Analysis Date: 10/4/2019	SeqNo: 2069683						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

TPH (Oil Range)	1.74	0.125	1.793	0	97.2	70	130	1.668	4.41	23.2	
Surr: 4-Terphenyl-d14	0.0442		0.05975		74.0	51.4	146		0	40	

Sample ID: LCS-M31763	SampType: LCS	TestCode: 8015_DO_W_	Units: mg/L	Prep Date: 10/2/2019	RunNo: 82673						
Client ID: LCSW	Batch ID: 31763	TestNo: SW8015B	SW3511	Analysis Date: 10/4/2019	SeqNo: 2069684						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

TPH (Oil Range)	1.67	0.124	1.775	0	94.0	70	130				
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Qualifiers: H Holding times for preparation or analysis exceeded M Matrix Interference ND Not Detected at the Reporting Limit
 R RPD outside accepted recovery limits RL Reporting Limit S Spike Recovery outside accepted recovery limits
 SDL Sample detection limit U Analyte not detected W Sample container temperature is out of limit as sj



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QC SUMMARY REPORT

WO#: 19091181
 17-Oct-19

Client: ICON Environmental Services
Project: Levert-Grand River 9326-025-0100

BatchID: 31763

Sample ID: LCS-M31763	SampType: LCS	TestCode: 8015_DO_W_	Units: mg/L	Prep Date: 10/2/2019	RunNo: 82673						
Client ID: LCSW	Batch ID: 31763	TestNo: SW8015B	SW3511	Analysis Date: 10/4/2019	SeqNo: 2069684						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Surr: 4-Terphenyl-d14 0.0416 0.05917 70.4 51.4 146

Sample ID: MB-31763	SampType: MBLK	TestCode: 8015_DO_W_	Units: mg/L	Prep Date: 10/2/2019	RunNo: 82673						
Client ID: PBW	Batch ID: 31763	TestNo: SW8015B	SW3511	Analysis Date: 10/4/2019	SeqNo: 2069685						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

TPH (Diesel Range) < 0.136 0.136
 TPH (Oil Range) < 0.125 0.125

Surr: 4-Terphenyl-d14 0.0503 0.05959 84.4 51.4 146

Qualifiers: H Holding times for preparation or analysis exceeded M Matrix Interference ND Not Detected at the Reporting Limit
 R RPD outside accepted recovery limits RL Reporting Limit S Spike Recovery outside accepted recovery limits
 SDL Sample detection limit U Analyte not detected W Sample container temperature is out of limit as sj



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QC SUMMARY REPORT

WO#: 19091181
 17-Oct-19

Client: ICON Environmental Services
Project: Levert-Grand River 9326-025-0100

BatchID: 31801

Sample ID: MB-31801	SampType: MBLK	TestCode: 6020A_W	Units: mg/L	Prep Date: 10/4/2019	RunNo: 82688
Client ID: PBW	Batch ID: 31801	TestNo: SW6020A	Analysis Date: 10/7/2019	SeqNo: 2070044	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual

Arsenic < 0.000250 0.000250

Sample ID: LCS-31801	SampType: LCS	TestCode: 6020A_W	Units: mg/L	Prep Date: 10/4/2019	RunNo: 82688
Client ID: LCSW	Batch ID: 31801	TestNo: SW6020A	Analysis Date: 10/7/2019	SeqNo: 2070045	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual

Arsenic 0.494 0.00500 0.500 0 98.8 80 120

Sample ID: LCSD-31801	SampType: LCSD	TestCode: 6020A_W	Units: mg/L	Prep Date: 10/4/2019	RunNo: 82688
Client ID: LCSS02	Batch ID: 31801	TestNo: SW6020A	Analysis Date: 10/7/2019	SeqNo: 2070046	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual

Arsenic 0.479 0.00500 0.500 0 95.7 80 120 0.494 3.15 20

Sample ID: 19091181-001CMS	SampType: MS	TestCode: 6020A_W	Units: mg/L	Prep Date: 10/4/2019	RunNo: 82688
Client ID: LT-1	Batch ID: 31801	TestNo: SW6020A	Analysis Date: 10/7/2019	SeqNo: 2070053	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual

Arsenic 0.500 0.00500 0.500 0.00210 99.5 75 125

Qualifiers: H Holding times for preparation or analysis exceeded M Matrix Interference ND Not Detected at the Reporting Limit
 R RPD outside accepted recovery limits RL Reporting Limit S Spike Recovery outside accepted recovery limits
 SDL Sample detection limit U Analyte not detected W Sample container temperature is out of limit as sj



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 Website: www.element.com

QC SUMMARY REPORT

WO#: 19091181
 17-Oct-19

Client: ICON Environmental Services
Project: Levert-Grand River 9326-025-0100

BatchID: 31801

Sample ID: 19091181-001CMSD	SampType: MSD	TestCode: 6020A_W	Units: mg/L	Prep Date: 10/4/2019	RunNo: 82688						
Client ID: LT-1	Batch ID: 31801	TestNo: SW6020A	Analysis Date: 10/7/2019	SeqNo: 2070054							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	0.482	0.00500	0.500	0.00210	96.0	75	125	0.500	3.59	20	

Qualifiers:

H	Holding times for preparation or analysis exceeded	M	Matrix Interference	ND	Not Detected at the Reporting Limit
R	RPD outside accepted recovery limits	RL	Reporting Limit	S	Spike Recovery outside accepted recovery limits
SDL	Sample detection limit	U	Analyte not detected	W	Sample container temperature is out of limit as sj



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QC SUMMARY REPORT

WO#: 19091181
 17-Oct-19

Client: ICON Environmental Services
Project: Levert-Grand River 9326-025-0100

BatchID: 31811

Sample ID: MB-31811	SampType: MBLK	TestCode: 6010_W	Units: mg/L	Prep Date: 10/4/2019	RunNo: 82692						
Client ID: PBW	Batch ID: 31811	TestNo: SW6010B		Analysis Date: 10/7/2019	SeqNo: 2070547						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Barium	< 0.0100	0.0100									
Cadmium	< 0.00500	0.00500									
Calcium	< 0.500	0.500									
Chromium	< 0.0100	0.0100									
Iron	< 0.0100	0.0100									
Lead	< 0.0100	0.0100									
Magnesium	< 0.500	0.500									
Manganese	< 0.0100	0.0100									
Potassium	< 5.00	5.00									
Sodium	< 10.0	10.0									
Strontium	< 0.0100	0.0100									
Zinc	< 0.0100	0.0100									

Sample ID: LCS-31811	SampType: LCS	TestCode: 6010_W	Units: mg/L	Prep Date: 10/4/2019	RunNo: 82692						
Client ID: LCSW	Batch ID: 31811	TestNo: SW6010B		Analysis Date: 10/7/2019	SeqNo: 2070548						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Barium	0.535	0.0100	0.5000	0	107	80	120				
Cadmium	0.529	0.00500	0.5000	0	106	80	120				
Calcium	52.0	0.500	50.00	0	104	80	120				
Chromium	0.534	0.0100	0.5000	0	107	80	120				
Iron	0.532	0.0100	0.5000	0	106	80	120				
Lead	0.534	0.0100	0.5000	0	107	80	120				
Magnesium	52.5	0.500	50.00	0	105	80	120				
Manganese	0.535	0.0100	0.5000	0	107	80	120				

Qualifiers: H Holding times for preparation or analysis exceeded M Matrix Interference ND Not Detected at the Reporting Limit
 R RPD outside accepted recovery limits RL Reporting Limit S Spike Recovery outside accepted recovery limits
 SDL Sample detection limit U Analyte not detected W Sample container temperature is out of limit as sj



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QC SUMMARY REPORT

WO#: 19091181
 17-Oct-19

Client: ICON Environmental Services
Project: Levert-Grand River 9326-025-0100

BatchID: 31811

Sample ID: LCS-31811	SampType: LCS	TestCode: 6010_W	Units: mg/L	Prep Date: 10/4/2019	RunNo: 82692						
Client ID: LCSW	Batch ID: 31811	TestNo: SW6010B	Analysis Date: 10/7/2019	SeqNo: 2070548							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Potassium	49.3	5.00	50.00	0	98.6	80	120				
Sodium	51.6	10.0	50.00	0	103	80	120				
Strontium	0.543	0.0100	0.5000	0	109	80	120				
Zinc	0.535	0.0100	0.5000	0	107	80	120				

Sample ID: LCSD-31811	SampType: LCSD	TestCode: 6010_W	Units: mg/L	Prep Date: 10/4/2019	RunNo: 82692						
Client ID: LCSS02	Batch ID: 31811	TestNo: SW6010B	Analysis Date: 10/7/2019	SeqNo: 2070549							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Barium	0.525	0.0100	0.5000	0	105	80	120	0.5352	1.98	20	
Cadmium	0.529	0.00500	0.5000	0	106	80	120	0.5288	0.0378	20	
Calcium	51.3	0.500	50.00	0	103	80	120	51.95	1.20	20	
Chromium	0.525	0.0100	0.5000	0	105	80	120	0.5339	1.70	20	
Iron	0.525	0.0100	0.5000	0	105	80	120	0.5322	1.36	20	
Lead	0.525	0.0100	0.5000	0	105	80	120	0.5339	1.70	20	
Magnesium	51.9	0.500	50.00	0	104	80	120	52.50	1.19	20	
Manganese	0.526	0.0100	0.5000	0	105	80	120	0.5347	1.74	20	
Potassium	48.8	5.00	50.00	0	97.7	80	120	49.29	0.897	20	
Sodium	51.6	10.0	50.00	0	103	80	120	51.64	0.0194	20	
Strontium	0.537	0.0100	0.5000	0	107	80	120	0.5434	1.24	20	
Zinc	0.526	0.0100	0.5000	0	105	80	120	0.5352	1.73	20	

Qualifiers: H Holding times for preparation or analysis exceeded M Matrix Interference ND Not Detected at the Reporting Limit
 R RPD outside accepted recovery limits RL Reporting Limit S Spike Recovery outside accepted recovery limits
 SDL Sample detection limit U Analyte not detected W Sample container temperature is out of limit as sj



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QC SUMMARY REPORT

WO#: 19091181
 17-Oct-19

Client: ICON Environmental Services
Project: Levert-Grand River 9326-025-0100

BatchID: 31811

Sample ID: 19091181-001CMS	SampType: MS	TestCode: 6010_W	Units: mg/L	Prep Date: 10/4/2019	RunNo: 82692						
Client ID: LT-1	Batch ID: 31811	TestNo: SW6010B	Analysis Date: 10/7/2019	SeqNo: 2070555							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Cadmium	0.460	0.00500	0.5000	0	92.0	75	125				
Chromium	0.451	0.0100	0.5000	0	90.3	75	125				
Lead	0.412	0.0100	0.5000	0	82.4	75	125				
Potassium	112	5.00	50.00	15.11	194	75	125				S
Zinc	0.468	0.0100	0.5000	0.01680	90.2	75	125				

Sample ID: 19091181-001CMSD	SampType: MSD	TestCode: 6010_W	Units: mg/L	Prep Date: 10/4/2019	RunNo: 82692						
Client ID: LT-1	Batch ID: 31811	TestNo: SW6010B	Analysis Date: 10/7/2019	SeqNo: 2070556							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Cadmium	0.446	0.00500	0.5000	0	89.2	75	125	0.4601	3.16	20	
Chromium	0.440	0.0100	0.5000	0	88.1	75	125	0.4514	2.49	20	
Lead	0.398	0.0100	0.5000	0	79.6	75	125	0.4120	3.46	20	
Potassium	108	5.00	50.00	15.11	185	75	125	112.2	4.00	20	S
Zinc	0.492	0.0100	0.5000	0.01680	95.1	75	125	0.4678	5.06	20	

NOTES:
 S - Spike recovery indicates matrix interference. The method is in control as indicated by the Lab Control Sample.

Sample ID: 19091181-001CMS	SampType: MS	TestCode: 6010_W	Units: mg/L	Prep Date: 10/4/2019	RunNo: 82692						
Client ID: LT-1	Batch ID: 31811	TestNo: SW6010B	Analysis Date: 10/7/2019	SeqNo: 2070558							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Barium	4.10	0.100	0.5000	3.430	134	75	125				S
Calcium	1,790	5.00	50.00	1,655	262	75	125				S

Qualifiers:

H	Holding times for preparation or analysis exceeded	M	Matrix Interference	ND	Not Detected at the Reporting Limit
R	RPD outside accepted recovery limits	RL	Reporting Limit	S	Spike Recovery outside accepted recovery limits
SDL	Sample detection limit	U	Analyte not detected	W	Sample container temperature is out of limit as sj



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QC SUMMARY REPORT

WO#: 19091181
 17-Oct-19

Client: ICON Environmental Services
Project: Levert-Grand River 9326-025-0100

BatchID: 31811

Sample ID: 19091181-001CMS	SampType: MS	TestCode: 6010_W	Units: mg/L	Prep Date: 10/4/2019	RunNo: 82692						
Client ID: LT-1	Batch ID: 31811	TestNo: SW6010B	Analysis Date: 10/7/2019	SeqNo: 2070558							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	107	0.100	0.5000	101.9	960	75	125				S
Magnesium	665	5.00	50.00	575.1	180	75	125				S
Manganese	8.56	0.100	0.5000	7.786	155	75	125				S
Sodium	3,120	100	50.00	2,892	450	75	125				S
Strontium	14.4	0.100	0.5000	13.31	216	75	125				S

Sample ID: 19091181-001CMSD	SampType: MSD	TestCode: 6010_W	Units: mg/L	Prep Date: 10/4/2019	RunNo: 82692						
Client ID: LT-1	Batch ID: 31811	TestNo: SW6010B	Analysis Date: 10/7/2019	SeqNo: 2070559							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Barium	3.98	0.100	0.5000	3.430	110	75	125	4.098	2.97	20	
Calcium	1,810	5.00	50.00	1,655	304	75	125	1,786	1.17	20	S
Iron	104	0.100	0.5000	101.9	380	75	125	106.7	2.76	20	S
Magnesium	654	5.00	50.00	575.1	158	75	125	665.0	1.62	20	S
Manganese	8.44	0.100	0.5000	7.786	131	75	125	8.559	1.40	20	S
Sodium	3,070	100	50.00	2,892	360	75	125	3,117	1.45	20	S
Strontium	14.1	0.100	0.5000	13.31	150	75	125	14.39	2.32	20	S

NOTES:

S - Analyte concentration in native sample was too high for accurate spike recovery(ies). The method is in control as indicated by the laboratory control sample (LCS).

Qualifiers:	H	Holding times for preparation or analysis exceeded	M	Matrix Interference	ND	Not Detected at the Reporting Limit
	R	RPD outside accepted recovery limits	RL	Reporting Limit	S	Spike Recovery outside accepted recovery limits
	SDL	Sample detection limit	U	Analyte not detected	W	Sample container temperature is out of limit as sj



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QC SUMMARY REPORT

WO#: 19091181
 17-Oct-19

Client: ICON Environmental Services
Project: Levert-Grand River 9326-025-0100

BatchID: 31829

Sample ID: 19091181-002CPDS	SampType: PDS	TestCode: HG_D_7470A	Units: mg/L	Prep Date:	RunNo: 82743						
Client ID: LT-2	Batch ID: 31829	TestNo: SW7470A		Analysis Date: 10/9/2019	SeqNo: 2072194						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Mercury	6.07	0.000200	0.0100	-0.0163	44.3	80	120				S
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Sample ID: 19091181-002CPDSD	SampType: PDSD	TestCode: HG_D_7470A	Units: mg/L	Prep Date:	RunNo: 82743						
Client ID: LT-2	Batch ID: 31829	TestNo: SW7470A		Analysis Date: 10/9/2019	SeqNo: 2072195						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Mercury	0.00603	0.000200	0.01370	0	44.0	80	120	0.006066	0.526	20	S
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Sample ID: MB-31829	SampType: MBLK	TestCode: HG_D_7470A	Units: mg/L	Prep Date: 10/8/2019	RunNo: 82743						
Client ID: PBW	Batch ID: 31829	TestNo: SW7470A		Analysis Date: 10/9/2019	SeqNo: 2072201						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Mercury	< 0.000200	0.000200									
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Sample ID: LCS-31829	SampType: LCS	TestCode: HG_D_7470A	Units: mg/L	Prep Date: 10/8/2019	RunNo: 82743						
Client ID: LCSW	Batch ID: 31829	TestNo: SW7470A		Analysis Date: 10/9/2019	SeqNo: 2072202						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Mercury	0.00973	0.000200	0.01000	0	97.3	80	120				
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Qualifiers:

H	Holding times for preparation or analysis exceeded	M	Matrix Interference	ND	Not Detected at the Reporting Limit
R	RPD outside accepted recovery limits	RL	Reporting Limit	S	Spike Recovery outside accepted recovery limits
SDL	Sample detection limit	U	Analyte not detected	W	Sample container temperature is out of limit as sj



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QC SUMMARY REPORT

WO#: 19091181
 17-Oct-19

Client: ICON Environmental Services
Project: Levert-Grand River 9326-025-0100

BatchID: 31829

Sample ID: LCSD-31829	SampType: LCSD	TestCode: HG_D_7470A	Units: mg/L	Prep Date: 10/8/2019	RunNo: 82743						
Client ID: LCSS02	Batch ID: 31829	TestNo: SW7470A	Analysis Date: 10/9/2019	SeqNo: 2072203							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Mercury	0.00975	0.000200	0.01000	0	97.5	80	120	0.009726	0.199	20	
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Sample ID: 19091181-002CMS	SampType: MS	TestCode: HG_D_7470A	Units: mg/L	Prep Date: 10/8/2019	RunNo: 82743						
Client ID: LT-2	Batch ID: 31829	TestNo: SW7470A	Analysis Date: 10/9/2019	SeqNo: 2072205							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Mercury	0.00368	0.000200	0.01000	0	36.8	75	125				S
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Sample ID: 19091181-002CMSD	SampType: MSD	TestCode: HG_D_7470A	Units: mg/L	Prep Date: 10/8/2019	RunNo: 82743						
Client ID: LT-2	Batch ID: 31829	TestNo: SW7470A	Analysis Date: 10/9/2019	SeqNo: 2072206							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Mercury	0.00380	0.000200	0.01000	0	38.0	75	125	0.003677	3.40	20	S
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NOTES:

S - Spike recoveries were outside of QC limits in MS/MSD and PDS/PDSD, suggesting matrix effect. The method is in control as indicated by the Lab Control Sample(s).

Qualifiers:	H	Holding times for preparation or analysis exceeded	M	Matrix Interference	ND	Not Detected at the Reporting Limit
	R	RPD outside accepted recovery limits	RL	Reporting Limit	S	Spike Recovery outside accepted recovery limits
	SDL	Sample detection limit	U	Analyte not detected	W	Sample container temperature is out of limit as sj



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QC SUMMARY REPORT

WO#: 19091181
 17-Oct-19

Client: ICON Environmental Services
Project: Levert-Grand River 9326-025-0100

BatchID: R82429

Sample ID: MBLK	SampType: MBLK	TestCode: 8021_BTEX_	Units: mg/L	Prep Date:	RunNo: 82429						
Client ID: PBW	Batch ID: R82429	TestNo: SW8021B		Analysis Date: 9/28/2019	SeqNo: 2063922						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	< 0.00500	0.00500									
Ethylbenzene	< 0.00500	0.00500									
Toluene	< 0.0100	0.0100									
Xylenes, Total	< 0.0500	0.0500									
Surr: alpha, alpha, alpha-Trifluorotoluene	0.0479		0.05000		95.8	70	130				

Sample ID: BTEX LCS	SampType: LCS	TestCode: 8021_BTEX_	Units: mg/L	Prep Date:	RunNo: 82429						
Client ID: LCSW	Batch ID: R82429	TestNo: SW8021B		Analysis Date: 9/28/2019	SeqNo: 2063923						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	0.0461	0.00500	0.05000	0	92.2	72	120				
Ethylbenzene	0.0471	0.00500	0.05000	0	94.2	76	129				
Toluene	0.0452	0.0100	0.05000	0	90.4	78	120				
Xylenes, Total	0.136	0.0500	0.1500	0	90.9	75	125				
Surr: alpha, alpha, alpha-Trifluorotoluene	0.0488		0.05000		97.6	70	130				

Sample ID: BTEX LCSD	SampType: lcscd	TestCode: 8021_BTEX_	Units: mg/L	Prep Date:	RunNo: 82429						
Client ID: LCSS02	Batch ID: R82429	TestNo: SW8021B		Analysis Date: 9/28/2019	SeqNo: 2063924						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	0.0475	0.00500	0.05000	0	95.0	72	120	0.04610	2.99	20	
Ethylbenzene	0.0490	0.00500	0.05000	0	98.0	76	129	0.04710	3.95	20	

Qualifiers: H Holding times for preparation or analysis exceeded M Matrix Interference ND Not Detected at the Reporting Limit
 R RPD outside accepted recovery limits RL Reporting Limit S Spike Recovery outside accepted recovery limits
 SDL Sample detection limit U Analyte not detected W Sample container temperature is out of limit as sj



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QC SUMMARY REPORT

WO#: 19091181
 17-Oct-19

Client: ICON Environmental Services
Project: Levert-Grand River 9326-025-0100

BatchID: R82429

Sample ID: BTEX LCSD	SampType: lcSD	TestCode: 8021_BTEX_	Units: mg/L	Prep Date:	RunNo: 82429						
Client ID: LCSS02	Batch ID: R82429	TestNo: SW8021B	Analysis Date: 9/28/2019	SeqNo: 2063924							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Toluene	0.0468	0.0100	0.05000	0	93.6	78	120	0.04520	3.48	20	
Xylenes, Total	0.142	0.0500	0.1500	0	95.0	75	125	0.1364	4.37	20	
Surr: alpha, alpha, alpha-Trifluorotoluene	0.0495		0.05000		99.0	70	130		0	20	

Qualifiers:

H	Holding times for preparation or analysis exceeded	M	Matrix Interference	ND	Not Detected at the Reporting Limit
R	RPD outside accepted recovery limits	RL	Reporting Limit	S	Spike Recovery outside accepted recovery limits
SDL	Sample detection limit	U	Analyte not detected	W	Sample container temperature is out of limit as sj



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QC SUMMARY REPORT

WO#: 19091181
 17-Oct-19

Client: ICON Environmental Services
Project: Levert-Grand River 9326-025-0100

BatchID: R82431

Sample ID: GAS LCS	SampType: LCS	TestCode: 8015_G_W	Units: mg/L	Prep Date:	RunNo: 82431						
Client ID: LCSW	Batch ID: R82431	TestNo: SW8015B		Analysis Date: 9/28/2019	SeqNo: 2063940						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

TPH (Gasoline Range) 11.9 0.150 12.50 0 95.0 80 130

Sample ID: GAS LCSD	SampType: LCSD	TestCode: 8015_G_W	Units: mg/L	Prep Date:	RunNo: 82431						
Client ID: LCSS02	Batch ID: R82431	TestNo: SW8015B		Analysis Date: 9/28/2019	SeqNo: 2063941						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

TPH (Gasoline Range) 11.9 0.150 12.50 0 95.2 80 130 11.87 0.238 20

Sample ID: MBLK	SampType: MBLK	TestCode: 8015_G_W	Units: mg/L	Prep Date:	RunNo: 82431						
Client ID: PBW	Batch ID: R82431	TestNo: SW8015B		Analysis Date: 9/28/2019	SeqNo: 2063942						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

TPH (Gasoline Range) < 0.150 0.150
 Surr: alpha, alpha, alpha-Trifluorotoluene 0.0428 0.05000 85.6 70 130

Qualifiers: H Holding times for preparation or analysis exceeded M Matrix Interference ND Not Detected at the Reporting Limit
 R RPD outside accepted recovery limits RL Reporting Limit S Spike Recovery outside accepted recovery limits
 SDL Sample detection limit U Analyte not detected W Sample container temperature is out of limit as sj



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 Website: www.element.com

QC SUMMARY REPORT

WO#: 19091181
 17-Oct-19

Client: ICON Environmental Services
Project: Levert-Grand River 9326-025-0100

BatchID: R82434

Sample ID: MB-R82434	SampType: MBLK	TestCode: TDS_2540C	Units: mg/L	Prep Date:	RunNo: 82434						
Client ID: PBW	Batch ID: R82434	TestNo: SM2540C		Analysis Date: 9/30/2019	SeqNo: 2064920						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Total Dissolved Solids (Residue, Filterable) < 20.0 20.0

Sample ID: LCS-R82434	SampType: LCS	TestCode: TDS_2540C	Units: mg/L	Prep Date:	RunNo: 82434						
Client ID: LCSW	Batch ID: R82434	TestNo: SM2540C		Analysis Date: 9/30/2019	SeqNo: 2064921						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Total Dissolved Solids (Residue, Filterable) 997 20.0 1,000 0 99.7 85 115

Sample ID: LCSD-R82434	SampType: LCSD	TestCode: TDS_2540C	Units: mg/L	Prep Date:	RunNo: 82434						
Client ID: LCSS02	Batch ID: R82434	TestNo: SM2540C		Analysis Date: 9/30/2019	SeqNo: 2064922						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Total Dissolved Solids (Residue, Filterable) 993 20.0 1,000 0 99.3 85 115 997.0 0.402 10

Sample ID: 19091176-007ADUP	SampType: DUP	TestCode: TDS_2540C	Units: mg/L	Prep Date:	RunNo: 82434						
Client ID: ZZZZZ	Batch ID: R82434	TestNo: SM2540C		Analysis Date: 9/30/2019	SeqNo: 2064943						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Total Dissolved Solids (Residue, Filterable) 465 20.0 463.0 0.431 10

Qualifiers: H Holding times for preparation or analysis exceeded M Matrix Interference ND Not Detected at the Reporting Limit
 R RPD outside accepted recovery limits RL Reporting Limit S Spike Recovery outside accepted recovery limits
 SDL Sample detection limit U Analyte not detected W Sample container temperature is out of limit as sj



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QC SUMMARY REPORT

WO#: 19091181
 17-Oct-19

Client: ICON Environmental Services
Project: Levert-Grand River 9326-025-0100

BatchID: R82434

Sample ID: 19091176-007ADUP	SampType: DUP	TestCode: TDS_2540C	Units: mg/L	Prep Date:	RunNo: 82434						
Client ID: ZZZZZZ	Batch ID: R82434	TestNo: SM2540C		Analysis Date: 9/30/2019	SeqNo: 2064943						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Sample ID: 19091181-001DDUP	SampType: DUP	TestCode: TDS_2540C	Units: mg/L	Prep Date:	RunNo: 82434						
Client ID: LT-1	Batch ID: R82434	TestNo: SM2540C		Analysis Date: 9/30/2019	SeqNo: 2064944						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Dissolved Solids (Residue, Filterable)	18,800	500						18,800	0	10	

Qualifiers:

H	Holding times for preparation or analysis exceeded	M	Matrix Interference	ND	Not Detected at the Reporting Limit
R	RPD outside accepted recovery limits	RL	Reporting Limit	S	Spike Recovery outside accepted recovery limits
SDL	Sample detection limit	U	Analyte not detected	W	Sample container temperature is out of limit as sj



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QC SUMMARY REPORT

WO#: 19091181
 17-Oct-19

Client: ICON Environmental Services
Project: Levert-Grand River 9326-025-0100

BatchID: R82461

Sample ID: MB-R82461	SampType: MBLK	TestCode: TDS_2540C	Units: mg/L	Prep Date:	RunNo: 82461
Client ID: PBW	Batch ID: R82461	TestNo: SM2540C		Analysis Date: 9/30/2019	SeqNo: 2065448
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual

Total Dissolved Solids (Residue, Filterable) < 20.0 20.0

Sample ID: LCS-R82461	SampType: LCS	TestCode: TDS_2540C	Units: mg/L	Prep Date:	RunNo: 82461
Client ID: LCSW	Batch ID: R82461	TestNo: SM2540C		Analysis Date: 9/30/2019	SeqNo: 2065449
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual

Total Dissolved Solids (Residue, Filterable) 1,000 20.0 1,000 0 100 85 115

Sample ID: LCSD-R82461	SampType: LCSD	TestCode: TDS_2540C	Units: mg/L	Prep Date:	RunNo: 82461
Client ID: LCSS02	Batch ID: R82461	TestNo: SM2540C		Analysis Date: 9/30/2019	SeqNo: 2065450
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual

Total Dissolved Solids (Residue, Filterable) 1,000 20.0 1,000 0 100 85 115 1,004 0.199 10

Sample ID: 19091194-004ADUP	SampType: DUP	TestCode: TDS_2540C	Units: mg/L	Prep Date:	RunNo: 82461
Client ID: ZZZZZ	Batch ID: R82461	TestNo: SM2540C		Analysis Date: 9/30/2019	SeqNo: 2065471
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual

Total Dissolved Solids (Residue, Filterable) 267 20.0 268.0 0.374 10

Qualifiers: H Holding times for preparation or analysis exceeded M Matrix Interference ND Not Detected at the Reporting Limit
 R RPD outside accepted recovery limits RL Reporting Limit S Spike Recovery outside accepted recovery limits
 SDL Sample detection limit U Analyte not detected W Sample container temperature is out of limit as sj



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QC SUMMARY REPORT

WO#: 19091181
 17-Oct-19

Client: ICON Environmental Services
Project: Levert-Grand River 9326-025-0100

BatchID: R82461

Sample ID: 19091194-004ADUP	SampType: DUP	TestCode: TDS_2540C	Units: mg/L	Prep Date:	RunNo: 82461						
Client ID: ZZZZZZ	Batch ID: R82461	TestNo: SM2540C		Analysis Date: 9/30/2019	SeqNo: 2065471						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Sample ID: 19091194-005ADUP	SampType: DUP	TestCode: TDS_2540C	Units: mg/L	Prep Date:	RunNo: 82461						
Client ID: ZZZZZZ	Batch ID: R82461	TestNo: SM2540C		Analysis Date: 9/30/2019	SeqNo: 2065472						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Dissolved Solids (Residue, Filterable)	401	20.0						401.0	0	10	

Qualifiers:

H	Holding times for preparation or analysis exceeded	M	Matrix Interference	ND	Not Detected at the Reporting Limit
R	RPD outside accepted recovery limits	RL	Reporting Limit	S	Spike Recovery outside accepted recovery limits
SDL	Sample detection limit	U	Analyte not detected	W	Sample container temperature is out of limit as sj



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QC SUMMARY REPORT

WO#: 19091181
 17-Oct-19

Client: ICON Environmental Services
Project: Levert-Grand River 9326-025-0100

BatchID: R82510

Sample ID: MB-R82510	SampType: MBLK	TestCode: ALK	Units: mgCaCO3/L	Prep Date:	RunNo: 82510						
Client ID: PBW	Batch ID: R82510	TestNo: SM2320 B		Analysis Date: 10/2/2019	SeqNo: 2065561						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Alkalinity, Bicarbonate (As CaCO3)	< 10.0	10.0									
Alkalinity, Carbonate (As CaCO3)	< 10.0	10.0									
Alkalinity, Total (As CaCO3)	< 10.0	10.0									

Sample ID: LCS-R82510	SampType: LCS	TestCode: ALK	Units: mgCaCO3/L	Prep Date:	RunNo: 82510						
Client ID: LCSW	Batch ID: R82510	TestNo: SM2320 B		Analysis Date: 10/2/2019	SeqNo: 2065562						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Alkalinity, Total (As CaCO3)	50.0	10.0	50.00	0	100	80	120				
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Sample ID: 19091196-004ADUP	SampType: DUP	TestCode: ALK	Units: mgCaCO3/L	Prep Date:	RunNo: 82510						
Client ID: ZZZZZ	Batch ID: R82510	TestNo: SM2320 B		Analysis Date: 10/2/2019	SeqNo: 2065577						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Alkalinity, Bicarbonate (As CaCO3)	110	10.0						115.0	4.44	20	
Alkalinity, Carbonate (As CaCO3)	< 10.0	10.0						0	0	20	
Alkalinity, Total (As CaCO3)	110	10.0						115.0	4.44	20	

Qualifiers: H Holding times for preparation or analysis exceeded M Matrix Interference ND Not Detected at the Reporting Limit
 R RPD outside accepted recovery limits RL Reporting Limit S Spike Recovery outside accepted recovery limits
 SDL Sample detection limit U Analyte not detected W Sample container temperature is out of limit as sj



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QC SUMMARY REPORT

WO#: 19091181
 17-Oct-19

Client: ICON Environmental Services
Project: Levert-Grand River 9326-025-0100

BatchID: R82561

Sample ID: MBLK	SampType: MBLK	TestCode: 9056_W	Units: mg/L	Prep Date:	RunNo: 82561
Client ID: PBW	Batch ID: R82561	TestNo: SW9056A		Analysis Date: 10/2/2019	SeqNo: 2067028
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual

Chloride	< 0.250	0.250									
Sulfate	< 0.250	0.250									

Sample ID: LCS	SampType: LCS	TestCode: 9056_W	Units: mg/L	Prep Date:	RunNo: 82561
Client ID: LCSW	Batch ID: R82561	TestNo: SW9056A		Analysis Date: 10/2/2019	SeqNo: 2067029
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual

Chloride	10.1	0.250	10.00	0	101	80	120				
Sulfate	10.1	0.250	10.00	0	101	80	120				

Sample ID: LCSD	SampType: LCSD	TestCode: 9056_W	Units: mg/L	Prep Date:	RunNo: 82561
Client ID: LCSS02	Batch ID: R82561	TestNo: SW9056A		Analysis Date: 10/2/2019	SeqNo: 2067030
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual

Chloride	10.1	0.250	10.00	0	101	80	120	10.07	0.134	15
Sulfate	9.82	0.250	10.00	0	98.2	80	120	10.11	2.91	15

Sample ID: 19100032-006AMS	SampType: MS	TestCode: 9056_W	Units: mg/L	Prep Date:	RunNo: 82561
Client ID: ZZZZZ	Batch ID: R82561	TestNo: SW9056A		Analysis Date: 10/2/2019	SeqNo: 2067035
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual

Chloride	1,950	25.0	500.0	1,493	90.9	80	120				
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Qualifiers:

H	Holding times for preparation or analysis exceeded	M	Matrix Interference	ND	Not Detected at the Reporting Limit
R	RPD outside accepted recovery limits	RL	Reporting Limit	S	Spike Recovery outside accepted recovery limits
SDL	Sample detection limit	U	Analyte not detected	W	Sample container temperature is out of limit as sj



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QC SUMMARY REPORT

WO#: 19091181
 17-Oct-19

Client: ICON Environmental Services
Project: Levert-Grand River 9326-025-0100

BatchID: R82561

Sample ID: 19100032-006AMS	SampType: MS	TestCode: 9056_W	Units: mg/L	Prep Date:	RunNo: 82561						
Client ID: ZZZZZ	Batch ID: R82561	TestNo: SW9056A		Analysis Date: 10/2/2019	SeqNo: 2067035						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Sulfate	741	25.0	500.0	242.9	99.6	80	120				
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Sample ID: 19100032-006AMSD	SampType: MSD	TestCode: 9056_W	Units: mg/L	Prep Date:	RunNo: 82561						
Client ID: ZZZZZ	Batch ID: R82561	TestNo: SW9056A		Analysis Date: 10/2/2019	SeqNo: 2067036						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Chloride	1,950	25.0	500.0	1,493	91.7	80	120	1,947	0.205	15	
Sulfate	748	25.0	500.0	242.9	101	80	120	740.7	1.01	15	

Qualifiers:

H	Holding times for preparation or analysis exceeded	M	Matrix Interference	ND	Not Detected at the Reporting Limit
R	RPD outside accepted recovery limits	RL	Reporting Limit	S	Spike Recovery outside accepted recovery limits
SDL	Sample detection limit	U	Analyte not detected	W	Sample container temperature is out of limit as sj



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QC SUMMARY REPORT

WO#: 19091181
 17-Oct-19

Client: ICON Environmental Services
Project: Levert-Grand River 9326-025-0100

BatchID: R82601

Sample ID: GAS LCS	SampType: LCS	TestCode: 8015_G_W	Units: mg/L	Prep Date:	RunNo: 82601						
Client ID: LCSW	Batch ID: R82601	TestNo: SW8015B		Analysis Date: 10/3/2019	SeqNo: 2068201						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

TPH (Gasoline Range)
 Surr: alpha, alpha, alpha-Trifluorotoluene

10.9
 0.0622

0.150
 0.05000

12.50
 0.05000

0
 0

87.5
 124

80
 70

130
 130

Sample ID: GAS LCSD	SampType: LCSD	TestCode: 8015_G_W	Units: mg/L	Prep Date:	RunNo: 82601						
Client ID: LCSS02	Batch ID: R82601	TestNo: SW8015B		Analysis Date: 10/3/2019	SeqNo: 2068202						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

TPH (Gasoline Range)
 Surr: alpha, alpha, alpha-Trifluorotoluene

11.1
 0.0618

0.150
 0.05000

12.50
 0.05000

0
 0

89.0
 124

80
 70

130
 130

10.94
 0

1.73
 0

20
 20

Sample ID: MB	SampType: MBLK	TestCode: 8015_G_W	Units: mg/L	Prep Date:	RunNo: 82601						
Client ID: PBW	Batch ID: R82601	TestNo: SW8015B		Analysis Date: 10/3/2019	SeqNo: 2068203						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

TPH (Gasoline Range)
 Surr: alpha, alpha, alpha-Trifluorotoluene

< 0.150
 0.0426

0.150
 0.05000

85.2
 70

130
 130

Qualifiers: H Holding times for preparation or analysis exceeded M Matrix Interference ND Not Detected at the Reporting Limit
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 SDL Sample detection limit U Analyte not detected W Sample container temperature is out of limit as sj



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QC SUMMARY REPORT

WO#: 19091181
 17-Oct-19

Client: ICON Environmental Services
Project: Levert-Grand River 9326-025-0100

BatchID: R82637

Sample ID: MB	SampType: MBLK	TestCode: 8021_BTEX_	Units: mg/L	Prep Date:	RunNo: 82637						
Client ID: PBW	Batch ID: R82637	TestNo: SW8021B		Analysis Date: 10/3/2019	SeqNo: 2068856						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	< 0.00500	0.00500									
Ethylbenzene	< 0.00500	0.00500									
Toluene	< 0.0100	0.0100									
Xylenes, Total	< 0.0500	0.0500									
Surr: alpha, alpha, alpha-Trifluorotoluene	0.0482		0.05000		96.4	70	130				

Qualifiers:

H	Holding times for preparation or analysis exceeded	M	Matrix Interference	ND	Not Detected at the Reporting Limit
R	RPD outside accepted recovery limits	RL	Reporting Limit	S	Spike Recovery outside accepted recovery limits
SDL	Sample detection limit	U	Analyte not detected	W	Sample container temperature is out of limit as sj



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QC SUMMARY REPORT

WO#: 19091181
 17-Oct-19

Client: ICON Environmental Services
Project: Levert-Grand River 9326-025-0100

BatchID: R82711-1

Sample ID: MB	SampType: MBLK	TestCode: 6010-D	Units: mg/L	Prep Date:	RunNo: 82711						
Client ID: PBW	Batch ID: R82711-1	TestNo: SW6010B		Analysis Date: 10/7/2019	SeqNo: 2071072						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Barium	< 0.0100	0.0100									
Cadmium	< 0.00500	0.00500									
Calcium	< 0.500	0.500									
Chromium	< 0.0100	0.0100									
Iron	< 0.0100	0.0100									
Lead	< 0.0100	0.0100									
Magnesium	< 0.500	0.500									
Manganese	< 0.0100	0.0100									
Potassium	< 5.00	5.00									
Selenium	< 0.0200	0.0200									
Sodium	< 10.0	10.0									
Strontium	< 0.0100	0.0100									
Zinc	< 0.0100	0.0100									

Sample ID: LCS	SampType: LCS	TestCode: 6010-D	Units: mg/L	Prep Date:	RunNo: 82711						
Client ID: LCSW	Batch ID: R82711-1	TestNo: SW6010B		Analysis Date: 10/7/2019	SeqNo: 2071073						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Barium	0.529	0.0100	0.5000	0	106	80	120				
Cadmium	0.525	0.00500	0.5000	0	105	80	120				
Calcium	50.6	0.500	50.00	0	101	80	120				
Chromium	0.531	0.0100	0.5000	0	106	80	120				
Iron	0.528	0.0100	0.5000	0	106	80	120				
Lead	0.521	0.0100	0.5000	0	104	80	120				
Magnesium	51.1	0.500	50.00	0	102	80	120				

Qualifiers: H Holding times for preparation or analysis exceeded M Matrix Interference ND Not Detected at the Reporting Limit
 R RPD outside accepted recovery limits RL Reporting Limit S Spike Recovery outside accepted recovery limits
 SDL Sample detection limit U Analyte not detected W Sample container temperature is out of limit as sj



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QC SUMMARY REPORT

WO#: 19091181
 17-Oct-19

Client: ICON Environmental Services
Project: Levert-Grand River 9326-025-0100

BatchID: R82711-1

Sample ID: LCS	SampType: LCS	TestCode: 6010-D	Units: mg/L	Prep Date:	RunNo: 82711						
Client ID: LCSW	Batch ID: R82711-1	TestNo: SW6010B		Analysis Date: 10/7/2019	SeqNo: 2071073						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	0.528	0.0100	0.5000	0	106	80	120				
Potassium	49.3	5.00	50.00	0	98.6	80	120				
Selenium	0.541	0.0200	0.5000	0	108	80	120				
Sodium	50.8	10.0	50.00	0	102	80	120				
Strontium	0.533	0.0100	0.5000	0	107	80	120				
Zinc	0.532	0.0100	0.5000	0	106	80	120				

Sample ID: LCSD	SampType: LCSD	TestCode: 6010-D	Units: mg/L	Prep Date:	RunNo: 82711						
Client ID: LCSS02	Batch ID: R82711-1	TestNo: SW6010B		Analysis Date: 10/7/2019	SeqNo: 2071074						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Barium	0.525	0.0100	0.5000	0	105	80	120	0.5287	0.721	20	
Cadmium	0.523	0.00500	0.5000	0	105	80	120	0.5249	0.420	20	
Calcium	50.6	0.500	50.00	0	101	80	120	50.58	0.119	20	
Chromium	0.526	0.0100	0.5000	0	105	80	120	0.5307	0.871	20	
Iron	0.524	0.0100	0.5000	0	105	80	120	0.5280	0.780	20	
Lead	0.518	0.0100	0.5000	0	104	80	120	0.5213	0.635	20	
Magnesium	51.1	0.500	50.00	0	102	80	120	51.14	0.137	20	
Manganese	0.524	0.0100	0.5000	0	105	80	120	0.5278	0.646	20	
Potassium	49.5	5.00	50.00	0	99.0	80	120	49.28	0.445	20	
Selenium	0.538	0.0200	0.5000	0	108	80	120	0.5406	0.408	20	
Sodium	51.4	10.0	50.00	0	103	80	120	50.75	1.27	20	
Strontium	0.533	0.0100	0.5000	0	107	80	120	0.5333	0.0563	20	
Zinc	0.528	0.0100	0.5000	0	106	80	120	0.5322	0.717	20	

Qualifiers: H Holding times for preparation or analysis exceeded M Matrix Interference ND Not Detected at the Reporting Limit
 R RPD outside accepted recovery limits RL Reporting Limit S Spike Recovery outside accepted recovery limits
 SDL Sample detection limit U Analyte not detected W Sample container temperature is out of limit as sj



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QC SUMMARY REPORT

WO#: 19091181
 17-Oct-19

Client: ICON Environmental Services
Project: Levert-Grand River 9326-025-0100

BatchID: R82711-1

Sample ID: 19091181-003CMS	SampType: MS	TestCode: 6010-D	Units: mg/L	Prep Date:	RunNo: 82711						
Client ID: LT-3	Batch ID: R82711-1	TestNo: SW6010B	Analysis Date: 10/7/2019	SeqNo: 2071078							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Cadmium	0.470	0.00500	0.5000	0	94.0	75	125				
Chromium	0.480	0.0100	0.5000	0	96.1	75	125				
Lead	0.453	0.0100	0.5000	0	90.5	75	125				
Magnesium	142	0.500	50.00	98.43	88.1	75	125				
Potassium	71.2	5.00	50.00	3.996	134	75	125				S
Selenium	0.555	0.0200	0.5000	0.07960	95.1	75	125				
Zinc	0.483	0.0100	0.5000	0	96.5	75	125				

Sample ID: 19091181-003CMSD	SampType: MSD	TestCode: 6010-D	Units: mg/L	Prep Date:	RunNo: 82711						
Client ID: LT-3	Batch ID: R82711-1	TestNo: SW6010B	Analysis Date: 10/7/2019	SeqNo: 2071079							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Cadmium	0.469	0.00500	0.5000	0	93.7	75	125	0.4698	0.256	20	
Chromium	0.479	0.0100	0.5000	0	95.7	75	125	0.4804	0.375	20	
Lead	0.454	0.0100	0.5000	0	90.8	75	125	0.4526	0.265	20	
Magnesium	143	0.500	50.00	98.43	88.7	75	125	142.5	0.210	20	
Potassium	71.4	5.00	50.00	3.996	135	75	125	71.23	0.238	20	S
Selenium	0.559	0.0200	0.5000	0.07960	95.9	75	125	0.5553	0.682	20	
Zinc	0.482	0.0100	0.5000	0	96.4	75	125	0.4826	0.0829	20	

NOTES:
 S - Spike recovery indicates matrix interference. The method is in control as indicated by the Lab Control Sample.

Qualifiers:	H Holding times for preparation or analysis exceeded	M Matrix Interference	ND Not Detected at the Reporting Limit
	R RPD outside accepted recovery limits	RL Reporting Limit	S Spike Recovery outside accepted recovery limits
	SDL Sample detection limit	U Analyte not detected	W Sample container temperature is out of limit as sj



Element Materials Technology Lafayette
 2417 W. Pinhook Road
 Lafayette, LA 70508-3344
 TEL: (337) 235-0483 FAX: (337) 233-6540
 Website: www.element.com

QC SUMMARY REPORT

WO#: 19091181
 17-Oct-19

Client: ICON Environmental Services
Project: Levert-Grand River 9326-025-0100

BatchID: R82711-1

Sample ID: 19091181-003CMS	SampType: MS	TestCode: 6010-D	Units: mg/L	Prep Date:	RunNo: 82711						
Client ID: LT-3	Batch ID: R82711-1	TestNo: SW6010B	Analysis Date: 10/7/2019	SeqNo: 2071081							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Barium	1.61	0.100	0.5000	1.219	79.0	75	125				
Calcium	313	5.00	50.00	281.7	62.0	75	125				S
Iron	5.72	0.100	0.5000	5.642	16.2	75	125				S
Manganese	2.38	0.100	0.5000	2.091	57.6	75	125				S
Sodium	580	100	50.00	601.8	-43.6	75	125				S
Strontium	2.41	0.100	0.5000	2.041	72.8	75	125				S

Sample ID: 19091181-003CMSD	SampType: MSD	TestCode: 6010-D	Units: mg/L	Prep Date:	RunNo: 82711						
Client ID: LT-3	Batch ID: R82711-1	TestNo: SW6010B	Analysis Date: 10/7/2019	SeqNo: 2071085							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Barium	1.62	0.100	0.5000	1.219	80.4	75	125	1.614	0.433	20	
Calcium	308	5.00	50.00	281.7	52.8	75	125	312.7	1.48	20	S
Iron	5.79	0.100	0.5000	5.642	29.0	75	125	5.723	1.11	20	S
Manganese	2.41	0.100	0.5000	2.091	63.6	75	125	2.379	1.25	20	S
Sodium	583	100	50.00	601.8	-37.4	75	125	580.0	0.533	20	S
Strontium	2.40	0.100	0.5000	2.041	72.2	75	125	2.405	0.125	20	S

NOTES:
 S - Spike recovery indicates matrix interference. The method is in control as indicated by the Lab Control Sample.

Qualifiers:	H Holding times for preparation or analysis exceeded	M Matrix Interference	ND Not Detected at the Reporting Limit
	R RPD outside accepted recovery limits	RL Reporting Limit	S Spike Recovery outside accepted recovery limits
	SDL Sample detection limit	U Analyte not detected	W Sample container temperature is out of limit as sj



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 Lafayette, LA 70508-3344
 TEL: (337) 235-0483 FAX: (337) 233-6546
 Website: www.element.com

QC SUMMARY REPORT

WO#: 19091181
 17-Oct-19

Client: ICON Environmental Services
Project: Levert-Grand River 9326-025-0100

BatchID: R82905

Sample ID: MBLK	SampType: MBLK	TestCode: 6020A_D	Units: mg/L	Prep Date:	RunNo: 82905
Client ID: PBW	Batch ID: R82905	TestNo: SW6020A		Analysis Date: 10/15/2019	SeqNo: 2075968
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual

Arsenic < 0.000250 0.000250

Sample ID: LCS	SampType: LCS	TestCode: 6020A_D	Units: mg/L	Prep Date:	RunNo: 82905
Client ID: LCSW	Batch ID: R82905	TestNo: SW6020A		Analysis Date: 10/15/2019	SeqNo: 2075969
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual

Arsenic 0.0192 0.000250 0.0200 0 95.8 80 120

Sample ID: LCSD	SampType: LCSD	TestCode: 6020A_D	Units: mg/L	Prep Date:	RunNo: 82905
Client ID: LCSS02	Batch ID: R82905	TestNo: SW6020A		Analysis Date: 10/15/2019	SeqNo: 2075970
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual

Arsenic 0.0200 0.000250 0.0200 0 100 80 120 0.0192 4.33 20

Sample ID: 19100080-005EMS	SampType: MS	TestCode: 6020A_D	Units: mg/L	Prep Date:	RunNo: 82905
Client ID: ZZZZZZ	Batch ID: R82905	TestNo: SW6020A		Analysis Date: 10/15/2019	SeqNo: 2075979
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual

Arsenic 0.216 0.00250 0.200 0.0237 96.2 75 125

Qualifiers: H Holding times for preparation or analysis exceeded M Matrix Interference ND Not Detected at the Reporting Limit
 R RPD outside accepted recovery limits RL Reporting Limit S Spike Recovery outside accepted recovery limits
 SDL Sample detection limit U Analyte not detected W Sample container temperature is out of limit as sj



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 Website: www.element.com

QC SUMMARY REPORT

WO#: 19091181
 17-Oct-19

Client: ICON Environmental Services
Project: Levert-Grand River 9326-025-0100

BatchID: R82905

Sample ID: 19100080-005EMSD	SampType: MSD	TestCode: 6020A_D	Units: mg/L	Prep Date:	RunNo: 82905						
Client ID: ZZZZZZ	Batch ID: R82905	TestNo: SW6020A		Analysis Date: 10/15/2019	SeqNo: 2075980						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	0.213	0.00250	0.200	0.0237	94.9	75	125	0.216	1.25	20	

Qualifiers:

H	Holding times for preparation or analysis exceeded	M	Matrix Interference	ND	Not Detected at the Reporting Limit
R	RPD outside accepted recovery limits	RL	Reporting Limit	S	Spike Recovery outside accepted recovery limits
SDL	Sample detection limit	U	Analyte not detected	W	Sample container temperature is out of limit as sj



Element Materials Technology Lafayette
 2417 W. Pinhook Road
 Lafayette, LA 70508-3344
 TEL: (337) 235-0483 FAX: (337) 233-6540
 Website: www.element.com

Sample Log-In Check List

Client Name: **ICON_ENV**

Work Order Number: **19091181**

RcptNo: **1**

Logged by:	Danielle Hollier	9/27/2019 3:45:00 PM	<i>Danielle Hollier</i>
Completed By:	Danielle Hollier	9/27/2019 5:17:10 PM	<i>Danielle Hollier</i>
Reviewed By:	Caitlin Duplantis	10/3/2019 11:55:16 AM	<i>Caitlin Duplantis</i>

Chain of Custody

1. Is Chain of Custody complete? Yes No Not Present
 2. How was the sample delivered? Element

Log In

3. Coolers are present? Yes No NA
 4. Shipping container/cooler in good condition? Yes No
 Custody seals intact on shipping container/cooler? Yes No Not Present
 No. Seal Date: Signed By:
 5. Was an attempt made to cool the samples? Yes No NA
 6. Were all samples received at a temperature of >0° C to 6.0°C Yes No NA
 7. Sample(s) in proper container(s)? Yes No
 8. Sufficient sample volume for indicated test(s)? Yes No
 9. Are samples (except VOA and ONG) properly preserved? Yes No
 10. Was preservative added to bottles? Yes No NA
 11. Is the headspace in the VOA vials less than 1/4 inch or 6 mm? Yes No No VOA Vials
 12. Were any sample containers received broken? Yes No
 13. Does paperwork match bottle labels? Yes No
 (Note discrepancies on chain of custody)
 14. Are matrices correctly identified on Chain of Custody? Yes No
 15. Is it clear what analyses were requested? Yes No
 16. Were all holding times able to be met? Yes No
 (If no, notify customer for authorization.)

Special Handling (if applicable)

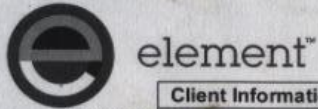
17. Was client notified of all discrepancies with this order? Yes No NA

Person Notified:	<input type="text"/>	Date:	<input type="text"/>
By Whom:	<input type="text"/>	Via:	<input type="checkbox"/> eMail <input type="checkbox"/> Phone <input type="checkbox"/> Fax <input type="checkbox"/> In Person
Regarding:	<input type="text"/>		
Client Instructions:	<input type="text"/>		

18. Additional remarks:

Cooler Information

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	1.7	Good	Not Present			



Chain of Custody

Laboratory Number: 19091131

Client Information:		Billing Information:		PO Number:	Project Name/Number:	Page of
Company Name: ICON		Billing Information: SAME		Quote Number:	LEVERT-GRAND RIVER	Matrix Code
Contact Name:				Required QC Level:	9326-025-0160	DW = Drinking Water
Address:				Bill Monthly:	Sampler's Signature: <i>[Signature]</i>	WW = Waste Water
City, State Zip:				<input type="checkbox"/> Yes		GW = Ground Water
Phone Number:		Ext:		<input type="checkbox"/> No	Shipping Method:	AQ = Aqueous
Fax Number:					UPS / FedEx / NOW	OT = Other
E-mail Address:					DHL / Element / Hand / Mail	SL = Sludge SOL = Solid
						O = Oil SO = Soil
						F = Food SW = Swab
						NG = Natural Gas
						NGL = Natural Gas Liquid
						PW = Produced Water
						CF = Completion Fluid

Sample ID/Description	Collection Information			Matrix	Quantity	Container Type P=Plastic, G=Glass, V=Vial	Pres. HCl, HNO ₃ , H ₂ SO ₄ , NaOH, Na ₂ S ₂ O ₃	Requested Tests							Comments
	Date	Time	Grab / Composite					TPS	Chlorides	BTEX	TPH-G	TPH-D+O	Total Metals	Dissolved Metals	
LT-1	9.25.19	1330	G	AQ	7	PV	HCl/HNO ₃	X	X	X	X	X	X	X	
LT-2	9.26.19	1035						X	X	X	X	X	X	X	
LT-3	9.27.19	0930						X	X	X	X	X	X	X	
Blind Dup	9.26.19	-						X	X	X	X	X	X	X	
Trip Blank	9-25-19				3	✓	HCl			X	X				

DH 9.27-19

Relinquished by	Date/Time	Received by	Date/Time	Field Notes:
<i>[Signature]</i>	9.27.19/1430	<i>[Signature]</i>	9.27.19/1430	
<i>[Signature]</i>	9.27.19/1545	<i>[Signature]</i>	9-27-19 1545	Received at lab on ice? <input checked="" type="checkbox"/> <i>IR</i>
				<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No Temp: 1.7 ^u

All samples submitted to Element Materials Technology for analysis are accepted on a custodial basis only. Ownership of the material remains with the client submitting the samples. Element Materials Technology reserves the right to return unused sample portions.

8800 North US 31 Columbus, IN 47201 USA P 812-375-0531 F 812-375-0731	328 Ley Road, Suite 100 Fort Wayne, IN 46825 USA P 260-471-7000 F 260-471-7777	909 Executive Dr Warsaw, IN 46580 USA P 574-267-3305 F 574-269-6569	3371 Cleveland Road, Suite 100A South Bend, IN 46628 USA P 574-277-0707 F 574-273-5699	2417 W. Pinhook Rd Lafayette, LA 70508 USA P 337-235-0483 F 337-233-6540
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Pace Analytical Services, LLC
1638 Roseytown Road - Suites 2,3,4
Greensburg, PA 15601
(724)850-5600

October 28, 2019

Mr. Greg Miller
ICON Environmental Services
2049 Commercial Drive
Port Allen, LA 70767

RE: Project: 9326-025-0100
Pace Project No.: 30328257

Dear Mr. Miller:

Enclosed are the analytical results for sample(s) received by the laboratory on October 07, 2019. The results relate only to the samples included in this report. Results reported herein conform to the most current, applicable TNI/NELAC standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Jacquelyn Collins
jacquelyn.collins@pacelabs.com
(724)850-5612
Project Manager

Enclosures

cc: Mr. Derek Pourciau



REPORT OF LABORATORY ANALYSIS

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Page 1 of 12

August Levert_BP Plan_002305



CERTIFICATIONS

Project: 9326-025-0100
Pace Project No.: 30328257

Pennsylvania Certification IDs

1638 Roseytown Rd Suites 2,3&4, Greensburg, PA 15601
ANAB DOD-ELAP Rad Accreditation #: L2417
Alabama Certification #: 41590
Arizona Certification #: AZ0734
Arkansas Certification
California Certification #: 04222CA
Colorado Certification #: PA01547
Connecticut Certification #: PH-0694
Delaware Certification
EPA Region 4 DW Rad
Florida/TNI Certification #: E87683
Georgia Certification #: C040
Florida: Cert E871149 SEKS WET
Guam Certification
Hawaii Certification
Idaho Certification
Illinois Certification
Indiana Certification
Iowa Certification #: 391
Kansas/TNI Certification #: E-10358
Kentucky Certification #: KY90133
KY WW Permit #: KY0098221
KY WW Permit #: KY0000221
Louisiana DHH/TNI Certification #: LA180012
Louisiana DEQ/TNI Certification #: 4086
Maine Certification #: 2017020
Maryland Certification #: 308
Massachusetts Certification #: M-PA1457
Michigan/PADEP Certification #: 9991

Missouri Certification #: 235
Montana Certification #: Cert0082
Nebraska Certification #: NE-OS-29-14
Nevada Certification #: PA014572018-1
New Hampshire/TNI Certification #: 297617
New Jersey/TNI Certification #: PA051
New Mexico Certification #: PA01457
New York/TNI Certification #: 10888
North Carolina Certification #: 42706
North Dakota Certification #: R-190
Ohio EPA Rad Approval: #41249
Oregon/TNI Certification #: PA200002-010
Pennsylvania/TNI Certification #: 65-00282
Puerto Rico Certification #: PA01457
Rhode Island Certification #: 65-00282
South Dakota Certification
Tennessee Certification #: 02867
Texas/TNI Certification #: T104704188-17-3
Utah/TNI Certification #: PA014572017-9
USDA Soil Permit #: P330-17-00091
Vermont Dept. of Health: ID# VT-0282
Virgin Island/PADEP Certification
Virginia/VELAP Certification #: 9526
Washington Certification #: C868
West Virginia DEP Certification #: 143
West Virginia DHHR Certification #: 9964C
Wisconsin Approve List for Rad
Wyoming Certification #: 8TMS-L

REPORT OF LABORATORY ANALYSIS

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SAMPLE SUMMARY

Project: 9326-025-0100
Pace Project No.: 30328257

Lab ID	Sample ID	Matrix	Date Collected	Date Received
30328257001	LT-1	Water	09/25/19 13:30	10/07/19 09:30
30328257002	LT-2	Water	09/26/19 10:35	10/07/19 09:30
30328257003	LT-3	Water	09/27/19 09:30	10/07/19 09:30
30328257004	Blind Dup	Water	09/26/19 00:01	10/07/19 09:30

REPORT OF LABORATORY ANALYSIS

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SAMPLE ANALYTE COUNT

Project: 9326-025-0100
 Pace Project No.: 30328257

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
30328257001	LT-1	EPA 903.1	MK1	1	PASI-PA
		EPA 904.0	VAL	1	PASI-PA
30328257002	LT-2	EPA 903.1	MK1	1	PASI-PA
		EPA 904.0	VAL	1	PASI-PA
30328257003	LT-3	EPA 903.1	MK1	1	PASI-PA
		EPA 904.0	VAL	1	PASI-PA
30328257004	Blind Dup	EPA 903.1	MK1	1	PASI-PA
		EPA 904.0	VAL	1	PASI-PA

REPORT OF LABORATORY ANALYSIS

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PROJECT NARRATIVE

Project: 9326-025-0100
Pace Project No.: 30328257

Method: EPA 903.1
Description: 903.1 Radium 226
Client: ICON Environmental Services
Date: October 28, 2019

General Information:

4 samples were analyzed for EPA 903.1. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:

The samples were analyzed within the method required hold times with any exceptions noted below.

Method Blank:

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

REPORT OF LABORATORY ANALYSIS

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PROJECT NARRATIVE

Project: 9326-025-0100
Pace Project No.: 30328257

Method: EPA 904.0
Description: 904.0 Radium 228
Client: ICON Environmental Services
Date: October 28, 2019

General Information:

4 samples were analyzed for EPA 904.0. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:

The samples were analyzed within the method required hold times with any exceptions noted below.

Method Blank:

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

This data package has been reviewed for quality and completeness and is approved for release.

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: 9326-025-0100
 Pace Project No.: 30328257

Sample: LT-1		Lab ID: 30328257001	Collected: 09/25/19 13:30	Received: 10/07/19 09:30	Matrix: Water		
PWS:		Site ID:	Sample Type:				
Parameters	Method	Act ± Unc (MDC)	Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 903.1	2.65 ± 1.00 (0.883)		pCi/L	10/23/19 13:25	13982-63-3	
Radium-228	EPA 904.0	3.63 ± 0.954 (0.927)		pCi/L	10/23/19 16:38	15262-20-1	
		C:NA T:86%					
		C:52% T:92%					

Sample: LT-2		Lab ID: 30328257002	Collected: 09/26/19 10:35	Received: 10/07/19 09:30	Matrix: Water		
PWS:		Site ID:	Sample Type:				
Parameters	Method	Act ± Unc (MDC)	Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 903.1	3.20 ± 1.03 (0.535)		pCi/L	10/23/19 13:25	13982-63-3	
Radium-228	EPA 904.0	1.57 ± 0.602 (0.880)		pCi/L	10/23/19 16:38	15262-20-1	
		C:NA T:83%					
		C:54% T:87%					

Sample: LT-3		Lab ID: 30328257003	Collected: 09/27/19 09:30	Received: 10/07/19 09:30	Matrix: Water		
PWS:		Site ID:	Sample Type:				
Parameters	Method	Act ± Unc (MDC)	Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 903.1	1.06 ± 0.613 (0.653)		pCi/L	10/23/19 13:25	13982-63-3	
Radium-228	EPA 904.0	1.07 ± 0.634 (1.15)		pCi/L	10/23/19 16:38	15262-20-1	
		C:NA T:85%					
		C:48% T:76%					

Sample: Blind Dup		Lab ID: 30328257004	Collected: 09/26/19 00:01	Received: 10/07/19 09:30	Matrix: Water		
PWS:		Site ID:	Sample Type:				
Parameters	Method	Act ± Unc (MDC)	Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 903.1	3.26 ± 1.10 (0.871)		pCi/L	10/23/19 13:25	13982-63-3	
Radium-228	EPA 904.0	1.58 ± 0.660 (1.05)		pCi/L	10/23/19 16:38	15262-20-1	
		C:NA T:85%					
		C:54% T:86%					

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL - RADIOCHEMISTRY

Project: 9326-025-0100
 Pace Project No.: 30328257

QC Batch: 365772 Analysis Method: EPA 903.1
 QC Batch Method: EPA 903.1 Analysis Description: 903.1 Radium-226
 Associated Lab Samples: 30328257001, 30328257002, 30328257003, 30328257004

METHOD BLANK: 1774266 Matrix: Water
 Associated Lab Samples: 30328257001, 30328257002, 30328257003, 30328257004

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-226	0.463 ± 0.368 (0.478) C:NA T:91%	pCi/L	10/23/19 13:12	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL - RADIOCHEMISTRY

Project: 9326-025-0100
 Pace Project No.: 30328257

QC Batch: 365773 Analysis Method: EPA 904.0
 QC Batch Method: EPA 904.0 Analysis Description: 904.0 Radium 228
 Associated Lab Samples: 30328257001, 30328257002, 30328257003, 30328257004

METHOD BLANK: 1774268 Matrix: Water
 Associated Lab Samples: 30328257001, 30328257002, 30328257003, 30328257004

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-228	0.157 ± 0.414 (0.925) C:61% T:87%	pCi/L	10/23/19 16:36	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

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QUALIFIERS

Project: 9326-025-0100
Pace Project No.: 30328257

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.
ND - Not Detected at or above adjusted reporting limit.
TNTC - Too Numerous To Count
J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.
MDL - Adjusted Method Detection Limit.
PQL - Practical Quantitation Limit.
RL - Reporting Limit - The lowest concentration value that meets project requirements for quantitative data with known precision and bias for a specific analyte in a specific matrix.
S - Surrogate
1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.
Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.
LCS(D) - Laboratory Control Sample (Duplicate)
MS(D) - Matrix Spike (Duplicate)
DUP - Sample Duplicate
RPD - Relative Percent Difference
NC - Not Calculable.
SG - Silica Gel - Clean-Up
U - Indicates the compound was analyzed for, but not detected.
N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.
Act - Activity
Unc - Uncertainty: For Safe Drinking Water Act (SDWA) analyses, the reported Unc. is the calculated Count Uncertainty (95% confidence interval) using a coverage factor of 1.96. For all other matrices (non-SDWA), the reported Unc. is the calculated Expanded Uncertainty (aka Combined Standard Uncertainty, CSU), reported at the 95% confidence interval using a coverage factor of 1.96.
Gamma Spec: The Unc. reported for all gamma-spectroscopy analyses (EPA 901.1), is the calculated Expanded Uncertainty (CSU) at the 95.4% confidence interval, using a coverage factor of 2.0.
(MDC) - Minimum Detectable Concentration
Trac - Tracer Recovery (%)
Carr - Carrier Recovery (%)
Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.
TNI - The NELAC Institute.

LABORATORIES

PASI-PA Pace Analytical Services - Greensburg

REPORT OF LABORATORY ANALYSIS

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without the written consent of Pace Analytical Services, LLC.

Pittsburgh Lab Sample Condition Upon Receipt

30328257



Client Name: Iron Environmental Project # _____

Courier: Fed Ex UPS USPS Client Commercial Pace Other _____

Tracking #: 776440593282/40576463

Label <u>OP</u>
LIMS Login <u>OP</u>

Custody Seal on Cooler/Box Present: yes no Seals Intact: yes no

Thermometer Used N/A Type of Ice: Wet Blue None

Cooler Temperature Observed Temp _____ °C Correction Factor: _____ °C Final Temp: _____ °C

Temp should be above freezing to 6°C

Comments:	Yes	No	N/A	pH paper Lot#	Date and Initials of person examining contents:
				<u>1003581</u>	<u>10/07/15 OAB</u>
Chain of Custody Present:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
Chain of Custody Filled Out:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
Chain of Custody Relinquished:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
Sampler Name & Signature on COC:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
Sample Labels match COC:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
-Includes date/time/ID Matrix: <u>WT</u>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
Samples Arrived within Hold Time:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
Short Hold Time Analysis (<72hr remaining):	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
Rush Turn Around Time Requested:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
Sufficient Volume:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
Correct Containers Used:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
-Pace Containers Used:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
Containers Intact:	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
Orthophosphate field filtered	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>		
Hex Cr Aqueous sample field filtered	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>		
Organic Samples checked for dechlorination:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>		
Filtered volume received for Dissolved tests	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>		
All containers have been checked for preservation.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
exceptions: VOA, coliform, TOC, O&G, Phenolics, Radon, Non-aqueous matrix	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u>PHL2</u>	
All containers meet method preservation requirements.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Initial when completed <u>OAB</u>	Date/time of preservation
				Lot # of added preservative	
Headspace in VOA Vials (>6mm):	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>		
Trip Blank Present:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>		
Trip Blank Custody Seals Present	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>		
Rad Samples Screened < 0.5 mrem/hr	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Initial when completed <u>OAB</u>	Date: <u>10/07/15</u>

Client Notification/ Resolution:

Person Contacted: _____ Date/Time: _____ Contacted By: _____

Comments/ Resolution: _____

A check in this box indicates that additional information has been stored in ereports.

Note: Whenever there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the North Carolina DEHNR Certification Office (i.e. out of hold, incorrect preservative, out of temp, incorrect containers)

*PM review is documented electronically in LIMS. When the Project Manager closes the SRF Review schedule in LIMS. The review is in the Status section of the Workorder Edit Screen.



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July 08, 2022

Greg Miller
ICON Environmental Services
2049 Commercial Drive
Port Allen, LA 70767
TEL: (225) 344-8490
FAX (225) 344-6654

RE: Grand River - Levert

Order No.: 22061147

Dear Greg Miller:

Element Materials Technology Lafayette received 2 sample(s) on 6/24/2022 for the analyses presented in the following report.

In accordance with your instructions, Element Lafayette either conducted or subcontracted these analyses. Subcontracted analyses will be identified in the accompanying case narrative. All relevant sampling information can be found on the attached Chain-of-Custody form. Unless otherwise noted, all analyses were conducted using EPA approved methodologies and all test results meet the applicable requirements of TNI. Reported results relate only to the items tested.

Where applicable, all soil data, except for 29-B, are reported on a wet-weight basis unless otherwise indicated in the units field as –dry.

LELAP Certification No.: 01997. TCEQ Certification No.: T104704261. LDHH Certification No.: LA023. ISDH Certification No.: C-LA-01. NDELCP Certification No.: R-226. A scope of accredited parameters is available upon request. A "#" by the test method or analyte indicates this parameter is outside the scope of accreditation. PA registration No.: 68-05967.

Estimated uncertainty is available upon request. This report shall not be reproduced, except in full, without the written approval of the laboratory.

If you have any questions regarding these test results, please feel free to call.

A handwritten signature in blue ink that reads 'Cristina Thibeaux'.

Cristina Thibeaux
Customer Service Supervisor



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Case Narrative

WO#: 22061147
Date: 7/8/2022

CLIENT: ICON Environmental Services

Project: Grand River - Levert

Unless specified by the client, a duplicate or MS/MSD, wherever applicable, is randomly selected and analyzed from each analytical batch provided sample volume is sufficient. The sample chosen for duplicate or MS/MSD may or may not be a sample submitted in this workorder. A method blank and/or a lab control sample (LCS)/lab control sample duplicate (LCSD), wherever applicable, are processed as a quality control check for each analytical batch. When the matrix QC data is not available due to insufficient sample volume or when the results indicate possible matrix effect, the validity of the batch is determined by the method blank and LCS/LCSD.

The results of the laboratory internal quality control data are provided in the QC Summary Report section of the report for your review. Laboratory-related QC exceptions that may impact the validity of data are discussed in the case narrative. Sample-related QC exceptions are flagged either in the results page(s) or in the QC report page(s). End users should consider QC exceptions when evaluating sample data against data quality objectives.

Any other exceptions associated with this report will be footnoted in the results page(s) or the QC summary page(s).



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Analytical Report

(consolidated)

WO#: 22061147

Date Reported: 7/8/2022

CLIENT: ICON Environmental Services **Collection Date:** 6/22/2022 3:00:00 PM
Project: Grand River - Levert
Lab ID: 22061147-001 **Matrix:** AQUEOUS
Client Sample ID LT-4

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
TPH-D/O IN WATER BY SW8015					SW8015B	Analyst: CRM
TPH DRO/ORO IN WATER BY SW8015					SW3511	
TPH (Diesel Range)	< 0.127	0.127		mg/L	1	6/30/2022 1:07:00 AM
TPH (Oil Range)	< 0.117	0.117		mg/L	1	6/30/2022 1:07:00 AM
Surr: 4-Terphenyl-d14	50.9	51.4 - 146	SM	%Rec	1	6/30/2022 1:07:00 AM
BTEX/TPH-G IN WATER BY SW8021/8015					SW8015B	Analyst: LG
TPH-GRO IN WATER BY SW8015B						
TPH (Gasoline Range)	< 0.150	0.150		mg/L	1	6/30/2022 6:51:00 PM
Surr: alpha, alpha, alpha-Trifluorotoluene	93.0	70 - 130		%Rec	1	6/30/2022 6:51:00 PM
BTEX/TPH-G IN WATER BY SW8021/8015					SW8021B	Analyst: LG
BTEX IN WATER BY SW8021B						
Benzene	< 0.00500	0.00500		mg/L	1	6/30/2022 6:51:00 PM
Ethylbenzene	< 0.00500	0.00500		mg/L	1	6/30/2022 6:51:00 PM
m,p-Xylene	< 0.0100	0.0100		mg/L	1	6/30/2022 6:51:00 PM
o-Xylene	< 0.00500	0.00500		mg/L	1	6/30/2022 6:51:00 PM
Toluene	< 0.0100	0.0100		mg/L	1	6/30/2022 6:51:00 PM
Xylenes, Total	< 0.0500	0.0500		mg/L	1	6/30/2022 6:51:00 PM
Surr: alpha, alpha, alpha-Trifluorotoluene	83.4	70 - 130		%Rec	1	6/30/2022 6:51:00 PM
RCRA METALS - SW6010/7470A					SW7470A	Analyst: BXB
MERCURY IN GROUND WATER, TOTAL						
Mercury	< 0.000200	0.000200		mg/L	1	6/29/2022 11:48:00 AM
INORGANIC ANIONS IN WATER BY IC					SW9056A	Analyst: SGP
Chloride	98.8	12.5		mg/L	50	6/30/2022 10:37:50 AM
Sulfate	< 0.250	0.250		mg/L	1	6/30/2022 12:28:09 PM
RCRA METALS - SW6010/7470A					SW6010B	Analyst: MRM
METALS IN WATER BY ICP, TOTALS						
Barium	0.680	0.0100		mg/L	1	6/29/2022 12:30:47 PM
Cadmium	< 0.00500	0.00500		mg/L	1	6/29/2022 12:30:47 PM

Qualifiers:	H	Holding times for preparation or analysis exceeded	M	Matrix Interference
	ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits
	RL	Reporting Limit	S	Spike Recovery outside accepted recovery limits
	SDL	Sample detection limit	U	Analyte not detected
	W	Sample container temperature is out of limit as specified at testcode		



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Analytical Report

(consolidated)

WO#: 22061147

Date Reported: 7/8/2022

CLIENT: ICON Environmental Services **Collection Date:** 6/22/2022 3:00:00 PM
Project: Grand River - Levert
Lab ID: 22061147-001 **Matrix:** AQUEOUS
Client Sample ID LT-4

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
RCRA METALS - SW6010/7470A				SW6010B	Analyst: MRM	
METALS IN WATER BY ICP, TOTALS						
Calcium	150	0.500		mg/L	1	6/29/2022 12:30:47 PM
Chromium	< 0.0100	0.0100		mg/L	1	6/29/2022 12:30:47 PM
Iron	33.2	0.0100		mg/L	1	6/29/2022 12:30:47 PM
Lead	< 0.0100	0.0100		mg/L	1	6/29/2022 12:30:47 PM
Magnesium	51.2	0.500		mg/L	1	6/29/2022 12:30:47 PM
Manganese	1.46	0.0500		mg/L	1	6/29/2022 12:30:47 PM
Potassium	< 5.00	5.00		mg/L	1	6/29/2022 12:30:47 PM
Sodium	52.4	5.00		mg/L	1	6/29/2022 12:30:47 PM
Strontium	0.993	0.0100		mg/L	1	6/29/2022 12:30:47 PM
Zinc	0.0116	0.0100		mg/L	1	6/29/2022 12:30:47 PM
RCRA METALS - SW6010/7470A				SW6020A	Analyst: MRB	
METALS IN WATER BY ICP-MS, TOTAL						
Arsenic	16.4	2.50		µg/L	10	6/28/2022 12:08:52 PM
ALKALINITY; TOTAL, CARB, BICARB				SM2320 B	Analyst: AD	
Alkalinity, Bicarbonate (As CaCO3)	485	20.0		mgCaCO3/L	1	7/5/2022 8:57:00 AM
Alkalinity, Carbonate (As CaCO3)	< 20.0	20.0		mgCaCO3/L	1	7/5/2022 8:57:00 AM
Alkalinity, Phenolphthalein	< 20.0	20.0		mgCaCO3/L	1	7/5/2022 8:57:00 AM
Alkalinity, Total (As CaCO3)	485	20.0		mgCaCO3/L	1	7/5/2022 8:57:00 AM
TOTAL DISSOLVED SOLIDS				SM2540C	Analyst: GMS	
Total Dissolved Solids (Residue, Filterable)	875	50.0		mg/L	5	6/27/2022 8:06:00 AM

Qualifiers:	H	Holding times for preparation or analysis exceeded	M	Matrix Interference
	ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits
	RL	Reporting Limit	S	Spike Recovery outside accepted recovery limits
	SDL	Sample detection limit	U	Analyte not detected
	W	Sample container temperature is out of limit as specified at testcode		



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Analytical Report

(consolidated)

WO#: 22061147

Date Reported: 7/8/2022

CLIENT: ICON Environmental Services **Collection Date:** 6/22/2022 11:20:00 AM
Project: Grand River - Levert
Lab ID: 22061147-002 **Matrix:** AQUEOUS
Client Sample ID LT-5

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
TPH-D/O IN WATER BY SW8015					SW8015B	Analyst: CRM
TPH DRO/ORO IN WATER BY SW8015					SW3511	
TPH (Diesel Range)	0.302	0.128		mg/L	1	6/30/2022 1:38:00 AM
TPH (Oil Range)	0.311	0.119		mg/L	1	6/30/2022 1:38:00 AM
Surr: 4-Terphenyl-d14	154	51.4 - 146	SM	%Rec	1	6/30/2022 1:38:00 AM
BTEX/TPH-G IN WATER BY SW8021/8015					SW8015B	Analyst: LG
TPH-GRO IN WATER BY SW8015B						
TPH (Gasoline Range)	< 0.150	0.150		mg/L	1	6/30/2022 7:18:00 PM
Surr: alpha, alpha, alpha-Trifluorotoluene	92.6	70 - 130		%Rec	1	6/30/2022 7:18:00 PM
BTEX/TPH-G IN WATER BY SW8021/8015					SW8021B	Analyst: LG
BTEX IN WATER BY SW8021B						
Benzene	< 0.00500	0.00500		mg/L	1	6/30/2022 7:18:00 PM
Ethylbenzene	< 0.00500	0.00500		mg/L	1	6/30/2022 7:18:00 PM
m,p-Xylene	< 0.0100	0.0100		mg/L	1	6/30/2022 7:18:00 PM
o-Xylene	< 0.00500	0.00500		mg/L	1	6/30/2022 7:18:00 PM
Toluene	< 0.0100	0.0100		mg/L	1	6/30/2022 7:18:00 PM
Xylenes, Total	< 0.0500	0.0500		mg/L	1	6/30/2022 7:18:00 PM
Surr: alpha, alpha, alpha-Trifluorotoluene	83.8	70 - 130		%Rec	1	6/30/2022 7:18:00 PM
RCRA METALS - SW6010/7470A					SW7470A	Analyst: BXB
MERCURY IN GROUND WATER, TOTAL						
Mercury	< 0.000200	0.000200		mg/L	1	6/29/2022 11:50:18 AM
INORGANIC ANIONS IN WATER BY IC					SW9056A	Analyst: SGP
Chloride	196	12.5		mg/L	50	6/30/2022 10:51:37 AM
Sulfate	< 0.250	0.250		mg/L	1	6/30/2022 12:41:57 PM
RCRA METALS - SW6010/7470A					SW6010B	Analyst: MRM
METALS IN WATER BY ICP, TOTALS						
Barium	0.627	0.0100		mg/L	1	6/29/2022 12:33:04 PM
Cadmium	< 0.00500	0.00500		mg/L	1	6/29/2022 12:33:04 PM

Qualifiers:	H	Holding times for preparation or analysis exceeded	M	Matrix Interference
	ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits
	RL	Reporting Limit	S	Spike Recovery outside accepted recovery limits
	SDL	Sample detection limit	U	Analyte not detected
	W	Sample container temperature is out of limit as specified at testcode		



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Analytical Report

(consolidated)

WO#: 22061147

Date Reported: 7/8/2022

CLIENT: ICON Environmental Services **Collection Date:** 6/22/2022 11:20:00 AM
Project: Grand River - Levert
Lab ID: 22061147-002 **Matrix:** AQUEOUS
Client Sample ID LT-5

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
RCRA METALS - SW6010/7470A				SW6010B	Analyst: MRM	
METALS IN WATER BY ICP, TOTALS						
Calcium	167	0.500		mg/L	1	6/29/2022 12:33:04 PM
Chromium	< 0.0100	0.0100		mg/L	1	6/29/2022 12:33:04 PM
Iron	28.4	0.0100		mg/L	1	6/29/2022 12:33:04 PM
Lead	< 0.0100	0.0100		mg/L	1	6/29/2022 12:33:04 PM
Magnesium	60.7	0.500		mg/L	1	6/29/2022 12:33:04 PM
Manganese	1.96	0.0500		mg/L	1	6/29/2022 12:33:04 PM
Potassium	< 5.00	5.00		mg/L	1	6/29/2022 12:33:04 PM
Sodium	72.1	5.00		mg/L	1	6/29/2022 12:33:04 PM
Strontium	1.18	0.0100		mg/L	1	6/29/2022 12:33:04 PM
Zinc	0.0172	0.0100		mg/L	1	6/29/2022 12:33:04 PM
RCRA METALS - SW6010/7470A				SW6020A	Analyst: MRB	
METALS IN WATER BY ICP-MS, TOTAL						
Arsenic	28.0	2.50		µg/L	10	6/28/2022 12:11:40 PM
ALKALINITY; TOTAL, CARB, BICARB				SM2320 B	Analyst: AD	
Alkalinity, Bicarbonate (As CaCO3)	465	20.0		mgCaCO3/L	1	7/5/2022 8:57:00 AM
Alkalinity, Carbonate (As CaCO3)	< 20.0	20.0		mgCaCO3/L	1	7/5/2022 8:57:00 AM
Alkalinity, Phenolphthalein	< 20.0	20.0		mgCaCO3/L	1	7/5/2022 8:57:00 AM
Alkalinity, Total (As CaCO3)	465	20.0		mgCaCO3/L	1	7/5/2022 8:57:00 AM
TOTAL DISSOLVED SOLIDS				SM2540C	Analyst: GMS	
Total Dissolved Solids (Residue, Filterable)	925	50.0		mg/L	5	6/27/2022 8:06:00 AM

Qualifiers:	H	Holding times for preparation or analysis exceeded	M	Matrix Interference
	ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits
	RL	Reporting Limit	S	Spike Recovery outside accepted recovery limits
	SDL	Sample detection limit	U	Analyte not detected
	W	Sample container temperature is out of limit as specified at testcode		



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QC SUMMARY REPORT

WO#: 22061147
 08-Jul-22

Client: ICON Environmental Services
Project: Grand River - Levert

BatchID: 44238

Sample ID	MB-44238	SampType:	MBLK	TestCode:	6010_W	Units:	mg/L	Prep Date:	6/26/2022	RunNo:	111000					
Client ID:	PBW	Batch ID:	44238	TestNo:	SW6010B			Analysis Date:	6/29/2022	SeqNo:	2741068					
Analyte		Result		PQL		SPK value		SPK Ref Val		%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Barium		< 0.0100		0.0100												
Cadmium		< 0.00500		0.00500												
Calcium		< 0.500		0.500												
Chromium		< 0.0100		0.0100												
Iron		< 0.0100		0.0100												
Lead		< 0.0100		0.0100												
Magnesium		< 0.500		0.500												
Manganese		< 0.0500		0.0500												
Potassium		< 5.00		5.00												
Sodium		< 10.0		10.0												
Strontium		< 0.0100		0.0100												
Zinc		< 0.0100		0.0100												

Sample ID	LCS-44238	SampType:	LCS	TestCode:	6010_W	Units:	mg/L	Prep Date:	6/26/2022	RunNo:	111000					
Client ID:	LCSW	Batch ID:	44238	TestNo:	SW6010B			Analysis Date:	6/29/2022	SeqNo:	2741069					
Analyte		Result		PQL		SPK value		SPK Ref Val		%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Barium		0.511		0.0100		0.5000		0		102	80	120				
Cadmium		0.507		0.00500		0.5000		0		101	80	120				
Calcium		52.1		0.500		50.00		0		104	80	120				
Chromium		0.518		0.0100		0.5000		0		104	80	120				
Iron		0.508		0.0100		0.5000		0		102	80	120				
Lead		0.506		0.0100		0.5000		0		101	80	120				
Magnesium		52.0		0.500		50.00		0		104	80	120				
Manganese		0.545		0.0500		0.5000		0		109	80	120				

Qualifiers:
 H Holding times for preparation or analysis exceeded
 R RPD outside accepted recovery limits
 SDL Sample detection limit

M Matrix Interference
 RL Reporting Limit
 U Analyte not detected

ND Not Detected at the Reporting Limit
 S Spike Recovery outside accepted recovery limits
 W Sample container temperature is out of limit as sp



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QC SUMMARY REPORT

WO#: 22061147
 08-Jul-22

Client: ICON Environmental Services
Project: Grand River - Levert

BatchID: 44238

Sample ID	LCS-44238	SampType:	LCS	TestCode:	6010_W	Units:	mg/L	Prep Date:	6/26/2022	RunNo:	111000
Client ID:	LCSW	Batch ID:	44238	TestNo:	SW6010B			Analysis Date:	6/29/2022	SeqNo:	2741069
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Potassium	52.0	5.00	50.00	0	104	80	120				
Sodium	53.0	10.0	50.00	0	106	80	120				
Strontium	0.515	0.0100	0.5000	0	103	80	120				
Zinc	0.506	0.0100	0.5000	0	101	80	120				

Sample ID	LCSD-44238	SampType:	LCSD	TestCode:	6010_W	Units:	mg/L	Prep Date:	6/26/2022	RunNo:	111000
Client ID:	LCSS02	Batch ID:	44238	TestNo:	SW6010B			Analysis Date:	6/29/2022	SeqNo:	2741070
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Barium	0.505	0.0100	0.5000	0	101	80	120	0.5111	1.15	20	
Cadmium	0.501	0.00500	0.5000	0	100	80	120	0.5072	1.13	20	
Calcium	49.7	0.500	50.00	0	99.4	80	120	52.15	4.80	20	
Chromium	0.510	0.0100	0.5000	0	102	80	120	0.5179	1.46	20	
Iron	0.502	0.0100	0.5000	0	100	80	120	0.5082	1.25	20	
Lead	0.504	0.0100	0.5000	0	101	80	120	0.5059	0.374	20	
Magnesium	49.7	0.500	50.00	0	99.4	80	120	51.96	4.48	20	
Manganese	0.544	0.0500	0.5000	0	109	80	120	0.5449	0.0716	20	
Potassium	49.6	5.00	50.00	0	99.3	80	120	52.03	4.69	20	
Sodium	52.2	10.0	50.00	0	104	80	120	52.99	1.59	20	
Strontium	0.509	0.0100	0.5000	0	102	80	120	0.5147	1.20	20	
Zinc	0.505	0.0100	0.5000	0	101	80	120	0.5057	0.162	20	

Qualifiers:
 H Holding times for preparation or analysis exceeded
 R RPD outside accepted recovery limits
 SDL Sample detection limit

M Matrix Interference
 RL Reporting Limit
 U Analyte not detected

ND Not Detected at the Reporting Limit
 S Spike Recovery outside accepted recovery limits
 W Sample container temperature is out of limit as sp



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QC SUMMARY REPORT

WO#: 22061147
 08-Jul-22

Client: ICON Environmental Services
Project: Grand River - Levert

BatchID: 44238

Sample ID	22061144-002DMS	SampType: MS	TestCode: 6010_W	Units: mg/L	Prep Date: 6/26/2022	RunNo: 111000					
Client ID:	ZZZZZZ	Batch ID: 44238	TestNo: SW6010B	Analysis Date: 6/29/2022	SeqNo: 2741073						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Barium	1.20	0.0100	0.5000	0.6984	100	75	125				
Cadmium	0.518	0.00500	0.5000	0.001440	103	75	125				
Calcium	156	0.500	50.00	104.6	104	75	125				
Chromium	0.517	0.0100	0.5000	0	103	75	125				
Iron	2.72	0.0100	0.5000	2.224	100	75	125				
Lead	0.502	0.0100	0.5000	0	100	75	125				
Magnesium	90.3	0.500	50.00	37.82	105	75	125				
Manganese	1.04	0.0500	0.5000	0.5445	99.7	75	125				
Potassium	58.8	5.00	50.00	5.309	107	75	125				
Sodium	250	10.0	50.00	195.9	108	75	125				
Strontium	1.15	0.0100	0.5000	0.6420	102	75	125				
Zinc	0.517	0.0100	0.5000	0	103	75	125				

Sample ID	22061144-002DMSD	SampType: MSD	TestCode: 6010_W	Units: mg/L	Prep Date: 6/26/2022	RunNo: 111000					
Client ID:	ZZZZZZ	Batch ID: 44238	TestNo: SW6010B	Analysis Date: 6/29/2022	SeqNo: 2741078						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Barium	1.20	0.0100	0.5000	0.6984	101	75	125	1.200	0.201	20	
Cadmium	0.514	0.00500	0.5000	0.001440	102	75	125	0.5177	0.793	20	
Calcium	158	0.500	50.00	104.6	107	75	125	156.4	1.12	20	
Chromium	0.510	0.0100	0.5000	0	102	75	125	0.5166	1.30	20	
Iron	2.75	0.0100	0.5000	2.224	106	75	125	2.724	1.12	20	
Lead	0.499	0.0100	0.5000	0	99.9	75	125	0.5023	0.567	20	
Magnesium	90.9	0.500	50.00	37.82	106	75	125	90.32	0.604	20	
Manganese	1.04	0.0500	0.5000	0.5445	99.6	75	125	1.043	0.0355	20	

Qualifiers:
 H Holding times for preparation or analysis exceeded
 R RPD outside accepted recovery limits
 SDL Sample detection limit

M Matrix Interference
 RL Reporting Limit
 U Analyte not detected

ND Not Detected at the Reporting Limit
 S Spike Recovery outside accepted recovery limits
 W Sample container temperature is out of limit as sp



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QC SUMMARY REPORT

WO#: 22061147
 08-Jul-22

Client: ICON Environmental Services
Project: Grand River - Levert

BatchID: 44238

Sample ID	22061144-002DMSD	SampType:	MSD	TestCode:	6010_W	Units:	mg/L	Prep Date:	6/26/2022	RunNo:	111000
Client ID:	ZZZZZZ	Batch ID:	44238	TestNo:	SW6010B			Analysis Date:	6/29/2022	SeqNo:	2741078
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Potassium	58.9	5.00	50.00	5.309	107	75	125	58.78	0.186	20	
Sodium	254	10.0	50.00	195.9	117	75	125	250.0	1.67	20	
Strontium	1.16	0.0100	0.5000	0.6420	104	75	125	1.152	0.647	20	
Zinc	0.518	0.0100	0.5000	0	104	75	125	0.5167	0.288	20	

Qualifiers:
 H Holding times for preparation or analysis exceeded
 R RPD outside accepted recovery limits
 SDL Sample detection limit

M Matrix Interference
 RL Reporting Limit
 U Analyte not detected

ND Not Detected at the Reporting Limit
 S Spike Recovery outside accepted recovery limits
 W Sample container temperature is out of limit as sp



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QC SUMMARY REPORT

WO#: 22061147
 08-Jul-22

Client: ICON Environmental Services
Project: Grand River - Levert

BatchID: 44239

Sample ID	MB-44239	SampType:	MBLK	TestCode:	6020A_W	Units:	µg/L	Prep Date:	6/26/2022	RunNo:	110960			
Client ID:	PBW	Batch ID:	44239	TestNo:	SW6020A			Analysis Date:	6/28/2022	SeqNo:	2739892			
Analyte		Result		PQL	SPK value	SPK Ref Val		%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic		< 0.250		0.250										

Sample ID	LCS-44239	SampType:	LCS	TestCode:	6020A_W	Units:	µg/L	Prep Date:	6/26/2022	RunNo:	110960			
Client ID:	LCSW	Batch ID:	44239	TestNo:	SW6020A			Analysis Date:	6/28/2022	SeqNo:	2739893			
Analyte		Result		PQL	SPK value	SPK Ref Val		%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic		502		5.00	500.0	0		100	80	120				

Sample ID	LCSD-44239	SampType:	LCSD	TestCode:	6020A_W	Units:	µg/L	Prep Date:	6/26/2022	RunNo:	110960			
Client ID:	LCSS02	Batch ID:	44239	TestNo:	SW6020A			Analysis Date:	6/28/2022	SeqNo:	2739894			
Analyte		Result		PQL	SPK value	SPK Ref Val		%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic		495		5.00	500.0	0		98.9	80	120	502.1	1.51	20	

Sample ID	22061144-002DMS	SampType:	MS	TestCode:	6020A_W	Units:	µg/L	Prep Date:	6/26/2022	RunNo:	110960			
Client ID:	ZZZZZZ	Batch ID:	44239	TestNo:	SW6020A			Analysis Date:	6/28/2022	SeqNo:	2739897			
Analyte		Result		PQL	SPK value	SPK Ref Val		%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic		522		5.00	500.0	24.30		99.6	75	125				

Qualifiers:
 H Holding times for preparation or analysis exceeded
 R RPD outside accepted recovery limits
 SDL Sample detection limit

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 RL Reporting Limit
 U Analyte not detected

ND Not Detected at the Reporting Limit
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 W Sample container temperature is out of limit as sp



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QC SUMMARY REPORT

WO#: 22061147
 08-Jul-22

Client: ICON Environmental Services
Project: Grand River - Levert

BatchID: 44239

Sample ID	22061144-002DMSD	SampType: MSD	TestCode: 6020A_W	Units: µg/L	Prep Date: 6/26/2022	RunNo: 110960					
Client ID: ZZZZZZ	Batch ID: 44239	TestNo: SW6020A	Analysis Date: 6/28/2022	SeqNo: 2739898							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	513	5.00	500.0	24.30	97.7	75	125	522.1	1.81	20	

Qualifiers:
 H Holding times for preparation or analysis exceeded
 R RPD outside accepted recovery limits
 SDL Sample detection limit

M Matrix Interference
 RL Reporting Limit
 U Analyte not detected

ND Not Detected at the Reporting Limit
 S Spike Recovery outside accepted recovery limits
 W Sample container temperature is out of limit as sp



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QC SUMMARY REPORT

WO#: 22061147
 08-Jul-22

Client: ICON Environmental Services
Project: Grand River - Levert

BatchID: 44247

Sample ID	22061144-003cdup	SampType:	DUP	TestCode:	8015_DO_W_	Units:	mg/L	Prep Date:	6/27/2022	RunNo:	111018
Client ID:	ZZZZZZ	Batch ID:	44247	TestNo:	SW8015B		SW3511	Analysis Date:	6/30/2022	SeqNo:	2741477
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
TPH (Diesel Range)	0.195	0.126						0.1957	0.292	40	
TPH (Oil Range)	< 0.117	0.117						0	0	40	
Surr: 4-Terphenyl-d14	0.0929		0.05558		167	51.4	146		0	0	SM

Sample ID	LCSD-D44247	SampType:	LCSD	TestCode:	8015_DO_W_	Units:	mg/L	Prep Date:	6/27/2022	RunNo:	111018
Client ID:	LCSS02	Batch ID:	44247	TestNo:	SW8015B		SW3511	Analysis Date:	6/29/2022	SeqNo:	2741482
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
TPH (Diesel Range)	1.72	0.128	1.691	0	102	70	130	2.035	16.8	14.1	R
Surr: 4-Terphenyl-d14	0.0740		0.05635		131	51.4	146		0	40	

NOTES:
 R - LCS/LCSD RPD above the control limit. Recovery of the analyte was within the acceptance limits in both LCS/LCSD.

Sample ID	LCSD-M44247	SampType:	LCSD	TestCode:	8015_DO_W_	Units:	mg/L	Prep Date:	6/27/2022	RunNo:	111018
Client ID:	LCSS02	Batch ID:	44247	TestNo:	SW8015B		SW3511	Analysis Date:	6/29/2022	SeqNo:	2741483
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
TPH (Oil Range)	2.11	0.119	1.700	0	124	70	130	1.849	13.4	23.2	
Surr: 4-Terphenyl-d14	0.0902		0.05665		159	51.4	146		0	40	S

Qualifiers:
 H Holding times for preparation or analysis exceeded
 R RPD outside accepted recovery limits
 SDL Sample detection limit

M Matrix Interference
 RL Reporting Limit
 U Analyte not detected

ND Not Detected at the Reporting Limit
 S Spike Recovery outside accepted recovery limits
 W Sample container temperature is out of limit as sp



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QC SUMMARY REPORT

WO#: 22061147
 08-Jul-22

Client: ICON Environmental Services
Project: Grand River - Levert

BatchID: 44247

Sample ID	LCS-M44247	SampType:	LCS	TestCode:	8015_DO_W_	Units:	mg/L	Prep Date:	6/27/2022	RunNo:	111018					
Client ID:	LCSW	Batch ID:	44247	TestNo:	SW8015B		SW3511	Analysis Date:	6/29/2022	SeqNo:	2741484					
Analyte		Result		PQL		SPK value		SPK Ref Val		%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

TPH (Oil Range) 1.85 0.119 1.693 0 109 70 130
 Surr: 4-Terphenyl-d14 0.0789 0.05643 140 51.4 146

Sample ID	MB-44247	SampType:	MBLK	TestCode:	8015_DO_W_	Units:	mg/L	Prep Date:	6/27/2022	RunNo:	111018					
Client ID:	PBW	Batch ID:	44247	TestNo:	SW8015B		SW3511	Analysis Date:	6/29/2022	SeqNo:	2741485					
Analyte		Result		PQL		SPK value		SPK Ref Val		%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

TPH (Diesel Range) < 0.137 0.137
 TPH (Oil Range) < 0.127 0.127
 Surr: 4-Terphenyl-d14 0.0844 0.06035 140 51.4 146

Sample ID	LCS-D44247	SampType:	LCS	TestCode:	8015_DO_W_	Units:	mg/L	Prep Date:	6/27/2022	RunNo:	111018					
Client ID:	LCSW	Batch ID:	44247	TestNo:	SW8015B		SW3511	Analysis Date:	7/5/2022	SeqNo:	2744423					
Analyte		Result		PQL		SPK value		SPK Ref Val		%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

TPH (Diesel Range) 2.04 0.128 1.691 0 120 70 130
 Surr: 4-Terphenyl-d14 0.0717 0.05637 127 51.4 146

Qualifiers:
 H Holding times for preparation or analysis exceeded
 R RPD outside accepted recovery limits
 SDL Sample detection limit

M Matrix Interference
 RL Reporting Limit
 U Analyte not detected

ND Not Detected at the Reporting Limit
 S Spike Recovery outside accepted recovery limits
 W Sample container temperature is out of limit as sp



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QC SUMMARY REPORT

WO#: 22061147
 08-Jul-22

Client: ICON Environmental Services
Project: Grand River - Levert

BatchID: 44263

Sample ID	MB-44263	SampType:	MBLK	TestCode:	HG_W_7470	Units:	mg/L	Prep Date:	6/28/2022	RunNo:	110997			
Client ID:	PBW	Batch ID:	44263	TestNo:	SW7470A			Analysis Date:	6/29/2022	SeqNo:	2740864			
Analyte		Result		PQL	SPK value	SPK Ref Val		%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury		< 0.000200		0.000200										

Sample ID	LCS-44263	SampType:	LCS	TestCode:	HG_W_7470	Units:	mg/L	Prep Date:	6/28/2022	RunNo:	110997			
Client ID:	LCSW	Batch ID:	44263	TestNo:	SW7470A			Analysis Date:	6/29/2022	SeqNo:	2740865			
Analyte		Result		PQL	SPK value	SPK Ref Val		%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury		0.00982		0.000200	0.01000	0		98.2	80	120				

Sample ID	LCSD-44263	SampType:	LCSD	TestCode:	HG_W_7470	Units:	mg/L	Prep Date:	6/28/2022	RunNo:	110997			
Client ID:	LCSS02	Batch ID:	44263	TestNo:	SW7470A			Analysis Date:	6/29/2022	SeqNo:	2740866			
Analyte		Result		PQL	SPK value	SPK Ref Val		%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury		0.00964		0.000200	0.01000	0		96.4	80	120	0.009817	1.86	20	

Sample ID	22061144-003DMS	SampType:	MS	TestCode:	HG_W_7470	Units:	mg/L	Prep Date:	6/28/2022	RunNo:	110997			
Client ID:	ZZZZZZ	Batch ID:	44263	TestNo:	SW7470A			Analysis Date:	6/29/2022	SeqNo:	2740868			
Analyte		Result		PQL	SPK value	SPK Ref Val		%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury		0.0101		0.000200	0.01000	0		101	75	125				

Qualifiers:
 H Holding times for preparation or analysis exceeded
 R RPD outside accepted recovery limits
 SDL Sample detection limit

M Matrix Interference
 RL Reporting Limit
 U Analyte not detected

ND Not Detected at the Reporting Limit
 S Spike Recovery outside accepted recovery limits
 W Sample container temperature is out of limit as sp



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QC SUMMARY REPORT

WO#: 22061147
 08-Jul-22

Client: ICON Environmental Services
Project: Grand River - Levert

BatchID: 44263

Sample ID	22061144-003DMSD	SampType:	MSD	TestCode:	HG_W_7470	Units:	mg/L	Prep Date:	6/28/2022	RunNo:	110997											
Client ID:	ZZZZZZ	Batch ID:	44263	TestNo:	SW7470A			Analysis Date:	6/29/2022	SeqNo:	2740869											
Analyte		Result		PQL		SPK value		SPK Ref Val		%REC		LowLimit		HighLimit		RPD Ref Val		%RPD		RPDLimit		Qual
Mercury		0.0104		0.000200		0.01000		0		104		75		125		0.01013		2.53		20		

Qualifiers:
 H Holding times for preparation or analysis exceeded
 R RPD outside accepted recovery limits
 SDL Sample detection limit

M Matrix Interference
 RL Reporting Limit
 U Analyte not detected

ND Not Detected at the Reporting Limit
 S Spike Recovery outside accepted recovery limits
 W Sample container temperature is out of limit as sp



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QC SUMMARY REPORT

WO#: 22061147
 08-Jul-22

Client: ICON Environmental Services
Project: Grand River - Levert

BatchID: R110912

Sample ID	MB-R110912	SampType:	MBLK	TestCode:	TDS_2540C	Units:	mg/L	Prep Date:		RunNo:	110912					
Client ID:	PBW	Batch ID:	R110912	TestNo:	SM2540C			Analysis Date:	6/27/2022	SeqNo:	2739682					
Analyte		Result		PQL		SPK value		SPK Ref Val		%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Total Dissolved Solids (Residue, Filterable) < 10.0 10.0

Sample ID	LCS-R110912	SampType:	LCS	TestCode:	TDS_2540C	Units:	mg/L	Prep Date:		RunNo:	110912					
Client ID:	LCSW	Batch ID:	R110912	TestNo:	SM2540C			Analysis Date:	6/27/2022	SeqNo:	2739683					
Analyte		Result		PQL		SPK value		SPK Ref Val		%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Total Dissolved Solids (Residue, Filterable) 1,000 10.0 1,000 0 100 85 115

Sample ID	LCSD-R110912	SampType:	LCSD	TestCode:	TDS_2540C	Units:	mg/L	Prep Date:		RunNo:	110912					
Client ID:	LCSS02	Batch ID:	R110912	TestNo:	SM2540C			Analysis Date:	6/27/2022	SeqNo:	2739684					
Analyte		Result		PQL		SPK value		SPK Ref Val		%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Total Dissolved Solids (Residue, Filterable) 1,020 10.0 1,000 0 102 85 115 1,003 1.29 10

Sample ID	22061144-001ADUP	SampType:	DUP	TestCode:	TDS_2540C	Units:	mg/L	Prep Date:		RunNo:	110912					
Client ID:	ZZZZZZ	Batch ID:	R110912	TestNo:	SM2540C			Analysis Date:	6/27/2022	SeqNo:	2739686					
Analyte		Result		PQL		SPK value		SPK Ref Val		%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Total Dissolved Solids (Residue, Filterable) 248 10.0 245.0 1.22 10

Qualifiers: H Holding times for preparation or analysis exceeded M Matrix Interference ND Not Detected at the Reporting Limit
 R RPD outside accepted recovery limits RL Reporting Limit S Spike Recovery outside accepted recovery limits
 SDL Sample detection limit U Analyte not detected W Sample container temperature is out of limit as sp



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QC SUMMARY REPORT

WO#: 22061147
 08-Jul-22

Client: ICON Environmental Services
Project: Grand River - Levert

BatchID: R110912

Sample ID	22061144-001ADUP	SampType:	DUP	TestCode:	TDS_2540C	Units:	mg/L	Prep Date:		RunNo:	110912			
Client ID:	ZZZZZZ	Batch ID:	R110912	TestNo:	SM2540C			Analysis Date:	6/27/2022	SeqNo:	2739686			
Analyte		Result		PQL	SPK value	SPK Ref Val		%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Sample ID	22061147-002ADUP	SampType:	DUP	TestCode:	TDS_2540C	Units:	mg/L	Prep Date:		RunNo:	110912			
Client ID:	LT-5	Batch ID:	R110912	TestNo:	SM2540C			Analysis Date:	6/27/2022	SeqNo:	2739692			
Analyte		Result		PQL	SPK value	SPK Ref Val		%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Dissolved Solids (Residue, Filterable)		895		50.0							925.0	3.30	10	

Qualifiers:
 H Holding times for preparation or analysis exceeded
 R RPD outside accepted recovery limits
 SDL Sample detection limit

M Matrix Interference
 RL Reporting Limit
 U Analyte not detected

ND Not Detected at the Reporting Limit
 S Spike Recovery outside accepted recovery limits
 W Sample container temperature is out of limit as sp



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QC SUMMARY REPORT

WO#: 22061147
 08-Jul-22

Client: ICON Environmental Services
Project: Grand River - Levert

BatchID: R111048

Sample ID	MBLK	SampType:	MBLK	TestCode:	9056_W	Units:	mg/L	Prep Date:		RunNo:	111048			
Client ID:	PBW	Batch ID:	R111048	TestNo:	SW9056A			Analysis Date:	6/30/2022	SeqNo:	2742263			
Analyte		Result		PQL	SPK value	SPK Ref Val		%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride		< 0.250		0.250										
Sulfate		< 0.250		0.250										

Sample ID	LCS	SampType:	LCS	TestCode:	9056_W	Units:	mg/L	Prep Date:		RunNo:	111048			
Client ID:	LCSW	Batch ID:	R111048	TestNo:	SW9056A			Analysis Date:	6/30/2022	SeqNo:	2742264			
Analyte		Result		PQL	SPK value	SPK Ref Val		%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride		10.1		0.250	10.00	0		101	80	120				
Sulfate		9.62		0.250	10.00	0		96.2	80	120				

Sample ID	LCSD	SampType:	LCSD	TestCode:	9056_W	Units:	mg/L	Prep Date:		RunNo:	111048			
Client ID:	LCSS02	Batch ID:	R111048	TestNo:	SW9056A			Analysis Date:	6/30/2022	SeqNo:	2742265			
Analyte		Result		PQL	SPK value	SPK Ref Val		%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride		10.1		0.250	10.00	0		101	80	120	10.09	0.302	15	
Sulfate		9.59		0.250	10.00	0		95.9	80	120	9.618	0.281	15	

Sample ID	22061329-001DMS	SampType:	MS	TestCode:	9056_W	Units:	mg/L	Prep Date:		RunNo:	111048			
Client ID:	ZZZZZ	Batch ID:	R111048	TestNo:	SW9056A			Analysis Date:	6/30/2022	SeqNo:	2742268			
Analyte		Result		PQL	SPK value	SPK Ref Val		%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride		5.29		0.250	5.000	0.2302		101	80	120				

Qualifiers:
 H Holding times for preparation or analysis exceeded
 R RPD outside accepted recovery limits
 SDL Sample detection limit

M Matrix Interference
 RL Reporting Limit
 U Analyte not detected

ND Not Detected at the Reporting Limit
 S Spike Recovery outside accepted recovery limits
 W Sample container temperature is out of limit as sp



Element Materials Technology Lafayette
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 TEL: (337) 235-0483 FAX: (337) 233-6540
 Website: www.element.com

QC SUMMARY REPORT

WO#: 22061147
 08-Jul-22

Client: ICON Environmental Services
Project: Grand River - Levert

BatchID: R111048

Sample ID	22061329-001DMS	SampType:	MS	TestCode:	9056_W	Units:	mg/L	Prep Date:		RunNo:	111048											
Client ID:	ZZZZZZ	Batch ID:	R111048	TestNo:	SW9056A			Analysis Date:	6/30/2022	SeqNo:	2742268											
Analyte		Result		PQL		SPK value		SPK Ref Val		%REC		LowLimit		HighLimit		RPD Ref Val		%RPD		RPDLimit		Qual
Sulfate		5.54		0.250		5.000		0.6550		97.7		80		120								

Sample ID	22061329-001DMSD	SampType:	MSD	TestCode:	9056_W	Units:	mg/L	Prep Date:		RunNo:	111048											
Client ID:	ZZZZZZ	Batch ID:	R111048	TestNo:	SW9056A			Analysis Date:	6/30/2022	SeqNo:	2742269											
Analyte		Result		PQL		SPK value		SPK Ref Val		%REC		LowLimit		HighLimit		RPD Ref Val		%RPD		RPDLimit		Qual
Chloride		5.48		0.250		5.000		0.2302		105		80		120		5.286		3.67		15		
Sulfate		5.54		0.250		5.000		0.6550		97.7		80		120		5.539		0.0239		15		

Qualifiers:
 H Holding times for preparation or analysis exceeded
 R RPD outside accepted recovery limits
 SDL Sample detection limit

M Matrix Interference
 RL Reporting Limit
 U Analyte not detected

ND Not Detected at the Reporting Limit
 S Spike Recovery outside accepted recovery limits
 W Sample container temperature is out of limit as sp



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QC SUMMARY REPORT

WO#: 22061147
 08-Jul-22

Client: ICON Environmental Services

Project: Grand River - Levert

BatchID: R111049

Sample ID	BTEX LCS	SampType: LCS	TestCode: 8021_BTEX_	Units: mg/L	Prep Date:	RunNo: 111049					
Client ID:	LCSW	Batch ID: R111049	TestNo: SW8021B	Analysis Date: 6/30/2022	SeqNo: 2742329						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	0.0465	0.00500	0.05000	0	93.0	72	120				
Ethylbenzene	0.0490	0.00500	0.05000	0	98.0	76	129				
m,p-Xylene	0.0985	0.0100	0.1000	0	98.5	75	125				
o-Xylene	0.0469	0.00500	0.05000	0	93.8	75	125				
Toluene	0.0471	0.0100	0.05000	0	94.2	78	120				
Xylenes, Total	0.146	0.0500	0.1500	0	97.0	75	125				
Surr: alpha, alpha, alpha-Trifluorotoluene	0.0454		0.05000		90.8	70	130				

Sample ID	BTEX LCSD	SampType: LCSD	TestCode: 8021_BTEX_	Units: mg/L	Prep Date:	RunNo: 111049					
Client ID:	LCSS02	Batch ID: R111049	TestNo: SW8021B	Analysis Date: 6/30/2022	SeqNo: 2742330						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	0.0475	0.00500	0.05000	0	95.0	72	120	0.04650	2.13	20	
Ethylbenzene	0.0500	0.00500	0.05000	0	100	76	129	0.04900	2.02	20	
m,p-Xylene	0.101	0.0100	0.1000	0	101	75	125	0.09850	2.51	20	
o-Xylene	0.0477	0.00500	0.05000	0	95.4	75	125	0.04690	1.69	20	
Toluene	0.0479	0.0100	0.05000	0	95.8	78	120	0.04710	1.68	20	
Xylenes, Total	0.149	0.0500	0.1500	0	99.1	75	125	0.1455	2.18	20	
Surr: alpha, alpha, alpha-Trifluorotoluene	0.0435		0.05000		87.0	70	130		0	20	

Qualifiers:

- | | | | | | |
|-----|--|----|----------------------|----|--|
| H | Holding times for preparation or analysis exceeded | M | Matrix Interference | ND | Not Detected at the Reporting Limit |
| R | RPD outside accepted recovery limits | RL | Reporting Limit | S | Spike Recovery outside accepted recovery limits |
| SDL | Sample detection limit | U | Analyte not detected | W | Sample container temperature is out of limit as sp |



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QC SUMMARY REPORT

WO#: 22061147
 08-Jul-22

Client: ICON Environmental Services
Project: Grand River - Levert

BatchID: R111049

Sample ID	MBLK ACID	SampType:	MBLK	TestCode:	8021_BTEX_	Units:	mg/L	Prep Date:		RunNo:	111049			
Client ID:	PBW	Batch ID:	R111049	TestNo:	SW8021B			Analysis Date:	6/30/2022	SeqNo:	2742331			
Analyte		Result		PQL		SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene		< 0.00500		0.00500										
Ethylbenzene		< 0.00500		0.00500										
m,p-Xylene		< 0.0100		0.0100										
o-Xylene		< 0.00500		0.00500										
Toluene		< 0.0100		0.0100										
Xylenes, Total		< 0.0500		0.0500										
Surr: alpha, alpha, alpha-Trifluorotoluene		0.0408				0.05000		81.6	70	130				

Qualifiers:
 H Holding times for preparation or analysis exceeded
 R RPD outside accepted recovery limits
 SDL Sample detection limit

M Matrix Interference
 RL Reporting Limit
 U Analyte not detected

ND Not Detected at the Reporting Limit
 S Spike Recovery outside accepted recovery limits
 W Sample container temperature is out of limit as sp



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QC SUMMARY REPORT

WO#: 22061147
 08-Jul-22

Client: ICON Environmental Services
Project: Grand River - Levert

BatchID: R111052

Sample ID	GAS LCS	SampType: LCS	TestCode: 8015_G_W	Units:	Prep Date:	RunNo: 111052					
Client ID:	LCSW	Batch ID: R111052	TestNo: SW8015B		Analysis Date: 6/30/2022	SeqNo: 2742411					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
TPH (Gasoline Range)	14.7	0.150	12.50	0	118	80	130				
Surr: alpha, alpha, alpha-Trifluorotoluene	0.0635		0.05000		127	70	130				

Sample ID	GAS LCSD	SampType: LCSD	TestCode: 8015_G_W	Units:	Prep Date:	RunNo: 111052					
Client ID:	LCSS02	Batch ID: R111052	TestNo: SW8015B		Analysis Date: 6/30/2022	SeqNo: 2742412					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
TPH (Gasoline Range)	14.1	0.150	12.50	0	113	80	130	14.74	4.31	20	
Surr: alpha, alpha, alpha-Trifluorotoluene	0.0621		0.05000		124	70	130		0	20	

Sample ID	MBLK ACID	SampType: MBLK	TestCode: 8015_G_W	Units: mg/L	Prep Date:	RunNo: 111052					
Client ID:	PBW	Batch ID: R111052	TestNo: SW8015B		Analysis Date: 6/30/2022	SeqNo: 2742413					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
TPH (Gasoline Range)	< 0.150	0.150									
Surr: alpha, alpha, alpha-Trifluorotoluene	0.0465		0.05000		93.0	70	130				

Qualifiers:
 H Holding times for preparation or analysis exceeded
 R RPD outside accepted recovery limits
 SDL Sample detection limit

M Matrix Interference
 RL Reporting Limit
 U Analyte not detected

ND Not Detected at the Reporting Limit
 S Spike Recovery outside accepted recovery limits
 W Sample container temperature is out of limit as sp



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QC SUMMARY REPORT

WO#: 22061147
 08-Jul-22

Client: ICON Environmental Services
Project: Grand River - Levert

BatchID: R111094

Sample ID MB-R111094	SampType: MBLK	TestCode: ALK	Units: mgCaCO3/L	Prep Date:	RunNo: 111094						
Client ID: PBW	Batch ID: R111094	TestNo: SM2320 B		Analysis Date: 7/5/2022	SeqNo: 2743209						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Bicarbonate (As CaCO3)	< 20.0	20.0									
Alkalinity, Carbonate (As CaCO3)	< 20.0	20.0									
Alkalinity, Phenolphthalein	< 20.0	20.0									
Alkalinity, Total (As CaCO3)	< 20.0	20.0									

Sample ID LCS-R111094	SampType: LCS	TestCode: ALK	Units: mgCaCO3/L	Prep Date:	RunNo: 111094						
Client ID: LCSW	Batch ID: R111094	TestNo: SM2320 B		Analysis Date: 7/5/2022	SeqNo: 2743210						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total (As CaCO3)	49.0	20.0	50.00	0	98.0	80	120				

Sample ID 22061144-003ADUP	SampType: DUP	TestCode: ALK	Units: mgCaCO3/L	Prep Date:	RunNo: 111094						
Client ID: ZZZZZZ	Batch ID: R111094	TestNo: SM2320 B		Analysis Date: 7/5/2022	SeqNo: 2743214						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Bicarbonate (As CaCO3)	300	20.0						312.5	4.08	20	
Alkalinity, Carbonate (As CaCO3)	< 20.0	20.0						0	0	20	
Alkalinity, Phenolphthalein	< 20.0	20.0						0	0	20	
Alkalinity, Total (As CaCO3)	300	20.0						312.5	4.08	20	

Qualifiers:
 H Holding times for preparation or analysis exceeded
 R RPD outside accepted recovery limits
 SDL Sample detection limit

M Matrix Interference
 RL Reporting Limit
 U Analyte not detected

ND Not Detected at the Reporting Limit
 S Spike Recovery outside accepted recovery limits
 W Sample container temperature is out of limit as sp






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Sample Log-In Check List

Client Name: **ICON_ENV**

Work Order Number: **22061147**

RcptNo: **1**

Logged by:	Rhonda David	6/24/2022 1:12:00 PM	
Completed By:	Rhonda David	6/24/2022 2:53:50 PM	
Reviewed By:	Buffy Bryant	6/25/2022 1:16:15 PM	

Chain of Custody

1. Is Chain of Custody complete? Yes No Not Present
 2. How was the sample delivered? Element

Log In

3. Coolers are present? Yes No NA
 4. Shipping container/cooler in good condition? Yes No
 Custody seals intact on shipping container/cooler? Yes No Not Present
 No. Seal Date: Signed By:
 5. Was an attempt made to cool the samples? Yes No NA
 6. Were all samples received at a temperature of >0° C to 6.0°C Yes No NA
 7. Sample(s) in proper container(s)? Yes No
 8. Sufficient sample volume for indicated test(s)? Yes No
 9. Are samples (except VOA and ONG) properly preserved? Yes No
 10. Was preservative added to bottles? Yes No NA
 11. Is the headspace in the VOA vials less than 1/4 inch or 6 mm? Yes No No VOA Vials
 12. Were any sample containers received broken? Yes No
 13. Does paperwork match bottle labels? Yes No
 (Note discrepancies on chain of custody)
 14. Are matrices correctly identified on Chain of Custody? Yes No
 15. Is it clear what analyses were requested? Yes No
 16. Were all holding times able to be met? Yes No
 (If no, notify customer for authorization.)

Special Handling (if applicable)

17. Was client notified of all discrepancies with this order? Yes No NA

Person Notified:	<input type="text"/>	Date	<input type="text"/>
By Whom:	<input type="text"/>	Via:	<input type="checkbox"/> eMail <input type="checkbox"/> Phone <input type="checkbox"/> Fax <input type="checkbox"/> In Person
Regarding:	<input type="text"/>		
Client Instructions:	<input type="text"/>		

18. Additional remarks:

Cooler Information

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	1.4	Good	Not Present			



Chain of Custody

Laboratory Number: 22061147

Client Information:
 Company Name: Iron Env
 Contact Name: S. Sills
 Address: 204 Commercial Dr
 City, State Zip: Port Allen La 70767
 Phone Number: 225 344 8416
 Fax Number: Ext: 1
 E-mail Address: Ext:

Billing Information:
 PO Number:
 Quote Number:
 Required QC Level:
 Bill Monthly: Yes No

Project Name/Number: Grand River - Levert
Sampler's Signature: [Signature]
Shipping Method: UPS / FedEx / NOW
DHL / Element / Hand / Mail

Matrix Code:
 DW = Drinking Water
 WW = Waste Water
 GW = Ground Water
 AQ = Aqueous
 OT = Other
 SL = Sludge
 SO = Soil
 F = Food
 NG = Natural Gas
 PW = Produced Water
 CF = Completion Fluid

Sample ID/Description	Which Regulations Apply: <input type="checkbox"/> RCRA <input type="checkbox"/> POTW <input type="checkbox"/> NPDES <input type="checkbox"/> USDA/FDA <input type="checkbox"/> RECAP/RISC	Turn Time <input checked="" type="checkbox"/> Standard <input type="checkbox"/> RUSH <input type="checkbox"/> 1 Day <input type="checkbox"/> 2 Day <input type="checkbox"/> Other	Collection Information		Rush turn times will incur a surcharge and must be pre-approved by lab.)	Container Type Quantity	Pres. HCl, HNO ₃ , H ₂ SO ₄ , NaOH, Na ₂ SO ₃	Requested Tests	Comments
			Date	Time					
LI-4			6-22-22	1500	GR	P, V		Chlorides TDS Metals	Metals As Ba Cd Cr Fe Mn Pb Sr Zn Hg
LI-5			6-23-22	1100	AR	P, V		Anions Cations	Na Ca K Mg Anions Sulfate Alk Carbonate Alk Bicarbonate

Requisitioned by	Date/Time	Received by	Date/Time	Field Notes:
<u>[Signature]</u>	6.24.22/0800	<u>Kath Bell</u>	6.24.22/0800	Received at lab on ice?
<u>[Signature]</u>	6.24.22/0925	<u>[Signature]</u>	6.24.22/0925	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No Temp: <u>1.4°C</u>
<u>[Signature]</u>	6/24/22 1312	<u>[Signature]</u>	6/24/22 1312	

Element Materials Technology reserves the right to return unused sample portions.

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 F 812-375-0731

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 46825 USA
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 F 260-471-7777

909 Executive Dr
 Warsaw, IN
 46580 USA
 P 574-267-3305
 F 574-269-6569

3371 Cleveland Road, Suite 100A
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July 11, 2022

Greg Miller
ICON Environmental Services
2049 Commercial Drive
Port Allen, LA 70767
TEL: (225) 344-8490
FAX (225) 344-6654

RE: Grand River - Levert 9326-025-0100

Order No.: 22061154

Dear Greg Miller:

Element Materials Technology Lafayette received 24 sample(s) on 6/24/2022 for the analyses presented in the following report.

In accordance with your instructions, Element Lafayette either conducted or subcontracted these analyses. Subcontracted analyses will be identified in the accompanying case narrative. All relevant sampling information can be found on the attached Chain-of-Custody form. Unless otherwise noted, all analyses were conducted using EPA approved methodologies and all test results meet the applicable requirements of TNI. Reported results relate only to the items tested.

Where applicable, all soil data, except for 29-B, are reported on a wet-weight basis unless otherwise indicated in the units field as –dry.

LELAP Certification No.: 01997. TCEQ Certification No.: T104704261. LDHH Certification No.: LA023. ISDH Certification No.: C-LA-01. NDELCP Certification No.: R-226. A scope of accredited parameters is available upon request. A "#" by the test method or analyte indicates this parameter is outside the scope of accreditation. PA registration No.: 68-05967.

Estimated uncertainty is available upon request. This report shall not be reproduced, except in full, without the written approval of the laboratory.

If you have any questions regarding these test results, please feel free to call.

A handwritten signature in blue ink, appearing to read 'Cristina Thibeaux'.

Cristina Thibeaux
Customer Service Supervisor



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Case Narrative

WO#: 22061154

Date: 7/11/2022

CLIENT: ICON Environmental Services

Project: Grand River - Levert 9326-025-0100

Unless specified by the client, a duplicate or MS/MSD, wherever applicable, is randomly selected and analyzed from each analytical batch provided sample volume is sufficient. The sample chosen for duplicate or MS/MSD may or may not be a sample submitted in this workorder. A method blank and/or a lab control sample (LCS)/lab control sample duplicate (LCSD), wherever applicable, are processed as a quality control check for each analytical batch. When the matrix QC data is not available due to insufficient sample volume or when the results indicate possible matrix effect, the validity of the batch is determined by the method blank and LCS/LCSD.

The results of the laboratory internal quality control data are provided in the QC Summary Report section of the report for your review. Laboratory-related QC exceptions that may impact the validity of data are discussed in the case narrative. Sample-related QC exceptions are flagged either in the results page(s) or in the QC report page(s). End users should consider QC exceptions when evaluating sample data against data quality objectives.

Any other exceptions associated with this report will be footnoted in the results page(s) or the QC summary page(s).



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Analytical Report

(consolidated)

WO#: 22061154

Date Reported: 7/11/2022

CLIENT: ICON Environmental Services
Project: Grand River - Levert 9326-025-0100
Lab ID: 22061154-001
Client Sample ID SB-9 2-4'

Collection Date: 6/22/2022 10:30:00 AM

Matrix: SOIL

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
TPH-D/O IN SOIL BY SW8015					SW8015B	Analyst: EH
TPH DRO/ORO IN SOIL BY SW8015						
TPH (Diesel Range)	1,210	100		mg/Kg	10	7/5/2022 10:57:00 AM
TPH (Oil Range)	632	120		mg/Kg	10	7/5/2022 10:57:00 AM
Surr: 4-Terphenyl-d14	103	33 - 152		%Rec	10	7/5/2022 10:57:00 AM
29B METALS					SW6010B SW3050B	Analyst: MRM
METALS IN SOIL OR SLUDGE BY ICP						
Arsenic	12.7	1.92	*	mg/Kg-dry	1	6/30/2022 5:25:56 PM
Barium	3,570	14.4		mg/Kg-dry	1	6/30/2022 5:25:56 PM
29B METALS					LDNR 29-B	Analyst: MRM
TRUE TOTAL BARIUM						
True Total Barium	160,000	48.3	*	mg/Kg-dry	1	7/5/2022 4:15:03 PM
PERCENT MOISTURE					LDNR 29-B	Analyst: HXW
Percent Moisture	39.6	1.00		wt%	1	6/27/2022 11:45:00 AM

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	H	Holding times for preparation or analysis exceeded	M	Matrix Interference
	ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits
	RL	Reporting Limit	S	Spike Recovery outside accepted recovery limits
	SDL	Sample detection limit	U	Analyte not detected
	W	Sample container temperature is out of limit as specified at testcode		



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Analytical Report

(consolidated)

WO#: 22061154

Date Reported: 7/11/2022

CLIENT: ICON Environmental Services
Project: Grand River - Levert 9326-025-0100
Lab ID: 22061154-002
Client Sample ID SB-10 0-2'

Collection Date: 6/22/2022 11:35:00 AM

Matrix: SOIL

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
TPH-D/O IN SOIL BY SW8015				SW8015B	Analyst: EH	
TPH DRO/ORO IN SOIL BY SW8015						
TPH (Diesel Range)	142	10.0		mg/Kg	1	7/5/2022 11:11:00 AM
TPH (Oil Range)	157	12.0		mg/Kg	1	7/5/2022 11:11:00 AM
Surr: 4-Terphenyl-d14	80.9	33 - 152		%Rec	1	7/5/2022 11:11:00 AM
29B METALS				SW6010B	SW3050B	Analyst: MRM
METALS IN SOIL OR SLUDGE BY ICP						
Arsenic	6.35	2.00		mg/Kg-dry	1	6/30/2022 5:32:46 PM
Barium	3,370	15.0		mg/Kg-dry	1	6/30/2022 5:32:46 PM
29B METALS				LDNR 29-B	Analyst: MRM	
TRUE TOTAL BARIUM						
True Total Barium	21,600	49.7		mg/Kg-dry	1	7/5/2022 4:21:53 PM
PERCENT MOISTURE				LDNR 29-B	Analyst: HXW	
Percent Moisture	59.8	1.00		wt%	1	6/27/2022 11:45:00 AM

Qualifiers:	* Value exceeds Maximum Contaminant Level.	B Analyte detected in the associated Method Blank
	H Holding times for preparation or analysis exceeded	M Matrix Interference
	ND Not Detected at the Reporting Limit	R RPD outside accepted recovery limits
	RL Reporting Limit	S Spike Recovery outside accepted recovery limits
	SDL Sample detection limit	U Analyte not detected
	W Sample container temperature is out of limit as specified at testcode	



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Analytical Report

(consolidated)

WO#: 22061154

Date Reported: 7/11/2022

CLIENT: ICON Environmental Services
Project: Grand River - Levert 9326-025-0100
Lab ID: 22061154-003
Client Sample ID SB-10 2-4'

Collection Date: 6/22/2022 11:35:00 AM

Matrix: SOIL

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
TPH-D/O IN SOIL BY SW8015				SW8015B	Analyst: EH	
TPH DRO/ORO IN SOIL BY SW8015						
TPH (Diesel Range)	4,800	200		mg/Kg	20	7/5/2022 11:25:00 AM
TPH (Oil Range)	4,800	240		mg/Kg	20	7/5/2022 11:25:00 AM
Surr: 4-Terphenyl-d14	130	33 - 152		%Rec	20	7/5/2022 11:25:00 AM
29B METALS				SW6010B	SW3050B	Analyst: MRM
METALS IN SOIL OR SLUDGE BY ICP						
Arsenic	4.22	1.96		mg/Kg-dry	1	6/30/2022 5:35:03 PM
Barium	2,320	14.7		mg/Kg-dry	1	6/30/2022 5:35:03 PM
29B METALS				LDNR 29-B	Analyst: MRM	
TRUE TOTAL BARIUM						
True Total Barium	64,500	49.6	*	mg/Kg-dry	1	7/5/2022 4:24:10 PM
PERCENT MOISTURE				LDNR 29-B	Analyst: HXW	
Percent Moisture	44.0	1.00		wt%	1	6/27/2022 11:45:00 AM

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	H	Holding times for preparation or analysis exceeded	M	Matrix Interference
	ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits
	RL	Reporting Limit	S	Spike Recovery outside accepted recovery limits
	SDL	Sample detection limit	U	Analyte not detected
	W	Sample container temperature is out of limit as specified at testcode		



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Analytical Report

(consolidated)

WO#: 22061154

Date Reported: 7/11/2022

CLIENT: ICON Environmental Services
Project: Grand River - Levert 9326-025-0100
Lab ID: 22061154-004
Client Sample ID SB-10 4-6'

Collection Date: 6/22/2022 12:00:00 PM

Matrix: SOIL

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
TPH-D/O IN SOIL BY SW8015				SW8015B	Analyst: EH	
TPH DRO/ORO IN SOIL BY SW8015						
TPH (Diesel Range)	149	10.0		mg/Kg	1	7/5/2022 11:39:00 AM
TPH (Oil Range)	149	12.0		mg/Kg	1	7/5/2022 11:39:00 AM
Surr: 4-Terphenyl-d14	75.2	33 - 152		%Rec	1	7/5/2022 11:39:00 AM
29B METALS				SW6010B	SW3050B	Analyst: MRM
METALS IN SOIL OR SLUDGE BY ICP						
Arsenic	5.92	2.00		mg/Kg-dry	1	6/30/2022 5:37:19 PM
Barium	485	15.0		mg/Kg-dry	1	6/30/2022 5:37:19 PM
29B METALS				LDNR 29-B	Analyst: MRM	
TRUE TOTAL BARIUM						
True Total Barium	2,620	48.3		mg/Kg-dry	1	7/5/2022 4:26:26 PM
PERCENT MOISTURE				LDNR 29-B	Analyst: HXW	
Percent Moisture	51.5	1.00		wt%	1	6/27/2022 11:45:00 AM

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	H	Holding times for preparation or analysis exceeded	M	Matrix Interference
	ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits
	RL	Reporting Limit	S	Spike Recovery outside accepted recovery limits
	SDL	Sample detection limit	U	Analyte not detected
	W	Sample container temperature is out of limit as specified at testcode		



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Analytical Report

(consolidated)

WO#: 22061154

Date Reported: 7/11/2022

CLIENT: ICON Environmental Services
Project: Grand River - Levert 9326-025-0100
Lab ID: 22061154-005
Client Sample ID SB-11 0-2'

Collection Date: 6/22/2022 1:45:00 PM

Matrix: SOIL

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
HEM, OIL & GREASE					SW9071B	Analyst: HXW
HEM, Oil & Grease	< 0.05	0.05		% dry wt	1	6/27/2022 1:34:00 PM
TPH-D/O IN SOIL BY SW8015					SW8015B	Analyst: EH
TPH DRO/ORO IN SOIL BY SW8015						
TPH (Diesel Range)	141	10.0		mg/Kg	1	7/5/2022 11:53:00 AM
TPH (Oil Range)	123	12.0		mg/Kg	1	7/5/2022 11:53:00 AM
Surr: 4-Terphenyl-d14	56.8	33 - 152		%Rec	1	7/5/2022 11:53:00 AM
29B METALS					29B/SW7471A SW7471A	Analyst: BXB
MERCURY IN SOIL OR SLUDGE						
Mercury	0.523	0.108		mg/Kg-dry	1	7/6/2022 10:01:32 AM
29B METALS					SW6010B SW3050B	Analyst: MRM
METALS IN SOIL OR SLUDGE BY ICP						
Arsenic	8.47	1.91		mg/Kg-dry	1	6/30/2022 5:39:36 PM
Barium	3,740	14.3		mg/Kg-dry	1	6/30/2022 5:39:36 PM
Cadmium	1.65	0.477		mg/Kg-dry	1	6/30/2022 5:39:36 PM
Chromium	196	0.955		mg/Kg-dry	1	6/30/2022 5:39:36 PM
Lead	122	0.955		mg/Kg-dry	1	6/30/2022 5:39:36 PM
Strontium	223	0.955		mg/Kg-dry	1	6/30/2022 5:39:36 PM
Zinc	273	0.955		mg/Kg-dry	1	6/30/2022 5:39:36 PM
29B METALS					LDNR 29-B	Analyst: MRM
TRUE TOTAL BARIUM						
True Total Barium	102,000	46.9	*	mg/Kg-dry	1	7/5/2022 4:33:18 PM
PERCENT MOISTURE					LDNR 29-B	Analyst: HXW
Percent Moisture	61.9	1.00		wt%	1	6/27/2022 11:45:00 AM

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- RL Reporting Limit
- SDL Sample detection limit
- W Sample container temperature is out of limit as specified at testcode

- B Analyte detected in the associated Method Blank
- M Matrix Interference
- R RPD outside accepted recovery limits
- S Spike Recovery outside accepted recovery limits
- U Analyte not detected



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Analytical Report

(consolidated)

WO#: 22061154

Date Reported: 7/11/2022

CLIENT: ICON Environmental Services
Project: Grand River - Levert 9326-025-0100
Lab ID: 22061154-006
Client Sample ID SB-11 2-4'

Collection Date: 6/22/2022 1:45:00 PM

Matrix: SOIL

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
HEM, OIL & GREASE					SW9071B	Analyst: HXW
HEM, Oil & Grease	0.14	0.05		% dry wt	1	6/27/2022 1:34:00 PM
TPH-D/O IN SOIL BY SW8015					SW8015B	Analyst: EH
TPH DRO/ORO IN SOIL BY SW8015						
TPH (Diesel Range)	7,870	500		mg/Kg	50	7/5/2022 12:07:00 PM
TPH (Oil Range)	4,560	600		mg/Kg	50	7/5/2022 12:07:00 PM
Surr: 4-Terphenyl-d14	0	33 - 152	SD	%Rec	50	7/5/2022 12:07:00 PM
NOTES:						
SD - Surrogate diluted out due to dilution.						
29B METALS					29B/SW7471A SW7471A	Analyst: BXB
MERCURY IN SOIL OR SLUDGE						
Mercury	2.10	0.102		mg/Kg-dry	1	7/6/2022 10:14:34 AM
29B METALS					SW6010B SW3050B	Analyst: MRM
METALS IN SOIL OR SLUDGE BY ICP						
Arsenic	28.1	1.97	*	mg/Kg-dry	1	6/30/2022 5:41:53 PM
Barium	2,040	14.7		mg/Kg-dry	1	6/30/2022 5:41:53 PM
Cadmium	8.98	0.491		mg/Kg-dry	1	6/30/2022 5:41:53 PM
Chromium	327	0.983		mg/Kg-dry	1	6/30/2022 5:41:53 PM
Lead	779	0.983	*	mg/Kg-dry	1	6/30/2022 5:41:53 PM
Strontium	449	0.983		mg/Kg-dry	1	6/30/2022 5:41:53 PM
Zinc	1,390	0.983	*	mg/Kg-dry	1	6/30/2022 5:41:53 PM
29B METALS					LDNR 29-B	Analyst: MRM
TRUE TOTAL BARIUM						
True Total Barium	320,000	466	*	mg/Kg-dry	10	7/5/2022 6:25:36 PM
PERCENT MOISTURE					LDNR 29-B	Analyst: HXW
Percent Moisture	44.1	1.00		wt%	1	6/27/2022 11:45:00 AM

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- RL Reporting Limit
- SDL Sample detection limit
- W Sample container temperature is out of limit as specified at testcode

- B Analyte detected in the associated Method Blank
- M Matrix Interference
- R RPD outside accepted recovery limits
- S Spike Recovery outside accepted recovery limits
- U Analyte not detected



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Analytical Report

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WO#: 22061154

Date Reported: 7/11/2022

CLIENT: ICON Environmental Services
Project: Grand River - Levert 9326-025-0100
Lab ID: 22061154-007
Client Sample ID SB-12 0-2'

Collection Date: 6/22/2022 2:30:00 PM

Matrix: SOIL

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
HEM, OIL & GREASE					SW9071B	Analyst: HXW
HEM, Oil & Grease	< 0.05	0.05		% dry wt	1	6/27/2022 1:34:00 PM
TPH-D/O IN SOIL BY SW8015					SW8015B	Analyst: EH
TPH DRO/ORO IN SOIL BY SW8015						
TPH (Diesel Range)	29.2	10.0		mg/Kg	1	7/5/2022 12:21:00 PM
TPH (Oil Range)	85.3	12.0		mg/Kg	1	7/5/2022 12:21:00 PM
Surr: 4-Terphenyl-d14	74.0	33 - 152		%Rec	1	7/5/2022 12:21:00 PM
29B METALS					29B/SW7471A SW7471A	Analyst: BXB
MERCURY IN SOIL OR SLUDGE						
Mercury	< 0.109	0.109		mg/Kg-dry	1	7/6/2022 10:17:15 AM
29B METALS					SW6010B SW3050B	Analyst: MRM
METALS IN SOIL OR SLUDGE BY ICP						
Arsenic	5.34	2.00		mg/Kg-dry	1	6/30/2022 5:48:46 PM
Barium	1,350	15.0		mg/Kg-dry	1	6/30/2022 5:48:46 PM
Cadmium	0.844	0.499		mg/Kg-dry	1	6/30/2022 5:48:46 PM
Chromium	22.3	0.999		mg/Kg-dry	1	6/30/2022 5:48:46 PM
Lead	23.2	0.999		mg/Kg-dry	1	6/30/2022 5:48:46 PM
Strontium	99.6	0.999		mg/Kg-dry	1	6/30/2022 5:48:46 PM
Zinc	109	0.999		mg/Kg-dry	1	6/30/2022 5:48:46 PM
29B METALS					LDNR 29-B	Analyst: MRM
TRUE TOTAL BARIUM						
True Total Barium	6,510	50.1		mg/Kg-dry	1	7/5/2022 4:37:52 PM
PERCENT MOISTURE					LDNR 29-B	Analyst: HXW
Percent Moisture	65.8	1.00		wt%	1	6/27/2022 11:45:00 AM

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- RL Reporting Limit
- SDL Sample detection limit
- W Sample container temperature is out of limit as specified at testcode

- B Analyte detected in the associated Method Blank
- M Matrix Interference
- R RPD outside accepted recovery limits
- S Spike Recovery outside accepted recovery limits
- U Analyte not detected



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Analytical Report

(consolidated)

WO#: 22061154

Date Reported: 7/11/2022

CLIENT: ICON Environmental Services **Collection Date:** 6/22/2022 2:30:00 PM
Project: Grand River - Levert 9326-025-0100
Lab ID: 22061154-008 **Matrix:** SOIL
Client Sample ID SB-12 2-4'

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
HEM, OIL & GREASE					SW9071B	Analyst: HXW
HEM, Oil & Grease	0.21	0.05		% dry wt	1	6/27/2022 1:34:00 PM
TPH-D/O IN SOIL BY SW8015					SW8015B	Analyst: EH
TPH DRO/ORO IN SOIL BY SW8015						
TPH (Diesel Range)	4,920	500		mg/Kg	50	7/5/2022 1:15:00 PM
TPH (Oil Range)	1,440	600		mg/Kg	50	7/5/2022 1:15:00 PM
Surr: 4-Terphenyl-d14	139	33 - 152		%Rec	50	7/5/2022 1:15:00 PM
29B METALS					29B/SW7471A SW7471A	Analyst: BXB
MERCURY IN SOIL OR SLUDGE						
Mercury	2.06	0.108		mg/Kg-dry	1	7/6/2022 10:19:56 AM
29B METALS					SW6010B SW3050B	Analyst: MRM
METALS IN SOIL OR SLUDGE BY ICP						
Arsenic	61.3	1.93	*	mg/Kg-dry	1	6/30/2022 5:51:04 PM
Barium	1,470	14.5		mg/Kg-dry	1	6/30/2022 5:51:04 PM
Cadmium	12.9	0.483	*	mg/Kg-dry	1	6/30/2022 5:51:04 PM
Chromium	172	0.965		mg/Kg-dry	1	6/30/2022 5:51:04 PM
Lead	1,060	0.965	*	mg/Kg-dry	1	6/30/2022 5:51:04 PM
Strontium	505	0.965		mg/Kg-dry	1	6/30/2022 5:51:04 PM
Zinc	2,080	0.965	*	mg/Kg-dry	1	6/30/2022 5:51:04 PM
29B METALS					LDNR 29-B	Analyst: MRM
TRUE TOTAL BARIUM						
True Total Barium	323,000	476	*	mg/Kg-dry	10	7/5/2022 6:27:55 PM
PERCENT MOISTURE					LDNR 29-B	Analyst: HXW
Percent Moisture	22.8	1.00		wt%	1	6/27/2022 11:45:00 AM

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	H	Holding times for preparation or analysis exceeded	M	Matrix Interference
	ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits
	RL	Reporting Limit	S	Spike Recovery outside accepted recovery limits
	SDL	Sample detection limit	U	Analyte not detected
	W	Sample container temperature is out of limit as specified at testcode		



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Analytical Report

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WO#: 22061154

Date Reported: 7/11/2022

CLIENT: ICON Environmental Services
Project: Grand River - Levert 9326-025-0100
Lab ID: 22061154-009
Client Sample ID SB-13 0-2'

Collection Date: 6/22/2022 3:30:00 PM

Matrix: SOIL

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
29B METALS					SW6010B	SW3050B
METALS IN SOIL OR SLUDGE BY ICP						Analyst: MRM
Arsenic	6.65	1.96		mg/Kg-dry	1	6/30/2022 5:53:23 PM
Barium	408	14.7		mg/Kg-dry	1	6/30/2022 5:53:23 PM
29B METALS					LDNR 29-B	Analyst: MRM
TRUE TOTAL BARIUM						
True Total Barium	3,990	49.9		mg/Kg-dry	1	7/5/2022 4:42:26 PM
PERCENT MOISTURE					LDNR 29-B	Analyst: HXW
Percent Moisture	42.5	1.00		wt%	1	6/27/2022 11:45:00 AM

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	H	Holding times for preparation or analysis exceeded	M	Matrix Interference
	ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits
	RL	Reporting Limit	S	Spike Recovery outside accepted recovery limits
	SDL	Sample detection limit	U	Analyte not detected
	W	Sample container temperature is out of limit as specified at testcode		



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Analytical Report

(consolidated)

WO#: **22061154**

Date Reported: **7/11/2022**

CLIENT: ICON Environmental Services **Collection Date:** 6/22/2022 3:30:00 PM
Project: Grand River - Levert 9326-025-0100
Lab ID: 22061154-010 **Matrix:** SOIL
Client Sample ID SB-13 2-4'

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
29B METALS					SW6010B	SW3050B Analyst: MRM
METALS IN SOIL OR SLUDGE BY ICP						
Arsenic	5.14	2.00		mg/Kg-dry	1	6/30/2022 5:55:40 PM
Barium	197	15.0		mg/Kg-dry	1	6/30/2022 5:55:40 PM
29B METALS					LDNR 29-B	Analyst: MRM
TRUE TOTAL BARIUM						
True Total Barium	1,390	48.2		mg/Kg-dry	1	7/5/2022 4:44:43 PM
PERCENT MOISTURE					LDNR 29-B	Analyst: HXW
Percent Moisture	38.0	1.00		wt%	1	6/27/2022 11:45:00 AM

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded	M	Matrix Interference
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits
RL	Reporting Limit	S	Spike Recovery outside accepted recovery limits
SDL	Sample detection limit	U	Analyte not detected
W	Sample container temperature is out of limit as specified at testcode		



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Analytical Report

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WO#: 22061154

Date Reported: 7/11/2022

CLIENT: ICON Environmental Services
Project: Grand River - Levert 9326-025-0100
Lab ID: 22061154-011
Client Sample ID SB-14 0-2'

Collection Date: 6/23/2022 10:15:00 AM

Matrix: SOIL

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
29B METALS					SW6010B	SW3050B
METALS IN SOIL OR SLUDGE BY ICP						Analyst: MRM
Arsenic	3.38	1.96		mg/Kg-dry	1	6/30/2022 5:57:58 PM
Barium	247	14.7		mg/Kg-dry	1	6/30/2022 5:57:58 PM
29B METALS					LDNR 29-B	Analyst: MRM
TRUE TOTAL BARIUM						
True Total Barium	4,050	46.6		mg/Kg-dry	1	7/5/2022 4:47:00 PM
PERCENT MOISTURE					LDNR 29-B	Analyst: HXW
Percent Moisture	39.2	1.00		wt%	1	6/27/2022 11:45:00 AM

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- RL Reporting Limit
- SDL Sample detection limit
- W Sample container temperature is out of limit as specified at testcode
- B Analyte detected in the associated Method Blank
- M Matrix Interference
- R RPD outside accepted recovery limits
- S Spike Recovery outside accepted recovery limits
- U Analyte not detected



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Analytical Report

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WO#: 22061154

Date Reported: 7/11/2022

CLIENT: ICON Environmental Services **Collection Date:** 6/23/2022 10:15:00 AM
Project: Grand River - Levert 9326-025-0100
Lab ID: 22061154-012 **Matrix:** SOIL
Client Sample ID SB-14 2-4'

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
29B METALS					SW6010B	SW3050B
METALS IN SOIL OR SLUDGE BY ICP						Analyst: MRM
Arsenic	5.17	1.96		mg/Kg-dry	1	6/30/2022 6:00:16 PM
Barium	929	14.7		mg/Kg-dry	1	6/30/2022 6:00:16 PM
29B METALS					LDNR 29-B	Analyst: MRM
TRUE TOTAL BARIUM						
True Total Barium	6,640	48.5		mg/Kg-dry	1	7/5/2022 4:49:17 PM
PERCENT MOISTURE					LDNR 29-B	Analyst: HXW
Percent Moisture	36.7	1.00		wt%	1	6/27/2022 11:45:00 AM

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded	M	Matrix Interference
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits
RL	Reporting Limit	S	Spike Recovery outside accepted recovery limits
SDL	Sample detection limit	U	Analyte not detected
W	Sample container temperature is out of limit as specified at testcode		



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Analytical Report

(consolidated)

WO#: 22061154

Date Reported: 7/11/2022

CLIENT: ICON Environmental Services
Project: Grand River - Levert 9326-025-0100
Lab ID: 22061154-013
Client Sample ID SB-14 6-8'

Collection Date: 6/23/2022 10:30:00 AM

Matrix: SOIL

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
29B METALS					SW6010B	SW3050B
METALS IN SOIL OR SLUDGE BY ICP						Analyst: MRM
Arsenic	4.46	1.95		mg/Kg-dry	1	6/30/2022 6:02:35 PM
Barium	530	14.7		mg/Kg-dry	1	6/30/2022 6:02:35 PM
29B METALS					LDNR 29-B	Analyst: MRM
TRUE TOTAL BARIUM						
True Total Barium	3,360	46.6		mg/Kg-dry	1	7/5/2022 4:51:34 PM
PERCENT MOISTURE					LDNR 29-B	Analyst: HXW
Percent Moisture	53.3	1.00		wt%	1	6/27/2022 11:45:00 AM

Qualifiers:	* Value exceeds Maximum Contaminant Level.	B Analyte detected in the associated Method Blank
	H Holding times for preparation or analysis exceeded	M Matrix Interference
	ND Not Detected at the Reporting Limit	R RPD outside accepted recovery limits
	RL Reporting Limit	S Spike Recovery outside accepted recovery limits
	SDL Sample detection limit	U Analyte not detected
	W Sample container temperature is out of limit as specified at testcode	



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Analytical Report

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WO#: **22061154**

Date Reported: **7/11/2022**

CLIENT: ICON Environmental Services
Project: Grand River - Levert 9326-025-0100
Lab ID: 22061154-014
Client Sample ID SB-15 0-2'

Collection Date: 6/23/2022 10:40:00 AM

Matrix: SOIL

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
29B METALS					SW6010B	SW3050B
METALS IN SOIL OR SLUDGE BY ICP						Analyst: MRM
Arsenic	5.65	1.98		mg/Kg-dry	1	6/30/2022 6:04:53 PM
Barium	258	14.9		mg/Kg-dry	1	6/30/2022 6:04:53 PM
29B METALS					LDNR 29-B	Analyst: MRM
TRUE TOTAL BARIUM						
True Total Barium	762	48.4		mg/Kg-dry	1	7/5/2022 4:53:50 PM
PERCENT MOISTURE					LDNR 29-B	Analyst: HXW
Percent Moisture	34.3	1.00		wt%	1	6/27/2022 11:45:00 AM

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- RL Reporting Limit
- SDL Sample detection limit
- W Sample container temperature is out of limit as specified at testcode
- B Analyte detected in the associated Method Blank
- M Matrix Interference
- R RPD outside accepted recovery limits
- S Spike Recovery outside accepted recovery limits
- U Analyte not detected



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Analytical Report

(consolidated)

WO#: **22061154**

Date Reported: **7/11/2022**

CLIENT: ICON Environmental Services
Project: Grand River - Levert 9326-025-0100
Lab ID: 22061154-015
Client Sample ID SB-15 2-4'

Collection Date: 6/23/2022 10:40:00 AM

Matrix: SOIL

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
29B METALS					SW6010B	SW3050B
METALS IN SOIL OR SLUDGE BY ICP						Analyst: MRM
Arsenic	4.99	1.95		mg/Kg-dry	1	6/30/2022 6:07:11 PM
Barium	297	14.6		mg/Kg-dry	1	6/30/2022 6:07:11 PM
29B METALS					LDNR 29-B	Analyst: MRM
TRUE TOTAL BARIUM						
True Total Barium	1,470	48.5		mg/Kg-dry	1	7/5/2022 5:00:40 PM
PERCENT MOISTURE					LDNR 29-B	Analyst: HXW
Percent Moisture	34.1	1.00		wt%	1	6/27/2022 11:45:00 AM

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	H	Holding times for preparation or analysis exceeded	M	Matrix Interference
	ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits
	RL	Reporting Limit	S	Spike Recovery outside accepted recovery limits
	SDL	Sample detection limit	U	Analyte not detected
	W	Sample container temperature is out of limit as specified at testcode		



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Analytical Report

(consolidated)

WO#: 22061154

Date Reported: 7/11/2022

CLIENT: ICON Environmental Services
Project: Grand River - Levert 9326-025-0100
Lab ID: 22061154-016
Client Sample ID SB-16 0-2'

Collection Date: 6/23/2022 11:20:00 AM

Matrix: SOIL

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
29B METALS					SW6010B	SW3050B
METALS IN SOIL OR SLUDGE BY ICP						Analyst: MRM
Arsenic	7.06	2.00		mg/Kg-dry	1	6/30/2022 6:09:29 PM
Barium	1,010	15.0		mg/Kg-dry	1	6/30/2022 6:09:29 PM
29B METALS					LDNR 29-B	Analyst: MRM
TRUE TOTAL BARIUM						
True Total Barium	4,960	49.2		mg/Kg-dry	1	7/5/2022 5:02:57 PM
PERCENT MOISTURE					LDNR 29-B	Analyst: HXW
Percent Moisture	39.8	1.00		wt%	1	6/27/2022 11:45:00 AM

Qualifiers:	* Value exceeds Maximum Contaminant Level.	B Analyte detected in the associated Method Blank
	H Holding times for preparation or analysis exceeded	M Matrix Interference
	ND Not Detected at the Reporting Limit	R RPD outside accepted recovery limits
	RL Reporting Limit	S Spike Recovery outside accepted recovery limits
	SDL Sample detection limit	U Analyte not detected
	W Sample container temperature is out of limit as specified at testcode	



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Analytical Report

(consolidated)

WO#: **22061154**

Date Reported: **7/11/2022**

CLIENT: ICON Environmental Services
Project: Grand River - Levert 9326-025-0100
Lab ID: 22061154-017
Client Sample ID SB-16 2-4'

Collection Date: 6/23/2022 11:20:00 AM

Matrix: SOIL

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
29B METALS					SW6010B	SW3050B
METALS IN SOIL OR SLUDGE BY ICP						Analyst: MRM
Arsenic	4.76	1.99		mg/Kg-dry	1	6/30/2022 6:16:20 PM
Barium	350	14.9		mg/Kg-dry	1	6/30/2022 6:16:20 PM
29B METALS					LDNR 29-B	Analyst: MRM
TRUE TOTAL BARIUM						
True Total Barium	723	45.8		mg/Kg-dry	1	7/5/2022 5:05:14 PM
PERCENT MOISTURE					LDNR 29-B	Analyst: HXW
Percent Moisture	37.0	1.00		wt%	1	6/27/2022 11:45:00 AM

Qualifiers:	* Value exceeds Maximum Contaminant Level.	B Analyte detected in the associated Method Blank
	H Holding times for preparation or analysis exceeded	M Matrix Interference
	ND Not Detected at the Reporting Limit	R RPD outside accepted recovery limits
	RL Reporting Limit	S Spike Recovery outside accepted recovery limits
	SDL Sample detection limit	U Analyte not detected
	W Sample container temperature is out of limit as specified at testcode	



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Analytical Report

(consolidated)

WO#: 22061154

Date Reported: 7/11/2022

CLIENT: ICON Environmental Services
Project: Grand River - Levert 9326-025-0100
Lab ID: 22061154-018
Client Sample ID SB-16 6-8'

Collection Date: 6/23/2022 11:35:00 AM

Matrix: SOIL

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
29B METALS					SW6010B	SW3050B
METALS IN SOIL OR SLUDGE BY ICP						Analyst: MRM
Arsenic	4.23	1.99		mg/Kg-dry	1	6/30/2022 6:18:38 PM
Barium	438	14.9		mg/Kg-dry	1	6/30/2022 6:18:38 PM
29B METALS					LDNR 29-B	Analyst: MRM
TRUE TOTAL BARIUM						
True Total Barium	1,170	49.2		mg/Kg-dry	1	7/5/2022 5:07:30 PM
PERCENT MOISTURE					LDNR 29-B	Analyst: HXW
Percent Moisture	46.5	1.00		wt%	1	6/27/2022 11:45:00 AM

Qualifiers:	* Value exceeds Maximum Contaminant Level.	B Analyte detected in the associated Method Blank
	H Holding times for preparation or analysis exceeded	M Matrix Interference
	ND Not Detected at the Reporting Limit	R RPD outside accepted recovery limits
	RL Reporting Limit	S Spike Recovery outside accepted recovery limits
	SDL Sample detection limit	U Analyte not detected
	W Sample container temperature is out of limit as specified at testcode	



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Analytical Report

(consolidated)

WO#: **22061154**

Date Reported: **7/11/2022**

CLIENT: ICON Environmental Services
Project: Grand River - Levert 9326-025-0100
Lab ID: 22061154-019
Client Sample ID SB-17 0-2'

Collection Date: 6/23/2022 2:15:00 PM

Matrix: SOIL

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
HEM, OIL & GREASE					SW9071B	Analyst: HXW
HEM, Oil & Grease	2.20	0.05		% dry wt	1	6/27/2022 1:34:00 PM
TPH-D/O IN SOIL BY SW8015					SW8015B	Analyst: EH
TPH DRO/ORO IN SOIL BY SW8015						
TPH (Diesel Range)	5,440	500		mg/Kg	50	7/5/2022 1:43:00 PM
TPH (Oil Range)	5,290	600		mg/Kg	50	7/5/2022 1:43:00 PM
Surr: 4-Terphenyl-d14	146	33 - 152		%Rec	50	7/5/2022 1:43:00 PM

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- RL Reporting Limit
- SDL Sample detection limit
- W Sample container temperature is out of limit as specified at testcode
- B Analyte detected in the associated Method Blank
- M Matrix Interference
- R RPD outside accepted recovery limits
- S Spike Recovery outside accepted recovery limits
- U Analyte not detected



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Analytical Report

(consolidated)

WO#: 22061154

Date Reported: 7/11/2022

CLIENT: ICON Environmental Services
Project: Grand River - Levert 9326-025-0100
Lab ID: 22061154-020
Client Sample ID SB-21 0-2'

Collection Date: 6/23/2022 3:10:00 PM

Matrix: SOIL

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
29B METALS					SW6010B	SW3050B
METALS IN SOIL OR SLUDGE BY ICP						Analyst: MRM
Arsenic	5.58	2.00		mg/Kg-dry	1	6/30/2022 6:20:56 PM
Barium	1,370	15.0		mg/Kg-dry	1	6/30/2022 6:20:56 PM
29B METALS					LDNR 29-B	Analyst: MRM
TRUE TOTAL BARIUM						
True Total Barium	6,910	49.9		mg/Kg-dry	1	7/5/2022 5:09:46 PM
PERCENT MOISTURE					LDNR 29-B	Analyst: HXW
Percent Moisture	31.7	1.00		wt%	1	6/27/2022 12:45:00 PM

Qualifiers:	* Value exceeds Maximum Contaminant Level.	B Analyte detected in the associated Method Blank
	H Holding times for preparation or analysis exceeded	M Matrix Interference
	ND Not Detected at the Reporting Limit	R RPD outside accepted recovery limits
	RL Reporting Limit	S Spike Recovery outside accepted recovery limits
	SDL Sample detection limit	U Analyte not detected
	W Sample container temperature is out of limit as specified at testcode	



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Analytical Report

(consolidated)

WO#: 22061154

Date Reported: 7/11/2022

CLIENT: ICON Environmental Services
Project: Grand River - Levert 9326-025-0100
Lab ID: 22061154-021
Client Sample ID SB-22 0-2'

Collection Date: 6/23/2022 3:20:00 PM

Matrix: SOIL

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
29B METALS					SW6010B	SW3050B
METALS IN SOIL OR SLUDGE BY ICP						Analyst: MRM
Arsenic	6.92	1.98		mg/Kg-dry	1	6/30/2022 6:23:14 PM
Barium	546	14.8		mg/Kg-dry	1	6/30/2022 6:23:14 PM
29B METALS					LDNR 29-B	Analyst: MRM
TRUE TOTAL BARIUM						
True Total Barium	3,150	49.4		mg/Kg-dry	1	7/5/2022 5:12:03 PM
PERCENT MOISTURE					LDNR 29-B	Analyst: HXW
Percent Moisture	35.6	1.00		wt%	1	6/27/2022 12:45:00 PM

Qualifiers:	* Value exceeds Maximum Contaminant Level.	B Analyte detected in the associated Method Blank
	H Holding times for preparation or analysis exceeded	M Matrix Interference
	ND Not Detected at the Reporting Limit	R RPD outside accepted recovery limits
	RL Reporting Limit	S Spike Recovery outside accepted recovery limits
	SDL Sample detection limit	U Analyte not detected
	W Sample container temperature is out of limit as specified at testcode	



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Analytical Report

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WO#: 22061154

Date Reported: 7/11/2022

CLIENT: ICON Environmental Services
Project: Grand River - Levert 9326-025-0100
Lab ID: 22061154-022
Client Sample ID SB-23 0-2'

Collection Date: 6/23/2022 3:25:00 PM

Matrix: SOIL

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
29B METALS					SW6010B	SW3050B
METALS IN SOIL OR SLUDGE BY ICP						Analyst: MRM
Arsenic	4.30	1.99		mg/Kg-dry	1	7/7/2022 4:06:48 PM
Barium	202	14.9		mg/Kg-dry	1	7/7/2022 4:06:48 PM
29B METALS					LDNR 29-B	Analyst: MRM
TRUE TOTAL BARIUM						
True Total Barium	492	235		mg/Kg-dry	1	7/7/2022 2:51:19 PM
PERCENT MOISTURE					LDNR 29-B	Analyst: HXW
Percent Moisture	34.2	1.00		wt%	1	6/27/2022 12:45:00 PM

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	H	Holding times for preparation or analysis exceeded	M	Matrix Interference
	ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits
	RL	Reporting Limit	S	Spike Recovery outside accepted recovery limits
	SDL	Sample detection limit	U	Analyte not detected
	W	Sample container temperature is out of limit as specified at testcode		



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Analytical Report

(consolidated)

WO#: 22061154

Date Reported: 7/11/2022

CLIENT: ICON Environmental Services
Project: Grand River - Levert 9326-025-0100
Lab ID: 22061154-023
Client Sample ID SB-24 0-2'

Collection Date: 6/23/2022 3:30:00 PM

Matrix: SOIL

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
29B METALS					SW6010B	SW3050B
METALS IN SOIL OR SLUDGE BY ICP						Analyst: MRM
Arsenic	3.21	1.93		mg/Kg-dry	1	7/7/2022 4:13:38 PM
Barium	179	14.5		mg/Kg-dry	1	7/7/2022 4:13:38 PM
29B METALS					LDNR 29-B	Analyst: MRM
TRUE TOTAL BARIUM						
True Total Barium	537	248		mg/Kg-dry	1	7/7/2022 3:02:46 PM
PERCENT MOISTURE					LDNR 29-B	Analyst: HXW
Percent Moisture	34.9	1.00		wt%	1	6/27/2022 12:45:00 PM

Qualifiers:	* Value exceeds Maximum Contaminant Level.	B Analyte detected in the associated Method Blank
	H Holding times for preparation or analysis exceeded	M Matrix Interference
	ND Not Detected at the Reporting Limit	R RPD outside accepted recovery limits
	RL Reporting Limit	S Spike Recovery outside accepted recovery limits
	SDL Sample detection limit	U Analyte not detected
	W Sample container temperature is out of limit as specified at testcode	



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Analytical Report

(consolidated)

WO#: 22061154

Date Reported: 7/11/2022

CLIENT: ICON Environmental Services
Project: Grand River - Levert 9326-025-0100
Lab ID: 22061154-024
Client Sample ID SB-15 6-8'

Collection Date: 6/23/2022 11:00:00 AM

Matrix: SOIL

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
29B METALS					SW6010B	SW3050B
METALS IN SOIL OR SLUDGE BY ICP						Analyst: MRM
Arsenic	6.07	2.00		mg/Kg-dry	1	7/7/2022 4:25:10 PM
Barium	217	15.0		mg/Kg-dry	1	7/7/2022 4:25:10 PM
29B METALS					LDNR 29-B	Analyst: MRM
TRUE TOTAL BARIUM						
True Total Barium	618	237		mg/Kg-dry	1	7/7/2022 3:05:02 PM
PERCENT MOISTURE					LDNR 29-B	Analyst: HXW
Percent Moisture	41.6	1.00		wt%	1	6/27/2022 12:45:00 PM

Qualifiers:	* Value exceeds Maximum Contaminant Level.	B Analyte detected in the associated Method Blank
	H Holding times for preparation or analysis exceeded	M Matrix Interference
	ND Not Detected at the Reporting Limit	R RPD outside accepted recovery limits
	RL Reporting Limit	S Spike Recovery outside accepted recovery limits
	SDL Sample detection limit	U Analyte not detected
	W Sample container temperature is out of limit as specified at testcode	



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QC SUMMARY REPORT

WO#: 22061154
 11-Jul-22

Client: ICON Environmental Services
Project: Grand River - Levert 9326-025-0100

BatchID: 44249-1

Sample ID	LCS-D44249	SampType:	LCS	TestCode:	8015_DO_S	Units:	mg/Kg	Prep Date:	6/27/2022	RunNo:	111122			
Client ID:	LCSS	Batch ID:	44249-1	TestNo:	SW8015B			Analysis Date:	7/5/2022	SeqNo:	2743740			
Analyte		Result		PQL	SPK value	SPK Ref Val		%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

TPH (Diesel Range)	89.4	10.0	100.0	0	89.4	63.4	109
Surr: 4-Terphenyl-d14	3.32		3.333		99.7	33	152

Sample ID	LCSD-D44249	SampType:	LCSD	TestCode:	8015_DO_S	Units:	mg/Kg	Prep Date:	6/27/2022	RunNo:	111122			
Client ID:	LCSS02	Batch ID:	44249-1	TestNo:	SW8015B			Analysis Date:	7/5/2022	SeqNo:	2743741			
Analyte		Result		PQL	SPK value	SPK Ref Val		%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

TPH (Diesel Range)	87.0	10.0	100.0	0	87.0	63.4	109	89.37	2.72	21.9
Surr: 4-Terphenyl-d14	3.23		3.333		96.9	33	152		0	40

Sample ID	MB-44249	SampType:	MBLK	TestCode:	8015_DO_S	Units:	mg/Kg	Prep Date:	6/27/2022	RunNo:	111122			
Client ID:	PBS	Batch ID:	44249-1	TestNo:	SW8015B			Analysis Date:	7/5/2022	SeqNo:	2743742			
Analyte		Result		PQL	SPK value	SPK Ref Val		%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

TPH (Diesel Range)	< 10.0	10.0					
TPH (Oil Range)	< 12.0	12.0					
Surr: 4-Terphenyl-d14	2.80		3.333		84.0	33	152

Sample ID	LCS-M44249	SampType:	LCS	TestCode:	8015_DO_S	Units:	mg/Kg	Prep Date:	6/27/2022	RunNo:	111122			
Client ID:	LCSS	Batch ID:	44249-1	TestNo:	SW8015B			Analysis Date:	7/5/2022	SeqNo:	2743776			
Analyte		Result		PQL	SPK value	SPK Ref Val		%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Qualifiers:	* Value exceeds Maximum Contaminant Level.	B Analyte detected in the associated Method Blank	H Holding times for preparation or analysis exceede
	M Matrix Interference	ND Not Detected at the Reporting Limit	R RPD outside accepted recovery limits
	RL Reporting Limit	S Spike Recovery outside accepted recovery limits	SDL Sample detection limit
	U Analyte not detected	W Sample container temperature is out of limit as specified at testcode	



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QC SUMMARY REPORT

WO#: 22061154
 11-Jul-22

Client: ICON Environmental Services
Project: Grand River - Levert 9326-025-0100

BatchID: 44249-1

Sample ID	LCS-M44249	SampType:	LCS	TestCode:	8015_DO_S	Units:	mg/Kg	Prep Date:	6/27/2022	RunNo:	111122			
Client ID:	LCSS	Batch ID:	44249-1	TestNo:	SW8015B			Analysis Date:	7/5/2022	SeqNo:	2743776			
Analyte		Result		PQL	SPK value	SPK Ref Val		%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

TPH (Oil Range)	90.2	12.0	100.0	0	90.2	63.9	120							
Surr: 4-Terphenyl-d14	3.27		3.333		98.2	33	152							

Sample ID	LCSD-M44249	SampType:	LCSD	TestCode:	8015_DO_S	Units:	mg/Kg	Prep Date:	6/27/2022	RunNo:	111122			
Client ID:	LCSS02	Batch ID:	44249-1	TestNo:	SW8015B			Analysis Date:	7/5/2022	SeqNo:	2743843			
Analyte		Result		PQL	SPK value	SPK Ref Val		%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

TPH (Oil Range)	99.1	12.0	100.0	0	99.1	63.9	120	90.15	9.41	20.7
Surr: 4-Terphenyl-d14	3.46		3.333		104	33	152		0	40

Sample ID	22061062-001AMS-	SampType:	MS	TestCode:	8015_DO_S	Units:	mg/Kg	Prep Date:	6/27/2022	RunNo:	111122			
Client ID:	ZZZZZ	Batch ID:	44249-1	TestNo:	SW8015B			Analysis Date:	7/5/2022	SeqNo:	2743893			
Analyte		Result		PQL	SPK value	SPK Ref Val		%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

TPH (Diesel Range)	77.6	10.0	100.0	11.79	65.8	23.4	123			
Surr: 4-Terphenyl-d14	3.13		3.333		93.9	33	152			

Sample ID	22061062-001AMS-	SampType:	MS	TestCode:	8015_DO_S	Units:	mg/Kg	Prep Date:	6/27/2022	RunNo:	111122			
Client ID:	ZZZZZ	Batch ID:	44249-1	TestNo:	SW8015B			Analysis Date:	7/5/2022	SeqNo:	2743894			
Analyte		Result		PQL	SPK value	SPK Ref Val		%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

TPH (Oil Range)	103	12.0	100.0	15.91	87.6	14.5	174			
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Qualifiers:

* Value exceeds Maximum Contaminant Level.	B Analyte detected in the associated Method Blank	H Holding times for preparation or analysis exceed
M Matrix Interference	ND Not Detected at the Reporting Limit	R RPD outside accepted recovery limits
RL Reporting Limit	S Spike Recovery outside accepted recovery limits	SDL Sample detection limit
U Analyte not detected	W Sample container temperature is out of limit as specified at testcode	



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QC SUMMARY REPORT

WO#: 22061154
 11-Jul-22

Client: ICON Environmental Services
Project: Grand River - Levert 9326-025-0100

BatchID: 44249-1

Sample ID	22061062-001AMS-	SampType:	MS	TestCode:	8015_DO_S	Units:	mg/Kg	Prep Date:	6/27/2022	RunNo:	111122			
Client ID:	ZZZZZZ	Batch ID:	44249-1	TestNo:	SW8015B			Analysis Date:	7/5/2022	SeqNo:	2743894			
Analyte		Result		PQL	SPK value	SPK Ref Val		%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Surr: 4-Terphenyl-d14 3.07 3.333 92.0 33 152

Sample ID	22061062-001AMSD	SampType:	MSD	TestCode:	8015_DO_S	Units:	mg/Kg	Prep Date:	6/27/2022	RunNo:	111122			
Client ID:	ZZZZZZ	Batch ID:	44249-1	TestNo:	SW8015B			Analysis Date:	7/5/2022	SeqNo:	2743895			
Analyte		Result		PQL	SPK value	SPK Ref Val		%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

TPH (Diesel Range) 84.4 10.0 100.0 11.79 72.7 23.4 123 77.62 8.41 35.6
 Surr: 4-Terphenyl-d14 2.93 3.333 88.0 33 152 0 40

Sample ID	22061062-001AMSD	SampType:	MSD	TestCode:	8015_DO_S	Units:	mg/Kg	Prep Date:	6/27/2022	RunNo:	111122			
Client ID:	ZZZZZZ	Batch ID:	44249-1	TestNo:	SW8015B			Analysis Date:	7/5/2022	SeqNo:	2743979			
Analyte		Result		PQL	SPK value	SPK Ref Val		%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

TPH (Oil Range) 100 12.0 100.0 15.91 84.2 14.5 174 103.5 3.34 48.8
 Surr: 4-Terphenyl-d14 2.93 3.333 87.8 33 152 0 40

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank	H	Holding times for preparation or analysis exceed
M	Matrix Interference	ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits
RL	Reporting Limit	S	Spike Recovery outside accepted recovery limits	SDL	Sample detection limit
U	Analyte not detected	W	Sample container temperature is out of limit as specified at testcode		



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 TEL: (337) 235-0483 FAX: (337) 233-6540
 Website: www.element.com

QC SUMMARY REPORT

WO#: 22061154
 11-Jul-22

Client: ICON Environmental Services
Project: Grand River - Levert 9326-025-0100

BatchID: 44272

Sample ID	MB-44272	SampType:	MBLK	TestCode:	6010_S_29B	Units:	mg/Kg-dry	Prep Date:	6/29/2022	RunNo:	111046		
Client ID:	PBS	Batch ID:	44272	TestNo:	SW6010B	SW3050B		Analysis Date:	6/30/2022	SeqNo:	2742152		
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Arsenic	< 2.00	2.00											
Barium	< 15.0	15.0											
Cadmium	< 0.500	0.500											
Chromium	< 1.00	1.00											
Lead	< 1.00	1.00											
Strontium	< 1.00	1.00											
Zinc	< 1.00	1.00											

Sample ID	LCS-44272	SampType:	LCS	TestCode:	6010_S_29B	Units:	mg/Kg-dry	Prep Date:	6/29/2022	RunNo:	111046		
Client ID:	LCSS	Batch ID:	44272	TestNo:	SW6010B	SW3050B		Analysis Date:	6/30/2022	SeqNo:	2742157		
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Arsenic	45.2	2.00	50.00	0	90.4	80	120						
Barium	52.1	15.0	50.00	0	104	80	120						
Cadmium	44.3	0.500	50.00	0	88.6	80	120						
Chromium	46.3	1.00	50.00	0	92.6	80	120						
Lead	45.5	1.00	50.00	0	91.1	80	120						
Strontium	46.0	1.00	50.00	0	92.0	80	120						
Zinc	43.3	1.00	50.00	0	86.6	80	120						

Qualifiers:	* Value exceeds Maximum Contaminant Level.	B Analyte detected in the associated Method Blank	H Holding times for preparation or analysis exceed
	M Matrix Interference	ND Not Detected at the Reporting Limit	R RPD outside accepted recovery limits
	RL Reporting Limit	S Spike Recovery outside accepted recovery limits	SDL Sample detection limit
	U Analyte not detected	W Sample container temperature is out of limit as specified at testcode	



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QC SUMMARY REPORT

WO#: 22061154
 11-Jul-22

Client: ICON Environmental Services
Project: Grand River - Levert 9326-025-0100

BatchID: 44272

Sample ID	LCSD-44272	SampType:	LCSD	TestCode:	6010_S_29B	Units:	mg/Kg-dry	Prep Date:	6/29/2022	RunNo:	111046
Client ID:	LCSS02	Batch ID:	44272	TestNo:	SW6010B	SW3050B		Analysis Date:	6/30/2022	SeqNo:	2742158
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	47.6	2.00	50.00	0	95.2	80	120	45.18	5.23	20	
Barium	54.5	15.0	50.00	0	109	80	120	52.12	4.48	20	
Cadmium	46.1	0.500	50.00	0	92.2	80	120	44.32	3.94	20	
Chromium	48.8	1.00	50.00	0	97.5	80	120	46.30	5.17	20	
Lead	47.3	1.00	50.00	0	94.6	80	120	45.54	3.76	20	
Strontium	48.2	1.00	50.00	0	96.4	80	120	46.02	4.63	20	
Zinc	45.3	1.00	50.00	0	90.6	80	120	43.28	4.53	20	

Sample ID	22061154-001AMS	SampType:	MS	TestCode:	6010_S_29B	Units:	mg/Kg-dry	Prep Date:	6/29/2022	RunNo:	111046
Client ID:	SB-9 2-4'	Batch ID:	44272	TestNo:	SW6010B	SW3050B		Analysis Date:	6/30/2022	SeqNo:	2742160
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	58.3	2.00	50.05	12.69	91.2	75	125				
Barium	4,400	15.0	50.05	3,566	1,660	75	125				S
Cadmium	50.5	0.500	50.05	4.752	91.3	75	125				
Chromium	235	1.00	50.05	234.6	-0.0975	75	125				S
Lead	386	1.00	50.05	360.9	50.5	75	125				S
Strontium	279	1.00	50.05	259.2	39.7	75	125				S
Zinc	890	1.00	50.05	746.1	287	75	125				S

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank	H	Holding times for preparation or analysis exceed
M	Matrix Interference	ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits
RL	Reporting Limit	S	Spike Recovery outside accepted recovery limits	SDL	Sample detection limit
U	Analyte not detected	W	Sample container temperature is out of limit as specified at testcode		



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QC SUMMARY REPORT

WO#: 22061154
 11-Jul-22

Client: ICON Environmental Services
Project: Grand River - Levert 9326-025-0100

BatchID: 44272

Sample ID	22061154-001AMSD	SampType:	MSD	TestCode:	6010_S_29B	Units:	mg/Kg-dry	Prep Date:	6/29/2022	RunNo:	111046
Client ID:	SB-9 2-4'	Batch ID:	44272	TestNo:	SW6010B	SW3050B		Analysis Date:	6/30/2022	SeqNo:	2742161
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	52.7	2.00	50.00	12.69	80.1	75	125	58.33	10.1	20	
Barium	4,000	15.0	50.00	3,566	860	75	125	4,398	9.58	20	S
Cadmium	46.1	0.500	50.00	4.752	82.7	75	125	50.46	9.00	20	
Chromium	202	1.00	50.00	234.6	-65.8	75	125	234.5	15.1	20	S
Lead	355	1.00	50.00	360.9	-11.5	75	125	386.2	8.36	20	S
Strontium	245	1.00	50.00	259.2	-29.0	75	125	279.0	13.1	20	S
Zinc	829	1.00	50.00	746.1	166	75	125	889.5	7.01	20	S

NOTES:

S - Spike recovery indicates matrix interference. The method is in control as indicated by the Lab Control Sample.

Qualifiers:	* Value exceeds Maximum Contaminant Level.	B Analyte detected in the associated Method Blank	H Holding times for preparation or analysis exceeded
	M Matrix Interference	ND Not Detected at the Reporting Limit	R RPD outside accepted recovery limits
	RL Reporting Limit	S Spike Recovery outside accepted recovery limits	SDL Sample detection limit
	U Analyte not detected	W Sample container temperature is out of limit as specified at testcode	



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QC SUMMARY REPORT

WO#: 22061154
 11-Jul-22

Client: ICON Environmental Services
Project: Grand River - Levert 9326-025-0100

BatchID: 44284

Sample ID	22061154-005AMS	SampType: MS	TestCode: HG_S_29B	Units: mg/Kg-dry	Prep Date: 6/30/2022	RunNo: 111172
Client ID:	SB-11 0-2'	Batch ID: 44284	TestNo: 29B/SW7471 SW7471A	Analysis Date: 7/6/2022	SeqNo: 2744976	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual

Mercury 1.39 0.101 0.8418 0.5233 103 75 125

Sample ID	22061154-005AMSD	SampType: MSD	TestCode: HG_S_29B	Units: mg/Kg-dry	Prep Date: 6/30/2022	RunNo: 111172
Client ID:	SB-11 0-2'	Batch ID: 44284	TestNo: 29B/SW7471 SW7471A	Analysis Date: 7/6/2022	SeqNo: 2744977	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual

Mercury 1.50 0.109 0.9061 0.5233 108 75 125 1.394 7.26 20

Sample ID	MB-44284	SampType: MBLK	TestCode: HG_S_29B	Units: mg/Kg-dry	Prep Date: 6/30/2022	RunNo: 111172
Client ID:	PBS	Batch ID: 44284	TestNo: 29B/SW7471 SW7471A	Analysis Date: 7/6/2022	SeqNo: 2745040	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual

Mercury < 0.100 0.100

Sample ID	LCS-44284	SampType: LCS	TestCode: HG_S_29B	Units: mg/Kg-dry	Prep Date: 6/30/2022	RunNo: 111172
Client ID:	LCSS	Batch ID: 44284	TestNo: 29B/SW7471 SW7471A	Analysis Date: 7/6/2022	SeqNo: 2745041	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual

Mercury 0.987 0.100 0.8330 0 119 80 120

Qualifiers:

* Value exceeds Maximum Contaminant Level.	B Analyte detected in the associated Method Blank	H Holding times for preparation or analysis exceed
M Matrix Interference	ND Not Detected at the Reporting Limit	R RPD outside accepted recovery limits
RL Reporting Limit	S Spike Recovery outside accepted recovery limits	SDL Sample detection limit
U Analyte not detected	W Sample container temperature is out of limit as specified at testcode	



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QC SUMMARY REPORT

WO#: 22061154
 11-Jul-22

Client: ICON Environmental Services
Project: Grand River - Levert 9326-025-0100

BatchID: 44284

Sample ID	LCSD-44284	SampType:	LCSD	TestCode:	HG_S_29B	Units:	mg/Kg-dry	Prep Date:	6/30/2022	RunNo:	111172		
Client ID:	LCSS02	Batch ID:	44284	TestNo:	29B/SW7471 SW7471A			Analysis Date:	7/6/2022	SeqNo:	2745042		
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury		0.989		0.100	0.8330	0	119	80	120	0.9873	0.200	20	

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank	H	Holding times for preparation or analysis exceede
M	Matrix Interference	ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits
RL	Reporting Limit	S	Spike Recovery outside accepted recovery limits	SDL	Sample detection limit
U	Analyte not detected	W	Sample container temperature is out of limit as specified at testcode		



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QC SUMMARY REPORT

WO#: 22061154
 11-Jul-22

Client: ICON Environmental Services
Project: Grand River - Levert 9326-025-0100

BatchID: 44298

Sample ID	MB-44298	SampType:	MBLK	TestCode:	TTBA	Units:	mg/Kg-dry	Prep Date:	6/30/2022	RunNo:	111137
Client ID:	PBS	Batch ID:	44298	TestNo:	LDNR 29-B			Analysis Date:	7/5/2022	SeqNo:	2744127
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD RPDLimit Qual

True Total Barium < 50.0 50.0

Sample ID	LCS-44298	SampType:	LCS	TestCode:	TTBA	Units:	mg/Kg-dry	Prep Date:	6/30/2022	RunNo:	111137
Client ID:	LCSS	Batch ID:	44298	TestNo:	LDNR 29-B			Analysis Date:	7/5/2022	SeqNo:	2744128
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD RPDLimit Qual

True Total Barium 4,720 50.0 5,000 0 94.4 75 125

Sample ID	LCSD-44298	SampType:	LCSD	TestCode:	TTBA	Units:	mg/Kg-dry	Prep Date:	6/30/2022	RunNo:	111137
Client ID:	LCSS02	Batch ID:	44298	TestNo:	LDNR 29-B			Analysis Date:	7/5/2022	SeqNo:	2744129
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD RPDLimit Qual

True Total Barium 4,670 50.0 5,000 0 93.3 75 125 4,718 1.11 20

Sample ID	22061154-001AMS	SampType:	MS	TestCode:	TTBA	Units:	mg/Kg-dry	Prep Date:	6/30/2022	RunNo:	111137
Client ID:	SB-9 2-4'	Batch ID:	44298	TestNo:	LDNR 29-B			Analysis Date:	7/5/2022	SeqNo:	2744131
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD RPDLimit Qual

True Total Barium 159,000 49.2 4,921 160,000 -29.3 75 125 S

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank	H	Holding times for preparation or analysis exceed
M	Matrix Interference	ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits
RL	Reporting Limit	S	Spike Recovery outside accepted recovery limits	SDL	Sample detection limit
U	Analyte not detected	W	Sample container temperature is out of limit as specified at testcode		



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QC SUMMARY REPORT

WO#: 22061154
 11-Jul-22

Client: ICON Environmental Services
Project: Grand River - Levert 9326-025-0100

BatchID: 44298

Sample ID	22061154-001AMSD	SampType:	MSD	TestCode:	TTBA	Units:	mg/Kg-dry	Prep Date:	6/30/2022	RunNo:	111137
Client ID:	SB-9 2-4'	Batch ID:	44298	TestNo:	LDNR 29-B			Analysis Date:	7/5/2022	SeqNo:	2744132
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
True Total Barium	175,000	49.9	4,990	160,000	297	75	125	158,500	9.75	20	S

NOTES:

S - Analyte concentration in native sample was too high for accurate spike recovery(ies). The method is in control as indicated by the laboratory control sample (LCS).

Qualifiers:	* Value exceeds Maximum Contaminant Level.	B Analyte detected in the associated Method Blank	H Holding times for preparation or analysis exceede
	M Matrix Interference	ND Not Detected at the Reporting Limit	R RPD outside accepted recovery limits
	RL Reporting Limit	S Spike Recovery outside accepted recovery limits	SDL Sample detection limit
	U Analyte not detected	W Sample container temperature is out of limit as specified at testcode	



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QC SUMMARY REPORT

WO#: 22061154
 11-Jul-22

Client: ICON Environmental Services
Project: Grand River - Levert 9326-025-0100

BatchID: 44320

Sample ID	MB-44320	SampType:	MBLK	TestCode:	TTBA	Units:	mg/Kg-dry	Prep Date:	7/1/2022	RunNo:	111187
Client ID:	PBS	Batch ID:	44320	TestNo:	LDNR 29-B			Analysis Date:	7/7/2022	SeqNo:	2746392
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD RPDLimit Qual

True Total Barium < 250 250

Sample ID	LCS-44320	SampType:	LCS	TestCode:	TTBA	Units:	mg/Kg-dry	Prep Date:	7/1/2022	RunNo:	111187
Client ID:	LCSS	Batch ID:	44320	TestNo:	LDNR 29-B			Analysis Date:	7/7/2022	SeqNo:	2746393
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD RPDLimit Qual

True Total Barium 5,130 250 5,000 0 103 75 125

Sample ID	LCSD-44320	SampType:	LCSD	TestCode:	TTBA	Units:	mg/Kg-dry	Prep Date:	7/1/2022	RunNo:	111187
Client ID:	LCSS02	Batch ID:	44320	TestNo:	LDNR 29-B			Analysis Date:	7/7/2022	SeqNo:	2746394
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD RPDLimit Qual

True Total Barium 5,130 250 5,000 0 103 75 125 5,126 0.0673 20

Sample ID	22061154-022AMS	SampType:	MS	TestCode:	TTBA	Units:	mg/Kg-dry	Prep Date:	7/1/2022	RunNo:	111187
Client ID:	SB-23 0-2'	Batch ID:	44320	TestNo:	LDNR 29-B			Analysis Date:	7/7/2022	SeqNo:	2746398
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD RPDLimit Qual

True Total Barium 5,280 241 4,826 492.4 99.2 75 125

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank	H	Holding times for preparation or analysis exceeded
M	Matrix Interference	ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits
RL	Reporting Limit	S	Spike Recovery outside accepted recovery limits	SDL	Sample detection limit
U	Analyte not detected	W	Sample container temperature is out of limit as specified at testcode		



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QC SUMMARY REPORT

WO#: 22061154
 11-Jul-22

Client: ICON Environmental Services
Project: Grand River - Levert 9326-025-0100

BatchID: 44320

Sample ID	22061154-022AMSD	SampType:	MSD	TestCode:	TTBA	Units:	mg/Kg-dry	Prep Date:	7/1/2022	RunNo:	111187		
Client ID:	SB-23 0-2'	Batch ID:	44320	TestNo:	LDNR 29-B			Analysis Date:	7/7/2022	SeqNo:	2746399		
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
True Total Barium		5,370		233	4,660	492.4	105	75	125	5,282	1.57	20	

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank	H	Holding times for preparation or analysis exceede
	M	Matrix Interference	ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits
	RL	Reporting Limit	S	Spike Recovery outside accepted recovery limits	SDL	Sample detection limit
	U	Analyte not detected	W	Sample container temperature is out of limit as specified at testcode		



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QC SUMMARY REPORT

WO#: 22061154
 11-Jul-22

Client: ICON Environmental Services
Project: Grand River - Levert 9326-025-0100

BatchID: 44342

Sample ID	MB-44342	SampType:	MBLK	TestCode:	6010_S_29B	Units:	mg/Kg-dry	Prep Date:	7/5/2022	RunNo:	111187
Client ID:	PBS	Batch ID:	44342	TestNo:	SW6010B	SW3050B		Analysis Date:	7/7/2022	SeqNo:	2746425
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD RPDLimit Qual

Arsenic	< 2.00	2.00									
Barium	< 15.0	15.0									

Sample ID	LCS-44342	SampType:	LCS	TestCode:	6010_S_29B	Units:	mg/Kg-dry	Prep Date:	7/5/2022	RunNo:	111187
Client ID:	LCSS	Batch ID:	44342	TestNo:	SW6010B	SW3050B		Analysis Date:	7/7/2022	SeqNo:	2746426
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD RPDLimit Qual

Arsenic	45.4	2.00	50.00	0	90.9	80	120				
Barium	54.4	15.0	50.00	0	109	80	120				

Sample ID	LCSD-44342	SampType:	LCSD	TestCode:	6010_S_29B	Units:	mg/Kg-dry	Prep Date:	7/5/2022	RunNo:	111187
Client ID:	LCSS02	Batch ID:	44342	TestNo:	SW6010B	SW3050B		Analysis Date:	7/7/2022	SeqNo:	2746427
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD RPDLimit Qual

Arsenic	44.4	2.00	50.00	0	88.7	80	120	45.43	2.40	20	
Barium	53.3	15.0	50.00	0	107	80	120	54.36	2.02	20	

Sample ID	22061154-022AMS	SampType:	MS	TestCode:	6010_S_29B	Units:	mg/Kg-dry	Prep Date:	7/5/2022	RunNo:	111187
Client ID:	SB-23 0-2'	Batch ID:	44342	TestNo:	SW6010B	SW3050B		Analysis Date:	7/7/2022	SeqNo:	2746429
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD RPDLimit Qual

Arsenic	33.6	1.91	47.70	4.301	61.4	75	125				S
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Qualifiers:

* Value exceeds Maximum Contaminant Level.	B Analyte detected in the associated Method Blank	H Holding times for preparation or analysis exceed
M Matrix Interference	ND Not Detected at the Reporting Limit	R RPD outside accepted recovery limits
RL Reporting Limit	S Spike Recovery outside accepted recovery limits	SDL Sample detection limit
U Analyte not detected	W Sample container temperature is out of limit as specified at testcode	



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QC SUMMARY REPORT

WO#: 22061154
 11-Jul-22

Client: ICON Environmental Services
Project: Grand River - Levert 9326-025-0100

BatchID: 44342

Sample ID	22061154-022AMS	SampType:	MS	TestCode:	6010_S_29B	Units:	mg/Kg-dry	Prep Date:	7/5/2022	RunNo:	111187		
Client ID:	SB-23 0-2'	Batch ID:	44342	TestNo:	SW6010B	SW3050B		Analysis Date:	7/7/2022	SeqNo:	2746429		
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Barium		218		14.3	47.70	201.5	34.9	75	125				S

Sample ID	22061154-022AMSD	SampType:	MSD	TestCode:	6010_S_29B	Units:	mg/Kg-dry	Prep Date:	7/5/2022	RunNo:	111187		
Client ID:	SB-23 0-2'	Batch ID:	44342	TestNo:	SW6010B	SW3050B		Analysis Date:	7/7/2022	SeqNo:	2746430		
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic		29.2		1.99	49.78	4.301	50.0	75	125	33.60	14.1	20	S
Barium		171		14.9	49.78	201.5	-62.1	75	125	218.2	24.5	20	RS

NOTES:

S - Spike recovery indicates matrix interference. The method is in control as indicated by the Lab Control Sample.

Qualifiers:	* Value exceeds Maximum Contaminant Level.	B Analyte detected in the associated Method Blank	H Holding times for preparation or analysis exceede
	M Matrix Interference	ND Not Detected at the Reporting Limit	R RPD outside accepted recovery limits
	RL Reporting Limit	S Spike Recovery outside accepted recovery limits	SDL Sample detection limit
	U Analyte not detected	W Sample container temperature is out of limit as specified at testcode	



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 Lafayette, LA 70508-3344
 TEL: (337) 235-0483 FAX: (337) 233-6540
 Website: www.element.com

QC SUMMARY REPORT

WO#: 22061154
 11-Jul-22

Client: ICON Environmental Services
Project: Grand River - Levert 9326-025-0100

BatchID: R110920

Sample ID	MB-R110920	SampType:	MBLK	TestCode:	HEM_S	Units:	% dry wt	Prep Date:		RunNo:	110920		
Client ID:	PBS	Batch ID:	R110920	TestNo:	SW9071B			Analysis Date:	6/27/2022	SeqNo:	2741721		
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

HEM, Oil & Grease

< 0.05

0.05

Sample ID	LCS-R110920	SampType:	LCS	TestCode:	HEM_S	Units:	% dry wt	Prep Date:		RunNo:	110920		
Client ID:	LCSS	Batch ID:	R110920	TestNo:	SW9071B			Analysis Date:	6/27/2022	SeqNo:	2741722		
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

HEM, Oil & Grease

0.24

0.05

0.20

0

120

70

130

Sample ID	LCSD-R110920	SampType:	LCSD	TestCode:	HEM_S	Units:	% dry wt	Prep Date:		RunNo:	110920		
Client ID:	LCSS02	Batch ID:	R110920	TestNo:	SW9071B			Analysis Date:	6/27/2022	SeqNo:	2741723		
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

HEM, Oil & Grease

0.24

0.05

0.20

0

120

70

130

0.24

0

40

Sample ID	22061154-005AMS	SampType:	MS	TestCode:	HEM_S	Units:	% dry wt	Prep Date:		RunNo:	110920		
Client ID:	SB-11 0-2'	Batch ID:	R110920	TestNo:	SW9071B			Analysis Date:	6/27/2022	SeqNo:	2741724		
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

HEM, Oil & Grease

0.33

0.05

0.52

0.03

56.5

70

130

S

NOTES:

S - Spike recovery indicates matrix interference. The method is in control as indicated by the LCS/LCSD.

Qualifiers:

- | | | |
|--|---|--|
| * Value exceeds Maximum Contaminant Level. | B Analyte detected in the associated Method Blank | H Holding times for preparation or analysis exceeded |
| M Matrix Interference | ND Not Detected at the Reporting Limit | R RPD outside accepted recovery limits |
| RL Reporting Limit | S Spike Recovery outside accepted recovery limits | SDL Sample detection limit |
| U Analyte not detected | W Sample container temperature is out of limit as specified at testcode | |



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QC SUMMARY REPORT

WO#: 22061154
 11-Jul-22

Client: ICON Environmental Services
Project: Grand River - Levert 9326-025-0100

BatchID: R110920

Sample ID	22061154-005ADUP	SampType:	DUP	TestCode:	HEM_S	Units:	% dry wt	Prep Date:		RunNo:	110920		
Client ID:	SB-11 0-2'	Batch ID:	R110920	TestNo:	SW9071B			Analysis Date:	6/27/2022	SeqNo:	2741726		
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
HEM, Oil & Grease		< 0.05		0.05						0	0	40	

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank	H	Holding times for preparation or analysis exceede
	M	Matrix Interference	ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits
	RL	Reporting Limit	S	Spike Recovery outside accepted recovery limits	SDL	Sample detection limit
	U	Analyte not detected	W	Sample container temperature is out of limit as specified at testcode		



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QC SUMMARY REPORT

WO#: 22061154
 11-Jul-22

Client: ICON Environmental Services
Project: Grand River - Levert 9326-025-0100

BatchID: R111103

Sample ID	22061119-001ADUP	SampType:	DUP	TestCode:	PMOIST_29B	Units:	wt%	Prep Date:		RunNo:	111103		
Client ID:	ZZZZZZ	Batch ID:	R111103	TestNo:	LDNR 29-B			Analysis Date:	6/24/2022	SeqNo:	2743455		
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Percent Moisture		17.8		1.00						17.30	2.85	20	

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank	H	Holding times for preparation or analysis exceede
	M	Matrix Interference	ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits
	RL	Reporting Limit	S	Spike Recovery outside accepted recovery limits	SDL	Sample detection limit
	U	Analyte not detected	W	Sample container temperature is out of limit as specified at testcode		



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QC SUMMARY REPORT

WO#: 22061154
 11-Jul-22

Client: ICON Environmental Services
Project: Grand River - Levert 9326-025-0100

BatchID: R111104

Sample ID	22061154-020ADUP	SampType:	DUP	TestCode:	PMOIST_29B	Units:	wt%	Prep Date:		RunNo:	111104		
Client ID:	SB-21 0-2'	Batch ID:	R111104	TestNo:	LDNR 29-B			Analysis Date:	6/27/2022	SeqNo:	2743402		
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Percent Moisture		32.3		1.00						31.70	1.88	20	

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank	H	Holding times for preparation or analysis exceede
M	Matrix Interference	ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits
RL	Reporting Limit	S	Spike Recovery outside accepted recovery limits	SDL	Sample detection limit
U	Analyte not detected	W	Sample container temperature is out of limit as specified at testcode		






Sample Log-In Check List

Client Name: **ICON_ENV**

Work Order Number: **22061154**

RcptNo: **1**

Logged by:	Rhonda David	6/24/2022 3:20:00 PM	
Completed By:	Rhonda David	6/24/2022 4:06:42 PM	
Reviewed By:	Cristina Thibeaux	6/29/2022 2:54:42 PM	

Chain of Custody

1. Is Chain of Custody complete? Yes No Not Present
2. How was the sample delivered? Client

Log In

3. Coolers are present? Yes No NA
4. Shipping container/cooler in good condition? Yes No
- Custody seals intact on shipping container/cooler? Yes No Not Present
- No. Seal Date: Signed By:
5. Was an attempt made to cool the samples? Yes No NA
6. Were all samples received at a temperature of >0° C to 6.0°C Yes No NA
7. Sample(s) in proper container(s)? Yes No
8. Sufficient sample volume for indicated test(s)? Yes No
9. Are samples (except VOA and ONG) properly preserved? Yes No
10. Was preservative added to bottles? Yes No NA
11. Is the headspace in the VOA vials less than 1/4 inch or 6 mm? Yes No No VOA Vials
12. Were any sample containers received broken? Yes No
13. Does paperwork match bottle labels? Yes No
(Note discrepancies on chain of custody)
14. Are matrices correctly identified on Chain of Custody? Yes No
15. Is it clear what analyses were requested? Yes No
16. Were all holding times able to be met? Yes No
(If no, notify customer for authorization.)

Special Handling (if applicable)

17. Was client notified of all discrepancies with this order? Yes No NA

Person Notified:	<input type="text"/>	Date:	<input type="text"/>
By Whom:	<input type="text"/>	Via:	<input type="checkbox"/> eMail <input type="checkbox"/> Phone <input type="checkbox"/> Fax <input type="checkbox"/> In Person
Regarding:	<input type="text"/>		
Client Instructions:	<input type="text"/>		

18. Additional remarks:
 Improper error correction(s) made by client

Cooler Information

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	4.3	Good	Not Present			



Chain of Custody

Laboratory Number: 22061154

Client Information:
 Company Name: ICON
 Contact Name: Jason Sills
 Address: 2049 Commercial Dr.
 City, State Zip: Port Allen, LA 70767
 Phone Number: 225.344.8490 Ext: _____
 Fax Number: 225.344.6654
 E-mail Address: jsills@iconenv.com

Billing Information:
 PO Number: _____
 Quote Number: _____
 Required QC Level: _____
 Bill Monthly: Yes No

Project Name/Number: Grand River - Levert
9326-025-0100
Sampler's Signature: Kahn Ball
Shipping Method: UPS / FedEx / NOW
DHL / Element / Hand / Mail

Matrix Code:
 DW = Drinking Water
 WW = Waste Water
 GW = Ground Water
 AQ = Aqueous
 OT = Other
 SL = Sludge
 O = Oil
 F = Food
 NG = Natural Gas
 NGL = Natural Gas Liquid
 PW = Produced Water
 CF = Completion Fluid

Sample ID/Description	Turn Time	Which Regulations Apply:	Collection Information	Container	Pres.	Requested Tests	Comments
SB-9	2-4'	<input type="checkbox"/> RCRA <input type="checkbox"/> POTW <input type="checkbox"/> NPDES <input type="checkbox"/> USDA/FDA <input type="checkbox"/> RECAP/RISC	Standard <input checked="" type="checkbox"/> RUSH <input type="checkbox"/> 1 Day <input type="checkbox"/> 2 Day <input type="checkbox"/> Other	Quantity Type P=Plastic, V=Vial	HCl, HNO ₃ , H ₂ SO ₄ NaOH, Na ₂ SO ₄	29B Metals As, Ba, TlBa, Cd, Cr, Sr, Zn, Pb, Hg	
SB-10	0-2'		6.22.22 1030	G	50	TPH D&D	
SB-10	0-2'		6.22.22 1135	G	50	29B Metals	
SB-10	2-4'		6.22.22 1135	G	50	29B Metals	
SB-10	4-6'		6.22.22 1200	G	50	29B Metals	
SB-11	0-2'		6.22.22 1345	G	50	29B Metals	
SB-11	2-4'		6.22.22 1345	G	50	29B Metals	
SB-12	0-2'		6.22.22 1430	G	50	29B Metals	
SB-12	2-4'		6.22.22 1430	G	50	29B Metals	
SB-13	0-2'		6.22.22 1530	G	50	29B Metals	

Relinquished by: Kahn Ball **Date/Time:** 6.24.22 / 1520
Received by: Markus Lee **Date/Time:** 6/24/22 1520
Field Notes: Received at lab on ice? Yes No **Temp:** 4.3°

All samples submitted to Element Materials Technology for analysis are accepted on a custodial basis only. Ownership of the material remains with the client submitting the samples. Element Materials Technology reserves the right to return unused sample portions.

8800 North US 31
 Columbus, IN 47201 USA
 P 812-375-0631
 F 812-375-0731

328 Lay Road, Suite 100
 Fort Wayne, IN 46825 USA
 P 260-471-7000
 F 260-471-7777

909 Executive Dr
 Warsaw, IN 46580 USA
 P 574-267-1305
 F 574-269-6569

3371 Cleveland Road, Suite 100A
 South Bend, IN 46628 USA
 P 574-277-0707
 F 574-273-5699

2417 W. Pinhook Rd
 Lafayette, LA 70508 USA
 P 337-235-0483
 F 337-233-6540



Chain of Custody

Laboratory Number: **22061154**

Client Information: Company Name: **ICON** PO Number: **Grand River-Levert**
 Billing Information: **SAME** Quote Number: **9324-025-0100**
 Address: **Matrix Code**

City, State Zip: **Ext:** Sampler's Signature: **Kath Bell**
 Phone Number: **Ext:** Shipping Method: **UPS / FedEx / NOW**
 Fax Number: **Ext:** **DHL / Element / Hand / Mail**
 E-mail Address:

Page 2 of 3
 Matrix Code
 DW = Drinking Water
 WW = Waste Water
 GW = Ground Water
 AQ = Aqueous
 OT = Other
 SL = Sludge
 D = Oil
 F = Food
 NG = Natural Gas
 NGL = Natural Gas Liquid
 PW = Produced Water
 CF = Completion Fluid

Sample ID/Description	Which Regulations Apply: <input type="checkbox"/> RCRA <input type="checkbox"/> POTW <input type="checkbox"/> NPDES <input type="checkbox"/> USDA/FDA <input type="checkbox"/> RECAP/RISC	Turn Time <input checked="" type="checkbox"/> Standard <input type="checkbox"/> RUSH <input type="checkbox"/> 1 Day <input type="checkbox"/> 2 Day <input type="checkbox"/> Other	Collection Information			Container Type Quantity	Pres. HCl, HNO ₃ , H ₂ SO ₄ NaOH, Na ₂ SO ₄	Requested Tests	Comments
			(Rush turn times will incur a surcharge and must be pre-approved by lab.)		Matrix				
			Date	Time					
SB-13	2-4'	6.23.22	1530	G	P	—	As, Ba, TTRx, 90 Moisture		
SB-14	0-2'	6.23.22	1015	G	P	—			
SB-14	2-4'	6.23.22	1015	G	P	—			
SB-14	6-8'	6.23.22	1030	G	P	—			
SB-15	0-2'	6.23.22	1040	G	P	—			
SB-15	2-4'	6.23.22	1040	G	P	—			
SB-15	6-8'	6.23.22	1100	G	P	—			
SB-16	0-2'	6.23.22	1120	G	P	—			
SB-16	2-4'	6.23.22	1120	G	P	—			

Relinquished by: **Kath Bell** **Date/Time:** **6.24.22 / 1520** **Matrix**

Received by: **[Signature]** **Date/Time:** **6/24/22 1520**

Field Notes: Received at lab on ice? Yes No Temp: **4.9°**

All samples submitted to Element Materials Technology for analysis are accepted on a custodial basis only. Ownership of the material remains with the client submitting the samples.

Element Materials Technology reserves the right to return unused sample portions.

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 46580 USA
 P 574-297-3305
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3371 Cleveland Road, Suite 100A
 South Bend, IN
 46628 USA
 P 574-277-0707
 F 574-273-5599

2417 W. Pinhook Rd
 Lafayette, LA
 70508 USA
 P 337-235-0683
 F 337-233-6540



Chain of Custody

Laboratory Number: **22061154**

Client Information: Company Name: **ICON** PO Number: **Grand River-Levert** Page 3 of 3
 Contact Name: **SAME** Quote Number: **9326-025-0100** Matrix Code
 Address: **Ext:** Required QC Level
 City, State Zip: **Ext:** Bill Monthly Yes No
 Phone Number: **Ext:** Shipping Method: **UPS / FedEx / NOW**
 Fax Number: **Ext:** **DHL / Element (Hand) / Mail**
 E-mail Address: **Ext:**

Which Regulations Apply:
 RCRA Drinking Water Standard RUSH
 POTW Distribution 1 Day
 NPDES Special 2 Day
 USDA/FDA State Other
 RECAP/RISC Other

Turn Time
 Standard RUSH
 1 Day 2 Day Other

Sample ID/Description
 SB-16 6-8' 6.23.22 1135 G SO
 SB-17 0-2' 6.23.22 1415 G SO
 SB-21 0-2' 6.23.22 1510 G SO
 SB-22 0-2' 6.23.22 1520 G SO
 SB-23 0-2' 6.23.22 1525 G SO
 SB-24 0-2' 6.23.22 1530 G SO

Project Name/Number: **Grand River-Levert**
Sampler's Signature: *Kateri Zell*
Shipping Method: **UPS / FedEx / NOW**
DHL / Element (Hand) / Mail

Matrix Code
 DW = Drinking Water
 WW = Waste Water
 GW = Ground Water
 AQ = Aqueous
 OT = Other
 SL = Sludge
 O = Oil
 F = Food
 NG = Natural Gas
 NGL = Natural Gas Liquid
 PW = Produced Water
 CF = Completion Fluid

Sample ID/Description	Turn Time	Date	Time	Matrix	Rush turn times will incur a surcharge and must be pre-approved by lab.	Container		Pres.	Requested Tests	Comments
						Quantity	Type			
SB-16	6-8'	6.23.22	1135	G		1	P	HCl, HNO ₃ , H ₂ SO ₄ NaOH, Na ₂ S ₂ O ₃	TPH, PCB, HEM, O ₃ , G	
SB-17	0-2'	6.23.22	1415	G		1	G		TPH, O ₃ , G	
SB-21	0-2'	6.23.22	1510	G		1	P		X	
SB-22	0-2'	6.23.22	1520	G		1	P		X	
SB-23	0-2'	6.23.22	1525	G		1	P		X	
SB-24	0-2'	6.23.22	1530	G		1	P		X	

Relinquished by: *Kateri Zell* **Date/Time:** 6.24.22/1520
Received by: *Y. Matlock* **Date/Time:** 6/24/22 1520
 Field Notes: Received at lab on ice? Yes No Temp: 4.3°

All samples submitted to Element Materials Technology for analysis are accepted on a custodial basis only. Ownership of the material remains with the client submitting the samples. Element Materials Technology reserves the right to return unused sample portions.

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 F 574-269-5569

3371 Cleveland Road, Suite 100A
 South Bend, IN 46628 USA
 P 574-277-0707
 F 574-273-5099

2417 W. Pinhook Rd
 Lafayette, LA 70508 USA
 P 337-235-0483
 F 337-233-6940



Element Materials Technology Lafayette
2417 W. Pinhook Road
Lafayette, LA 70508-3344
TEL: (337) 235-0483 FAX: (337) 233-6540
Website: www.element.com

July 15, 2022

Greg Miller
ICON Environmental Services
2049 Commercial Drive
Port Allen, LA 70767
TEL: (225) 344-8490
FAX (225) 344-6654

RE: Grand River Levert 9326-025-0100

Order No.: 22061196

Dear Greg Miller:

Element Materials Technology Lafayette received 13 sample(s) on 6/28/2022 for the analyses presented in the following report.

In accordance with your instructions, Element Lafayette either conducted or subcontracted these analyses. Subcontracted analyses will be identified in the accompanying case narrative. All relevant sampling information can be found on the attached Chain-of-Custody form. Unless otherwise noted, all analyses were conducted using EPA approved methodologies and all test results meet the applicable requirements of TNI. Reported results relate only to the items tested.

Where applicable, all soil data, except for 29-B, are reported on a wet-weight basis unless otherwise indicated in the units field as –dry.

LELAP Certification No.: 01997. TCEQ Certification No.: T104704261. LDHH Certification No.: LA023. ISDH Certification No.: C-LA-01. NDELCP Certification No.: R-226. A scope of accredited parameters is available upon request. A "#" by the test method or analyte indicates this parameter is outside the scope of accreditation. PA registration No.: 68-05967.

Estimated uncertainty is available upon request. This report shall not be reproduced, except in full, without the written approval of the laboratory.

If you have any questions regarding these test results, please feel free to call.

Cristina Thibeaux
Customer Service Supervisor



Element Materials Technology Lafayette
2417 W. Pinhook Road
Lafayette, LA 70508-3344
TEL: (337) 235-0483 FAX: (337) 233-6540
Website: www.element.com

Case Narrative

WO#: 22061196
Date: 7/15/2022

CLIENT: ICON Environmental Services
Project: Grand River Levert 9326-025-0100

Unless specified by the client, a duplicate or MS/MSD, wherever applicable, is randomly selected and analyzed from each analytical batch provided sample volume is sufficient. The sample chosen for duplicate or MS/MSD may or may not be a sample submitted in this workorder. A method blank and/or a lab control sample (LCS)/lab control sample duplicate (LCSD), wherever applicable, are processed as a quality control check for each analytical batch. When the matrix QC data is not available due to insufficient sample volume or when the results indicate possible matrix effect, the validity of the batch is determined by the method blank and LCS/LCSD.

The results of the laboratory internal quality control data are provided in the QC Summary Report section of the report for your review. Laboratory-related QC exceptions that may impact the validity of data are discussed in the case narrative. Sample-related QC exceptions are flagged either in the results page(s) or in the QC report page(s). End users should consider QC exceptions when evaluating sample data against data quality objectives.

Any other exceptions associated with this report will be footnoted in the results page(s) or the QC summary page(s).



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Analytical Report

(consolidated)

WO#: 22061196

Date Reported: 7/15/2022

CLIENT: ICON Environmental Services **Collection Date:** 6/21/2022 10:40:00 AM
Project: Grand River Levert 9326-025-0100
Lab ID: 22061196-001 **Matrix:** SOIL
Client Sample ID SB 1 0-2

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
29B SALTS						
CATION EXCHANGE CAPACITY						
Cation Exchange Capacity	74.3	0.100		meq/100g	1	7/8/2022
29B SALTS						
ELECTRICAL CONDUCTIVITY @ SATURATION						
Electrical Conductivity	0.52	0.10		mmhos/cm	1	7/1/2022 11:00:00 AM
29B SALTS						
EXCHANGEABLE SODIUM PERCENTAGE						
Exchangeable Sodium %	0.77	0.10		%	1	7/8/2022
29B SALTS						
SODIUM ADSORPTION RATIO						
Sodium Adsorption Ratio	1.13	0.10			1	7/5/2022
Soluble Calcium	2.06	0.02		meq/L	1	7/5/2022
Soluble Magnesium	1.03	0.05		meq/L	1	7/5/2022
Soluble Sodium	1.40	0.25		meq/L	1	7/5/2022
29B METALS						
METALS IN SOIL OR SLUDGE BY ICP						
Arsenic	3.85	1.98		mg/Kg-dry	1	7/7/2022 4:27:28 PM
Barium	3,050	14.9		mg/Kg-dry	1	7/7/2022 4:27:28 PM
29B METALS						
TRUE TOTAL BARIUM						
True Total Barium	51,900	235	*	mg/Kg-dry	1	7/7/2022 3:07:19 PM
PERCENT MOISTURE						
Percent Moisture	41.2	1.00		wt%	1	6/28/2022 12:00:00 PM

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded	M	Matrix Interference
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits
RL	Reporting Limit	S	Spike Recovery outside accepted recovery limits
SDL	Sample detection limit	U	Analyte not detected
W	Sample container temperature is out of limit as specified at testcode		



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Analytical Report

(consolidated)

WO#: 22061196

Date Reported: 7/15/2022

CLIENT: ICON Environmental Services **Collection Date:** 6/21/2022 10:40:00 AM
Project: Grand River Levert 9326-025-0100
Lab ID: 22061196-002 **Matrix:** SOIL
Client Sample ID SB 1 2-4

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
29B SALTS					LDNR 29-B	LDNR 29-B Analyst: MRM
CATION EXCHANGE CAPACITY						
Cation Exchange Capacity	77.4	0.100		meq/100g	1	7/8/2022
29B SALTS					LDNR 29-B	Analyst: JMI
ELECTRICAL CONDUCTIVITY @ SATURATION						
Electrical Conductivity	1.14	0.10		mmhos/cm	1	7/1/2022 11:00:00 AM
29B SALTS					LDNR 29-B	LDNR 29-B Analyst: MRM
EXCHANGEABLE SODIUM PERCENTAGE						
Exchangeable Sodium %	1.62	0.10		%	1	7/8/2022
29B SALTS					LDNR 29-B	LDNR 29-B Analyst: MRM
SODIUM ADSORPTION RATIO						
Sodium Adsorption Ratio	1.99	0.10			1	7/5/2022
Soluble Calcium	4.68	0.02		meq/L	1	7/5/2022
Soluble Magnesium	2.27	0.05		meq/L	1	7/5/2022
Soluble Sodium	3.71	0.25		meq/L	1	7/5/2022
29B METALS					SW6010B	SW3050B Analyst: MRM
METALS IN SOIL OR SLUDGE BY ICP						
Arsenic	6.57	1.98		mg/Kg-dry	1	7/7/2022 4:29:46 PM
Barium	2,600	14.8		mg/Kg-dry	1	7/7/2022 4:29:46 PM
29B METALS					LDNR 29-B	Analyst: MRM
TRUE TOTAL BARIUM						
True Total Barium	33,700	242		mg/Kg-dry	1	7/7/2022 3:09:36 PM
PERCENT MOISTURE					LDNR 29-B	Analyst: HXW
Percent Moisture	44.2	1.00		wt%	1	6/28/2022 12:00:00 PM

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded	M	Matrix Interference
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits
RL	Reporting Limit	S	Spike Recovery outside accepted recovery limits
SDL	Sample detection limit	U	Analyte not detected
W	Sample container temperature is out of limit as specified at testcode		



Element Materials Technology Lafayette
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Analytical Report

(consolidated)

WO#: 22061196

Date Reported: 7/15/2022

CLIENT: ICON Environmental Services **Collection Date:** 6/21/2022 11:40:00 AM
Project: Grand River Levert 9326-025-0100
Lab ID: 22061196-003 **Matrix:** SOIL
Client Sample ID SB 3 0-2

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
29B SALTS						
CATION EXCHANGE CAPACITY						
Cation Exchange Capacity	25.8	0.100		meq/100g	1	7/8/2022
29B SALTS						
ELECTRICAL CONDUCTIVITY @ SATURATION						
Electrical Conductivity	0.78	0.10		mmhos/cm	1	7/1/2022 11:00:00 AM
29B SALTS						
EXCHANGEABLE SODIUM PERCENTAGE						
Exchangeable Sodium %	1.11	0.10		%	1	7/8/2022
29B SALTS						
SODIUM ADSORPTION RATIO						
Sodium Adsorption Ratio	1.22	0.10			1	7/5/2022
Soluble Calcium	3.70	0.02		meq/L	1	7/5/2022
Soluble Magnesium	1.62	0.05		meq/L	1	7/5/2022
Soluble Sodium	1.99	0.25		meq/L	1	7/5/2022
TPH-D/O IN SOIL BY SW8015						
TPH DRO/ORO IN SOIL BY SW8015						
TPH (Diesel Range)	1,430	100		mg/Kg	10	7/5/2022 5:02:00 PM
TPH (Oil Range)	229	120		mg/Kg	10	7/5/2022 5:02:00 PM
Surr: 4-Terphenyl-d14	103	33 - 152		%Rec	10	7/5/2022 5:02:00 PM
29B METALS						
MERCURY IN SOIL OR SLUDGE						
Mercury	1.12	0.107		mg/Kg-dry	1	7/6/2022 10:30:18 AM
29B METALS						
METALS IN SOIL OR SLUDGE BY ICP						
Arsenic	12.0	2.00	*	mg/Kg-dry	1	7/7/2022 4:32:05 PM
Barium	4,510	15.0		mg/Kg-dry	1	7/7/2022 4:32:05 PM
Cadmium	0.654	0.499		mg/Kg-dry	1	7/7/2022 4:32:05 PM
Chromium	481	0.999		mg/Kg-dry	1	7/7/2022 4:32:05 PM
Lead	302	0.999		mg/Kg-dry	1	7/7/2022 4:32:05 PM

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- RL Reporting Limit
- SDL Sample detection limit
- W Sample container temperature is out of limit as specified at testcode

- B Analyte detected in the associated Method Blank
- M Matrix Interference
- R RPD outside accepted recovery limits
- S Spike Recovery outside accepted recovery limits
- U Analyte not detected



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Analytical Report

(consolidated)

WO#: 22061196

Date Reported: 7/15/2022

CLIENT: ICON Environmental Services
Project: Grand River Levert 9326-025-0100
Lab ID: 22061196-003
Client Sample ID SB 3 0-2

Collection Date: 6/21/2022 11:40:00 AM

Matrix: SOIL

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
29B METALS					SW6010B	SW3050B
METALS IN SOIL OR SLUDGE BY ICP						Analyst: MRM
Strontium	219	0.999		mg/Kg-dry	1	7/7/2022 4:32:05 PM
Zinc	207	0.999		mg/Kg-dry	1	7/7/2022 4:32:05 PM
29B METALS					LDNR 29-B	Analyst: MRM
TRUE TOTAL BARIUM						
True Total Barium	412,000	2,350	*	mg/Kg-dry	10	7/7/2022 9:15:50 PM
PERCENT MOISTURE					LDNR 29-B	Analyst: HXW
Percent Moisture	33.7	1.00		wt%	1	6/28/2022 12:00:00 PM

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	H	Holding times for preparation or analysis exceeded	M	Matrix Interference
	ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits
	RL	Reporting Limit	S	Spike Recovery outside accepted recovery limits
	SDL	Sample detection limit	U	Analyte not detected
	W	Sample container temperature is out of limit as specified at testcode		



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Analytical Report

(consolidated)

WO#: 22061196

Date Reported: 7/15/2022

CLIENT: ICON Environmental Services **Collection Date:** 6/21/2022 11:40:00 AM
Project: Grand River Levert 9326-025-0100
Lab ID: 22061196-004 **Matrix:** SOIL
Client Sample ID SB 3 2-4

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
29B SALTS						
CATION EXCHANGE CAPACITY						
Cation Exchange Capacity	60.5	0.100		meq/100g	1	7/8/2022
29B SALTS						
ELECTRICAL CONDUCTIVITY @ SATURATION						
Electrical Conductivity	0.59	0.10		mmhos/cm	1	7/1/2022 11:00:00 AM
29B SALTS						
EXCHANGEABLE SODIUM PERCENTAGE						
Exchangeable Sodium %	2.56	0.10		%	1	7/8/2022
29B SALTS						
SODIUM ADSORPTION RATIO						
Sodium Adsorption Ratio	2.45	0.10			1	7/5/2022
Soluble Calcium	1.60	0.02		meq/L	1	7/5/2022
Soluble Magnesium	0.81	0.05		meq/L	1	7/5/2022
Soluble Sodium	2.69	0.25		meq/L	1	7/5/2022
TPH-D/O IN SOIL BY SW8015						
TPH DRO/ORO IN SOIL BY SW8015						
TPH (Diesel Range)	10.4	10.0		mg/Kg	1	7/5/2022 5:16:00 PM
TPH (Oil Range)	13.8	12.0		mg/Kg	1	7/5/2022 5:16:00 PM
Surr: 4-Terphenyl-d14	94.3	33 - 152		%Rec	1	7/5/2022 5:16:00 PM
29B METALS						
MERCURY IN SOIL OR SLUDGE						
Mercury	< 0.106	0.106		mg/Kg-dry	1	7/6/2022 10:38:06 AM
29B METALS						
METALS IN SOIL OR SLUDGE BY ICP						
Arsenic	3.22	1.98		mg/Kg-dry	1	7/7/2022 4:34:24 PM
Barium	1,110	14.8		mg/Kg-dry	1	7/7/2022 4:34:24 PM
Cadmium	< 0.495	0.495		mg/Kg-dry	1	7/7/2022 4:34:24 PM
Chromium	17.7	0.989		mg/Kg-dry	1	7/7/2022 4:34:24 PM
Lead	14.8	0.989		mg/Kg-dry	1	7/7/2022 4:34:24 PM

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- RL Reporting Limit
- SDL Sample detection limit
- W Sample container temperature is out of limit as specified at testcode

- B Analyte detected in the associated Method Blank
- M Matrix Interference
- R RPD outside accepted recovery limits
- S Spike Recovery outside accepted recovery limits
- U Analyte not detected



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Analytical Report

(consolidated)

WO#: 22061196

Date Reported: 7/15/2022

CLIENT: ICON Environmental Services
Project: Grand River Levert 9326-025-0100
Lab ID: 22061196-004
Client Sample ID SB 3 2-4

Collection Date: 6/21/2022 11:40:00 AM

Matrix: SOIL

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
29B METALS					SW6010B	SW3050B
METALS IN SOIL OR SLUDGE BY ICP						Analyst: MRM
Strontium	53.8	0.989		mg/Kg-dry	1	7/7/2022 4:34:24 PM
Zinc	61.1	0.989		mg/Kg-dry	1	7/7/2022 4:34:24 PM
29B METALS					LDNR 29-B	Analyst: MRM
TRUE TOTAL BARIUM						
True Total Barium	12,100	236		mg/Kg-dry	1	7/7/2022 3:14:10 PM
PERCENT MOISTURE					LDNR 29-B	Analyst: HXW
Percent Moisture	36.9	1.00		wt%	1	6/28/2022 12:00:00 PM

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	H	Holding times for preparation or analysis exceeded	M	Matrix Interference
	ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits
	RL	Reporting Limit	S	Spike Recovery outside accepted recovery limits
	SDL	Sample detection limit	U	Analyte not detected
	W	Sample container temperature is out of limit as specified at testcode		



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Analytical Report

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WO#: 22061196

Date Reported: 7/15/2022

CLIENT: ICON Environmental Services **Collection Date:** 6/21/2022 12:10:00 PM
Project: Grand River Levert 9326-025-0100
Lab ID: 22061196-005 **Matrix:** SOIL
Client Sample ID SB 4 0-2

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
29B SALTS					LDNR 29-B	LDNR 29-B Analyst: MRM
CATION EXCHANGE CAPACITY						
Cation Exchange Capacity	7.91	0.100		meq/100g	1	7/8/2022
29B SALTS					LDNR 29-B	Analyst: JMI
ELECTRICAL CONDUCTIVITY @ SATURATION						
Electrical Conductivity	0.64	0.10		mmhos/cm	1	7/1/2022 11:00:00 AM
29B SALTS					LDNR 29-B	LDNR 29-B Analyst: MRM
EXCHANGEABLE SODIUM PERCENTAGE						
Exchangeable Sodium %	1.38	0.10		%	1	7/8/2022
29B SALTS					LDNR 29-B	LDNR 29-B Analyst: MRM
SODIUM ADSORPTION RATIO						
Sodium Adsorption Ratio	1.07	0.10			1	7/5/2022
Soluble Calcium	2.87	0.02		meq/L	1	7/5/2022
Soluble Magnesium	1.17	0.05		meq/L	1	7/5/2022
Soluble Sodium	1.52	0.25		meq/L	1	7/5/2022
TPH-D/O IN SOIL BY SW8015					SW8015B	Analyst: EH
TPH DRO/ORO IN SOIL BY SW8015						
TPH (Diesel Range)	771	50.0		mg/Kg	5	7/5/2022 5:30:00 PM
TPH (Oil Range)	121	60.0		mg/Kg	5	7/5/2022 5:30:00 PM
Surr: 4-Terphenyl-d14	66.1	33 - 152		%Rec	5	7/5/2022 5:30:00 PM
29B METALS					29B/SW7471A	SW7471A Analyst: BXB
MERCURY IN SOIL OR SLUDGE						
Mercury	1.24	0.0981		mg/Kg-dry	1	7/6/2022 10:45:47 AM
29B METALS					SW6010B	SW3050B Analyst: MRM
METALS IN SOIL OR SLUDGE BY ICP						
Arsenic	13.3	1.98	*	mg/Kg-dry	1	7/7/2022 4:36:42 PM
Barium	4,230	14.9		mg/Kg-dry	1	7/7/2022 4:36:42 PM
Cadmium	0.611	0.496		mg/Kg-dry	1	7/7/2022 4:36:42 PM
Chromium	220	0.992		mg/Kg-dry	1	7/7/2022 4:36:42 PM
Lead	266	0.992		mg/Kg-dry	1	7/7/2022 4:36:42 PM

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- RL Reporting Limit
- SDL Sample detection limit
- W Sample container temperature is out of limit as specified at testcode

- B Analyte detected in the associated Method Blank
- M Matrix Interference
- R RPD outside accepted recovery limits
- S Spike Recovery outside accepted recovery limits
- U Analyte not detected



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Analytical Report

(consolidated)

WO#: 22061196

Date Reported: 7/15/2022

CLIENT: ICON Environmental Services
Project: Grand River Levert 9326-025-0100
Lab ID: 22061196-005
Client Sample ID SB 4 0-2

Collection Date: 6/21/2022 12:10:00 PM

Matrix: SOIL

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
29B METALS					SW6010B	SW3050B
METALS IN SOIL OR SLUDGE BY ICP						Analyst: MRM
Strontium	200	0.992		mg/Kg-dry	1	7/7/2022 4:36:42 PM
Zinc	186	0.992		mg/Kg-dry	1	7/7/2022 4:36:42 PM
29B METALS					LDNR 29-B	Analyst: MRM
TRUE TOTAL BARIUM						
True Total Barium	439,000	2,350	*	mg/Kg-dry	10	7/7/2022 9:18:09 PM
PERCENT MOISTURE					LDNR 29-B	Analyst: HXW
Percent Moisture	23.5	1.00		wt%	1	6/28/2022 12:00:00 PM

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded	M	Matrix Interference
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits
RL	Reporting Limit	S	Spike Recovery outside accepted recovery limits
SDL	Sample detection limit	U	Analyte not detected
W	Sample container temperature is out of limit as specified at testcode		



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Analytical Report

(consolidated)

WO#: 22061196

Date Reported: 7/15/2022

CLIENT: ICON Environmental Services
Project: Grand River Levert 9326-025-0100
Lab ID: 22061196-006
Client Sample ID SB 4 2-4

Collection Date: 6/21/2022 12:10:00 PM

Matrix: SOIL

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	
29B SALTS							
CATION EXCHANGE CAPACITY					LDNR 29-B	LDNR 29-B	Analyst: MRM
Cation Exchange Capacity	29.0	0.100		meq/100g	1	7/8/2022	
29B SALTS							
ELECTRICAL CONDUCTIVITY @ SATURATION					LDNR 29-B		Analyst: JMI
Electrical Conductivity	0.73	0.10		mmhos/cm	1	7/1/2022 11:00:00 AM	
29B SALTS							
EXCHANGEABLE SODIUM PERCENTAGE					LDNR 29-B	LDNR 29-B	Analyst: MRM
Exchangeable Sodium %	2.37	0.10		%	1	7/8/2022	
29B SALTS							
SODIUM ADSORPTION RATIO					LDNR 29-B	LDNR 29-B	Analyst: MRM
Sodium Adsorption Ratio	2.71	0.10			1	7/5/2022	
Soluble Calcium	1.99	0.02		meq/L	1	7/5/2022	
Soluble Magnesium	1.03	0.05		meq/L	1	7/5/2022	
Soluble Sodium	3.33	0.25		meq/L	1	7/5/2022	
TPH-D/O IN SOIL BY SW8015							
TPH DRO/ORO IN SOIL BY SW8015					SW8015B		Analyst: EH
TPH (Diesel Range)	1,350	100		mg/Kg	10	7/5/2022 5:44:00 PM	
TPH (Oil Range)	234	120		mg/Kg	10	7/5/2022 5:44:00 PM	
Surr: 4-Terphenyl-d14	95.0	33 - 152		%Rec	10	7/5/2022 5:44:00 PM	
29B METALS							
MERCURY IN SOIL OR SLUDGE					29B/SW7471A	SW7471A	Analyst: BXB
Mercury	0.548	0.106		mg/Kg-dry	1	7/6/2022 10:48:26 AM	
29B METALS							
METALS IN SOIL OR SLUDGE BY ICP					SW6010B	SW3050B	Analyst: MRM
Arsenic	9.00	1.90		mg/Kg-dry	1	7/7/2022 4:39:00 PM	
Barium	3,610	14.2		mg/Kg-dry	1	7/7/2022 4:39:00 PM	
Cadmium	0.496	0.474		mg/Kg-dry	1	7/7/2022 4:39:00 PM	
Chromium	67.4	0.949		mg/Kg-dry	1	7/7/2022 4:39:00 PM	
Lead	146	0.949		mg/Kg-dry	1	7/7/2022 4:39:00 PM	

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- RL Reporting Limit
- SDL Sample detection limit
- W Sample container temperature is out of limit as specified at testcode

- B Analyte detected in the associated Method Blank
- M Matrix Interference
- R RPD outside accepted recovery limits
- S Spike Recovery outside accepted recovery limits
- U Analyte not detected



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Analytical Report

(consolidated)

WO#: **22061196**

Date Reported: **7/15/2022**

CLIENT: ICON Environmental Services
Project: Grand River Levert 9326-025-0100
Lab ID: 22061196-006
Client Sample ID SB 4 2-4

Collection Date: 6/21/2022 12:10:00 PM

Matrix: SOIL

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
29B METALS					SW6010B	SW3050B
METALS IN SOIL OR SLUDGE BY ICP						Analyst: MRM
Strontium	112	0.949		mg/Kg-dry	1	7/7/2022 4:39:00 PM
Zinc	127	0.949		mg/Kg-dry	1	7/7/2022 4:39:00 PM
29B METALS					LDNR 29-B	Analyst: MRM
TRUE TOTAL BARIUM						
True Total Barium	434,000	2,390	*	mg/Kg-dry	10	7/7/2022 9:20:27 PM
PERCENT MOISTURE					LDNR 29-B	Analyst: HXW
Percent Moisture	28.3	1.00		wt%	1	6/28/2022 12:00:00 PM

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	H	Holding times for preparation or analysis exceeded	M	Matrix Interference
	ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits
	RL	Reporting Limit	S	Spike Recovery outside accepted recovery limits
	SDL	Sample detection limit	U	Analyte not detected
	W	Sample container temperature is out of limit as specified at testcode		



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Analytical Report

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WO#: 22061196

Date Reported: 7/15/2022

CLIENT: ICON Environmental Services **Collection Date:** 6/21/2022 2:10:00 PM
Project: Grand River Levert 9326-025-0100
Lab ID: 22061196-007 **Matrix:** SOIL
Client Sample ID SB 5 2-4

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
29B SALTS					LDNR 29-B	LDNR 29-B Analyst: MRM
CATION EXCHANGE CAPACITY						
Cation Exchange Capacity	63.1	0.100		meq/100g	1	7/8/2022
29B SALTS					LDNR 29-B	Analyst: JMI
ELECTRICAL CONDUCTIVITY @ SATURATION						
Electrical Conductivity	0.34	0.10		mmhos/cm	1	7/1/2022 11:00:00 AM
29B SALTS					LDNR 29-B	LDNR 29-B Analyst: MRM
EXCHANGEABLE SODIUM PERCENTAGE						
Exchangeable Sodium %	0.90	0.10		%	1	7/8/2022
29B SALTS					LDNR 29-B	LDNR 29-B Analyst: MRM
SODIUM ADSORPTION RATIO						
Sodium Adsorption Ratio	1.02	0.10			1	7/5/2022
Soluble Calcium	1.41	0.02		meq/L	1	7/5/2022
Soluble Magnesium	0.73	0.05		meq/L	1	7/5/2022
Soluble Sodium	1.05	0.25		meq/L	1	7/5/2022
29B METALS					SW6010B	SW3050B Analyst: MRM
METALS IN SOIL OR SLUDGE BY ICP						
Arsenic	4.73	2.00		mg/Kg-dry	1	7/7/2022 4:41:19 PM
Barium	4,460	15.0		mg/Kg-dry	1	7/7/2022 4:41:19 PM
29B METALS					LDNR 29-B	Analyst: MRM
TRUE TOTAL BARIUM						
True Total Barium	116,000	244	*	mg/Kg-dry	1	7/7/2022 3:25:41 PM
PERCENT MOISTURE					LDNR 29-B	Analyst: HXW
Percent Moisture	33.4	1.00		wt%	1	6/28/2022 12:00:00 PM

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded	M	Matrix Interference
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits
RL	Reporting Limit	S	Spike Recovery outside accepted recovery limits
SDL	Sample detection limit	U	Analyte not detected
W	Sample container temperature is out of limit as specified at testcode		



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Analytical Report

(consolidated)

WO#: 22061196

Date Reported: 7/15/2022

CLIENT: ICON Environmental Services
Project: Grand River Levert 9326-025-0100
Lab ID: 22061196-008
Client Sample ID SB 5 4-6

Collection Date: 6/21/2022 2:20:00 PM

Matrix: SOIL

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	
29B SALTS							
CATION EXCHANGE CAPACITY					LDNR 29-B	LDNR 29-B	Analyst: MRM
Cation Exchange Capacity	66.6	0.100		meq/100g	1	7/8/2022	
29B SALTS							
ELECTRICAL CONDUCTIVITY @ SATURATION					LDNR 29-B		Analyst: JMI
Electrical Conductivity	0.32	0.10		mmhos/cm	1	7/1/2022 11:00:00 AM	
29B SALTS							
EXCHANGEABLE SODIUM PERCENTAGE					LDNR 29-B	LDNR 29-B	Analyst: MRM
Exchangeable Sodium %	1.52	0.10		%	1	7/8/2022	
29B SALTS							
SODIUM ADSORPTION RATIO					LDNR 29-B	LDNR 29-B	Analyst: MRM
Sodium Adsorption Ratio	1.14	0.10			1	7/5/2022	
Soluble Calcium	1.10	0.02		meq/L	1	7/5/2022	
Soluble Magnesium	0.59	0.05		meq/L	1	7/5/2022	
Soluble Sodium	1.05	0.25		meq/L	1	7/5/2022	
29B METALS							
METALS IN SOIL OR SLUDGE BY ICP					SW6010B	SW3050B	Analyst: MRM
Arsenic	3.41	1.98		mg/Kg-dry	1	7/7/2022 4:43:37 PM	
Barium	2,580	14.9		mg/Kg-dry	1	7/7/2022 4:43:37 PM	
29B METALS							
TRUE TOTAL BARIUM					LDNR 29-B		Analyst: MRM
True Total Barium	16,900	237		mg/Kg-dry	1	7/7/2022 3:27:58 PM	
PERCENT MOISTURE							
PERCENT MOISTURE					LDNR 29-B		Analyst: HXW
Percent Moisture	34.4	1.00		wt%	1	6/28/2022 12:00:00 PM	

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- RL Reporting Limit
- SDL Sample detection limit
- W Sample container temperature is out of limit as specified at testcode

- B Analyte detected in the associated Method Blank
- M Matrix Interference
- R RPD outside accepted recovery limits
- S Spike Recovery outside accepted recovery limits
- U Analyte not detected



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Analytical Report

(consolidated)

WO#: 22061196

Date Reported: 7/15/2022

CLIENT: ICON Environmental Services
Project: Grand River Levert 9326-025-0100
Lab ID: 22061196-009
Client Sample ID SB 6 2-4

Collection Date: 6/21/2022 2:50:00 PM

Matrix: SOIL

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
29B SALTS						
CATION EXCHANGE CAPACITY						
Cation Exchange Capacity	79.0	0.100		meq/100g	1	7/8/2022
29B SALTS						
ELECTRICAL CONDUCTIVITY @ SATURATION						
Electrical Conductivity	1.45	0.10		mmhos/cm	1	7/1/2022 11:00:00 AM
29B SALTS						
EXCHANGEABLE SODIUM PERCENTAGE						
Exchangeable Sodium %	1.57	0.10		%	1	7/8/2022
29B SALTS						
SODIUM ADSORPTION RATIO						
Sodium Adsorption Ratio	1.34	0.10			1	7/5/2022
Soluble Calcium	6.86	0.02		meq/L	1	7/5/2022
Soluble Magnesium	4.05	0.05		meq/L	1	7/5/2022
Soluble Sodium	3.14	0.25		meq/L	1	7/5/2022
29B METALS						
METALS IN SOIL OR SLUDGE BY ICP						
Arsenic	4.71	1.99		mg/Kg-dry	1	7/7/2022 4:47:16 PM
Barium	692	14.9		mg/Kg-dry	1	7/7/2022 4:47:16 PM
29B METALS						
TRUE TOTAL BARIUM						
True Total Barium	3,770	241		mg/Kg-dry	1	7/7/2022 3:30:15 PM
PERCENT MOISTURE						
Percent Moisture	26.2	1.00		wt%	1	6/28/2022 12:00:00 PM

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- RL Reporting Limit
- SDL Sample detection limit
- W Sample container temperature is out of limit as specified at testcode

- B Analyte detected in the associated Method Blank
- M Matrix Interference
- R RPD outside accepted recovery limits
- S Spike Recovery outside accepted recovery limits
- U Analyte not detected



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Analytical Report

(consolidated)

WO#: 22061196

Date Reported: 7/15/2022

CLIENT: ICON Environmental Services
Project: Grand River Levert 9326-025-0100
Lab ID: 22061196-010
Client Sample ID SB 6 4-6

Collection Date: 6/21/2022 2:55:00 PM

Matrix: SOIL

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
29B SALTS					LDNR 29-B	LDNR 29-B
CATION EXCHANGE CAPACITY						Analyst: MRM
Cation Exchange Capacity	70.4	0.100		meq/100g	1	7/8/2022
29B SALTS					LDNR 29-B	Analyst: JMI
ELECTRICAL CONDUCTIVITY @ SATURATION						
Electrical Conductivity	1.38	0.10		mmhos/cm	1	7/1/2022 11:00:00 AM
29B SALTS					LDNR 29-B	LDNR 29-B
EXCHANGEABLE SODIUM PERCENTAGE						Analyst: MRM
Exchangeable Sodium %	2.16	0.10		%	1	7/8/2022
29B SALTS					LDNR 29-B	LDNR 29-B
SODIUM ADSORPTION RATIO						Analyst: MRM
Sodium Adsorption Ratio	1.66	0.10			1	7/5/2022
Soluble Calcium	6.14	0.02		meq/L	1	7/5/2022
Soluble Magnesium	3.18	0.05		meq/L	1	7/5/2022
Soluble Sodium	3.59	0.25		meq/L	1	7/5/2022
29B METALS					SW6010B	SW3050B
METALS IN SOIL OR SLUDGE BY ICP						Analyst: MRM
Arsenic	3.69	2.00		mg/Kg-dry	1	7/7/2022 4:54:14 PM
Barium	700	15.0		mg/Kg-dry	1	7/7/2022 4:54:14 PM
29B METALS					LDNR 29-B	Analyst: MRM
TRUE TOTAL BARIUM						
True Total Barium	5,430	245		mg/Kg-dry	1	7/7/2022 3:32:32 PM
PERCENT MOISTURE					LDNR 29-B	Analyst: HXW
Percent Moisture	34.1	1.00		wt%	1	6/28/2022 12:00:00 PM

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- RL Reporting Limit
- SDL Sample detection limit
- W Sample container temperature is out of limit as specified at testcode

- B Analyte detected in the associated Method Blank
- M Matrix Interference
- R RPD outside accepted recovery limits
- S Spike Recovery outside accepted recovery limits
- U Analyte not detected



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Analytical Report

(consolidated)

WO#: 22061196

Date Reported: 7/15/2022

CLIENT: ICON Environmental Services
Project: Grand River Levert 9326-025-0100
Lab ID: 22061196-011
Client Sample ID SB 7 2-4

Collection Date: 6/21/2022 3:25:00 PM

Matrix: SOIL

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
29B SALTS					LDNR 29-B	LDNR 29-B
CATION EXCHANGE CAPACITY						Analyst: MRM
Cation Exchange Capacity	65.2	0.100		meq/100g	1	7/8/2022
29B SALTS					LDNR 29-B	Analyst: JMI
ELECTRICAL CONDUCTIVITY @ SATURATION						
Electrical Conductivity	0.72	0.10		mmhos/cm	1	7/1/2022 11:00:00 AM
29B SALTS					LDNR 29-B	LDNR 29-B
EXCHANGEABLE SODIUM PERCENTAGE						Analyst: MRM
Exchangeable Sodium %	1.44	0.10		%	1	7/8/2022
29B SALTS					LDNR 29-B	LDNR 29-B
SODIUM ADSORPTION RATIO						Analyst: MRM
Sodium Adsorption Ratio	1.67	0.10			1	7/5/2022
Soluble Calcium	2.59	0.02		meq/L	1	7/5/2022
Soluble Magnesium	1.45	0.05		meq/L	1	7/5/2022
Soluble Sodium	2.38	0.25		meq/L	1	7/5/2022
29B METALS					SW6010B	SW3050B
METALS IN SOIL OR SLUDGE BY ICP						Analyst: MRM
Arsenic	4.13	1.99		mg/Kg-dry	1	7/7/2022 4:56:32 PM
Barium	295	14.9		mg/Kg-dry	1	7/7/2022 4:56:32 PM
29B METALS					LDNR 29-B	Analyst: MRM
TRUE TOTAL BARIUM						
True Total Barium	1,840	246		mg/Kg-dry	1	7/7/2022 3:34:49 PM
PERCENT MOISTURE					LDNR 29-B	Analyst: HXW
Percent Moisture	34.9	1.00		wt%	1	6/28/2022 12:00:00 PM

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- RL Reporting Limit
- SDL Sample detection limit
- W Sample container temperature is out of limit as specified at testcode

- B Analyte detected in the associated Method Blank
- M Matrix Interference
- R RPD outside accepted recovery limits
- S Spike Recovery outside accepted recovery limits
- U Analyte not detected



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Analytical Report

(consolidated)

WO#: 22061196

Date Reported: 7/15/2022

CLIENT: ICON Environmental Services **Collection Date:** 6/21/2022 3:50:00 PM
Project: Grand River Levert 9326-025-0100
Lab ID: 22061196-012 **Matrix:** SOIL
Client Sample ID SB 8 0-2

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
29B SALTS					LDNR 29-B	LDNR 29-B Analyst: MRM
CATION EXCHANGE CAPACITY						
Cation Exchange Capacity	74.5	0.100		meq/100g	1	7/8/2022
29B SALTS					LDNR 29-B	Analyst: JMI
ELECTRICAL CONDUCTIVITY @ SATURATION						
Electrical Conductivity	0.63	0.10		mmhos/cm	1	7/1/2022 11:00:00 AM
29B SALTS					LDNR 29-B	LDNR 29-B Analyst: MRM
EXCHANGEABLE SODIUM PERCENTAGE						
Exchangeable Sodium %	0.73	0.10		%	1	7/8/2022
29B SALTS					LDNR 29-B	LDNR 29-B Analyst: MRM
SODIUM ADSORPTION RATIO						
Sodium Adsorption Ratio	1.06	0.10			1	7/5/2022
Soluble Calcium	3.01	0.02		meq/L	1	7/5/2022
Soluble Magnesium	1.57	0.05		meq/L	1	7/5/2022
Soluble Sodium	1.61	0.25		meq/L	1	7/5/2022
29B METALS					SW6010B	SW3050B Analyst: MRM
METALS IN SOIL OR SLUDGE BY ICP						
Arsenic	3.96	1.99		mg/Kg-dry	1	7/7/2022 4:58:50 PM
Barium	1,350	14.9		mg/Kg-dry	1	7/7/2022 4:58:50 PM
29B METALS					LDNR 29-B	Analyst: MRM
TRUE TOTAL BARIUM						
True Total Barium	42,200	249	*	mg/Kg-dry	1	7/7/2022 3:37:05 PM
PERCENT MOISTURE					LDNR 29-B	Analyst: HXW
Percent Moisture	33.2	1.00		wt%	1	6/28/2022 12:00:00 PM

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded	M	Matrix Interference
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits
RL	Reporting Limit	S	Spike Recovery outside accepted recovery limits
SDL	Sample detection limit	U	Analyte not detected
W	Sample container temperature is out of limit as specified at testcode		



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Analytical Report

(consolidated)

WO#: 22061196

Date Reported: 7/15/2022

CLIENT: ICON Environmental Services **Collection Date:** 6/21/2022 3:50:00 PM
Project: Grand River Levert 9326-025-0100
Lab ID: 22061196-013 **Matrix:** SOIL
Client Sample ID SB 8 2-4

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
29B SALTS					LDNR 29-B	LDNR 29-B Analyst: MRM
CATION EXCHANGE CAPACITY						
Cation Exchange Capacity	70.1	0.100		meq/100g	1	7/8/2022
29B SALTS					LDNR 29-B	Analyst: JMI
ELECTRICAL CONDUCTIVITY @ SATURATION						
Electrical Conductivity	0.31	0.10		mmhos/cm	1	7/1/2022 11:00:00 AM
29B SALTS					LDNR 29-B	LDNR 29-B Analyst: MRM
EXCHANGEABLE SODIUM PERCENTAGE						
Exchangeable Sodium %	1.01	0.10		%	1	7/8/2022
29B SALTS					LDNR 29-B	LDNR 29-B Analyst: MRM
SODIUM ADSORPTION RATIO						
Sodium Adsorption Ratio	1.16	0.10			1	7/5/2022
Soluble Calcium	1.13	0.02		meq/L	1	7/5/2022
Soluble Magnesium	0.60	0.05		meq/L	1	7/5/2022
Soluble Sodium	1.08	0.25		meq/L	1	7/5/2022
29B METALS					SW6010B	SW3050B Analyst: MRM
METALS IN SOIL OR SLUDGE BY ICP						
Arsenic	4.22	1.98		mg/Kg-dry	1	7/7/2022 5:01:07 PM
Barium	245	14.9		mg/Kg-dry	1	7/7/2022 5:01:07 PM
29B METALS					LDNR 29-B	Analyst: MRM
TRUE TOTAL BARIUM						
True Total Barium	1,390	245		mg/Kg-dry	1	7/7/2022 3:39:23 PM
PERCENT MOISTURE					LDNR 29-B	Analyst: HXW
Percent Moisture	33.9	1.00		wt%	1	6/28/2022 12:00:00 PM

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- RL Reporting Limit
- SDL Sample detection limit
- W Sample container temperature is out of limit as specified at testcode

- B Analyte detected in the associated Method Blank
- M Matrix Interference
- R RPD outside accepted recovery limits
- S Spike Recovery outside accepted recovery limits
- U Analyte not detected



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QC SUMMARY REPORT

WO#: 22061196
 15-Jul-22

Client: ICON Environmental Services
Project: Grand River Levert 9326-025-0100

BatchID: 44249-1

Sample ID	LCS-D44249	SampType:	LCS	TestCode:	8015_DO_S	Units:	mg/Kg	Prep Date:	6/27/2022	RunNo:	111122			
Client ID:	LCSS	Batch ID:	44249-1	TestNo:	SW8015B			Analysis Date:	7/5/2022	SeqNo:	2743740			
Analyte		Result		PQL	SPK value	SPK Ref Val		%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

TPH (Diesel Range)	89.4	10.0	100.0	0	89.4	63.4	109
Surr: 4-Terphenyl-d14	3.32		3.333		99.7	33	152

Sample ID	LCSD-D44249	SampType:	LCSD	TestCode:	8015_DO_S	Units:	mg/Kg	Prep Date:	6/27/2022	RunNo:	111122			
Client ID:	LCSS02	Batch ID:	44249-1	TestNo:	SW8015B			Analysis Date:	7/5/2022	SeqNo:	2743741			
Analyte		Result		PQL	SPK value	SPK Ref Val		%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

TPH (Diesel Range)	87.0	10.0	100.0	0	87.0	63.4	109	89.37	2.72	21.9
Surr: 4-Terphenyl-d14	3.23		3.333		96.9	33	152		0	40

Sample ID	MB-44249	SampType:	MBLK	TestCode:	8015_DO_S	Units:	mg/Kg	Prep Date:	6/27/2022	RunNo:	111122			
Client ID:	PBS	Batch ID:	44249-1	TestNo:	SW8015B			Analysis Date:	7/5/2022	SeqNo:	2743742			
Analyte		Result		PQL	SPK value	SPK Ref Val		%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

TPH (Diesel Range)	< 10.0	10.0					
TPH (Oil Range)	< 12.0	12.0					
Surr: 4-Terphenyl-d14	2.80		3.333		84.0	33	152

Sample ID	LCS-M44249	SampType:	LCS	TestCode:	8015_DO_S	Units:	mg/Kg	Prep Date:	6/27/2022	RunNo:	111122			
Client ID:	LCSS	Batch ID:	44249-1	TestNo:	SW8015B			Analysis Date:	7/5/2022	SeqNo:	2743776			
Analyte		Result		PQL	SPK value	SPK Ref Val		%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Qualifiers:	* Value exceeds Maximum Contaminant Level.	B Analyte detected in the associated Method Blank	H Holding times for preparation or analysis exceed
	M Matrix Interference	ND Not Detected at the Reporting Limit	R RPD outside accepted recovery limits
	RL Reporting Limit	S Spike Recovery outside accepted recovery limits	SDL Sample detection limit
	U Analyte not detected	W Sample container temperature is out of limit as specified at testcode	



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QC SUMMARY REPORT

WO#: 22061196
 15-Jul-22

Client: ICON Environmental Services
Project: Grand River Levert 9326-025-0100

BatchID: 44249-1

Sample ID	LCS-M44249	SampType:	LCS	TestCode:	8015_DO_S	Units:	mg/Kg	Prep Date:	6/27/2022	RunNo:	111122			
Client ID:	LCSS	Batch ID:	44249-1	TestNo:	SW8015B			Analysis Date:	7/5/2022	SeqNo:	2743776			
Analyte		Result		PQL	SPK value	SPK Ref Val		%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

TPH (Oil Range)	90.2	12.0	100.0	0	90.2	63.9	120							
Surr: 4-Terphenyl-d14	3.27		3.333		98.2	33	152							

Sample ID	LCSD-M44249	SampType:	LCSD	TestCode:	8015_DO_S	Units:	mg/Kg	Prep Date:	6/27/2022	RunNo:	111122			
Client ID:	LCSS02	Batch ID:	44249-1	TestNo:	SW8015B			Analysis Date:	7/5/2022	SeqNo:	2743843			
Analyte		Result		PQL	SPK value	SPK Ref Val		%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

TPH (Oil Range)	99.1	12.0	100.0	0	99.1	63.9	120	90.15	9.41	20.7
Surr: 4-Terphenyl-d14	3.46		3.333		104	33	152		0	40

Sample ID	22061062-001AMS-	SampType:	MS	TestCode:	8015_DO_S	Units:	mg/Kg	Prep Date:	6/27/2022	RunNo:	111122			
Client ID:	ZZZZZZ	Batch ID:	44249-1	TestNo:	SW8015B			Analysis Date:	7/5/2022	SeqNo:	2743893			
Analyte		Result		PQL	SPK value	SPK Ref Val		%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

TPH (Diesel Range)	77.6	10.0	100.0	11.79	65.8	23.4	123			
Surr: 4-Terphenyl-d14	3.13		3.333		93.9	33	152			

Sample ID	22061062-001AMS-	SampType:	MS	TestCode:	8015_DO_S	Units:	mg/Kg	Prep Date:	6/27/2022	RunNo:	111122			
Client ID:	ZZZZZZ	Batch ID:	44249-1	TestNo:	SW8015B			Analysis Date:	7/5/2022	SeqNo:	2743894			
Analyte		Result		PQL	SPK value	SPK Ref Val		%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

TPH (Oil Range)	103	12.0	100.0	15.91	87.6	14.5	174			
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Qualifiers:

* Value exceeds Maximum Contaminant Level.	B Analyte detected in the associated Method Blank	H Holding times for preparation or analysis exceeded
M Matrix Interference	ND Not Detected at the Reporting Limit	R RPD outside accepted recovery limits
RL Reporting Limit	S Spike Recovery outside accepted recovery limits	SDL Sample detection limit
U Analyte not detected	W Sample container temperature is out of limit as specified at testcode	



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QC SUMMARY REPORT

WO#: 22061196
 15-Jul-22

Client: ICON Environmental Services
Project: Grand River Levert 9326-025-0100

BatchID: 44249-1

Sample ID	22061062-001AMS-	SampType:	MS	TestCode:	8015_DO_S	Units:	mg/Kg	Prep Date:	6/27/2022	RunNo:	111122			
Client ID:	ZZZZZZ	Batch ID:	44249-1	TestNo:	SW8015B			Analysis Date:	7/5/2022	SeqNo:	2743894			
Analyte		Result		PQL	SPK value	SPK Ref Val		%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Surr: 4-Terphenyl-d14 3.07 3.333 92.0 33 152

Sample ID	22061062-001AMSD	SampType:	MSD	TestCode:	8015_DO_S	Units:	mg/Kg	Prep Date:	6/27/2022	RunNo:	111122			
Client ID:	ZZZZZZ	Batch ID:	44249-1	TestNo:	SW8015B			Analysis Date:	7/5/2022	SeqNo:	2743895			
Analyte		Result		PQL	SPK value	SPK Ref Val		%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

TPH (Diesel Range) 84.4 10.0 100.0 11.79 72.7 23.4 123 77.62 8.41 35.6
 Surr: 4-Terphenyl-d14 2.93 3.333 88.0 33 152 0 40

Sample ID	22061062-001AMSD	SampType:	MSD	TestCode:	8015_DO_S	Units:	mg/Kg	Prep Date:	6/27/2022	RunNo:	111122			
Client ID:	ZZZZZZ	Batch ID:	44249-1	TestNo:	SW8015B			Analysis Date:	7/5/2022	SeqNo:	2743979			
Analyte		Result		PQL	SPK value	SPK Ref Val		%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

TPH (Oil Range) 100 12.0 100.0 15.91 84.2 14.5 174 103.5 3.34 48.8
 Surr: 4-Terphenyl-d14 2.93 3.333 87.8 33 152 0 40

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank	H	Holding times for preparation or analysis exceed
M	Matrix Interference	ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits
RL	Reporting Limit	S	Spike Recovery outside accepted recovery limits	SDL	Sample detection limit
U	Analyte not detected	W	Sample container temperature is out of limit as specified at testcode		



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QC SUMMARY REPORT

WO#: 22061196
 15-Jul-22

Client: ICON Environmental Services
Project: Grand River Levert 9326-025-0100

BatchID: 44312

Sample ID	22061196-001ADUP	SampType:	DUP	TestCode:	ESP_S	Units:	%	Prep Date:	7/1/2022	RunNo:	111277		
Client ID:	SB 1 0-2	Batch ID:	44312	TestNo:	LDNR 29-B	LDNR 29-B		Analysis Date:	7/8/2022	SeqNo:	2748482		
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Exchangeable Sodium %		0.91		0.10						0.77	16.7	20	

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank	H	Holding times for preparation or analysis exceede
M	Matrix Interference	ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits
RL	Reporting Limit	S	Spike Recovery outside accepted recovery limits	SDL	Sample detection limit
U	Analyte not detected	W	Sample container temperature is out of limit as specified at testcode		



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QC SUMMARY REPORT

WO#: 22061196
 15-Jul-22

Client: ICON Environmental Services
Project: Grand River Levert 9326-025-0100

BatchID: 44313

Sample ID	22061196-001ADUP	SampType:	DUP	TestCode:	CEC	Units:	meq/100g	Prep Date:	7/1/2022	RunNo:	111277
Client ID:	SB 1 0-2	Batch ID:	44313	TestNo:	LDNR 29-B	LDNR 29-B		Analysis Date:	7/8/2022	SeqNo:	2748449
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD RPDLimit Qual
Cation Exchange Capacity		69.6		0.100						74.28	6.53 20

Sample ID	LCS-44313	SampType:	LCS	TestCode:	CEC	Units:	meq/100g	Prep Date:	7/1/2022	RunNo:	111277
Client ID:	LCSS	Batch ID:	44313	TestNo:	LDNR 29-B	LDNR 29-B		Analysis Date:	7/8/2022	SeqNo:	2748450
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD RPDLimit Qual
Cation Exchange Capacity		4.29		0.100	4.350	0	98.6	76	124		

Sample ID	LCSD-44313	SampType:	LCSD	TestCode:	CEC	Units:	meq/100g	Prep Date:	7/1/2022	RunNo:	111277
Client ID:	LCSS02	Batch ID:	44313	TestNo:	LDNR 29-B	LDNR 29-B		Analysis Date:	7/8/2022	SeqNo:	2748451
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD RPDLimit Qual
Cation Exchange Capacity		4.39		0.100	4.350	0	101	76	124	4.290	2.30 20

Qualifiers:

* Value exceeds Maximum Contaminant Level.	B Analyte detected in the associated Method Blank	H Holding times for preparation or analysis exceeded
M Matrix Interference	ND Not Detected at the Reporting Limit	R RPD outside accepted recovery limits
RL Reporting Limit	S Spike Recovery outside accepted recovery limits	SDL Sample detection limit
U Analyte not detected	W Sample container temperature is out of limit as specified at testcode	



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QC SUMMARY REPORT

WO#: 22061196
 15-Jul-22

Client: ICON Environmental Services
Project: Grand River Levert 9326-025-0100

BatchID: 44320

Sample ID	MB-44320	SampType:	MBLK	TestCode:	TTBA	Units:	mg/Kg-dry	Prep Date:	7/1/2022	RunNo:	111187
Client ID:	PBS	Batch ID:	44320	TestNo:	LDNR 29-B			Analysis Date:	7/7/2022	SeqNo:	2746392
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD RPDLimit Qual

True Total Barium < 250 250

Sample ID	LCS-44320	SampType:	LCS	TestCode:	TTBA	Units:	mg/Kg-dry	Prep Date:	7/1/2022	RunNo:	111187
Client ID:	LCSS	Batch ID:	44320	TestNo:	LDNR 29-B			Analysis Date:	7/7/2022	SeqNo:	2746393
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD RPDLimit Qual

True Total Barium 5,130 250 5,000 0 103 75 125

Sample ID	LCSD-44320	SampType:	LCSD	TestCode:	TTBA	Units:	mg/Kg-dry	Prep Date:	7/1/2022	RunNo:	111187
Client ID:	LCSS02	Batch ID:	44320	TestNo:	LDNR 29-B			Analysis Date:	7/7/2022	SeqNo:	2746394
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD RPDLimit Qual

True Total Barium 5,130 250 5,000 0 103 75 125 5,126 0.0673 20

Sample ID	22061154-022AMS	SampType:	MS	TestCode:	TTBA	Units:	mg/Kg-dry	Prep Date:	7/1/2022	RunNo:	111187
Client ID:	ZZZZZ	Batch ID:	44320	TestNo:	LDNR 29-B			Analysis Date:	7/7/2022	SeqNo:	2746398
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD RPDLimit Qual

True Total Barium 5,280 241 4,826 492.4 99.2 75 125

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank	H	Holding times for preparation or analysis exceed
M	Matrix Interference	ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits
RL	Reporting Limit	S	Spike Recovery outside accepted recovery limits	SDL	Sample detection limit
U	Analyte not detected	W	Sample container temperature is out of limit as specified at testcode		



Element Materials Technology Lafayette
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 TEL: (337) 235-0483 FAX: (337) 233-6540
 Website: www.element.com

QC SUMMARY REPORT

WO#: 22061196
 15-Jul-22

Client: ICON Environmental Services
Project: Grand River Levert 9326-025-0100

BatchID: 44320

Sample ID	22061154-022AMSD	SampType:	MSD	TestCode:	TTBA	Units:	mg/Kg-dry	Prep Date:	7/1/2022	RunNo:	111187		
Client ID:	ZZZZZZ	Batch ID:	44320	TestNo:	LDNR 29-B			Analysis Date:	7/7/2022	SeqNo:	2746399		
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
True Total Barium		5,370		233	4,660	492.4	105	75	125	5,282	1.57	20	

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank	H	Holding times for preparation or analysis exceede
	M	Matrix Interference	ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits
	RL	Reporting Limit	S	Spike Recovery outside accepted recovery limits	SDL	Sample detection limit
	U	Analyte not detected	W	Sample container temperature is out of limit as specified at testcode		



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QC SUMMARY REPORT

WO#: 22061196
 15-Jul-22

Client: ICON Environmental Services
Project: Grand River Levert 9326-025-0100

BatchID: 44321

Sample ID	22061196-005adup	SampType:	DUP	TestCode:	SAR_S	Units:		Prep Date:	7/1/2022	RunNo:	111222
Client ID:	SB 4 0-2	Batch ID:	44321	TestNo:	LDNR 29-B	LDNR 29-B		Analysis Date:	7/5/2022	SeqNo:	2746959
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium Adsorption Ratio	1.09	0.10						1.07	1.85	20	
Soluble Calcium	2.89	0.02						2.87	0.69	20	
Soluble Magnesium	1.17	0.05						1.17	0	20	
Soluble Sodium	1.55	0.25						1.52	1.95	20	

Qualifiers:	* Value exceeds Maximum Contaminant Level.	B Analyte detected in the associated Method Blank	H Holding times for preparation or analysis exceede
	M Matrix Interference	ND Not Detected at the Reporting Limit	R RPD outside accepted recovery limits
	RL Reporting Limit	S Spike Recovery outside accepted recovery limits	SDL Sample detection limit
	U Analyte not detected	W Sample container temperature is out of limit as specified at testcode	



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QC SUMMARY REPORT

WO#: 22061196
 15-Jul-22

Client: ICON Environmental Services
Project: Grand River Levert 9326-025-0100

BatchID: 44327

Sample ID	MB-44327	SampType:	MBLK	TestCode:	HG_S_29B	Units:	mg/Kg-dry	Prep Date:	7/5/2022	RunNo:	111172
Client ID:	PBS	Batch ID:	44327	TestNo:	29B/SW7471 SW7471A			Analysis Date:	7/6/2022	SeqNo:	2744983
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD RPDLimit Qual

Mercury < 0.100 0.100

Sample ID	LCS-44327	SampType:	LCS	TestCode:	HG_S_29B	Units:	mg/Kg-dry	Prep Date:	7/5/2022	RunNo:	111172
Client ID:	LCSS	Batch ID:	44327	TestNo:	29B/SW7471 SW7471A			Analysis Date:	7/6/2022	SeqNo:	2744984
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD RPDLimit Qual

Mercury 0.831 0.100 0.8330 0 99.7 80 120

Sample ID	LCSD-44327	SampType:	LCSD	TestCode:	HG_S_29B	Units:	mg/Kg-dry	Prep Date:	7/5/2022	RunNo:	111172
Client ID:	LCSS02	Batch ID:	44327	TestNo:	29B/SW7471 SW7471A			Analysis Date:	7/6/2022	SeqNo:	2744985
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD RPDLimit Qual

Mercury 0.832 0.100 0.8330 0 99.9 80 120 0.8305 0.152 20

Sample ID	22061196-003AMS	SampType:	MS	TestCode:	HG_S_29B	Units:	mg/Kg-dry	Prep Date:	7/5/2022	RunNo:	111172
Client ID:	SB 3 0-2	Batch ID:	44327	TestNo:	29B/SW7471 SW7471A			Analysis Date:	7/7/2022	SeqNo:	2745043
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD RPDLimit Qual

Mercury 2.09 0.200 0.8309 1.123 116 75 125

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank	H	Holding times for preparation or analysis exceeded
M	Matrix Interference	ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits
RL	Reporting Limit	S	Spike Recovery outside accepted recovery limits	SDL	Sample detection limit
U	Analyte not detected	W	Sample container temperature is out of limit as specified at testcode		



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QC SUMMARY REPORT

WO#: 22061196
 15-Jul-22

Client: ICON Environmental Services
Project: Grand River Levert 9326-025-0100

BatchID: 44327

Sample ID	22061196-003AMSD	SampType:	MSD	TestCode:	HG_S_29B	Units:	mg/Kg-dry	Prep Date:	7/5/2022	RunNo:	111172		
Client ID:	SB 3 0-2	Batch ID:	44327	TestNo:	29B/SW7471 SW7471A			Analysis Date:	7/7/2022	SeqNo:	2745044		
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury		1.96		0.195	0.8107	1.123	103	75	125	2.090	6.45	20	

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank	H	Holding times for preparation or analysis exceede
M	Matrix Interference	ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits
RL	Reporting Limit	S	Spike Recovery outside accepted recovery limits	SDL	Sample detection limit
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QC SUMMARY REPORT

WO#: 22061196
 15-Jul-22

Client: ICON Environmental Services
Project: Grand River Levert 9326-025-0100

BatchID: 44342

Sample ID	MB-44342	SampType:	MBLK	TestCode:	6010_S_29B	Units:	mg/Kg-dry	Prep Date:	7/5/2022	RunNo:	111187
Client ID:	PBS	Batch ID:	44342	TestNo:	SW6010B	SW3050B		Analysis Date:	7/7/2022	SeqNo:	2746425
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Arsenic	< 2.00	2.00									
Barium	< 15.0	15.0									
Cadmium	< 0.500	0.500									
Chromium	< 1.00	1.00									
Lead	< 1.00	1.00									
Strontium	< 1.00	1.00									
Zinc	< 1.00	1.00									

Sample ID	LCS-44342	SampType:	LCS	TestCode:	6010_S_29B	Units:	mg/Kg-dry	Prep Date:	7/5/2022	RunNo:	111187
Client ID:	LCSS	Batch ID:	44342	TestNo:	SW6010B	SW3050B		Analysis Date:	7/7/2022	SeqNo:	2746426
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Arsenic	45.4	2.00	50.00	0	90.9	80	120				
Barium	54.4	15.0	50.00	0	109	80	120				
Cadmium	45.7	0.500	50.00	0	91.5	80	120				
Chromium	47.0	1.00	50.00	0	94.1	80	120				
Lead	45.6	1.00	50.00	0	91.3	80	120				
Strontium	47.6	1.00	50.00	0	95.2	80	120				
Zinc	44.1	1.00	50.00	0	88.2	80	120				

Qualifiers:

* Value exceeds Maximum Contaminant Level.	B Analyte detected in the associated Method Blank	H Holding times for preparation or analysis exceed
M Matrix Interference	ND Not Detected at the Reporting Limit	R RPD outside accepted recovery limits
RL Reporting Limit	S Spike Recovery outside accepted recovery limits	SDL Sample detection limit
U Analyte not detected	W Sample container temperature is out of limit as specified at testcode	



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QC SUMMARY REPORT

WO#: 22061196
 15-Jul-22

Client: ICON Environmental Services
Project: Grand River Levert 9326-025-0100

BatchID: 44342

Sample ID	LCSD-44342	SampType:	LCSD	TestCode:	6010_S_29B	Units:	mg/Kg-dry	Prep Date:	7/5/2022	RunNo:	111187
Client ID:	LCSS02	Batch ID:	44342	TestNo:	SW6010B		SW3050B	Analysis Date:	7/7/2022	SeqNo:	2746427
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	44.4	2.00	50.00	0	88.7	80	120	45.43	2.40	20	
Barium	53.3	15.0	50.00	0	107	80	120	54.36	2.02	20	
Cadmium	44.6	0.500	50.00	0	89.3	80	120	45.75	2.46	20	
Chromium	45.8	1.00	50.00	0	91.5	80	120	47.03	2.76	20	
Lead	44.6	1.00	50.00	0	89.3	80	120	45.63	2.21	20	
Strontium	46.3	1.00	50.00	0	92.6	80	120	47.61	2.84	20	
Zinc	42.9	1.00	50.00	0	85.7	80	120	44.12	2.88	20	

Sample ID	22061154-022AMS	SampType:	MS	TestCode:	6010_S_29B	Units:	mg/Kg-dry	Prep Date:	7/5/2022	RunNo:	111187
Client ID:	ZZZZZZ	Batch ID:	44342	TestNo:	SW6010B		SW3050B	Analysis Date:	7/7/2022	SeqNo:	2746429
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	33.6	1.91	47.70	4.301	61.4	75	125				S
Barium	218	14.3	47.70	201.5	34.9	75	125				S
Cadmium	31.4	0.477	47.70	0.3852	65.1	75	125				S
Chromium	48.4	0.954	47.70	15.35	69.3	75	125				S
Lead	43.5	0.954	47.70	14.76	60.2	75	125				S
Strontium	87.5	0.954	47.70	58.39	61.1	75	125				S
Zinc	94.7	0.954	47.70	66.48	59.2	75	125				S

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank	H	Holding times for preparation or analysis exceed
M	Matrix Interference	ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits
RL	Reporting Limit	S	Spike Recovery outside accepted recovery limits	SDL	Sample detection limit
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QC SUMMARY REPORT

WO#: 22061196
 15-Jul-22

Client: ICON Environmental Services
Project: Grand River Levert 9326-025-0100

BatchID: 44342

Sample ID	22061154-022AMSD	SampType:	MSD	TestCode:	6010_S_29B	Units:	mg/Kg-dry	Prep Date:	7/5/2022	RunNo:	111187
Client ID:	ZZZZZZ	Batch ID:	44342	TestNo:	SW6010B		SW3050B	Analysis Date:	7/7/2022	SeqNo:	2746430
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	29.2	1.99	49.78	4.301	50.0	75	125	33.60	14.1	20	S
Barium	171	14.9	49.78	201.5	-62.1	75	125	218.2	24.5	20	RS
Cadmium	26.9	0.498	49.78	0.3852	53.3	75	125	31.45	15.5	20	S
Chromium	39.3	0.996	49.78	15.35	48.1	75	125	48.40	20.7	20	RS
Lead	37.1	0.996	49.78	14.76	44.9	75	125	43.46	15.8	20	S
Strontium	70.2	0.996	49.78	58.39	23.8	75	125	87.52	21.9	20	RS
Zinc	77.0	0.996	49.78	66.48	21.1	75	125	94.73	20.7	20	RS

NOTES:

S - Spike recovery indicates matrix interference. The method is in control as indicated by the Lab Control Sample.

Qualifiers:	* Value exceeds Maximum Contaminant Level.	B Analyte detected in the associated Method Blank	H Holding times for preparation or analysis exceeded
	M Matrix Interference	ND Not Detected at the Reporting Limit	R RPD outside accepted recovery limits
	RL Reporting Limit	S Spike Recovery outside accepted recovery limits	SDL Sample detection limit
	U Analyte not detected	W Sample container temperature is out of limit as specified at testcode	



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QC SUMMARY REPORT

WO#: 22061196
 15-Jul-22

Client: ICON Environmental Services
Project: Grand River Levert 9326-025-0100

BatchID: R111055

Sample ID	MB-R111054	SampType:	MBLK	TestCode:	EC_S	Units:	mmhos/cm	Prep Date:		RunNo:	111055		
Client ID:	PBS	Batch ID:	R111055	TestNo:	LDNR 29-B			Analysis Date:	7/1/2022	SeqNo:	2742511		
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Electrical Conductivity < 0.10 0.10

Sample ID	LCS1-R111054	SampType:	LCS1	TestCode:	EC_S	Units:	mmhos/cm	Prep Date:		RunNo:	111055		
Client ID:	ZZZZZ	Batch ID:	R111055	TestNo:	LDNR 29-B			Analysis Date:	7/1/2022	SeqNo:	2742512		
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Electrical Conductivity 0.54 0.10 0.50 0 107 90 110

Sample ID	LCS2-R111054	SampType:	LCS2	TestCode:	EC_S	Units:	mmhos/cm	Prep Date:		RunNo:	111055		
Client ID:	ZZZZZ	Batch ID:	R111055	TestNo:	LDNR 29-B			Analysis Date:	7/1/2022	SeqNo:	2742513		
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Electrical Conductivity 53.3 0.10 53.00 0 101 90 110

Sample ID	22061196-005ADUP	SampType:	DUP	TestCode:	EC_S	Units:	mmhos/cm	Prep Date:		RunNo:	111055		
Client ID:	SB 4 0-2	Batch ID:	R111055	TestNo:	LDNR 29-B			Analysis Date:	7/1/2022	SeqNo:	2742519		
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Electrical Conductivity 0.63 0.10 0.64 0.47 20

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank	H	Holding times for preparation or analysis exceed
M	Matrix Interference	ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits
RL	Reporting Limit	S	Spike Recovery outside accepted recovery limits	SDL	Sample detection limit
U	Analyte not detected	W	Sample container temperature is out of limit as specified at testcode		



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QC SUMMARY REPORT

WO#: 22061196
 15-Jul-22

Client: ICON Environmental Services
Project: Grand River Levert 9326-025-0100

BatchID: R111104

Sample ID	22061154-020ADUP	SampType:	DUP	TestCode:	PMOIST_29B	Units:	wt%	Prep Date:		RunNo:	111104		
Client ID:	ZZZZZZ	Batch ID:	R111104	TestNo:	LDNR 29-B			Analysis Date:	6/27/2022	SeqNo:	2743402		
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Percent Moisture		32.3		1.00						31.70	1.88	20	

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank	H	Holding times for preparation or analysis exceede
	M	Matrix Interference	ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits
	RL	Reporting Limit	S	Spike Recovery outside accepted recovery limits	SDL	Sample detection limit
	U	Analyte not detected	W	Sample container temperature is out of limit as specified at testcode		

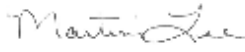




Sample Log-In Check List

Client Name: **ICON_ENV**

Work Order Number: **22061196**

RcptNo: **1**

Logged by: Martin Lee	6/28/2022 8:45:00 AM	
Completed By: Rhonda David	6/28/2022 11:01:15 AM	
Reviewed By: Buffy Bryant	7/9/2022 12:55:27 PM	

Chain of Custody

1. Is Chain of Custody complete? Yes No Not Present
2. How was the sample delivered? Client

Log In

3. Coolers are present? Yes No NA
4. Shipping container/cooler in good condition? Yes No
- Custody seals intact on shipping container/cooler? Yes No Not Present
- No. Seal Date: Signed By:
5. Was an attempt made to cool the samples? Yes No NA
6. Were all samples received at a temperature of >0° C to 6.0°C Yes No NA
7. Sample(s) in proper container(s)? Yes No
8. Sufficient sample volume for indicated test(s)? Yes No
9. Are samples (except VOA and ONG) properly preserved? Yes No
10. Was preservative added to bottles? Yes No NA
11. Is the headspace in the VOA vials less than 1/4 inch or 6 mm? Yes No No VOA Vials
12. Were any sample containers received broken? Yes No
13. Does paperwork match bottle labels? Yes No
(Note discrepancies on chain of custody)
14. Are matrices correctly identified on Chain of Custody? Yes No
15. Is it clear what analyses were requested? Yes No
16. Were all holding times able to be met? Yes No
(If no, notify customer for authorization.)

Special Handling (if applicable)

17. Was client notified of all discrepancies with this order? Yes No NA

Person Notified:	<input type="text"/>	Date:	<input type="text"/>
By Whom:	<input type="text"/>	Via:	<input type="checkbox"/> eMail <input type="checkbox"/> Phone <input type="checkbox"/> Fax <input type="checkbox"/> In Person
Regarding:	<input type="text"/>		
Client Instructions:	<input type="text"/>		

18. Additional remarks:

Cooler Information

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	5.3	Good	Not Present			



Chain of Custody

Laboratory Number: 22061196

Company Name: ICAN Environmental
 Contact Name: Jason Sills
 Address: 2049 Commercial Dr.
 City, State Zip: Port Allen, LA 70167
 Phone Number: 225.344.8490
 Fax Number: 225.344.6654
 E-mail Address: jsills@icanenv.com

Client Information: ICAN Environmental
 Billing Information: SAME
 PO Number: Grand River - Levert
 Quote Number: 9326-025-0100
 Required QC Level: None
 Ext: None

Matrix Code: None
 DW = Drinking Water
 WW = Waste Water
 GW = Ground Water
 AQ = Aqueous
 OT = Other
 SL = Sludge
 SOL = Solid
 SO = Soil
 O = Oil
 F = Food
 SW = Swab
 NG = Natural Gas
 NGL = Natural Gas Liquid
 PW = Produced Water
 CF = Completion Fluid

Project Name/Number: Grand River - Levert
 9326-025-0100
 Sampler's Signature: _____
 Shipping Method: UPS / FedEx / NOW
DHL / Element (Hand) Mail

Sample ID/Description	Turn Time		Collection Information		Container	Pres.	Requested Tests			Comments			
	Date	Time	Date	Time			Type	Quantity	HCl, HNO ₃ , H ₂ SO ₄ , NaOH, Na ₂ S ₂ O ₃		As, Ba, TTBa	TPH D ₉₀	CEC/ESP/SAR
SB-1	0-2'	6.21.22	10:40	10:40	G	1	P	---	---	---	---	---	Metals
SB-1	2-4'	6.21.22	10:40	10:40	G	1	P	---	---	---	---	---	As, Ba, TTBa, Cd, Cr, Sr, Zn, Fe, Hg, Pb
SB-3	0-2'	6.21.22	11:40	11:40	G	1	G	---	---	---	---	---	(RB)
SB-3	2-4'	6.21.22	11:40	11:40	G	1	G	---	---	---	---	---	
SB-4	0-2'	6.21.22	12:10	12:10	G	1	G	---	---	---	---	---	
SB-4	2-4'	6.21.22	12:10	12:10	G	1	G	---	---	---	---	---	
SB-5	2-4'	6.21.22	14:10	14:10	G	1	P	---	---	---	---	---	
SB-5	4-6'	6.21.22	14:20	14:20	G	1	P	---	---	---	---	---	
SB-6	2-4'	6.21.22	14:50	14:50	G	1	P	---	---	---	---	---	

Relinquished by	Date/Time	Received by	Date/Time
<u>Kathie Bogle</u>	<u>6.27.22/1645</u>	<u>Kathie Bogle</u>	<u>6.27.22/1645</u>
<u>Kathie Bogle</u>	<u>6.28.22/0845</u>	<u>Martine</u>	<u>6/28/22 0845</u>
			Received at lab on ice? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No Temp: <u>5.3</u>

All samples submitted to Element Materials Technology for analysis are accepted on a custodial basis only. Ownership of the material remains with the client submitting the samples. Element Materials Technology reserves the right to return unused sample portions.

8900 North US 31
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 P 260-471-7000 F 260-471-7777

909 Executive Dr
 Warsaw, IN 46580 USA
 P 574-267-3205 F 574-269-6569

3371 Cleveland Road, Suite 100A
 South Bend, IN 46628 USA
 P 574-277-0707 F 574-273-5699

2417 W. Pinhook Rd
 Lafayette, LA 70508 USA
 P 337-235-0483 F 337-233-6540



Chain of Custody

Laboratory Number: 22061196

Company Name: ICON PO Number: Grand River-Level Page 2 of 2
 Contact Name: SAME Quote Number: 9326-025-0100 Matrix Code: DW = Drinking Water
 Address: _____ Sampler's Signature: _____
 City, State Zip: _____ Ext: _____ Shipping Method: UPS / FedEx / NOW
 Phone Number: _____ Ext: _____ DHL / Element Hand / Mail
 Fax Number: _____ Bill Monthly: Yes No
 E-mail Address: _____ Required QC Level: _____

Sample ID/Description	Which Regulations Apply: <input type="checkbox"/> RCRA <input type="checkbox"/> Drinking Water <input type="checkbox"/> POTW <input type="checkbox"/> Distribution <input type="checkbox"/> NPDES <input type="checkbox"/> Special <input type="checkbox"/> USDA/FDA <input type="checkbox"/> State <input checked="" type="checkbox"/> RECAP/RISC <input type="checkbox"/> Other	Turn Time <input checked="" type="checkbox"/> Standard <input type="checkbox"/> RUSH <input type="checkbox"/> 1 Day <input type="checkbox"/> 2 Day <input type="checkbox"/> Other	Collection Information		Matrix	Container Type G=Glass, V=Vial P=Plastic	Pres. HCl, HNO ₃ , H ₂ SO ₄ , NaOH, Na ₂ S ₂ O ₃	Requested Tests		Comments
			Date	Time				Quantity	EC	
SB-6	4-6'	6.21.22	1455	Gr	SO	1	P	CEC/ESP/SAR	90 Moisture	
SB-7	2-4'	6.21.22	1525	Gr	SO	1	P			
SB-8	0-2'	6.21.22	1550	Gr	SO	1	P			
SB-8	2-4'	6.21.22	1550	Gr	SO	1	P			

Retinquished by	Date/Time	Received by	Date/Time	Field Notes:
<u>Kathy Bell</u>	<u>6.27.22/1645</u>	<u>Kathy Bell</u>	<u>6.27.22/1645</u>	Received at lab on ice?
<u>Martine Lee</u>	<u>6.28.22/0845</u>	<u>Martine Lee</u>	<u>6/28/22 0845</u>	<input type="checkbox"/> Yes <input type="checkbox"/> No Temp:

All samples submitted to Element Materials Technology for analysis are accepted on a custodial basis only. Ownership of the material remains with the client submitting the samples. Element Materials Technology reserves the right to return unused sample portions.

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Element Materials Technology Lafayette
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Website: www.element.com

July 14, 2022

Greg Miller
ICON Environmental Services
2049 Commercial Drive
Port Allen, LA 70767
TEL: (225) 344-8490
FAX (225) 344-6654

RE: Levert-Grand River/9326-025-0100

Order No.: 22061340

Dear Greg Miller:

Element Materials Technology Lafayette received 33 sample(s) on 6/29/2022 for the analyses presented in the following report.

In accordance with your instructions, Element Lafayette either conducted or subcontracted these analyses. Subcontracted analyses will be identified in the accompanying case narrative. All relevant sampling information can be found on the attached Chain-of-Custody form. Unless otherwise noted, all analyses were conducted using EPA approved methodologies and all test results meet the applicable requirements of TNI. Reported results relate only to the items tested.

Where applicable, all soil data, except for 29-B, are reported on a wet-weight basis unless otherwise indicated in the units field as –dry.

LELAP Certification No.: 01997. TCEQ Certification No.: T104704261. LDHH Certification No.: LA023. ISDH Certification No.: C-LA-01. NDELCP Certification No.: R-226. A scope of accredited parameters is available upon request. A "#" by the test method or analyte indicates this parameter is outside the scope of accreditation. PA registration No.: 68-05967.

Estimated uncertainty is available upon request. This report shall not be reproduced, except in full, without the written approval of the laboratory.

If you have any questions regarding these test results, please feel free to call.

A handwritten signature in blue ink that reads 'Cristina Thibeaux'.

Cristina Thibeaux
Customer Service Supervisor



Element Materials Technology Lafayette
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Lafayette, LA 70508-3344
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Case Narrative

WO#: 22061340
Date: 7/14/2022

CLIENT: ICON Environmental Services
Project: Levert-Grand River/9326-025-0100

Unless specified by the client, a duplicate or MS/MSD, wherever applicable, is randomly selected and analyzed from each analytical batch provided sample volume is sufficient. The sample chosen for duplicate or MS/MSD may or may not be a sample submitted in this workorder. A method blank and/or a lab control sample (LCS)/lab control sample duplicate (LCSD), wherever applicable, are processed as a quality control check for each analytical batch. When the matrix QC data is not available due to insufficient sample volume or when the results indicate possible matrix effect, the validity of the batch is determined by the method blank and LCS/LCSD.

The results of the laboratory internal quality control data are provided in the QC Summary Report section of the report for your review. Laboratory-related QC exceptions that may impact the validity of data are discussed in the case narrative. Sample-related QC exceptions are flagged either in the results page(s) or in the QC report page(s). End users should consider QC exceptions when evaluating sample data against data quality objectives.

Any other exceptions associated with this report will be footnoted in the results page(s) or the QC summary page(s).

Note: Due to limited sample, the following Lab IDs were prepared for Leachate Chloride, using less than 100g of the soil (dry wt basis). The amount of the extraction fluid was proportionally reduced to yield a 1:4 sample to fluid ratio.

22061340-004A: INSUFFICIENT VOLUME USE 82.2g
22061340-014A: INSUFFICIENT VOLUME USE 98.4g
22061340-020A: INSUFFICIENT VOLUME USE 95.5g
22061340-021A: INSUFFICIENT VOLUME USE 90.9g
22061340-023A: INSUFFICIENT VOLUME USE 75.6g



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Analytical Report

(consolidated)

WO#: 22061340

Date Reported: 7/14/2022

CLIENT: ICON Environmental Services **Collection Date:** 6/22/2022 12:20:00 PM
Project: Levert-Grand River/9326-025-0100
Lab ID: 22061340-001 **Matrix:** SOIL
Client Sample ID LT-4 (8-10')

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
29B SALTS					LDNR 29-B	LDNR 29-B Analyst: MRM
CATION EXCHANGE CAPACITY						
Cation Exchange Capacity	68.3	0.100		meq/100g	1	7/13/2022
29B SALTS					LDNR 29-B	Analyst: HXW
ELECTRICAL CONDUCTIVITY @ SATURATION						
Electrical Conductivity	0.72	0.10		mmhos/cm	1	7/7/2022 9:56:00 AM
29B SALTS					LDNR 29-B	LDNR 29-B Analyst: MRM
EXCHANGEABLE SODIUM PERCENTAGE						
Exchangeable Sodium %	1.02	0.10		%	1	7/13/2022
29B SALTS					LDNR 29-B	LDNR 29-B Analyst: MRM
SODIUM ADSORPTION RATIO						
Sodium Adsorption Ratio	1.14	0.10			1	7/12/2022
Soluble Calcium	2.79	0.02		meq/L	1	7/12/2022
Soluble Magnesium	1.40	0.05		meq/L	1	7/12/2022
Soluble Sodium	1.66	0.25		meq/L	1	7/12/2022
29B METALS					29B/SW7471A	SW7471A Analyst: BXB
MERCURY IN SOIL OR SLUDGE						
Mercury	< 0.0998	0.0998		mg/Kg-dry	1	7/8/2022 7:41:27 AM
SOLUBLE INORGANIC ANIONS IN SOIL BY IC					SW9056A	Analyst: SGP
Chloride	83.8	5.56		mg/Kg-dry	20	7/7/2022 5:28:12 PM
29B METALS					SW6010B	SW3050B Analyst: MRM
METALS IN SOIL OR SLUDGE BY ICP						
Arsenic	2.18	1.99		mg/Kg-dry	1	7/7/2022 5:03:27 PM
Barium	192	14.9		mg/Kg-dry	1	7/7/2022 5:03:27 PM
Cadmium	< 0.496	0.496		mg/Kg-dry	1	7/7/2022 5:03:27 PM
Chromium	14.0	0.993		mg/Kg-dry	1	7/7/2022 5:03:27 PM
Lead	12.1	0.993		mg/Kg-dry	1	7/7/2022 5:03:27 PM
Selenium	< 3.97	3.97		mg/Kg-dry	1	7/7/2022 5:03:27 PM
Strontium	39.2	0.993		mg/Kg-dry	1	7/7/2022 5:03:27 PM

Qualifiers:	B Analyte detected in the associated Method Blank	E Value above quantitation range
	H Holding times for preparation or analysis exceeded	M Matrix Interference
	ND Not Detected at the Reporting Limit	R RPD outside accepted recovery limits
	RL Reporting Limit	S Spike Recovery outside accepted recovery limits
	SDL Sample detection limit	U Analyte not detected
	W Sample container temperature is out of limit as specified at testcode	



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Analytical Report

(consolidated)

WO#: 22061340

Date Reported: 7/14/2022

CLIENT: ICON Environmental Services **Collection Date:** 6/22/2022 12:20:00 PM
Project: Levert-Grand River/9326-025-0100
Lab ID: 22061340-001 **Matrix:** SOIL
Client Sample ID LT-4 (8-10')

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
29B METALS					SW6010B	SW3050B Analyst: MRM
METALS IN SOIL OR SLUDGE BY ICP						
Zinc	48.0	0.993		mg/Kg-dry	1	7/7/2022 5:03:27 PM
29B METALS					LDNR 29-B	Analyst: MRM
TRUE TOTAL BARIUM						
True Total Barium	375	47.9		mg/Kg-dry	1	7/12/2022 1:59:49 PM
PERCENT MOISTURE					LDNR 29-B	Analyst: HXW
Percent Moisture	42.2	1.00		wt%	1	6/30/2022 1:15:00 PM

Qualifiers:	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	M	Matrix Interference
	ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits
	RL	Reporting Limit	S	Spike Recovery outside accepted recovery limits
	SDL	Sample detection limit	U	Analyte not detected
	W	Sample container temperature is out of limit as specified at testcode		



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Analytical Report

(consolidated)

WO#: 22061340

Date Reported: 7/14/2022

CLIENT: ICON Environmental Services **Collection Date:** 6/22/2022 12:25:00 PM
Project: Levert-Grand River/9326-025-0100
Lab ID: 22061340-002 **Matrix:** SOIL
Client Sample ID LT-4 (12-14')

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
ELECTRICAL CONDUCTIVITY @ SATURATION						
						Analyst: HXW
Electrical Conductivity	0.81	0.10		mmhos/cm	1	7/7/2022 9:56:00 AM
29B METALS						
MERCURY IN SOIL OR SLUDGE						
						Analyst: BXB
Mercury	< 0.0946	0.0946		mg/Kg-dry	1	7/8/2022 7:43:45 AM
SOLUBLE INORGANIC ANIONS IN SOIL BY IC						
						Analyst: SGP
Chloride	33.6	2.45		mg/Kg-dry	20	7/7/2022 5:42:00 PM
29B METALS						
METALS IN SOIL OR SLUDGE BY ICP						
						Analyst: MRM
Arsenic	4.06	1.99		mg/Kg-dry	1	7/7/2022 5:05:47 PM
Barium	265	14.9		mg/Kg-dry	1	7/7/2022 5:05:47 PM
Cadmium	< 0.498	0.498		mg/Kg-dry	1	7/7/2022 5:05:47 PM
Chromium	11.2	0.996		mg/Kg-dry	1	7/7/2022 5:05:47 PM
Lead	9.42	0.996		mg/Kg-dry	1	7/7/2022 5:05:47 PM
Selenium	< 3.98	3.98		mg/Kg-dry	1	7/7/2022 5:05:47 PM
Strontium	35.9	0.996		mg/Kg-dry	1	7/7/2022 5:05:47 PM
Zinc	45.0	0.996		mg/Kg-dry	1	7/7/2022 5:05:47 PM
29B METALS						
TRUE TOTAL BARIUM						
						Analyst: MRM
True Total Barium	409	49.6		mg/Kg-dry	1	7/12/2022 2:02:07 PM
PERCENT MOISTURE						
						Analyst: HXW
Percent Moisture	28.9	1.00		wt%	1	6/30/2022 1:15:00 PM

Qualifiers:	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	M	Matrix Interference
	ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits
	RL	Reporting Limit	S	Spike Recovery outside accepted recovery limits
	SDL	Sample detection limit	U	Analyte not detected
	W	Sample container temperature is out of limit as specified at testcode		



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Analytical Report

(consolidated)

WO#: 22061340

Date Reported: 7/14/2022

CLIENT: ICON Environmental Services **Collection Date:** 6/22/2022 12:30:00 PM
Project: Levert-Grand River/9326-025-0100
Lab ID: 22061340-003 **Matrix:** SOIL
Client Sample ID LT-4 (16-18')

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
ELECTRICAL CONDUCTIVITY @ SATURATION					LDNR 29-B	Analyst: HXW
Electrical Conductivity	0.67	0.10		mmhos/cm	1	7/7/2022 9:56:00 AM
SOLUBLE INORGANIC ANIONS IN SOIL BY IC					SW9056A	Analyst: SGP
Chloride	34.4	1.28		mg/Kg-dry	10	7/7/2022 5:55:47 PM
PERCENT MOISTURE					LDNR 29-B	Analyst: HXW
Percent Moisture	26.8	1.00		wt%	1	6/30/2022 1:15:00 PM

Qualifiers:	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	M	Matrix Interference
	ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits
	RL	Reporting Limit	S	Spike Recovery outside accepted recovery limits
	SDL	Sample detection limit	U	Analyte not detected
	W	Sample container temperature is out of limit as specified at testcode		



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Analytical Report

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WO#: 22061340

Date Reported: 7/14/2022

CLIENT: ICON Environmental Services **Collection Date:** 6/22/2022 12:35:00 PM
Project: Levert-Grand River/9326-025-0100
Lab ID: 22061340-004 **Matrix:** SOIL
Client Sample ID LT-4 (20-22')

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
ELECTRICAL CONDUCTIVITY @ SATURATION				LDNR 29-B		Analyst: HXW
Electrical Conductivity	0.77	0.10		mmhos/cm	1	7/7/2022 9:56:00 AM
INORGANIC ANIONS IN LEACHATE BY IC				SW9056A		Analyst: SGP
Chloride	21.6	2.50		mg/L	10	7/12/2022 5:27:33 PM
SOLUBLE INORGANIC ANIONS IN SOIL BY IC				SW9056A		Analyst: SGP
Chloride	49.7	3.96		mg/Kg-dry	20	7/7/2022 6:09:35 PM
PERCENT MOISTURE				LDNR 29-B		Analyst: HXW
Percent Moisture	41.5	1.00		wt%	1	6/30/2022 1:15:00 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	M	Matrix Interference
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits
RL	Reporting Limit	S	Spike Recovery outside accepted recovery limits
SDL	Sample detection limit	U	Analyte not detected
W	Sample container temperature is out of limit as specified at testcode		



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Analytical Report

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WO#: 22061340

Date Reported: 7/14/2022

CLIENT: ICON Environmental Services **Collection Date:** 6/23/2022 9:05:00 AM
Project: Levert-Grand River/9326-025-0100
Lab ID: 22061340-005 **Matrix:** SOIL
Client Sample ID LT-5 (0-2')

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
29B SALTS						
CATION EXCHANGE CAPACITY						
Cation Exchange Capacity	71.6	0.100		meq/100g	1	7/13/2022
29B SALTS						
ELECTRICAL CONDUCTIVITY @ SATURATION						
Electrical Conductivity	0.96	0.10		mmhos/cm	1	7/7/2022 9:56:00 AM
29B SALTS						
EXCHANGEABLE SODIUM PERCENTAGE						
Exchangeable Sodium %	2.24	0.10		%	1	7/13/2022
29B SALTS						
SODIUM ADSORPTION RATIO						
Sodium Adsorption Ratio	1.96	0.10			1	7/12/2022
Soluble Calcium	2.82	0.02		meq/L	1	7/12/2022
Soluble Magnesium	1.71	0.05		meq/L	1	7/12/2022
Soluble Sodium	2.96	0.25		meq/L	1	7/12/2022
29B METALS						
MERCURY IN SOIL OR SLUDGE						
Mercury	< 0.104	0.104		mg/Kg-dry	1	7/8/2022 7:46:03 AM
SOLUBLE INORGANIC ANIONS IN SOIL BY IC						
Chloride	146	6.08		mg/Kg-dry	20	7/7/2022 6:23:23 PM
29B METALS						
METALS IN SOIL OR SLUDGE BY ICP						
Arsenic	4.38	1.99		mg/Kg-dry	1	7/7/2022 5:08:05 PM
Barium	166	14.9		mg/Kg-dry	1	7/7/2022 5:08:05 PM
Cadmium	< 0.497	0.497		mg/Kg-dry	1	7/7/2022 5:08:05 PM
Chromium	16.0	0.993		mg/Kg-dry	1	7/7/2022 5:08:05 PM
Lead	14.2	0.993		mg/Kg-dry	1	7/7/2022 5:08:05 PM
Selenium	< 3.97	3.97		mg/Kg-dry	1	7/7/2022 5:08:05 PM
Strontium	32.4	0.993		mg/Kg-dry	1	7/7/2022 5:08:05 PM

Qualifiers:
 B Analyte detected in the associated Method Blank
 H Holding times for preparation or analysis exceeded
 ND Not Detected at the Reporting Limit
 RL Reporting Limit
 SDL Sample detection limit
 W Sample container temperature is out of limit as specified at testcode

E Value above quantitation range
 M Matrix Interference
 R RPD outside accepted recovery limits
 S Spike Recovery outside accepted recovery limits
 U Analyte not detected



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Analytical Report

(consolidated)

WO#: 22061340

Date Reported: 7/14/2022

CLIENT: ICON Environmental Services **Collection Date:** 6/23/2022 9:05:00 AM
Project: Levert-Grand River/9326-025-0100
Lab ID: 22061340-005 **Matrix:** SOIL
Client Sample ID LT-5 (0-2')

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
29B METALS					SW6010B	SW3050B Analyst: MRM
METALS IN SOIL OR SLUDGE BY ICP						
Zinc	58.7	0.993		mg/Kg-dry	1	7/7/2022 5:08:05 PM
29B METALS					LDNR 29-B	Analyst: MRM
TRUE TOTAL BARIUM						
True Total Barium	411	47.5		mg/Kg-dry	1	7/12/2022 2:04:24 PM
PERCENT MOISTURE					LDNR 29-B	Analyst: HXW
Percent Moisture	28.3	1.00		wt%	1	6/30/2022 1:15:00 PM

Qualifiers:	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	M	Matrix Interference
	ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits
	RL	Reporting Limit	S	Spike Recovery outside accepted recovery limits
	SDL	Sample detection limit	U	Analyte not detected
	W	Sample container temperature is out of limit as specified at testcode		



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Analytical Report

(consolidated)

WO#: 22061340

Date Reported: 7/14/2022

CLIENT: ICON Environmental Services **Collection Date:** 6/23/2022 9:10:00 AM
Project: Levert-Grand River/9326-025-0100
Lab ID: 22061340-006 **Matrix:** SOIL
Client Sample ID LT-5 (4-6')

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
29B SALTS						
CATION EXCHANGE CAPACITY						
Cation Exchange Capacity	81.2	0.100		meq/100g	1	7/13/2022
29B SALTS						
ELECTRICAL CONDUCTIVITY @ SATURATION						
Electrical Conductivity	1.02	0.10		mmhos/cm	1	7/7/2022 9:56:00 AM
29B SALTS						
EXCHANGEABLE SODIUM PERCENTAGE						
Exchangeable Sodium %	1.72	0.10		%	1	7/13/2022
29B SALTS						
SODIUM ADSORPTION RATIO						
Sodium Adsorption Ratio	1.57	0.10			1	7/12/2022
Soluble Calcium	3.43	0.02		meq/L	1	7/12/2022
Soluble Magnesium	1.94	0.05		meq/L	1	7/12/2022
Soluble Sodium	2.57	0.25		meq/L	1	7/12/2022
29B METALS						
MERCURY IN SOIL OR SLUDGE						
Mercury	< 0.0962	0.0962		mg/Kg-dry	1	7/8/2022 7:48:22 AM
SOLUBLE INORGANIC ANIONS IN SOIL BY IC						
Chloride	153	7.62		mg/Kg-dry	20	7/7/2022 6:37:10 PM
29B METALS						
METALS IN SOIL OR SLUDGE BY ICP						
Arsenic	5.67	1.99		mg/Kg-dry	1	7/7/2022 5:10:24 PM
Barium	200	15.0		mg/Kg-dry	1	7/7/2022 5:10:24 PM
Cadmium	< 0.498	0.498		mg/Kg-dry	1	7/7/2022 5:10:24 PM
Chromium	16.4	0.997		mg/Kg-dry	1	7/7/2022 5:10:24 PM
Lead	15.3	0.997		mg/Kg-dry	1	7/7/2022 5:10:24 PM
Selenium	< 3.99	3.99		mg/Kg-dry	1	7/7/2022 5:10:24 PM
Strontium	41.9	0.997		mg/Kg-dry	1	7/7/2022 5:10:24 PM

Qualifiers:
 B Analyte detected in the associated Method Blank
 H Holding times for preparation or analysis exceeded
 ND Not Detected at the Reporting Limit
 RL Reporting Limit
 SDL Sample detection limit
 W Sample container temperature is out of limit as specified at testcode

E Value above quantitation range
 M Matrix Interference
 R RPD outside accepted recovery limits
 S Spike Recovery outside accepted recovery limits
 U Analyte not detected



Element Materials Technology Lafayette
 2417 W. Pinhook Road
 Lafayette, LA 70508-3344
 TEL: (337) 235-0483 FAX: (337) 233-6540
 Website: www.element.com

Analytical Report

(consolidated)

WO#: 22061340

Date Reported: 7/14/2022

CLIENT: ICON Environmental Services **Collection Date:** 6/23/2022 9:10:00 AM
Project: Levert-Grand River/9326-025-0100
Lab ID: 22061340-006 **Matrix:** SOIL
Client Sample ID LT-5 (4-6')

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
29B METALS					SW6010B	SW3050B Analyst: MRM
METALS IN SOIL OR SLUDGE BY ICP						
Zinc	65.0	0.997		mg/Kg-dry	1	7/7/2022 5:10:24 PM
29B METALS					LDNR 29-B	Analyst: MRM
TRUE TOTAL BARIUM						
True Total Barium	341	49.1		mg/Kg-dry	1	7/12/2022 2:06:42 PM
PERCENT MOISTURE					LDNR 29-B	Analyst: HXW
Percent Moisture	37.4	1.00		wt%	1	6/30/2022 1:15:00 PM

Qualifiers:	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	M	Matrix Interference
	ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits
	RL	Reporting Limit	S	Spike Recovery outside accepted recovery limits
	SDL	Sample detection limit	U	Analyte not detected
	W	Sample container temperature is out of limit as specified at testcode		



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Analytical Report

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WO#: 22061340

Date Reported: 7/14/2022

CLIENT: ICON Environmental Services **Collection Date:** 6/23/2022 9:15:00 AM
Project: Levert-Grand River/9326-025-0100
Lab ID: 22061340-007 **Matrix:** SOIL
Client Sample ID LT-5 (8-10')

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
29B SALTS						
CATION EXCHANGE CAPACITY						
Cation Exchange Capacity	51.3	0.100		meq/100g	1	7/13/2022
29B SALTS						
ELECTRICAL CONDUCTIVITY @ SATURATION						
Electrical Conductivity	0.71	0.10		mmhos/cm	1	7/7/2022 9:56:00 AM
29B SALTS						
EXCHANGEABLE SODIUM PERCENTAGE						
Exchangeable Sodium %	1.26	0.10		%	1	7/13/2022
29B SALTS						
SODIUM ADSORPTION RATIO						
Sodium Adsorption Ratio	1.19	0.10			1	7/12/2022
Soluble Calcium	2.28	0.02		meq/L	1	7/12/2022
Soluble Magnesium	1.34	0.05		meq/L	1	7/12/2022
Soluble Sodium	1.61	0.25		meq/L	1	7/12/2022
29B METALS						
MERCURY IN SOIL OR SLUDGE						
Mercury	< 0.0947	0.0947		mg/Kg-dry	1	7/8/2022 7:56:07 AM
SOLUBLE INORGANIC ANIONS IN SOIL BY IC						
Chloride	88.7	3.94		mg/Kg-dry	20	7/7/2022 6:50:58 PM
29B METALS						
METALS IN SOIL OR SLUDGE BY ICP						
Arsenic	4.36	1.91		mg/Kg-dry	1	7/12/2022 11:35:48 AM
Barium	447	1.91		mg/Kg-dry	1	7/12/2022 11:35:48 AM
Cadmium	< 0.478	0.478		mg/Kg-dry	1	7/12/2022 11:35:48 AM
Chromium	12.5	0.956		mg/Kg-dry	1	7/12/2022 11:35:48 AM
Lead	11.6	0.956		mg/Kg-dry	1	7/12/2022 11:35:48 AM
Selenium	< 3.83	3.83		mg/Kg-dry	1	7/12/2022 11:35:48 AM
Strontium	44.3	0.956		mg/Kg-dry	1	7/12/2022 11:35:48 AM

Qualifiers:
 B Analyte detected in the associated Method Blank
 H Holding times for preparation or analysis exceeded
 ND Not Detected at the Reporting Limit
 RL Reporting Limit
 SDL Sample detection limit
 W Sample container temperature is out of limit as specified at testcode

E Value above quantitation range
 M Matrix Interference
 R RPD outside accepted recovery limits
 S Spike Recovery outside accepted recovery limits
 U Analyte not detected



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Analytical Report

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WO#: 22061340

Date Reported: 7/14/2022

CLIENT: ICON Environmental Services **Collection Date:** 6/23/2022 9:15:00 AM
Project: Levert-Grand River/9326-025-0100
Lab ID: 22061340-007 **Matrix:** SOIL
Client Sample ID LT-5 (8-10')

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
29B METALS					SW6010B	SW3050B Analyst: MRM
METALS IN SOIL OR SLUDGE BY ICP						
Zinc	50.5	0.956		mg/Kg-dry	1	7/12/2022 11:35:48 AM
29B METALS					LDNR 29-B	Analyst: MRM
TRUE TOTAL BARIUM						
True Total Barium	691	48.4		mg/Kg-dry	1	7/12/2022 2:08:58 PM
PERCENT MOISTURE					LDNR 29-B	Analyst: HXW
Percent Moisture	32.7	1.00		wt%	1	6/30/2022 1:15:00 PM

Qualifiers:	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	M	Matrix Interference
	ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits
	RL	Reporting Limit	S	Spike Recovery outside accepted recovery limits
	SDL	Sample detection limit	U	Analyte not detected
	W	Sample container temperature is out of limit as specified at testcode		



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WO#: 22061340

Date Reported: 7/14/2022

CLIENT: ICON Environmental Services **Collection Date:** 6/23/2022 9:25:00 AM
Project: Levert-Grand River/9326-025-0100
Lab ID: 22061340-008 **Matrix:** SOIL
Client Sample ID LT-5 (16-18')

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
ELECTRICAL CONDUCTIVITY @ SATURATION					LDNR 29-B	Analyst: HXW
Electrical Conductivity	0.64	0.10		mmhos/cm	1	7/7/2022 9:56:00 AM
SOLUBLE INORGANIC ANIONS IN SOIL BY IC					SW9056A	Analyst: SGP
Chloride	39.8	1.04		mg/Kg-dry	10	7/7/2022 7:32:20 PM
PERCENT MOISTURE					LDNR 29-B	Analyst: HXW
Percent Moisture	20.6	1.00		wt%	1	6/30/2022 1:15:00 PM

Qualifiers:	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	M	Matrix Interference
	ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits
	RL	Reporting Limit	S	Spike Recovery outside accepted recovery limits
	SDL	Sample detection limit	U	Analyte not detected
	W	Sample container temperature is out of limit as specified at testcode		



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WO#: 22061340

Date Reported: 7/14/2022

CLIENT: ICON Environmental Services **Collection Date:** 6/23/2022 9:40:00 AM
Project: Levert-Grand River/9326-025-0100
Lab ID: 22061340-009 **Matrix:** SOIL
Client Sample ID LT-5 (22-24')

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
ELECTRICAL CONDUCTIVITY @ SATURATION					LDNR 29-B	Analyst: HXW
Electrical Conductivity	1.06	0.10		mmhos/cm	1	7/7/2022 9:56:00 AM
INORGANIC ANIONS IN LEACHATE BY IC					SW9056A	Analyst: SGP
Chloride	28.0	2.50		mg/L	10	7/12/2022 5:41:21 PM
SOLUBLE INORGANIC ANIONS IN SOIL BY IC					SW9056A	Analyst: SGP
Chloride	77.7	3.00		mg/Kg-dry	20	7/7/2022 7:46:08 PM
PERCENT MOISTURE					LDNR 29-B	Analyst: HXW
Percent Moisture	31.7	1.00		wt%	1	6/30/2022 1:15:00 PM

Qualifiers:	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	M	Matrix Interference
	ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits
	RL	Reporting Limit	S	Spike Recovery outside accepted recovery limits
	SDL	Sample detection limit	U	Analyte not detected
	W	Sample container temperature is out of limit as specified at testcode		



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WO#: 22061340

Date Reported: 7/14/2022

CLIENT: ICON Environmental Services **Collection Date:** 6/23/2022 2:15:00 PM
Project: Levert-Grand River/9326-025-0100
Lab ID: 22061340-010 **Matrix:** SOIL
Client Sample ID LT-6 (0-2')

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
29B SALTS					LDNR 29-B	LDNR 29-B Analyst: MRM
CATION EXCHANGE CAPACITY						
Cation Exchange Capacity	70.8	0.100		meq/100g	1	7/13/2022
29B SALTS					LDNR 29-B	Analyst: HXW
ELECTRICAL CONDUCTIVITY @ SATURATION						
Electrical Conductivity	2.33	0.10		mmhos/cm	1	7/7/2022 9:56:00 AM
29B SALTS					LDNR 29-B	LDNR 29-B Analyst: MRM
EXCHANGEABLE SODIUM PERCENTAGE						
Exchangeable Sodium %	0.49	0.10		%	1	7/13/2022
29B SALTS					LDNR 29-B	LDNR 29-B Analyst: MRM
SODIUM ADSORPTION RATIO						
Sodium Adsorption Ratio	0.38	0.10			1	7/12/2022
Soluble Calcium	15.2	0.02		meq/L	1	7/12/2022
Soluble Magnesium	6.52	0.05		meq/L	1	7/12/2022
Soluble Sodium	1.27	0.25		meq/L	1	7/12/2022
29B METALS					29B/SW7471A	SW7471A Analyst: BXB
MERCURY IN SOIL OR SLUDGE						
Mercury	< 0.103	0.103		mg/Kg-dry	1	7/8/2022 7:58:26 AM
SOLUBLE INORGANIC ANIONS IN SOIL BY IC					SW9056A	Analyst: SGP
Chloride	30.8	12.9		mg/Kg-dry	50	7/7/2022 7:59:56 PM
29B METALS					SW6010B	SW3050B Analyst: MRM
METALS IN SOIL OR SLUDGE BY ICP						
Arsenic	5.58	2.00		mg/Kg-dry	1	7/12/2022 11:42:41 AM
Barium	213	2.00		mg/Kg-dry	1	7/12/2022 11:42:41 AM
Cadmium	< 0.499	0.499		mg/Kg-dry	1	7/12/2022 11:42:41 AM
Chromium	17.6	0.999		mg/Kg-dry	1	7/12/2022 11:42:41 AM
Lead	16.6	0.999		mg/Kg-dry	1	7/12/2022 11:42:41 AM
Selenium	< 3.99	3.99		mg/Kg-dry	1	7/12/2022 11:42:41 AM
Strontium	38.3	0.999		mg/Kg-dry	1	7/12/2022 11:42:41 AM

Qualifiers:
 B Analyte detected in the associated Method Blank
 H Holding times for preparation or analysis exceeded
 ND Not Detected at the Reporting Limit
 RL Reporting Limit
 SDL Sample detection limit
 W Sample container temperature is out of limit as specified at testcode

E Value above quantitation range
 M Matrix Interference
 R RPD outside accepted recovery limits
 S Spike Recovery outside accepted recovery limits
 U Analyte not detected



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WO#: 22061340

Date Reported: 7/14/2022

CLIENT: ICON Environmental Services **Collection Date:** 6/23/2022 2:15:00 PM
Project: Levert-Grand River/9326-025-0100
Lab ID: 22061340-010 **Matrix:** SOIL
Client Sample ID LT-6 (0-2')

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
29B METALS					SW6010B	SW3050B Analyst: MRM
METALS IN SOIL OR SLUDGE BY ICP						
Zinc	73.2	0.999		mg/Kg-dry	1	7/12/2022 11:42:41 AM
29B METALS					LDNR 29-B	Analyst: MRM
TRUE TOTAL BARIUM						
True Total Barium	356	49.8		mg/Kg-dry	1	7/12/2022 2:15:53 PM
PERCENT MOISTURE					LDNR 29-B	Analyst: HXW
Percent Moisture	25.6	1.00		wt%	1	6/30/2022 1:15:00 PM

Qualifiers:	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	M	Matrix Interference
	ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits
	RL	Reporting Limit	S	Spike Recovery outside accepted recovery limits
	SDL	Sample detection limit	U	Analyte not detected
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WO#: 22061340

Date Reported: 7/14/2022

CLIENT: ICON Environmental Services **Collection Date:** 6/23/2022 2:20:00 PM
Project: Levert-Grand River/9326-025-0100
Lab ID: 22061340-011 **Matrix:** SOIL
Client Sample ID LT-6 (4-6')

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
29B SALTS						
CATION EXCHANGE CAPACITY						
Cation Exchange Capacity	77.6	0.100		meq/100g	1	7/13/2022
29B SALTS						
ELECTRICAL CONDUCTIVITY @ SATURATION						
Electrical Conductivity	3.32	0.10		mmhos/cm	1	7/7/2022 9:56:00 AM
29B SALTS						
EXCHANGEABLE SODIUM PERCENTAGE						
Exchangeable Sodium %	1.34	0.10		%	1	7/13/2022
29B SALTS						
SODIUM ADSORPTION RATIO						
Sodium Adsorption Ratio	0.87	0.10			1	7/12/2022
Soluble Calcium	18.6	0.02		meq/L	1	7/12/2022
Soluble Magnesium	12.1	0.05		meq/L	1	7/12/2022
Soluble Sodium	3.43	0.25		meq/L	1	7/12/2022
29B METALS						
MERCURY IN SOIL OR SLUDGE						
Mercury	< 0.105	0.105		mg/Kg-dry	1	7/8/2022 8:00:44 AM
SOLUBLE INORGANIC ANIONS IN SOIL BY IC						
Chloride	78.7	14.7		mg/Kg-dry	50	7/7/2022 8:13:44 PM
29B METALS						
METALS IN SOIL OR SLUDGE BY ICP						
Arsenic	4.91	1.94		mg/Kg-dry	1	7/12/2022 11:44:58 AM
Barium	181	1.94		mg/Kg-dry	1	7/12/2022 11:44:58 AM
Cadmium	< 0.485	0.485		mg/Kg-dry	1	7/12/2022 11:44:58 AM
Chromium	19.7	0.969		mg/Kg-dry	1	7/12/2022 11:44:58 AM
Lead	16.5	0.969		mg/Kg-dry	1	7/12/2022 11:44:58 AM
Selenium	< 3.88	3.88		mg/Kg-dry	1	7/12/2022 11:44:58 AM
Strontium	43.8	0.969		mg/Kg-dry	1	7/12/2022 11:44:58 AM

Qualifiers:
 B Analyte detected in the associated Method Blank
 H Holding times for preparation or analysis exceeded
 ND Not Detected at the Reporting Limit
 RL Reporting Limit
 SDL Sample detection limit
 W Sample container temperature is out of limit as specified at testcode

E Value above quantitation range
 M Matrix Interference
 R RPD outside accepted recovery limits
 S Spike Recovery outside accepted recovery limits
 U Analyte not detected



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Analytical Report

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WO#: 22061340

Date Reported: 7/14/2022

CLIENT: ICON Environmental Services **Collection Date:** 6/23/2022 2:20:00 PM
Project: Levert-Grand River/9326-025-0100
Lab ID: 22061340-011 **Matrix:** SOIL
Client Sample ID LT-6 (4-6')

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
29B METALS					SW6010B	SW3050B Analyst: MRM
METALS IN SOIL OR SLUDGE BY ICP						
Zinc	74.4	0.969		mg/Kg-dry	1	7/12/2022 11:44:58 AM
29B METALS					LDNR 29-B	Analyst: MRM
TRUE TOTAL BARIUM						
True Total Barium	418	49.5		mg/Kg-dry	1	7/12/2022 2:18:10 PM
PERCENT MOISTURE					LDNR 29-B	Analyst: HXW
Percent Moisture	28.8	1.00		wt%	1	6/30/2022 1:15:00 PM

Qualifiers:	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	M	Matrix Interference
	ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits
	RL	Reporting Limit	S	Spike Recovery outside accepted recovery limits
	SDL	Sample detection limit	U	Analyte not detected
	W	Sample container temperature is out of limit as specified at testcode		



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Analytical Report

(consolidated)

WO#: 22061340

Date Reported: 7/14/2022

CLIENT: ICON Environmental Services **Collection Date:** 6/23/2022 2:25:00 PM
Project: Levert-Grand River/9326-025-0100
Lab ID: 22061340-012 **Matrix:** SOIL
Client Sample ID LT-6 (6-8')

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
29B SALTS						
CATION EXCHANGE CAPACITY						
Cation Exchange Capacity	73.0	0.100		meq/100g	1	7/13/2022
29B SALTS						
ELECTRICAL CONDUCTIVITY @ SATURATION						
Electrical Conductivity	1.24	0.10		mmhos/cm	1	7/7/2022 9:56:00 AM
29B SALTS						
EXCHANGEABLE SODIUM PERCENTAGE						
Exchangeable Sodium %	1.50	0.10		%	1	7/13/2022
29B SALTS						
SODIUM ADSORPTION RATIO						
Sodium Adsorption Ratio	1.28	0.10			1	7/12/2022
Soluble Calcium	4.99	0.02		meq/L	1	7/12/2022
Soluble Magnesium	2.70	0.05		meq/L	1	7/12/2022
Soluble Sodium	2.50	0.25		meq/L	1	7/12/2022
29B METALS						
MERCURY IN SOIL OR SLUDGE						
Mercury	< 0.106	0.106		mg/Kg-dry	1	7/8/2022 8:03:28 AM
SOLUBLE INORGANIC ANIONS IN SOIL BY IC						
Chloride	95.5	6.54		mg/Kg-dry	20	7/7/2022 8:27:31 PM
29B METALS						
METALS IN SOIL OR SLUDGE BY ICP						
Arsenic	4.96	2.00		mg/Kg-dry	1	7/12/2022 11:51:50 AM
Barium	161	2.00		mg/Kg-dry	1	7/12/2022 11:51:50 AM
Cadmium	< 0.499	0.499		mg/Kg-dry	1	7/12/2022 11:51:50 AM
Chromium	18.9	0.998		mg/Kg-dry	1	7/12/2022 11:51:50 AM
Lead	15.4	0.998		mg/Kg-dry	1	7/12/2022 11:51:50 AM
Selenium	< 3.99	3.99		mg/Kg-dry	1	7/12/2022 11:51:50 AM
Strontium	40.0	0.998		mg/Kg-dry	1	7/12/2022 11:51:50 AM

Qualifiers:	B Analyte detected in the associated Method Blank	E Value above quantitation range
	H Holding times for preparation or analysis exceeded	M Matrix Interference
	ND Not Detected at the Reporting Limit	R RPD outside accepted recovery limits
	RL Reporting Limit	S Spike Recovery outside accepted recovery limits
	SDL Sample detection limit	U Analyte not detected
	W Sample container temperature is out of limit as specified at testcode	



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Analytical Report

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WO#: 22061340

Date Reported: 7/14/2022

CLIENT: ICON Environmental Services **Collection Date:** 6/23/2022 2:25:00 PM
Project: Levert-Grand River/9326-025-0100
Lab ID: 22061340-012 **Matrix:** SOIL
Client Sample ID LT-6 (6-8')

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
29B METALS					SW6010B	SW3050B Analyst: MRM
METALS IN SOIL OR SLUDGE BY ICP						
Zinc	76.8	0.998		mg/Kg-dry	1	7/12/2022 11:51:50 AM
29B METALS					LDNR 29-B	Analyst: MRM
TRUE TOTAL BARIUM						
True Total Barium	430	49.8		mg/Kg-dry	1	7/12/2022 2:20:27 PM
PERCENT MOISTURE					LDNR 29-B	Analyst: HXW
Percent Moisture	33.4	1.00		wt%	1	6/30/2022 1:15:00 PM

Qualifiers:	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	M	Matrix Interference
	ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits
	RL	Reporting Limit	S	Spike Recovery outside accepted recovery limits
	SDL	Sample detection limit	U	Analyte not detected
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Analytical Report

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WO#: 22061340

Date Reported: 7/14/2022

CLIENT: ICON Environmental Services **Collection Date:** 6/23/2022 2:45:00 PM
Project: Levert-Grand River/9326-025-0100
Lab ID: 22061340-013 **Matrix:** SOIL
Client Sample ID LT-6 (16-18')

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
ELECTRICAL CONDUCTIVITY @ SATURATION					LDNR 29-B	Analyst: HXW
Electrical Conductivity	3.77	0.10		mmhos/cm	1	7/7/2022 9:56:00 AM
SOLUBLE INORGANIC ANIONS IN SOIL BY IC					SW9056A	Analyst: SGP
Chloride	364	30.2		mg/Kg-dry	100	7/7/2022 8:41:19 PM
PERCENT MOISTURE					LDNR 29-B	Analyst: HXW
Percent Moisture	51.7	1.00		wt%	1	6/30/2022 1:15:00 PM

Qualifiers:	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	M	Matrix Interference
	ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits
	RL	Reporting Limit	S	Spike Recovery outside accepted recovery limits
	SDL	Sample detection limit	U	Analyte not detected
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Analytical Report

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WO#: 22061340

Date Reported: 7/14/2022

CLIENT: ICON Environmental Services **Collection Date:** 6/23/2022 2:55:00 PM
Project: Levert-Grand River/9326-025-0100
Lab ID: 22061340-014 **Matrix:** SOIL
Client Sample ID LT-6 (24-26')

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
ELECTRICAL CONDUCTIVITY @ SATURATION				LDNR 29-B		Analyst: HXW
Electrical Conductivity	0.95	0.10		mmhos/cm	1	7/7/2022 9:56:00 AM
INORGANIC ANIONS IN LEACHATE BY IC				SW9056A		Analyst: SGP
Chloride	59.3	2.50		mg/L	10	7/12/2022 5:55:09 PM
SOLUBLE INORGANIC ANIONS IN SOIL BY IC				SW9056A		Analyst: SGP
Chloride	259	7.42		mg/Kg-dry	20	7/7/2022 8:55:06 PM
PERCENT MOISTURE				LDNR 29-B		Analyst: HXW
Percent Moisture	33.2	1.00		wt%	1	6/30/2022 1:15:00 PM

Qualifiers:	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	M	Matrix Interference
	ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits
	RL	Reporting Limit	S	Spike Recovery outside accepted recovery limits
	SDL	Sample detection limit	U	Analyte not detected
	W	Sample container temperature is out of limit as specified at testcode		



Element Materials Technology Lafayette
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Analytical Report

(consolidated)

WO#: 22061340

Date Reported: 7/14/2022

CLIENT: ICON Environmental Services **Collection Date:** 6/27/2022 11:30:00 AM
Project: Levert-Grand River/9326-025-0100
Lab ID: 22061340-015 **Matrix:** SOIL
Client Sample ID LT-7 (0-2')

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
29B SALTS					LDNR 29-B	LDNR 29-B Analyst: MRM
CATION EXCHANGE CAPACITY						
Cation Exchange Capacity	29.4	0.100		meq/100g	1	7/13/2022
29B SALTS					LDNR 29-B	Analyst: HXW
ELECTRICAL CONDUCTIVITY @ SATURATION						
Electrical Conductivity	0.52	0.10		mmhos/cm	1	7/7/2022 9:56:00 AM
29B SALTS					LDNR 29-B	LDNR 29-B Analyst: MRM
EXCHANGEABLE SODIUM PERCENTAGE						
Exchangeable Sodium %	1.24	0.10		%	1	7/13/2022
29B SALTS					LDNR 29-B	LDNR 29-B Analyst: MRM
SODIUM ADSORPTION RATIO						
Sodium Adsorption Ratio	0.52	0.10			1	7/12/2022
Soluble Calcium	2.81	0.02		meq/L	1	7/12/2022
Soluble Magnesium	1.18	0.05		meq/L	1	7/12/2022
Soluble Sodium	0.74	0.25		meq/L	1	7/12/2022
29B METALS					29B/SW7471A	SW7471A Analyst: BXB
MERCURY IN SOIL OR SLUDGE						
Mercury	< 0.104	0.104		mg/Kg-dry	1	7/8/2022 8:05:46 AM
INORGANIC ANIONS IN LEACHATE BY IC					SW9056A	Analyst: SGP
Chloride	4.84	1.25		mg/L	5	7/12/2022 6:08:56 PM
SOLUBLE INORGANIC ANIONS IN SOIL BY IC					SW9056A	Analyst: SGP
Chloride	17.5	1.66		mg/Kg-dry	10	7/7/2022 9:08:55 PM
29B METALS					SW6010B	SW3050B Analyst: MRM
METALS IN SOIL OR SLUDGE BY ICP						
Arsenic	4.47	2.00		mg/Kg-dry	1	7/12/2022 11:54:07 AM
Barium	144	2.00		mg/Kg-dry	1	7/12/2022 11:54:07 AM

Qualifiers:
 B Analyte detected in the associated Method Blank
 H Holding times for preparation or analysis exceeded
 ND Not Detected at the Reporting Limit
 RL Reporting Limit
 SDL Sample detection limit
 W Sample container temperature is out of limit as specified at testcode

E Value above quantitation range
 M Matrix Interference
 R RPD outside accepted recovery limits
 S Spike Recovery outside accepted recovery limits
 U Analyte not detected



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Analytical Report

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WO#: 22061340

Date Reported: 7/14/2022

CLIENT: ICON Environmental Services **Collection Date:** 6/27/2022 11:30:00 AM
Project: Levert-Grand River/9326-025-0100
Lab ID: 22061340-015 **Matrix:** SOIL
Client Sample ID LT-7 (0-2')

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
29B METALS					SW6010B	SW3050B
METALS IN SOIL OR SLUDGE BY ICP						Analyst: MRM
Cadmium	< 0.500	0.500		mg/Kg-dry	1	7/12/2022 11:54:07 AM
Chromium	12.2	1.00		mg/Kg-dry	1	7/12/2022 11:54:07 AM
Lead	9.71	1.00		mg/Kg-dry	1	7/12/2022 11:54:07 AM
Selenium	< 4.00	4.00		mg/Kg-dry	1	7/12/2022 11:54:07 AM
Strontium	26.7	1.00		mg/Kg-dry	1	7/12/2022 11:54:07 AM
Zinc	48.0	1.00		mg/Kg-dry	1	7/12/2022 11:54:07 AM
29B METALS					LDNR 29-B	Analyst: MRM
TRUE TOTAL BARIUM						
True Total Barium	234	46.9		mg/Kg-dry	1	7/12/2022 2:22:44 PM
PERCENT MOISTURE					LDNR 29-B	Analyst: HXW
Percent Moisture	17.4	1.00		wt%	1	6/30/2022 1:15:00 PM

Qualifiers:	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	M	Matrix Interference
	ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits
	RL	Reporting Limit	S	Spike Recovery outside accepted recovery limits
	SDL	Sample detection limit	U	Analyte not detected
	W	Sample container temperature is out of limit as specified at testcode		



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Analytical Report

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WO#: 22061340

Date Reported: 7/14/2022

CLIENT: ICON Environmental Services **Collection Date:** 6/27/2022 11:35:00 AM
Project: Levert-Grand River/9326-025-0100
Lab ID: 22061340-016 **Matrix:** SOIL
Client Sample ID LT-7 (4-6')

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
29B SALTS					LDNR 29-B	LDNR 29-B Analyst: MRM
CATION EXCHANGE CAPACITY						
Cation Exchange Capacity	20.7	0.100		meq/100g	1	7/13/2022
29B SALTS					LDNR 29-B	Analyst: HXW
ELECTRICAL CONDUCTIVITY @ SATURATION						
Electrical Conductivity	0.24	0.10		mmhos/cm	1	7/7/2022 9:56:00 AM
29B SALTS					LDNR 29-B	LDNR 29-B Analyst: MRM
EXCHANGEABLE SODIUM PERCENTAGE						
Exchangeable Sodium %	1.28	0.10		%	1	7/13/2022
29B SALTS					LDNR 29-B	LDNR 29-B Analyst: MRM
SODIUM ADSORPTION RATIO						
Sodium Adsorption Ratio	0.44	0.10			1	7/12/2022
Soluble Calcium	1.21	0.02		meq/L	1	7/12/2022
Soluble Magnesium	0.52	0.05		meq/L	1	7/12/2022
Soluble Sodium	0.41	0.25		meq/L	1	7/12/2022
29B METALS					29B/SW7471A	SW7471A Analyst: BXB
MERCURY IN SOIL OR SLUDGE						
Mercury	< 0.0991	0.0991		mg/Kg-dry	1	7/8/2022 8:08:08 AM
INORGANIC ANIONS IN LEACHATE BY IC					SW9056A	Analyst: SGP
Chloride	2.47	1.25		mg/L	5	7/12/2022 6:22:44 PM
SOLUBLE INORGANIC ANIONS IN SOIL BY IC					SW9056A	Analyst: SGP
Chloride	7.83	0.718		mg/Kg-dry	5	7/7/2022 9:22:42 PM
29B METALS					SW6010B	SW3050B Analyst: MRM
METALS IN SOIL OR SLUDGE BY ICP						
Arsenic	4.79	1.98		mg/Kg-dry	1	7/12/2022 11:56:24 AM
Barium	141	1.98		mg/Kg-dry	1	7/12/2022 11:56:24 AM

Qualifiers:

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- RL Reporting Limit
- SDL Sample detection limit
- W Sample container temperature is out of limit as specified at testcode

- E Value above quantitation range
- M Matrix Interference
- R RPD outside accepted recovery limits
- S Spike Recovery outside accepted recovery limits
- U Analyte not detected



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Analytical Report

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WO#: 22061340

Date Reported: 7/14/2022

CLIENT: ICON Environmental Services **Collection Date:** 6/27/2022 11:35:00 AM
Project: Levert-Grand River/9326-025-0100
Lab ID: 22061340-016 **Matrix:** SOIL
Client Sample ID LT-7 (4-6')

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
29B METALS					SW6010B	SW3050B
METALS IN SOIL OR SLUDGE BY ICP						Analyst: MRM
Cadmium	< 0.494	0.494		mg/Kg-dry	1	7/12/2022 11:56:24 AM
Chromium	9.62	0.988		mg/Kg-dry	1	7/12/2022 11:56:24 AM
Lead	7.58	0.988		mg/Kg-dry	1	7/12/2022 11:56:24 AM
Selenium	< 3.95	3.95		mg/Kg-dry	1	7/12/2022 11:56:24 AM
Strontium	28.7	0.988		mg/Kg-dry	1	7/12/2022 11:56:24 AM
Zinc	35.4	0.988		mg/Kg-dry	1	7/12/2022 11:56:24 AM
29B METALS					LDNR 29-B	Analyst: MRM
TRUE TOTAL BARIUM						
True Total Barium	220	48.1		mg/Kg-dry	1	7/12/2022 2:25:01 PM
PERCENT MOISTURE					LDNR 29-B	Analyst: HXW
Percent Moisture	24.2	1.00		wt%	1	6/30/2022 1:15:00 PM

Qualifiers:	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	M	Matrix Interference
	ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits
	RL	Reporting Limit	S	Spike Recovery outside accepted recovery limits
	SDL	Sample detection limit	U	Analyte not detected
	W	Sample container temperature is out of limit as specified at testcode		



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Analytical Report

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WO#: 22061340

Date Reported: 7/14/2022

CLIENT: ICON Environmental Services **Collection Date:** 6/27/2022 11:40:00 AM
Project: Levert-Grand River/9326-025-0100
Lab ID: 22061340-017 **Matrix:** SOIL
Client Sample ID LT-7 (8-10')

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
29B SALTS						
CATION EXCHANGE CAPACITY						
Cation Exchange Capacity	27.8	0.100		meq/100g	1	7/13/2022
29B SALTS						
ELECTRICAL CONDUCTIVITY @ SATURATION						
Electrical Conductivity	0.47	0.10		mmhos/cm	1	7/7/2022 9:56:00 AM
29B SALTS						
EXCHANGEABLE SODIUM PERCENTAGE						
Exchangeable Sodium %	1.30	0.10		%	1	7/13/2022
29B SALTS						
SODIUM ADSORPTION RATIO						
Sodium Adsorption Ratio	0.50	0.10			1	7/12/2022
Soluble Calcium	2.15	0.02		meq/L	1	7/12/2022
Soluble Magnesium	0.97	0.05		meq/L	1	7/12/2022
Soluble Sodium	0.63	0.25		meq/L	1	7/12/2022
29B METALS						
MERCURY IN SOIL OR SLUDGE						
Mercury	< 0.106	0.106		mg/Kg-dry	1	7/8/2022 8:10:26 AM
SOLUBLE INORGANIC ANIONS IN SOIL BY IC						
Chloride	8.98	1.41		mg/Kg-dry	10	7/7/2022 9:36:30 PM
29B METALS						
METALS IN SOIL OR SLUDGE BY ICP						
Arsenic	4.06	1.95		mg/Kg-dry	1	7/12/2022 11:58:40 AM
Barium	160	1.95		mg/Kg-dry	1	7/12/2022 11:58:40 AM
Cadmium	< 0.486	0.486		mg/Kg-dry	1	7/12/2022 11:58:40 AM
Chromium	12.5	0.973		mg/Kg-dry	1	7/12/2022 11:58:40 AM
Lead	10.3	0.973		mg/Kg-dry	1	7/12/2022 11:58:40 AM
Selenium	< 3.89	3.89		mg/Kg-dry	1	7/12/2022 11:58:40 AM
Strontium	36.0	0.973		mg/Kg-dry	1	7/12/2022 11:58:40 AM

Qualifiers:	B Analyte detected in the associated Method Blank	E Value above quantitation range
	H Holding times for preparation or analysis exceeded	M Matrix Interference
	ND Not Detected at the Reporting Limit	R RPD outside accepted recovery limits
	RL Reporting Limit	S Spike Recovery outside accepted recovery limits
	SDL Sample detection limit	U Analyte not detected
	W Sample container temperature is out of limit as specified at testcode	



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Analytical Report

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WO#: 22061340

Date Reported: 7/14/2022

CLIENT: ICON Environmental Services **Collection Date:** 6/27/2022 11:40:00 AM
Project: Levert-Grand River/9326-025-0100
Lab ID: 22061340-017 **Matrix:** SOIL
Client Sample ID LT-7 (8-10')

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
29B METALS					SW6010B	SW3050B Analyst: MRM
METALS IN SOIL OR SLUDGE BY ICP						
Zinc	50.2	0.973		mg/Kg-dry	1	7/12/2022 11:58:40 AM
29B METALS					LDNR 29-B	Analyst: MRM
TRUE TOTAL BARIUM						
True Total Barium	270	46.0		mg/Kg-dry	1	7/12/2022 2:27:18 PM
PERCENT MOISTURE					LDNR 29-B	Analyst: HXW
Percent Moisture	25.6	1.00		wt%	1	6/30/2022 1:15:00 PM

Qualifiers:	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	M	Matrix Interference
	ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits
	RL	Reporting Limit	S	Spike Recovery outside accepted recovery limits
	SDL	Sample detection limit	U	Analyte not detected
	W	Sample container temperature is out of limit as specified at testcode		



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Analytical Report

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WO#: 22061340

Date Reported: 7/14/2022

CLIENT: ICON Environmental Services **Collection Date:** 6/27/2022 11:50:00 AM
Project: Levert-Grand River/9326-025-0100
Lab ID: 22061340-018 **Matrix:** SOIL
Client Sample ID LT-7 (16-18')

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
ELECTRICAL CONDUCTIVITY @ SATURATION				LDNR 29-B		Analyst: HXW
Electrical Conductivity	0.62	0.10		mmhos/cm	1	7/7/2022 9:56:00 AM
SOLUBLE INORGANIC ANIONS IN SOIL BY IC				SW9056A		Analyst: SGP
Chloride	40.3	2.64		mg/Kg-dry	10	7/8/2022 12:00:38 PM
PERCENT MOISTURE				LDNR 29-B		Analyst: HXW
Percent Moisture	40.7	1.00		wt%	1	6/30/2022 1:15:00 PM

Qualifiers:	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	M	Matrix Interference
	ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits
	RL	Reporting Limit	S	Spike Recovery outside accepted recovery limits
	SDL	Sample detection limit	U	Analyte not detected
	W	Sample container temperature is out of limit as specified at testcode		



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Analytical Report

(consolidated)

WO#: 22061340

Date Reported: 7/14/2022

CLIENT: ICON Environmental Services **Collection Date:** 6/27/2022 11:55:00 AM
Project: Levert-Grand River/9326-025-0100
Lab ID: 22061340-019 **Matrix:** SOIL
Client Sample ID LT-7 (20-22')

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
ELECTRICAL CONDUCTIVITY @ SATURATION				LDNR 29-B		Analyst: HXW
Electrical Conductivity	0.58	0.10		mmhos/cm	1	7/7/2022 9:56:00 AM
SOLUBLE INORGANIC ANIONS IN SOIL BY IC				SW9056A		Analyst: SGP
Chloride	43.2	2.06		mg/Kg-dry	10	7/8/2022 12:14:26 PM
PERCENT MOISTURE				LDNR 29-B		Analyst: HXW
Percent Moisture	41.5	1.00		wt%	1	6/30/2022 1:15:00 PM

Qualifiers:	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	M	Matrix Interference
	ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits
	RL	Reporting Limit	S	Spike Recovery outside accepted recovery limits
	SDL	Sample detection limit	U	Analyte not detected
	W	Sample container temperature is out of limit as specified at testcode		



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Analytical Report

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WO#: 22061340

Date Reported: 7/14/2022

CLIENT: ICON Environmental Services **Collection Date:** 6/27/2022 12:00:00 PM
Project: Levert-Grand River/9326-025-0100
Lab ID: 22061340-020 **Matrix:** SOIL
Client Sample ID LT-7 (24-26')

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
ELECTRICAL CONDUCTIVITY @ SATURATION				LDNR 29-B		Analyst: HXW
Electrical Conductivity	0.60	0.10		mmhos/cm	1	7/7/2022 9:56:00 AM
INORGANIC ANIONS IN LEACHATE BY IC				SW9056A		Analyst: SGP
Chloride	13.9	2.50		mg/L	10	7/12/2022 6:36:32 PM
SOLUBLE INORGANIC ANIONS IN SOIL BY IC				SW9056A		Analyst: SGP
Chloride	35.6	1.92		mg/Kg-dry	10	7/8/2022 12:28:14 PM
PERCENT MOISTURE				LDNR 29-B		Analyst: HXW
Percent Moisture	35.4	1.00		wt%	1	6/30/2022 1:15:00 PM

Qualifiers:	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	M	Matrix Interference
	ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits
	RL	Reporting Limit	S	Spike Recovery outside accepted recovery limits
	SDL	Sample detection limit	U	Analyte not detected
	W	Sample container temperature is out of limit as specified at testcode		



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Analytical Report

(consolidated)

WO#: 22061340

Date Reported: 7/14/2022

CLIENT: ICON Environmental Services **Collection Date:** 6/27/2022 1:15:00 PM
Project: Levert-Grand River/9326-025-0100
Lab ID: 22061340-021 **Matrix:** SOIL
Client Sample ID LT-7 (36-38')

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
ELECTRICAL CONDUCTIVITY @ SATURATION				LDNR 29-B		Analyst: HXW
Electrical Conductivity	0.82	0.10		mmhos/cm	1	7/7/2022 9:56:00 AM
INORGANIC ANIONS IN LEACHATE BY IC				SW9056A		Analyst: SGP
Chloride	16.1	1.25		mg/L	5	7/12/2022 6:50:19 PM
SOLUBLE INORGANIC ANIONS IN SOIL BY IC				SW9056A		Analyst: SGP
Chloride	36.3	2.22		mg/Kg-dry	10	7/8/2022 12:42:01 PM
PERCENT MOISTURE				LDNR 29-B		Analyst: HXW
Percent Moisture	39.0	1.00		wt%	1	6/30/2022 2:15:00 PM

Qualifiers:	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	M	Matrix Interference
	ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits
	RL	Reporting Limit	S	Spike Recovery outside accepted recovery limits
	SDL	Sample detection limit	U	Analyte not detected
	W	Sample container temperature is out of limit as specified at testcode		



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WO#: 22061340

Date Reported: 7/14/2022

CLIENT: ICON Environmental Services **Collection Date:** 6/28/2022 9:00:00 AM
Project: Levert-Grand River/9326-025-0100
Lab ID: 22061340-022 **Matrix:** SOIL
Client Sample ID LT-8 (0-2')

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
29B SALTS					LDNR 29-B	LDNR 29-B Analyst: MRM
CATION EXCHANGE CAPACITY						
Cation Exchange Capacity	18.8	0.100		meq/100g	1	7/13/2022
29B SALTS					LDNR 29-B	Analyst: HXW
ELECTRICAL CONDUCTIVITY @ SATURATION						
Electrical Conductivity	0.40	0.10		mmhos/cm	1	7/7/2022 9:57:00 AM
29B SALTS					LDNR 29-B	LDNR 29-B Analyst: MRM
EXCHANGEABLE SODIUM PERCENTAGE						
Exchangeable Sodium %	1.46	0.10		%	1	7/13/2022
29B SALTS					LDNR 29-B	LDNR 29-B Analyst: MRM
SODIUM ADSORPTION RATIO						
Sodium Adsorption Ratio	0.47	0.10			1	7/12/2022
Soluble Calcium	1.96	0.02		meq/L	1	7/12/2022
Soluble Magnesium	0.80	0.05		meq/L	1	7/12/2022
Soluble Sodium	0.56	0.25		meq/L	1	7/12/2022
29B METALS					29B/SW7471A	SW7471A Analyst: BXB
MERCURY IN SOIL OR SLUDGE						
Mercury	< 0.107	0.107		mg/Kg-dry	1	7/8/2022 8:12:44 AM
INORGANIC ANIONS IN LEACHATE BY IC					SW9056A	Analyst: SGP
Chloride	2.79	1.25		mg/L	5	7/12/2022 7:04:07 PM
SOLUBLE INORGANIC ANIONS IN SOIL BY IC					SW9056A	Analyst: SGP
Chloride	10.1	1.65		mg/Kg-dry	10	7/8/2022 1:23:23 PM
29B METALS					SW6010B	SW3050B Analyst: MRM
METALS IN SOIL OR SLUDGE BY ICP						
Arsenic	2.61	2.00		mg/Kg-dry	1	7/12/2022 12:00:56 PM
Barium	119	2.00		mg/Kg-dry	1	7/12/2022 12:00:56 PM

Qualifiers:
 B Analyte detected in the associated Method Blank
 H Holding times for preparation or analysis exceeded
 ND Not Detected at the Reporting Limit
 RL Reporting Limit
 SDL Sample detection limit
 W Sample container temperature is out of limit as specified at testcode

E Value above quantitation range
 M Matrix Interference
 R RPD outside accepted recovery limits
 S Spike Recovery outside accepted recovery limits
 U Analyte not detected



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Analytical Report

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WO#: 22061340

Date Reported: 7/14/2022

CLIENT: ICON Environmental Services **Collection Date:** 6/28/2022 9:00:00 AM
Project: Levert-Grand River/9326-025-0100
Lab ID: 22061340-022 **Matrix:** SOIL
Client Sample ID LT-8 (0-2')

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
29B METALS					SW6010B	SW3050B
METALS IN SOIL OR SLUDGE BY ICP						Analyst: MRM
Cadmium	< 0.500	0.500		mg/Kg-dry	1	7/12/2022 12:00:56 PM
Chromium	9.35	0.999		mg/Kg-dry	1	7/12/2022 12:00:56 PM
Lead	7.02	0.999		mg/Kg-dry	1	7/12/2022 12:00:56 PM
Selenium	< 4.00	4.00		mg/Kg-dry	1	7/12/2022 12:00:56 PM
Strontium	25.7	0.999		mg/Kg-dry	1	7/12/2022 12:00:56 PM
Zinc	35.3	0.999		mg/Kg-dry	1	7/12/2022 12:00:56 PM
29B METALS					LDNR 29-B	Analyst: MRM
TRUE TOTAL BARIUM						
True Total Barium	208	49.0		mg/Kg-dry	1	7/12/2022 2:29:34 PM
PERCENT MOISTURE					LDNR 29-B	Analyst: HXW
Percent Moisture	25.7	1.00		wt%	1	6/30/2022 2:15:00 PM

Qualifiers:	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	M	Matrix Interference
	ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits
	RL	Reporting Limit	S	Spike Recovery outside accepted recovery limits
	SDL	Sample detection limit	U	Analyte not detected
	W	Sample container temperature is out of limit as specified at testcode		



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Analytical Report

(consolidated)

WO#: 22061340

Date Reported: 7/14/2022

CLIENT: ICON Environmental Services **Collection Date:** 6/28/2022 9:05:00 AM
Project: Levert-Grand River/9326-025-0100
Lab ID: 22061340-023 **Matrix:** SOIL
Client Sample ID LT-8 (4-6')

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
29B SALTS						
CATION EXCHANGE CAPACITY						
Cation Exchange Capacity	16.2	0.100		meq/100g	1	7/13/2022
29B SALTS						
ELECTRICAL CONDUCTIVITY @ SATURATION						
Electrical Conductivity	0.48	0.10		mmhos/cm	1	7/7/2022 9:57:00 AM
29B SALTS						
EXCHANGEABLE SODIUM PERCENTAGE						
Exchangeable Sodium %	1.55	0.10		%	1	7/13/2022
29B SALTS						
SODIUM ADSORPTION RATIO						
Sodium Adsorption Ratio	0.60	0.10			1	7/12/2022
Soluble Calcium	2.26	0.02		meq/L	1	7/12/2022
Soluble Magnesium	0.92	0.05		meq/L	1	7/12/2022
Soluble Sodium	0.76	0.25		meq/L	1	7/12/2022
29B METALS						
MERCURY IN SOIL OR SLUDGE						
Mercury	< 0.0928	0.0928		mg/Kg-dry	1	7/8/2022 8:15:03 AM
INORGANIC ANIONS IN LEACHATE BY IC						
Chloride	1.84	1.25		mg/L	5	7/12/2022 7:17:54 PM
SOLUBLE INORGANIC ANIONS IN SOIL BY IC						
Chloride	7.00	1.46		mg/Kg-dry	10	7/8/2022 1:37:10 PM
29B METALS						
METALS IN SOIL OR SLUDGE BY ICP						
Arsenic	3.96	1.98		mg/Kg-dry	1	7/12/2022 12:03:14 PM
Barium	133	1.98		mg/Kg-dry	1	7/12/2022 12:03:14 PM

Qualifiers:
 B Analyte detected in the associated Method Blank
 H Holding times for preparation or analysis exceeded
 ND Not Detected at the Reporting Limit
 RL Reporting Limit
 SDL Sample detection limit
 W Sample container temperature is out of limit as specified at testcode

E Value above quantitation range
 M Matrix Interference
 R RPD outside accepted recovery limits
 S Spike Recovery outside accepted recovery limits
 U Analyte not detected



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WO#: 22061340

Date Reported: 7/14/2022

CLIENT: ICON Environmental Services **Collection Date:** 6/28/2022 9:05:00 AM
Project: Levert-Grand River/9326-025-0100
Lab ID: 22061340-023 **Matrix:** SOIL
Client Sample ID LT-8 (4-6')

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
29B METALS					SW6010B	SW3050B
METALS IN SOIL OR SLUDGE BY ICP						Analyst: MRM
Cadmium	< 0.496	0.496		mg/Kg-dry	1	7/12/2022 12:03:14 PM
Chromium	9.68	0.992		mg/Kg-dry	1	7/12/2022 12:03:14 PM
Lead	6.76	0.992		mg/Kg-dry	1	7/12/2022 12:03:14 PM
Selenium	< 3.97	3.97		mg/Kg-dry	1	7/12/2022 12:03:14 PM
Strontium	26.0	0.992		mg/Kg-dry	1	7/12/2022 12:03:14 PM
Zinc	34.6	0.992		mg/Kg-dry	1	7/12/2022 12:03:14 PM
29B METALS					LDNR 29-B	Analyst: MRM
TRUE TOTAL BARIUM						
True Total Barium	203	46.4		mg/Kg-dry	1	7/12/2022 2:31:51 PM
PERCENT MOISTURE					LDNR 29-B	Analyst: HXW
Percent Moisture	24.9	1.00		wt%	1	6/30/2022 2:15:00 PM

Qualifiers:	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	M	Matrix Interference
	ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits
	RL	Reporting Limit	S	Spike Recovery outside accepted recovery limits
	SDL	Sample detection limit	U	Analyte not detected
	W	Sample container temperature is out of limit as specified at testcode		



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Analytical Report

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WO#: 22061340

Date Reported: 7/14/2022

CLIENT: ICON Environmental Services **Collection Date:** 6/28/2022 9:10:00 AM
Project: Levert-Grand River/9326-025-0100
Lab ID: 22061340-024 **Matrix:** SOIL
Client Sample ID LT-8 (8-10')

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
29B SALTS						
CATION EXCHANGE CAPACITY						
Cation Exchange Capacity	21.3	0.100		meq/100g	1	7/13/2022
29B SALTS						
ELECTRICAL CONDUCTIVITY @ SATURATION						
Electrical Conductivity	0.42	0.10		mmhos/cm	1	7/7/2022 9:57:00 AM
29B SALTS						
EXCHANGEABLE SODIUM PERCENTAGE						
Exchangeable Sodium %	1.50	0.10		%	1	7/13/2022
29B SALTS						
SODIUM ADSORPTION RATIO						
Sodium Adsorption Ratio	0.81	0.10			1	7/12/2022
Soluble Calcium	1.53	0.02		meq/L	1	7/12/2022
Soluble Magnesium	0.66	0.05		meq/L	1	7/12/2022
Soluble Sodium	0.85	0.25		meq/L	1	7/12/2022
29B METALS						
MERCURY IN SOIL OR SLUDGE						
Mercury	< 0.104	0.104		mg/Kg-dry	1	7/8/2022 8:17:21 AM
SOLUBLE INORGANIC ANIONS IN SOIL BY IC						
Chloride	17.4	1.55		mg/Kg-dry	10	7/8/2022 1:50:56 PM
29B METALS						
METALS IN SOIL OR SLUDGE BY ICP						
Arsenic	4.16	1.96		mg/Kg-dry	1	7/12/2022 12:05:30 PM
Barium	147	1.96		mg/Kg-dry	1	7/12/2022 12:05:30 PM
Cadmium	< 0.491	0.491		mg/Kg-dry	1	7/12/2022 12:05:30 PM
Chromium	10.9	0.982		mg/Kg-dry	1	7/12/2022 12:05:30 PM
Lead	8.18	0.982		mg/Kg-dry	1	7/12/2022 12:05:30 PM
Selenium	< 3.93	3.93		mg/Kg-dry	1	7/12/2022 12:05:30 PM
Strontium	31.4	0.982		mg/Kg-dry	1	7/12/2022 12:05:30 PM

Qualifiers:
 B Analyte detected in the associated Method Blank
 H Holding times for preparation or analysis exceeded
 ND Not Detected at the Reporting Limit
 RL Reporting Limit
 SDL Sample detection limit
 W Sample container temperature is out of limit as specified at testcode

E Value above quantitation range
 M Matrix Interference
 R RPD outside accepted recovery limits
 S Spike Recovery outside accepted recovery limits
 U Analyte not detected



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WO#: 22061340

Date Reported: 7/14/2022

CLIENT: ICON Environmental Services **Collection Date:** 6/28/2022 9:10:00 AM
Project: Levert-Grand River/9326-025-0100
Lab ID: 22061340-024 **Matrix:** SOIL
Client Sample ID LT-8 (8-10')

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
29B METALS					SW6010B	SW3050B Analyst: MRM
METALS IN SOIL OR SLUDGE BY ICP						
Zinc	41.9	0.982		mg/Kg-dry	1	7/12/2022 12:05:30 PM
29B METALS					LDNR 29-B	Analyst: MRM
TRUE TOTAL BARIUM						
True Total Barium	261	46.7		mg/Kg-dry	1	7/12/2022 2:34:08 PM
PERCENT MOISTURE					LDNR 29-B	Analyst: HXW
Percent Moisture	27.4	1.00		wt%	1	6/30/2022 2:15:00 PM

Qualifiers:	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	M	Matrix Interference
	ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits
	RL	Reporting Limit	S	Spike Recovery outside accepted recovery limits
	SDL	Sample detection limit	U	Analyte not detected
	W	Sample container temperature is out of limit as specified at testcode		



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WO#: 22061340

Date Reported: 7/14/2022

CLIENT: ICON Environmental Services **Collection Date:** 6/28/2022 9:20:00 AM
Project: Levert-Grand River/9326-025-0100
Lab ID: 22061340-025 **Matrix:** SOIL
Client Sample ID LT-8 (16-18')

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
ELECTRICAL CONDUCTIVITY @ SATURATION				LDNR 29-B		Analyst: HXW
Electrical Conductivity	0.50	0.10		mmhos/cm	1	7/7/2022 9:57:00 AM
SOLUBLE INORGANIC ANIONS IN SOIL BY IC				SW9056A		Analyst: SGP
Chloride	25.3	1.33		mg/Kg-dry	10	7/8/2022 2:04:43 PM
PERCENT MOISTURE				LDNR 29-B		Analyst: HXW
Percent Moisture	26.1	1.00		wt%	1	6/30/2022 2:15:00 PM

Qualifiers:	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	M	Matrix Interference
	ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits
	RL	Reporting Limit	S	Spike Recovery outside accepted recovery limits
	SDL	Sample detection limit	U	Analyte not detected
	W	Sample container temperature is out of limit as specified at testcode		



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WO#: 22061340

Date Reported: 7/14/2022

CLIENT: ICON Environmental Services **Collection Date:** 6/28/2022 9:25:00 AM
Project: Levert-Grand River/9326-025-0100
Lab ID: 22061340-026 **Matrix:** SOIL
Client Sample ID LT-8 (20-22')

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
ELECTRICAL CONDUCTIVITY @ SATURATION				LDNR 29-B		Analyst: HXW
Electrical Conductivity	0.34	0.10		mmhos/cm	1	7/7/2022 9:57:00 AM
SOLUBLE INORGANIC ANIONS IN SOIL BY IC				SW9056A		Analyst: SGP
Chloride	14.6	0.604		mg/Kg-dry	5	7/8/2022 2:18:31 PM
PERCENT MOISTURE				LDNR 29-B		Analyst: HXW
Percent Moisture	22.7	1.00		wt%	1	6/30/2022 2:15:00 PM

Qualifiers:	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	M	Matrix Interference
	ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits
	RL	Reporting Limit	S	Spike Recovery outside accepted recovery limits
	SDL	Sample detection limit	U	Analyte not detected
	W	Sample container temperature is out of limit as specified at testcode		



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WO#: 22061340

Date Reported: 7/14/2022

CLIENT: ICON Environmental Services **Collection Date:** 6/28/2022 9:30:00 AM
Project: Levert-Grand River/9326-025-0100
Lab ID: 22061340-027 **Matrix:** SOIL
Client Sample ID LT-8 (24-26')

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
ELECTRICAL CONDUCTIVITY @ SATURATION				LDNR 29-B		Analyst: HXW
Electrical Conductivity	0.44	0.10		mmhos/cm	1	7/7/2022 9:57:00 AM
INORGANIC ANIONS IN LEACHATE BY IC				SW9056A		Analyst: SGP
Chloride	11.9	2.50		mg/L	10	7/12/2022 7:31:41 PM
SOLUBLE INORGANIC ANIONS IN SOIL BY IC				SW9056A		Analyst: SGP
Chloride	17.7	1.71		mg/Kg-dry	10	7/8/2022 2:32:18 PM
PERCENT MOISTURE				LDNR 29-B		Analyst: HXW
Percent Moisture	29.6	1.00		wt%	1	6/30/2022 2:15:00 PM

Qualifiers:	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	M	Matrix Interference
	ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits
	RL	Reporting Limit	S	Spike Recovery outside accepted recovery limits
	SDL	Sample detection limit	U	Analyte not detected
	W	Sample container temperature is out of limit as specified at testcode		



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WO#: 22061340

Date Reported: 7/14/2022

CLIENT: ICON Environmental Services **Collection Date:** 6/28/2022 9:45:00 AM
Project: Levert-Grand River/9326-025-0100
Lab ID: 22061340-028 **Matrix:** SOIL
Client Sample ID LT-8 (36-38')

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
ELECTRICAL CONDUCTIVITY @ SATURATION					LDNR 29-B	Analyst: HXW
Electrical Conductivity	0.56	0.10		mmhos/cm	1	7/7/2022 9:57:00 AM
INORGANIC ANIONS IN LEACHATE BY IC					SW9056A	Analyst: SGP
Chloride	12.6	2.50		mg/L	10	7/12/2022 8:13:02 PM
SOLUBLE INORGANIC ANIONS IN SOIL BY IC					SW9056A	Analyst: SGP
Chloride	43.2	1.77		mg/Kg-dry	10	7/8/2022 2:46:06 PM
PERCENT MOISTURE					LDNR 29-B	Analyst: HXW
Percent Moisture	28.7	1.00		wt%	1	6/30/2022 2:15:00 PM

Qualifiers:	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	M	Matrix Interference
	ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits
	RL	Reporting Limit	S	Spike Recovery outside accepted recovery limits
	SDL	Sample detection limit	U	Analyte not detected
	W	Sample container temperature is out of limit as specified at testcode		



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Analytical Report

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WO#: 22061340

Date Reported: 7/14/2022

CLIENT: ICON Environmental Services **Collection Date:** 6/28/2022 1:30:00 PM
Project: Levert-Grand River/9326-025-0100
Lab ID: 22061340-029 **Matrix:** SOIL
Client Sample ID LT-9 (0-2')

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
29B SALTS						
CATION EXCHANGE CAPACITY						
Cation Exchange Capacity	24.5	0.100		meq/100g	1	7/13/2022
29B SALTS						
ELECTRICAL CONDUCTIVITY @ SATURATION						
Electrical Conductivity	0.39	0.10		mmhos/cm	1	7/7/2022 9:57:00 AM
29B SALTS						
EXCHANGEABLE SODIUM PERCENTAGE						
Exchangeable Sodium %	1.20	0.10		%	1	7/13/2022
29B SALTS						
SODIUM ADSORPTION RATIO						
Sodium Adsorption Ratio	0.54	0.10			1	7/12/2022
Soluble Calcium	1.93	0.02		meq/L	1	7/12/2022
Soluble Magnesium	0.84	0.05		meq/L	1	7/12/2022
Soluble Sodium	0.63	0.25		meq/L	1	7/12/2022
29B METALS						
MERCURY IN SOIL OR SLUDGE						
Mercury	< 0.0935	0.0935		mg/Kg-dry	1	7/8/2022 8:24:43 AM
SOLUBLE INORGANIC ANIONS IN SOIL BY IC						
Chloride	10.2	1.54		mg/Kg-dry	10	7/8/2022 2:59:54 PM
29B METALS						
METALS IN SOIL OR SLUDGE BY ICP						
Arsenic	5.08	1.97		mg/Kg-dry	1	7/12/2022 12:07:47 PM
Barium	137	1.97		mg/Kg-dry	1	7/12/2022 12:07:47 PM
Cadmium	< 0.494	0.494		mg/Kg-dry	1	7/12/2022 12:07:47 PM
Chromium	10.5	0.987		mg/Kg-dry	1	7/12/2022 12:07:47 PM
Lead	8.00	0.987		mg/Kg-dry	1	7/12/2022 12:07:47 PM
Selenium	< 3.95	3.95		mg/Kg-dry	1	7/12/2022 12:07:47 PM
Strontium	26.5	0.987		mg/Kg-dry	1	7/12/2022 12:07:47 PM

Qualifiers:
 B Analyte detected in the associated Method Blank
 H Holding times for preparation or analysis exceeded
 ND Not Detected at the Reporting Limit
 RL Reporting Limit
 SDL Sample detection limit
 W Sample container temperature is out of limit as specified at testcode

E Value above quantitation range
 M Matrix Interference
 R RPD outside accepted recovery limits
 S Spike Recovery outside accepted recovery limits
 U Analyte not detected



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Analytical Report

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WO#: 22061340

Date Reported: 7/14/2022

CLIENT: ICON Environmental Services **Collection Date:** 6/28/2022 1:30:00 PM
Project: Levert-Grand River/9326-025-0100
Lab ID: 22061340-029 **Matrix:** SOIL
Client Sample ID LT-9 (0-2')

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
29B METALS					SW6010B	SW3050B Analyst: MRM
METALS IN SOIL OR SLUDGE BY ICP						
Zinc	41.6	0.987		mg/Kg-dry	1	7/12/2022 12:07:47 PM
29B METALS					LDNR 29-B	Analyst: MRM
TRUE TOTAL BARIUM						
True Total Barium	196	45.9		mg/Kg-dry	1	7/12/2022 2:36:25 PM
PERCENT MOISTURE					LDNR 29-B	Analyst: HXW
Percent Moisture	25.9	1.00		wt%	1	6/30/2022 2:15:00 PM

Qualifiers:	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	M	Matrix Interference
	ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits
	RL	Reporting Limit	S	Spike Recovery outside accepted recovery limits
	SDL	Sample detection limit	U	Analyte not detected
	W	Sample container temperature is out of limit as specified at testcode		



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Analytical Report

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WO#: 22061340

Date Reported: 7/14/2022

CLIENT: ICON Environmental Services **Collection Date:** 6/28/2022 1:35:00 PM
Project: Levert-Grand River/9326-025-0100
Lab ID: 22061340-030 **Matrix:** SOIL
Client Sample ID LT-9 (4-6')

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
29B SALTS					LDNR 29-B	LDNR 29-B Analyst: MRM
CATION EXCHANGE CAPACITY						
Cation Exchange Capacity	25.5	0.100		meq/100g	1	7/13/2022
29B SALTS					LDNR 29-B	Analyst: HXW
ELECTRICAL CONDUCTIVITY @ SATURATION						
Electrical Conductivity	0.41	0.10		mmhos/cm	1	7/7/2022 9:57:00 AM
29B SALTS					LDNR 29-B	LDNR 29-B Analyst: MRM
EXCHANGEABLE SODIUM PERCENTAGE						
Exchangeable Sodium %	1.41	0.10		%	1	7/13/2022
29B SALTS					LDNR 29-B	LDNR 29-B Analyst: MRM
SODIUM ADSORPTION RATIO						
Sodium Adsorption Ratio	0.62	0.10			1	7/12/2022
Soluble Calcium	1.87	0.02		meq/L	1	7/12/2022
Soluble Magnesium	0.79	0.05		meq/L	1	7/12/2022
Soluble Sodium	0.72	0.25		meq/L	1	7/12/2022
29B METALS					29B/SW7471A	SW7471A Analyst: BXB
MERCURY IN SOIL OR SLUDGE						
Mercury	< 0.105	0.105		mg/Kg-dry	1	7/8/2022 8:27:01 AM
SOLUBLE INORGANIC ANIONS IN SOIL BY IC					SW9056A	Analyst: SGP
Chloride	8.15	1.52		mg/Kg-dry	10	7/8/2022 3:13:41 PM
29B METALS					SW6010B	SW3050B Analyst: MRM
METALS IN SOIL OR SLUDGE BY ICP						
Arsenic	3.89	1.96		mg/Kg-dry	1	7/12/2022 12:10:04 PM
Barium	156	1.96		mg/Kg-dry	1	7/12/2022 12:10:04 PM
Cadmium	< 0.489	0.489		mg/Kg-dry	1	7/12/2022 12:10:04 PM
Chromium	11.5	0.978		mg/Kg-dry	1	7/12/2022 12:10:04 PM
Lead	9.44	0.978		mg/Kg-dry	1	7/12/2022 12:10:04 PM
Selenium	< 3.91	3.91		mg/Kg-dry	1	7/12/2022 12:10:04 PM
Strontium	32.5	0.978		mg/Kg-dry	1	7/12/2022 12:10:04 PM

Qualifiers:
 B Analyte detected in the associated Method Blank
 H Holding times for preparation or analysis exceeded
 ND Not Detected at the Reporting Limit
 RL Reporting Limit
 SDL Sample detection limit
 W Sample container temperature is out of limit as specified at testcode

E Value above quantitation range
 M Matrix Interference
 R RPD outside accepted recovery limits
 S Spike Recovery outside accepted recovery limits
 U Analyte not detected



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WO#: 22061340

Date Reported: 7/14/2022

CLIENT: ICON Environmental Services **Collection Date:** 6/28/2022 1:35:00 PM
Project: Levert-Grand River/9326-025-0100
Lab ID: 22061340-030 **Matrix:** SOIL
Client Sample ID LT-9 (4-6')

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
29B METALS					SW6010B	SW3050B Analyst: MRM
METALS IN SOIL OR SLUDGE BY ICP						
Zinc	46.0	0.978		mg/Kg-dry	1	7/12/2022 12:10:04 PM
29B METALS					LDNR 29-B	Analyst: MRM
TRUE TOTAL BARIUM						
True Total Barium	245	49.2		mg/Kg-dry	1	7/12/2022 2:50:20 PM
PERCENT MOISTURE					LDNR 29-B	Analyst: HXW
Percent Moisture	26.6	1.00		wt%	1	6/30/2022 2:15:00 PM

Qualifiers:	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	M	Matrix Interference
	ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits
	RL	Reporting Limit	S	Spike Recovery outside accepted recovery limits
	SDL	Sample detection limit	U	Analyte not detected
	W	Sample container temperature is out of limit as specified at testcode		



Element Materials Technology Lafayette
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 TEL: (337) 235-0483 FAX: (337) 233-6540
 Website: www.element.com

Analytical Report

(consolidated)

WO#: 22061340

Date Reported: 7/14/2022

CLIENT: ICON Environmental Services **Collection Date:** 6/28/2022 1:40:00 PM
Project: Levert-Grand River/9326-025-0100
Lab ID: 22061340-031 **Matrix:** SOIL
Client Sample ID LT-9 (8-10')

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
29B SALTS						
CATION EXCHANGE CAPACITY						
Cation Exchange Capacity	24.3	0.100		meq/100g	1	7/13/2022
29B SALTS						
ELECTRICAL CONDUCTIVITY @ SATURATION						
Electrical Conductivity	0.49	0.10		mmhos/cm	1	7/7/2022 9:57:00 AM
29B SALTS						
EXCHANGEABLE SODIUM PERCENTAGE						
Exchangeable Sodium %	1.25	0.10		%	1	7/13/2022
29B SALTS						
SODIUM ADSORPTION RATIO						
Sodium Adsorption Ratio	0.70	0.10			1	7/12/2022
Soluble Calcium	1.78	0.02		meq/L	1	7/12/2022
Soluble Magnesium	0.77	0.05		meq/L	1	7/12/2022
Soluble Sodium	0.79	0.25		meq/L	1	7/12/2022
29B METALS						
MERCURY IN SOIL OR SLUDGE						
Mercury	< 0.0949	0.0949		mg/Kg-dry	1	7/8/2022 8:29:19 AM
SOLUBLE INORGANIC ANIONS IN SOIL BY IC						
Chloride	25.6	1.61		mg/Kg-dry	10	7/8/2022 3:27:29 PM
29B METALS						
METALS IN SOIL OR SLUDGE BY ICP						
Arsenic	5.61	1.99		mg/Kg-dry	1	7/12/2022 12:12:21 PM
Barium	149	1.99		mg/Kg-dry	1	7/12/2022 12:12:21 PM
Cadmium	< 0.497	0.497		mg/Kg-dry	1	7/12/2022 12:12:21 PM
Chromium	10.4	0.995		mg/Kg-dry	1	7/12/2022 12:12:21 PM
Lead	9.01	0.995		mg/Kg-dry	1	7/12/2022 12:12:21 PM
Selenium	< 3.98	3.98		mg/Kg-dry	1	7/12/2022 12:12:21 PM
Strontium	35.1	0.995		mg/Kg-dry	1	7/12/2022 12:12:21 PM

Qualifiers:
 B Analyte detected in the associated Method Blank
 H Holding times for preparation or analysis exceeded
 ND Not Detected at the Reporting Limit
 RL Reporting Limit
 SDL Sample detection limit
 W Sample container temperature is out of limit as specified at testcode

E Value above quantitation range
 M Matrix Interference
 R RPD outside accepted recovery limits
 S Spike Recovery outside accepted recovery limits
 U Analyte not detected



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Analytical Report

(consolidated)

WO#: 22061340

Date Reported: 7/14/2022

CLIENT: ICON Environmental Services **Collection Date:** 6/28/2022 1:40:00 PM
Project: Levert-Grand River/9326-025-0100
Lab ID: 22061340-031 **Matrix:** SOIL
Client Sample ID LT-9 (8-10')

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
29B METALS					SW6010B	SW3050B Analyst: MRM
METALS IN SOIL OR SLUDGE BY ICP						
Zinc	44.1	0.995		mg/Kg-dry	1	7/12/2022 12:12:21 PM
29B METALS					LDNR 29-B	Analyst: MRM
TRUE TOTAL BARIUM						
True Total Barium	180	47.0		mg/Kg-dry	1	7/13/2022 3:21:16 PM
PERCENT MOISTURE					LDNR 29-B	Analyst: HXW
Percent Moisture	25.4	1.00		wt%	1	6/30/2022 2:15:00 PM

Qualifiers:	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	M	Matrix Interference
	ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits
	RL	Reporting Limit	S	Spike Recovery outside accepted recovery limits
	SDL	Sample detection limit	U	Analyte not detected
	W	Sample container temperature is out of limit as specified at testcode		



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Analytical Report

(consolidated)

WO#: 22061340

Date Reported: 7/14/2022

CLIENT: ICON Environmental Services **Collection Date:** 6/28/2022 1:45:00 PM
Project: Levert-Grand River/9326-025-0100
Lab ID: 22061340-032 **Matrix:** SOIL
Client Sample ID LT-9 (12-14')

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
ELECTRICAL CONDUCTIVITY @ SATURATION				LDNR 29-B		Analyst: HXW
Electrical Conductivity	0.48	0.10		mmhos/cm	1	7/7/2022 9:57:00 AM
SOLUBLE INORGANIC ANIONS IN SOIL BY IC				SW9056A		Analyst: SGP
Chloride	31.8	1.41		mg/Kg-dry	10	7/8/2022 4:50:10 PM
PERCENT MOISTURE				LDNR 29-B		Analyst: HXW
Percent Moisture	26.4	1.00		wt%	1	6/30/2022 2:15:00 PM

Qualifiers:	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	M	Matrix Interference
	ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits
	RL	Reporting Limit	S	Spike Recovery outside accepted recovery limits
	SDL	Sample detection limit	U	Analyte not detected
	W	Sample container temperature is out of limit as specified at testcode		



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Analytical Report

(consolidated)

WO#: 22061340

Date Reported: 7/14/2022

CLIENT: ICON Environmental Services **Collection Date:** 6/28/2022 1:55:00 PM
Project: Levert-Grand River/9326-025-0100
Lab ID: 22061340-033 **Matrix:** SOIL
Client Sample ID LT-9 (20-22')

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
ELECTRICAL CONDUCTIVITY @ SATURATION				LDNR 29-B		Analyst: HXW
Electrical Conductivity	0.43	0.10		mmhos/cm	1	7/7/2022 9:57:00 AM
SOLUBLE INORGANIC ANIONS IN SOIL BY IC				SW9056A		Analyst: SGP
Chloride	18.9	2.87		mg/Kg-dry	20	7/8/2022 5:03:58 PM
PERCENT MOISTURE				LDNR 29-B		Analyst: HXW
Percent Moisture	28.3	1.00		wt%	1	6/30/2022 2:15:00 PM

Qualifiers:	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	M	Matrix Interference
	ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits
	RL	Reporting Limit	S	Spike Recovery outside accepted recovery limits
	SDL	Sample detection limit	U	Analyte not detected
	W	Sample container temperature is out of limit as specified at testcode		



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QC SUMMARY REPORT

WO#: 22061340
 14-Jul-22

Client: ICON Environmental Services
Project: Levert-Grand River/9326-025-0100

BatchID: 44342

Sample ID	MB-44342	SampType:	MBLK	TestCode:	6010_S_29B	Units:	mg/Kg-dry	Prep Date:	7/5/2022	RunNo:	111187
Client ID:	PBS	Batch ID:	44342	TestNo:	SW6010B	SW3050B		Analysis Date:	7/7/2022	SeqNo:	2746425
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD RPDLimit Qual
Arsenic		< 2.00		2.00							
Barium		< 15.0		15.0							
Cadmium		< 0.500		0.500							
Chromium		< 1.00		1.00							
Lead		< 1.00		1.00							
Selenium		< 4.00		4.00							
Strontium		< 1.00		1.00							
Zinc		< 1.00		1.00							

Sample ID	LCS-44342	SampType:	LCS	TestCode:	6010_S_29B	Units:	mg/Kg-dry	Prep Date:	7/5/2022	RunNo:	111187
Client ID:	LCSS	Batch ID:	44342	TestNo:	SW6010B	SW3050B		Analysis Date:	7/7/2022	SeqNo:	2746426
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD RPDLimit Qual
Arsenic		45.4		2.00	50.00	0	90.9	80	120		
Barium		54.4		15.0	50.00	0	109	80	120		
Cadmium		45.7		0.500	50.00	0	91.5	80	120		
Chromium		47.0		1.00	50.00	0	94.1	80	120		
Lead		45.6		1.00	50.00	0	91.3	80	120		
Selenium		42.3		4.00	50.00	0	84.5	80	120		
Strontium		47.6		1.00	50.00	0	95.2	80	120		
Zinc		44.1		1.00	50.00	0	88.2	80	120		

Qualifiers:

- | | | | | | |
|----|---|----|---|-----|--|
| B | Analyte detected in the associated Method Blank | E | Value above quantitation range | H | Holding times for preparation or analysis exceeded |
| M | Matrix Interference | ND | Not Detected at the Reporting Limit | R | RPD outside accepted recovery limits |
| RL | Reporting Limit | S | Spike Recovery outside accepted recovery limits | SDL | Sample detection limit |
| U | Analyte not detected | W | Sample container temperature is out of limit as specified at testcode | | |



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QC SUMMARY REPORT

WO#: 22061340
 14-Jul-22

Client: ICON Environmental Services
Project: Levert-Grand River/9326-025-0100

BatchID: 44342

Sample ID	LCSD-44342	SampType:	LCSD	TestCode:	6010_S_29B	Units:	mg/Kg-dry	Prep Date:	7/5/2022	RunNo:	111187
Client ID:	LCSS02	Batch ID:	44342	TestNo:	SW6010B		SW3050B	Analysis Date:	7/7/2022	SeqNo:	2746427
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	44.4	2.00	50.00	0	88.7	80	120	45.43	2.40	20	
Barium	53.3	15.0	50.00	0	107	80	120	54.36	2.02	20	
Cadmium	44.6	0.500	50.00	0	89.3	80	120	45.75	2.46	20	
Chromium	45.8	1.00	50.00	0	91.5	80	120	47.03	2.76	20	
Lead	44.6	1.00	50.00	0	89.3	80	120	45.63	2.21	20	
Selenium	40.8	4.00	50.00	0	81.6	80	120	42.25	3.52	20	
Strontium	46.3	1.00	50.00	0	92.6	80	120	47.61	2.84	20	
Zinc	42.9	1.00	50.00	0	85.7	80	120	44.12	2.88	20	

Sample ID	22061154-022AMS	SampType:	MS	TestCode:	6010_S_29B	Units:	mg/Kg-dry	Prep Date:	7/5/2022	RunNo:	111187
Client ID:	ZZZZZZ	Batch ID:	44342	TestNo:	SW6010B		SW3050B	Analysis Date:	7/7/2022	SeqNo:	2746429
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	33.6	1.91	47.70	4.301	61.4	75	125				S
Barium	218	14.3	47.70	201.5	34.9	75	125				S
Cadmium	31.4	0.477	47.70	0.3852	65.1	75	125				S
Chromium	48.4	0.954	47.70	15.35	69.3	75	125				S
Lead	43.5	0.954	47.70	14.76	60.2	75	125				S
Selenium	25.6	3.82	47.70	0.1221	53.4	75	125				S
Strontium	87.5	0.954	47.70	58.39	61.1	75	125				S
Zinc	94.7	0.954	47.70	66.48	59.2	75	125				S

Qualifiers:

- | | | | | | |
|----|---|----|---|-----|--|
| B | Analyte detected in the associated Method Blank | E | Value above quantitation range | H | Holding times for preparation or analysis exceeded |
| M | Matrix Interference | ND | Not Detected at the Reporting Limit | R | RPD outside accepted recovery limits |
| RL | Reporting Limit | S | Spike Recovery outside accepted recovery limits | SDL | Sample detection limit |
| U | Analyte not detected | W | Sample container temperature is out of limit as specified at testcode | | |



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QC SUMMARY REPORT

WO#: 22061340
 14-Jul-22

Client: ICON Environmental Services
Project: Levert-Grand River/9326-025-0100

BatchID: 44342

Sample ID	22061154-022AMSD	SampType:	MSD	TestCode:	6010_S_29B	Units:	mg/Kg-dry	Prep Date:	7/5/2022	RunNo:	111187
Client ID:	ZZZZZZ	Batch ID:	44342	TestNo:	SW6010B		SW3050B	Analysis Date:	7/7/2022	SeqNo:	2746430
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	29.2	1.99	49.78	4.301	50.0	75	125	33.60	14.1	20	S
Barium	171	14.9	49.78	201.5	-62.1	75	125	218.2	24.5	20	RS
Cadmium	26.9	0.498	49.78	0.3852	53.3	75	125	31.45	15.5	20	S
Chromium	39.3	0.996	49.78	15.35	48.1	75	125	48.40	20.7	20	RS
Lead	37.1	0.996	49.78	14.76	44.9	75	125	43.46	15.8	20	S
Selenium	23.7	3.98	49.78	0.1221	47.5	75	125	25.62	7.57	20	S
Strontium	70.2	0.996	49.78	58.39	23.8	75	125	87.52	21.9	20	RS
Zinc	77.0	0.996	49.78	66.48	21.1	75	125	94.73	20.7	20	RS

NOTES:

S - Spike recovery indicates matrix interference. The method is in control as indicated by the Lab Control Sample.

Qualifiers:

- | | | | | | |
|----|---|----|---|-----|--|
| B | Analyte detected in the associated Method Blank | E | Value above quantitation range | H | Holding times for preparation or analysis exceeded |
| M | Matrix Interference | ND | Not Detected at the Reporting Limit | R | RPD outside accepted recovery limits |
| RL | Reporting Limit | S | Spike Recovery outside accepted recovery limits | SDL | Sample detection limit |
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QC SUMMARY REPORT

WO#: 22061340
 14-Jul-22

Client: ICON Environmental Services
Project: Levert-Grand River/9326-025-0100

BatchID: 44353

Sample ID	MB-44353	SampType:	MBLK	TestCode:	HG_S_29B	Units:	mg/Kg-dry	Prep Date:	7/6/2022	RunNo:	111229
Client ID:	PBS	Batch ID:	44353	TestNo:	29B/SW7471 SW7471A	Analysis Date:	7/8/2022	SeqNo:	2747064		
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD RPDLimit Qual
Mercury		< 0.100		0.100							

Sample ID	LCS-44353	SampType:	LCS	TestCode:	HG_S_29B	Units:	mg/Kg-dry	Prep Date:	7/6/2022	RunNo:	111229
Client ID:	LCSS	Batch ID:	44353	TestNo:	29B/SW7471 SW7471A	Analysis Date:	7/8/2022	SeqNo:	2747065		
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD RPDLimit Qual
Mercury		0.842		0.100	0.8330	0	101	80	120		

Sample ID	LCSD-44353	SampType:	LCSD	TestCode:	HG_S_29B	Units:	mg/Kg-dry	Prep Date:	7/6/2022	RunNo:	111229
Client ID:	LCSS02	Batch ID:	44353	TestNo:	29B/SW7471 SW7471A	Analysis Date:	7/8/2022	SeqNo:	2747066		
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD RPDLimit Qual
Mercury		0.834		0.100	0.8330	0	100	80	120	0.8418	0.879 20

Sample ID	22070024-001AMS	SampType:	MS	TestCode:	HG_S_29B	Units:	mg/Kg-dry	Prep Date:	7/6/2022	RunNo:	111229
Client ID:	ZZZZZZ	Batch ID:	44353	TestNo:	29B/SW7471 SW7471A	Analysis Date:	7/8/2022	SeqNo:	2747068		
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD RPDLimit Qual
Mercury		0.867		0.0964	0.8031	0.1616	87.8	75	125		

Qualifiers:

- | | | | | | |
|----|---|----|---|-----|--|
| B | Analyte detected in the associated Method Blank | E | Value above quantitation range | H | Holding times for preparation or analysis exceeded |
| M | Matrix Interference | ND | Not Detected at the Reporting Limit | R | RPD outside accepted recovery limits |
| RL | Reporting Limit | S | Spike Recovery outside accepted recovery limits | SDL | Sample detection limit |
| U | Analyte not detected | W | Sample container temperature is out of limit as specified at testcode | | |



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QC SUMMARY REPORT

WO#: 22061340
 14-Jul-22

Client: ICON Environmental Services
Project: Levert-Grand River/9326-025-0100

BatchID: 44353

Sample ID	22070024-001AMSD	SampType:	MSD	TestCode:	HG_S_29B	Units:	mg/Kg-dry	Prep Date:	7/6/2022	RunNo:	111229		
Client ID:	ZZZZZZ	Batch ID:	44353	TestNo:	29B/SW7471 SW7471A			Analysis Date:	7/8/2022	SeqNo:	2747069		
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury		0.923		0.102	0.8512	0.1616	89.4	75	125	0.8669	6.23	20	

Qualifiers:

- | | | | | | |
|----|---|----|---|-----|--|
| B | Analyte detected in the associated Method Blank | E | Value above quantitation range | H | Holding times for preparation or analysis exceeded |
| M | Matrix Interference | ND | Not Detected at the Reporting Limit | R | RPD outside accepted recovery limits |
| RL | Reporting Limit | S | Spike Recovery outside accepted recovery limits | SDL | Sample detection limit |
| U | Analyte not detected | W | Sample container temperature is out of limit as specified at testcode | | |



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QC SUMMARY REPORT

WO#: 22061340
 14-Jul-22

Client: ICON Environmental Services
Project: Levert-Grand River/9326-025-0100

BatchID: 44357

Sample ID	MB-44357	SampType:	MBLK	TestCode:	TTBA	Units:	mg/Kg-dry	Prep Date:	7/6/2022	RunNo:	111346			
Client ID:	PBS	Batch ID:	44357	TestNo:	LDNR 29-B			Analysis Date:	7/12/2022	SeqNo:	2750063			
Analyte		Result		PQL	SPK value	SPK Ref Val		%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
True Total Barium		< 50.0		50.0										

Sample ID	LCS-44357	SampType:	LCS	TestCode:	TTBA	Units:	mg/Kg-dry	Prep Date:	7/6/2022	RunNo:	111346			
Client ID:	LCSS	Batch ID:	44357	TestNo:	LDNR 29-B			Analysis Date:	7/12/2022	SeqNo:	2750064			
Analyte		Result		PQL	SPK value	SPK Ref Val		%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
True Total Barium		5,090		50.0	5,000	0		102	75	125				

Sample ID	LCSD-44357	SampType:	LCSD	TestCode:	TTBA	Units:	mg/Kg-dry	Prep Date:	7/6/2022	RunNo:	111346			
Client ID:	LCSS02	Batch ID:	44357	TestNo:	LDNR 29-B			Analysis Date:	7/12/2022	SeqNo:	2750065			
Analyte		Result		PQL	SPK value	SPK Ref Val		%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
True Total Barium		5,120		50.0	5,000	0		102	75	125	5,087	0.611	20	

Sample ID	22061295-001AMS	SampType:	MS	TestCode:	TTBA	Units:	mg/Kg-dry	Prep Date:	7/6/2022	RunNo:	111346			
Client ID:	ZZZZZZ	Batch ID:	44357	TestNo:	LDNR 29-B			Analysis Date:	7/12/2022	SeqNo:	2750069			
Analyte		Result		PQL	SPK value	SPK Ref Val		%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
True Total Barium		42,900		49.8	4,978	36,910		120	75	125				

Qualifiers:

- | | | | | | |
|----|---|----|---|-----|--|
| B | Analyte detected in the associated Method Blank | E | Value above quantitation range | H | Holding times for preparation or analysis exceeded |
| M | Matrix Interference | ND | Not Detected at the Reporting Limit | R | RPD outside accepted recovery limits |
| RL | Reporting Limit | S | Spike Recovery outside accepted recovery limits | SDL | Sample detection limit |
| U | Analyte not detected | W | Sample container temperature is out of limit as specified at testcode | | |



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QC SUMMARY REPORT

WO#: 22061340
 14-Jul-22

Client: ICON Environmental Services
Project: Levert-Grand River/9326-025-0100

BatchID: 44357

Sample ID	22061295-001AMSD	SampType:	MSD	TestCode:	TTBA	Units:	mg/Kg-dry	Prep Date:	7/6/2022	RunNo:	111346		
Client ID:	ZZZZZZ	Batch ID:	44357	TestNo:	LDNR 29-B			Analysis Date:	7/12/2022	SeqNo:	2750070		
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
True Total Barium		40,900		48.3	4,831	36,910	83.1	75	125	42,870	4.65	20	

Qualifiers:

- | | | | | | |
|----|---|----|---|-----|--|
| B | Analyte detected in the associated Method Blank | E | Value above quantitation range | H | Holding times for preparation or analysis exceeded |
| M | Matrix Interference | ND | Not Detected at the Reporting Limit | R | RPD outside accepted recovery limits |
| RL | Reporting Limit | S | Spike Recovery outside accepted recovery limits | SDL | Sample detection limit |
| U | Analyte not detected | W | Sample container temperature is out of limit as specified at testcode | | |



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 TEL: (337) 235-0483 FAX: (337) 233-6540
 Website: www.element.com

QC SUMMARY REPORT

WO#: 22061340
 14-Jul-22

Client: ICON Environmental Services
Project: Levert-Grand River/9326-025-0100

BatchID: 44387

Sample ID	22061340-001ADUP	SampType:	DUP	TestCode:	SAR_S	Units:		Prep Date:	7/8/2022	RunNo:	111393		
Client ID:	LT-4 (8-10')	Batch ID:	44387	TestNo:	LDNR 29-B	LDNR 29-B		Analysis Date:	7/12/2022	SeqNo:	2751135		
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium Adsorption Ratio		1.13		0.10						1.14	0.88	20	
Soluble Calcium		2.76		0.02						2.79	1.08	20	
Soluble Magnesium		1.39		0.05						1.40	0.72	20	
Soluble Sodium		1.62		0.25						1.66	2.44	20	

Qualifiers:

- | | | | | | |
|----|---|----|---|-----|--|
| B | Analyte detected in the associated Method Blank | E | Value above quantitation range | H | Holding times for preparation or analysis exceeded |
| M | Matrix Interference | ND | Not Detected at the Reporting Limit | R | RPD outside accepted recovery limits |
| RL | Reporting Limit | S | Spike Recovery outside accepted recovery limits | SDL | Sample detection limit |
| U | Analyte not detected | W | Sample container temperature is out of limit as specified at testcode | | |



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QC SUMMARY REPORT

WO#: 22061340
 14-Jul-22

Client: ICON Environmental Services
Project: Levert-Grand River/9326-025-0100

BatchID: 44395

Sample ID	MB-44395	SampType:	MBLK	TestCode:	6010_S_29B	Units:	mg/Kg-dry	Prep Date:	7/11/2022	RunNo:	111346
Client ID:	PBS	Batch ID:	44395	TestNo:	SW6010B	SW3050B		Analysis Date:	7/12/2022	SeqNo:	2750113
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD RPDLimit Qual
Arsenic		< 2.00		2.00							
Barium		< 2.00		2.00							
Cadmium		< 0.500		0.500							
Chromium		< 1.00		1.00							
Lead		< 1.00		1.00							
Selenium		< 4.00		4.00							
Strontium		< 1.00		1.00							
Zinc		< 1.00		1.00							

Sample ID	LCS-44395	SampType:	LCS	TestCode:	6010_S_29B	Units:	mg/Kg-dry	Prep Date:	7/11/2022	RunNo:	111346
Client ID:	LCSS	Batch ID:	44395	TestNo:	SW6010B	SW3050B		Analysis Date:	7/12/2022	SeqNo:	2750114
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD RPDLimit Qual
Arsenic		46.9		2.00	50.00	0	93.9	80	120		
Barium		50.2		2.00	50.00	0	100	80	120		
Cadmium		47.4		0.500	50.00	0	94.8	80	120		
Chromium		48.6		1.00	50.00	0	97.1	80	120		
Lead		48.2		1.00	50.00	0	96.5	80	120		
Selenium		44.2		4.00	50.00	0	88.5	80	120		
Strontium		47.8		1.00	50.00	0	95.6	80	120		
Zinc		46.2		1.00	50.00	0	92.4	80	120		

Qualifiers:

- | | | | | | |
|----|---|----|---|-----|--|
| B | Analyte detected in the associated Method Blank | E | Value above quantitation range | H | Holding times for preparation or analysis exceeded |
| M | Matrix Interference | ND | Not Detected at the Reporting Limit | R | RPD outside accepted recovery limits |
| RL | Reporting Limit | S | Spike Recovery outside accepted recovery limits | SDL | Sample detection limit |
| U | Analyte not detected | W | Sample container temperature is out of limit as specified at testcode | | |



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QC SUMMARY REPORT

WO#: 22061340
 14-Jul-22

Client: ICON Environmental Services
Project: Levert-Grand River/9326-025-0100

BatchID: 44395

Sample ID	LCSD-44395	SampType:	LCSD	TestCode:	6010_S_29B	Units:	mg/Kg-dry	Prep Date:	7/11/2022	RunNo:	111346
Client ID:	LCSS02	Batch ID:	44395	TestNo:	SW6010B	SW3050B		Analysis Date:	7/12/2022	SeqNo:	2750115
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	48.8	2.00	50.00	0	97.5	80	120	46.94	3.81	20	
Barium	50.3	2.00	50.00	0	101	80	120	50.18	0.231	20	
Cadmium	47.9	0.500	50.00	0	95.8	80	120	47.40	1.06	20	
Chromium	49.2	1.00	50.00	0	98.4	80	120	48.56	1.30	20	
Lead	48.5	1.00	50.00	0	97.1	80	120	48.25	0.616	20	
Selenium	42.5	4.00	50.00	0	85.0	80	120	44.24	4.04	20	
Strontium	48.3	1.00	50.00	0	96.7	80	120	47.78	1.17	20	
Zinc	46.8	1.00	50.00	0	93.7	80	120	46.22	1.33	20	

Sample ID	22061340-007AMS	SampType:	MS	TestCode:	6010_S_29B	Units:	mg/Kg-dry	Prep Date:	7/11/2022	RunNo:	111346
Client ID:	LT-5 (8-10')	Batch ID:	44395	TestNo:	SW6010B	SW3050B		Analysis Date:	7/12/2022	SeqNo:	2750117
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	44.0	1.99	49.73	4.357	79.6	75	125				
Barium	557	1.99	49.73	447.4	221	75	125				S
Cadmium	42.0	0.497	49.73	0.1951	84.0	75	125				
Chromium	59.5	0.995	49.73	12.55	94.4	75	125				
Lead	52.4	0.995	49.73	11.63	82.0	75	125				
Selenium	34.8	3.98	49.73	0	69.9	75	125				S
Strontium	92.3	0.995	49.73	44.32	96.4	75	125				
Zinc	97.5	0.995	49.73	50.46	94.6	75	125				

Qualifiers:

- | | | | | | |
|----|---|----|---|-----|--|
| B | Analyte detected in the associated Method Blank | E | Value above quantitation range | H | Holding times for preparation or analysis exceeded |
| M | Matrix Interference | ND | Not Detected at the Reporting Limit | R | RPD outside accepted recovery limits |
| RL | Reporting Limit | S | Spike Recovery outside accepted recovery limits | SDL | Sample detection limit |
| U | Analyte not detected | W | Sample container temperature is out of limit as specified at testcode | | |



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QC SUMMARY REPORT

WO#: 22061340
 14-Jul-22

Client: ICON Environmental Services
Project: Levert-Grand River/9326-025-0100

BatchID: 44395

Sample ID	22061340-007AMSD	SampType:	MSD	TestCode:	6010_S_29B	Units:	mg/Kg-dry	Prep Date:	7/11/2022	RunNo:	111346
Client ID:	LT-5 (8-10')	Batch ID:	44395	TestNo:	SW6010B	SW3050B		Analysis Date:	7/12/2022	SeqNo:	2750118
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	43.1	2.00	49.97	4.357	77.5	75	125	43.95	2.03	20	
Barium	550	2.00	49.97	447.4	205	75	125	557.3	1.40	20	S
Cadmium	41.0	0.500	49.97	0.1951	81.7	75	125	41.96	2.21	20	
Chromium	58.1	0.999	49.97	12.55	91.1	75	125	59.49	2.39	20	
Lead	52.2	0.999	49.97	11.63	81.1	75	125	52.39	0.454	20	
Selenium	35.6	4.00	49.97	0	71.3	75	125	34.77	2.36	20	S
Strontium	90.3	0.999	49.97	44.32	92.1	75	125	92.26	2.12	20	
Zinc	95.6	0.999	49.97	50.46	90.3	75	125	97.50	2.01	20	

NOTES:
 S - Spike recovery indicates matrix interference. The method is in control as indicated by the Lab Control Sample.

Qualifiers:	B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
	M	Matrix Interference	ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits
	RL	Reporting Limit	S	Spike Recovery outside accepted recovery limits	SDL	Sample detection limit
	U	Analyte not detected	W	Sample container temperature is out of limit as specified at testcode		



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QC SUMMARY REPORT

WO#: 22061340
 14-Jul-22

Client: ICON Environmental Services
Project: Levert-Grand River/9326-025-0100

BatchID: 44400

Sample ID	22061340-015ADUP	SampType:	DUP	TestCode:	ESP_S	Units:	%	Prep Date:	7/11/2022	RunNo:	111394
Client ID:	LT-7 (0-2')	Batch ID:	44400	TestNo:	LDNR 29-B	LDNR 29-B		Analysis Date:	7/13/2022	SeqNo:	2751195
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD RPDLimit Qual
Exchangeable Sodium %		1.28		0.10						1.24	3.17 20

Qualifiers:

- | | | | | | |
|----|---|----|---|-----|--|
| B | Analyte detected in the associated Method Blank | E | Value above quantitation range | H | Holding times for preparation or analysis exceeded |
| M | Matrix Interference | ND | Not Detected at the Reporting Limit | R | RPD outside accepted recovery limits |
| RL | Reporting Limit | S | Spike Recovery outside accepted recovery limits | SDL | Sample detection limit |
| U | Analyte not detected | W | Sample container temperature is out of limit as specified at testcode | | |



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QC SUMMARY REPORT

WO#: 22061340
 14-Jul-22

Client: ICON Environmental Services
Project: Levert-Grand River/9326-025-0100

BatchID: 44401

Sample ID	22061340-015ADUP	SampType:	DUP	TestCode:	CEC	Units:	meq/100g	Prep Date:	7/11/2022	RunNo:	111394
Client ID:	LT-7 (0-2')	Batch ID:	44401	TestNo:	LDNR 29-B	LDNR 29-B		Analysis Date:	7/13/2022	SeqNo:	2751182
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD RPDLimit Qual
Cation Exchange Capacity		27.8		0.100						29.40	5.45 20

Sample ID	LCS-44401	SampType:	LCS	TestCode:	CEC	Units:	meq/100g	Prep Date:	7/11/2022	RunNo:	111394
Client ID:	LCSS	Batch ID:	44401	TestNo:	LDNR 29-B	LDNR 29-B		Analysis Date:	7/13/2022	SeqNo:	2751183
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD RPDLimit Qual
Cation Exchange Capacity		4.70		0.100	4.350	0	108	76	124		

Sample ID	LCSD-44401	SampType:	LCSD	TestCode:	CEC	Units:	meq/100g	Prep Date:	7/11/2022	RunNo:	111394
Client ID:	LCSS02	Batch ID:	44401	TestNo:	LDNR 29-B	LDNR 29-B		Analysis Date:	7/13/2022	SeqNo:	2751184
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD RPDLimit Qual
Cation Exchange Capacity		4.79		0.100	4.350	0	110	76	124	4.700	1.90 20

Qualifiers:

- | | | | | | |
|----|---|----|---|-----|--|
| B | Analyte detected in the associated Method Blank | E | Value above quantitation range | H | Holding times for preparation or analysis exceeded |
| M | Matrix Interference | ND | Not Detected at the Reporting Limit | R | RPD outside accepted recovery limits |
| RL | Reporting Limit | S | Spike Recovery outside accepted recovery limits | SDL | Sample detection limit |
| U | Analyte not detected | W | Sample container temperature is out of limit as specified at testcode | | |



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QC SUMMARY REPORT

WO#: 22061340
 14-Jul-22

Client: ICON Environmental Services
Project: Levert-Grand River/9326-025-0100

BatchID: 44417

Sample ID	MB-44417	SampType:	MBLK	TestCode:	TTBA	Units:	mg/Kg-dry	Prep Date:	7/12/2022	RunNo:	111396
Client ID:	PBS	Batch ID:	44417	TestNo:	LDNR 29-B			Analysis Date:	7/13/2022	SeqNo:	2751290
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD RPDLimit Qual
True Total Barium		< 50.0		50.0							

Sample ID	LCS-44417	SampType:	LCS	TestCode:	TTBA	Units:	mg/Kg-dry	Prep Date:	7/12/2022	RunNo:	111396
Client ID:	LCSS	Batch ID:	44417	TestNo:	LDNR 29-B			Analysis Date:	7/13/2022	SeqNo:	2751291
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD RPDLimit Qual
True Total Barium		5,160		50.0	5,000	0	103	75	125		

Sample ID	LCSD-44417	SampType:	LCSD	TestCode:	TTBA	Units:	mg/Kg-dry	Prep Date:	7/12/2022	RunNo:	111396
Client ID:	LCSS02	Batch ID:	44417	TestNo:	LDNR 29-B			Analysis Date:	7/13/2022	SeqNo:	2751292
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD RPDLimit Qual
True Total Barium		5,120		50.0	5,000	0	102	75	125	5,160	0.749 20

Sample ID	22061340-031AMS	SampType:	MS	TestCode:	TTBA	Units:	mg/Kg-dry	Prep Date:	7/12/2022	RunNo:	111396
Client ID:	LT-9 (8-10')	Batch ID:	44417	TestNo:	LDNR 29-B			Analysis Date:	7/13/2022	SeqNo:	2751294
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD RPDLimit Qual
True Total Barium		5,150		48.2	4,817	179.7	103	75	125		

Qualifiers:

- | | | | | | |
|----|---|----|---|-----|--|
| B | Analyte detected in the associated Method Blank | E | Value above quantitation range | H | Holding times for preparation or analysis exceeded |
| M | Matrix Interference | ND | Not Detected at the Reporting Limit | R | RPD outside accepted recovery limits |
| RL | Reporting Limit | S | Spike Recovery outside accepted recovery limits | SDL | Sample detection limit |
| U | Analyte not detected | W | Sample container temperature is out of limit as specified at testcode | | |



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QC SUMMARY REPORT

WO#: 22061340
 14-Jul-22

Client: ICON Environmental Services
Project: Levert-Grand River/9326-025-0100

BatchID: 44417

Sample ID	22061340-031AMSD	SampType:	MSD	TestCode:	TTBA	Units:	mg/Kg-dry	Prep Date:	7/12/2022	RunNo:	111396		
Client ID:	LT-9 (8-10')	Batch ID:	44417	TestNo:	LDNR 29-B			Analysis Date:	7/13/2022	SeqNo:	2751295		
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
True Total Barium		5,270		49.5	4,950	179.7	103	75	125	5,146	2.38	20	

Qualifiers:

- | | | | | | |
|----|---|----|---|-----|--|
| B | Analyte detected in the associated Method Blank | E | Value above quantitation range | H | Holding times for preparation or analysis exceeded |
| M | Matrix Interference | ND | Not Detected at the Reporting Limit | R | RPD outside accepted recovery limits |
| RL | Reporting Limit | S | Spike Recovery outside accepted recovery limits | SDL | Sample detection limit |
| U | Analyte not detected | W | Sample container temperature is out of limit as specified at testcode | | |



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QC SUMMARY REPORT

WO#: 22061340
 14-Jul-22

Client: ICON Environmental Services
Project: Levert-Grand River/9326-025-0100

BatchID: R111112

Sample ID	22061340-002ADUP	SampType:	DUP	TestCode:	PMOIST_29B	Units:	wt%	Prep Date:		RunNo:	111112		
Client ID:	LT-4 (12-14')	Batch ID:	R111112	TestNo:	LDNR 29-B			Analysis Date:	6/30/2022	SeqNo:	2743526		
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Percent Moisture		23.6		1.00						28.90	20.2	20	R

NOTES:
 R - High RPD due to suspected sample non-homogeneity.

Qualifiers:

- | | | | | | |
|----|---|----|---|-----|--|
| B | Analyte detected in the associated Method Blank | E | Value above quantitation range | H | Holding times for preparation or analysis exceeded |
| M | Matrix Interference | ND | Not Detected at the Reporting Limit | R | RPD outside accepted recovery limits |
| RL | Reporting Limit | S | Spike Recovery outside accepted recovery limits | SDL | Sample detection limit |
| U | Analyte not detected | W | Sample container temperature is out of limit as specified at testcode | | |



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QC SUMMARY REPORT

WO#: 22061340
 14-Jul-22

Client: ICON Environmental Services
Project: Levert-Grand River/9326-025-0100

BatchID: R111113

Sample ID	22061340-025ADUP	SampType:	DUP	TestCode:	PMOIST_29B	Units:	wt%	Prep Date:		RunNo:	111113		
Client ID:	LT-8 (16-18')	Batch ID:	R111113	TestNo:	LDNR 29-B			Analysis Date:	6/30/2022	SeqNo:	2743550		
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Percent Moisture		26.9		1.00						26.10	3.02	20	

Qualifiers:

- | | | | | | |
|----|---|----|---|-----|--|
| B | Analyte detected in the associated Method Blank | E | Value above quantitation range | H | Holding times for preparation or analysis exceeded |
| M | Matrix Interference | ND | Not Detected at the Reporting Limit | R | RPD outside accepted recovery limits |
| RL | Reporting Limit | S | Spike Recovery outside accepted recovery limits | SDL | Sample detection limit |
| U | Analyte not detected | W | Sample container temperature is out of limit as specified at testcode | | |



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QC SUMMARY REPORT

WO#: 22061340
 14-Jul-22

Client: ICON Environmental Services
Project: Levert-Grand River/9326-025-0100

BatchID: R111182

Sample ID	MB-R111182	SampType:	MBLK	TestCode:	EC_S	Units:	mmhos/cm	Prep Date:		RunNo:	111182
Client ID:	PBS	Batch ID:	R111182	TestNo:	LDNR 29-B			Analysis Date:	7/7/2022	SeqNo:	2745522
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD RPDLimit Qual
Electrical Conductivity		< 0.10		0.10							

Sample ID	LCS1-R111182	SampType:	LCS1	TestCode:	EC_S	Units:	mmhos/cm	Prep Date:		RunNo:	111182
Client ID:	ZZZZZ	Batch ID:	R111182	TestNo:	LDNR 29-B			Analysis Date:	7/7/2022	SeqNo:	2745523
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD RPDLimit Qual
Electrical Conductivity		0.48		0.10	0.50	0	95.8	90	110		

Sample ID	LCS2-R111182	SampType:	LCS2	TestCode:	EC_S	Units:	mmhos/cm	Prep Date:		RunNo:	111182
Client ID:	ZZZZZ	Batch ID:	R111182	TestNo:	LDNR 29-B			Analysis Date:	7/7/2022	SeqNo:	2745524
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD RPDLimit Qual
Electrical Conductivity		50.8		0.10	53.00	0	95.8	90	110		

Sample ID	22061340-002ADUP	SampType:	DUP	TestCode:	EC_S	Units:	mmhos/cm	Prep Date:		RunNo:	111182
Client ID:	LT-4 (12-14')	Batch ID:	R111182	TestNo:	LDNR 29-B			Analysis Date:	7/7/2022	SeqNo:	2745527
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD RPDLimit Qual
Electrical Conductivity		0.82		0.10						0.81	1.35 20

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
M	Matrix Interference	ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits
RL	Reporting Limit	S	Spike Recovery outside accepted recovery limits	SDL	Sample detection limit
U	Analyte not detected	W	Sample container temperature is out of limit as specified at testcode		



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QC SUMMARY REPORT

WO#: **22061340**
14-Jul-22

Client: ICON Environmental Services
Project: Levert-Grand River/9326-025-0100

BatchID: R111183

Sample ID	MB-R111183	SampType:	MBLK	TestCode:	EC_S	Units:	mmhos/cm	Prep Date:		RunNo:	111183
Client ID:	PBS	Batch ID:	R111183	TestNo:	LDNR 29-B			Analysis Date:	7/7/2022	SeqNo:	2745549
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD RPDLimit Qual
Electrical Conductivity		< 0.10		0.10							

Sample ID	LCS1-R111183	SampType:	LCS1	TestCode:	EC_S	Units:	mmhos/cm	Prep Date:		RunNo:	111183
Client ID:	ZZZZZ	Batch ID:	R111183	TestNo:	LDNR 29-B			Analysis Date:	7/7/2022	SeqNo:	2745550
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD RPDLimit Qual
Electrical Conductivity		0.49		0.10	0.50	0	96.4	90	110		

Sample ID	LCS2-R111183	SampType:	LCS2	TestCode:	EC_S	Units:	mmhos/cm	Prep Date:		RunNo:	111183
Client ID:	ZZZZZ	Batch ID:	R111183	TestNo:	LDNR 29-B			Analysis Date:	7/7/2022	SeqNo:	2745551
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD RPDLimit Qual
Electrical Conductivity		50.9		0.10	53.00	0	96.0	90	110		

Sample ID	22061340-025ADUP	SampType:	DUP	TestCode:	EC_S	Units:	mmhos/cm	Prep Date:		RunNo:	111183
Client ID:	LT-8 (16-18')	Batch ID:	R111183	TestNo:	LDNR 29-B			Analysis Date:	7/7/2022	SeqNo:	2745556
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD RPDLimit Qual
Electrical Conductivity		0.50		0.10						0.50	0.20 20

Qualifiers:

- | | | | | | |
|----|---|----|---|-----|--|
| B | Analyte detected in the associated Method Blank | E | Value above quantitation range | H | Holding times for preparation or analysis exceeded |
| M | Matrix Interference | ND | Not Detected at the Reporting Limit | R | RPD outside accepted recovery limits |
| RL | Reporting Limit | S | Spike Recovery outside accepted recovery limits | SDL | Sample detection limit |
| U | Analyte not detected | W | Sample container temperature is out of limit as specified at testcode | | |



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 Website: www.element.com

QC SUMMARY REPORT

WO#: 22061340
 14-Jul-22

Client: ICON Environmental Services

Project: Levert-Grand River/9326-025-0100

BatchID: R111183

Sample ID	22070051-001ADUP	SampType:	DUP	TestCode:	EC_S	Units:	mmhos/cm	Prep Date:		RunNo:	111183		
Client ID:	ZZZZZZ	Batch ID:	R111183	TestNo:	LDNR 29-B			Analysis Date:	7/7/2022	SeqNo:	2745566		
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Electrical Conductivity	0.88	0.10								0.88	0.91	20	
-------------------------	------	------	--	--	--	--	--	--	--	------	------	----	--

Qualifiers:

- | | | | | | |
|----|---|----|---|-----|--|
| B | Analyte detected in the associated Method Blank | E | Value above quantitation range | H | Holding times for preparation or analysis exceeded |
| M | Matrix Interference | ND | Not Detected at the Reporting Limit | R | RPD outside accepted recovery limits |
| RL | Reporting Limit | S | Spike Recovery outside accepted recovery limits | SDL | Sample detection limit |
| U | Analyte not detected | W | Sample container temperature is out of limit as specified at testcode | | |



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QC SUMMARY REPORT

WO#: 22061340
 14-Jul-22

Client: ICON Environmental Services
Project: Levert-Grand River/9326-025-0100

BatchID: R111264

Sample ID	MBLK	SampType:	MBLK	TestCode:	9056_S	Units:	mg/Kg-dry	Prep Date:		RunNo:	111264			
Client ID:	PBS	Batch ID:	R111264	TestNo:	SW9056A			Analysis Date:	7/7/2022	SeqNo:	2748105			
Analyte		Result		PQL	SPK value	SPK Ref Val		%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride		< 0.250		0.250										

Sample ID	LCS	SampType:	LCS	TestCode:	9056_S	Units:	mg/Kg-dry	Prep Date:		RunNo:	111264			
Client ID:	LCSS	Batch ID:	R111264	TestNo:	SW9056A			Analysis Date:	7/7/2022	SeqNo:	2748106			
Analyte		Result		PQL	SPK value	SPK Ref Val		%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride		10.2		0.250	10.00	0		102	80	120				

Sample ID	LCSD	SampType:	LCSD	TestCode:	9056_S	Units:	mg/Kg-dry	Prep Date:		RunNo:	111264			
Client ID:	LCSS02	Batch ID:	R111264	TestNo:	SW9056A			Analysis Date:	7/7/2022	SeqNo:	2748107			
Analyte		Result		PQL	SPK value	SPK Ref Val		%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride		10.2		0.250	10.00	0		102	80	120	10.21	0.229	15	

Sample ID	22070248-009BMS	SampType:	MS	TestCode:	9056_S	Units:	mg/Kg-dry	Prep Date:		RunNo:	111264			
Client ID:	ZZZZZZ	Batch ID:	R111264	TestNo:	SW9056A			Analysis Date:	7/7/2022	SeqNo:	2748110			
Analyte		Result		PQL	SPK value	SPK Ref Val		%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride		16.2		0.250	5.000	11.22		100	80	120				

Qualifiers:

- | | | | | | |
|----|---|----|---|-----|--|
| B | Analyte detected in the associated Method Blank | E | Value above quantitation range | H | Holding times for preparation or analysis exceeded |
| M | Matrix Interference | ND | Not Detected at the Reporting Limit | R | RPD outside accepted recovery limits |
| RL | Reporting Limit | S | Spike Recovery outside accepted recovery limits | SDL | Sample detection limit |
| U | Analyte not detected | W | Sample container temperature is out of limit as specified at testcode | | |



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QC SUMMARY REPORT

WO#: 22061340
 14-Jul-22

Client: ICON Environmental Services
Project: Levert-Grand River/9326-025-0100

BatchID: R111264

Sample ID	22070248-009BMSD	SampType:	MSD	TestCode:	9056_S	Units:	mg/Kg-dry	Prep Date:		RunNo:	111264											
Client ID:	ZZZZZZ	Batch ID:	R111264	TestNo:	SW9056A			Analysis Date:	7/7/2022	SeqNo:	2748111											
Analyte		Result		PQL		SPK value		SPK Ref Val		%REC		LowLimit		HighLimit		RPD Ref Val		%RPD		RPDLimit		Qual
Chloride		16.3		0.250		5.000		11.22		102		80		120		16.24		0.603		15		

Qualifiers:

- | | | | | | |
|----|---|----|---|-----|--|
| B | Analyte detected in the associated Method Blank | E | Value above quantitation range | H | Holding times for preparation or analysis exceeded |
| M | Matrix Interference | ND | Not Detected at the Reporting Limit | R | RPD outside accepted recovery limits |
| RL | Reporting Limit | S | Spike Recovery outside accepted recovery limits | SDL | Sample detection limit |
| U | Analyte not detected | W | Sample container temperature is out of limit as specified at testcode | | |



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QC SUMMARY REPORT

WO#: 22061340
 14-Jul-22

Client: ICON Environmental Services
Project: Levert-Grand River/9326-025-0100

BatchID: R111265

Sample ID	MBLK	SampType:	MBLK	TestCode:	9056_S	Units:	mg/Kg-dry	Prep Date:		RunNo:	111265			
Client ID:	PBS	Batch ID:	R111265	TestNo:	SW9056A			Analysis Date:	7/8/2022	SeqNo:	2748154			
Analyte		Result		PQL	SPK value	SPK Ref Val		%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride		< 0.250		0.250										

Sample ID	LCS	SampType:	LCS	TestCode:	9056_S	Units:	mg/Kg-dry	Prep Date:		RunNo:	111265			
Client ID:	LCSS	Batch ID:	R111265	TestNo:	SW9056A			Analysis Date:	7/8/2022	SeqNo:	2748155			
Analyte		Result		PQL	SPK value	SPK Ref Val		%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride		10.1		0.250	10.00	0		101	80	120				

Sample ID	LCSD	SampType:	LCSD	TestCode:	9056_S	Units:	mg/Kg-dry	Prep Date:		RunNo:	111265			
Client ID:	LCSS02	Batch ID:	R111265	TestNo:	SW9056A			Analysis Date:	7/8/2022	SeqNo:	2748156			
Analyte		Result		PQL	SPK value	SPK Ref Val		%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride		10.1		0.250	10.00	0		101	80	120	10.08	0.214	15	

Sample ID	22070310-004AMS	SampType:	MS	TestCode:	9056_S	Units:	mg/Kg-dry	Prep Date:		RunNo:	111265			
Client ID:	ZZZZZZ	Batch ID:	R111265	TestNo:	SW9056A			Analysis Date:	7/8/2022	SeqNo:	2748162			
Analyte		Result		PQL	SPK value	SPK Ref Val		%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride		8.30		0.250	5.000	3.744		91.0	80	120				

Qualifiers:

- | | | | | | |
|----|---|----|---|-----|--|
| B | Analyte detected in the associated Method Blank | E | Value above quantitation range | H | Holding times for preparation or analysis exceeded |
| M | Matrix Interference | ND | Not Detected at the Reporting Limit | R | RPD outside accepted recovery limits |
| RL | Reporting Limit | S | Spike Recovery outside accepted recovery limits | SDL | Sample detection limit |
| U | Analyte not detected | W | Sample container temperature is out of limit as specified at testcode | | |



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QC SUMMARY REPORT

WO#: 22061340
 14-Jul-22

Client: ICON Environmental Services
Project: Levert-Grand River/9326-025-0100

BatchID: R111265

Sample ID	22070310-004AMSD	SampType:	MSD	TestCode:	9056_S	Units:	mg/Kg-dry	Prep Date:		RunNo:	111265											
Client ID:	ZZZZZZ	Batch ID:	R111265	TestNo:	SW9056A			Analysis Date:	7/8/2022	SeqNo:	2748163											
Analyte		Result		PQL		SPK value		SPK Ref Val		%REC		LowLimit		HighLimit		RPD Ref Val		%RPD		RPDLimit		Qual
Chloride		8.43		0.250		5.000		3.744		93.8		80		120		8.295		1.65		15		

Qualifiers:

- | | | | | | |
|----|---|----|---|-----|--|
| B | Analyte detected in the associated Method Blank | E | Value above quantitation range | H | Holding times for preparation or analysis exceeded |
| M | Matrix Interference | ND | Not Detected at the Reporting Limit | R | RPD outside accepted recovery limits |
| RL | Reporting Limit | S | Spike Recovery outside accepted recovery limits | SDL | Sample detection limit |
| U | Analyte not detected | W | Sample container temperature is out of limit as specified at testcode | | |



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QC SUMMARY REPORT

WO#: 22061340
 14-Jul-22

Client: ICON Environmental Services
Project: Levert-Grand River/9326-025-0100

BatchID: R111265-1

Sample ID	MBLK	SampType:	MBLK	TestCode:	9056_S	Units:	mg/Kg-dry	Prep Date:		RunNo:	111265
Client ID:	PBS	Batch ID:	R111265-1	TestNo:	SW9056A			Analysis Date:	7/8/2022	SeqNo:	2748183
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD RPDLimit Qual
Chloride		< 0.250		0.250							

Sample ID	LCS	SampType:	LCS	TestCode:	9056_S	Units:	mg/Kg-dry	Prep Date:		RunNo:	111265
Client ID:	LCSS	Batch ID:	R111265-1	TestNo:	SW9056A			Analysis Date:	7/8/2022	SeqNo:	2748184
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD RPDLimit Qual
Chloride		10.1		0.250	10.00	0	101	80	120		

Sample ID	LCSD	SampType:	LCSD	TestCode:	9056_S	Units:	mg/Kg-dry	Prep Date:		RunNo:	111265
Client ID:	LCSS02	Batch ID:	R111265-1	TestNo:	SW9056A			Analysis Date:	7/8/2022	SeqNo:	2748185
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD RPDLimit Qual
Chloride		10.1		0.250	10.00	0	101	80	120	10.08	0.0378 15

Sample ID	22070034-001AMS	SampType:	MS	TestCode:	9056_S	Units:	mg/Kg-dry	Prep Date:		RunNo:	111265
Client ID:	ZZZZZZ	Batch ID:	R111265-1	TestNo:	SW9056A			Analysis Date:	7/8/2022	SeqNo:	2748192
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD RPDLimit Qual
Chloride		246		5.00	100.0	151.2	94.7	80	120		

Qualifiers:

- | | | | | | |
|----|---|----|---|-----|--|
| B | Analyte detected in the associated Method Blank | E | Value above quantitation range | H | Holding times for preparation or analysis exceeded |
| M | Matrix Interference | ND | Not Detected at the Reporting Limit | R | RPD outside accepted recovery limits |
| RL | Reporting Limit | S | Spike Recovery outside accepted recovery limits | SDL | Sample detection limit |
| U | Analyte not detected | W | Sample container temperature is out of limit as specified at testcode | | |



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QC SUMMARY REPORT

WO#: 22061340
 14-Jul-22

Client: ICON Environmental Services
Project: Levert-Grand River/9326-025-0100

BatchID: R111265-1

Sample ID	22070034-001AMSD	SampType:	MSD	TestCode:	9056_S	Units:	mg/Kg-dry	Prep Date:		RunNo:	111265		
Client ID:	ZZZZZZ	Batch ID:	R111265-1	TestNo:	SW9056A			Analysis Date:	7/8/2022	SeqNo:	2748193		
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride		246		5.00	100.0	151.2	95.1	80	120	245.9	0.143	15	

Qualifiers:

- | | | | | | |
|----|---|----|---|-----|--|
| B | Analyte detected in the associated Method Blank | E | Value above quantitation range | H | Holding times for preparation or analysis exceeded |
| M | Matrix Interference | ND | Not Detected at the Reporting Limit | R | RPD outside accepted recovery limits |
| RL | Reporting Limit | S | Spike Recovery outside accepted recovery limits | SDL | Sample detection limit |
| U | Analyte not detected | W | Sample container temperature is out of limit as specified at testcode | | |



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QC SUMMARY REPORT

WO#: 22061340
 14-Jul-22

Client: ICON Environmental Services
Project: Levert-Grand River/9326-025-0100

BatchID: R111351

Sample ID	MBLK	SampType:	MBLK	TestCode:	9056_LEACH	Units:	mg/L	Prep Date:		RunNo:	111351			
Client ID:	PBW	Batch ID:	R111351	TestNo:	SW9056A			Analysis Date:	7/12/2022	SeqNo:	2750391			
Analyte		Result		PQL	SPK value	SPK Ref Val		%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride		< 0.250		0.250										

Sample ID	LCS	SampType:	LCS	TestCode:	9056_LEACH	Units:	mg/L	Prep Date:		RunNo:	111351			
Client ID:	LCSW	Batch ID:	R111351	TestNo:	SW9056A			Analysis Date:	7/12/2022	SeqNo:	2750392			
Analyte		Result		PQL	SPK value	SPK Ref Val		%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride		9.95		0.250	10.00	0		99.5	80	120				

Sample ID	LCSD	SampType:	LCSD	TestCode:	9056_LEACH	Units:	mg/L	Prep Date:		RunNo:	111351			
Client ID:	LCSS02	Batch ID:	R111351	TestNo:	SW9056A			Analysis Date:	7/12/2022	SeqNo:	2750393			
Analyte		Result		PQL	SPK value	SPK Ref Val		%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride		9.99		0.250	10.00	0		99.9	80	120	0	200	15	R

Sample ID	22070307-008AMS	SampType:	MS	TestCode:	9056_LEACH	Units:	mg/L	Prep Date:		RunNo:	111351			
Client ID:	ZZZZZZ	Batch ID:	R111351	TestNo:	SW9056A			Analysis Date:	7/12/2022	SeqNo:	2750411			
Analyte		Result		PQL	SPK value	SPK Ref Val		%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride		27.3		1.25	25.00	2.410		99.4	80	120				

Qualifiers:

- | | | | | | |
|----|---|----|---|-----|--|
| B | Analyte detected in the associated Method Blank | E | Value above quantitation range | H | Holding times for preparation or analysis exceeded |
| M | Matrix Interference | ND | Not Detected at the Reporting Limit | R | RPD outside accepted recovery limits |
| RL | Reporting Limit | S | Spike Recovery outside accepted recovery limits | SDL | Sample detection limit |
| U | Analyte not detected | W | Sample container temperature is out of limit as specified at testcode | | |



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QC SUMMARY REPORT

WO#: 22061340
 14-Jul-22

Client: ICON Environmental Services
Project: Levert-Grand River/9326-025-0100

BatchID: R111351

Sample ID	22070307-008AMSD	SampType:	MSD	TestCode:	9056_LEACH	Units:	mg/L	Prep Date:		RunNo:	111351		
Client ID:	ZZZZZZ	Batch ID:	R111351	TestNo:	SW9056A			Analysis Date:	7/12/2022	SeqNo:	2750412		
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride		27.8		1.25	25.00	2.410	101	80	120	27.25	1.89	15	

Qualifiers:




- | | | | | | |
|----|---|----|---|-----|--|
| B | Analyte detected in the associated Method Blank | E | Value above quantitation range | H | Holding times for preparation or analysis exceeded |
| M | Matrix Interference | ND | Not Detected at the Reporting Limit | R | RPD outside accepted recovery limits |
| RL | Reporting Limit | S | Spike Recovery outside accepted recovery limits | SDL | Sample detection limit |
| U | Analyte not detected | W | Sample container temperature is out of limit as specified at testcode | | |



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Sample Log-In Check List

Client Name: **ICON_ENV** Work Order Number: **22061340** RcptNo: **1**

Logged by:	Rhonda David	6/29/2022 2:50:00 PM	
Completed By:	Rhonda David	6/30/2022 8:06:38 AM	
Reviewed By:	Buffy Bryant	7/9/2022 1:37:14 PM	

Chain of Custody

1. Is Chain of Custody complete? Yes No Not Present
 2. How was the sample delivered? Element

Log In

3. Coolers are present? Yes No NA
 4. Shipping container/cooler in good condition? Yes No
 Custody seals intact on shipping container/cooler? Yes No Not Present
 No. Seal Date: Signed By:
 5. Was an attempt made to cool the samples? Yes No NA
 6. Were all samples received at a temperature of >0° C to 6.0°C Yes No NA
Not required
 7. Sample(s) in proper container(s)? Yes No
 8. Sufficient sample volume for indicated test(s)? Yes No
 9. Are samples (except VOA and ONG) properly preserved? Yes No
 10. Was preservative added to bottles? Yes No NA
 11. Is the headspace in the VOA vials less than 1/4 inch or 6 mm? Yes No No VOA Vials
 12. Were any sample containers received broken? Yes No
 13. Does paperwork match bottle labels? Yes No
 (Note discrepancies on chain of custody)
 14. Are matrices correctly identified on Chain of Custody? Yes No
 15. Is it clear what analyses were requested? Yes No
 16. Were all holding times able to be met? Yes No
 (If no, notify customer for authorization.)

Special Handling (if applicable)

17. Was client notified of all discrepancies with this order? Yes No NA

Person Notified:	<input type="text"/>	Date	<input type="text"/>
By Whom:	<input type="text"/>	Via:	<input type="checkbox"/> eMail <input type="checkbox"/> Phone <input type="checkbox"/> Fax <input type="checkbox"/> In Person
Regarding:	<input type="text"/>		
Client Instructions:	<input type="text"/>		

18. Additional remarks:
 Improper error correction(s) made by client
 Samplers signature missing on page 5 of COC.

Cooler Information

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
-----------	---------	-----------	-------------	---------	-----------	-----------



Chain of Custody

Laboratory Number: **22061340**

Client Information:
 Company Name: **Iron Env**
 Contact Name: **J Sills**
 Address: **709A Commercial Dr**
 City, State Zip: **Port Allen La 70767**
 Phone Number: **725 3448490**
 Fax Number:
 E-mail Address:

Billing Information:
 PO Number:
 Quote Number:
 Required QC Level:
 Bill Monthly: Yes No
 Ext:

Project Name/Number: **Levert - Grand River**
Matrix Code:
 Sampler's Signature: *[Signature]*
 Shipping Method: **UPS / FedEx / NOW**
 DHL / Element / Hand / Mail

Page 1 of 5
 DW = Drinking Water
 WW = Waste Water
 GW = Ground Water
 AQ = Aqueous
 OT = Other
 SL = Sludge
 O = Oil
 F = Food
 NG = Natural Gas
 NGL = Natural Gas Liquid
 PW = Produced Water
 CF = Completion Fluid

Sample ID/Description	Turn Time		Rush turn times will incur a surcharge and must be pre-approved by (lab.)	Container	Quantity	Pres.	Requested Tests	Comments
	Collection Information							
	Date	Time						
LT-1 (8-10)	6-22-22	1220	60	P	1	HCl, HNO ₃ , H ₂ SO ₄ , NaOH, Na ₂ S ₂ O ₈	X SAHESP X CEC X 298 Metals X 1/2 Moisture X Leachate	
LT-4 (12-14)		1225						
LT-4 (16-18)		1230						
LT-4 (20-22)		1235						
LT-5 (0-2)	6-23-22	905						
LT-5 (4-6)		910						
LT-5 (8-10)		915						
LT-5 (16-18)		925						
LT-5 (22-24)		940						

Relinquished by: *[Signature]* **Date/Time:** 6-29-22 0930

Received by: *[Signature]* **Date/Time:** 6-29-22 0930

Field Notes: Received at lab on ice? Yes No Temp: **1450**

8500 North US 31
 Columbus, IN 47201 USA
 P 812-375-0531
 F 812-375-0731

328 Ley Road, Suite 100
 Fort Wayne, IN 46825 USA
 P 260-471-7000
 F 260-471-7777

909 Executive Dr
 Warsaw, IN 46580 USA
 P 574-267-3305
 F 574-269-6589

3371 Cleveland Road, Suite 100A
 South Bend, IN 46628 USA
 P 574-277-0707
 F 574-273-6699

2417 W. Pinhook Rd
 Lafayette, LA 70506 USA
 P 337-235-0483
 F 337-233-6540



Chain of Custody

Laboratory Number: **22061340**

Client Information:
 Company Name: **Icon Env**
 Contact Name: _____
 Address: _____
 City, State Zip: _____
 Phone Number: _____
 Fax Number: _____
 E-mail Address: _____

Billing Information:
 PO Number: _____
 Quote Number: _____
 Required QC Level: _____
 Bill Monthly: Yes No

Project Name/Number: **Levert-Grand hives**
Sampler's Signature: _____
Shipping Method: **UPS / FedEx / NOW**
DHL / Element / Hand / Mail

Matrix Code:
 DW = Drinking Water
 WW = Waste Water
 GW = Ground Water
 AQ = Aqueous
 OT = Other
 SL = Sludge SOL = Solid
 O = Oil SO = Soil
 F = Food SW = Swab
 NG = Natural Gas
 NGL = Natural Gas Liquid
 PW = Produced Water
 CF = Completion Fluid

Page 4 of 5

Sample ID/Description	Which Regulations Apply: <input type="checkbox"/> RCRA <input type="checkbox"/> POTW <input type="checkbox"/> NPDES <input type="checkbox"/> USDA/FDA <input type="checkbox"/> RECAP/RISC	Turn Time <input type="checkbox"/> Standard <input type="checkbox"/> RUSH <input type="checkbox"/> 1 Day <input type="checkbox"/> 2 Day <input type="checkbox"/> Other	(Rush turn times will incur a surcharge and must be pre-approved by lab.)	Collection Information		Container Type Plastic, V=Vial	Pres. HCl, HNO ₃ , H ₂ SO ₄ , NaOH, Na ₂ S ₂ O ₃	Requested Tests	Comments
				Date					
				Date	Time				
LT-8 (8-10)				6-28-22	910	G			
LT-8 (16-18)					920				
LT-8 (20-22)					925				
LT-8 (24-26)					930				
LT-8 (36-38)					945				
LT-9 (0-2)					1330				
LT-9 (4-6)					1335				
LT-9 (8-10)					1340				
LT-9 (12-14)					1345				

Relinquished by: _____ **Date/Time:** 6-28-22 0930

Received by: _____ **Date/Time:** 6-29-22 0930

Field Notes: Received at lab on ice? Yes No Temp: _____

All samples submitted to Element Materials Technology for analysis are accepted on a custodial basis only. Ownership of the material remains with the client submitting the samples. Element Materials Technology reserves the right to return unused sample portions.

8800 North US 31
 Columbus, IN 47201 USA
 P 812-375-0531
 F 812-375-0731

328 Ley Road, Suite 100
 Fort Wayne, IN 46825 USA
 P 260-471-7000
 F 260-471-7777

909 Executive Dr
 Warsaw, IN 46580 USA
 P 574-267-3305
 F 574-269-8569

3371 Cleveland Road, Suite 100A
 South Bend, IN 46628 USA
 P 574-277-0707
 F 574-273-5699

2417 W. Pinhook Rd
 Lafayette, LA 70506 USA
 P 337-235-0483
 F 337-233-8640



Chain of Custody

Laboratory Number: **22061340**

Client Information: *Tean Env*

Billing Information:

PO Number: *Levert-Grand hives*

Quote Number: *[Signature]*

Required QC Level: Yes No

Bill Monthly: Yes No

Shipping Method: UPS / FedEx / NOW
DHL / Element / Hand / Mail

Project Name/Number: *Levert-Grand hives*

Sampler's Signature: *[Signature]*

Page 5 of 5

Matrix Code

DW = Drinking Water
WW = Waste Water
GW = Ground Water
AQ = Aqueous
OT = Other
SL = Sludge
SO = Soil
D = Oil
F = Food
NG = Natural Gas
NGL = Natural Gas Liquid
PW = Produced Water
CF = Completion Fluid

Sample ID/Description	Turn Time		Collection Information	Rush turn times will incur a surcharge and must be pre-approved by lab.)	Container	Pres.	Requested Tests	Comments
	Date	Time						
<i>WT-9 (W-22)</i>	<i>6-28-22</i>	<i>1355</i>	<i>bn</i>	<i>6-29-22 0930</i>	<i>P</i>	<i>HCl, HNO₃, H₂SO₄, NaOH, Na₂S₂O₃</i>	<i>X Ec</i> <i>X Soluble Chloride</i> <i>X K/MS/ure</i>	

Relinquished by	Date/Time	Received by	Date/Time	Field Notes:
<i>[Signature]</i>	<i>6-29-22 0930</i>	<i>[Signature]</i>	<i>6-29-22 0930</i>	<i>no</i>
<i>[Signature]</i>	<i>6-29-22 1450</i>	<i>[Signature]</i>	<i>6-29-22 1450</i>	<i>Received at lab on ice? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No Temp:</i>

All samples submitted to Element Materials Technology for analysis are accepted on a custodial basis only. Ownership of the material remains with the client submitting the samples. Element Materials Technology reserves the right to return unused sample portions.

8800 North US 31
Columbus, IN
47201 USA
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F 260-471-7777

909 Executive Dr
Warsaw, IN
46580 USA
P 574-267-3305
F 574-269-6569

3371 Cleveland Road, Suite 100A
South Bend, IN
46628 USA
P 574-277-0707
F 574-273-5699

2417 W. Pinhook Rd
Lafayette, LA
70508 USA
P 337-235-0483
F 337-233-6540



Element Materials Technology Lafayette
2417 W. Pinhook Road
Lafayette, LA 70508-3344
TEL: (337) 235-0483 FAX: (337) 233-6540
Website: www.element.com

July 15, 2022

Greg Miller
ICON Environmental Services
2049 Commercial Drive
Port Allen, LA 70767
TEL: (225) 344-8490
FAX (225) 344-6654

RE: Levert-Grand River/9326-025-0100

Order No.: 22061336

Dear Greg Miller:

Element Materials Technology Lafayette received 2 sample(s) on 6/29/2022 for the analyses presented in the following report.

In accordance with your instructions, Element Lafayette either conducted or subcontracted these analyses. Subcontracted analyses will be identified in the accompanying case narrative. All relevant sampling information can be found on the attached Chain-of-Custody form. Unless otherwise noted, all analyses were conducted using EPA approved methodologies and all test results meet the applicable requirements of TNI. Reported results relate only to the items tested.

Where applicable, all soil data, except for 29-B, are reported on a wet-weight basis unless otherwise indicated in the units field as –dry.

LELAP Certification No.: 01997. TCEQ Certification No.: T104704261. LDHH Certification No.: LA023. ISDH Certification No.: C-LA-01. NDELCP Certification No.: R-226. A scope of accredited parameters is available upon request. A "#" by the test method or analyte indicates this parameter is outside the scope of accreditation. PA registration No.: 68-05967.

Estimated uncertainty is available upon request. This report shall not be reproduced, except in full, without the written approval of the laboratory.

If you have any questions regarding these test results, please feel free to call.

A handwritten signature in blue ink that reads 'Cristina Thibeaux'.

Cristina Thibeaux
Customer Service Supervisor



Element Materials Technology Lafayette
2417 W. Pinhook Road
Lafayette, LA 70508-3344
TEL: (337) 235-0483 FAX: (337) 233-6540
Website: www.element.com

Case Narrative

WO#: 22061336
Date: 7/15/2022

CLIENT: ICON Environmental Services
Project: Levert-Grand River/9326-025-0100

Unless specified by the client, a duplicate or MS/MSD, wherever applicable, is randomly selected and analyzed from each analytical batch provided sample volume is sufficient. The sample chosen for duplicate or MS/MSD may or may not be a sample submitted in this workorder. A method blank and/or a lab control sample (LCS)/lab control sample duplicate (LCSD), wherever applicable, are processed as a quality control check for each analytical batch. When the matrix QC data is not available due to insufficient sample volume or when the results indicate possible matrix effect, the validity of the batch is determined by the method blank and LCS/LCSD.

The results of the laboratory internal quality control data are provided in the QC Summary Report section of the report for your review. Laboratory-related QC exceptions that may impact the validity of data are discussed in the case narrative. Sample-related QC exceptions are flagged either in the results page(s) or in the QC report page(s). End users should consider QC exceptions when evaluating sample data against data quality objectives.

Any other exceptions associated with this report will be footnoted in the results page(s) or the QC summary page(s).



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Analytical Report

(consolidated)

WO#: 22061336

Date Reported: 7/15/2022

CLIENT: ICON Environmental Services **Collection Date:** 6/28/2022 11:45:00 AM
Project: Levert-Grand River/9326-025-0100
Lab ID: 22061336-001 **Matrix:** AQUEOUS
Client Sample ID LT-8

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
TPH-D/O IN WATER BY SW8015					SW8015B	Analyst: CRM
TPH DRO/ORO IN WATER BY SW8015					SW3511	
TPH (Diesel Range)	< 0.131	0.131		mg/L	1	7/1/2022 9:37:00 PM
TPH (Oil Range)	< 0.121	0.121		mg/L	1	7/1/2022 9:37:00 PM
Surr: 4-Terphenyl-d14	27.8	51.4 - 146	S	%Rec	1	7/1/2022 9:37:00 PM
NOTES:						
S: Surrogate outside of control limits. Re-extraction was not possible due to insufficient sample or holding time constraints.						
BTEX/TPH-G IN WATER BY SW8021/8015					SW8015B	Analyst: LG
TPH-GRO IN WATER BY SW8015B						
TPH (Gasoline Range)	< 0.150	0.150		mg/L	1	6/30/2022 7:46:00 PM
Surr: alpha, alpha, alpha-Trifluorotoluene	91.2	70 - 130		%Rec	1	6/30/2022 7:46:00 PM
BTEX/TPH-G IN WATER BY SW8021/8015					SW8021B	Analyst: LG
BTEX IN WATER BY SW8021B						
Benzene	< 0.00500	0.00500		mg/L	1	6/30/2022 7:46:00 PM
Ethylbenzene	< 0.00500	0.00500		mg/L	1	6/30/2022 7:46:00 PM
Toluene	< 0.0100	0.0100		mg/L	1	6/30/2022 7:46:00 PM
Xylenes, Total	< 0.0500	0.0500		mg/L	1	6/30/2022 7:46:00 PM
Surr: alpha, alpha, alpha-Trifluorotoluene	82.8	70 - 130		%Rec	1	6/30/2022 7:46:00 PM
MERCURY IN GROUND WATER, TOTAL					SW7470A	Analyst: BXB
Mercury	< 0.000200	0.000200		mg/L	1	7/1/2022 8:43:45 AM
INORGANIC ANIONS IN WATER BY IC					SW9056A	Analyst: SGP
Chloride	58.0	12.5		mg/L	50	6/30/2022 11:05:25 AM
Sulfate	< 0.250	0.250		mg/L	1	6/30/2022 12:55:45 PM
METALS IN WATER BY ICP, TOTALS					SW6010B	Analyst: MRM
Barium	0.729	0.0100		mg/L	1	7/7/2022 11:36:46 AM
Cadmium	< 0.00500	0.00500		mg/L	1	7/7/2022 11:36:46 AM

Qualifiers:	H	Holding times for preparation or analysis exceeded	M	Matrix Interference
	ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits
	RL	Reporting Limit	S	Spike Recovery outside accepted recovery limits
	SDL	Sample detection limit	U	Analyte not detected
	W	Sample container temperature is out of limit as specified at testcode		



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Analytical Report

(consolidated)

WO#: 22061336

Date Reported: 7/15/2022

CLIENT: ICON Environmental Services **Collection Date:** 6/28/2022 11:45:00 AM
Project: Levert-Grand River/9326-025-0100
Lab ID: 22061336-001 **Matrix:** AQUEOUS
Client Sample ID LT-8

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
METALS IN WATER BY ICP, TOTALS				SW6010B		Analyst: MRM
Calcium	220	0.500		mg/L	1	7/7/2022 11:36:46 AM
Chromium	< 0.0100	0.0100		mg/L	1	7/7/2022 11:36:46 AM
Iron	36.1	0.0500		mg/L	1	7/7/2022 11:36:46 AM
Lead	< 0.0100	0.0100		mg/L	1	7/7/2022 11:36:46 AM
Magnesium	63.0	0.500		mg/L	1	7/7/2022 11:36:46 AM
Manganese	0.761	0.0100		mg/L	1	7/7/2022 11:36:46 AM
Potassium	10.1	5.00		mg/L	1	7/7/2022 11:36:46 AM
Sodium	46.0	10.0		mg/L	1	7/7/2022 11:36:46 AM
Strontium	1.41	0.0100		mg/L	1	7/7/2022 11:36:46 AM
Zinc	< 0.0100	0.0100		mg/L	1	7/7/2022 11:36:46 AM
METALS IN WATER BY ICP-MS, TOTAL				SW6020A		Analyst: MRB
Arsenic	0.301	0.00250		mg/L	10	7/6/2022 11:09:49 AM
ALKALINITY; TOTAL, CARB, BICARB				SM2320 B		Analyst: AD
Alkalinity, Bicarbonate (As CaCO3)	808	20.0		mgCaCO3/L	1	7/5/2022 8:57:00 AM
Alkalinity, Carbonate (As CaCO3)	< 20.0	20.0		mgCaCO3/L	1	7/5/2022 8:57:00 AM
Alkalinity, Total (As CaCO3)	808	20.0		mgCaCO3/L	1	7/5/2022 8:57:00 AM
TOTAL DISSOLVED SOLIDS				SM2540C		Analyst: GMS
Total Dissolved Solids (Residue, Filterable)	920	50.0		mg/L	5	7/5/2022 6:51:00 AM

Qualifiers:	H	Holding times for preparation or analysis exceeded	M	Matrix Interference
	ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits
	RL	Reporting Limit	S	Spike Recovery outside accepted recovery limits
	SDL	Sample detection limit	U	Analyte not detected
	W	Sample container temperature is out of limit as specified at testcode		



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Analytical Report

(consolidated)

WO#: 22061336

Date Reported: 7/15/2022

CLIENT: ICON Environmental Services **Collection Date:** 6/28/2022 3:10:00 PM
Project: Levert-Grand River/9326-025-0100
Lab ID: 22061336-002 **Matrix:** AQUEOUS
Client Sample ID LT-9

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
TPH-D/O IN WATER BY SW8015					SW8015B	Analyst: CRM
TPH DRO/ORO IN WATER BY SW8015					SW3511	
TPH (Diesel Range)	< 0.131	0.131		mg/L	1	7/1/2022 10:09:00 PM
TPH (Oil Range)	< 0.121	0.121		mg/L	1	7/1/2022 10:09:00 PM
Surr: 4-Terphenyl-d14	31.9	51.4 - 146	S	%Rec	1	7/1/2022 10:09:00 PM
NOTES:						
S: Surrogate outside of control limits. Re-extraction was not possible due to insufficient sample or holding time constraints.						
BTEX/TPH-G IN WATER BY SW8021/8015					SW8015B	Analyst: LG
TPH-GRO IN WATER BY SW8015B						
TPH (Gasoline Range)	< 0.150	0.150		mg/L	1	6/30/2022 8:13:00 PM
Surr: alpha, alpha, alpha-Trifluorotoluene	93.6	70 - 130		%Rec	1	6/30/2022 8:13:00 PM
BTEX/TPH-G IN WATER BY SW8021/8015					SW8021B	Analyst: LG
BTEX IN WATER BY SW8021B						
Benzene	< 0.00500	0.00500		mg/L	1	6/30/2022 8:13:00 PM
Ethylbenzene	< 0.00500	0.00500		mg/L	1	6/30/2022 8:13:00 PM
Toluene	< 0.0100	0.0100		mg/L	1	6/30/2022 8:13:00 PM
Xylenes, Total	< 0.0500	0.0500		mg/L	1	6/30/2022 8:13:00 PM
Surr: alpha, alpha, alpha-Trifluorotoluene	84.2	70 - 130		%Rec	1	6/30/2022 8:13:00 PM
MERCURY IN GROUND WATER, TOTAL					SW7470A	Analyst: BXB
Mercury	< 0.000200	0.000200		mg/L	1	7/1/2022 8:46:04 AM
INORGANIC ANIONS IN WATER BY IC					SW9056A	Analyst: SGP
Chloride	88.7	12.5		mg/L	50	6/30/2022 11:19:12 AM
Sulfate	< 0.250	0.250		mg/L	1	6/30/2022 1:09:33 PM
METALS IN WATER BY ICP, TOTALS					SW6010B	Analyst: MRM
Barium	0.696	0.0100		mg/L	1	7/7/2022 11:39:03 AM
Cadmium	< 0.00500	0.00500		mg/L	1	7/7/2022 11:39:03 AM

Qualifiers:	H	Holding times for preparation or analysis exceeded	M	Matrix Interference
	ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits
	RL	Reporting Limit	S	Spike Recovery outside accepted recovery limits
	SDL	Sample detection limit	U	Analyte not detected
	W	Sample container temperature is out of limit as specified at testcode		



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Analytical Report

(consolidated)

WO#: 22061336

Date Reported: 7/15/2022

CLIENT: ICON Environmental Services **Collection Date:** 6/28/2022 3:10:00 PM
Project: Levert-Grand River/9326-025-0100
Lab ID: 22061336-002 **Matrix:** AQUEOUS
Client Sample ID LT-9

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
METALS IN WATER BY ICP, TOTALS				SW6010B		Analyst: MRM
Calcium	212	0.500		mg/L	1	7/7/2022 11:39:03 AM
Chromium	< 0.0100	0.0100		mg/L	1	7/7/2022 11:39:03 AM
Iron	36.7	0.0500		mg/L	1	7/7/2022 11:39:03 AM
Lead	< 0.0100	0.0100		mg/L	1	7/7/2022 11:39:03 AM
Magnesium	58.2	0.500		mg/L	1	7/7/2022 11:39:03 AM
Manganese	0.788	0.0100		mg/L	1	7/7/2022 11:39:03 AM
Potassium	9.63	5.00		mg/L	1	7/7/2022 11:39:03 AM
Sodium	44.9	10.0		mg/L	1	7/7/2022 11:39:03 AM
Strontium	1.31	0.0100		mg/L	1	7/7/2022 11:39:03 AM
Zinc	0.0117	0.0100		mg/L	1	7/7/2022 11:39:03 AM
METALS IN WATER BY ICP-MS, TOTAL				SW6020A		Analyst: MRB
Arsenic	0.281	0.00250		mg/L	10	7/6/2022 11:12:37 AM
ALKALINITY; TOTAL, CARB, BICARB				SM2320 B		Analyst: AD
Alkalinity, Bicarbonate (As CaCO3)	780	20.0		mgCaCO3/L	1	7/5/2022 8:57:00 AM
Alkalinity, Carbonate (As CaCO3)	< 20.0	20.0		mgCaCO3/L	1	7/5/2022 8:57:00 AM
Alkalinity, Total (As CaCO3)	780	20.0		mgCaCO3/L	1	7/5/2022 8:57:00 AM
TOTAL DISSOLVED SOLIDS				SM2540C		Analyst: GMS
Total Dissolved Solids (Residue, Filterable)	965	50.0		mg/L	5	7/5/2022 6:51:00 AM

Qualifiers:	H	Holding times for preparation or analysis exceeded	M	Matrix Interference
	ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits
	RL	Reporting Limit	S	Spike Recovery outside accepted recovery limits
	SDL	Sample detection limit	U	Analyte not detected
	W	Sample container temperature is out of limit as specified at testcode		



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QC SUMMARY REPORT

WO#: 22061336
 15-Jul-22

Client: ICON Environmental Services
Project: Levert-Grand River/9326-025-0100

BatchID: 44289

Sample ID	MB-44289	SampType:	MBLK	TestCode:	HG_W_7470	Units:	mg/L	Prep Date:	6/30/2022	RunNo:	111044			
Client ID:	PBW	Batch ID:	44289	TestNo:	SW7470A			Analysis Date:	7/1/2022	SeqNo:	2741976			
Analyte		Result		PQL	SPK value	SPK Ref Val		%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury		< 0.000200		0.000200										

Sample ID	LCS-44289	SampType:	LCS	TestCode:	HG_W_7470	Units:	mg/L	Prep Date:	6/30/2022	RunNo:	111044			
Client ID:	LCSW	Batch ID:	44289	TestNo:	SW7470A			Analysis Date:	7/1/2022	SeqNo:	2741977			
Analyte		Result		PQL	SPK value	SPK Ref Val		%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury		0.00877		0.000200	0.01000	0		87.7	80	120				

Sample ID	LCSD-44289	SampType:	LCSD	TestCode:	HG_W_7470	Units:	mg/L	Prep Date:	6/30/2022	RunNo:	111044			
Client ID:	LCSS02	Batch ID:	44289	TestNo:	SW7470A			Analysis Date:	7/1/2022	SeqNo:	2741978			
Analyte		Result		PQL	SPK value	SPK Ref Val		%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury		0.00881		0.000200	0.01000	0		88.1	80	120	0.008774	0.416	20	

Sample ID	22061332-016BMS	SampType:	MS	TestCode:	HG_W_7470	Units:	mg/L	Prep Date:	6/30/2022	RunNo:	111044			
Client ID:	ZZZZZZ	Batch ID:	44289	TestNo:	SW7470A			Analysis Date:	7/1/2022	SeqNo:	2741980			
Analyte		Result		PQL	SPK value	SPK Ref Val		%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury		0.00856		0.000200	0.01000	0		85.6	75	125				

Qualifiers:
 H Holding times for preparation or analysis exceeded
 R RPD outside accepted recovery limits
 SDL Sample detection limit

M Matrix Interference
 RL Reporting Limit
 U Analyte not detected

ND Not Detected at the Reporting Limit
 S Spike Recovery outside accepted recovery limits
 W Sample container temperature is out of limit as sp



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 Website: www.element.com

QC SUMMARY REPORT

WO#: 22061336
 15-Jul-22

Client: ICON Environmental Services
Project: Levert-Grand River/9326-025-0100

BatchID: 44289

Sample ID	22061332-016BMSD	SampType:	MSD	TestCode:	HG_W_7470	Units:	mg/L	Prep Date:	6/30/2022	RunNo:	111044											
Client ID:	ZZZZZZ	Batch ID:	44289	TestNo:	SW7470A			Analysis Date:	7/1/2022	SeqNo:	2741981											
Analyte		Result		PQL		SPK value		SPK Ref Val		%REC		LowLimit		HighLimit		RPD Ref Val		%RPD		RPDLimit		Qual
Mercury		0.00852		0.000200		0.01000		0		85.2		75		125		0.008560		0.470		20		

Qualifiers:
 H Holding times for preparation or analysis exceeded
 R RPD outside accepted recovery limits
 SDL Sample detection limit

M Matrix Interference
 RL Reporting Limit
 U Analyte not detected

ND Not Detected at the Reporting Limit
 S Spike Recovery outside accepted recovery limits
 W Sample container temperature is out of limit as sp



Element Materials Technology Lafayette
 2417 W. Pinhook Road
 Lafayette, LA 70508-3344
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 Website: www.element.com

QC SUMMARY REPORT

WO#: 22061336
 15-Jul-22

Client: ICON Environmental Services
Project: Levert-Grand River/9326-025-0100

BatchID: 44290

Sample ID	MB-44290	SampType:	MBLK	TestCode:	6020A_W	Units:	mg/L	Prep Date:	6/30/2022	RunNo:	111154			
Client ID:	PBW	Batch ID:	44290	TestNo:	SW6020A			Analysis Date:	7/6/2022	SeqNo:	2744579			
Analyte		Result		PQL	SPK value	SPK Ref Val		%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic		< 0.000250		0.000250										

Sample ID	LCS-44290	SampType:	LCS	TestCode:	6020A_W	Units:	mg/L	Prep Date:	6/30/2022	RunNo:	111154			
Client ID:	LCSW	Batch ID:	44290	TestNo:	SW6020A			Analysis Date:	7/6/2022	SeqNo:	2744580			
Analyte		Result		PQL	SPK value	SPK Ref Val		%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic		0.518		0.00500	0.500	0		104	80	120				

Sample ID	LCSD-44290	SampType:	LCSD	TestCode:	6020A_W	Units:	mg/L	Prep Date:	6/30/2022	RunNo:	111154			
Client ID:	LCSS02	Batch ID:	44290	TestNo:	SW6020A			Analysis Date:	7/6/2022	SeqNo:	2744581			
Analyte		Result		PQL	SPK value	SPK Ref Val		%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic		0.515		0.00500	0.500	0		103	80	120	0.518	0.552	20	

Sample ID	22061332-004BMS	SampType:	MS	TestCode:	6020A_W	Units:	mg/L	Prep Date:	6/30/2022	RunNo:	111154			
Client ID:	ZZZZZZ	Batch ID:	44290	TestNo:	SW6020A			Analysis Date:	7/6/2022	SeqNo:	2744591			
Analyte		Result		PQL	SPK value	SPK Ref Val		%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic		0.508		0.00500	0.500	0.000181		102	75	125				

Qualifiers:
 H Holding times for preparation or analysis exceeded
 R RPD outside accepted recovery limits
 SDL Sample detection limit

M Matrix Interference
 RL Reporting Limit
 U Analyte not detected

ND Not Detected at the Reporting Limit
 S Spike Recovery outside accepted recovery limits
 W Sample container temperature is out of limit as sp



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QC SUMMARY REPORT

WO#: 22061336
 15-Jul-22

Client: ICON Environmental Services
Project: Levert-Grand River/9326-025-0100

BatchID: 44290

Sample ID	22061332-004BMSD	SampType:	MSD	TestCode:	6020A_W	Units:	mg/L	Prep Date:	6/30/2022	RunNo:	111154		
Client ID:	ZZZZZZ	Batch ID:	44290	TestNo:	SW6020A			Analysis Date:	7/6/2022	SeqNo:	2744592		
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic		0.507		0.00500	0.500	0.000181	101	75	125	0.508	0.133	20	

Qualifiers:
 H Holding times for preparation or analysis exceeded
 R RPD outside accepted recovery limits
 SDL Sample detection limit

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 U Analyte not detected

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 S Spike Recovery outside accepted recovery limits
 W Sample container temperature is out of limit as sp



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QC SUMMARY REPORT

WO#: 22061336
 15-Jul-22

Client: ICON Environmental Services
Project: Levert-Grand River/9326-025-0100

BatchID: 44291

Sample ID	MB-44291	SampType:	MBLK	TestCode:	6010_W	Units:	mg/L	Prep Date:	6/30/2022	RunNo:	111187					
Client ID:	PBW	Batch ID:	44291	TestNo:	SW6010B			Analysis Date:	7/7/2022	SeqNo:	2745982					
Analyte		Result		PQL		SPK value		SPK Ref Val		%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Barium		< 0.0100		0.0100												
Cadmium		< 0.00500		0.00500												
Calcium		< 0.500		0.500												
Chromium		< 0.0100		0.0100												
Iron		< 0.0500		0.0500												
Lead		< 0.0100		0.0100												
Magnesium		< 0.500		0.500												
Manganese		< 0.0100		0.0100												
Potassium		< 5.00		5.00												
Sodium		< 10.0		10.0												
Strontium		< 0.0100		0.0100												
Zinc		< 0.0100		0.0100												

Sample ID	LCS-44291	SampType:	LCS	TestCode:	6010_W	Units:	mg/L	Prep Date:	6/30/2022	RunNo:	111187					
Client ID:	LCSW	Batch ID:	44291	TestNo:	SW6010B			Analysis Date:	7/7/2022	SeqNo:	2745983					
Analyte		Result		PQL		SPK value		SPK Ref Val		%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Barium		0.493		0.0100		0.5000		0		98.5	80	120				
Cadmium		0.481		0.00500		0.5000		0		96.2	80	120				
Calcium		49.2		0.500		50.00		0		98.4	80	120				
Chromium		0.487		0.0100		0.5000		0		97.3	80	120				
Iron		0.490		0.0500		0.5000		0		98.0	80	120				
Lead		0.479		0.0100		0.5000		0		95.7	80	120				
Magnesium		48.9		0.500		50.00		0		97.8	80	120				
Manganese		0.483		0.0100		0.5000		0		96.7	80	120				

Qualifiers:
 H Holding times for preparation or analysis exceeded
 R RPD outside accepted recovery limits
 SDL Sample detection limit

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 RL Reporting Limit
 U Analyte not detected

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 W Sample container temperature is out of limit as sp



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QC SUMMARY REPORT

WO#: 22061336
 15-Jul-22

Client: ICON Environmental Services
Project: Levert-Grand River/9326-025-0100

BatchID: 44291

Sample ID	LCS-44291	SampType:	LCS	TestCode:	6010_W	Units:	mg/L	Prep Date:	6/30/2022	RunNo:	111187											
Client ID:	LCSW	Batch ID:	44291	TestNo:	SW6010B			Analysis Date:	7/7/2022	SeqNo:	2745983											
Analyte		Result		PQL		SPK value		SPK Ref Val		%REC		LowLimit		HighLimit		RPD Ref Val		%RPD		RPDLimit		Qual
Potassium		49.4		5.00		50.00		0		98.7		80		120								
Sodium		49.4		10.0		50.00		0		98.9		80		120								
Strontium		0.490		0.0100		0.5000		0		98.1		80		120								
Zinc		0.469		0.0100		0.5000		0		93.8		80		120								

Sample ID	LCSD-44291	SampType:	LCSD	TestCode:	6010_W	Units:	mg/L	Prep Date:	6/30/2022	RunNo:	111187											
Client ID:	LCSS02	Batch ID:	44291	TestNo:	SW6010B			Analysis Date:	7/7/2022	SeqNo:	2745984											
Analyte		Result		PQL		SPK value		SPK Ref Val		%REC		LowLimit		HighLimit		RPD Ref Val		%RPD		RPDLimit		Qual
Barium		0.495		0.0100		0.5000		0		98.9		80		120		0.4926		0.442		20		
Cadmium		0.485		0.00500		0.5000		0		97.0		80		120		0.4812		0.787		20		
Calcium		49.7		0.500		50.00		0		99.3		80		120		49.21		0.948		20		
Chromium		0.490		0.0100		0.5000		0		98.0		80		120		0.4866		0.660		20		
Iron		0.497		0.0500		0.5000		0		99.5		80		120		0.4902		1.48		20		
Lead		0.479		0.0100		0.5000		0		95.9		80		120		0.4786		0.140		20		
Magnesium		49.4		0.500		50.00		0		98.8		80		120		48.92		0.986		20		
Manganese		0.488		0.0100		0.5000		0		97.6		80		120		0.4835		0.949		20		
Potassium		49.8		5.00		50.00		0		99.7		80		120		49.36		0.959		20		
Sodium		50.2		10.0		50.00		0		100		80		120		49.45		1.47		20		
Strontium		0.495		0.0100		0.5000		0		98.9		80		120		0.4903		0.891		20		
Zinc		0.487		0.0100		0.5000		0		97.4		80		120		0.4692		3.67		20		

Qualifiers:
 H Holding times for preparation or analysis exceeded
 R RPD outside accepted recovery limits
 SDL Sample detection limit

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 RL Reporting Limit
 U Analyte not detected

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 W Sample container temperature is out of limit as sp



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QC SUMMARY REPORT

WO#: 22061336
 15-Jul-22

Client: ICON Environmental Services
Project: Levert-Grand River/9326-025-0100

BatchID: 44291

Sample ID	22061331-004BMS	SampType: MS	TestCode: 6010_W	Units: mg/L	Prep Date: 6/30/2022	RunNo: 111187					
Client ID:	ZZZZZZ	Batch ID: 44291	TestNo: SW6010B	Analysis Date: 7/7/2022	SeqNo: 2745989						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Barium	0.616	0.0100	0.5000	0.1365	95.8	75	125				
Cadmium	0.493	0.00500	0.5000	0	98.6	75	125				
Calcium	70.2	0.500	50.00	19.80	101	75	125				
Chromium	0.496	0.0100	0.5000	0.001330	99.0	75	125				
Iron	0.553	0.0500	0.5000	0.07676	95.3	75	125				
Lead	0.481	0.0100	0.5000	0	96.3	75	125				
Magnesium	58.9	0.500	50.00	8.822	100	75	125				
Manganese	0.648	0.0100	0.5000	0.1563	98.3	75	125				
Potassium	52.7	5.00	50.00	2.638	100	75	125				
Sodium	104	10.0	50.00	53.58	102	75	125				
Strontium	0.663	0.0100	0.5000	0.1602	101	75	125				
Zinc	0.485	0.0100	0.5000	0	97.0	75	125				

Sample ID	22061331-004BMSD	SampType: MSD	TestCode: 6010_W	Units: mg/L	Prep Date: 6/30/2022	RunNo: 111187					
Client ID:	ZZZZZZ	Batch ID: 44291	TestNo: SW6010B	Analysis Date: 7/7/2022	SeqNo: 2745989						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Barium	0.611	0.0100	0.5000	0.1365	94.8	75	125	0.6157	0.824	20	
Cadmium	0.489	0.00500	0.5000	0	97.8	75	125	0.4931	0.798	20	
Calcium	69.7	0.500	50.00	19.80	99.8	75	125	70.20	0.707	20	
Chromium	0.492	0.0100	0.5000	0.001330	98.2	75	125	0.4964	0.829	20	
Iron	0.549	0.0500	0.5000	0.07676	94.4	75	125	0.5534	0.833	20	
Lead	0.478	0.0100	0.5000	0	95.6	75	125	0.4814	0.742	20	
Magnesium	58.6	0.500	50.00	8.822	99.6	75	125	58.87	0.421	20	
Manganese	0.642	0.0100	0.5000	0.1563	97.1	75	125	0.6477	0.929	20	

Qualifiers:
 H Holding times for preparation or analysis exceeded
 R RPD outside accepted recovery limits
 SDL Sample detection limit

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 RL Reporting Limit
 U Analyte not detected

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 W Sample container temperature is out of limit as sp



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QC SUMMARY REPORT

WO#: 22061336
 15-Jul-22

Client: ICON Environmental Services
Project: Levert-Grand River/9326-025-0100

BatchID: 44291

Sample ID	22061331-004BMSD	SampType: MSD	TestCode: 6010_W	Units: mg/L	Prep Date: 6/30/2022	RunNo: 111187					
Client ID:	ZZZZZZ	Batch ID: 44291	TestNo: SW6010B	Analysis Date: 7/7/2022	SeqNo: 2745990						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Potassium	52.7	5.00	50.00	2.638	100	75	125	52.75	0.0999	20	
Sodium	103	10.0	50.00	53.58	99.6	75	125	104.4	0.955	20	
Strontium	0.657	0.0100	0.5000	0.1602	99.3	75	125	0.6629	0.932	20	
Zinc	0.477	0.0100	0.5000	0	95.4	75	125	0.4850	1.60	20	

Sample ID	22061332-004BMS	SampType: MS	TestCode: 6010_W	Units: mg/L	Prep Date: 6/30/2022	RunNo: 111187					
Client ID:	ZZZZZZ	Batch ID: 44291	TestNo: SW6010B	Analysis Date: 7/7/2022	SeqNo: 2746027						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Barium	0.608	0.0100	0.5000	0.1353	94.6	75	125				
Cadmium	0.487	0.00500	0.5000	0	97.5	75	125				
Calcium	69.6	0.500	50.00	19.70	99.8	75	125				
Chromium	0.490	0.0100	0.5000	0.001340	97.8	75	125				
Iron	0.547	0.0500	0.5000	0.07701	93.9	75	125				
Lead	0.473	0.0100	0.5000	0	94.6	75	125				
Magnesium	58.3	0.500	50.00	8.742	99.1	75	125				
Manganese	0.639	0.0100	0.5000	0.1554	96.8	75	125				
Potassium	52.4	5.00	50.00	2.527	99.8	75	125				
Sodium	103	10.0	50.00	52.30	102	75	125				
Strontium	0.656	0.0100	0.5000	0.1592	99.3	75	125				
Zinc	0.478	0.0100	0.5000	0	95.7	75	125				

Qualifiers:
 H Holding times for preparation or analysis exceeded
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 S Spike Recovery outside accepted recovery limits
 W Sample container temperature is out of limit as sp



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QC SUMMARY REPORT

WO#: 22061336
 15-Jul-22

Client: ICON Environmental Services
Project: Levert-Grand River/9326-025-0100

BatchID: 44291

Sample ID	22061332-004BMSD	SampType:	MSD	TestCode:	6010_W	Units:	mg/L	Prep Date:	6/30/2022	RunNo:	111187
Client ID:	ZZZZZZ	Batch ID:	44291	TestNo:	SW6010B	Analysis Date:	7/7/2022	SeqNo:	2746029		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Barium	0.588	0.0100	0.5000	0.1353	90.6	75	125	0.6080	3.34	20	
Cadmium	0.472	0.00500	0.5000	0	94.3	75	125	0.4873	3.26	20	
Calcium	67.1	0.500	50.00	19.70	94.8	75	125	69.60	3.65	20	
Chromium	0.473	0.0100	0.5000	0.001340	94.4	75	125	0.4904	3.59	20	
Iron	0.525	0.0500	0.5000	0.07701	89.7	75	125	0.5467	3.99	20	
Lead	0.464	0.0100	0.5000	0	92.8	75	125	0.4728	1.91	20	
Magnesium	56.3	0.500	50.00	8.742	95.1	75	125	58.28	3.46	20	
Manganese	0.618	0.0100	0.5000	0.1554	92.6	75	125	0.6393	3.33	20	
Potassium	50.9	5.00	50.00	2.527	96.7	75	125	52.40	2.93	20	
Sodium	97.6	10.0	50.00	52.30	90.6	75	125	103.4	5.77	20	
Strontium	0.632	0.0100	0.5000	0.1592	94.5	75	125	0.6559	3.76	20	
Zinc	0.459	0.0100	0.5000	0	91.8	75	125	0.4785	4.13	20	

Qualifiers:
 H Holding times for preparation or analysis exceeded
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QC SUMMARY REPORT

WO#: 22061336
 15-Jul-22

Client: ICON Environmental Services
Project: Levert-Grand River/9326-025-0100

BatchID: 44300

Sample ID	lcsd-d44300	SampType: LCSD	TestCode: 8015_DO_W_ Units: mg/L			Prep Date: 6/30/2022			RunNo: 111100		
Client ID:	LCSS02	Batch ID: 44300	TestNo: SW8015B SW3511		Analysis Date: 7/1/2022			SeqNo: 2743229			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
TPH (Diesel Range)	1.93	0.130	1.710	0	113	70	130	1.887	2.18	14.1	
Surr: 4-Terphenyl-d14	0.0879		0.05701		154	51.4	146		0	40	S

NOTES:

S - Surrogate recovery(ies) outside of the control limits. However, recovery(ies) of the target analytes are within the limits.

Sample ID	lcsd-m44300	SampType: LCSD	TestCode: 8015_DO_W_ Units: mg/L			Prep Date: 6/30/2022			RunNo: 111100		
Client ID:	LCSS02	Batch ID: 44300	TestNo: SW8015B SW3511		Analysis Date: 7/1/2022			SeqNo: 2743230			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
TPH (Oil Range)	1.85	0.120	1.711	0	108	70	130	1.914	3.13	23.2	
Surr: 4-Terphenyl-d14	0.0745		0.05704		131	51.4	146		0	40	

Sample ID	lcs-m44300	SampType: LCS	TestCode: 8015_DO_W_ Units: mg/L			Prep Date: 6/30/2022			RunNo: 111100		
Client ID:	LCSSW	Batch ID: 44300	TestNo: SW8015B SW3511		Analysis Date: 7/1/2022			SeqNo: 2743231			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
TPH (Oil Range)	1.91	0.119	1.706	0	112	70	130				
Surr: 4-Terphenyl-d14	0.0813		0.05686		143	51.4	146				

Sample ID	mb-44300	SampType: MBLK	TestCode: 8015_DO_W_ Units: mg/L			Prep Date: 6/30/2022			RunNo: 111100		
Client ID:	PBW	Batch ID: 44300	TestNo: SW8015B SW3511		Analysis Date: 7/1/2022			SeqNo: 2743232			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Qualifiers:
 H Holding times for preparation or analysis exceeded
 R RPD outside accepted recovery limits
 SDL Sample detection limit

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 RL Reporting Limit
 U Analyte not detected

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 S Spike Recovery outside accepted recovery limits
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QC SUMMARY REPORT

WO#: 22061336
 15-Jul-22

Client: ICON Environmental Services
Project: Levert-Grand River/9326-025-0100

BatchID: 44300

Sample ID mb-44300	SampType: MBLK	TestCode: 8015_DO_W_ Units: mg/L				Prep Date: 6/30/2022			RunNo: 111100		
Client ID: PBW	Batch ID: 44300	TestNo: SW8015B SW3511		Analysis Date: 7/1/2022			SeqNo: 2743232				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
TPH (Diesel Range)	< 0.129	0.129									
TPH (Oil Range)	< 0.119	0.119									
Surr: 4-Terphenyl-d14	0.0498		0.05672		87.9	51.4	146				

Sample ID lcs-d44300	SampType: LCS	TestCode: 8015_DO_W_ Units: mg/L				Prep Date: 6/30/2022			RunNo: 111100		
Client ID: LCSW	Batch ID: 44300	TestNo: SW8015B SW3511		Analysis Date: 7/5/2022			SeqNo: 2744421				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
TPH (Diesel Range)	1.89	0.127	1.680	0	112	70	130				
Surr: 4-Terphenyl-d14	0.0739		0.05600		132	51.4	146				

Qualifiers:
 H Holding times for preparation or analysis exceeded
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 U Analyte not detected

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 S Spike Recovery outside accepted recovery limits
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QC SUMMARY REPORT

WO#: 22061336
 15-Jul-22

Client: ICON Environmental Services
Project: Levert-Grand River/9326-025-0100

BatchID: R111048

Sample ID	MBLK	SampType:	MBLK	TestCode:	9056_W	Units:	mg/L	Prep Date:		RunNo:	111048			
Client ID:	PBW	Batch ID:	R111048	TestNo:	SW9056A			Analysis Date:	6/30/2022	SeqNo:	2742263			
Analyte		Result		PQL	SPK value	SPK Ref Val		%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride		< 0.250		0.250										
Sulfate		< 0.250		0.250										

Sample ID	LCS	SampType:	LCS	TestCode:	9056_W	Units:	mg/L	Prep Date:		RunNo:	111048			
Client ID:	LCSW	Batch ID:	R111048	TestNo:	SW9056A			Analysis Date:	6/30/2022	SeqNo:	2742264			
Analyte		Result		PQL	SPK value	SPK Ref Val		%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride		10.1		0.250	10.00	0		101	80	120				
Sulfate		9.62		0.250	10.00	0		96.2	80	120				

Sample ID	LCSD	SampType:	LCSD	TestCode:	9056_W	Units:	mg/L	Prep Date:		RunNo:	111048			
Client ID:	LCSS02	Batch ID:	R111048	TestNo:	SW9056A			Analysis Date:	6/30/2022	SeqNo:	2742265			
Analyte		Result		PQL	SPK value	SPK Ref Val		%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride		10.1		0.250	10.00	0		101	80	120	10.09	0.302	15	
Sulfate		9.59		0.250	10.00	0		95.9	80	120	9.618	0.281	15	

Sample ID	22061329-001DMS	SampType:	MS	TestCode:	9056_W	Units:	mg/L	Prep Date:		RunNo:	111048			
Client ID:	ZZZZZZ	Batch ID:	R111048	TestNo:	SW9056A			Analysis Date:	6/30/2022	SeqNo:	2742268			
Analyte		Result		PQL	SPK value	SPK Ref Val		%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride		5.29		0.250	5.000	0.2302		101	80	120				

Qualifiers:

H	Holding times for preparation or analysis exceeded	M	Matrix Interference	ND	Not Detected at the Reporting Limit
R	RPD outside accepted recovery limits	RL	Reporting Limit	S	Spike Recovery outside accepted recovery limits
SDL	Sample detection limit	U	Analyte not detected	W	Sample container temperature is out of limit as sp



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 Website: www.element.com

QC SUMMARY REPORT

WO#: 22061336
 15-Jul-22

Client: ICON Environmental Services
Project: Levert-Grand River/9326-025-0100

BatchID: R111048

Sample ID	22061329-001DMS	SampType:	MS	TestCode:	9056_W	Units:	mg/L	Prep Date:		RunNo:	111048					
Client ID:	ZZZZZZ	Batch ID:	R111048	TestNo:	SW9056A			Analysis Date:	6/30/2022	SeqNo:	2742268					
Analyte		Result		PQL		SPK value		SPK Ref Val		%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate		5.54		0.250		5.000		0.6550		97.7	80	120				

Sample ID	22061329-001DMSD	SampType:	MSD	TestCode:	9056_W	Units:	mg/L	Prep Date:		RunNo:	111048					
Client ID:	ZZZZZZ	Batch ID:	R111048	TestNo:	SW9056A			Analysis Date:	6/30/2022	SeqNo:	2742269					
Analyte		Result		PQL		SPK value		SPK Ref Val		%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride		5.48		0.250		5.000		0.2302		105	80	120	5.286	3.67		15
Sulfate		5.54		0.250		5.000		0.6550		97.7	80	120	5.539	0.0239		15

Qualifiers:
 H Holding times for preparation or analysis exceeded
 R RPD outside accepted recovery limits
 SDL Sample detection limit

M Matrix Interference
 RL Reporting Limit
 U Analyte not detected

ND Not Detected at the Reporting Limit
 S Spike Recovery outside accepted recovery limits
 W Sample container temperature is out of limit as sp



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QC SUMMARY REPORT

WO#: 22061336
 15-Jul-22

Client: ICON Environmental Services
Project: Levert-Grand River/9326-025-0100

BatchID: R111049

Sample ID BTEX LCS	SampType: LCS	TestCode: 8021_BTEX_	Units: mg/L	Prep Date:	RunNo: 111049						
Client ID: LCSW	Batch ID: R111049	TestNo: SW8021B	Analysis Date: 6/30/2022	SeqNo: 2742329							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	0.0465	0.00500	0.05000	0	93.0	72	120				
Ethylbenzene	0.0490	0.00500	0.05000	0	98.0	76	129				
Toluene	0.0471	0.0100	0.05000	0	94.2	78	120				
Xylenes, Total	0.146	0.0500	0.1500	0	97.0	75	125				
Surr: alpha, alpha, alpha-Trifluorotoluene	0.0454		0.05000		90.8	70	130				

Sample ID BTEX LCSD	SampType: LCSD	TestCode: 8021_BTEX_	Units: mg/L	Prep Date:	RunNo: 111049						
Client ID: LCSS02	Batch ID: R111049	TestNo: SW8021B	Analysis Date: 6/30/2022	SeqNo: 2742330							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	0.0475	0.00500	0.05000	0	95.0	72	120	0.04650	2.13	20	
Ethylbenzene	0.0500	0.00500	0.05000	0	100	76	129	0.04900	2.02	20	
Toluene	0.0479	0.0100	0.05000	0	95.8	78	120	0.04710	1.68	20	
Xylenes, Total	0.149	0.0500	0.1500	0	99.1	75	125	0.1455	2.18	20	
Surr: alpha, alpha, alpha-Trifluorotoluene	0.0435		0.05000		87.0	70	130		0	20	

Sample ID MBLK ACID	SampType: MBLK	TestCode: 8021_BTEX_	Units: mg/L	Prep Date:	RunNo: 111049						
Client ID: PBW	Batch ID: R111049	TestNo: SW8021B	Analysis Date: 6/30/2022	SeqNo: 2742331							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	< 0.00500	0.00500									
Ethylbenzene	< 0.00500	0.00500									

Qualifiers:
 H Holding times for preparation or analysis exceeded
 R RPD outside accepted recovery limits
 SDL Sample detection limit

M Matrix Interference
 RL Reporting Limit
 U Analyte not detected

ND Not Detected at the Reporting Limit
 S Spike Recovery outside accepted recovery limits
 W Sample container temperature is out of limit as sp



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QC SUMMARY REPORT

WO#: 22061336
 15-Jul-22

Client: ICON Environmental Services
Project: Levert-Grand River/9326-025-0100

BatchID: R111049

Sample ID	MBLK ACID	SampType:	MBLK	TestCode:	8021_BTEX_	Units:	mg/L	Prep Date:		RunNo:	111049			
Client ID:	PBW	Batch ID:	R111049	TestNo:	SW8021B			Analysis Date:	6/30/2022	SeqNo:	2742331			
Analyte		Result		PQL		SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Toluene		< 0.0100		0.0100										
Xylenes, Total		< 0.0500		0.0500										
Surr: alpha, alpha, alpha-Trifluorotoluene		0.0408				0.05000		81.6	70	130				

Qualifiers:
 H Holding times for preparation or analysis exceeded
 R RPD outside accepted recovery limits
 SDL Sample detection limit

M Matrix Interference
 RL Reporting Limit
 U Analyte not detected

ND Not Detected at the Reporting Limit
 S Spike Recovery outside accepted recovery limits
 W Sample container temperature is out of limit as sp



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QC SUMMARY REPORT

WO#: 22061336
 15-Jul-22

Client: ICON Environmental Services
Project: Levert-Grand River/9326-025-0100

BatchID: R111052

Sample ID	GAS LCS	SampType: LCS	TestCode: 8015_G_W	Units:	Prep Date:	RunNo: 111052					
Client ID:	LCSW	Batch ID: R111052	TestNo: SW8015B		Analysis Date: 6/30/2022	SeqNo: 2742411					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
TPH (Gasoline Range)	14.7	0.150	12.50	0	118	80	130				
Surr: alpha, alpha, alpha-Trifluorotoluene	0.0635		0.05000		127	70	130				

Sample ID	GAS LCSD	SampType: LCSD	TestCode: 8015_G_W	Units:	Prep Date:	RunNo: 111052					
Client ID:	LCSS02	Batch ID: R111052	TestNo: SW8015B		Analysis Date: 6/30/2022	SeqNo: 2742412					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
TPH (Gasoline Range)	14.1	0.150	12.50	0	113	80	130	14.74	4.31	20	
Surr: alpha, alpha, alpha-Trifluorotoluene	0.0621		0.05000		124	70	130		0	20	

Sample ID	MBLK ACID	SampType: MBLK	TestCode: 8015_G_W	Units: mg/L	Prep Date:	RunNo: 111052					
Client ID:	PBW	Batch ID: R111052	TestNo: SW8015B		Analysis Date: 6/30/2022	SeqNo: 2742413					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
TPH (Gasoline Range)	< 0.150	0.150									
Surr: alpha, alpha, alpha-Trifluorotoluene	0.0465		0.05000		93.0	70	130				

Qualifiers:
 H Holding times for preparation or analysis exceeded
 R RPD outside accepted recovery limits
 SDL Sample detection limit

M Matrix Interference
 RL Reporting Limit
 U Analyte not detected

ND Not Detected at the Reporting Limit
 S Spike Recovery outside accepted recovery limits
 W Sample container temperature is out of limit as sp



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QC SUMMARY REPORT

WO#: 22061336
 15-Jul-22

Client: ICON Environmental Services
Project: Levert-Grand River/9326-025-0100

BatchID: R111091

Sample ID	MB-R111091	SampType:	MBLK	TestCode:	TDS_2540C	Units:	mg/L	Prep Date:		RunNo:	111091			
Client ID:	PBW	Batch ID:	R111091	TestNo:	SM2540C			Analysis Date:	7/5/2022	SeqNo:	2744533			
Analyte		Result		PQL	SPK value	SPK Ref Val		%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Total Dissolved Solids (Residue, Filterable) < 10.0 10.0

Sample ID	LCS-R111091	SampType:	LCS	TestCode:	TDS_2540C	Units:	mg/L	Prep Date:		RunNo:	111091			
Client ID:	LCSW	Batch ID:	R111091	TestNo:	SM2540C			Analysis Date:	7/5/2022	SeqNo:	2744534			
Analyte		Result		PQL	SPK value	SPK Ref Val		%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Total Dissolved Solids (Residue, Filterable) 1,010 10.0 1,000 0 101 85 115

Sample ID	LCSD-R111091	SampType:	LCSD	TestCode:	TDS_2540C	Units:	mg/L	Prep Date:		RunNo:	111091			
Client ID:	LCSS02	Batch ID:	R111091	TestNo:	SM2540C			Analysis Date:	7/5/2022	SeqNo:	2744535			
Analyte		Result		PQL	SPK value	SPK Ref Val		%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Total Dissolved Solids (Residue, Filterable) 1,010 10.0 1,000 0 101 85 115 1,014 0.296 10

Sample ID	22061331-004ADUP	SampType:	DUP	TestCode:	TDS_2540C	Units:	mg/L	Prep Date:		RunNo:	111091			
Client ID:	ZZZZZZ	Batch ID:	R111091	TestNo:	SM2540C			Analysis Date:	7/5/2022	SeqNo:	2744541			
Analyte		Result		PQL	SPK value	SPK Ref Val		%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Total Dissolved Solids (Residue, Filterable) 275 10.0 292.0 6.00 10

Qualifiers: H Holding times for preparation or analysis exceeded M Matrix Interference ND Not Detected at the Reporting Limit
 R RPD outside accepted recovery limits RL Reporting Limit S Spike Recovery outside accepted recovery limits
 SDL Sample detection limit U Analyte not detected W Sample container temperature is out of limit as sp



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QC SUMMARY REPORT

WO#: 22061336
 15-Jul-22

Client: ICON Environmental Services
Project: Levert-Grand River/9326-025-0100

BatchID: R111091

Sample ID	22061331-004ADUP	SampType:	DUP	TestCode:	TDS_2540C	Units:	mg/L	Prep Date:		RunNo:	111091
Client ID:	ZZZZZZ	Batch ID:	R111091	TestNo:	SM2540C			Analysis Date:	7/5/2022	SeqNo:	2744541
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD RPDLimit Qual

Sample ID	22061331-009ADUP	SampType:	DUP	TestCode:	TDS_2540C	Units:	mg/L	Prep Date:		RunNo:	111091
Client ID:	ZZZZZZ	Batch ID:	R111091	TestNo:	SM2540C			Analysis Date:	7/5/2022	SeqNo:	2744557
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD RPDLimit Qual
Total Dissolved Solids (Residue, Filterable)		354		10.0						357.0	0.844 10

Qualifiers:
 H Holding times for preparation or analysis exceeded
 R RPD outside accepted recovery limits
 SDL Sample detection limit

M Matrix Interference
 RL Reporting Limit
 U Analyte not detected

ND Not Detected at the Reporting Limit
 S Spike Recovery outside accepted recovery limits
 W Sample container temperature is out of limit as sp



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QC SUMMARY REPORT

WO#: 22061336
 15-Jul-22

Client: ICON Environmental Services
Project: Levert-Grand River/9326-025-0100

BatchID: R111094

Sample ID	MB-R111094	SampType:	MBLK	TestCode:	ALK	Units:	mgCaCO3/L	Prep Date:		RunNo:	111094
Client ID:	PBW	Batch ID:	R111094	TestNo:	SM2320 B			Analysis Date:	7/5/2022	SeqNo:	2743209
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD RPDLimit Qual
Alkalinity, Bicarbonate (As CaCO3)		< 20.0		20.0							
Alkalinity, Carbonate (As CaCO3)		< 20.0		20.0							
Alkalinity, Total (As CaCO3)		< 20.0		20.0							

Sample ID	LCS-R111094	SampType:	LCS	TestCode:	ALK	Units:	mgCaCO3/L	Prep Date:		RunNo:	111094
Client ID:	LCSW	Batch ID:	R111094	TestNo:	SM2320 B			Analysis Date:	7/5/2022	SeqNo:	2743210
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD RPDLimit Qual
Alkalinity, Total (As CaCO3)		49.0		20.0	50.00	0	98.0	80	120		

Sample ID	22061144-003ADUP	SampType:	DUP	TestCode:	ALK	Units:	mgCaCO3/L	Prep Date:		RunNo:	111094
Client ID:	ZZZZZZ	Batch ID:	R111094	TestNo:	SM2320 B			Analysis Date:	7/5/2022	SeqNo:	2743214
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD RPDLimit Qual
Alkalinity, Bicarbonate (As CaCO3)		300		20.0						312.5	4.08 20
Alkalinity, Carbonate (As CaCO3)		< 20.0		20.0						0	0 20
Alkalinity, Total (As CaCO3)		300		20.0						312.5	4.08 20

Qualifiers:
 H Holding times for preparation or analysis exceeded
 R RPD outside accepted recovery limits
 SDL Sample detection limit

M Matrix Interference
 RL Reporting Limit
 U Analyte not detected

ND Not Detected at the Reporting Limit
 S Spike Recovery outside accepted recovery limits
 W Sample container temperature is out of limit as sp



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 Website: www.element.com

Sample Log-In Check List

Client Name: **ICON_ENV** Work Order Number: **22061336** RcptNo: **1**

Logged by:	Tammy Thibodeaux	6/29/2022 2:50:00 PM	<i>Tammy Thibodeaux</i>
Completed By:	Tammy Thibodeaux	6/29/2022 6:23:39 PM	<i>Tammy Thibodeaux</i>
Reviewed By:	Buffy Bryant	7/9/2022 1:00:28 PM	<i>Buffy Bryant</i>

Chain of Custody

1. Is Chain of Custody complete? Yes No Not Present
 2. How was the sample delivered? Element

Log In

3. Coolers are present? Yes No NA
 4. Shipping container/cooler in good condition? Yes No
 Custody seals intact on shipping container/cooler? Yes No Not Present
 No. Seal Date: Signed By:
 5. Was an attempt made to cool the samples? Yes No NA
 6. Were all samples received at a temperature of >0° C to 6.0°C Yes No NA
 7. Sample(s) in proper container(s)? Yes No
 8. Sufficient sample volume for indicated test(s)? Yes No
 9. Are samples (except VOA and ONG) properly preserved? Yes No
 10. Was preservative added to bottles? Yes No NA
 11. Is the headspace in the VOA vials less than 1/4 inch or 6 mm? Yes No No VOA Vials
 12. Were any sample containers received broken? Yes No
 13. Does paperwork match bottle labels? Yes No
 (Note discrepancies on chain of custody)
 14. Are matrices correctly identified on Chain of Custody? Yes No
 15. Is it clear what analyses were requested? Yes No
 16. Were all holding times able to be met? Yes No
 (If no, notify customer for authorization.)

Special Handling (if applicable)

17. Was client notified of all discrepancies with this order? Yes No NA

Person Notified:	<input type="text"/>	Date	<input type="text"/>
By Whom:	<input type="text"/>	Via:	<input type="checkbox"/> eMail <input type="checkbox"/> Phone <input type="checkbox"/> Fax <input type="checkbox"/> In Person
Regarding:	<input type="text"/>		
Client Instructions:	<input type="text"/>		

18. Additional remarks:

Cooler Information

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	2.8	Good	Not Present			



Chain of Custody

Laboratory Number: 22001334

Client Information:
 Company Name: Iron Env
 Contact Name: J Gills
 Address: 2049 Commercial Dr
 City, State Zip: Port Allen La 70767
 Phone Number: 225 344 8480
 Fax Number: 225 344 8480
 E-mail Address:

Billing Information:
 PO Number:
 Quote Number:
 Required QC Level:
 Bill Monthly: Yes No
 Ext:

Project Name/Number: Levert - Grand River
Matrix Code: DW = Drinking Water, WW = Waste Water, GW = Ground Water, AQ = Aqueous, OT = Other, SL = Sludge, SOL = Solid, O = Oil, SO = Soil, F = Food, SW = Swab, NGL = Natural Gas Liquid, PW = Produced Water, CF = Completion Fluid

Shipping Method: UPS + FedEx / NOW
 DHL / Element / Hand / Mail

Sampler's Signature: [Signature]
Shipping Method: [Signature]

Page 1 of 1

Sample ID/Description	Turn Time		Collection Information	Container		Pres.	Requested Tests		Comments
	Standard	RUSH		Quantity	Type		Requested Tests	Comments	
LT-8	<input type="checkbox"/> Standard	<input checked="" type="checkbox"/> RUSH	Date: 6-25-22 1455 Time: 1510 Grab/Composite: G Matrix: AQ	Quantity: 9 Type: PV	HCl, HNO ₃ , H ₂ SO ₄ NaOH, Na ₂ S ₂ O ₃	Requested Tests: TDS, Metals (Cd, Cr, Fe, Hg, Pb, Sr, Zn), Anions, Na, Ca, K, Mg	Comments: Metals, As, Pb, Cd, Cr, Fe, Hg, Pb, Sr, Zn		
LT-9	<input type="checkbox"/> Standard	<input type="checkbox"/> RUSH	Date: 6-29-22 1450 Time: 1510 Grab/Composite: G Matrix: AQ	Quantity: 9 Type: PV	HCl, HNO ₃ , H ₂ SO ₄ NaOH, Na ₂ S ₂ O ₃	Requested Tests: TDS, Metals (Cd, Cr, Fe, Hg, Pb, Sr, Zn), Anions, Na, Ca, K, Mg	Comments: Anions, Na, Ca, K, Mg		

Relinquished by	Date/Time	Received by	Date/Time	Field Notes:
[Signature]	6-29-22 0930	Adrian Bonds	6-29-22 0930	Received at lab on ice? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No Temp: 2.8°C
[Signature]	6-29-22 1450	[Signature]	6-29-22 1450	

All samples submitted to Element Materials Technology for analysis are accepted on a custodial basis only. Ownership of the material remains with the client submitting the samples. Element Materials Technology reserves the right to return unused sample portions.

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 F 812-375-0731

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 F 260-471-7777

909 Executive Dr
 Warsaw, IN 46580 USA
 P 574-267-3305
 F 574-269-5569

3371 Cleveland Road, Suite 100A
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1638 Roseytown Road - Suites 2,3,4
Greensburg, PA 15601
(724)850-5600

July 29, 2015

Mr. Greg Miller
ICON Environmental
2049 Commercial Drive
Port Allen, LA 70767

RE: Project: Iberville Parish School Board
Pace Project No.: 30153056

Dear Mr. Miller:

Enclosed are the analytical results for sample(s) received by the laboratory on July 10, 2015. The results relate only to the samples included in this report. Results reported herein conform to the most current TNI standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Jacquelyn Collins
jacquelyn.collins@pacelabs.com
Project Manager

Enclosures

cc: Mr. Derek Pourciau



REPORT OF LABORATORY ANALYSIS

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Page 1 of 14

August Levert_BP Plan_002540



CERTIFICATIONS

Project: Iberville Parish School Board
Pace Project No.: 30153056

Pennsylvania Certification IDs

1638 Roseytown Rd Suites 2,3&4, Greensburg, PA 15601
ACCLASS DOD-ELAP Accreditation #: ADE-1544
Alabama Certification #: 41590
Arizona Certification #: AZ0734
Arkansas Certification
California/TNI Certification #: 04222CA
Colorado Certification
Connecticut Certification #: PH-0694
Delaware Certification
Florida/TNI Certification #: E87683
Guam/PADEP Certification
Hawaii/PADEP Certification
Idaho Certification
Illinois/PADEP Certification
Indiana/PADEP Certification
Iowa Certification #: 391
Kansas/TNI Certification #: E-10358
Kentucky Certification #: 90133
Louisiana DHH/TNI Certification #: LA140008
Louisiana DEQ/TNI Certification #: 4086
Maine Certification #: PA00091
Maryland Certification #: 308
Massachusetts Certification #: M-PA1457
Michigan/PADEP Certification
Missouri Certification #: 235

Montana Certification #: Cert 0082
Nebraska Certification #: NE-05-29-14
Nevada Certification
New Hampshire/TNI Certification #: 2976
New Jersey/TNI Certification #: PA 051
New Mexico Certification
New York/TNI Certification #: 10888
North Carolina Certification #: 42706
North Dakota Certification #: R-190
Oregon/TNI Certification #: PA200002
Pennsylvania/TNI Certification #: 65-00282
Puerto Rico Certification #: PA01457
South Dakota Certification
Tennessee Certification #: TN2867
Texas/TNI Certification #: T104704188
Utah/TNI Certification #: PA014572014-4
Vermont Dept. of Health: ID# VT-0282
Virgin Island/PADEP Certification
Virginia/VELAP Certification #: 460198
Washington Certification #: C868
West Virginia DEP Certification #: 143
West Virginia DHHR Certification #: 9964C
Wisconsin/PADEP Certification
Wyoming Certification #: 8TMS-Q

REPORT OF LABORATORY ANALYSIS

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SAMPLE SUMMARY

Project: Iberville Parish School Board
Pace Project No.: 30153056

Lab ID	Sample ID	Matrix	Date Collected	Date Received
30153056001	SB-5	Water	06/04/15 11:00	07/10/15 09:35
30153056002	SB-1	Water	06/08/15 15:15	07/10/15 09:35
30153056003	SB-9	Water	06/11/15 16:00	07/10/15 09:35
30153056004	SB-16	Water	06/17/15 14:15	07/10/15 09:35
30153056005	SB-24	Water	06/23/15 09:45	07/10/15 09:35
30153056006	SB-26	Water	06/26/15 10:15	07/10/15 09:35
30153056007	SB-27	Water	06/29/15 10:45	07/10/15 09:35

REPORT OF LABORATORY ANALYSIS

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SAMPLE ANALYTE COUNT

Project: Iberville Parish School Board
 Pace Project No.: 30153056

Lab ID	Sample ID	Method	Analysts	Analytes Reported
30153056001	SB-5	EPA 903.1	JC2	1
		EPA 904.0	JLW	1
30153056002	SB-1	EPA 903.1	JC2	1
		EPA 904.0	JLW	1
30153056003	SB-9	EPA 903.1	JC2	1
		EPA 904.0	JLW	1
30153056004	SB-16	EPA 903.1	JC2	1
		EPA 904.0	JLW	1
30153056005	SB-24	EPA 903.1	JC2	1
		EPA 904.0	JLW	1
30153056006	SB-26	EPA 903.1	JC2	1
		EPA 904.0	JLW	1
30153056007	SB-27	EPA 903.1	JC2	1
		EPA 904.0	JLW	1

REPORT OF LABORATORY ANALYSIS

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PROJECT NARRATIVE

Project: Iberville Parish School Board
Pace Project No.: 30153056

Method: EPA 903.1
Description: 903.1 Radium 226
Client: ICON Environmental
Date: July 29, 2015

General Information:

7 samples were analyzed for EPA 903.1. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:

The samples were analyzed within the method required hold times with any exceptions noted below.

Method Blank:

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

REPORT OF LABORATORY ANALYSIS

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PROJECT NARRATIVE

Project: Iberville Parish School Board
Pace Project No.: 30153056

Method: EPA 904.0
Description: 904.0 Radium 228
Client: ICON Environmental
Date: July 29, 2015

General Information:

7 samples were analyzed for EPA 904.0. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:

The samples were analyzed within the method required hold times with any exceptions noted below.

Method Blank:

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

This data package has been reviewed for quality and completeness and is approved for release.

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: Iberville Parish School Board
 Pace Project No.: 30153056

Sample: SB-5		Lab ID: 30153056001	Collected: 06/04/15 11:00	Received: 07/10/15 09:35	Matrix: Water		
PWS:		Site ID:	Sample Type:				
Parameters	Method	Act ± Unc (MDC)	Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 903.1	27.1 ± 3.95 (0.401)		pCi/L	07/29/15 10:28	13982-63-3	
Radium-228	EPA 904.0	8.49 ± 1.71 (0.725)		pCi/L	07/24/15 14:32	15262-20-1	
		C:74% T:92%					

Sample: SB-1		Lab ID: 30153056002	Collected: 06/08/15 15:15	Received: 07/10/15 09:35	Matrix: Water		
PWS:		Site ID:	Sample Type:				
Parameters	Method	Act ± Unc (MDC)	Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 903.1	1.09 ± 0.598 (0.690)		pCi/L	07/29/15 10:28	13982-63-3	
Radium-228	EPA 904.0	1.05 ± 0.456 (0.733)		pCi/L	07/24/15 14:36	15262-20-1	
		C:75% T:82%					

Sample: SB-9		Lab ID: 30153056003	Collected: 06/11/15 16:00	Received: 07/10/15 09:35	Matrix: Water		
PWS:		Site ID:	Sample Type:				
Parameters	Method	Act ± Unc (MDC)	Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 903.1	1.27 ± 0.640 (0.725)		pCi/L	07/29/15 10:39	13982-63-3	
Radium-228	EPA 904.0	1.29 ± 0.487 (0.727)		pCi/L	07/24/15 17:36	15262-20-1	
		C:80% T:78%					

Sample: SB-16		Lab ID: 30153056004	Collected: 06/17/15 14:15	Received: 07/10/15 09:35	Matrix: Water		
PWS:		Site ID:	Sample Type:				
Parameters	Method	Act ± Unc (MDC)	Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 903.1	1.81 ± 0.793 (0.818)		pCi/L	07/29/15 10:34	13982-63-3	
Radium-228	EPA 904.0	3.08 ± 0.872 (0.981)		pCi/L	07/24/15 17:37	15262-20-1	
		C:78% T:80%					

Sample: SB-24		Lab ID: 30153056005	Collected: 06/23/15 09:45	Received: 07/10/15 09:35	Matrix: Water		
PWS:		Site ID:	Sample Type:				
Parameters	Method	Act ± Unc (MDC)	Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 903.1	0.522 ± 0.415 (0.539)		pCi/L	07/29/15 10:39	13982-63-3	
Radium-228	EPA 904.0	1.06 ± 0.477 (0.804)		pCi/L	07/24/15 17:37	15262-20-1	
		C:77% T:83%					

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: Iberville Parish School Board
 Pace Project No.: 30153056

Sample: SB-26		Lab ID: 30153056006	Collected: 06/26/15 10:15	Received: 07/10/15 09:35	Matrix: Water		
PWS:		Site ID:	Sample Type:				
Parameters	Method	Act ± Unc (MDC)	Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 903.1	0.898 ± 0.507 (0.569)		pCi/L	07/29/15 10:39	13982-63-3	
Radium-228	EPA 904.0	1.22 ± 0.522 (0.862)		pCi/L	07/24/15 17:39	15262-20-1	
		C:78% T:76%					

Sample: SB-27		Lab ID: 30153056007	Collected: 06/29/15 10:45	Received: 07/10/15 09:35	Matrix: Water		
PWS:		Site ID:	Sample Type:				
Parameters	Method	Act ± Unc (MDC)	Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 903.1	1.36 ± 0.601 (0.436)		pCi/L	07/29/15 10:50	13982-63-3	
Radium-228	EPA 904.0	0.442 ± 0.378 (0.762)		pCi/L	07/24/15 17:39	15262-20-1	
		C:80% T:79%					

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QUALITY CONTROL - RADIOCHEMISTRY

Project: Iberville Parish School Board
 Pace Project No.: 30153056

QC Batch: RADC/25143 Analysis Method: EPA 903.1
 QC Batch Method: EPA 903.1 Analysis Description: 903.1 Radium-226
 Associated Lab Samples: 30153056001, 30153056002, 30153056003, 30153056004, 30153056005, 30153056006, 30153056007

METHOD BLANK: 921727 Matrix: Water
 Associated Lab Samples: 30153056001, 30153056002, 30153056003, 30153056004, 30153056005, 30153056006, 30153056007

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-226	0.236 ± 0.284 (0.434) C:NA T:101%	pCi/L	07/29/15 10:18	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

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QUALITY CONTROL - RADIOCHEMISTRY

Project: Iberville Parish School Board
 Pace Project No.: 30153056

QC Batch: RADC/25145 Analysis Method: EPA 904.0
 QC Batch Method: EPA 904.0 Analysis Description: 904.0 Radium 228
 Associated Lab Samples: 30153056001, 30153056002, 30153056003, 30153056004, 30153056005, 30153056006, 30153056007

METHOD BLANK: 921729 Matrix: Water
 Associated Lab Samples: 30153056001, 30153056002, 30153056003, 30153056004, 30153056005, 30153056006, 30153056007

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-228	-0.0503 ± 0.286 (0.680) C:78% T:86%	pCi/L	07/24/15 10:54	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

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QUALIFIERS

Project: Iberville Parish School Board
Pace Project No.: 30153056

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.
ND - Not Detected at or above adjusted reporting limit.
J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.
MDL - Adjusted Method Detection Limit.
PQL - Practical Quantitation Limit.
RL - Reporting Limit.
S - Surrogate
1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.
Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.
LCS(D) - Laboratory Control Sample (Duplicate)
MS(D) - Matrix Spike (Duplicate)
DUP - Sample Duplicate
RPD - Relative Percent Difference
NC - Not Calculable.
SG - Silica Gel - Clean-Up
U - Indicates the compound was analyzed for, but not detected.
N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.
Act - Activity
Unc - Uncertainty: SDWA = 1.96 sigma count uncertainty, all other matrices = Expanded Uncertainty (95% confidence interval).
Gamma Spec = Expanded Uncertainty (95.4% Confidence Interval)
(MDC) - Minimum Detectable Concentration
Trac - Tracer Recovery (%)
Carr - Carrier Recovery (%)
Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.
TNI - The NELAC Institute.

REPORT OF LABORATORY ANALYSIS

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WO#: 30153056



CHAIN-OF-CUSTODY FORM



Environmental Services, Inc.

2049 Commercial Drive

Port Allen, LA 70767

(225) 344-8490 fax (225) 344-6654

Project Name/Number: Iberville Parish School Board / A090-040-0100

Sampler: Chase Joubert

Transporter: FedEx

Bottles: 14

ANALYTICAL REQUESTS

Sample Description	Matrix (See Code)	Date	Time (24:00)	Type (Comp., Grab)	Containers (Number)	Turnaround (See code)	Radium-226	Radium-228	Comments/ Field Results
SB-5	W	6-4-15	1100	Grab	2	STD	X	X	001
SB-1	↓	6-8-15	1515	↓	↓	↓	X	X	002
SB-4	↓	6-11-15	1600	↓	↓	↓	X	X	003
SB-16	↓	6-17-15	1415	↓	↓	↓	X	X	004
SB-24	↓	6-23-15	945	↓	↓	↓	X	X	005
SB-26	↓	6-26-15	1015	↓	↓	↓	X	X	006
SB-27	↓	6-29-15	1045	↓	↓	↓	X	X	007
Relinquished by: Chase Joubert	Company: Icon	Received by: Scott Gumbis			Company: Pace		Date: 7-16-15	Time: 0935	
Relinquished by:	Company:	Received by:			Company:		Date:	Time:	
Relinquished by:	Company:	Received by:			Company:		Date:	Time:	

Please e-mail results to

gregm@iconenv.com

dpourciau@iconenv.com

Matrix: W = water, S = solid, SL = sludge, L = liquid, CT = charcoal tube, CN = canister, A = airbag

Turnaround: 24 = 24 hr, 48 = 48 hr, 3D = 3 days, 1 wk = 1 week, 2 wk = 2 weeks, STD = standard



Sample Condition Upon Receipt

Client Name: Icon

Project # 30153056

Courier: Fed Ex UPS USPS Client Commercial Pace Other _____

Tracking #: 773992499121

Custody Seal on Cooler/Box Present: yes no Seals intact: yes no Biological Tissue Is Frozen: Yes No

Packing Material: Bubble Wrap Bubble Bags _____ None _____ Other _____

Thermometer Used NA Type of Ice: Wet Blue None Samples on ice, cooling process has begun

Cooler Temp.: Observed Temp.: _____ °C Correction Factor: _____ °C Final Temp.: _____ °C

Date and initials of person examining contents: SAA 7-10

Temp should be above freezing to 6°C

Comments:

Chain of Custody Present:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	1.
Chain of Custody Filled Out:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	2.
Chain of Custody Relinquished:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	3.
Sampler Name & Signature on COC:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	4.
Samples Arrived within Hold Time:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	5.
Short Hold Time Analysis (<72hr):	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	6.
Rush Turn Around Time Requested:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	7.
Sufficient Volume:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	8.
Correct Containers Used:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	9.
-Pace Containers Used:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
Containers Intact:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	10.
Filtered volume received for Dissolved tests	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	11.
Sample Labels match COC:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	12.
-Includes date/time/ID/Analysis Matrix:	<u>ut</u>	
All containers needing preservation have been checked.	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	13.
All containers needing preservation are found to be in compliance with EPA recommendation.	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
exceptions: VOA, colform, TOC, O&G, Phenols	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Initial when completed <u>SRA</u> Lot # of added preservative
Samples checked for dechlorination:	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	14.
Headspace in VOA Vials (>6mm):	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	15.
Trip Blank Present:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	16.
Trip Blank Custody Seals Present	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	
Pace Trip Blank Lot # (if purchased):		

Client Notification/ Resolution:

Field Data Required? Y / N

Person Contacted: _____ Date/Time: _____

Comments/ Resolution: _____

Project Manager Review:

JAC

Date: 7/13/15

Note: Whenever there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the North Carolina DEHNR Certification Office (i.e. out of hold, incorrect preservative, out of temp, incorrect containers)



Pace Analytical Services, Inc.
1638 Roseytown Road - Suites 2,3,4
Greensburg, PA 15601
(724)850-5600

November 04, 2015

Mr. Greg Miller
ICON Environmental
2049 Commercial Drive
Port Allen, LA 70767

RE: Project: Iberville Parish School Board
Pace Project No.: 30162215

Dear Mr. Miller:

Enclosed are the analytical results for sample(s) received by the laboratory on October 15, 2015. The results relate only to the samples included in this report. Results reported herein conform to the most current TNI standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Jacquelyn Collins
jacquelyn.collins@pacelabs.com
Project Manager

Enclosures

cc: Mr. Derek Pourciau
Mr. Jason Sills, ICON Environmental



REPORT OF LABORATORY ANALYSIS

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CERTIFICATIONS

Project: Iberville Parish School Board
Pace Project No.: 30162215

Pennsylvania Certification IDs

Georgia Certification #: C040
1638 Roseytown Rd Suites 2,3&4, Greensburg, PA 15601
L-A-B DOD-ELAP Accreditation #: L2417
Alabama Certification #: 41590
Arizona Certification #: AZ0734
Arkansas Certification
California Certification #: 04222CA
Colorado Certification
Connecticut Certification #: PH-0694
Delaware Certification
Florida/TNI Certification #: E87683
Georgia Certification #: C040
Guam Certification
Hawaii Certification
Idaho Certification
Illinois Certification
Indiana Certification
Iowa Certification #: 391
Kansas/TNI Certification #: E-10358
Kentucky Certification #: 90133
Louisiana DHH/TNI Certification #: LA140008
Louisiana DEQ/TNI Certification #: 4086
Maine Certification #: PA00091
Maryland Certification #: 308
Massachusetts Certification #: M-PA1457
Michigan/PADEP Certification
Missouri Certification #: 235

Montana Certification #: Cert 0082
Nebraska Certification #: NE-05-29-14
Nevada Certification #: PA014572015-1
New Hampshire/TNI Certification #: 2976
New Jersey/TNI Certification #: PA 051
New Mexico Certification #: PA01457
New York/TNI Certification #: 10888
North Carolina Certification #: 42706
North Dakota Certification #: R-190
Oregon/TNI Certification #: PA200002
Pennsylvania/TNI Certification #: 65-00282
Puerto Rico Certification #: PA01457
Rhode Island Certification #: 65-00282
South Dakota Certification
Tennessee Certification #: TN2867
Texas/TNI Certification #: T104704188-14-8
Utah/TNI Certification #: PA014572015-5
USDA Soil Permit #: P330-14-00213
Vermont Dept. of Health: ID# VT-0282
Virgin Island/PADEP Certification
Virginia/VELAP Certification #: 460198
Washington Certification #: C868
West Virginia DEP Certification #: 143
West Virginia DHHR Certification #: 9964C
Wisconsin Certification
Wyoming Certification #: 8TMS-L

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SAMPLE SUMMARY

Project: Iberville Parish School Board
Pace Project No.: 30162215

Lab ID	Sample ID	Matrix	Date Collected	Date Received
30162215001	MW-6	Water	10/06/15 10:35	10/15/15 09:25
30162215002	MW-5	Water	10/06/15 13:05	10/15/15 09:25
30162215003	MW-4	Water	10/07/15 09:40	10/15/15 09:25
30162215004	MW-3	Water	10/07/15 10:45	10/15/15 09:25
30162215005	MW-2	Water	10/08/15 10:35	10/15/15 09:25
30162215006	MW-1	Water	10/08/15 09:40	10/15/15 09:25

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SAMPLE ANALYTE COUNT

Project: Iberville Parish School Board
Pace Project No.: 30162215

Lab ID	Sample ID	Method	Analysts	Analytes Reported
30162215001	MW-6	EPA 903.1	WRR	1
		EPA 904.0	JLW	1
30162215002	MW-5	EPA 903.1	WRR	1
		EPA 904.0	JLW	1
30162215003	MW-4	EPA 903.1	WRR	1
		EPA 904.0	JLW	1
30162215004	MW-3	EPA 903.1	WRR	1
		EPA 904.0	JLW	1
30162215005	MW-2	EPA 903.1	WRR	1
		EPA 904.0	JLW	1
30162215006	MW-1	EPA 903.1	WRR	1
		EPA 904.0	JLW	1

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PROJECT NARRATIVE

Project: Iberville Parish School Board
Pace Project No.: 30162215

Method: EPA 903.1
Description: 903.1 Radium 226
Client: ICON Environmental
Date: November 04, 2015

General Information:

6 samples were analyzed for EPA 903.1. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:

The samples were analyzed within the method required hold times with any exceptions noted below.

Method Blank:

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

REPORT OF LABORATORY ANALYSIS

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PROJECT NARRATIVE

Project: Iberville Parish School Board
Pace Project No.: 30162215

Method: EPA 904.0
Description: 904.0 Radium 228
Client: ICON Environmental
Date: November 04, 2015

General Information:

6 samples were analyzed for EPA 904.0. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:

The samples were analyzed within the method required hold times with any exceptions noted below.

Method Blank:

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

This data package has been reviewed for quality and completeness and is approved for release.

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: Iberville Parish School Board
 Pace Project No.: 30162215

Sample: MW-6		Lab ID: 30162215001	Collected: 10/06/15 10:35	Received: 10/15/15 09:25	Matrix: Water		
PWS:		Site ID:	Sample Type:				
Parameters	Method	Act ± Unc (MDC)	Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 903.1	6.52 ± 1.50 (0.485)		pCi/L	11/03/15 11:11	13982-63-3	
		C:NA T:94%					
Radium-228	EPA 904.0	8.54 ± 1.75 (0.800)		pCi/L	10/30/15 18:04	15262-20-1	
		C:79% T:84%					

Sample: MW-5		Lab ID: 30162215002	Collected: 10/06/15 13:05	Received: 10/15/15 09:25	Matrix: Water		
PWS:		Site ID:	Sample Type:				
Parameters	Method	Act ± Unc (MDC)	Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 903.1	2.43 ± 0.920 (0.913)		pCi/L	11/03/15 11:10	13982-63-3	
		C:NA T:91%					
Radium-228	EPA 904.0	3.89 ± 0.942 (0.936)		pCi/L	10/30/15 17:57	15262-20-1	
		C:79% T:80%					

Sample: MW-4		Lab ID: 30162215003	Collected: 10/07/15 09:40	Received: 10/15/15 09:25	Matrix: Water		
PWS:		Site ID:	Sample Type:				
Parameters	Method	Act ± Unc (MDC)	Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 903.1	0.627 ± 0.467 (0.614)		pCi/L	11/03/15 11:20	13982-63-3	
		C:NA T:95%					
Radium-228	EPA 904.0	2.82 ± 0.744 (0.864)		pCi/L	10/30/15 17:57	15262-20-1	
		C:79% T:86%					

Sample: MW-3		Lab ID: 30162215004	Collected: 10/07/15 10:45	Received: 10/15/15 09:25	Matrix: Water		
PWS:		Site ID:	Sample Type:				
Parameters	Method	Act ± Unc (MDC)	Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 903.1	16.9 ± 2.75 (0.601)		pCi/L	11/03/15 11:14	13982-63-3	
		C:NA T:98%					
Radium-228	EPA 904.0	14.6 ± 2.78 (0.868)		pCi/L	10/30/15 17:57	15262-20-1	
		C:79% T:91%					

Sample: MW-2		Lab ID: 30162215005	Collected: 10/08/15 10:35	Received: 10/15/15 09:25	Matrix: Water		
PWS:		Site ID:	Sample Type:				
Parameters	Method	Act ± Unc (MDC)	Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 903.1	31.7 ± 4.59 (0.736)		pCi/L	11/03/15 11:23	13982-63-3	
		C:NA T:90%					
Radium-228	EPA 904.0	15.7 ± 2.99 (0.948)		pCi/L	10/30/15 17:57	15262-20-1	
		C:80% T:79%					

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: Iberville Parish School Board
 Pace Project No.: 30162215

Sample: MW-1		Lab ID: 30162215006	Collected: 10/08/15 09:40	Received: 10/15/15 09:25	Matrix: Water		
PWS:		Site ID:	Sample Type:				
Parameters	Method	Act ± Unc (MDC)	Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 903.1	2.04 ± 0.756 (0.455)		pCi/L	11/03/15 11:31	13982-63-3	
Radium-228	EPA 904.0	1.99 ± 0.631 (0.886)		pCi/L	10/30/15 17:57	15262-20-1	
		C:NA T:94%					
		C:79% T:82%					

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL - RADIOCHEMISTRY

Project: Iberville Parish School Board
 Pace Project No.: 30162215

QC Batch: RADC/26534 Analysis Method: EPA 904.0
 QC Batch Method: EPA 904.0 Analysis Description: 904.0 Radium 228
 Associated Lab Samples: 30162215001, 30162215002, 30162215003, 30162215004, 30162215005, 30162215006

METHOD BLANK: 970757 Matrix: Water
 Associated Lab Samples: 30162215001, 30162215002, 30162215003, 30162215004, 30162215005, 30162215006

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-228	0.257 ± 0.344 (0.734) C:80% T:84%	pCi/L	10/30/15 13:03	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL - RADIOCHEMISTRY

Project: Iberville Parish School Board
 Pace Project No.: 30162215

QC Batch: RADC/26519 Analysis Method: EPA 903.1
 QC Batch Method: EPA 903.1 Analysis Description: 903.1 Radium-226
 Associated Lab Samples: 30162215001, 30162215002, 30162215003, 30162215004, 30162215005, 30162215006

METHOD BLANK: 970742 Matrix: Water
 Associated Lab Samples: 30162215001, 30162215002, 30162215003, 30162215004, 30162215005, 30162215006

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-226	0.218 ± 0.338 (0.586) C:NA T:104%	pCi/L	11/03/15 10:57	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

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QUALIFIERS

Project: Iberville Parish School Board
Pace Project No.: 30162215

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.
ND - Not Detected at or above adjusted reporting limit.
J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.
MDL - Adjusted Method Detection Limit.
PQL - Practical Quantitation Limit.
RL - Reporting Limit.
S - Surrogate
1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.
Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.
LCS(D) - Laboratory Control Sample (Duplicate)
MS(D) - Matrix Spike (Duplicate)
DUP - Sample Duplicate
RPD - Relative Percent Difference
NC - Not Calculable.
SG - Silica Gel - Clean-Up
U - Indicates the compound was analyzed for, but not detected.
N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.
Act - Activity
Unc - Uncertainty: SDWA = 1.96 sigma count uncertainty, all other matrices = Expanded Uncertainty (95% confidence interval).
Gamma Spec = Expanded Uncertainty (95.4% Confidence Interval)
(MDC) - Minimum Detectable Concentration
Trac - Tracer Recovery (%)
Carr - Carrier Recovery (%)
Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.
TNI - The NELAC Institute.

REPORT OF LABORATORY ANALYSIS

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Sample Condition Upon Receipt

Client Name: ICM

Project # 30162215

Courier: Fed Ex UPS USPS Client Commercial Pace Other _____

Tracking #: 774715228034 / 774715228034

Custody Seal on Cooler/Box Present: Yes no Seals Intact: yes no Biological Tissue is Frozen: Yes No

Packing Material: Bubble Wrap Bubble Bags _____ None _____ Other _____

Thermometer Used N/A Type of Ice: Wet Blue None Samples on Ice, cooling process has begun

Cooler Temp.: Observed Temp.: _____ °C Correction Factor: _____ °C Final Temp: _____ °C

Date and initials of person examining contents: 10/15/15 ARM

Temp should be above freezing to 6°C		Comments:
Chain of Custody Present:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	1.
Chain of Custody Filled Out:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	2.
Chain of Custody Relinquished:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	3.
Sampler Name & Signature on COC:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	4.
Samples Arrived within Hold Time:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	5.
Short Hold Time Analysis (<72hr):	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	6.
Rush Turn Around Time Requested:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	7.
Sufficient Volume:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	8.
Correct Containers Used:	<input checked="" type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	9.
-Pace Containers Used:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	
Containers Intact:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	10.
Filtered volume received for Dissolved tests	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	11.
Sample Labels match COC:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	12.
-Includes date/time/ID/Analysis Matrix:	<u>WT</u>	
All containers needing preservation have been checked.	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	13.
All containers needing preservation are found to be in compliance with EPA recommendation.	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	<u>PHL2</u>
exceptions: VOA, coliform, TOC, O&G, Phenols	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Initial when completed <u>ARM</u> Lot # of added preservative
Samples checked for dechlorination:	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	14.
Headspace in VOA Vials (>6mm):	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	15.
Trip Blank Present:	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	16.
Trip Blank Custody Seals Present	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	
Pace Trip Blank Lot # (if purchased):		

Client Notification/ Resolution: Field Data Required? Y / N

Person Contacted: _____ Date/Time: _____

Comments/ Resolution: _____

Project Manager Review: Bacindan Date: 10/19/15

Note: Whenever there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the North Carolina DEHNR Certification Office (i.e. out of hold, incorrect preservative, out of temp, incorrect containers)



Element Materials Technology Lafayette
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Website: www.element.com

June 25, 2015

Greg Miller
ICON Environmental Services
2049 Commercial Drive
Port Allen, LA 70767
TEL: (225) 344-8490
FAX (225) 344-6654

RE: Iberville Parish SB 9090-040-0100

Order No.: 15060355

Dear Greg Miller:

Element Materials Technology Lafayette, LLC received 26 sample(s) on 6/5/2015 for the analyses presented in the following report.

In accordance with your instructions Element Lafayette conducted the analysis shown on the following pages on samples submitted by your company. The results related only to the items tested. Unless otherwise noted, all analyses were conducted using EPA approved methodologies and all test results meet all requirements of TNI. All relevant sampling information is on the attached Chain-of-Custody form.

All soil data, except for 29-B, are on a wet-weight basis unless otherwise indicated in the units field as –dry.

LELAP Certification No.: 01997. TCEQ Certification No.: T104704261-14-6. A scope of accredited parameters is available upon request. A "#" by the test method or analyte indicates this parameter is outside the scope of accreditation.

Estimated uncertainty is available upon request. This report shall not be reproduced except in full, without the written approval of the laboratory.

If you have any questions regarding these test results, please feel free to call.

A handwritten signature in blue ink, appearing to read 'Cristina Thibeaux'.

Cristina Thibeaux
Customer Service Supervisor
2417 W. Pinhook Road
Lafayette, LA 70508-3344



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Case Narrative

WO#: 15060355
Date: 6/25/2015

CLIENT: ICON Environmental Services
Project: Iberville Parish SB 9090-040-0100

Unless specified by the client, a duplicate or MS/MSD, wherever applicable, is randomly selected and analyzed from each analytical batch provided sample volume is sufficient. The sample chosen for duplicate or MS/MSD may or may not be a sample submitted in this workorder. A method blank and/or a lab control sample (LCS)/lab control sample duplicate (LCSD), wherever applicable, are processed as a quality control check for each analytical batch. When the matrix QC data is not available due to insufficient sample volume or when the results indicate possible matrix effect, the validity of the batch is determined by the method blank and LCS/LCSD.

The results of the laboratory internal quality control data are provided in the QC Summary Report section of the report for your review. Laboratory-related QC exceptions that may impact the validity of data are discussed in the case narrative. Sample-related QC exceptions are flagged either in the results page(s) or in the QC report page(s). End users should consider QC exceptions when evaluating sample data against data quality objectives.

Any other exceptions associated with this report will be footnoted in the results page(s) or the QC summary page(s).

Due to limited sample, Lab IDs 15060355-009, 016, -021, and -022 were prepared for Leachate Chloride, using less than 100g of the soil (dry wt basis). The amount of the extraction fluid was proportionally reduced to yield a 1:4 sample to fluid ratio.

15060355-009A insufficient volume for chloride leachate, used 48.0g

15060355-016A insufficient volume for chloride leachate, used 33.0g

15060355-021B insufficient volume for chloride leachate, used 72.0g

15060355-022A insufficient volume for chloride leachate, used 37.0g



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Analytical Report

(consolidated)

WO#: **15060355**

Date Reported: **6/25/2015**

CLIENT: ICON Environmental Services
Project: Iberville Parish SB 9090-040-0100
Lab ID: 15060355-001
Client Sample ID SB-11 0-1

Collection Date: 6/2/2015 8:30:00 AM

Matrix: SOIL

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
29B SALTS						
CATION EXCHANGE CAPACITY						Analyst: MMT
Cation Exchange Capacity	81.1	0.1		meq/100g	1	6/17/2015 12:52:00 PM
29B SALTS						Analyst: MXF
ELECTRICAL CONDUCTIVITY @ SATURATION						
Electrical Conductivity	0.76	0.10		mmhos/cm	1	6/11/2015 1:31:00 PM
29B SALTS						Analyst: MMT
EXCHANGEABLE SODIUM PERCENTAGE						
Exchangeable Sodium %	0.7	0.1		%	1	6/17/2015 12:52:00 PM
PERCENT MOISTURE						Analyst: MMT
Percent Moisture	51.7	1.0		wt%	1	6/8/2015 9:15:00 AM
29B SALTS						Analyst: STS
SODIUM ADSORPTION RATIO						
Sodium Adsorption Ratio	1.40	0.100			1	6/17/2015
Soluble Calcium	2.65	1.00		meq/L	1	6/17/2015
Soluble Magnesium	1.37	1.00		meq/L	1	6/17/2015
Soluble Sodium	1.98	1.00		meq/L	1	6/17/2015
29B METALS						Analyst: BAS
MERCURY IN SOIL OR SLUDGE						
Mercury	< 0.10	0.10		mg/Kg-dry	1	6/10/2015 11:49:33 AM
INORGANIC ANIONS IN LEACHATE BY IC						Analyst: TBB
Chloride	4.24	0.50		mg/L	2	6/18/2015 6:38:29 PM
29B METALS						Analyst: STS
METALS IN SOIL OR SLUDGE BY ICP						
Arsenic	4.81	1.00		mg/Kg-dry	1	6/13/2015 6:06:56 AM
Barium	245	1.00		mg/Kg-dry	1	6/13/2015 6:06:56 AM

Qualifiers:

- | | |
|--|---|
| * Value exceeds Maximum Contaminant Level. | B Analyte detected in the associated Method Blank |
| C Value is below Minimum Compound Limit. | E Value above quantitation range |
| H Holding times for preparation or analysis exceeded | J Analyte detected below quantitation limits |
| M Matrix Interference | ND Not Detected at the Reporting Limit |
| R RPD outside accepted recovery limits | RL Reporting Limit |
| S Spike Recovery outside accepted recovery limits | U Analyte not detected |



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Analytical Report

(consolidated)

WO#: **15060355**

Date Reported: **6/25/2015**

CLIENT: ICON Environmental Services
Project: Iberville Parish SB 9090-040-0100
Lab ID: 15060355-001
Client Sample ID SB-11 0-1

Collection Date: 6/2/2015 8:30:00 AM

Matrix: SOIL

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
29B METALS					SW6010B	SW3050B
METALS IN SOIL OR SLUDGE BY ICP						Analyst: STS
Cadmium	< 0.50	0.50		mg/Kg-dry	1	6/13/2015 6:06:56 AM
Chromium	15.6	1.00		mg/Kg-dry	1	6/13/2015 6:06:56 AM
Lead	14.7	1.00		mg/Kg-dry	1	6/13/2015 6:06:56 AM
Selenium	< 1.99	1.99		mg/Kg-dry	1	6/13/2015 6:06:56 AM
Silver	< 0.50	0.50		mg/Kg-dry	1	6/13/2015 6:06:56 AM
Zinc	62.2	1.00		mg/Kg-dry	1	6/13/2015 6:06:56 AM
29B METALS					LDNR 29-B	Analyst: STS
TRUE TOTAL BARIUM						
True Total Barium	394	46		mg/Kg-dry	1	6/13/2015 7:54:12 AM

Qualifiers:	* Value exceeds Maximum Contaminant Level.	B Analyte detected in the associated Method Blank
	C Value is below Minimum Compound Limit.	E Value above quantitation range
	H Holding times for preparation or analysis exceeded	J Analyte detected below quantitation limits
	M Matrix Interference	ND Not Detected at the Reporting Limit
	R RPD outside accepted recovery limits	RL Reporting Limit
	S Spike Recovery outside accepted recovery limits	U Analyte not detected



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Analytical Report

(consolidated)

WO#: 15060355

Date Reported: 6/25/2015

CLIENT: ICON Environmental Services **Collection Date:** 6/2/2015 9:30:00 AM
Project: Iberville Parish SB 9090-040-0100
Lab ID: 15060355-002 **Matrix:** SOIL
Client Sample ID SB-12 0-2

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
29B SALTS						
CATION EXCHANGE CAPACITY						Analyst: MMT
Cation Exchange Capacity	64.8	0.1		meq/100g	1	6/17/2015 12:52:00 PM
29B SALTS						Analyst: MXF
ELECTRICAL CONDUCTIVITY @ SATURATION						
Electrical Conductivity	1.29	0.10		mmhos/cm	1	6/11/2015 1:31:00 PM
29B SALTS						Analyst: MMT
EXCHANGEABLE SODIUM PERCENTAGE						
Exchangeable Sodium %	1.6	0.1		%	1	6/17/2015 12:52:00 PM
PERCENT MOISTURE						Analyst: MMT
Percent Moisture	63.3	1.0		wt%	1	6/8/2015 9:15:00 AM
29B SALTS						Analyst: STS
SODIUM ADSORPTION RATIO						
Sodium Adsorption Ratio	2.15	0.100			1	6/17/2015
Soluble Calcium	4.62	1.00		meq/L	1	6/17/2015
Soluble Magnesium	2.13	1.00		meq/L	1	6/17/2015
Soluble Sodium	3.95	1.00		meq/L	1	6/17/2015
29B METALS						Analyst: BAS
MERCURY IN SOIL OR SLUDGE						
Mercury	< 0.10	0.10		mg/Kg-dry	1	6/10/2015 11:57:12 AM
INORGANIC ANIONS IN LEACHATE BY IC						Analyst: TBB
Chloride	16.0	2.50		mg/L	10	6/18/2015 7:19:42 PM
29B METALS						Analyst: STS
METALS IN SOIL OR SLUDGE BY ICP						
Arsenic	6.26	0.99		mg/Kg-dry	1	6/13/2015 6:30:05 AM
Barium	2,040	0.99		mg/Kg-dry	1	6/13/2015 6:30:05 AM

Qualifiers:

- | | |
|--|---|
| * Value exceeds Maximum Contaminant Level. | B Analyte detected in the associated Method Blank |
| C Value is below Minimum Compound Limit. | E Value above quantitation range |
| H Holding times for preparation or analysis exceeded | J Analyte detected below quantitation limits |
| M Matrix Interference | ND Not Detected at the Reporting Limit |
| R RPD outside accepted recovery limits | RL Reporting Limit |
| S Spike Recovery outside accepted recovery limits | U Analyte not detected |



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Analytical Report

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WO#: **15060355**

Date Reported: **6/25/2015**

CLIENT: ICON Environmental Services
Project: Iberville Parish SB 9090-040-0100
Lab ID: 15060355-002
Client Sample ID SB-12 0-2

Collection Date: 6/2/2015 9:30:00 AM

Matrix: SOIL

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
29B METALS					SW6010B	SW3050B
METALS IN SOIL OR SLUDGE BY ICP						Analyst: STS
Cadmium	< 0.50	0.50		mg/Kg-dry	1	6/13/2015 6:30:05 AM
Chromium	20.4	0.99		mg/Kg-dry	1	6/13/2015 6:30:05 AM
Lead	22.1	0.99		mg/Kg-dry	1	6/13/2015 6:30:05 AM
Selenium	< 1.98	1.98		mg/Kg-dry	1	6/13/2015 6:30:05 AM
Silver	< 0.50	0.50		mg/Kg-dry	1	6/13/2015 6:30:05 AM
Zinc	71.4	0.99		mg/Kg-dry	1	6/13/2015 6:30:05 AM
29B METALS					LDNR 29-B	Analyst: STS
TRUE TOTAL BARIUM						
True Total Barium	9,530	48		mg/Kg-dry	1	6/13/2015 8:16:45 AM

Qualifiers:

- | | |
|--|---|
| * Value exceeds Maximum Contaminant Level. | B Analyte detected in the associated Method Blank |
| C Value is below Minimum Compound Limit. | E Value above quantitation range |
| H Holding times for preparation or analysis exceeded | J Analyte detected below quantitation limits |
| M Matrix Interference | ND Not Detected at the Reporting Limit |
| R RPD outside accepted recovery limits | RL Reporting Limit |
| S Spike Recovery outside accepted recovery limits | U Analyte not detected |



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Analytical Report

(consolidated)

WO#: **15060355**

Date Reported: **6/25/2015**

CLIENT: ICON Environmental Services
Project: Iberville Parish SB 9090-040-0100
Lab ID: 15060355-003
Client Sample ID SB-12 2-4

Collection Date: 6/2/2015 9:35:00 AM

Matrix: SOIL

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
29B SALTS						
CATION EXCHANGE CAPACITY						Analyst: MMT
Cation Exchange Capacity	50.5	0.1		meq/100g	1	6/17/2015 12:52:00 PM
29B SALTS						Analyst: MXF
ELECTRICAL CONDUCTIVITY @ SATURATION						
Electrical Conductivity	0.91	0.10		mmhos/cm	1	6/11/2015 1:31:00 PM
29B SALTS						Analyst: MMT
EXCHANGEABLE SODIUM PERCENTAGE						
Exchangeable Sodium %	1.4	0.1		%	1	6/17/2015 12:52:00 PM
PERCENT MOISTURE						Analyst: MMT
Percent Moisture	52.7	1.0		wt%	1	6/8/2015 9:15:00 AM
29B SALTS						Analyst: STS
SODIUM ADSORPTION RATIO						
Sodium Adsorption Ratio	2.08	0.100			1	6/17/2015
Soluble Calcium	3.08	1.00		meq/L	1	6/17/2015
Soluble Magnesium	1.41	1.00		meq/L	1	6/17/2015
Soluble Sodium	3.11	1.00		meq/L	1	6/17/2015
29B METALS						Analyst: BAS
MERCURY IN SOIL OR SLUDGE						
Mercury	0.11	0.10		mg/Kg-dry	1	6/10/2015 11:59:53 AM
INORGANIC ANIONS IN LEACHATE BY IC						Analyst: TBB
Chloride	14.1	2.50		mg/L	10	6/18/2015 7:33:27 PM
29B METALS						Analyst: STS
METALS IN SOIL OR SLUDGE BY ICP						
Arsenic	6.73	0.99		mg/Kg-dry	1	6/13/2015 6:34:43 AM
Barium	2,820	0.99		mg/Kg-dry	1	6/13/2015 6:34:43 AM

Qualifiers:

- | | |
|--|---|
| * Value exceeds Maximum Contaminant Level. | B Analyte detected in the associated Method Blank |
| C Value is below Minimum Compound Limit. | E Value above quantitation range |
| H Holding times for preparation or analysis exceeded | J Analyte detected below quantitation limits |
| M Matrix Interference | ND Not Detected at the Reporting Limit |
| R RPD outside accepted recovery limits | RL Reporting Limit |
| S Spike Recovery outside accepted recovery limits | U Analyte not detected |



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Analytical Report

(consolidated)

WO#: **15060355**

Date Reported: **6/25/2015**

CLIENT: ICON Environmental Services
Project: Iberville Parish SB 9090-040-0100
Lab ID: 15060355-003
Client Sample ID SB-12 2-4

Collection Date: 6/2/2015 9:35:00 AM

Matrix: SOIL

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
29B METALS					SW6010B	SW3050B
METALS IN SOIL OR SLUDGE BY ICP						Analyst: STS
Cadmium	< 0.50	0.50		mg/Kg-dry	1	6/13/2015 6:34:43 AM
Chromium	22.4	0.99		mg/Kg-dry	1	6/13/2015 6:34:43 AM
Lead	37.7	0.99		mg/Kg-dry	1	6/13/2015 6:34:43 AM
Selenium	< 1.98	1.98		mg/Kg-dry	1	6/13/2015 6:34:43 AM
Silver	< 0.50	0.50		mg/Kg-dry	1	6/13/2015 6:34:43 AM
Zinc	62.1	0.99		mg/Kg-dry	1	6/13/2015 6:34:43 AM
29B METALS					LDNR 29-B	Analyst: STS
TRUE TOTAL BARIUM						
True Total Barium	34,900	46		mg/Kg-dry	1	6/13/2015 8:21:18 AM

Qualifiers:	* Value exceeds Maximum Contaminant Level.	B Analyte detected in the associated Method Blank
	C Value is below Minimum Compound Limit.	E Value above quantitation range
	H Holding times for preparation or analysis exceeded	J Analyte detected below quantitation limits
	M Matrix Interference	ND Not Detected at the Reporting Limit
	R RPD outside accepted recovery limits	RL Reporting Limit
	S Spike Recovery outside accepted recovery limits	U Analyte not detected



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 TEL: (337) 235-0483 FAX: (337) 233-6540
 Website: www.element.com

Analytical Report

(consolidated)

WO#: **15060355**

Date Reported: **6/25/2015**

CLIENT: ICON Environmental Services **Collection Date:** 6/2/2015 10:30:00 AM
Project: Iberville Parish SB 9090-040-0100
Lab ID: 15060355-004 **Matrix:** SOIL
Client Sample ID SB-13 0-2

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
29B SALTS						
CATION EXCHANGE CAPACITY						Analyst: MMT
Cation Exchange Capacity	67.7	0.1		meq/100g	1	6/17/2015 12:52:00 PM
29B SALTS						Analyst: MXF
ELECTRICAL CONDUCTIVITY @ SATURATION						
Electrical Conductivity	2.17	0.10		mmhos/cm	1	6/11/2015 1:31:00 PM
29B SALTS						Analyst: MMT
EXCHANGEABLE SODIUM PERCENTAGE						
Exchangeable Sodium %	1.2	0.1		%	1	6/17/2015 12:52:00 PM
PERCENT MOISTURE						Analyst: MMT
Percent Moisture	63.4	1.0		wt%	1	6/8/2015 9:15:00 AM
29B SALTS						Analyst: STS
SODIUM ADSORPTION RATIO						
Sodium Adsorption Ratio	2.14	0.100			1	6/17/2015
Soluble Calcium	8.59	1.00		meq/L	1	6/17/2015
Soluble Magnesium	4.23	1.00		meq/L	1	6/17/2015
Soluble Sodium	5.42	1.00		meq/L	1	6/17/2015
29B METALS						Analyst: BAS
MERCURY IN SOIL OR SLUDGE						
Mercury	< 0.10	0.10		mg/Kg-dry	1	6/10/2015 12:02:34 PM
INORGANIC ANIONS IN LEACHATE BY IC						Analyst: TBB
Chloride	58.8	5.00		mg/L	20	6/18/2015 7:47:12 PM
29B METALS						Analyst: STS
METALS IN SOIL OR SLUDGE BY ICP						
Arsenic	6.93	0.99		mg/Kg-dry	1	6/13/2015 6:39:24 AM
Barium	1,540	0.99		mg/Kg-dry	1	6/13/2015 6:39:24 AM

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
C	Value is below Minimum Compound Limit.	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
M	Matrix Interference	ND	Not Detected at the Reporting Limit
R	RPD outside accepted recovery limits	RL	Reporting Limit
S	Spike Recovery outside accepted recovery limits	U	Analyte not detected



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Analytical Report

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WO#: **15060355**

Date Reported: **6/25/2015**

CLIENT: ICON Environmental Services
Project: Iberville Parish SB 9090-040-0100
Lab ID: 15060355-004
Client Sample ID SB-13 0-2

Collection Date: 6/2/2015 10:30:00 AM

Matrix: SOIL

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
29B METALS					SW6010B	SW3050B
METALS IN SOIL OR SLUDGE BY ICP						Analyst: STS
Cadmium	0.57	0.50		mg/Kg-dry	1	6/13/2015 6:39:24 AM
Chromium	22.2	0.99		mg/Kg-dry	1	6/13/2015 6:39:24 AM
Lead	22.9	0.99		mg/Kg-dry	1	6/13/2015 6:39:24 AM
Selenium	< 1.98	1.98		mg/Kg-dry	1	6/13/2015 6:39:24 AM
Silver	< 0.50	0.50		mg/Kg-dry	1	6/13/2015 6:39:24 AM
Zinc	82.4	0.99		mg/Kg-dry	1	6/13/2015 6:39:24 AM
29B METALS					LDNR 29-B	Analyst: STS
TRUE TOTAL BARIUM						
True Total Barium	4,420	47		mg/Kg-dry	1	6/13/2015 8:25:54 AM

Qualifiers:	* Value exceeds Maximum Contaminant Level.	B Analyte detected in the associated Method Blank
	C Value is below Minimum Compound Limit.	E Value above quantitation range
	H Holding times for preparation or analysis exceeded	J Analyte detected below quantitation limits
	M Matrix Interference	ND Not Detected at the Reporting Limit
	R RPD outside accepted recovery limits	RL Reporting Limit
	S Spike Recovery outside accepted recovery limits	U Analyte not detected



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Analytical Report

(consolidated)

WO#: **15060355**

Date Reported: **6/25/2015**

CLIENT: ICON Environmental Services
Project: Iberville Parish SB 9090-040-0100
Lab ID: 15060355-005
Client Sample ID SB-13 2-4

Collection Date: 6/2/2015 10:35:00 AM

Matrix: SOIL

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
29B SALTS						
CATION EXCHANGE CAPACITY						Analyst: MMT
Cation Exchange Capacity	69.6	0.1		meq/100g	1	6/17/2015 12:52:00 PM
29B SALTS						Analyst: MXF
ELECTRICAL CONDUCTIVITY @ SATURATION						
Electrical Conductivity	2.37	0.10		mmhos/cm	1	6/11/2015 1:31:00 PM
29B SALTS						Analyst: MMT
EXCHANGEABLE SODIUM PERCENTAGE						
Exchangeable Sodium %	1.2	0.1		%	1	6/17/2015 12:52:00 PM
PERCENT MOISTURE						Analyst: MMT
Percent Moisture	60.4	1.0		wt%	1	6/8/2015 9:15:00 AM
29B SALTS						Analyst: STS
SODIUM ADSORPTION RATIO						
Sodium Adsorption Ratio	2.37	0.100			1	6/17/2015
Soluble Calcium	9.35	1.00		meq/L	1	6/17/2015
Soluble Magnesium	4.55	1.00		meq/L	1	6/17/2015
Soluble Sodium	6.25	1.00		meq/L	1	6/17/2015
29B METALS						Analyst: BAS
MERCURY IN SOIL OR SLUDGE						
Mercury	< 0.10	0.10		mg/Kg-dry	1	6/10/2015 12:05:13 PM
INORGANIC ANIONS IN LEACHATE BY IC						Analyst: TBB
Chloride	65.9	5.00		mg/L	20	6/18/2015 8:00:57 PM
29B METALS						Analyst: STS
METALS IN SOIL OR SLUDGE BY ICP						
Arsenic	5.88	0.99		mg/Kg-dry	1	6/13/2015 6:44:14 AM
Barium	1,840	0.99		mg/Kg-dry	1	6/13/2015 6:44:14 AM

Qualifiers:

- | | |
|--|---|
| * Value exceeds Maximum Contaminant Level. | B Analyte detected in the associated Method Blank |
| C Value is below Minimum Compound Limit. | E Value above quantitation range |
| H Holding times for preparation or analysis exceeded | J Analyte detected below quantitation limits |
| M Matrix Interference | ND Not Detected at the Reporting Limit |
| R RPD outside accepted recovery limits | RL Reporting Limit |
| S Spike Recovery outside accepted recovery limits | U Analyte not detected |



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WO#: **15060355**

Date Reported: **6/25/2015**

CLIENT: ICON Environmental Services
Project: Iberville Parish SB 9090-040-0100
Lab ID: 15060355-005
Client Sample ID SB-13 2-4

Collection Date: 6/2/2015 10:35:00 AM

Matrix: SOIL

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
29B METALS					SW6010B	SW3050B
METALS IN SOIL OR SLUDGE BY ICP						Analyst: STS
Cadmium	0.50	0.50		mg/Kg-dry	1	6/13/2015 6:44:14 AM
Chromium	24.5	0.99		mg/Kg-dry	1	6/13/2015 6:44:14 AM
Lead	24.8	0.99		mg/Kg-dry	1	6/13/2015 6:44:14 AM
Selenium	< 1.99	1.99		mg/Kg-dry	1	6/13/2015 6:44:14 AM
Silver	< 0.50	0.50		mg/Kg-dry	1	6/13/2015 6:44:14 AM
Zinc	75.4	0.99		mg/Kg-dry	1	6/13/2015 6:44:14 AM
29B METALS					LDNR 29-B	Analyst: STS
TRUE TOTAL BARIUM						
True Total Barium	11,300	48		mg/Kg-dry	1	6/13/2015 8:30:25 AM

Qualifiers:

- | | |
|--|---|
| * Value exceeds Maximum Contaminant Level. | B Analyte detected in the associated Method Blank |
| C Value is below Minimum Compound Limit. | E Value above quantitation range |
| H Holding times for preparation or analysis exceeded | J Analyte detected below quantitation limits |
| M Matrix Interference | ND Not Detected at the Reporting Limit |
| R RPD outside accepted recovery limits | RL Reporting Limit |
| S Spike Recovery outside accepted recovery limits | U Analyte not detected |



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Analytical Report

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WO#: **15060355**

Date Reported: **6/25/2015**

CLIENT: ICON Environmental Services
Project: Iberville Parish SB 9090-040-0100
Lab ID: 15060355-006
Client Sample ID SB-14 0-2

Collection Date: 6/2/2015 11:30:00 AM

Matrix: SOIL

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
29B SALTS						
CATION EXCHANGE CAPACITY						Analyst: MMT
Cation Exchange Capacity	62.6	0.1		meq/100g	1	6/17/2015 12:52:00 PM
29B SALTS						Analyst: MXF
ELECTRICAL CONDUCTIVITY @ SATURATION						
Electrical Conductivity	12.6	0.10	*	mmhos/cm	1	6/11/2015 1:31:00 PM
29B SALTS						Analyst: MMT
EXCHANGEABLE SODIUM PERCENTAGE						
Exchangeable Sodium %	6.7	0.1		%	1	6/17/2015 12:52:00 PM
PERCENT MOISTURE						Analyst: MMT
Percent Moisture	61.9	1.0		wt%	1	6/8/2015 9:15:00 AM
29B SALTS						Analyst: STS
SODIUM ADSORPTION RATIO						
Sodium Adsorption Ratio	10.5	0.100			1	6/17/2015
Soluble Calcium	35.6	1.00		meq/L	1	6/17/2015
Soluble Magnesium	17.8	1.00		meq/L	1	6/17/2015
Soluble Sodium	54.4	1.00		meq/L	1	6/17/2015
29B METALS						Analyst: BAS
MERCURY IN SOIL OR SLUDGE						
Mercury	< 0.10	0.10		mg/Kg-dry	1	6/10/2015 12:07:52 PM
INORGANIC ANIONS IN LEACHATE BY IC						Analyst: TBB
Chloride	743	12.5		mg/L	50	6/18/2015 8:14:40 PM
29B METALS						Analyst: STS
METALS IN SOIL OR SLUDGE BY ICP						
Arsenic	5.65	0.99		mg/Kg-dry	1	6/13/2015 6:49:04 AM
Barium	2,440	0.99		mg/Kg-dry	1	6/13/2015 6:49:04 AM

Qualifiers:

- | | |
|--|---|
| * Value exceeds Maximum Contaminant Level. | B Analyte detected in the associated Method Blank |
| C Value is below Minimum Compound Limit. | E Value above quantitation range |
| H Holding times for preparation or analysis exceeded | J Analyte detected below quantitation limits |
| M Matrix Interference | ND Not Detected at the Reporting Limit |
| R RPD outside accepted recovery limits | RL Reporting Limit |
| S Spike Recovery outside accepted recovery limits | U Analyte not detected |



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WO#: **15060355**

Date Reported: **6/25/2015**

CLIENT: ICON Environmental Services **Collection Date:** 6/2/2015 11:30:00 AM
Project: Iberville Parish SB 9090-040-0100
Lab ID: 15060355-006 **Matrix:** SOIL
Client Sample ID SB-14 0-2

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
29B METALS					SW6010B	SW3050B
METALS IN SOIL OR SLUDGE BY ICP						Analyst: STS
Cadmium	< 0.50	0.50		mg/Kg-dry	1	6/13/2015 6:49:04 AM
Chromium	21.9	0.99		mg/Kg-dry	1	6/13/2015 6:49:04 AM
Lead	21.1	0.99		mg/Kg-dry	1	6/13/2015 6:49:04 AM
Selenium	< 1.99	1.99		mg/Kg-dry	1	6/13/2015 6:49:04 AM
Silver	< 0.50	0.50		mg/Kg-dry	1	6/13/2015 6:49:04 AM
Zinc	83.4	0.99		mg/Kg-dry	1	6/13/2015 6:49:04 AM
29B METALS					LDNR 29-B	Analyst: STS
TRUE TOTAL BARIUM						
True Total Barium	24,900	47		mg/Kg-dry	1	6/13/2015 8:34:56 AM

Qualifiers:	* Value exceeds Maximum Contaminant Level.	B Analyte detected in the associated Method Blank
	C Value is below Minimum Compound Limit.	E Value above quantitation range
	H Holding times for preparation or analysis exceeded	J Analyte detected below quantitation limits
	M Matrix Interference	ND Not Detected at the Reporting Limit
	R RPD outside accepted recovery limits	RL Reporting Limit
	S Spike Recovery outside accepted recovery limits	U Analyte not detected



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Analytical Report

(consolidated)

WO#: **15060355**

Date Reported: **6/25/2015**

CLIENT: ICON Environmental Services **Collection Date:** 6/2/2015 11:35:00 AM
Project: Iberville Parish SB 9090-040-0100
Lab ID: 15060355-007 **Matrix:** SOIL
Client Sample ID SB-14 2-4

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
29B SALTS						
CATION EXCHANGE CAPACITY						Analyst: MMT
Cation Exchange Capacity	59.5	0.1		meq/100g	1	6/17/2015 12:52:00 PM
29B SALTS						Analyst: MXF
ELECTRICAL CONDUCTIVITY @ SATURATION						
Electrical Conductivity	15.6	0.10	*	mmhos/cm	1	6/11/2015 1:31:00 PM
29B SALTS						Analyst: MMT
EXCHANGEABLE SODIUM PERCENTAGE						
Exchangeable Sodium %	8.2	0.1		%	1	6/17/2015 12:52:00 PM
PERCENT MOISTURE						Analyst: MMT
Percent Moisture	56.7	1.0		wt%	1	6/8/2015 9:15:00 AM
29B SALTS						Analyst: STS
SODIUM ADSORPTION RATIO						
Sodium Adsorption Ratio	13.7	0.100	*		1	6/17/2015
Soluble Calcium	42.1	1.00		meq/L	1	6/17/2015
Soluble Magnesium	20.6	1.00		meq/L	1	6/17/2015
Soluble Sodium	77.0	1.00		meq/L	1	6/17/2015
29B METALS						Analyst: BAS
MERCURY IN SOIL OR SLUDGE						
Mercury	< 0.10	0.10		mg/Kg-dry	1	6/10/2015 12:10:30 PM
INORGANIC ANIONS IN LEACHATE BY IC						Analyst: TBB
Chloride	932	12.5		mg/L	50	6/18/2015 8:28:25 PM
29B METALS						Analyst: STS
METALS IN SOIL OR SLUDGE BY ICP						
Arsenic	6.87	1.00		mg/Kg-dry	1	6/13/2015 6:53:54 AM
Barium	2,460	1.00		mg/Kg-dry	1	6/13/2015 6:53:54 AM

Qualifiers:

- | | |
|--|---|
| * Value exceeds Maximum Contaminant Level. | B Analyte detected in the associated Method Blank |
| C Value is below Minimum Compound Limit. | E Value above quantitation range |
| H Holding times for preparation or analysis exceeded | J Analyte detected below quantitation limits |
| M Matrix Interference | ND Not Detected at the Reporting Limit |
| R RPD outside accepted recovery limits | RL Reporting Limit |
| S Spike Recovery outside accepted recovery limits | U Analyte not detected |



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Analytical Report

(consolidated)

WO#: **15060355**

Date Reported: **6/25/2015**

CLIENT: ICON Environmental Services
Project: Iberville Parish SB 9090-040-0100
Lab ID: 15060355-007
Client Sample ID SB-14 2-4

Collection Date: 6/2/2015 11:35:00 AM

Matrix: SOIL

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
29B METALS					SW6010B	SW3050B
METALS IN SOIL OR SLUDGE BY ICP						Analyst: STS
Cadmium	< 0.50	0.50		mg/Kg-dry	1	6/13/2015 6:53:54 AM
Chromium	22.1	1.00		mg/Kg-dry	1	6/13/2015 6:53:54 AM
Lead	21.4	1.00		mg/Kg-dry	1	6/13/2015 6:53:54 AM
Selenium	< 1.99	1.99		mg/Kg-dry	1	6/13/2015 6:53:54 AM
Silver	< 0.50	0.50		mg/Kg-dry	1	6/13/2015 6:53:54 AM
Zinc	82.0	1.00		mg/Kg-dry	1	6/13/2015 6:53:54 AM
29B METALS					LDNR 29-B	Analyst: STS
TRUE TOTAL BARIUM						
True Total Barium	36,700	45		mg/Kg-dry	1	6/13/2015 8:39:28 AM

Qualifiers:	* Value exceeds Maximum Contaminant Level.	B Analyte detected in the associated Method Blank
	C Value is below Minimum Compound Limit.	E Value above quantitation range
	H Holding times for preparation or analysis exceeded	J Analyte detected below quantitation limits
	M Matrix Interference	ND Not Detected at the Reporting Limit
	R RPD outside accepted recovery limits	RL Reporting Limit
	S Spike Recovery outside accepted recovery limits	U Analyte not detected



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Analytical Report

(consolidated)

WO#: **15060355**

Date Reported: **6/25/2015**

CLIENT: ICON Environmental Services
Project: Iberville Parish SB 9090-040-0100
Lab ID: 15060355-008
Client Sample ID SB-4 4-6

Collection Date: 6/2/2015 2:30:00 PM

Matrix: SOIL

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
29B SALTS CATION EXCHANGE CAPACITY					LDNR 29-B	LDNR 29-B Analyst: MMT
Cation Exchange Capacity	64.3	0.1		meq/100g	1	6/17/2015 12:52:00 PM
29B SALTS ELECTRICAL CONDUCTIVITY @ SATURATION					LDNR 29-B	Analyst: MXF
Electrical Conductivity	5.82	0.10	*	mmhos/cm	1	6/11/2015 1:31:00 PM
29B SALTS EXCHANGEABLE SODIUM PERCENTAGE					LDNR 29-B	LDNR 29-B Analyst: MMT
Exchangeable Sodium %	23.7	0.1	*	%	1	6/17/2015 12:52:00 PM
PERCENT MOISTURE					LDNR 29-B	Analyst: MMT
Percent Moisture	35.8	1.0		wt%	1	6/8/2015 9:15:00 AM
29B SALTS SODIUM ADSORPTION RATIO					LDNR 29-B	LDNR 29-B Analyst: STS
Sodium Adsorption Ratio	25.3	0.100	*		1	6/17/2015
Soluble Calcium	3.96	1.00		meq/L	1	6/17/2015
Soluble Magnesium	1.93	1.00		meq/L	1	6/17/2015
Soluble Sodium	43.4	1.00		meq/L	1	6/17/2015
29B METALS MERCURY IN SOIL OR SLUDGE					29B/SW7471A	SW7471A Analyst: BAS
Mercury	< 0.10	0.10		mg/Kg-dry	1	6/10/2015 12:18:08 PM
INORGANIC ANIONS IN LEACHATE BY IC					SW9056A	LDNR 29-B Analyst: TBB
Chloride	395	12.5		mg/L	50	6/18/2015 8:42:10 PM
29B METALS METALS IN SOIL OR SLUDGE BY ICP					SW6010B	SW3050B Analyst: STS
Arsenic	5.01	1.00		mg/Kg-dry	1	6/13/2015 6:58:34 AM
Barium	255	1.00		mg/Kg-dry	1	6/13/2015 6:58:34 AM

Qualifiers:

- | | |
|--|---|
| * Value exceeds Maximum Contaminant Level. | B Analyte detected in the associated Method Blank |
| C Value is below Minimum Compound Limit. | E Value above quantitation range |
| H Holding times for preparation or analysis exceeded | J Analyte detected below quantitation limits |
| M Matrix Interference | ND Not Detected at the Reporting Limit |
| R RPD outside accepted recovery limits | RL Reporting Limit |
| S Spike Recovery outside accepted recovery limits | U Analyte not detected |



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Analytical Report

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WO#: **15060355**

Date Reported: **6/25/2015**

CLIENT: ICON Environmental Services
Project: Iberville Parish SB 9090-040-0100
Lab ID: 15060355-008
Client Sample ID SB-4 4-6

Collection Date: 6/2/2015 2:30:00 PM

Matrix: SOIL

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
29B METALS					SW6010B	SW3050B
METALS IN SOIL OR SLUDGE BY ICP						Analyst: STS
Cadmium	< 0.50	0.50		mg/Kg-dry	1	6/13/2015 6:58:34 AM
Chromium	16.7	1.00		mg/Kg-dry	1	6/13/2015 6:58:34 AM
Lead	14.8	1.00		mg/Kg-dry	1	6/13/2015 6:58:34 AM
Selenium	< 1.99	1.99		mg/Kg-dry	1	6/13/2015 6:58:34 AM
Silver	< 0.50	0.50		mg/Kg-dry	1	6/13/2015 6:58:34 AM
Zinc	66.6	1.00		mg/Kg-dry	1	6/13/2015 6:58:34 AM
29B METALS					LDNR 29-B	Analyst: STS
TRUE TOTAL BARIUM						
True Total Barium	569	48		mg/Kg-dry	1	6/13/2015 8:43:59 AM

Qualifiers:	* Value exceeds Maximum Contaminant Level.	B Analyte detected in the associated Method Blank
	C Value is below Minimum Compound Limit.	E Value above quantitation range
	H Holding times for preparation or analysis exceeded	J Analyte detected below quantitation limits
	M Matrix Interference	ND Not Detected at the Reporting Limit
	R RPD outside accepted recovery limits	RL Reporting Limit
	S Spike Recovery outside accepted recovery limits	U Analyte not detected



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Analytical Report

(consolidated)

WO#: 15060355

Date Reported: 6/25/2015

CLIENT: ICON Environmental Services **Collection Date:** 6/2/2015 2:35:00 PM
Project: Iberville Parish SB 9090-040-0100
Lab ID: 15060355-009 **Matrix:** SOIL
Client Sample ID SB-4 8-10

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
29B SALTS						
CATION EXCHANGE CAPACITY						Analyst: MMT
Cation Exchange Capacity	70.2	0.1		meq/100g	1	6/17/2015 12:52:00 PM
29B SALTS						Analyst: MXF
ELECTRICAL CONDUCTIVITY @ SATURATION						
Electrical Conductivity	13.8	0.10	*	mmhos/cm	1	6/11/2015 1:31:00 PM
29B SALTS						Analyst: MMT
EXCHANGEABLE SODIUM PERCENTAGE						
Exchangeable Sodium %	12.3	0.1		%	1	6/17/2015 12:52:00 PM
PERCENT MOISTURE						Analyst: MMT
Percent Moisture	41.1	1.0		wt%	1	6/8/2015 9:15:00 AM
29B SALTS						Analyst: STS
SODIUM ADSORPTION RATIO						
Sodium Adsorption Ratio	37.5	0.100	*		1	6/17/2015
Soluble Calcium	10.9	1.00		meq/L	1	6/17/2015
Soluble Magnesium	4.74	1.00		meq/L	1	6/17/2015
Soluble Sodium	105	1.00		meq/L	1	6/17/2015
29B METALS						Analyst: BAS
MERCURY IN SOIL OR SLUDGE						
Mercury	< 0.10	0.10		mg/Kg-dry	1	6/10/2015 12:20:28 PM
INORGANIC ANIONS IN LEACHATE BY IC						Analyst: TBB
Chloride	905	12.5		mg/L	50	6/18/2015 9:23:24 PM
29B METALS						Analyst: STS
METALS IN SOIL OR SLUDGE BY ICP						
Arsenic	5.14	0.99		mg/Kg-dry	1	6/13/2015 7:03:23 AM
Barium	232	0.99		mg/Kg-dry	1	6/13/2015 7:03:23 AM

Qualifiers:

- | | |
|--|---|
| * Value exceeds Maximum Contaminant Level. | B Analyte detected in the associated Method Blank |
| C Value is below Minimum Compound Limit. | E Value above quantitation range |
| H Holding times for preparation or analysis exceeded | J Analyte detected below quantitation limits |
| M Matrix Interference | ND Not Detected at the Reporting Limit |
| R RPD outside accepted recovery limits | RL Reporting Limit |
| S Spike Recovery outside accepted recovery limits | U Analyte not detected |



Element Materials Technology Lafayette
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Analytical Report

(consolidated)

WO#: **15060355**

Date Reported: **6/25/2015**

CLIENT: ICON Environmental Services
Project: Iberville Parish SB 9090-040-0100
Lab ID: 15060355-009
Client Sample ID SB-4 8-10

Collection Date: 6/2/2015 2:35:00 PM

Matrix: SOIL

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
29B METALS					SW6010B	SW3050B
METALS IN SOIL OR SLUDGE BY ICP						Analyst: STS
Cadmium	< 0.50	0.50		mg/Kg-dry	1	6/13/2015 7:03:23 AM
Chromium	15.7	0.99		mg/Kg-dry	1	6/13/2015 7:03:23 AM
Lead	13.4	0.99		mg/Kg-dry	1	6/13/2015 7:03:23 AM
Selenium	< 1.98	1.98		mg/Kg-dry	1	6/13/2015 7:03:23 AM
Silver	< 0.50	0.50		mg/Kg-dry	1	6/13/2015 7:03:23 AM
Zinc	54.0	0.99		mg/Kg-dry	1	6/13/2015 7:03:23 AM
29B METALS					LDNR 29-B	Analyst: STS
TRUE TOTAL BARIUM						
True Total Barium	379	46		mg/Kg-dry	1	6/13/2015 8:48:31 AM

Qualifiers:	* Value exceeds Maximum Contaminant Level.	B Analyte detected in the associated Method Blank
	C Value is below Minimum Compound Limit.	E Value above quantitation range
	H Holding times for preparation or analysis exceeded	J Analyte detected below quantitation limits
	M Matrix Interference	ND Not Detected at the Reporting Limit
	R RPD outside accepted recovery limits	RL Reporting Limit
	S Spike Recovery outside accepted recovery limits	U Analyte not detected



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Analytical Report

(consolidated)

WO#: **15060355**

Date Reported: **6/25/2015**

CLIENT: ICON Environmental Services
Project: Iberville Parish SB 9090-040-0100
Lab ID: 15060355-010
Client Sample ID SB-4 20-22

Collection Date: 6/2/2015 2:50:00 PM

Matrix: SOLID

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
ELECTRICAL CONDUCTIVITY @ SATURATION					LDNR 29-B	Analyst: MXF
Electrical Conductivity	53.9	0.10	*	mmhos/cm	1	6/11/2015 2:00:00 PM
PERCENT MOISTURE					LDNR 29-B	Analyst: MMT
Percent Moisture	20.6	1.0		wt%	1	6/8/2015 9:15:00 AM

Qualifiers:

- | | |
|--|---|
| * Value exceeds Maximum Contaminant Level. | B Analyte detected in the associated Method Blank |
| C Value is below Minimum Compound Limit. | E Value above quantitation range |
| H Holding times for preparation or analysis exceeded | J Analyte detected below quantitation limits |
| M Matrix Interference | ND Not Detected at the Reporting Limit |
| R RPD outside accepted recovery limits | RL Reporting Limit |
| S Spike Recovery outside accepted recovery limits | U Analyte not detected |



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Analytical Report

(consolidated)

WO#: **15060355**

Date Reported: **6/25/2015**

CLIENT: ICON Environmental Services
Project: Iberville Parish SB 9090-040-0100
Lab ID: 15060355-011
Client Sample ID SB-4 24-26

Collection Date: 6/2/2015 3:00:00 PM

Matrix: SOLID

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
ELECTRICAL CONDUCTIVITY @ SATURATION				LDNR 29-B		Analyst: MXF
Electrical Conductivity	21.9	0.10	*	mmhos/cm	1	6/11/2015 2:00:00 PM
PERCENT MOISTURE				LDNR 29-B		Analyst: MMT
Percent Moisture	38.7	1.0		wt%	1	6/8/2015 9:15:00 AM

Qualifiers:

- | | |
|--|---|
| * Value exceeds Maximum Contaminant Level. | B Analyte detected in the associated Method Blank |
| C Value is below Minimum Compound Limit. | E Value above quantitation range |
| H Holding times for preparation or analysis exceeded | J Analyte detected below quantitation limits |
| M Matrix Interference | ND Not Detected at the Reporting Limit |
| R RPD outside accepted recovery limits | RL Reporting Limit |
| S Spike Recovery outside accepted recovery limits | U Analyte not detected |



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Analytical Report

(consolidated)

WO#: **15060355**

Date Reported: **6/25/2015**

CLIENT: ICON Environmental Services
Project: Iberville Parish SB 9090-040-0100
Lab ID: 15060355-012
Client Sample ID SB-4 34-36

Collection Date: 6/2/2015 3:20:00 PM

Matrix: SOLID

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
ELECTRICAL CONDUCTIVITY @ SATURATION					LDNR 29-B	Analyst: MXF
Electrical Conductivity	4.02	0.10	*	mmhos/cm	1	6/11/2015 2:00:00 PM
PERCENT MOISTURE					LDNR 29-B	Analyst: MMT
Percent Moisture	39.9	1.0		wt%	1	6/8/2015 9:15:00 AM

Qualifiers:

- | | |
|--|---|
| * Value exceeds Maximum Contaminant Level. | B Analyte detected in the associated Method Blank |
| C Value is below Minimum Compound Limit. | E Value above quantitation range |
| H Holding times for preparation or analysis exceeded | J Analyte detected below quantitation limits |
| M Matrix Interference | ND Not Detected at the Reporting Limit |
| R RPD outside accepted recovery limits | RL Reporting Limit |
| S Spike Recovery outside accepted recovery limits | U Analyte not detected |



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Analytical Report

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WO#: **15060355**

Date Reported: **6/25/2015**

CLIENT: ICON Environmental Services
Project: Iberville Parish SB 9090-040-0100
Lab ID: 15060355-013
Client Sample ID SB-3 18-20

Collection Date: 6/2/2015 10:20:00 AM

Matrix: SOLID

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
ELECTRICAL CONDUCTIVITY @ SATURATION					LDNR 29-B	Analyst: MXF
Electrical Conductivity	22.1	0.10	*	mmhos/cm	1	6/11/2015 2:00:00 PM
PERCENT MOISTURE					LDNR 29-B	Analyst: MMT
Percent Moisture	23.9	1.0		wt%	1	6/8/2015 9:15:00 AM

Qualifiers:

- | | |
|--|---|
| * Value exceeds Maximum Contaminant Level. | B Analyte detected in the associated Method Blank |
| C Value is below Minimum Compound Limit. | E Value above quantitation range |
| H Holding times for preparation or analysis exceeded | J Analyte detected below quantitation limits |
| M Matrix Interference | ND Not Detected at the Reporting Limit |
| R RPD outside accepted recovery limits | RL Reporting Limit |
| S Spike Recovery outside accepted recovery limits | U Analyte not detected |



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Analytical Report

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WO#: **15060355**

Date Reported: **6/25/2015**

CLIENT: ICON Environmental Services
Project: Iberville Parish SB 9090-040-0100
Lab ID: 15060355-014
Client Sample ID SB-3 24-26

Collection Date: 6/2/2015 10:30:00 AM

Matrix: SOLID

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
ELECTRICAL CONDUCTIVITY @ SATURATION					LDNR 29-B	Analyst: MXF
Electrical Conductivity	6.40	0.10	*	mmhos/cm	1	6/11/2015 2:00:00 PM
PERCENT MOISTURE					LDNR 29-B	Analyst: MMT
Percent Moisture	34.3	1.0		wt%	1	6/8/2015 9:15:00 AM

Qualifiers:

- | | |
|--|---|
| * Value exceeds Maximum Contaminant Level. | B Analyte detected in the associated Method Blank |
| C Value is below Minimum Compound Limit. | E Value above quantitation range |
| H Holding times for preparation or analysis exceeded | J Analyte detected below quantitation limits |
| M Matrix Interference | ND Not Detected at the Reporting Limit |
| R RPD outside accepted recovery limits | RL Reporting Limit |
| S Spike Recovery outside accepted recovery limits | U Analyte not detected |



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Analytical Report

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WO#: **15060355**

Date Reported: **6/25/2015**

CLIENT: ICON Environmental Services
Project: Iberville Parish SB 9090-040-0100
Lab ID: 15060355-015
Client Sample ID SB-3 30-32

Collection Date: 6/2/2015 10:40:00 AM

Matrix: SOLID

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
ELECTRICAL CONDUCTIVITY @ SATURATION				LDNR 29-B		Analyst: MXF
Electrical Conductivity	2.23	0.10		mmhos/cm	1	6/11/2015 2:00:00 PM
PERCENT MOISTURE				LDNR 29-B		Analyst: MMT
Percent Moisture	25.8	1.0		wt%	1	6/8/2015 9:15:00 AM

Qualifiers:

- | | |
|--|---|
| * Value exceeds Maximum Contaminant Level. | B Analyte detected in the associated Method Blank |
| C Value is below Minimum Compound Limit. | E Value above quantitation range |
| H Holding times for preparation or analysis exceeded | J Analyte detected below quantitation limits |
| M Matrix Interference | ND Not Detected at the Reporting Limit |
| R RPD outside accepted recovery limits | RL Reporting Limit |
| S Spike Recovery outside accepted recovery limits | U Analyte not detected |



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Analytical Report

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WO#: **15060355**

Date Reported: **6/25/2015**

CLIENT: ICON Environmental Services
Project: Iberville Parish SB 9090-040-0100
Lab ID: 15060355-016
Client Sample ID SB-6 8-10

Collection Date: 6/3/2015 11:45:00 AM

Matrix: SOLID

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
29B SALTS CATION EXCHANGE CAPACITY					LDNR 29-B	LDNR 29-B Analyst: MMT
Cation Exchange Capacity	73.7	0.1		meq/100g	1	6/17/2015 12:52:00 PM
29B SALTS ELECTRICAL CONDUCTIVITY @ SATURATION					LDNR 29-B	Analyst: MXF
Electrical Conductivity	29.5	0.10	*	mmhos/cm	1	6/11/2015 2:00:00 PM
29B SALTS EXCHANGEABLE SODIUM PERCENTAGE					LDNR 29-B	LDNR 29-B Analyst: MMT
Exchangeable Sodium %	54.3	0.1	*	%	1	6/17/2015 12:52:00 PM
PERCENT MOISTURE					LDNR 29-B	Analyst: MMT
Percent Moisture	39.6	1.0		wt%	1	6/8/2015 9:15:00 AM
29B SALTS SODIUM ADSORPTION RATIO					LDNR 29-B	LDNR 29-B Analyst: STS
Sodium Adsorption Ratio	92.7	0.100	*		1	6/17/2015
Soluble Calcium	11.9	1.00		meq/L	1	6/17/2015
Soluble Magnesium	3.47	1.00		meq/L	1	6/17/2015
Soluble Sodium	257	1.00		meq/L	1	6/17/2015
29B METALS MERCURY IN SOIL OR SLUDGE					29B/SW7471A	SW7471A Analyst: BAS
Mercury	< 0.10	0.10		mg/Kg-dry	1	6/10/2015 12:22:48 PM
INORGANIC ANIONS IN LEACHATE BY IC					SW9056A	LDNR 29-B Analyst: TBB
Chloride	4,040	50.0		mg/L	200	6/18/2015 9:37:09 PM
29B METALS METALS IN SOIL OR SLUDGE BY ICP					SW6010B	SW3050B Analyst: STS
Arsenic	5.38	0.99		mg/Kg-dry	1	6/13/2015 7:07:46 AM
Barium	244	0.99		mg/Kg-dry	1	6/13/2015 7:07:46 AM

Qualifiers:

- | | |
|--|---|
| * Value exceeds Maximum Contaminant Level. | B Analyte detected in the associated Method Blank |
| C Value is below Minimum Compound Limit. | E Value above quantitation range |
| H Holding times for preparation or analysis exceeded | J Analyte detected below quantitation limits |
| M Matrix Interference | ND Not Detected at the Reporting Limit |
| R RPD outside accepted recovery limits | RL Reporting Limit |
| S Spike Recovery outside accepted recovery limits | U Analyte not detected |



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Analytical Report

(consolidated)

WO#: **15060355**

Date Reported: **6/25/2015**

CLIENT: ICON Environmental Services
Project: Iberville Parish SB 9090-040-0100
Lab ID: 15060355-016
Client Sample ID SB-6 8-10

Collection Date: 6/3/2015 11:45:00 AM

Matrix: SOLID

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
29B METALS					SW6010B	SW3050B
METALS IN SOIL OR SLUDGE BY ICP						Analyst: STS
Cadmium	< 0.50	0.50		mg/Kg-dry	1	6/13/2015 7:07:46 AM
Chromium	14.5	0.99		mg/Kg-dry	1	6/13/2015 7:07:46 AM
Lead	13.3	0.99		mg/Kg-dry	1	6/13/2015 7:07:46 AM
Selenium	< 1.98	1.98		mg/Kg-dry	1	6/13/2015 7:07:46 AM
Silver	< 0.50	0.50		mg/Kg-dry	1	6/13/2015 7:07:46 AM
Zinc	53.4	0.99		mg/Kg-dry	1	6/13/2015 7:07:46 AM
29B METALS					LDNR 29-B	Analyst: STS
TRUE TOTAL BARIUM						
True Total Barium	430	46		mg/Kg-dry	1	6/13/2015 8:53:01 AM

Qualifiers:	* Value exceeds Maximum Contaminant Level.	B Analyte detected in the associated Method Blank
	C Value is below Minimum Compound Limit.	E Value above quantitation range
	H Holding times for preparation or analysis exceeded	J Analyte detected below quantitation limits
	M Matrix Interference	ND Not Detected at the Reporting Limit
	R RPD outside accepted recovery limits	RL Reporting Limit
	S Spike Recovery outside accepted recovery limits	U Analyte not detected



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Analytical Report

(consolidated)

WO#: **15060355**

Date Reported: **6/25/2015**

CLIENT: ICON Environmental Services
Project: Iberville Parish SB 9090-040-0100
Lab ID: 15060355-017
Client Sample ID SB-6 16-18

Collection Date: 6/3/2015 11:50:00 AM

Matrix: SOLID

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
ELECTRICAL CONDUCTIVITY @ SATURATION					LDNR 29-B	Analyst: MXF
Electrical Conductivity	65.0	0.10	*	mmhos/cm	1	6/11/2015 2:00:00 PM
PERCENT MOISTURE					LDNR 29-B	Analyst: MMT
Percent Moisture	23.6	1.0		wt%	1	6/8/2015 9:15:00 AM

Qualifiers:	* Value exceeds Maximum Contaminant Level.	B Analyte detected in the associated Method Blank
	C Value is below Minimum Compound Limit.	E Value above quantitation range
	H Holding times for preparation or analysis exceeded	J Analyte detected below quantitation limits
	M Matrix Interference	ND Not Detected at the Reporting Limit
	R RPD outside accepted recovery limits	RL Reporting Limit
	S Spike Recovery outside accepted recovery limits	U Analyte not detected



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Analytical Report

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WO#: **15060355**

Date Reported: **6/25/2015**

CLIENT: ICON Environmental Services
Project: Iberville Parish SB 9090-040-0100
Lab ID: 15060355-018
Client Sample ID SB-6 24-26

Collection Date: 6/3/2015 12:10:00 PM

Matrix: SOLID

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
ELECTRICAL CONDUCTIVITY @ SATURATION					LDNR 29-B	Analyst: MXF
Electrical Conductivity	45.4	0.10	*	mmhos/cm	1	6/11/2015 2:00:00 PM
PERCENT MOISTURE					LDNR 29-B	Analyst: MMT
Percent Moisture	34.4	1.0		wt%	1	6/8/2015 9:15:00 AM

Qualifiers:

- | | |
|--|---|
| * Value exceeds Maximum Contaminant Level. | B Analyte detected in the associated Method Blank |
| C Value is below Minimum Compound Limit. | E Value above quantitation range |
| H Holding times for preparation or analysis exceeded | J Analyte detected below quantitation limits |
| M Matrix Interference | ND Not Detected at the Reporting Limit |
| R RPD outside accepted recovery limits | RL Reporting Limit |
| S Spike Recovery outside accepted recovery limits | U Analyte not detected |



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Analytical Report

(consolidated)

WO#: **15060355**

Date Reported: **6/25/2015**

CLIENT: ICON Environmental Services **Collection Date:** 6/4/2015 11:00:00 AM
Project: Iberville Parish SB 9090-040-0100
Lab ID: 15060355-019 **Matrix:** AQUEOUS
Client Sample ID SB-5

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
TPH-D/O IN WATER BY SW8015					SW8015B	Analyst: MMV
TPH DRO/ORO IN WATER BY SW8015					SW3510C	
TPH (Diesel Range)	5.36	0.14		mg/L	1	6/9/2015 2:27:00 PM
TPH (Oil Range)	0.47	0.12		mg/L	1	6/9/2015 2:27:00 PM
Surr: 4-Terphenyl-d14	74.3	36.8 - 128		%REC	1	6/9/2015 2:27:00 PM
BTEX/TPH-G IN WATER BY SW8021/8015					SW8015B	Analyst: MMV
TPH-GRO IN WATER BY SW8015						
TPH (Gasoline Range)	1.92	0.15		mg/L	1	6/11/2015 1:34:00 AM
Surr: alpha, alpha, alpha-Trifluorotoluene	97.6	70 - 130		%REC	1	6/11/2015 1:34:00 AM
NOTES: The pH of the sample was greater than 2. Analysis was performed within the 7 day holding time for unpreserved samples.						
BTEX/TPH-G IN WATER BY SW8021/8015					SW8021B	Analyst: MMV
BTEX IN WATER BY SW8021						
Benzene	0.376	0.0500		mg/L	10	6/11/2015 10:03:00 PM
Ethylbenzene	0.0737	0.00500		mg/L	1	6/11/2015 1:34:00 AM
Toluene	< 0.0100	0.0100		mg/L	1	6/11/2015 1:34:00 AM
Xylenes, Total	< 0.0500	0.0500		mg/L	1	6/11/2015 1:34:00 AM
Surr: alpha, alpha, alpha-Trifluorotoluene	93.0	70 - 130		%REC	10	6/11/2015 10:03:00 PM
Surr: alpha, alpha, alpha-Trifluorotoluene	103	70 - 130		%REC	1	6/11/2015 1:34:00 AM
NOTES: The pH of the sample was greater than 2. Analysis was performed within the 7 day holding time for unpreserved samples.						
MERCURY IN GROUND WATER,TOTAL					SW7470A	Analyst: BAS
Mercury	< 0.0002	0.0002		mg/L	1	6/9/2015 2:44:36 PM
INORGANIC ANIONS IN WATER BY IC					SW9056A	Analyst: TBB
Chloride	26,300	500		mg/L	2000	6/10/2015 9:18:59 AM
Sulfate	< 25.0	25.0		mg/L	100	6/10/2015 11:22:39 AM

Qualifiers:	* Value exceeds Maximum Contaminant Level.	B Analyte detected in the associated Method Blank
	C Value is below Minimum Compound Limit.	E Value above quantitation range
	H Holding times for preparation or analysis exceeded	J Analyte detected below quantitation limits
	M Matrix Interference	ND Not Detected at the Reporting Limit
	R RPD outside accepted recovery limits	RL Reporting Limit
	S Spike Recovery outside accepted recovery limits	U Analyte not detected



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Analytical Report

(consolidated)

WO#: **15060355**

Date Reported: **6/25/2015**

CLIENT: ICON Environmental Services
Project: Iberville Parish SB 9090-040-0100
Lab ID: 15060355-019
Client Sample ID SB-5

Collection Date: 6/4/2015 11:00:00 AM

Matrix: AQUEOUS

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
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METALS IN WATER BY ICP, TOTALS

SW6010B

Analyst: **STS**

Arsenic	< 0.010	0.010		mg/L	1	6/9/2015 5:01:51 PM
Barium	4.86	0.010		mg/L	1	6/9/2015 5:01:51 PM
Cadmium	< 0.005	0.005		mg/L	1	6/9/2015 5:01:51 PM
Calcium	1,400	50.0		mg/L	100	6/9/2015 4:53:48 PM
Chromium	< 0.010	0.010		mg/L	1	6/9/2015 5:01:51 PM
Iron	57.4	1.00		mg/L	100	6/9/2015 4:53:48 PM
Lead	< 0.010	0.010		mg/L	1	6/9/2015 5:01:51 PM
Magnesium	268	5.00		mg/L	10	6/9/2015 4:57:59 PM
Manganese	4.08	0.010		mg/L	1	6/9/2015 5:01:51 PM
Potassium	61.0	5.00		mg/L	1	6/9/2015 5:01:51 PM
Sodium	15,400	500		mg/L	100	6/9/2015 4:53:48 PM
Strontium	159	10.0		mg/L	1000	6/9/2015 5:07:27 PM
Zinc	0.039	0.010		mg/L	1	6/9/2015 5:01:51 PM

ALKALINITY; TOTAL, CARB, BICARB

SM2320 B

Analyst: **TBB**

Alkalinity, Bicarbonate (As CaCO3)	880	10		mgCaCO3/L	1	6/9/2015 12:00:53 PM
Alkalinity, Carbonate (As CaCO3)	< 10	10		mgCaCO3/L	1	6/9/2015 12:00:53 PM
Alkalinity, Total (As CaCO3)	880	10		mgCaCO3/L	1	6/9/2015 12:00:53 PM

TOTAL DISSOLVED SOLIDS

SM2540C

Analyst: **GMS**

Total Dissolved Solids (Residue, Filterable)	40,000	2,000		mg/L	100	6/9/2015 7:41:00 AM
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Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
C	Value is below Minimum Compound Limit.	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
M	Matrix Interference	ND	Not Detected at the Reporting Limit
R	RPD outside accepted recovery limits	RL	Reporting Limit
S	Spike Recovery outside accepted recovery limits	U	Analyte not detected



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Analytical Report

(consolidated)

WO#: **15060355**

Date Reported: **6/25/2015**

CLIENT: ICON Environmental Services
Project: Iberville Parish SB 9090-040-0100
Lab ID: 15060355-020
Client Sample ID SB-6 32-34

Collection Date: 6/3/2015 2:05:00 PM

Matrix: SOIL

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
ELECTRICAL CONDUCTIVITY @ SATURATION				LDNR 29-B		Analyst: MXF
Electrical Conductivity	17.1	0.10	*	mmhos/cm	1	6/11/2015 2:00:00 PM
PERCENT MOISTURE				LDNR 29-B		Analyst: MMT
Percent Moisture	34.7	1.0		wt%	1	6/8/2015 9:15:00 AM

Qualifiers:	* Value exceeds Maximum Contaminant Level.	B Analyte detected in the associated Method Blank
	C Value is below Minimum Compound Limit.	E Value above quantitation range
	H Holding times for preparation or analysis exceeded	J Analyte detected below quantitation limits
	M Matrix Interference	ND Not Detected at the Reporting Limit
	R RPD outside accepted recovery limits	RL Reporting Limit
	S Spike Recovery outside accepted recovery limits	U Analyte not detected



Element Materials Technology Lafayette
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Analytical Report

(consolidated)

WO#: **15060355**

Date Reported: **6/25/2015**

CLIENT: ICON Environmental Services
Project: Iberville Parish SB 9090-040-0100
Lab ID: 15060355-021
Client Sample ID SB-5 8-10

Collection Date: 6/3/2015 4:05:00 PM

Matrix: SOIL

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
29B SALTS						
CATION EXCHANGE CAPACITY						
Cation Exchange Capacity	76.1	0.1		meq/100g	1	6/17/2015 12:52:00 PM
29B SALTS						
ELECTRICAL CONDUCTIVITY @ SATURATION						
Electrical Conductivity	25.2	0.10	*	mmhos/cm	1	6/11/2015 2:00:00 PM
29B SALTS						
EXCHANGEABLE SODIUM PERCENTAGE						
Exchangeable Sodium %	51.2	0.1	*	%	1	6/17/2015 12:52:00 PM
PERCENT MOISTURE						
Percent Moisture	43.6	1.0		wt%	1	6/8/2015 10:45:00 AM
29B SALTS						
SODIUM ADSORPTION RATIO						
Sodium Adsorption Ratio	88.3	0.100	*		1	6/17/2015
Soluble Calcium	9.93	1.00		meq/L	1	6/17/2015
Soluble Magnesium	1.98	1.00		meq/L	1	6/17/2015
Soluble Sodium	215	1.00		meq/L	1	6/17/2015
TPH-D/O IN SOIL BY SW8015						
TPH DRO/ORO IN SOIL BY SW8015						
TPH (Diesel Range)	62.4	50.0		mg/Kg	10	6/16/2015 1:32:00 AM
TPH (Oil Range)	< 50.0	50.0		mg/Kg	10	6/16/2015 1:32:00 AM
Surr: 4-Terphenyl-d14	59.2	33 - 152		%REC	10	6/16/2015 1:32:00 AM
29B METALS						
MERCURY IN SOIL OR SLUDGE						
Mercury	< 0.10	0.10		mg/Kg-dry	1	6/10/2015 12:25:09 PM
INORGANIC ANIONS IN LEACHATE BY IC						

Qualifiers:

- | | |
|--|---|
| * Value exceeds Maximum Contaminant Level. | B Analyte detected in the associated Method Blank |
| C Value is below Minimum Compound Limit. | E Value above quantitation range |
| H Holding times for preparation or analysis exceeded | J Analyte detected below quantitation limits |
| M Matrix Interference | ND Not Detected at the Reporting Limit |
| R RPD outside accepted recovery limits | RL Reporting Limit |
| S Spike Recovery outside accepted recovery limits | U Analyte not detected |



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Analytical Report

(consolidated)

WO#: **15060355**

Date Reported: **6/25/2015**

CLIENT: ICON Environmental Services
Project: Iberville Parish SB 9090-040-0100
Lab ID: 15060355-021
Client Sample ID SB-5 8-10

Collection Date: 6/3/2015 4:05:00 PM

Matrix: SOIL

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
INORGANIC ANIONS IN LEACHATE BY IC					SW9056A	Analyst: TBB
Chloride	3,470	50.0		mg/L	200	6/23/2015 1:18:56 PM
29B METALS METALS IN SOIL OR SLUDGE BY ICP					SW6010B SW3050B	Analyst: STS
Arsenic	6.55	0.99		mg/Kg-dry	1	6/13/2015 7:21:05 AM
Barium	354	0.99		mg/Kg-dry	1	6/13/2015 7:21:05 AM
Cadmium	< 0.50	0.50		mg/Kg-dry	1	6/13/2015 7:21:05 AM
Chromium	15.0	0.99		mg/Kg-dry	1	6/13/2015 7:21:05 AM
Lead	13.8	0.99		mg/Kg-dry	1	6/13/2015 7:21:05 AM
Selenium	< 1.99	1.99		mg/Kg-dry	1	6/13/2015 7:21:05 AM
Silver	< 0.50	0.50		mg/Kg-dry	1	6/13/2015 7:21:05 AM
Zinc	53.6	0.99		mg/Kg-dry	1	6/13/2015 7:21:05 AM
29B METALS TRUE TOTAL BARIUM					LDNR 29-B	Analyst: STS
True Total Barium	957	47		mg/Kg-dry	1	6/13/2015 8:57:33 AM

Qualifiers:	* Value exceeds Maximum Contaminant Level.	B Analyte detected in the associated Method Blank
	C Value is below Minimum Compound Limit.	E Value above quantitation range
	H Holding times for preparation or analysis exceeded	J Analyte detected below quantitation limits
	M Matrix Interference	ND Not Detected at the Reporting Limit
	R RPD outside accepted recovery limits	RL Reporting Limit
	S Spike Recovery outside accepted recovery limits	U Analyte not detected



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Analytical Report

(consolidated)

WO#: **15060355**

Date Reported: **6/25/2015**

CLIENT: ICON Environmental Services
Project: Iberville Parish SB 9090-040-0100
Lab ID: 15060355-022
Client Sample ID SB-5 6-8

Collection Date: 6/3/2015 4:00:00 PM

Matrix: SOIL

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
29B SALTS						
CATION EXCHANGE CAPACITY					LDNR 29-B	LDNR 29-B Analyst: MMT
Cation Exchange Capacity	67.3	0.1		meq/100g	1	6/17/2015 12:52:00 PM
29B SALTS						
ELECTRICAL CONDUCTIVITY @ SATURATION					LDNR 29-B	Analyst: MXF
Electrical Conductivity	9.20	0.10	*	mmhos/cm	1	6/11/2015 2:00:00 PM
29B SALTS						
EXCHANGEABLE SODIUM PERCENTAGE					LDNR 29-B	LDNR 29-B Analyst: MMT
Exchangeable Sodium %	56.8	0.1	*	%	1	6/17/2015 12:52:00 PM
PERCENT MOISTURE						
					LDNR 29-B	Analyst: MMT
Percent Moisture	34.3	1.0		wt%	1	6/8/2015 10:45:00 AM
29B SALTS						
SODIUM ADSORPTION RATIO					LDNR 29-B	LDNR 29-B Analyst: STS
Sodium Adsorption Ratio	64.0	0.100	*		1	6/17/2015
Soluble Calcium	2.20	1.00		meq/L	1	6/17/2015
Soluble Magnesium	< 1.00	1.00		meq/L	1	6/17/2015
Soluble Sodium	74.9	1.00		meq/L	1	6/17/2015
TPH-D/O IN SOIL BY SW8015						
					SW8015B	SW3550C Analyst: MMV
TPH DRO/ORO IN SOIL BY SW8015						
TPH (Diesel Range)	3,180	1,000		mg/Kg	100	6/16/2015 10:24:00 PM
TPH (Oil Range)	2,390	1,000		mg/Kg	100	6/16/2015 10:24:00 PM
Surr: 4-Terphenyl-d14	0	33 - 152	SD	%REC	100	6/16/2015 10:24:00 PM
NOTES:						
SD - Surrogate diluted out due to dilution.						
29B METALS						
MERCURY IN SOIL OR SLUDGE					29B/SW7471A	SW7471A Analyst: BAS
Mercury	< 0.10	0.10		mg/Kg-dry	1	6/10/2015 12:27:29 PM

Qualifiers:

- | | |
|--|---|
| * Value exceeds Maximum Contaminant Level. | B Analyte detected in the associated Method Blank |
| C Value is below Minimum Compound Limit. | E Value above quantitation range |
| H Holding times for preparation or analysis exceeded | J Analyte detected below quantitation limits |
| M Matrix Interference | ND Not Detected at the Reporting Limit |
| R RPD outside accepted recovery limits | RL Reporting Limit |
| S Spike Recovery outside accepted recovery limits | U Analyte not detected |



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Analytical Report

(consolidated)

WO#: **15060355**

Date Reported: **6/25/2015**

CLIENT: ICON Environmental Services
Project: Iberville Parish SB 9090-040-0100
Lab ID: 15060355-022
Client Sample ID SB-5 6-8

Collection Date: 6/3/2015 4:00:00 PM

Matrix: SOIL

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
INORGANIC ANIONS IN LEACHATE BY IC				SW9056A	LDNR 29-B	Analyst: TBB
Chloride	1,500	25.0		mg/L	100	6/18/2015 9:50:53 PM
29B METALS METALS IN SOIL OR SLUDGE BY ICP				SW6010B	SW3050B	Analyst: STS
Arsenic	5.39	0.99		mg/Kg-dry	1	6/13/2015 7:25:39 AM
Barium	154	0.99		mg/Kg-dry	1	6/13/2015 7:25:39 AM
Cadmium	< 0.50	0.50		mg/Kg-dry	1	6/13/2015 7:25:39 AM
Chromium	16.2	0.99		mg/Kg-dry	1	6/13/2015 7:25:39 AM
Lead	14.3	0.99		mg/Kg-dry	1	6/13/2015 7:25:39 AM
Selenium	< 1.99	1.99		mg/Kg-dry	1	6/13/2015 7:25:39 AM
Silver	< 0.50	0.50		mg/Kg-dry	1	6/13/2015 7:25:39 AM
Zinc	66.2	0.99		mg/Kg-dry	1	6/13/2015 7:25:39 AM
29B METALS TRUE TOTAL BARIUM				LDNR 29-B		Analyst: STS
True Total Barium	281	47		mg/Kg-dry	1	6/13/2015 9:11:04 AM

Qualifiers:	* Value exceeds Maximum Contaminant Level.	B Analyte detected in the associated Method Blank
	C Value is below Minimum Compound Limit.	E Value above quantitation range
	H Holding times for preparation or analysis exceeded	J Analyte detected below quantitation limits
	M Matrix Interference	ND Not Detected at the Reporting Limit
	R RPD outside accepted recovery limits	RL Reporting Limit
	S Spike Recovery outside accepted recovery limits	U Analyte not detected



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Analytical Report

(consolidated)

WO#: **15060355**

Date Reported: **6/25/2015**

CLIENT: ICON Environmental Services
Project: Iberville Parish SB 9090-040-0100
Lab ID: 15060355-023
Client Sample ID SB-3 12-14

Collection Date: 6/2/2015 10:10:00 AM

Matrix: SOIL

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
ELECTRICAL CONDUCTIVITY @ SATURATION					LDNR 29-B	Analyst: MXF
Electrical Conductivity	9.22	0.10	*	mmhos/cm	1	6/11/2015 2:00:00 PM
PERCENT MOISTURE					LDNR 29-B	Analyst: MMT
Percent Moisture	26.6	1.0		wt%	1	6/8/2015 10:45:00 AM

Qualifiers:

- | | |
|--|---|
| * Value exceeds Maximum Contaminant Level. | B Analyte detected in the associated Method Blank |
| C Value is below Minimum Compound Limit. | E Value above quantitation range |
| H Holding times for preparation or analysis exceeded | J Analyte detected below quantitation limits |
| M Matrix Interference | ND Not Detected at the Reporting Limit |
| R RPD outside accepted recovery limits | RL Reporting Limit |
| S Spike Recovery outside accepted recovery limits | U Analyte not detected |



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Analytical Report

(consolidated)

WO#: **15060355**

Date Reported: **6/25/2015**

CLIENT: ICON Environmental Services
Project: Iberville Parish SB 9090-040-0100
Lab ID: 15060355-024
Client Sample ID SB-5 16-18

Collection Date: 6/3/2015 4:20:00 PM

Matrix: SOIL

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
ELECTRICAL CONDUCTIVITY @ SATURATION					LDNR 29-B	Analyst: MXF
Electrical Conductivity	42.9	0.10	*	mmhos/cm	1	6/11/2015 2:00:00 PM
PERCENT MOISTURE					LDNR 29-B	Analyst: MMT
Percent Moisture	25.5	1.0		wt%	1	6/8/2015 10:45:00 AM

Qualifiers:

- | | |
|--|---|
| * Value exceeds Maximum Contaminant Level. | B Analyte detected in the associated Method Blank |
| C Value is below Minimum Compound Limit. | E Value above quantitation range |
| H Holding times for preparation or analysis exceeded | J Analyte detected below quantitation limits |
| M Matrix Interference | ND Not Detected at the Reporting Limit |
| R RPD outside accepted recovery limits | RL Reporting Limit |
| S Spike Recovery outside accepted recovery limits | U Analyte not detected |



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Analytical Report

(consolidated)

WO#: **15060355**

Date Reported: **6/25/2015**

CLIENT: ICON Environmental Services
Project: Iberville Parish SB 9090-040-0100
Lab ID: 15060355-025
Client Sample ID SB-5 20-22

Collection Date: 6/3/2015 4:30:00 PM

Matrix: SOIL

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
ELECTRICAL CONDUCTIVITY @ SATURATION				LDNR 29-B		Analyst: MXF
Electrical Conductivity	40.5	0.10	*	mmhos/cm	1	6/11/2015 2:00:00 PM
PERCENT MOISTURE				LDNR 29-B		Analyst: MMT
Percent Moisture	35.2	1.0		wt%	1	6/8/2015 10:45:00 AM

Qualifiers:

- | | | | |
|---|--|----|---|
| * | Value exceeds Maximum Contaminant Level. | B | Analyte detected in the associated Method Blank |
| C | Value is below Minimum Compound Limit. | E | Value above quantitation range |
| H | Holding times for preparation or analysis exceeded | J | Analyte detected below quantitation limits |
| M | Matrix Interference | ND | Not Detected at the Reporting Limit |
| R | RPD outside accepted recovery limits | RL | Reporting Limit |
| S | Spike Recovery outside accepted recovery limits | U | Analyte not detected |



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Analytical Report

(consolidated)

WO#: **15060355**

Date Reported: **6/25/2015**

CLIENT: ICON Environmental Services
Project: Iberville Parish SB 9090-040-0100
Lab ID: 15060355-026
Client Sample ID SB-5 32-34

Collection Date: 6/4/2015 12:10:00 PM

Matrix: SOIL

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
ELECTRICAL CONDUCTIVITY @ SATURATION					LDNR 29-B	Analyst: MXF
Electrical Conductivity	18.8	0.10	*	mmhos/cm	1	6/11/2015 2:00:00 PM
PERCENT MOISTURE					LDNR 29-B	Analyst: MMT
Percent Moisture	36.7	1.0		wt%	1	6/8/2015 10:45:00 AM

Qualifiers:

- | | |
|--|---|
| * Value exceeds Maximum Contaminant Level. | B Analyte detected in the associated Method Blank |
| C Value is below Minimum Compound Limit. | E Value above quantitation range |
| H Holding times for preparation or analysis exceeded | J Analyte detected below quantitation limits |
| M Matrix Interference | ND Not Detected at the Reporting Limit |
| R RPD outside accepted recovery limits | RL Reporting Limit |
| S Spike Recovery outside accepted recovery limits | U Analyte not detected |



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QC SUMMARY REPORT

WO#: 15060355
 25-Jun-15

Client: ICON Environmental Services
Project: Iberville Parish SB 9090-040-0100

BatchID: 15493

Sample ID	LCS-D15493	SampType:	LCS	TestCode:	8015_DO_W	Units:	mg/L	Prep Date:	6/8/2015	RunNo:	44354			
Client ID:	LCSW	Batch ID:	15493	TestNo:	SW8015B		SW3510C	Analysis Date:	6/9/2015	SeqNo:	1067219			
Analyte		Result		PQL	SPK value	SPK Ref Val		%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

TPH (Diesel Range)	2.87	0.13	3.00	0	95.7	62.3	110
Surr: 4-Terphenyl-d14	0.07		0.10		71.5	36.8	128

Sample ID	LCSD-D15493	SampType:	LCSD	TestCode:	8015_DO_W	Units:	mg/L	Prep Date:	6/8/2015	RunNo:	44354			
Client ID:	LCSS02	Batch ID:	15493	TestNo:	SW8015B		SW3510C	Analysis Date:	6/9/2015	SeqNo:	1067220			
Analyte		Result		PQL	SPK value	SPK Ref Val		%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

TPH (Diesel Range)	2.89	0.13	3.00	0	96.2	62.3	110	2.87	0.52	14.1
Surr: 4-Terphenyl-d14	0.07		0.10		66.3	36.8	128		0	40

Sample ID	LCSD-M15493	SampType:	LCSD	TestCode:	8015_DO_W	Units:	mg/L	Prep Date:	6/8/2015	RunNo:	44354			
Client ID:	LCSS02	Batch ID:	15493	TestNo:	SW8015B		SW3510C	Analysis Date:	6/9/2015	SeqNo:	1067221			
Analyte		Result		PQL	SPK value	SPK Ref Val		%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

TPH (Oil Range)	2.59	0.12	3.00	0	86.5	63.8	124	2.73	4.96	23.2
Surr: 4-Terphenyl-d14	0.05		0.10		53.7	36.8	128		0	40

Sample ID	LCS-M15493	SampType:	LCS	TestCode:	8015_DO_W	Units:	mg/L	Prep Date:	6/8/2015	RunNo:	44354			
Client ID:	LCSW	Batch ID:	15493	TestNo:	SW8015B		SW3510C	Analysis Date:	6/9/2015	SeqNo:	1067222			
Analyte		Result		PQL	SPK value	SPK Ref Val		%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

TPH (Oil Range)	2.73	0.12	3.00	0	90.9	63.8	124
-----------------	------	------	------	---	------	------	-----

Qualifiers:

* Value exceeds Maximum Contaminant Level.	B Analyte detected in the associated Method Blank	C Value is below Minimum Compound Limit.
E Value above quantitation range	H Holding times for preparation or analysis exceeded	J Analyte detected below quantitation limits
M Matrix Interference	ND Not Detected at the Reporting Limit	R RPD outside accepted recovery limits
RL Reporting Limit	S Spike Recovery outside accepted recovery limits	U Analyte not detected



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QC SUMMARY REPORT

WO#: 15060355
 25-Jun-15

Client: ICON Environmental Services
Project: Iberville Parish SB 9090-040-0100

BatchID: 15493

Sample ID	LCS-M15493	SampType:	LCS	TestCode:	8015_DO_W	Units:	mg/L	Prep Date:	6/8/2015	RunNo:	44354			
Client ID:	LCSW	Batch ID:	15493	TestNo:	SW8015B	SW3510C		Analysis Date:	6/9/2015	SeqNo:	1067222			
Analyte		Result		PQL	SPK value	SPK Ref Val		%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Surr: 4-Terphenyl-d14		0.06			0.10			57.2	36.8	128				

Sample ID	MB-15493	SampType:	MBLK	TestCode:	8015_DO_W	Units:	mg/L	Prep Date:	6/8/2015	RunNo:	44354			
Client ID:	PBW	Batch ID:	15493	TestNo:	SW8015B	SW3510C		Analysis Date:	6/9/2015	SeqNo:	1067223			
Analyte		Result		PQL	SPK value	SPK Ref Val		%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
TPH (Diesel Range)		< 0.13		0.13										
TPH (Oil Range)		< 0.12		0.12										
Surr: 4-Terphenyl-d14		0.07			0.10			67.9	36.8	128				

Sample ID	15493-DCS 0.1PPM	SampType:	DCS	TestCode:	8015_DO_W	Units:	%REC	Prep Date:	6/8/2015	RunNo:	44354			
Client ID:	ZZZZZ	Batch ID:	15493	TestNo:	SW8015B	SW3510C		Analysis Date:	6/9/2015	SeqNo:	1067224			
Analyte		Result		PQL	SPK value	SPK Ref Val		%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Surr: 4-Terphenyl-d14		0.06												

Qualifiers:	* Value exceeds Maximum Contaminant Level.	B Analyte detected in the associated Method Blank	C Value is below Minimum Compound Limit.
	E Value above quantitation range	H Holding times for preparation or analysis exceeded	J Analyte detected below quantitation limits
	M Matrix Interference	ND Not Detected at the Reporting Limit	R RPD outside accepted recovery limits
	RL Reporting Limit	S Spike Recovery outside accepted recovery limits	U Analyte not detected



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QC SUMMARY REPORT

WO#: 15060355
 25-Jun-15

Client: ICON Environmental Services
Project: Iberville Parish SB 9090-040-0100

BatchID: 15495

Sample ID	MB-15495	SampType:	MBLK	TestCode:	6010_W	Units:	mg/L	Prep Date:	6/8/2015	RunNo:	44346
Client ID:	PBW	Batch ID:	15495	TestNo:	SW6010B	Analysis Date:	6/9/2015	SeqNo:	1066850		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	< 0.010	0.010									
Barium	< 0.010	0.010									
Cadmium	< 0.005	0.005									
Calcium	< 0.500	0.500									
Chromium	< 0.010	0.010									
Iron	< 0.010	0.010									
Lead	< 0.010	0.010									
Magnesium	< 0.500	0.500									
Manganese	< 0.010	0.010									
Potassium	< 5.00	5.00									
Sodium	< 5.00	5.00									
Strontium	< 0.010	0.010									
Zinc	< 0.010	0.010									

Sample ID	LCS-15495	SampType:	LCS	TestCode:	6010_W	Units:	mg/L	Prep Date:	6/8/2015	RunNo:	44346
Client ID:	LCSW	Batch ID:	15495	TestNo:	SW6010B	Analysis Date:	6/9/2015	SeqNo:	1066851		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	0.514	0.010	0.500	0	103	80	120				
Barium	0.523	0.010	0.500	0	105	80	120				
Cadmium	0.524	0.005	0.500	0	105	80	120				
Calcium	52.2	0.500	50.00	0	104	80	120				
Chromium	0.519	0.010	0.500	0	104	80	120				
Iron	0.528	0.010	0.500	0	106	80	120				
Lead	0.519	0.010	0.500	0	104	80	120				

Qualifiers:	* Value exceeds Maximum Contaminant Level.	B Analyte detected in the associated Method Blank	C Value is below Minimum Compound Limit.
	E Value above quantitation range	H Holding times for preparation or analysis exceeded	J Analyte detected below quantitation limits
	M Matrix Interference	ND Not Detected at the Reporting Limit	R RPD outside accepted recovery limits
	RL Reporting Limit	S Spike Recovery outside accepted recovery limits	U Analyte not detected



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QC SUMMARY REPORT

WO#: 15060355
 25-Jun-15

Client: ICON Environmental Services
Project: Iberville Parish SB 9090-040-0100

BatchID: 15495

Sample ID	LCS-15495	SampType:	LCS	TestCode:	6010_W	Units:	mg/L	Prep Date:	6/8/2015	RunNo:	44346
Client ID:	LCSW	Batch ID:	15495	TestNo:	SW6010B			Analysis Date:	6/9/2015	SeqNo:	1066851
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Magnesium	52.4	0.500	50.00	0	105	80	120				
Manganese	0.520	0.010	0.500	0	104	80	120				
Potassium	50.4	5.00	50.00	0	101	80	120				
Sodium	52.0	5.00	50.00	0	104	80	120				
Strontium	0.506	0.010	0.500	0	101	80	120				
Zinc	0.525	0.010	0.500	0	105	80	120				

Sample ID	LCSD-15495	SampType:	LCSD	TestCode:	6010_W	Units:	mg/L	Prep Date:	6/8/2015	RunNo:	44346
Client ID:	LCSS02	Batch ID:	15495	TestNo:	SW6010B			Analysis Date:	6/9/2015	SeqNo:	1066852
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	0.523	0.010	0.500	0	105	80	120	0.514	1.72	20	
Barium	0.524	0.010	0.500	0	105	80	120	0.523	0.134	20	
Cadmium	0.524	0.005	0.500	0	105	80	120	0.524	0	20	
Calcium	51.5	0.500	50.00	0	103	80	120	52.16	1.27	20	
Chromium	0.517	0.010	0.500	0	103	80	120	0.519	0.289	20	
Iron	0.528	0.010	0.500	0	106	80	120	0.528	0	20	
Lead	0.517	0.010	0.500	0	103	80	120	0.519	0.270	20	
Magnesium	52.1	0.500	50.00	0	104	80	120	52.36	0.498	20	
Manganese	0.520	0.010	0.500	0	104	80	120	0.520	0.058	20	
Potassium	49.9	5.00	50.00	0	99.7	80	120	50.42	1.10	20	
Sodium	51.4	5.00	50.00	0	103	80	120	52.03	1.24	20	
Strontium	0.504	0.010	0.500	0	101	80	120	0.506	0.436	20	
Zinc	0.524	0.010	0.500	0	105	80	120	0.525	0.057	20	

Qualifiers:

* Value exceeds Maximum Contaminant Level.	B Analyte detected in the associated Method Blank	C Value is below Minimum Compound Limit.
E Value above quantitation range	H Holding times for preparation or analysis exceeded	J Analyte detected below quantitation limits
M Matrix Interference	ND Not Detected at the Reporting Limit	R RPD outside accepted recovery limits
RL Reporting Limit	S Spike Recovery outside accepted recovery limits	U Analyte not detected



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QC SUMMARY REPORT

WO#: 15060355
 25-Jun-15

Client: ICON Environmental Services
Project: Iberville Parish SB 9090-040-0100

BatchID: 15495

Sample ID	15060265-007BMS	SampType:	MS	TestCode:	6010_W	Units:	mg/L	Prep Date:	6/8/2015	RunNo:	44346
Client ID:	ZZZZZZ	Batch ID:	15495	TestNo:	SW6010B			Analysis Date:	6/9/2015	SeqNo:	1066860
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	0.552	0.010	0.500	0.045	101	75	125				
Barium	1.06	0.010	0.500	0.574	98.1	75	125				
Cadmium	0.482	0.005	0.500	0.002	96.0	75	125				
Calcium	122	0.500	50.00	71.04	101	75	125				
Chromium	0.526	0.010	0.500	0.040	97.1	75	125				
Iron	39.8	0.010	0.500	37.51	454	75	125				S
Lead	0.500	0.010	0.500	0.020	95.9	75	125				
Magnesium	77.2	0.500	50.00	26.17	102	75	125				
Manganese	5.04	0.010	0.500	4.615	84.6	75	125				
Potassium	53.5	5.00	50.00	4.759	97.5	75	125				
Sodium	69.3	5.00	50.00	18.50	102	75	125				
Zinc	0.690	0.010	0.500	0.214	95.3	75	125				

Sample ID	15060265-007BMSD	SampType:	MSD	TestCode:	6010_W	Units:	mg/L	Prep Date:	6/8/2015	RunNo:	44346
Client ID:	ZZZZZZ	Batch ID:	15495	TestNo:	SW6010B			Analysis Date:	6/9/2015	SeqNo:	1066861
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	0.577	0.010	0.500	0.045	106	75	125	0.552	4.54	20	
Barium	1.07	0.010	0.500	0.574	99.5	75	125	1.065	0.655	20	
Cadmium	0.502	0.005	0.500	0.002	100	75	125	0.482	4.11	20	
Calcium	121	0.500	50.00	71.04	100	75	125	121.7	0.412	20	
Chromium	0.549	0.010	0.500	0.040	102	75	125	0.526	4.28	20	
Iron	39.0	0.010	0.500	37.51	308	75	125	39.78	1.85	20	S
Lead	0.524	0.010	0.500	0.020	101	75	125	0.500	4.61	20	
Magnesium	77.2	0.500	50.00	26.17	102	75	125	77.22	0.013	20	

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank	C	Value is below Minimum Compound Limit.
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
M	Matrix Interference	ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits
RL	Reporting Limit	S	Spike Recovery outside accepted recovery limits	U	Analyte not detected



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QC SUMMARY REPORT

WO#: 15060355
 25-Jun-15

Client: ICON Environmental Services
Project: Iberville Parish SB 9090-040-0100

BatchID: 15495

Sample ID	15060265-007BMSD	SampType:	MSD	TestCode:	6010_W	Units:	mg/L	Prep Date:	6/8/2015	RunNo:	44346		
Client ID:	ZZZZZZ	Batch ID:	15495	TestNo:	SW6010B			Analysis Date:	6/9/2015	SeqNo:	1066861		
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Manganese	5.00	0.010	0.500	4.615	76.0	75	125	5.038	0.857	20
Potassium	53.7	5.00	50.00	4.759	98.0	75	125	53.49	0.466	20
Sodium	69.4	5.00	50.00	18.50	102	75	125	69.30	0.173	20
Zinc	0.708	0.010	0.500	0.214	98.8	75	125	0.690	2.53	20

Sample ID	15060265-007BMS	SampType:	MS	TestCode:	6010_W	Units:	mg/L	Prep Date:	6/8/2015	RunNo:	44346		
Client ID:	ZZZZZZ	Batch ID:	15495	TestNo:	SW6010B			Analysis Date:	6/9/2015	SeqNo:	1066863		
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Strontium	1.40	0.100	0.500	0.909	99.0	75	125						
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Sample ID	15060265-007BMSD	SampType:	MSD	TestCode:	6010_W	Units:	mg/L	Prep Date:	6/8/2015	RunNo:	44346		
Client ID:	ZZZZZZ	Batch ID:	15495	TestNo:	SW6010B			Analysis Date:	6/9/2015	SeqNo:	1066864		
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Strontium	1.42	0.100	0.500	0.909	101	75	125	1.404	0.780	20
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Qualifiers:

* Value exceeds Maximum Contaminant Level.	B Analyte detected in the associated Method Blank	C Value is below Minimum Compound Limit.
E Value above quantitation range	H Holding times for preparation or analysis exceeded	J Analyte detected below quantitation limits
M Matrix Interference	ND Not Detected at the Reporting Limit	R RPD outside accepted recovery limits
RL Reporting Limit	S Spike Recovery outside accepted recovery limits	U Analyte not detected



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QC SUMMARY REPORT

WO#: 15060355
 25-Jun-15

Client: ICON Environmental Services
Project: Iberville Parish SB 9090-040-0100

BatchID: 15504

Sample ID	MB-15504	SampType:	MBLK	TestCode:	HG_W_7470	Units:	mg/L	Prep Date:	6/9/2015	RunNo:	44342		
Client ID:	PBW	Batch ID:	15504	TestNo:	SW7470A			Analysis Date:	6/9/2015	SeqNo:	1066780		
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury		< 0.0002		0.0002									

Sample ID	LCS-15504	SampType:	LCS	TestCode:	HG_W_7470	Units:	mg/L	Prep Date:	6/9/2015	RunNo:	44342		
Client ID:	LCSW	Batch ID:	15504	TestNo:	SW7470A			Analysis Date:	6/9/2015	SeqNo:	1066781		
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury		0.0098		0.0002	0.0100	0	98.3	80	120				

Sample ID	LCSD-15504	SampType:	LCSD	TestCode:	HG_W_7470	Units:	mg/L	Prep Date:	6/9/2015	RunNo:	44342		
Client ID:	LCSS02	Batch ID:	15504	TestNo:	SW7470A			Analysis Date:	6/9/2015	SeqNo:	1066782		
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury		0.0100		0.0002	0.0100	0	100	80	120	0.0098	2.16	20	

Sample ID	15060364-002DMS	SampType:	MS	TestCode:	HG_W_7470	Units:	mg/L	Prep Date:	6/9/2015	RunNo:	44342		
Client ID:	ZZZZZ	Batch ID:	15504	TestNo:	SW7470A			Analysis Date:	6/9/2015	SeqNo:	1066784		
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury		0.0102		0.0002	0.0100	0	102	75	125				

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank	C	Value is below Minimum Compound Limit.
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
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RL	Reporting Limit	S	Spike Recovery outside accepted recovery limits	U	Analyte not detected



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QC SUMMARY REPORT

WO#: 15060355
 25-Jun-15

Client: ICON Environmental Services
Project: Iberville Parish SB 9090-040-0100

BatchID: 15504

Sample ID	15060364-002DMSD	SampType:	MSD	TestCode:	HG_W_7470	Units:	mg/L	Prep Date:	6/9/2015	RunNo:	44342		
Client ID:	ZZZZZZ	Batch ID:	15504	TestNo:	SW7470A			Analysis Date:	6/9/2015	SeqNo:	1066785		
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury		0.0104		0.0002	0.0100	0	104	75	125	0.0102	1.43	20	

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank	C	Value is below Minimum Compound Limit.
	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	M	Matrix Interference	ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits
	RL	Reporting Limit	S	Spike Recovery outside accepted recovery limits	U	Analyte not detected



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QC SUMMARY REPORT

WO#: 15060355
 25-Jun-15

Client: ICON Environmental Services
Project: Iberville Parish SB 9090-040-0100

BatchID: 15522

Sample ID	MB-15522	SampType:	MBLK	TestCode:	HG_S_29B	Units:	mg/Kg-dry	Prep Date:	6/10/2015	RunNo:	44365
Client ID:	PBS	Batch ID:	15522	TestNo:	29B/SW7471 SW7471A	Analysis Date:	6/10/2015	SeqNo:	1067416		
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD RPDLimit Qual
Mercury		< 0.10		0.10							

Sample ID	LCS-15522	SampType:	LCS	TestCode:	HG_S_29B	Units:	mg/Kg-dry	Prep Date:	6/10/2015	RunNo:	44365
Client ID:	LCSS	Batch ID:	15522	TestNo:	29B/SW7471 SW7471A	Analysis Date:	6/10/2015	SeqNo:	1067417		
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD RPDLimit Qual
Mercury		0.91		0.10	0.83	0	110	80	120		

Sample ID	LCSD-15522	SampType:	LCSD	TestCode:	HG_S_29B	Units:	mg/Kg-dry	Prep Date:	6/10/2015	RunNo:	44365
Client ID:	LCSS02	Batch ID:	15522	TestNo:	29B/SW7471 SW7471A	Analysis Date:	6/10/2015	SeqNo:	1067420		
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD RPDLimit Qual
Mercury		0.91		0.10	0.83	0	109	80	120	0.91	0.37 20

Sample ID	15060355-001AMS	SampType:	MS	TestCode:	HG_S_29B	Units:	mg/Kg-dry	Prep Date:	6/10/2015	RunNo:	44365
Client ID:	SB-11 0-1	Batch ID:	15522	TestNo:	29B/SW7471 SW7471A	Analysis Date:	6/10/2015	SeqNo:	1067422		
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD RPDLimit Qual
Mercury		0.96		0.10	0.83	0	115	75	125		

Qualifiers:

* Value exceeds Maximum Contaminant Level.	B Analyte detected in the associated Method Blank	C Value is below Minimum Compound Limit.
E Value above quantitation range	H Holding times for preparation or analysis exceeded	J Analyte detected below quantitation limits
M Matrix Interference	ND Not Detected at the Reporting Limit	R RPD outside accepted recovery limits
RL Reporting Limit	S Spike Recovery outside accepted recovery limits	U Analyte not detected



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QC SUMMARY REPORT

WO#: 15060355
 25-Jun-15

Client: ICON Environmental Services
Project: Iberville Parish SB 9090-040-0100

BatchID: 15522

Sample ID	15060355-001AMSD	SampType:	MSD	TestCode:	HG_S_29B	Units:	mg/Kg-dry	Prep Date:	6/10/2015	RunNo:	44365		
Client ID:	SB-11 0-1	Batch ID:	15522	TestNo:	29B/SW7471 SW7471A	Analysis Date:	6/10/2015	SeqNo:	1067423				
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury		0.96		0.10	0.83	0	116	75	125	0.96	0.15	20	

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank	C	Value is below Minimum Compound Limit.
	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	M	Matrix Interference	ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits
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QC SUMMARY REPORT

WO#: 15060355
 25-Jun-15

Client: ICON Environmental Services
Project: Iberville Parish SB 9090-040-0100

BatchID: 15527

Sample ID	MB-15527	SampType:	MBLK	TestCode:	6010_S_29B	Units:	mg/Kg-dry	Prep Date:	6/10/2015	RunNo:	44475		
Client ID:	PBS	Batch ID:	15527	TestNo:	SW6010B	SW3050B		Analysis Date:	6/13/2015	SeqNo:	1070132		
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic		< 1.00		1.00									
Barium		< 1.00		1.00									
Cadmium		< 0.50		0.50									
Chromium		< 1.00		1.00									
Lead		< 1.00		1.00									
Selenium		< 2.00		2.00									
Silver		< 0.50		0.50									
Zinc		< 1.00		1.00									

Sample ID	LCS-15527	SampType:	LCS	TestCode:	6010_S_29B	Units:	mg/Kg-dry	Prep Date:	6/10/2015	RunNo:	44475		
Client ID:	LCSS	Batch ID:	15527	TestNo:	SW6010B	SW3050B		Analysis Date:	6/13/2015	SeqNo:	1070133		
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic		49.5		1.00	50.00	0	98.9	80	120				
Barium		52.2		1.00	50.00	0	104	80	120				
Cadmium		50.1		0.50	50.00	0	100	80	120				
Chromium		51.9		1.00	50.00	0	104	80	120				
Lead		49.4		1.00	50.00	0	98.9	80	120				
Selenium		47.7		2.00	50.00	0	95.5	80	120				
Silver		27.4		0.50	25.00	0	110	80	120				
Zinc		49.0		1.00	50.00	0	97.9	80	120				

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank	C	Value is below Minimum Compound Limit.
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
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QC SUMMARY REPORT

WO#: 15060355
 25-Jun-15

Client: ICON Environmental Services
Project: Iberville Parish SB 9090-040-0100

BatchID: 15527

Sample ID	LCSD-15527	SampType:	LCSD	TestCode:	6010_S_29B	Units:	mg/Kg-dry	Prep Date:	6/10/2015	RunNo:	44475
Client ID:	LCSS02	Batch ID:	15527	TestNo:	SW6010B	SW3050B		Analysis Date:	6/13/2015	SeqNo:	1070134
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	49.8	1.00	50.00	0	99.6	80	120	49.47	0.62	20	
Barium	53.6	1.00	50.00	0	107	80	120	52.23	2.53	20	
Cadmium	51.4	0.50	50.00	0	103	80	120	50.12	2.56	20	
Chromium	53.3	1.00	50.00	0	107	80	120	51.87	2.68	20	
Lead	50.0	1.00	50.00	0	99.9	80	120	49.43	1.07	20	
Selenium	48.6	2.00	50.00	0	97.3	80	120	47.74	1.89	20	
Silver	28.1	0.50	25.00	0	112	80	120	27.45	2.34	20	
Zinc	50.3	1.00	50.00	0	101	80	120	48.95	2.62	20	

Sample ID	15060355-001AMS	SampType:	MS	TestCode:	6010_S_29B	Units:	mg/Kg-dry	Prep Date:	6/10/2015	RunNo:	44475
Client ID:	SB-11 0-1	Batch ID:	15527	TestNo:	SW6010B	SW3050B		Analysis Date:	6/13/2015	SeqNo:	1070136
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	46.5	1.00	49.78	4.81	83.8	75	125				
Barium	284	1.00	49.78	245.1	77.7	75	125				
Cadmium	41.5	0.50	49.78	0.33	82.6	75	125				
Chromium	58.7	1.00	49.78	15.58	86.6	75	125				
Lead	55.5	1.00	49.78	14.74	81.9	75	125				
Selenium	35.3	1.99	49.78	0	70.8	75	125				S
Silver	22.9	0.50	24.89	0	91.9	75	125				
Zinc	101	1.00	49.78	62.16	78.7	75	125				

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank	C	Value is below Minimum Compound Limit.
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
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QC SUMMARY REPORT

WO#: 15060355
 25-Jun-15

Client: ICON Environmental Services
Project: Iberville Parish SB 9090-040-0100

BatchID: 15527

Sample ID	15060355-001AMSD	SampType:	MSD	TestCode:	6010_S_29B	Units:	mg/Kg-dry	Prep Date:	6/10/2015	RunNo:	44475
Client ID:	SB-11 0-1	Batch ID:	15527	TestNo:	SW6010B		SW3050B	Analysis Date:	6/13/2015	SeqNo:	1070139
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	47.0	1.00	49.80	4.81	84.7	75	125	46.50	1.09	20	
Barium	286	1.00	49.80	245.1	81.3	75	125	283.7	0.64	20	
Cadmium	41.3	0.50	49.80	0.33	82.3	75	125	41.46	0.31	20	
Chromium	58.8	1.00	49.80	15.58	86.8	75	125	58.71	0.20	20	
Lead	55.4	1.00	49.80	14.74	81.6	75	125	55.49	0.17	20	
Selenium	35.3	1.99	49.80	0	70.8	75	125	35.26	0	20	S
Silver	22.9	0.50	24.90	0	91.9	75	125	22.87	0.09	20	
Zinc	102	1.00	49.80	62.16	80.2	75	125	101.3	0.74	20	

NOTES:

S - Spike recovery indicates matrix interference. The method is in control as indicated by the Lab Control Sample.

Qualifiers:	* Value exceeds Maximum Contaminant Level.	B Analyte detected in the associated Method Blank	C Value is below Minimum Compound Limit.
	E Value above quantitation range	H Holding times for preparation or analysis exceeded	J Analyte detected below quantitation limits
	M Matrix Interference	ND Not Detected at the Reporting Limit	R RPD outside accepted recovery limits
	RL Reporting Limit	S Spike Recovery outside accepted recovery limits	U Analyte not detected



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 25-Jun-15

Client: ICON Environmental Services
Project: Iberville Parish SB 9090-040-0100

BatchID: 15528

Sample ID	MB-15528	SampType:	MBLK	TestCode:	TTBA	Units:	mg/Kg-dry	Prep Date:	6/10/2015	RunNo:	44475		
Client ID:	PBS	Batch ID:	15528	TestNo:	LDNR 29-B			Analysis Date:	6/13/2015	SeqNo:	1070155		
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

True Total Barium < 50 50

Sample ID	LCS-15528	SampType:	LCS	TestCode:	TTBA	Units:	mg/Kg-dry	Prep Date:	6/10/2015	RunNo:	44475		
Client ID:	LCSS	Batch ID:	15528	TestNo:	LDNR 29-B			Analysis Date:	6/13/2015	SeqNo:	1070156		
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

True Total Barium 4,900 50 5,000 0 98 75 125

Sample ID	LCSD-15528	SampType:	LCSD	TestCode:	TTBA	Units:	mg/Kg-dry	Prep Date:	6/10/2015	RunNo:	44475		
Client ID:	LCSS02	Batch ID:	15528	TestNo:	LDNR 29-B			Analysis Date:	6/13/2015	SeqNo:	1070157		
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

True Total Barium 4,890 50 5,000 0 98 75 125 4,905 0 20

Sample ID	15060355-001AMS	SampType:	MS	TestCode:	TTBA	Units:	mg/Kg-dry	Prep Date:	6/10/2015	RunNo:	44475		
Client ID:	SB-11 0-1	Batch ID:	15528	TestNo:	LDNR 29-B			Analysis Date:	6/13/2015	SeqNo:	1070159		
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

True Total Barium 4,940 47 4,699 394 97 75 125

Qualifiers:	* Value exceeds Maximum Contaminant Level.	B Analyte detected in the associated Method Blank	C Value is below Minimum Compound Limit.
	E Value above quantitation range	H Holding times for preparation or analysis exceeded	J Analyte detected below quantitation limits
	M Matrix Interference	ND Not Detected at the Reporting Limit	R RPD outside accepted recovery limits
	RL Reporting Limit	S Spike Recovery outside accepted recovery limits	U Analyte not detected



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QC SUMMARY REPORT

WO#: 15060355
 25-Jun-15

Client: ICON Environmental Services
Project: Iberville Parish SB 9090-040-0100

BatchID: 15528

Sample ID	15060355-001AMSD	SampType:	MSD	TestCode:	TTBA	Units:	mg/Kg-dry	Prep Date:	6/10/2015	RunNo:	44475		
Client ID:	SB-11 0-1	Batch ID:	15528	TestNo:	LDNR 29-B			Analysis Date:	6/13/2015	SeqNo:	1070160		
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
True Total Barium		4,850		46	4,647	394	96	75	125	4,944	2	20	

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank	C	Value is below Minimum Compound Limit.
	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	M	Matrix Interference	ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits
	RL	Reporting Limit	S	Spike Recovery outside accepted recovery limits	U	Analyte not detected



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QC SUMMARY REPORT

WO#: 15060355
 25-Jun-15

Client: ICON Environmental Services
Project: Iberville Parish SB 9090-040-0100

BatchID: 15556

Sample ID	15060571-005AMS-	SampType:	MS	TestCode:	8015_DO_S	Units:	mg/Kg	Prep Date:	6/12/2015	RunNo:	44524			
Client ID:	ZZZZZZ	Batch ID:	15556	TestNo:	SW8015B		SW3550C	Analysis Date:	6/15/2015	SeqNo:	1071851			
Analyte		Result		PQL	SPK value	SPK Ref Val		%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

TPH (Diesel Range)	79.8	50.0	100.0	31.73	48.1	23.4	123							
Surr: 4-Terphenyl-d14	1.88		3.330		56.4	33	152							

Sample ID	15060571-005AMSD	SampType:	MSD	TestCode:	8015_DO_S	Units:	mg/Kg	Prep Date:	6/12/2015	RunNo:	44524			
Client ID:	ZZZZZZ	Batch ID:	15556	TestNo:	SW8015B		SW3550C	Analysis Date:	6/16/2015	SeqNo:	1071853			
Analyte		Result		PQL	SPK value	SPK Ref Val		%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

TPH (Diesel Range)	82.2	50.0	100.0	31.73	50.5	23.4	123	79.84	2.91	35.6				
Surr: 4-Terphenyl-d14	1.89		3.330		56.8	33	152		0	40				

Sample ID	LCS-D15556	SampType:	LCS	TestCode:	8015_DO_S	Units:	mg/Kg	Prep Date:	6/12/2015	RunNo:	44524			
Client ID:	LCSS	Batch ID:	15556	TestNo:	SW8015B		SW3550C	Analysis Date:	6/16/2015	SeqNo:	1071855			
Analyte		Result		PQL	SPK value	SPK Ref Val		%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

TPH (Diesel Range)	85.3	10.0	100.0	0	85.3	63.4	109							
Surr: 4-Terphenyl-d14	2.33		3.330		70.0	33	152							

Sample ID	LCSD-D15556	SampType:	LCSD	TestCode:	8015_DO_S	Units:	mg/Kg	Prep Date:	6/12/2015	RunNo:	44524			
Client ID:	LCSS02	Batch ID:	15556	TestNo:	SW8015B		SW3550C	Analysis Date:	6/16/2015	SeqNo:	1071856			
Analyte		Result		PQL	SPK value	SPK Ref Val		%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

TPH (Diesel Range)	81.2	10.0	100.0	0	81.2	63.4	109	85.31	4.94	17.2				
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Qualifiers:

* Value exceeds Maximum Contaminant Level.	B Analyte detected in the associated Method Blank	C Value is below Minimum Compound Limit.
E Value above quantitation range	H Holding times for preparation or analysis exceeded	J Analyte detected below quantitation limits
M Matrix Interference	ND Not Detected at the Reporting Limit	R RPD outside accepted recovery limits
RL Reporting Limit	S Spike Recovery outside accepted recovery limits	U Analyte not detected



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QC SUMMARY REPORT

WO#: 15060355
 25-Jun-15

Client: ICON Environmental Services
Project: Iberville Parish SB 9090-040-0100

BatchID: 15556

Sample ID	LCSD-D15556	SampType:	LCSD	TestCode:	8015_DO_S	Units:	mg/Kg	Prep Date:	6/12/2015	RunNo:	44524			
Client ID:	LCSS02	Batch ID:	15556	TestNo:	SW8015B		SW3550C	Analysis Date:	6/16/2015	SeqNo:	1071856			
Analyte		Result		PQL	SPK value	SPK Ref Val		%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Surr: 4-Terphenyl-d14		2.39			3.330			71.7	33	152		0	40	

Sample ID	LCSD-M15556	SampType:	LCSD	TestCode:	8015_DO_S	Units:	mg/Kg	Prep Date:	6/12/2015	RunNo:	44524			
Client ID:	LCSS02	Batch ID:	15556	TestNo:	SW8015B		SW3550C	Analysis Date:	6/15/2015	SeqNo:	1071858			
Analyte		Result		PQL	SPK value	SPK Ref Val		%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
TPH (Oil Range)		90.7		10.0	100.0	0		90.7	63.9	120	94.26	3.85	16.6	
Surr: 4-Terphenyl-d14		2.25			3.330			67.5	33	152		0	40	

Sample ID	LCS-M15556	SampType:	LCS	TestCode:	8015_DO_S	Units:	mg/Kg	Prep Date:	6/12/2015	RunNo:	44524			
Client ID:	LCSS	Batch ID:	15556	TestNo:	SW8015B		SW3550C	Analysis Date:	6/15/2015	SeqNo:	1071859			
Analyte		Result		PQL	SPK value	SPK Ref Val		%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
TPH (Oil Range)		94.3		10.0	100.0	0		94.3	63.9	120				
Surr: 4-Terphenyl-d14		2.42			3.330			72.8	33	152				

Sample ID	MB-15556	SampType:	MBLK	TestCode:	8015_DO_S	Units:	mg/Kg	Prep Date:	6/12/2015	RunNo:	44524			
Client ID:	PBS	Batch ID:	15556	TestNo:	SW8015B		SW3550C	Analysis Date:	6/15/2015	SeqNo:	1071861			
Analyte		Result		PQL	SPK value	SPK Ref Val		%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
TPH (Diesel Range)		< 5.00		5.00										
TPH (Oil Range)		< 5.00		5.00										

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank	C	Value is below Minimum Compound Limit.
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
M	Matrix Interference	ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits
RL	Reporting Limit	S	Spike Recovery outside accepted recovery limits	U	Analyte not detected



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QC SUMMARY REPORT

WO#: 15060355
 25-Jun-15

Client: ICON Environmental Services
Project: Iberville Parish SB 9090-040-0100

BatchID: 15556

Sample ID	MB-15556	SampType:	MBLK	TestCode:	8015_DO_S	Units:	mg/Kg	Prep Date:	6/12/2015	RunNo:	44524			
Client ID:	PBS	Batch ID:	15556	TestNo:	SW8015B	SW3550C		Analysis Date:	6/15/2015	SeqNo:	1071861			
Analyte		Result		PQL	SPK value	SPK Ref Val		%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Surr: 4-Terphenyl-d14		2.19			3.330			65.8	33	152				

Sample ID	15060571-005AMS-	SampType:	MS	TestCode:	8015_DO_S	Units:	mg/Kg	Prep Date:	6/12/2015	RunNo:	44524			
Client ID:	ZZZZZZ	Batch ID:	15556	TestNo:	SW8015B	SW3550C		Analysis Date:	6/16/2015	SeqNo:	1071870			
Analyte		Result		PQL	SPK value	SPK Ref Val		%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
TPH (Oil Range)		104		50.0	100.0	30.86		72.8	14.5	174				
Surr: 4-Terphenyl-d14		2.31			3.330			69.3	33	152				

Sample ID	15060571-005AMSD	SampType:	MSD	TestCode:	8015_DO_S	Units:	mg/Kg	Prep Date:	6/12/2015	RunNo:	44524			
Client ID:	ZZZZZZ	Batch ID:	15556	TestNo:	SW8015B	SW3550C		Analysis Date:	6/16/2015	SeqNo:	1071871			
Analyte		Result		PQL	SPK value	SPK Ref Val		%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
TPH (Oil Range)		88.7		50.0	100.0	30.86		57.8	14.5	174	103.6	15.6	48.8	
Surr: 4-Terphenyl-d14		2.06			3.330			61.8	33	152		0	40	

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank	C	Value is below Minimum Compound Limit.
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
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QC SUMMARY REPORT

WO#: 15060355
 25-Jun-15

Client: ICON Environmental Services
Project: Iberville Parish SB 9090-040-0100

BatchID: 15592

Sample ID	15060217-002ADUP	SampType:	DUP	TestCode:	SAR_S	Units:		Prep Date:	6/16/2015	RunNo:	44571		
Client ID:	ZZZZZZ	Batch ID:	15592	TestNo:	LDNR 29-B	LDNR 29-B		Analysis Date:	6/17/2015	SeqNo:	1073038		
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Sodium Adsorption Ratio	8.39	0.100								8.362	0.399	20	
Soluble Calcium	4.69	1.00								4.682	0.128	20	
Soluble Magnesium	2.11	1.00								2.010	4.87	20	
Soluble Sodium	15.5	1.00								15.29	1.19	20	

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank	C	Value is below Minimum Compound Limit.
	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	M	Matrix Interference	ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits
	RL	Reporting Limit	S	Spike Recovery outside accepted recovery limits	U	Analyte not detected



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QC SUMMARY REPORT

WO#: 15060355
 25-Jun-15

Client: ICON Environmental Services
Project: Iberville Parish SB 9090-040-0100

BatchID: 15593

Sample ID	15060412-001ADUP	SampType:	DUP	TestCode:	SAR_S	Units:		Prep Date:	6/16/2015	RunNo:	44571		
Client ID:	ZZZZZZ	Batch ID:	15593	TestNo:	LDNR 29-B	LDNR 29-B		Analysis Date:	6/17/2015	SeqNo:	1073095		
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Sodium Adsorption Ratio	0.806		0.100							0.8105	0.554	20	
Soluble Calcium	< 1.00		1.00							0	0	20	
Soluble Magnesium	< 1.00		1.00							0	0	20	
Soluble Sodium	< 1.00		1.00							0	0	20	

Sample ID	15060451-007ADUP	SampType:	DUP	TestCode:	SAR_S	Units:		Prep Date:	6/16/2015	RunNo:	44571		
Client ID:	ZZZZZZ	Batch ID:	15593	TestNo:	LDNR 29-B	LDNR 29-B		Analysis Date:	6/17/2015	SeqNo:	1073115		
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Sodium Adsorption Ratio	3.42		0.100							3.389	0.794	20	
Soluble Calcium	1.32		1.00							1.301	1.52	20	
Soluble Magnesium	< 1.00		1.00							0	0	20	
Soluble Sodium	3.42		1.00							3.369	1.52	20	

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank	C	Value is below Minimum Compound Limit.
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
M	Matrix Interference	ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits
RL	Reporting Limit	S	Spike Recovery outside accepted recovery limits	U	Analyte not detected



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QC SUMMARY REPORT

WO#: 15060355
 25-Jun-15

Client: ICON Environmental Services
Project: Iberville Parish SB 9090-040-0100

BatchID: 15609

Sample ID	15060412-001ADUP	SampType:	DUP	TestCode:	ESP_S	Units:	%	Prep Date:	6/16/2015	RunNo:	44563		
Client ID:	ZZZZZZ	Batch ID:	15609	TestNo:	LDNR 29-B	LDNR 29-B		Analysis Date:	6/17/2015	SeqNo:	1073101		
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Exchangeable Sodium %		0.3		0.1						0.3	14.3	20	

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank	C	Value is below Minimum Compound Limit.
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	M	Matrix Interference	ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits
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QC SUMMARY REPORT

WO#: 15060355
 25-Jun-15

Client: ICON Environmental Services
Project: Iberville Parish SB 9090-040-0100

BatchID: 15610

Sample ID	15060412-001ADUP	SampType:	DUP	TestCode:	CEC	Units:	meq/100g	Prep Date:	6/16/2015	RunNo:	44562		
Client ID:	ZZZZZZ	Batch ID:	15610	TestNo:	LDNR 29-B	LDNR 29-B		Analysis Date:	6/17/2015	SeqNo:	1072849		
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Cation Exchange Capacity		25.9		0.1						26.5	2.2	20	

Sample ID	LCS-15610	SampType:	LCS	TestCode:	CEC	Units:	meq/100g	Prep Date:	6/16/2015	RunNo:	44562		
Client ID:	LCSS	Batch ID:	15610	TestNo:	LDNR 29-B	LDNR 29-B		Analysis Date:	6/17/2015	SeqNo:	1072853		
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Cation Exchange Capacity		21.1		0.1	25.0	0	84.2	76	124				

Sample ID	LCSD-15610	SampType:	LCSD	TestCode:	CEC	Units:	meq/100g	Prep Date:	6/16/2015	RunNo:	44562		
Client ID:	LCSS02	Batch ID:	15610	TestNo:	LDNR 29-B	LDNR 29-B		Analysis Date:	6/17/2015	SeqNo:	1072854		
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Cation Exchange Capacity		22.2		0.1	25.0	0	88.7	76	124	21.1	5.2	20	

Qualifiers:

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E Value above quantitation range	H Holding times for preparation or analysis exceeded	J Analyte detected below quantitation limits
M Matrix Interference	ND Not Detected at the Reporting Limit	R RPD outside accepted recovery limits
RL Reporting Limit	S Spike Recovery outside accepted recovery limits	U Analyte not detected



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QC SUMMARY REPORT

WO#: 15060355
 25-Jun-15

Client: ICON Environmental Services
Project: Iberville Parish SB 9090-040-0100

BatchID: R44320

Sample ID	MB-R44320	SampType:	MBLK	TestCode:	TDS_2540C	Units:	mg/L	Prep Date:		RunNo:	44320		
Client ID:	PBW	Batch ID:	R44320	TestNo:	SM2540C			Analysis Date:	6/9/2015	SeqNo:	1067972		
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Dissolved Solids (Residue, Filterable)		< 20		20									

Sample ID	LCSD-R44320	SampType:	LCSD	TestCode:	TDS_2540C	Units:	mg/L	Prep Date:		RunNo:	44320		
Client ID:	LCSS02	Batch ID:	R44320	TestNo:	SM2540C			Analysis Date:	6/9/2015	SeqNo:	1067973		
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Dissolved Solids (Residue, Filterable)		860		20	1,000	0	86	85	115	940	9	10	

Sample ID	LCS-R44320	SampType:	LCS	TestCode:	TDS_2540C	Units:	mg/L	Prep Date:		RunNo:	44320		
Client ID:	LCSW	Batch ID:	R44320	TestNo:	SM2540C			Analysis Date:	6/9/2015	SeqNo:	1067974		
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Dissolved Solids (Residue, Filterable)		940		20	1,000	0	94	85	115				

Sample ID	15060113-001BDUP	SampType:	DUP	TestCode:	TDS_2540C	Units:	mg/L	Prep Date:		RunNo:	44320		
Client ID:	ZZZZZ	Batch ID:	R44320	TestNo:	SM2540C			Analysis Date:	6/9/2015	SeqNo:	1067977		
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Dissolved Solids (Residue, Filterable)		29,800		2,000						29,300	2	10	H

Qualifiers:

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E	Value above quantitation range	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
M	Matrix Interference	ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits
RL	Reporting Limit	S	Spike Recovery outside accepted recovery limits	U	Analyte not detected



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QC SUMMARY REPORT

WO#: 15060355
 25-Jun-15

Client: ICON Environmental Services
Project: Iberville Parish SB 9090-040-0100

BatchID: R44320

Sample ID	15060113-001BDUP	SampType:	DUP	TestCode:	TDS_2540C	Units:	mg/L	Prep Date:		RunNo:	44320		
Client ID:	ZZZZZZ	Batch ID:	R44320	TestNo:	SM2540C			Analysis Date:	6/9/2015	SeqNo:	1067977		
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Sample ID	15060364-003BDUP	SampType:	DUP	TestCode:	TDS_2540C	Units:	mg/L	Prep Date:		RunNo:	44320		
Client ID:	ZZZZZZ	Batch ID:	R44320	TestNo:	SM2540C			Analysis Date:	6/9/2015	SeqNo:	1067982		
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Total Dissolved Solids (Residue, Filterable)	735	100								845	14	10	R
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NOTES:

R - High RPD due to suspected sample matrix. The method is in control as indicated by the LCS/LCSD.

Qualifiers:	* Value exceeds Maximum Contaminant Level.	B Analyte detected in the associated Method Blank	C Value is below Minimum Compound Limit.
	E Value above quantitation range	H Holding times for preparation or analysis exceeded	J Analyte detected below quantitation limits
	M Matrix Interference	ND Not Detected at the Reporting Limit	R RPD outside accepted recovery limits
	RL Reporting Limit	S Spike Recovery outside accepted recovery limits	U Analyte not detected



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 Website: www.element.com

QC SUMMARY REPORT

WO#: 15060355
 25-Jun-15

Client: ICON Environmental Services
Project: Iberville Parish SB 9090-040-0100

BatchID: R44336

Sample ID	MB-R44336	SampType:	MBLK	TestCode:	ALK	Units:	mgCaCO3/L	Prep Date:		RunNo:	44336		
Client ID:	PBW	Batch ID:	R44336	TestNo:	SM2320 B			Analysis Date:	6/9/2015	SeqNo:	1066522		
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Alkalinity, Bicarbonate (As CaCO3) < 10 10
 Alkalinity, Carbonate (As CaCO3) < 10 10
 Alkalinity, Total (As CaCO3) < 10 10

Sample ID	LCS-R44336	SampType:	LCS	TestCode:	ALK	Units:	mgCaCO3/L	Prep Date:		RunNo:	44336		
Client ID:	LCSW	Batch ID:	R44336	TestNo:	SM2320 B			Analysis Date:	6/9/2015	SeqNo:	1066522		
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Alkalinity, Total (As CaCO3) 48 10 50 0 96 80 120

Sample ID	15060364-003CDUP	SampType:	DUP	TestCode:	ALK	Units:	mgCaCO3/L	Prep Date:		RunNo:	44336		
Client ID:	ZZZZZZ	Batch ID:	R44336	TestNo:	SM2320 B			Analysis Date:	6/9/2015	SeqNo:	1066522		
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Alkalinity, Bicarbonate (As CaCO3) 140 10 138 2 20
 Alkalinity, Carbonate (As CaCO3) < 10 10 0 0 20
 Alkalinity, Total (As CaCO3) 140 10 138 2 20

Qualifiers:

* Value exceeds Maximum Contaminant Level.	B Analyte detected in the associated Method Blank	C Value is below Minimum Compound Limit.
E Value above quantitation range	H Holding times for preparation or analysis exceeded	J Analyte detected below quantitation limits
M Matrix Interference	ND Not Detected at the Reporting Limit	R RPD outside accepted recovery limits
RL Reporting Limit	S Spike Recovery outside accepted recovery limits	U Analyte not detected



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QC SUMMARY REPORT

WO#: 15060355
 25-Jun-15

Client: ICON Environmental Services
Project: Iberville Parish SB 9090-040-0100

BatchID: R44352

Sample ID	MBLK	SampType:	MBLK	TestCode:	9056_W	Units:	mg/L	Prep Date:		RunNo:	44352			
Client ID:	PBW	Batch ID:	R44352	TestNo:	SW9056A			Analysis Date:	6/10/2015	SeqNo:	1067679			
Analyte		Result		PQL	SPK value	SPK Ref Val		%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Chloride		< 0.25		0.25										
Sulfate		< 0.25		0.25										

Sample ID	LCS	SampType:	LCS	TestCode:	9056_W	Units:	mg/L	Prep Date:		RunNo:	44352			
Client ID:	LCSW	Batch ID:	R44352	TestNo:	SW9056A			Analysis Date:	6/10/2015	SeqNo:	1067680			
Analyte		Result		PQL	SPK value	SPK Ref Val		%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Chloride		9.51		0.25	10.00	0		95.1	80	120				
Sulfate		9.79		0.25	10.00	0		97.9	80	120				

Sample ID	LCSD	SampType:	LCSD	TestCode:	9056_W	Units:	mg/L	Prep Date:		RunNo:	44352			
Client ID:	LCSS02	Batch ID:	R44352	TestNo:	SW9056A			Analysis Date:	6/10/2015	SeqNo:	1067681			
Analyte		Result		PQL	SPK value	SPK Ref Val		%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Chloride		9.52		0.25	10.00	0		95.2	80	120	9.51	0.13	15
Sulfate		9.83		0.25	10.00	0		98.3	80	120	9.79	0.38	15

Sample ID	15060364-002BMS	SampType:	MS	TestCode:	9056_W	Units:	mg/L	Prep Date:		RunNo:	44352			
Client ID:	ZZZZZ	Batch ID:	R44352	TestNo:	SW9056A			Analysis Date:	6/10/2015	SeqNo:	1067684			
Analyte		Result		PQL	SPK value	SPK Ref Val		%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Chloride		276		5.00	100.0	176.0		99.6	80	120				
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Qualifiers:

* Value exceeds Maximum Contaminant Level.	B Analyte detected in the associated Method Blank	C Value is below Minimum Compound Limit.
E Value above quantitation range	H Holding times for preparation or analysis exceeded	J Analyte detected below quantitation limits
M Matrix Interference	ND Not Detected at the Reporting Limit	R RPD outside accepted recovery limits
RL Reporting Limit	S Spike Recovery outside accepted recovery limits	U Analyte not detected



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QC SUMMARY REPORT

WO#: 15060355
 25-Jun-15

Client: ICON Environmental Services
Project: Iberville Parish SB 9090-040-0100

BatchID: R44352

Sample ID	15060364-002BMS	SampType:	MS	TestCode:	9056_W	Units:	mg/L	Prep Date:		RunNo:	44352		
Client ID:	ZZZZZZ	Batch ID:	R44352	TestNo:	SW9056A			Analysis Date:	6/10/2015	SeqNo:	1067684		
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate		233		5.00	100.0	136.8	96.6	80	120				

Sample ID	15060364-002BMSD	SampType:	MSD	TestCode:	9056_W	Units:	mg/L	Prep Date:		RunNo:	44352		
Client ID:	ZZZZZZ	Batch ID:	R44352	TestNo:	SW9056A			Analysis Date:	6/10/2015	SeqNo:	1067685		
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride		276		5.00	100.0	176.0	99.6	80	120	275.6	0	15	
Sulfate		233		5.00	100.0	136.8	96.5	80	120	233.4	0.05	15	

Qualifiers:

* Value exceeds Maximum Contaminant Level.	B Analyte detected in the associated Method Blank	C Value is below Minimum Compound Limit.
E Value above quantitation range	H Holding times for preparation or analysis exceeded	J Analyte detected below quantitation limits
M Matrix Interference	ND Not Detected at the Reporting Limit	R RPD outside accepted recovery limits
RL Reporting Limit	S Spike Recovery outside accepted recovery limits	U Analyte not detected



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QC SUMMARY REPORT

WO#: 15060355
 25-Jun-15

Client: ICON Environmental Services
Project: Iberville Parish SB 9090-040-0100

BatchID: R44387

Sample ID	15060265-007AMS	SampType:	MS	TestCode:	8021_BTEX_	Units:	mg/L	Prep Date:		RunNo:	44387
Client ID:	ZZZZZZ	Batch ID:	R44387	TestNo:	SW8021B			Analysis Date:	6/10/2015	SeqNo:	1067808
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Ethylbenzene	0.0471	0.00500	0.05000	0	94.2	66	153				
Toluene	0.0506	0.0100	0.05000	0.0003000	101	68	141				
Xylenes, Total	0.145	0.0500	0.1500	0	96.7	48	154				
Surr: alpha, alpha, alpha-Trifluorotoluene	0.0487		0.05000		97.4	70	130				

Sample ID	15060265-007AMSD	SampType:	MSD	TestCode:	8021_BTEX_	Units:	mg/L	Prep Date:		RunNo:	44387
Client ID:	ZZZZZZ	Batch ID:	R44387	TestNo:	SW8021B			Analysis Date:	6/10/2015	SeqNo:	1067809
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Ethylbenzene	0.0478	0.00500	0.05000	0	95.6	66	153	0.04710	1.48	20	
Toluene	0.0513	0.0100	0.05000	0.0003000	102	68	141	0.05060	1.37	20	
Xylenes, Total	0.147	0.0500	0.1500	0	98.1	48	154	0.1451	1.37	20	
Surr: alpha, alpha, alpha-Trifluorotoluene	0.0494		0.05000		98.8	70	130		0	20	

Sample ID	BTEX_W LCS	SampType:	LCS	TestCode:	8021_BTEX_	Units:	mg/L	Prep Date:		RunNo:	44387
Client ID:	LCSW	Batch ID:	R44387	TestNo:	SW8021B			Analysis Date:	6/10/2015	SeqNo:	1067816
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Ethylbenzene	0.0478	0.00500	0.05000	0	95.6	76	129				
Toluene	0.0508	0.0100	0.05000	0	102	78	120				
Xylenes, Total	0.147	0.0500	0.1500	0	98.0	75	125				

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank	C	Value is below Minimum Compound Limit.
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
M	Matrix Interference	ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits
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QC SUMMARY REPORT

WO#: 15060355
 25-Jun-15

Client: ICON Environmental Services
Project: Iberville Parish SB 9090-040-0100

BatchID: R44387

Sample ID	BTEX_W LCS	SampType:	LCS	TestCode:	8021_BTEX_	Units:	mg/L	Prep Date:		RunNo:	44387		
Client ID:	LCSW	Batch ID:	R44387	TestNo:	SW8021B	Analysis Date:	6/10/2015	SeqNo:	1067816				
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Surr: alpha, alpha, alpha-Trifluorotoluene		0.0474			0.05000		94.8	70	130				

Sample ID	BTEX_W LCSD	SampType:	LCSD	TestCode:	8021_BTEX_	Units:	mg/L	Prep Date:		RunNo:	44387		
Client ID:	LCSS02	Batch ID:	R44387	TestNo:	SW8021B	Analysis Date:	6/10/2015	SeqNo:	1067817				
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Ethylbenzene		0.0490		0.00500	0.05000	0	98.0	76	129	0.04780	2.48	20	
Toluene		0.0519		0.0100	0.05000	0	104	78	120	0.05080	2.14	20	
Xylenes, Total		0.150		0.0500	0.1500	0	99.9	75	125	0.1470	1.89	20	
Surr: alpha, alpha, alpha-Trifluorotoluene		0.0504			0.05000		101	70	130		0	20	

Sample ID	MB ACID	SampType:	MBLK	TestCode:	8021_BTEX_	Units:	mg/L	Prep Date:		RunNo:	44387		
Client ID:	PBW	Batch ID:	R44387	TestNo:	SW8021B	Analysis Date:	6/10/2015	SeqNo:	1067818				
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Ethylbenzene		< 0.00500		0.00500									
Toluene		< 0.0100		0.0100									
Xylenes, Total		< 0.0500		0.0500									
Surr: alpha, alpha, alpha-Trifluorotoluene		0.0479			0.05000		95.8	70	130				

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank	C	Value is below Minimum Compound Limit.
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
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RL	Reporting Limit	S	Spike Recovery outside accepted recovery limits	U	Analyte not detected



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QC SUMMARY REPORT

WO#: 15060355
 25-Jun-15

Client: ICON Environmental Services
Project: Iberville Parish SB 9090-040-0100

BatchID: R44390

Sample ID	GAS_W LCS	SampType:	LCS	TestCode:	8015_G_W	Units:	mg/L	Prep Date:		RunNo:	44390			
Client ID:	LCSW	Batch ID:	R44390	TestNo:	SW8015B			Analysis Date:	6/10/2015	SeqNo:	1067831			
Analyte		Result		PQL	SPK value	SPK Ref Val		%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
TPH (Gasoline Range)		14.5		0.15	12.50	0		116	80	130				

Sample ID	GAS_W LCSD	SampType:	LCSD	TestCode:	8015_G_W	Units:	mg/L	Prep Date:		RunNo:	44390			
Client ID:	LCSS02	Batch ID:	R44390	TestNo:	SW8015B			Analysis Date:	6/10/2015	SeqNo:	1067832			
Analyte		Result		PQL	SPK value	SPK Ref Val		%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
TPH (Gasoline Range)		14.6		0.15	12.50	0		117	80	130	14.45	1.06	20	

Sample ID	MB ACID	SampType:	MBLK	TestCode:	8015_G_W	Units:	mg/L	Prep Date:		RunNo:	44390			
Client ID:	PBW	Batch ID:	R44390	TestNo:	SW8015B			Analysis Date:	6/10/2015	SeqNo:	1067833			
Analyte		Result		PQL	SPK value	SPK Ref Val		%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
TPH (Gasoline Range)		< 0.15		0.15										
Surr: alpha, alpha, alpha-Trifluorotoluene		0.05			0.05			97.4	70	130				

Sample ID	15060265-007AMS	SampType:	MS	TestCode:	8015_G_W	Units:	mg/L	Prep Date:		RunNo:	44390			
Client ID:	ZZZZZZ	Batch ID:	R44390	TestNo:	SW8015B			Analysis Date:	6/10/2015	SeqNo:	1067837			
Analyte		Result		PQL	SPK value	SPK Ref Val		%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
TPH (Gasoline Range)		13.5		0.15	12.50	0		108	70	130				
Surr: alpha, alpha, alpha-Trifluorotoluene		0.06			0.05			115	70	130				

Qualifiers:

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E	Value above quantitation range	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
M	Matrix Interference	ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits
RL	Reporting Limit	S	Spike Recovery outside accepted recovery limits	U	Analyte not detected



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QC SUMMARY REPORT

WO#: 15060355
 25-Jun-15

Client: ICON Environmental Services
Project: Iberville Parish SB 9090-040-0100

BatchID: R44390

Sample ID	15060265-007AMS	SampType:	MS	TestCode:	8015_G_W	Units:	mg/L	Prep Date:		RunNo:	44390		
Client ID:	ZZZZZZ	Batch ID:	R44390	TestNo:	SW8015B			Analysis Date:	6/10/2015	SeqNo:	1067837		
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Sample ID	15060265-007AMSD	SampType:	MSD	TestCode:	8015_G_W	Units:	mg/L	Prep Date:		RunNo:	44390		
Client ID:	ZZZZZZ	Batch ID:	R44390	TestNo:	SW8015B			Analysis Date:	6/10/2015	SeqNo:	1067838		
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
TPH (Gasoline Range)		14.0		0.15	12.50	0	112	70	130	13.53	3.32	20	
Surr: alpha, alpha, alpha-Trifluorotoluene		0.06			0.05		129	70	130		0	20	

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank	C	Value is below Minimum Compound Limit.
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
M	Matrix Interference	ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits
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QC SUMMARY REPORT

WO#: 15060355
 25-Jun-15

Client: ICON Environmental Services
Project: Iberville Parish SB 9090-040-0100

BatchID: R44402

Sample ID MB-R44402	SampType: MBLK	TestCode: EC_S	Units: mmhos/cm	Prep Date:	RunNo: 44402						
Client ID: PBS	Batch ID: R44402	TestNo: LDNR 29-B		Analysis Date: 6/11/2015	SeqNo: 1068291						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Electrical Conductivity	< 0.10	0.10									
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Sample ID R44402LCS1	SampType: LCS1	TestCode: EC_S	Units: mmhos/cm	Prep Date:	RunNo: 44402						
Client ID: ZZZZZ	Batch ID: R44402	TestNo: LDNR 29-B		Analysis Date: 6/11/2015	SeqNo: 1068292						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Electrical Conductivity	0.47	0.10	0.47	0	99.6	89.87	110.12				
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Sample ID R44402LCS2	SampType: LCS2	TestCode: EC_S	Units: mmhos/cm	Prep Date:	RunNo: 44402						
Client ID: ZZZZZ	Batch ID: R44402	TestNo: LDNR 29-B		Analysis Date: 6/11/2015	SeqNo: 1068293						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Electrical Conductivity	53.9	0.10	53.00	0	102	90	110				
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Sample ID 15060217-002ADUP	SampType: DUP	TestCode: EC_S	Units: mmhos/cm	Prep Date:	RunNo: 44402						
Client ID: ZZZZZ	Batch ID: R44402	TestNo: LDNR 29-B		Analysis Date: 6/11/2015	SeqNo: 1068295						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Electrical Conductivity	2.61	0.10						2.72	4.24	20	
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Qualifiers:	* Value exceeds Maximum Contaminant Level.	B Analyte detected in the associated Method Blank	C Value is below Minimum Compound Limit.
	E Value above quantitation range	H Holding times for preparation or analysis exceeded	J Analyte detected below quantitation limits
	M Matrix Interference	ND Not Detected at the Reporting Limit	R RPD outside accepted recovery limits
	RL Reporting Limit	S Spike Recovery outside accepted recovery limits	U Analyte not detected



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QC SUMMARY REPORT

WO#: 15060355
 25-Jun-15

Client: ICON Environmental Services
Project: Iberville Parish SB 9090-040-0100

BatchID: R44404

Sample ID MB-R44404	SampType: MBLK	TestCode: EC_S	Units: mmhos/cm	Prep Date:	RunNo: 44404						
Client ID: PBS	Batch ID: R44404	TestNo: LDNR 29-B		Analysis Date: 6/11/2015	SeqNo: 1068268						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Electrical Conductivity < 0.10 0.10

Sample ID R44404LCS1	SampType: LCS1	TestCode: EC_S	Units: mmhos/cm	Prep Date:	RunNo: 44404						
Client ID: ZZZZZZ	Batch ID: R44404	TestNo: LDNR 29-B		Analysis Date: 6/11/2015	SeqNo: 1068269						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Electrical Conductivity 0.47 0.10 0.47 0 99.6 89.87 110.12

Sample ID R44404LCS2	SampType: LCS2	TestCode: EC_S	Units: mmhos/cm	Prep Date:	RunNo: 44404						
Client ID: ZZZZZZ	Batch ID: R44404	TestNo: LDNR 29-B		Analysis Date: 6/11/2015	SeqNo: 1068270						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Electrical Conductivity 53.8 0.10 53.00 0 102 90 110

Sample ID 15060355-010ADUP	SampType: DUP	TestCode: EC_S	Units: mmhos/cm	Prep Date:	RunNo: 44404						
Client ID: SB-4 20-22	Batch ID: R44404	TestNo: LDNR 29-B		Analysis Date: 6/11/2015	SeqNo: 1068272						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Electrical Conductivity 51.4 0.10 53.90 4.75 20 *

Qualifiers:	* Value exceeds Maximum Contaminant Level.	B Analyte detected in the associated Method Blank	C Value is below Minimum Compound Limit.
	E Value above quantitation range	H Holding times for preparation or analysis exceeded	J Analyte detected below quantitation limits
	M Matrix Interference	ND Not Detected at the Reporting Limit	R RPD outside accepted recovery limits
	RL Reporting Limit	S Spike Recovery outside accepted recovery limits	U Analyte not detected



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QC SUMMARY REPORT

WO#: 15060355
 25-Jun-15

Client: ICON Environmental Services
Project: Iberville Parish SB 9090-040-0100

BatchID: R44404

Sample ID	15060355-023ADUP	SampType:	DUP	TestCode:	EC_S	Units:	mmhos/cm	Prep Date:		RunNo:	44404		
Client ID:	SB-3 12-14	Batch ID:	R44404	TestNo:	LDNR 29-B			Analysis Date:	6/11/2015	SeqNo:	1068285		
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Electrical Conductivity		8.87		0.10						9.22	3.87	20	*

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank	C	Value is below Minimum Compound Limit.
	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	M	Matrix Interference	ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits
	RL	Reporting Limit	S	Spike Recovery outside accepted recovery limits	U	Analyte not detected



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QC SUMMARY REPORT

WO#: 15060355
 25-Jun-15

Client: ICON Environmental Services
Project: Iberville Parish SB 9090-040-0100

BatchID: R44446

Sample ID	15060355-010ADUP	SampType:	DUP	TestCode:	PMOIST	Units:	wt%	Prep Date:		RunNo:	44446		
Client ID:	SB-4 20-22	Batch ID:	R44446	TestNo:	LDNR 29-B			Analysis Date:	6/8/2015	SeqNo:	1069015		
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Percent Moisture		18.4		1.0						20.6	11.3	20	

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank	C	Value is below Minimum Compound Limit.
	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	M	Matrix Interference	ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits
	RL	Reporting Limit	S	Spike Recovery outside accepted recovery limits	U	Analyte not detected



Element Materials Technology Lafayette
 2417 W. Pinhook Road
 Lafayette, LA 70508-3344
 TEL: (337) 235-0483 FAX: (337) 233-6540
 Website: www.element.com

QC SUMMARY REPORT

WO#: 15060355
 25-Jun-15

Client: ICON Environmental Services
Project: Iberville Parish SB 9090-040-0100

BatchID: R44447

Sample ID	15060355-023ADUP	SampType:	DUP	TestCode:	PMOIST	Units:	wt%	Prep Date:		RunNo:	44447		
Client ID:	SB-3 12-14	Batch ID:	R44447	TestNo:	LDNR 29-B			Analysis Date:	6/8/2015	SeqNo:	1069057		
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Percent Moisture		31.0		1.0						26.6	15.3	20	

Sample ID	15060412-001ADUP	SampType:	DUP	TestCode:	PMOIST	Units:	wt%	Prep Date:		RunNo:	44447		
Client ID:	ZZZZZZ	Batch ID:	R44447	TestNo:	LDNR 29-B			Analysis Date:	6/9/2015	SeqNo:	1069064		
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Percent Moisture		15.3		1.0						14.7	4.0	20	

Qualifiers:

* Value exceeds Maximum Contaminant Level.	B Analyte detected in the associated Method Blank	C Value is below Minimum Compound Limit.
E Value above quantitation range	H Holding times for preparation or analysis exceeded	J Analyte detected below quantitation limits
M Matrix Interference	ND Not Detected at the Reporting Limit	R RPD outside accepted recovery limits
RL Reporting Limit	S Spike Recovery outside accepted recovery limits	U Analyte not detected



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QC SUMMARY REPORT

WO#: 15060355
 25-Jun-15

Client: ICON Environmental Services
Project: Iberville Parish SB 9090-040-0100

BatchID: R44467

Sample ID	BTEX_W LCS	SampType:	LCS	TestCode:	8021_BTEX_	Units:	mg/L	Prep Date:		RunNo:	44467			
Client ID:	LCSW	Batch ID:	R44467	TestNo:	SW8021B			Analysis Date:	6/11/2015	SeqNo:	1069965			
Analyte		Result		PQL	SPK value	SPK Ref Val		%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene		0.0537		0.00500	0.05000	0		107	72	120				
Surr: alpha, alpha, alpha-Trifluorotoluene		0.0477			0.05000			95.4	70	130				

Sample ID	BTEX_W LCSD	SampType:	LCSD	TestCode:	8021_BTEX_	Units:	mg/L	Prep Date:		RunNo:	44467			
Client ID:	LCSS02	Batch ID:	R44467	TestNo:	SW8021B			Analysis Date:	6/11/2015	SeqNo:	1069966			
Analyte		Result		PQL	SPK value	SPK Ref Val		%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene		0.0543		0.00500	0.05000	0		109	72	120	0.05370	1.11	20	
Surr: alpha, alpha, alpha-Trifluorotoluene		0.0482			0.05000			96.4	70	130		0	20	

Sample ID	MB ACID	SampType:	MBLK	TestCode:	8021_BTEX_	Units:	mg/L	Prep Date:		RunNo:	44467			
Client ID:	PBW	Batch ID:	R44467	TestNo:	SW8021B			Analysis Date:	6/11/2015	SeqNo:	1069967			
Analyte		Result		PQL	SPK value	SPK Ref Val		%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene		< 0.00500		0.00500										
Surr: alpha, alpha, alpha-Trifluorotoluene		0.0472			0.05000			94.4	70	130				

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank	C	Value is below Minimum Compound Limit.
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
M	Matrix Interference	ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits
RL	Reporting Limit	S	Spike Recovery outside accepted recovery limits	U	Analyte not detected



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QC SUMMARY REPORT

WO#: 15060355
 25-Jun-15

Client: ICON Environmental Services
Project: Iberville Parish SB 9090-040-0100

BatchID: R44674

Sample ID	MBLK	SampType:	MBLK	TestCode:	9056_LEACH	Units:	mg/L	Prep Date:		RunNo:	44674		
Client ID:	PBW	Batch ID:	R44674	TestNo:	SW9056A			Analysis Date:	6/23/2015	SeqNo:	1075955		
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride		< 0.25		0.25									

Sample ID	LCS	SampType:	LCS	TestCode:	9056_LEACH	Units:	mg/L	Prep Date:		RunNo:	44674		
Client ID:	LCSW	Batch ID:	R44674	TestNo:	SW9056A			Analysis Date:	6/23/2015	SeqNo:	1075956		
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride		10.3		0.25	10.00	0	103	80	120				

Sample ID	LCSD	SampType:	LCSD	TestCode:	9056_LEACH	Units:	mg/L	Prep Date:		RunNo:	44674		
Client ID:	LCSS02	Batch ID:	R44674	TestNo:	SW9056A			Analysis Date:	6/23/2015	SeqNo:	1075957		
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride		10.3		0.25	10.00	0	103	80	120	10.31	0.30	15	

Sample ID	15060543-001AMS	SampType:	MS	TestCode:	9056_LEACH	Units:	mg/L	Prep Date:		RunNo:	44674		
Client ID:	ZZZZZ	Batch ID:	R44674	TestNo:	SW9056A			Analysis Date:	6/23/2015	SeqNo:	1075959		
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride		2,080		25.0	500.0	1,623	90.6	80	120				

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank	C	Value is below Minimum Compound Limit.
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
M	Matrix Interference	ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits
RL	Reporting Limit	S	Spike Recovery outside accepted recovery limits	U	Analyte not detected



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QC SUMMARY REPORT

WO#: 15060355
 25-Jun-15

Client: ICON Environmental Services
Project: Iberville Parish SB 9090-040-0100

BatchID: R44674

Sample ID	15060543-001AMSD	SampType:	MSD	TestCode:	9056_LEACH	Units:	mg/L	Prep Date:		RunNo:	44674		
Client ID:	ZZZZZZ	Batch ID:	R44674	TestNo:	SW9056A			Analysis Date:	6/23/2015	SeqNo:	1075960		
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride		2,090		25.0	500.0	1,623	93.8	80	120	2,076	0.77	15	

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank	C	Value is below Minimum Compound Limit.
	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	M	Matrix Interference	ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits
	RL	Reporting Limit	S	Spike Recovery outside accepted recovery limits	U	Analyte not detected



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Sample Log-In Check List

Client Name: **ICON_ENV**

Work Order Number: **15060355**

RcptNo: **1**

Logged by: **Danielle Hollier** **6/5/2015 3:30:00 PM**
 Completed By: **Danielle Hollier** **6/8/2015 7:59:33 AM**
 Reviewed By: **Heather Delay** **6/10/2015 7:56:08 AM**

Danielle Hollier
Danielle Hollier
Heather Delay

Chain of Custody

1. Is Chain of Custody complete? Yes No Not Present
 2. How was the sample delivered? Client

Log In

3. Coolers are present? Yes No NA
 4. Shipping container/cooler in good condition? Yes No
 Custody seals intact on shipping container/cooler? Yes No Not Present
 No. Seal Date: Signed By:
 5. Was an attempt made to cool the samples? Yes No NA
 6. Were all samples received at a temperature of >0° C to 6.0°C Yes No NA
 7. Sample(s) in proper container(s)? Yes No
 8. Sufficient sample volume for indicated test(s)? Yes No
 9. Are samples (except VOA and ONG) properly preserved? Yes No
 10. Was preservative added to bottles? Yes No NA
 11. Is the headspace in the VOA vials less than 1/4 inch or 6 mm? Yes No No VOA Vials
 12. Were any sample containers received broken? Yes No
 13. Does paperwork match bottle labels? Yes No
 (Note discrepancies on chain of custody)
 14. Are matrices correctly identified on Chain of Custody? Yes No
 15. Is it clear what analyses were requested? Yes No
 16. Were all holding times able to be met? Yes No
 (If no, notify customer for authorization.)

Special Handling (if applicable)

17. Was client notified of all discrepancies with this order? Yes No NA

Person Notified:	<input type="text"/>	Date	<input type="text"/>
By Whom:	<input type="text"/>	Via:	<input type="checkbox"/> eMail <input type="checkbox"/> Phone <input type="checkbox"/> Fax <input type="checkbox"/> In Person
Regarding:	<input type="text"/>		
Client Instructions:	<input type="text"/>		

18. Additional remarks:
 Improper error correction(s) made by client
 Marked off SB-6 24-26 on Page 4 since it was already listed on Page 2.

Cooler Information

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	2.1	Good	Not Present			



Chain of Custody

Laboratory Number: **15060355**

Client Information: **JEAN ENV**
 Name: **Greg Walker**
 Address: **2049 Commercial Dr**
 City, State Zip: **Port Allen La 70267**
 Phone Number: **225 344 8490**
 Fax Number: **225 344 8490**
 E-mail Address:

Billing Information: **SAVING**
 PO Number:
 Quote Number:
 Required QC Level:
 Bill Monthly: Yes No
 Ext:

Project Name/Number: **0090-040-0100**
 Matrix Code:
 Sampler's Signature: *[Signature]*
 Shipping Method: **UPS / FedEx / Airborne**
 DHL / Element / Hand / Mail

Matrix Code Legend:
 DW = Drinking Water
 WW = Waste Water
 GW = Ground Water
 AQ = Aqueous
 SL = Sludge
 O = Oil
 F = Food
 NG = Natural Gas
 NGL = Natural Gas Liquid
 PW = Produced Water
 CF = Completion Fluid

Sample ID/Description	Turn Time	Which Regulations Apply:	Collection Information	Container	Pres.	Requested Tests	Comments
SB-11	6-2-15	0-1	830 Comp	P	HCl, HNO ₃ , H ₂ SO ₄ , NaOH, Na ₂ S ₂ O ₈	Leach/CI	
SB-12	930	0-2	930	P		Leach/CI	
SB-12	935	2-4	935	P		Leach/CI	
SB-13	1030	0-2	1030	P		Leach/CI	
SB-13	1035	2-4	1035	P		Leach/CI	
SB-14	1130	0-2	1130	P		Leach/CI	
SB-14	1135	2-4	1135	P		Leach/CI	
SB-4	1430	4-6	1430	P		Leach/CI	
SB-4	1435	8-10	1435	P		Leach/CI	

Relinquished by	Date/Time	Received by	Date/Time	Field Notes
<i>[Signature]</i>	6-5-15/1300	<i>[Signature]</i>	6-5-15/1300	Received at lab on ice? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No Temp: 2.0C
<i>[Signature]</i>	6-5-15/1530	<i>[Signature]</i>	6-5-15/1530	

All samples submitted to Element Materials Technology for analysis are accepted on a custodial basis only. Ownership of the material remains with the client submitting the samples. CH
 Element Materials Technology reserves the right to return unused sample portions.

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 F 765-378-4109

629 Washington St. Suite 300
 Columbus, IN 47201-4231 USA
 P 812-375-0531
 F 812-375-0731

580 South Zimmer Road
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 P 574-267-3305
 F 574-269-6559

3371 Cleveland Road, Suite 100A
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 P 574-277-0707
 F 574-273-5699

2417 W. Pinhook Rd
 Lafayette, LA 70506-3344 USA
 P 337-235-0483
 F 337-233-6540



Chain of Custody

Laboratory Number: **15260355**

Client Information: **Iron** Billing Information: *[Signature]* PO Number: *[Blank]* Project Name/Number: **same** Page **2** of **4**
 Company Name: **Iron** Quote Number: *[Blank]* Sampler's Signature: *[Signature]* Matrix Code: **DW = Drinking Water, WW = Waste Water, GW = Ground Water, AQ = Aqueous, OT = Other, SL = Sludge, SOL = Solid, O = Oil, SO = Soil, F = Food, SW = Swab, NG = Natural Gas, NGL = Natural Gas Liquid, PW = Produced Water, CF = Completion Fluid**
 Address: *[Blank]* Required QC Level: *[Blank]* Shipping Method: **UPS / FedEx / Airborne**
 City, State Zip: *[Blank]* Bill Monthly: Yes No DHL / Element (Hand / Mail)

Sample ID/Description	Turn Time	Which Regulations Apply:	Collection Information	Container	Pres.	Requested Tests	Comments
SB-4	70-22	<input checked="" type="checkbox"/> RCRA <input type="checkbox"/> Drinking Water <input type="checkbox"/> Distribution <input type="checkbox"/> POTW <input type="checkbox"/> NPDES <input type="checkbox"/> USDO/FDA <input checked="" type="checkbox"/> RECAP/IRIS <input type="checkbox"/> Other	6-2-15	1450	G	SOL	
SB-4	24-26		1500				
SB-4	34-36		1520				
SB-3	18-20		1020				
SB-3	24-26		1230				
SB-3	30-32		1040				
SB-6	8-10		6-3-15				
SB-6	16-18		1150				
SB-6	24-26		1210				

Relinquished by	Date/Time	Received by	Date/Time	Field Notes:
<i>[Signature]</i>	6-5-15 / 1300	<i>[Signature]</i>	6-5-15 / 1300	Received at lab on ice? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No Temp: 2.10
<i>[Signature]</i>	6-5-15 / 1530	<i>[Signature]</i>	6-5-15 / 1530	

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 47334-0569 USA 47201-6231 USA 46803-1328 USA 46580-2368 USA 46628-8760 USA 70508-3344 USA
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 F 765-378-4108 F 812-375-0731 F 260-471-7777 F 574-269-6569 F 574-273-5699 F 337-235-6540



Chain of Custody

15760355

Laboratory Number: 15760355

Client Information: **Iron**
 Billing Information: PO Number: **9090-040-0100**
 Project Name/Number: **9090-040-0100**
 Matrix Code: **Page 3 of 4**
 Quote Number: **Everville Parish SB**
 Sampler's Signature: *[Signature]*
 Shipping Method: **UPS / FedEx / Airborne**
 Required QC Level: Yes No
 Bill Monthly: Yes No
 Ext: _____
 City, State Zip: _____
 Phone Number: _____
 Fax Number: _____
 E-mail Address: _____

Sample ID/Description	Turn Time	Which Regulations Apply:	Container	Pres.	Requested Tests	Comments
SB-5	6-4-15	1100	G	AQ	HCl, HNO ₃ , H ₂ SO ₄ NaOH, Na ₂ S ₂ O ₈ G=Glass, V=Vial Type P=Plastic Quantity 6	Metals As Ba Cd Cr Fe Mn Pb Sr Zn Hg Cations Na K Mg Ca Anions Sulfate AK Carbonate AK Bicarbonate
					HCl, HNO ₃ , H ₂ SO ₄ NaOH, Na ₂ S ₂ O ₈ G=Glass, V=Vial Type P=Plastic Quantity 6	Metals As Ba Cd Cr Fe Mn Pb Sr Zn Hg Cations Na K Mg Ca Anions Sulfate AK Carbonate AK Bicarbonate

Relinquished by	Date/Time	Received by	Date/Time	Field Notes
<i>[Signature]</i>	6-5-15 / 1300	<i>[Signature]</i>	6-5-15 / 1300	Received at lab on ice? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No Temp: 21°C
<i>[Signature]</i>	6-5-15 / 1530	<i>[Signature]</i>	6-5-15 / 1530	

All samples submitted to Element Materials Technology for analysis are accepted on a custodial basis only. Ownership of the material remains with the client submitting the samples.

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 Lafayette, LA 70508-3344 USA
 P 337-235-0483
 F 337-233-6540



Chain of Custody

Laboratory Number: 15260355

Client Information: **Iron** PO Number: **900-010-0100** Project Name/Number: **900-010-0100** Page 4 of 4
 Billing Information: **same** Quote Number: **Dixville Peak SB** Matrix Code
 Turn Time: Standard RUSH 1 Day 2 Day Other
 Which Regulations Apply: Drinking Water Distribution Special State Other
 USDA/FDA IECAP/RISC Other

Sample ID/Description	Turn Time		Date	Collection Information		Quantity	Container	Pres.	Requested Tests	Comments
	Date	Time		Grab / Composite	Matrix					
SB-6	24-26	6-3-15	12:10	G	50L	1	P	HCl, HNO ₃ , H ₂ SO ₄ , NaOH, Na ₂ S ₂ O ₈	TRH 20	SB-6 24-26 Already listed on Page 2. DH 6-8-15
SB-6	32-34	6-3-15	14:05	G	50L	2	VP		298Mchls	
SB-5	8-10	6-8-15	16:05	VP	VP	2	P, VP		Leach CI	
SB-5	6-8	6-8-15	16:00	VP	VP	2	P, VP		CEC	
SB-5	12-14	6-2-15	10:10	VP	VP	1	P		SAR/ESP	
SB-5	16-18	6-3-15	16:20	VP	VP	1	P		EC	
SB-5	20-22	6-4-15	16:30	VP	VP	1	P			
SB-5	32-34	6-4-15	12:10	VP	VP	1	P			

Relinquished by	Date/Time	Received by	Date/Time	Field Notes
<i>[Signature]</i>	6-5-15 / 1300	<i>[Signature]</i>	6-5-15 / 1300	Received at lab on ice? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No Temp: 2.10C
<i>[Signature]</i>	6-5-15 / 1530	<i>[Signature]</i>	6-5-15 / 1530	

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Website: www.element.com

July 01, 2015

Greg Miller
ICON Environmental Services
2049 Commercial Drive
Port Allen, LA 70767
TEL: (225) 344-8490
FAX (225) 344-6654

RE: Iberville Parish SB 9090-040-0100

Order No.: 15060607

Dear Greg Miller:

Element Materials Technology Lafayette, LLC received 26 sample(s) on 6/12/2015 for the analyses presented in the following report.

In accordance with your instructions Element Lafayette conducted the analysis shown on the following pages on samples submitted by your company. The results related only to the items tested. Unless otherwise noted, all analyses were conducted using EPA approved methodologies and all test results meet all requirements of TNI. All relevant sampling information is on the attached Chain-of-Custody form.

All soil data, except for 29-B, are on a wet-weight basis unless otherwise indicated in the units field as –dry.

LELAP Certification No.: 01997. TCEQ Certification No.: T104704261-14-6. A scope of accredited parameters is available upon request. A "#" by the test method or analyte indicates this parameter is outside the scope of accreditation.

Estimated uncertainty is available upon request. This report shall not be reproduced except in full, without the written approval of the laboratory.

If you have any questions regarding these test results, please feel free to call.

A handwritten signature in blue ink, appearing to read 'Cristina Thibeaux'.

Cristina Thibeaux
Customer Service Supervisor
2417 W. Pinhook Road
Lafayette, LA 70508-3344



Element Materials Technology Lafayette
2417 W. Pinhook Road
Lafayette, LA 70508-3344
TEL: (337) 235-0483 FAX: (337) 233-6540
Website: www.element.com

Case Narrative

WO#: 15060607
Date: 7/1/2015

CLIENT: ICON Environmental Services
Project: Iberville Parish SB 9090-040-0100

Unless specified by the client, a duplicate or MS/MSD, wherever applicable, is randomly selected and analyzed from each analytical batch provided sample volume is sufficient. The sample chosen for duplicate or MS/MSD may or may not be a sample submitted in this workorder. A method blank and/or a lab control sample (LCS)/lab control sample duplicate (LCSD), wherever applicable, are processed as a quality control check for each analytical batch. When the matrix QC data is not available due to insufficient sample volume or when the results indicate possible matrix effect, the validity of the batch is determined by the method blank and LCS/LCSD.

The results of the laboratory internal quality control data are provided in the QC Summary Report section of the report for your review. Laboratory-related QC exceptions that may impact the validity of data are discussed in the case narrative. Sample-related QC exceptions are flagged either in the results page(s) or in the QC report page(s). End users should consider QC exceptions when evaluating sample data against data quality objectives.

Any other exceptions associated with this report will be footnoted in the results page(s) or the QC summary page(s).

Due to insufficient volume, the Leachable chloride by method SW9056A requested on the COC could not be completed on the following samples: SB-8 8-10 (Lab ID: 15060607-017) and SB-9 8-10 (Lab ID: 15060607-020).

Due to limited sample, the following were prepared for Leachate Chloride, using less than 100g of the soil (dry wt basis). The amount of the extraction fluid was proportionally reduced to yield a 1:4 sample to fluid ratio.

15060607-001A insufficient volume for chloride leachate, used 42.0g

15060607-012A insufficient volume for chloride leachate, used 24.0g

15060607-024A insufficient volume for chloride leachate, used 66.0g



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Analytical Report

(consolidated)

WO#: **15060607**

Date Reported: **7/1/2015**

CLIENT: ICON Environmental Services
Project: Iberville Parish SB 9090-040-0100
Lab ID: 15060607-001
Client Sample ID SB-2 6-8

Collection Date: 6/8/2015 9:30:00 AM

Matrix: SOIL

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
29B SALTS						
CATION EXCHANGE CAPACITY						
Cation Exchange Capacity	64.6	0.1		meq/100g	1	6/23/2015 12:10:00 PM
29B SALTS						
ELECTRICAL CONDUCTIVITY @ SATURATION						
Electrical Conductivity	13.3	0.10	*	mmhos/cm	1	6/19/2015 9:56:00 AM
29B SALTS						
EXCHANGEABLE SODIUM PERCENTAGE						
Exchangeable Sodium %	11.2	0.1		%	1	6/23/2015 12:10:00 PM
PERCENT MOISTURE						
Percent Moisture	34.9	1.0		wt%	1	6/12/2015 3:30:00 PM
29B SALTS						
SODIUM ADSORPTION RATIO						
Sodium Adsorption Ratio	19.7	0.100	*		1	6/25/2015
Soluble Calcium	28.1	1.00		meq/L	1	6/25/2015
Soluble Magnesium	14.7	1.00		meq/L	1	6/25/2015
Soluble Sodium	91.0	1.00		meq/L	1	6/25/2015
29B METALS						
MERCURY IN SOIL OR SLUDGE						
Mercury	< 0.10	0.10		mg/Kg-dry	1	6/16/2015 12:47:10 PM
INORGANIC ANIONS IN LEACHATE BY IC						
Chloride	1,340	25.0		mg/L	100	6/25/2015 1:21:17 PM
29B METALS						
METALS IN SOIL OR SLUDGE BY ICP						
Arsenic	5.70	1.00		mg/Kg-dry	1	6/16/2015 7:36:21 PM
Barium	198	1.00		mg/Kg-dry	1	6/16/2015 7:36:21 PM

Qualifiers:

- | | |
|--|---|
| * Value exceeds Maximum Contaminant Level. | B Analyte detected in the associated Method Blank |
| C Value is below Minimum Compound Limit. | E Value above quantitation range |
| H Holding times for preparation or analysis exceeded | J Analyte detected below quantitation limits |
| M Matrix Interference | ND Not Detected at the Reporting Limit |
| R RPD outside accepted recovery limits | RL Reporting Limit |
| S Spike Recovery outside accepted recovery limits | U Analyte not detected |



Element Materials Technology Lafayette
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 Website: www.element.com

Analytical Report

(consolidated)

WO#: **15060607**

Date Reported: **7/1/2015**

CLIENT: ICON Environmental Services
Project: Iberville Parish SB 9090-040-0100
Lab ID: 15060607-001
Client Sample ID SB-2 6-8

Collection Date: 6/8/2015 9:30:00 AM

Matrix: SOIL

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
29B METALS					SW6010B	SW3050B
METALS IN SOIL OR SLUDGE BY ICP						Analyst: STS
Cadmium	< 0.50	0.50		mg/Kg-dry	1	6/16/2015 7:36:21 PM
Chromium	14.8	1.00		mg/Kg-dry	1	6/16/2015 7:36:21 PM
Lead	14.1	1.00		mg/Kg-dry	1	6/16/2015 7:36:21 PM
Strontium	52.6	1.00		mg/Kg-dry	1	6/16/2015 7:36:21 PM
Zinc	60.3	1.00		mg/Kg-dry	1	6/16/2015 7:36:21 PM
29B METALS					LDNR 29-B	Analyst: STS
TRUE TOTAL BARIUM						
True Total Barium	343	49		mg/Kg-dry	1	6/16/2015 10:31:52 PM

Qualifiers:

- | | |
|--|---|
| * Value exceeds Maximum Contaminant Level. | B Analyte detected in the associated Method Blank |
| C Value is below Minimum Compound Limit. | E Value above quantitation range |
| H Holding times for preparation or analysis exceeded | J Analyte detected below quantitation limits |
| M Matrix Interference | ND Not Detected at the Reporting Limit |
| R RPD outside accepted recovery limits | RL Reporting Limit |
| S Spike Recovery outside accepted recovery limits | U Analyte not detected |



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Analytical Report

(consolidated)

WO#: **15060607**

Date Reported: **7/1/2015**

CLIENT: ICON Environmental Services
Project: Iberville Parish SB 9090-040-0100
Lab ID: 15060607-002
Client Sample ID SB-2 12-14

Collection Date: 6/8/2015 9:40:00 AM

Matrix: SOIL

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
ELECTRICAL CONDUCTIVITY @ SATURATION				LDNR 29-B		Analyst: MMT
Electrical Conductivity	20.8	0.10	*	mmhos/cm	1	6/19/2015 9:56:00 AM
PERCENT MOISTURE				LDNR 29-B		Analyst: MMT
Percent Moisture	47.8	1.0		wt%	1	6/12/2015 3:30:00 PM

Qualifiers:

- | | |
|--|---|
| * Value exceeds Maximum Contaminant Level. | B Analyte detected in the associated Method Blank |
| C Value is below Minimum Compound Limit. | E Value above quantitation range |
| H Holding times for preparation or analysis exceeded | J Analyte detected below quantitation limits |
| M Matrix Interference | ND Not Detected at the Reporting Limit |
| R RPD outside accepted recovery limits | RL Reporting Limit |
| S Spike Recovery outside accepted recovery limits | U Analyte not detected |



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Analytical Report

(consolidated)

WO#: **15060607**

Date Reported: **7/1/2015**

CLIENT: ICON Environmental Services
Project: Iberville Parish SB 9090-040-0100
Lab ID: 15060607-003
Client Sample ID SB-2 20-22

Collection Date: 6/8/2015 9:50:00 AM

Matrix: SOIL

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
ELECTRICAL CONDUCTIVITY @ SATURATION				LDNR 29-B		Analyst: MMT
Electrical Conductivity	7.13	0.10	*	mmhos/cm	1	6/19/2015 9:56:00 AM
PERCENT MOISTURE				LDNR 29-B		Analyst: MMT
Percent Moisture	37.7	1.0		wt%	1	6/12/2015 3:30:00 PM

Qualifiers:

- | | |
|--|---|
| * Value exceeds Maximum Contaminant Level. | B Analyte detected in the associated Method Blank |
| C Value is below Minimum Compound Limit. | E Value above quantitation range |
| H Holding times for preparation or analysis exceeded | J Analyte detected below quantitation limits |
| M Matrix Interference | ND Not Detected at the Reporting Limit |
| R RPD outside accepted recovery limits | RL Reporting Limit |
| S Spike Recovery outside accepted recovery limits | U Analyte not detected |



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Analytical Report

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WO#: **15060607**

Date Reported: **7/1/2015**

CLIENT: ICON Environmental Services
Project: Iberville Parish SB 9090-040-0100
Lab ID: 15060607-004
Client Sample ID SB-2 28-30

Collection Date: 6/8/2015 10:00:00 AM

Matrix: SOIL

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
ELECTRICAL CONDUCTIVITY @ SATURATION				LDNR 29-B		Analyst: MMT
Electrical Conductivity	1.98	0.10		mmhos/cm	1	6/19/2015 9:57:00 AM
PERCENT MOISTURE				LDNR 29-B		Analyst: MMT
Percent Moisture	41.1	1.0		wt%	1	6/12/2015 3:30:00 PM

Qualifiers:

- | | |
|--|---|
| * Value exceeds Maximum Contaminant Level. | B Analyte detected in the associated Method Blank |
| C Value is below Minimum Compound Limit. | E Value above quantitation range |
| H Holding times for preparation or analysis exceeded | J Analyte detected below quantitation limits |
| M Matrix Interference | ND Not Detected at the Reporting Limit |
| R RPD outside accepted recovery limits | RL Reporting Limit |
| S Spike Recovery outside accepted recovery limits | U Analyte not detected |



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Analytical Report

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WO#: 15060607

Date Reported: 7/1/2015

CLIENT: ICON Environmental Services
Project: Iberville Parish SB 9090-040-0100
Lab ID: 15060607-005
Client Sample ID SB-1 6-8

Collection Date: 6/8/2015 11:00:00 AM

Matrix: SOIL

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
29B SALTS						
CATION EXCHANGE CAPACITY						
Cation Exchange Capacity	64.2	0.1		meq/100g	1	6/23/2015 12:10:00 PM
29B SALTS						
ELECTRICAL CONDUCTIVITY @ SATURATION						
Electrical Conductivity	8.62	0.10	*	mmhos/cm	1	6/19/2015 9:57:00 AM
29B SALTS						
EXCHANGEABLE SODIUM PERCENTAGE						
Exchangeable Sodium %	3.8	0.1		%	1	6/23/2015 12:10:00 PM
PERCENT MOISTURE						
Percent Moisture	34.8	1.0		wt%	1	6/12/2015 3:30:00 PM
29B SALTS						
SODIUM ADSORPTION RATIO						
Sodium Adsorption Ratio	7.21	0.100			1	6/25/2015
Soluble Calcium	31.6	1.00		meq/L	1	6/25/2015
Soluble Magnesium	17.9	1.00		meq/L	1	6/25/2015
Soluble Sodium	35.9	1.00		meq/L	1	6/25/2015
29B METALS						
MERCURY IN SOIL OR SLUDGE						
Mercury	< 0.10	0.10		mg/Kg-dry	1	6/16/2015 12:49:30 PM
INORGANIC ANIONS IN LEACHATE BY IC						
Chloride	508	12.5		mg/L	50	6/25/2015 1:35:02 PM
29B METALS						
METALS IN SOIL OR SLUDGE BY ICP						
Arsenic	5.88	0.99		mg/Kg-dry	1	6/16/2015 7:40:14 PM
Barium	207	0.99		mg/Kg-dry	1	6/16/2015 7:40:14 PM

Qualifiers:

- | | |
|--|---|
| * Value exceeds Maximum Contaminant Level. | B Analyte detected in the associated Method Blank |
| C Value is below Minimum Compound Limit. | E Value above quantitation range |
| H Holding times for preparation or analysis exceeded | J Analyte detected below quantitation limits |
| M Matrix Interference | ND Not Detected at the Reporting Limit |
| R RPD outside accepted recovery limits | RL Reporting Limit |
| S Spike Recovery outside accepted recovery limits | U Analyte not detected |



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Analytical Report

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WO#: **15060607**

Date Reported: **7/1/2015**

CLIENT: ICON Environmental Services
Project: Iberville Parish SB 9090-040-0100
Lab ID: 15060607-005
Client Sample ID SB-1 6-8

Collection Date: 6/8/2015 11:00:00 AM

Matrix: SOIL

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
29B METALS					SW6010B	SW3050B
METALS IN SOIL OR SLUDGE BY ICP						Analyst: STS
Cadmium	< 0.50	0.50		mg/Kg-dry	1	6/16/2015 7:40:14 PM
Chromium	16.0	0.99		mg/Kg-dry	1	6/16/2015 7:40:14 PM
Lead	14.8	0.99		mg/Kg-dry	1	6/16/2015 7:40:14 PM
Strontium	44.8	0.99		mg/Kg-dry	1	6/16/2015 7:40:14 PM
Zinc	63.6	0.99		mg/Kg-dry	1	6/16/2015 7:40:14 PM
29B METALS					LDNR 29-B	Analyst: STS
TRUE TOTAL BARIUM						
True Total Barium	324	46		mg/Kg-dry	1	6/16/2015 10:35:38 PM

Qualifiers:

- | | |
|--|---|
| * Value exceeds Maximum Contaminant Level. | B Analyte detected in the associated Method Blank |
| C Value is below Minimum Compound Limit. | E Value above quantitation range |
| H Holding times for preparation or analysis exceeded | J Analyte detected below quantitation limits |
| M Matrix Interference | ND Not Detected at the Reporting Limit |
| R RPD outside accepted recovery limits | RL Reporting Limit |
| S Spike Recovery outside accepted recovery limits | U Analyte not detected |



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Analytical Report

(consolidated)

WO#: **15060607**

Date Reported: **7/1/2015**

CLIENT: ICON Environmental Services
Project: Iberville Parish SB 9090-040-0100
Lab ID: 15060607-006
Client Sample ID SB-1 12-14

Collection Date: 6/8/2015 11:10:00 AM

Matrix: SOIL

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
ELECTRICAL CONDUCTIVITY @ SATURATION				LDNR 29-B		Analyst: MMT
Electrical Conductivity	5.99	0.10	*	mmhos/cm	1	6/19/2015 9:58:00 AM
PERCENT MOISTURE				LDNR 29-B		Analyst: MMT
Percent Moisture	46.8	1.0		wt%	1	6/12/2015 3:30:00 PM
TPH-D/O IN SOIL BY SW8015				SW8015B	SW3550C	Analyst: MMV
TPH DRO/ORO IN SOIL BY SW8015						
TPH (Diesel Range)	< 50.0	50.0		mg/Kg	10	6/16/2015 5:03:00 AM
TPH (Oil Range)	< 50.0	50.0		mg/Kg	10	6/16/2015 5:03:00 AM
Surr: 4-Terphenyl-d14	83.4	33 - 152		%REC	10	6/16/2015 5:03:00 AM
29B METALS				29B/SW7471A	SW7471A	Analyst: KML
MERCURY IN SOIL OR SLUDGE						
Mercury	< 0.10	0.10		mg/Kg-dry	1	6/16/2015 12:51:50 PM
29B METALS				SW6010B	SW3050B	Analyst: STS
METALS IN SOIL OR SLUDGE BY ICP						
Arsenic	8.69	0.99		mg/Kg-dry	1	6/16/2015 7:44:05 PM
Barium	269	0.99		mg/Kg-dry	1	6/16/2015 7:44:05 PM
Cadmium	0.82	0.50		mg/Kg-dry	1	6/16/2015 7:44:05 PM
Chromium	15.8	0.99		mg/Kg-dry	1	6/16/2015 7:44:05 PM
Lead	13.5	0.99		mg/Kg-dry	1	6/16/2015 7:44:05 PM
Strontium	53.0	0.99		mg/Kg-dry	1	6/16/2015 7:44:05 PM
Zinc	61.4	0.99		mg/Kg-dry	1	6/16/2015 7:44:05 PM
29B METALS				LDNR 29-B		Analyst: STS
TRUE TOTAL BARIUM						
True Total Barium	371	47		mg/Kg-dry	1	6/16/2015 10:39:25 PM

Qualifiers:

- | | |
|--|---|
| * Value exceeds Maximum Contaminant Level. | B Analyte detected in the associated Method Blank |
| C Value is below Minimum Compound Limit. | E Value above quantitation range |
| H Holding times for preparation or analysis exceeded | J Analyte detected below quantitation limits |
| M Matrix Interference | ND Not Detected at the Reporting Limit |
| R RPD outside accepted recovery limits | RL Reporting Limit |
| S Spike Recovery outside accepted recovery limits | U Analyte not detected |



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Analytical Report

(consolidated)

WO#: **15060607**

Date Reported: **7/1/2015**

CLIENT: ICON Environmental Services
Project: Iberville Parish SB 9090-040-0100
Lab ID: 15060607-007
Client Sample ID SB-1 18-20

Collection Date: 6/8/2015 11:15:00 AM

Matrix: SOIL

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
ELECTRICAL CONDUCTIVITY @ SATURATION				LDNR 29-B		Analyst: MMT
Electrical Conductivity	3.67	0.10		mmhos/cm	1	6/19/2015 9:58:00 AM
PERCENT MOISTURE				LDNR 29-B		Analyst: MMT
Percent Moisture	35.2	1.0		wt%	1	6/12/2015 3:30:00 PM
TPH-D/O IN SOIL BY SW8015				SW8015B	SW3550C	Analyst: MMV
TPH DRO/ORO IN SOIL BY SW8015						
TPH (Diesel Range)	< 50.0	50.0		mg/Kg	10	6/16/2015 5:19:00 AM
TPH (Oil Range)	< 50.0	50.0		mg/Kg	10	6/16/2015 5:19:00 AM
Surr: 4-Terphenyl-d14	67.9	33 - 152		%REC	10	6/16/2015 5:19:00 AM
29B METALS				29B/SW7471A	SW7471A	Analyst: KML
MERCURY IN SOIL OR SLUDGE						
Mercury	< 0.10	0.10		mg/Kg-dry	1	6/16/2015 12:59:51 PM
29B METALS				SW6010B	SW3050B	Analyst: STS
METALS IN SOIL OR SLUDGE BY ICP						
Arsenic	13.3	0.99	*	mg/Kg-dry	1	6/16/2015 7:47:43 PM
Barium	136	0.99		mg/Kg-dry	1	6/16/2015 7:47:43 PM
Cadmium	0.66	0.50		mg/Kg-dry	1	6/16/2015 7:47:43 PM
Chromium	8.73	0.99		mg/Kg-dry	1	6/16/2015 7:47:43 PM
Lead	7.98	0.99		mg/Kg-dry	1	6/16/2015 7:47:43 PM
Strontium	32.2	0.99		mg/Kg-dry	1	6/16/2015 7:47:43 PM
Zinc	38.2	0.99		mg/Kg-dry	1	6/16/2015 7:47:43 PM
29B METALS				LDNR 29-B		Analyst: STS
TRUE TOTAL BARIUM						
True Total Barium	274	48		mg/Kg-dry	1	6/16/2015 10:43:11 PM

Qualifiers:

- | | |
|--|---|
| * Value exceeds Maximum Contaminant Level. | B Analyte detected in the associated Method Blank |
| C Value is below Minimum Compound Limit. | E Value above quantitation range |
| H Holding times for preparation or analysis exceeded | J Analyte detected below quantitation limits |
| M Matrix Interference | ND Not Detected at the Reporting Limit |
| R RPD outside accepted recovery limits | RL Reporting Limit |
| S Spike Recovery outside accepted recovery limits | U Analyte not detected |



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Analytical Report

(consolidated)

WO#: 15060607

Date Reported: 7/1/2015

CLIENT: ICON Environmental Services
Project: Iberville Parish SB 9090-040-0100
Lab ID: 15060607-008
Client Sample ID SB-1 22-24

Collection Date: 6/8/2015 11:25:00 AM

Matrix: SOIL

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
ELECTRICAL CONDUCTIVITY @ SATURATION				LDNR 29-B		Analyst: MMT
Electrical Conductivity	3.88	0.10		mmhos/cm	1	6/19/2015 9:58:00 AM
PERCENT MOISTURE				LDNR 29-B		Analyst: MMT
Percent Moisture	27.8	1.0		wt%	1	6/12/2015 3:30:00 PM
TPH-D/O IN SOIL BY SW8015				SW8015B	SW3550C	Analyst: MMV
TPH DRO/ORO IN SOIL BY SW8015						
TPH (Diesel Range)	< 50.0	50.0		mg/Kg	10	6/16/2015 5:35:00 AM
TPH (Oil Range)	< 50.0	50.0		mg/Kg	10	6/16/2015 5:35:00 AM
Surr: 4-Terphenyl-d14	70.7	33 - 152		%REC	10	6/16/2015 5:35:00 AM
29B METALS				29B/SW7471A	SW7471A	Analyst: KML
MERCURY IN SOIL OR SLUDGE						
Mercury	< 0.10	0.10		mg/Kg-dry	1	6/16/2015 1:02:10 PM
29B METALS				SW6010B	SW3050B	Analyst: STS
METALS IN SOIL OR SLUDGE BY ICP						
Arsenic	3.49	0.99		mg/Kg-dry	1	6/16/2015 7:51:30 PM
Barium	158	0.99		mg/Kg-dry	1	6/16/2015 7:51:30 PM
Cadmium	< 0.50	0.50		mg/Kg-dry	1	6/16/2015 7:51:30 PM
Chromium	7.58	0.99		mg/Kg-dry	1	6/16/2015 7:51:30 PM
Lead	6.47	0.99		mg/Kg-dry	1	6/16/2015 7:51:30 PM
Strontium	35.2	0.99		mg/Kg-dry	1	6/16/2015 7:51:30 PM
Zinc	32.0	0.99		mg/Kg-dry	1	6/16/2015 7:51:30 PM
29B METALS				LDNR 29-B		Analyst: STS
TRUE TOTAL BARIUM						
True Total Barium	210	47		mg/Kg-dry	1	6/16/2015 10:46:56 PM

Qualifiers:

- | | |
|--|---|
| * Value exceeds Maximum Contaminant Level. | B Analyte detected in the associated Method Blank |
| C Value is below Minimum Compound Limit. | E Value above quantitation range |
| H Holding times for preparation or analysis exceeded | J Analyte detected below quantitation limits |
| M Matrix Interference | ND Not Detected at the Reporting Limit |
| R RPD outside accepted recovery limits | RL Reporting Limit |
| S Spike Recovery outside accepted recovery limits | U Analyte not detected |



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Analytical Report

(consolidated)

WO#: **15060607**

Date Reported: **7/1/2015**

CLIENT: ICON Environmental Services
Project: Iberville Parish SB 9090-040-0100
Lab ID: 15060607-009
Client Sample ID SB-1

Collection Date: 6/8/2015 3:15:00 PM

Matrix: AQUEOUS

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	
TPH-D/O IN WATER BY SW8015							
					SW8015B	SW3510C	Analyst: MMV
TPH DRO/ORO IN WATER BY SW8015							
TPH (Diesel Range)	2.27	0.13		mg/L	1	6/16/2015 5:32:00 PM	
TPH (Oil Range)	0.23	0.12		mg/L	1	6/16/2015 5:32:00 PM	
Surr: 4-Terphenyl-d14	57.6	36.8 - 128		%REC	1	6/16/2015 5:32:00 PM	
BTEX/TPH-G IN WATER BY SW8021/8015							
					SW8015B	Analyst: MMV	
TPH-GRO IN WATER BY SW8015							
TPH (Gasoline Range)	0.17	0.15		mg/L	1	6/15/2015 9:46:00 PM	
Surr: alpha, alpha, alpha-Trifluorotoluene	95.0	70 - 130		%REC	1	6/15/2015 9:46:00 PM	
BTEX/TPH-G IN WATER BY SW8021/8015							
					SW8021B	Analyst: MMV	
BTEX IN WATER BY SW8021							
Benzene	0.0498	0.00500		mg/L	1	6/15/2015 9:46:00 PM	
Ethylbenzene	< 0.00500	0.00500		mg/L	1	6/15/2015 9:46:00 PM	
Toluene	< 0.0100	0.0100		mg/L	1	6/15/2015 9:46:00 PM	
Xylenes, Total	< 0.0500	0.0500		mg/L	1	6/15/2015 9:46:00 PM	
Surr: alpha, alpha, alpha-Trifluorotoluene	91.6	70 - 130		%REC	1	6/15/2015 9:46:00 PM	
METALS IN GROUND WATER							
					SW7470A	Analyst: KML	
MERCURY IN GROUND WATER, TOTAL							
Mercury	< 0.0002	0.0002		mg/L	1	6/15/2015 7:03:05 PM	
INORGANIC ANIONS IN WATER BY IC							
					SW9056A	Analyst: TBB	
Chloride	1,020	25.0		mg/L	100	6/16/2015 3:03:57 PM	
Sulfate	< 1.25	1.25		mg/L	5	6/16/2015 7:11:17 PM	
METALS IN GROUND WATER							
					SW6010B	Analyst: STS	
METALS IN WATER BY ICP, TOTALS							
Arsenic	0.017	0.010		mg/L	1	6/15/2015 5:27:16 PM	
Barium	1.22	0.010		mg/L	1	6/15/2015 5:27:16 PM	
Cadmium	< 0.005	0.005		mg/L	1	6/15/2015 5:27:16 PM	
Calcium	523	5.00		mg/L	10	6/15/2015 5:49:12 PM	

Qualifiers:

- | | |
|--|---|
| * Value exceeds Maximum Contaminant Level. | B Analyte detected in the associated Method Blank |
| C Value is below Minimum Compound Limit. | E Value above quantitation range |
| H Holding times for preparation or analysis exceeded | J Analyte detected below quantitation limits |
| M Matrix Interference | ND Not Detected at the Reporting Limit |
| R RPD outside accepted recovery limits | RL Reporting Limit |
| S Spike Recovery outside accepted recovery limits | U Analyte not detected |



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Analytical Report

(consolidated)

WO#: **15060607**

Date Reported: **7/1/2015**

CLIENT: ICON Environmental Services
Project: Iberville Parish SB 9090-040-0100
Lab ID: 15060607-009
Client Sample ID SB-1

Collection Date: 6/8/2015 3:15:00 PM

Matrix: AQUEOUS

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
METALS IN GROUND WATER					SW6010B	Analyst: STS
METALS IN WATER BY ICP, TOTALS						
Chromium	< 0.010	0.010		mg/L	1	6/15/2015 5:27:16 PM
Iron	67.8	0.100		mg/L	10	6/15/2015 5:49:12 PM
Lead	< 0.010	0.010		mg/L	1	6/15/2015 5:27:16 PM
Magnesium	195	5.00		mg/L	10	6/15/2015 5:49:12 PM
Manganese	3.81	0.010		mg/L	1	6/15/2015 5:27:16 PM
Potassium	< 5.00	5.00		mg/L	1	6/16/2015 4:41:50 PM
Sodium	273	50.0		mg/L	10	6/15/2015 5:49:12 PM
Strontium	3.43	0.100		mg/L	10	6/15/2015 5:49:12 PM
Zinc	0.012	0.010		mg/L	1	6/15/2015 5:27:16 PM
ALKALINITY; TOTAL, CARB, BICARB					SM2320 B	Analyst: TBB
Alkalinity, Bicarbonate (As CaCO3)	1,340	20		mgCaCO3/L	2	6/16/2015 12:15:43 PM
Alkalinity, Carbonate (As CaCO3)	< 20	20		mgCaCO3/L	2	6/16/2015 12:15:43 PM
Alkalinity, Total (As CaCO3)	1,340	20		mgCaCO3/L	2	6/16/2015 12:15:43 PM
TOTAL DISSOLVED SOLIDS					SM2540C	Analyst: GMS
Total Dissolved Solids (Residue, Filterable)	3,480	200		mg/L	10	6/15/2015 8:13:00 AM

Qualifiers:

- | | |
|--|---|
| * Value exceeds Maximum Contaminant Level. | B Analyte detected in the associated Method Blank |
| C Value is below Minimum Compound Limit. | E Value above quantitation range |
| H Holding times for preparation or analysis exceeded | J Analyte detected below quantitation limits |
| M Matrix Interference | ND Not Detected at the Reporting Limit |
| R RPD outside accepted recovery limits | RL Reporting Limit |
| S Spike Recovery outside accepted recovery limits | U Analyte not detected |



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Analytical Report

(consolidated)

WO#: **15060607**

Date Reported: **7/1/2015**

CLIENT: ICON Environmental Services
Project: Iberville Parish SB 9090-040-0100
Lab ID: 15060607-010
Client Sample ID SB-9

Collection Date: 6/11/2015 4:00:00 PM

Matrix: AQUEOUS

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
TPH-D/O IN WATER BY SW8015						
TPH DRO/ORO IN WATER BY SW8015						
TPH (Diesel Range)	0.17	0.13		mg/L	1	6/16/2015 5:48:00 PM
TPH (Oil Range)	< 0.12	0.12		mg/L	1	6/16/2015 5:48:00 PM
Surr: 4-Terphenyl-d14	45.6	36.8 - 128		%REC	1	6/16/2015 5:48:00 PM
BTEX/TPH-G IN WATER BY SW8021/8015						
TPH-GRO IN WATER BY SW8015						
TPH (Gasoline Range)	< 0.15	0.15		mg/L	1	6/15/2015 10:14:00 PM
Surr: alpha, alpha, alpha-Trifluorotoluene	96.2	70 - 130		%REC	1	6/15/2015 10:14:00 PM
BTEX/TPH-G IN WATER BY SW8021/8015						
BTEX IN WATER BY SW8021						
Benzene	< 0.00500	0.00500		mg/L	1	6/15/2015 10:14:00 PM
Ethylbenzene	< 0.00500	0.00500		mg/L	1	6/15/2015 10:14:00 PM
Toluene	< 0.0100	0.0100		mg/L	1	6/15/2015 10:14:00 PM
Xylenes, Total	< 0.0500	0.0500		mg/L	1	6/15/2015 10:14:00 PM
Surr: alpha, alpha, alpha-Trifluorotoluene	92.8	70 - 130		%REC	1	6/15/2015 10:14:00 PM
METALS IN GROUND WATER						
MERCURY IN GROUND WATER,TOTAL						
Mercury	< 0.0002	0.0002		mg/L	1	6/15/2015 7:05:16 PM
INORGANIC ANIONS IN WATER BY IC						
Chloride	13,200	250		mg/L	1000	6/16/2015 3:45:09 PM
Sulfate	439	12.5		mg/L	50	6/17/2015 8:31:22 AM
METALS IN GROUND WATER						
METALS IN WATER BY ICP, TOTALS						
Arsenic	< 0.010	0.010		mg/L	1	6/15/2015 5:31:30 PM
Barium	2.99	0.010		mg/L	1	6/15/2015 5:31:30 PM
Cadmium	< 0.005	0.005		mg/L	1	6/15/2015 5:31:30 PM
Calcium	2,620	50.0		mg/L	100	6/15/2015 5:57:59 PM

Qualifiers:

- | | |
|--|---|
| * Value exceeds Maximum Contaminant Level. | B Analyte detected in the associated Method Blank |
| C Value is below Minimum Compound Limit. | E Value above quantitation range |
| H Holding times for preparation or analysis exceeded | J Analyte detected below quantitation limits |
| M Matrix Interference | ND Not Detected at the Reporting Limit |
| R RPD outside accepted recovery limits | RL Reporting Limit |
| S Spike Recovery outside accepted recovery limits | U Analyte not detected |



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Analytical Report

(consolidated)

WO#: **15060607**

Date Reported: **7/1/2015**

CLIENT: ICON Environmental Services
Project: Iberville Parish SB 9090-040-0100
Lab ID: 15060607-010
Client Sample ID SB-9

Collection Date: 6/11/2015 4:00:00 PM

Matrix: AQUEOUS

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
METALS IN GROUND WATER					SW6010B	Analyst: STS
METALS IN WATER BY ICP, TOTALS						
Chromium	< 0.010	0.010		mg/L	1	6/15/2015 5:31:30 PM
Iron	327	1.00		mg/L	100	6/15/2015 5:57:59 PM
Lead	< 0.010	0.010		mg/L	1	6/15/2015 5:31:30 PM
Magnesium	863	5.00		mg/L	10	6/15/2015 5:53:48 PM
Manganese	20.4	0.100		mg/L	10	6/15/2015 5:53:48 PM
Potassium	11.4	5.00		mg/L	1	6/16/2015 4:46:07 PM
Sodium	2,980	500		mg/L	100	6/15/2015 5:57:59 PM
Strontium	18.6	1.00		mg/L	100	6/15/2015 5:57:59 PM
Zinc	0.052	0.010		mg/L	1	6/15/2015 5:31:30 PM
ALKALINITY; TOTAL, CARB, BICARB					SM2320 B	Analyst: TBB
Alkalinity, Bicarbonate (As CaCO3)	615	20		mgCaCO3/L	2	6/16/2015 12:15:43 PM
Alkalinity, Carbonate (As CaCO3)	< 20	20		mgCaCO3/L	2	6/16/2015 12:15:43 PM
Alkalinity, Total (As CaCO3)	615	20		mgCaCO3/L	2	6/16/2015 12:15:43 PM
TOTAL DISSOLVED SOLIDS					SM2540C	Analyst: GMS
Total Dissolved Solids (Residue, Filterable)	24,000	2,000		mg/L	100	6/15/2015 8:13:00 AM

Qualifiers:	* Value exceeds Maximum Contaminant Level.	B Analyte detected in the associated Method Blank
	C Value is below Minimum Compound Limit.	E Value above quantitation range
	H Holding times for preparation or analysis exceeded	J Analyte detected below quantitation limits
	M Matrix Interference	ND Not Detected at the Reporting Limit
	R RPD outside accepted recovery limits	RL Reporting Limit
	S Spike Recovery outside accepted recovery limits	U Analyte not detected



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Analytical Report

(consolidated)

WO#: **15060607**

Date Reported: **7/1/2015**

CLIENT: ICON Environmental Services
Project: Iberville Parish SB 9090-040-0100
Lab ID: 15060607-011
Client Sample ID Trip Blank

Collection Date: 6/8/2015

Matrix: AQUEOUS

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
BTEX/TPH-G IN WATER BY SW8021/8015				SW8015B	Analyst: MMV	
TPH-GRO IN WATER BY SW8015						
TPH (Gasoline Range)	< 0.15	0.15		mg/L	1	6/17/2015 5:05:00 PM
Surr: alpha, alpha, alpha-Trifluorotoluene	94.0	70 - 130		%REC	1	6/17/2015 5:05:00 PM
BTEX/TPH-G IN WATER BY SW8021/8015				SW8021B	Analyst: MMV	
BTEX IN WATER BY SW8021						
Benzene	< 0.00500	0.00500		mg/L	1	6/17/2015 5:05:00 PM
Ethylbenzene	< 0.00500	0.00500		mg/L	1	6/17/2015 5:05:00 PM
Toluene	< 0.0100	0.0100		mg/L	1	6/17/2015 5:05:00 PM
Xylenes, Total	< 0.0500	0.0500		mg/L	1	6/17/2015 5:05:00 PM
Surr: alpha, alpha, alpha-Trifluorotoluene	89.8	70 - 130		%REC	1	6/17/2015 5:05:00 PM

Qualifiers:

- | | |
|--|---|
| * Value exceeds Maximum Contaminant Level. | B Analyte detected in the associated Method Blank |
| C Value is below Minimum Compound Limit. | E Value above quantitation range |
| H Holding times for preparation or analysis exceeded | J Analyte detected below quantitation limits |
| M Matrix Interference | ND Not Detected at the Reporting Limit |
| R RPD outside accepted recovery limits | RL Reporting Limit |
| S Spike Recovery outside accepted recovery limits | U Analyte not detected |



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Analytical Report

(consolidated)

WO#: 15060607

Date Reported: 7/1/2015

CLIENT: ICON Environmental Services
Project: Iberville Parish SB 9090-040-0100
Lab ID: 15060607-012
Client Sample ID SB-7 8-10

Collection Date: 6/10/2015 10:35:00 AM

Matrix: SOIL

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
29B SALTS						
CATION EXCHANGE CAPACITY						
Cation Exchange Capacity	56.1	0.1		meq/100g	1	6/23/2015 12:10:00 PM
29B SALTS						
ELECTRICAL CONDUCTIVITY @ SATURATION						
Electrical Conductivity	20.7	0.10	*	mmhos/cm	1	6/19/2015 9:58:00 AM
29B SALTS						
EXCHANGEABLE SODIUM PERCENTAGE						
Exchangeable Sodium %	13.0	0.1		%	1	6/23/2015 12:10:00 PM
PERCENT MOISTURE						
Percent Moisture	40.1	1.0		wt%	1	6/12/2015 3:30:00 PM
29B SALTS						
SODIUM ADSORPTION RATIO						
Sodium Adsorption Ratio	34.9	0.100	*		1	6/25/2015
Soluble Calcium	43.7	1.00		meq/L	1	6/25/2015
Soluble Magnesium	15.7	1.00		meq/L	1	6/25/2015
Soluble Sodium	190	1.00		meq/L	1	6/25/2015
29B METALS						
MERCURY IN SOIL OR SLUDGE						
Mercury	< 0.10	0.10		mg/Kg-dry	1	6/16/2015 1:04:30 PM
INORGANIC ANIONS IN LEACHATE BY IC						
Chloride	1,310	25.0		mg/L	100	6/25/2015 1:48:46 PM
29B METALS						
METALS IN SOIL OR SLUDGE BY ICP						
Arsenic	4.84	0.99		mg/Kg-dry	1	6/16/2015 7:55:00 PM
Barium	252	0.99		mg/Kg-dry	1	6/16/2015 7:55:00 PM

Qualifiers:

- | | |
|--|---|
| * Value exceeds Maximum Contaminant Level. | B Analyte detected in the associated Method Blank |
| C Value is below Minimum Compound Limit. | E Value above quantitation range |
| H Holding times for preparation or analysis exceeded | J Analyte detected below quantitation limits |
| M Matrix Interference | ND Not Detected at the Reporting Limit |
| R RPD outside accepted recovery limits | RL Reporting Limit |
| S Spike Recovery outside accepted recovery limits | U Analyte not detected |



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Analytical Report

(consolidated)

WO#: **15060607**

Date Reported: **7/1/2015**

CLIENT: ICON Environmental Services
Project: Iberville Parish SB 9090-040-0100
Lab ID: 15060607-012
Client Sample ID SB-7 8-10

Collection Date: 6/10/2015 10:35:00 AM

Matrix: SOIL

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
29B METALS					SW6010B	SW3050B
METALS IN SOIL OR SLUDGE BY ICP						Analyst: STS
Cadmium	< 0.50	0.50		mg/Kg-dry	1	6/16/2015 7:55:00 PM
Chromium	10.1	0.99		mg/Kg-dry	1	6/16/2015 7:55:00 PM
Lead	11.3	0.99		mg/Kg-dry	1	6/16/2015 7:55:00 PM
Strontium	145	9.91		mg/Kg-dry	10	6/30/2015 4:13:52 PM
Zinc	41.7	0.99		mg/Kg-dry	1	6/16/2015 7:55:00 PM
29B METALS					LDNR 29-B	Analyst: STS
TRUE TOTAL BARIUM						
True Total Barium	346	47		mg/Kg-dry	1	6/16/2015 10:50:41 PM

Qualifiers:

- | | |
|--|---|
| * Value exceeds Maximum Contaminant Level. | B Analyte detected in the associated Method Blank |
| C Value is below Minimum Compound Limit. | E Value above quantitation range |
| H Holding times for preparation or analysis exceeded | J Analyte detected below quantitation limits |
| M Matrix Interference | ND Not Detected at the Reporting Limit |
| R RPD outside accepted recovery limits | RL Reporting Limit |
| S Spike Recovery outside accepted recovery limits | U Analyte not detected |



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Analytical Report

(consolidated)

WO#: **15060607**

Date Reported: **7/1/2015**

CLIENT: ICON Environmental Services
Project: Iberville Parish SB 9090-040-0100
Lab ID: 15060607-013
Client Sample ID SB-7 12-14

Collection Date: 6/10/2015 10:40:00 AM

Matrix: SOIL

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
ELECTRICAL CONDUCTIVITY @ SATURATION					LDNR 29-B	Analyst: MMT
Electrical Conductivity	30.4	0.10	*	mmhos/cm	1	6/19/2015 9:59:00 AM
EXCHANGEABLE SODIUM PERCENTAGE					LDNR 29-B	LDNR 29-B Analyst: MMT
Exchangeable Sodium %	14.7	0.1		%	1	6/23/2015 12:10:00 PM
PERCENT MOISTURE					LDNR 29-B	Analyst: MMT
Percent Moisture	25.8	1.0		wt%	1	6/12/2015 3:45:00 PM
SODIUM ADSORPTION RATIO					LDNR 29-B	LDNR 29-B Analyst: STS
Sodium Adsorption Ratio	38.1	0.100	*		1	6/25/2015
Soluble Calcium	64.1	1.00		meq/L	1	6/25/2015
Soluble Magnesium	24.0	1.00		meq/L	1	6/25/2015
Soluble Sodium	253	1.00		meq/L	1	6/25/2015

Qualifiers:

- | | |
|--|---|
| * Value exceeds Maximum Contaminant Level. | B Analyte detected in the associated Method Blank |
| C Value is below Minimum Compound Limit. | E Value above quantitation range |
| H Holding times for preparation or analysis exceeded | J Analyte detected below quantitation limits |
| M Matrix Interference | ND Not Detected at the Reporting Limit |
| R RPD outside accepted recovery limits | RL Reporting Limit |
| S Spike Recovery outside accepted recovery limits | U Analyte not detected |



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Analytical Report

(consolidated)

WO#: **15060607**

Date Reported: **7/1/2015**

CLIENT: ICON Environmental Services
Project: Iberville Parish SB 9090-040-0100
Lab ID: 15060607-014
Client Sample ID SB-7 18-20

Collection Date: 6/10/2015 10:50:00 AM

Matrix: SOIL

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
ELECTRICAL CONDUCTIVITY @ SATURATION				LDNR 29-B		Analyst: MMT
Electrical Conductivity	20.1	0.10	*	mmhos/cm	1	6/19/2015 10:00:00 AM
PERCENT MOISTURE				LDNR 29-B		Analyst: MMT
Percent Moisture	41.7	1.0		wt%	1	6/12/2015 3:45:00 PM

Qualifiers:

- | | |
|--|---|
| * Value exceeds Maximum Contaminant Level. | B Analyte detected in the associated Method Blank |
| C Value is below Minimum Compound Limit. | E Value above quantitation range |
| H Holding times for preparation or analysis exceeded | J Analyte detected below quantitation limits |
| M Matrix Interference | ND Not Detected at the Reporting Limit |
| R RPD outside accepted recovery limits | RL Reporting Limit |
| S Spike Recovery outside accepted recovery limits | U Analyte not detected |



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Analytical Report

(consolidated)

WO#: **15060607**

Date Reported: **7/1/2015**

CLIENT: ICON Environmental Services
Project: Iberville Parish SB 9090-040-0100
Lab ID: 15060607-015
Client Sample ID SB-7 24-26

Collection Date: 6/10/2015 11:00:00 AM

Matrix: SOIL

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
ELECTRICAL CONDUCTIVITY @ SATURATION				LDNR 29-B		Analyst: MMT
Electrical Conductivity	2.68	0.10		mmhos/cm	1	6/19/2015 10:00:00 AM
PERCENT MOISTURE				LDNR 29-B		Analyst: MMT
Percent Moisture	27.9	1.0		wt%	1	6/12/2015 3:45:00 PM

Qualifiers:

- | | |
|--|---|
| * Value exceeds Maximum Contaminant Level. | B Analyte detected in the associated Method Blank |
| C Value is below Minimum Compound Limit. | E Value above quantitation range |
| H Holding times for preparation or analysis exceeded | J Analyte detected below quantitation limits |
| M Matrix Interference | ND Not Detected at the Reporting Limit |
| R RPD outside accepted recovery limits | RL Reporting Limit |
| S Spike Recovery outside accepted recovery limits | U Analyte not detected |



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Analytical Report

(consolidated)

WO#: **15060607**

Date Reported: **7/1/2015**

CLIENT: ICON Environmental Services
Project: Iberville Parish SB 9090-040-0100
Lab ID: 15060607-016
Client Sample ID SB-7 38-40

Collection Date: 6/10/2015 11:35:00 AM

Matrix: SOIL

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
ELECTRICAL CONDUCTIVITY @ SATURATION				LDNR 29-B		Analyst: MMT
Electrical Conductivity	1.23	0.10		mmhos/cm	1	6/19/2015 10:02:00 AM
PERCENT MOISTURE				LDNR 29-B		Analyst: MMT
Percent Moisture	36.1	1.0		wt%	1	6/12/2015 3:45:00 PM

Qualifiers:

- | | |
|--|---|
| * Value exceeds Maximum Contaminant Level. | B Analyte detected in the associated Method Blank |
| C Value is below Minimum Compound Limit. | E Value above quantitation range |
| H Holding times for preparation or analysis exceeded | J Analyte detected below quantitation limits |
| M Matrix Interference | ND Not Detected at the Reporting Limit |
| R RPD outside accepted recovery limits | RL Reporting Limit |
| S Spike Recovery outside accepted recovery limits | U Analyte not detected |



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Analytical Report

(consolidated)

WO#: 15060607

Date Reported: 7/1/2015

CLIENT: ICON Environmental Services
Project: Iberville Parish SB 9090-040-0100
Lab ID: 15060607-017
Client Sample ID SB-8 8-10

Collection Date: 6/10/2015 2:40:00 PM

Matrix: SOIL

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
29B SALTS						
CATION EXCHANGE CAPACITY						
Cation Exchange Capacity	48.0	0.1		meq/100g	1	6/23/2015 12:10:00 PM
29B SALTS						
ELECTRICAL CONDUCTIVITY @ SATURATION						
Electrical Conductivity	12.1	0.10	*	mmhos/cm	1	6/19/2015 10:02:00 AM
29B SALTS						
EXCHANGEABLE SODIUM PERCENTAGE						
Exchangeable Sodium %	3.9	0.1		%	1	6/23/2015 12:10:00 PM
PERCENT MOISTURE						
Percent Moisture	41.1	1.0		wt%	1	6/12/2015 3:45:00 PM
29B SALTS						
SODIUM ADSORPTION RATIO						
Sodium Adsorption Ratio	7.58	0.100			1	6/25/2015
Soluble Calcium	73.5	1.00		meq/L	1	6/25/2015
Soluble Magnesium	15.4	1.00		meq/L	1	6/25/2015
Soluble Sodium	50.5	1.00		meq/L	1	6/25/2015
29B METALS						
MERCURY IN SOIL OR SLUDGE						
Mercury	< 0.10	0.10		mg/Kg-dry	1	6/16/2015 1:06:50 PM
29B METALS						
METALS IN SOIL OR SLUDGE BY ICP						
Arsenic	9.27	1.00		mg/Kg-dry	1	6/16/2015 8:13:22 PM
Barium	174	1.00		mg/Kg-dry	1	6/16/2015 8:13:22 PM
Cadmium	< 0.50	0.50		mg/Kg-dry	1	6/16/2015 8:13:22 PM
Chromium	12.8	1.00		mg/Kg-dry	1	6/16/2015 8:13:22 PM
Lead	11.1	1.00		mg/Kg-dry	1	6/16/2015 8:13:22 PM
Strontium	55.1	1.00		mg/Kg-dry	1	6/16/2015 8:13:22 PM
Zinc	46.3	1.00		mg/Kg-dry	1	6/16/2015 8:13:22 PM

Qualifiers:

- | | |
|--|---|
| * Value exceeds Maximum Contaminant Level. | B Analyte detected in the associated Method Blank |
| C Value is below Minimum Compound Limit. | E Value above quantitation range |
| H Holding times for preparation or analysis exceeded | J Analyte detected below quantitation limits |
| M Matrix Interference | ND Not Detected at the Reporting Limit |
| R RPD outside accepted recovery limits | RL Reporting Limit |
| S Spike Recovery outside accepted recovery limits | U Analyte not detected |



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Analytical Report

(consolidated)

WO#: **15060607**

Date Reported: **7/1/2015**

CLIENT: ICON Environmental Services
Project: Iberville Parish SB 9090-040-0100
Lab ID: 15060607-017
Client Sample ID SB-8 8-10

Collection Date: 6/10/2015 2:40:00 PM

Matrix: SOIL

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
29B METALS						
TRUE TOTAL BARIUM						
True Total Barium	246	48		mg/Kg-dry	1	6/16/2015 10:54:26 PM

LDNR 29-B

Analyst: **STS**

Qualifiers:

- | | |
|--|---|
| * Value exceeds Maximum Contaminant Level. | B Analyte detected in the associated Method Blank |
| C Value is below Minimum Compound Limit. | E Value above quantitation range |
| H Holding times for preparation or analysis exceeded | J Analyte detected below quantitation limits |
| M Matrix Interference | ND Not Detected at the Reporting Limit |
| R RPD outside accepted recovery limits | RL Reporting Limit |
| S Spike Recovery outside accepted recovery limits | U Analyte not detected |



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Analytical Report

(consolidated)

WO#: **15060607**

Date Reported: **7/1/2015**

CLIENT: ICON Environmental Services
Project: Iberville Parish SB 9090-040-0100
Lab ID: 15060607-018
Client Sample ID SB-8 16-18

Collection Date: 6/10/2015 2:50:00 PM

Matrix: SOIL

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
ELECTRICAL CONDUCTIVITY @ SATURATION				LDNR 29-B		Analyst: MMT
Electrical Conductivity	4.54	0.10	*	mmhos/cm	1	6/19/2015 10:03:00 AM
PERCENT MOISTURE				LDNR 29-B		Analyst: MMT
Percent Moisture	32.1	1.0		wt%	1	6/12/2015 3:45:00 PM

Qualifiers:

- | | |
|--|---|
| * Value exceeds Maximum Contaminant Level. | B Analyte detected in the associated Method Blank |
| C Value is below Minimum Compound Limit. | E Value above quantitation range |
| H Holding times for preparation or analysis exceeded | J Analyte detected below quantitation limits |
| M Matrix Interference | ND Not Detected at the Reporting Limit |
| R RPD outside accepted recovery limits | RL Reporting Limit |
| S Spike Recovery outside accepted recovery limits | U Analyte not detected |



Element Materials Technology Lafayette
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Analytical Report

(consolidated)

WO#: **15060607**

Date Reported: **7/1/2015**

CLIENT: ICON Environmental Services
Project: Iberville Parish SB 9090-040-0100
Lab ID: 15060607-019
Client Sample ID SB-8 20-22

Collection Date: 6/10/2015 2:55:00 PM

Matrix: SOIL

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
ELECTRICAL CONDUCTIVITY @ SATURATION				LDNR 29-B		Analyst: MMT
Electrical Conductivity	1.84	0.10		mmhos/cm	1	6/19/2015 10:03:00 AM
PERCENT MOISTURE				LDNR 29-B		Analyst: MMT
Percent Moisture	34.9	1.0		wt%	1	6/12/2015 3:45:00 PM

Qualifiers:

- | | |
|--|---|
| * Value exceeds Maximum Contaminant Level. | B Analyte detected in the associated Method Blank |
| C Value is below Minimum Compound Limit. | E Value above quantitation range |
| H Holding times for preparation or analysis exceeded | J Analyte detected below quantitation limits |
| M Matrix Interference | ND Not Detected at the Reporting Limit |
| R RPD outside accepted recovery limits | RL Reporting Limit |
| S Spike Recovery outside accepted recovery limits | U Analyte not detected |



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Analytical Report

(consolidated)

WO#: **15060607**

Date Reported: **7/1/2015**

CLIENT: ICON Environmental Services
Project: Iberville Parish SB 9090-040-0100
Lab ID: 15060607-020
Client Sample ID SB-9 8-10

Collection Date: 6/11/2015 12:15:00 PM

Matrix: SOIL

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
29B SALTS						
CATION EXCHANGE CAPACITY						
Cation Exchange Capacity	45.1	0.1		meq/100g	1	6/23/2015 12:10:00 PM
29B SALTS						
ELECTRICAL CONDUCTIVITY @ SATURATION						
Electrical Conductivity	15.9	0.10	*	mmhos/cm	1	6/19/2015 10:03:00 AM
29B SALTS						
EXCHANGEABLE SODIUM PERCENTAGE						
Exchangeable Sodium %	5.7	0.1		%	1	6/23/2015 12:10:00 PM
PERCENT MOISTURE						
Percent Moisture	35.2	1.0		wt%	1	6/12/2015 3:45:00 PM
29B SALTS						
SODIUM ADSORPTION RATIO						
Sodium Adsorption Ratio	11.2	0.100			1	6/25/2015
Soluble Calcium	64.8	1.00		meq/L	1	6/25/2015
Soluble Magnesium	28.0	1.00		meq/L	1	6/25/2015
Soluble Sodium	76.6	1.00		meq/L	1	6/25/2015
29B METALS						
MERCURY IN SOIL OR SLUDGE						
Mercury	< 0.10	0.10		mg/Kg-dry	1	6/16/2015 1:09:10 PM
29B METALS						
METALS IN SOIL OR SLUDGE BY ICP						
Arsenic	2.57	0.99		mg/Kg-dry	1	6/16/2015 8:17:15 PM
Barium	145	0.99		mg/Kg-dry	1	6/16/2015 8:17:15 PM
Cadmium	< 0.50	0.50		mg/Kg-dry	1	6/16/2015 8:17:15 PM
Chromium	9.04	0.99		mg/Kg-dry	1	6/16/2015 8:17:15 PM
Lead	10.3	0.99		mg/Kg-dry	1	6/16/2015 8:17:15 PM
Strontium	48.0	0.99		mg/Kg-dry	1	6/16/2015 8:17:15 PM
Zinc	38.8	0.99		mg/Kg-dry	1	6/16/2015 8:17:15 PM

Qualifiers:

- | | |
|--|---|
| * Value exceeds Maximum Contaminant Level. | B Analyte detected in the associated Method Blank |
| C Value is below Minimum Compound Limit. | E Value above quantitation range |
| H Holding times for preparation or analysis exceeded | J Analyte detected below quantitation limits |
| M Matrix Interference | ND Not Detected at the Reporting Limit |
| R RPD outside accepted recovery limits | RL Reporting Limit |
| S Spike Recovery outside accepted recovery limits | U Analyte not detected |



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Analytical Report

(consolidated)

WO#: **15060607**

Date Reported: **7/1/2015**

CLIENT: ICON Environmental Services
Project: Iberville Parish SB 9090-040-0100
Lab ID: 15060607-020
Client Sample ID SB-9 8-10

Collection Date: 6/11/2015 12:15:00 PM

Matrix: SOIL

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
29B METALS						
TRUE TOTAL BARIUM						Analyst: STS
True Total Barium	200	47		mg/Kg-dry	1	6/16/2015 11:05:41 PM

Qualifiers:

- | | |
|--|---|
| * Value exceeds Maximum Contaminant Level. | B Analyte detected in the associated Method Blank |
| C Value is below Minimum Compound Limit. | E Value above quantitation range |
| H Holding times for preparation or analysis exceeded | J Analyte detected below quantitation limits |
| M Matrix Interference | ND Not Detected at the Reporting Limit |
| R RPD outside accepted recovery limits | RL Reporting Limit |
| S Spike Recovery outside accepted recovery limits | U Analyte not detected |



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Analytical Report

(consolidated)

WO#: **15060607**

Date Reported: **7/1/2015**

CLIENT: ICON Environmental Services
Project: Iberville Parish SB 9090-040-0100
Lab ID: 15060607-021
Client Sample ID SB-9 12-14

Collection Date: 6/11/2015 12:20:00 PM

Matrix: SOIL

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
ELECTRICAL CONDUCTIVITY @ SATURATION				LDNR 29-B		Analyst: MMT
Electrical Conductivity	23.6	0.10	*	mmhos/cm	1	6/19/2015 10:04:00 AM
PERCENT MOISTURE				LDNR 29-B		Analyst: MMT
Percent Moisture	27.2	1.0		wt%	1	6/12/2015 3:45:00 PM

Qualifiers:

- | | |
|--|---|
| * Value exceeds Maximum Contaminant Level. | B Analyte detected in the associated Method Blank |
| C Value is below Minimum Compound Limit. | E Value above quantitation range |
| H Holding times for preparation or analysis exceeded | J Analyte detected below quantitation limits |
| M Matrix Interference | ND Not Detected at the Reporting Limit |
| R RPD outside accepted recovery limits | RL Reporting Limit |
| S Spike Recovery outside accepted recovery limits | U Analyte not detected |



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Analytical Report

(consolidated)

WO#: **15060607**

Date Reported: **7/1/2015**

CLIENT: ICON Environmental Services
Project: Iberville Parish SB 9090-040-0100
Lab ID: 15060607-022
Client Sample ID SB-9 16-18

Collection Date: 6/11/2015 12:30:00 PM

Matrix: SOIL

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
ELECTRICAL CONDUCTIVITY @ SATURATION				LDNR 29-B		Analyst: MMT
Electrical Conductivity	12.8	0.10	*	mmhos/cm	1	6/19/2015 10:04:00 AM
PERCENT MOISTURE				LDNR 29-B		Analyst: MMT
Percent Moisture	33.9	1.0		wt%	1	6/12/2015 3:45:00 PM

Qualifiers:

- | | |
|--|---|
| * Value exceeds Maximum Contaminant Level. | B Analyte detected in the associated Method Blank |
| C Value is below Minimum Compound Limit. | E Value above quantitation range |
| H Holding times for preparation or analysis exceeded | J Analyte detected below quantitation limits |
| M Matrix Interference | ND Not Detected at the Reporting Limit |
| R RPD outside accepted recovery limits | RL Reporting Limit |
| S Spike Recovery outside accepted recovery limits | U Analyte not detected |



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Analytical Report

(consolidated)

WO#: **15060607**

Date Reported: **7/1/2015**

CLIENT: ICON Environmental Services
Project: Iberville Parish SB 9090-040-0100
Lab ID: 15060607-023
Client Sample ID SB-9 20-22

Collection Date: 6/11/2015 12:40:00 PM

Matrix: SOIL

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
ELECTRICAL CONDUCTIVITY @ SATURATION				LDNR 29-B		Analyst: MMT
Electrical Conductivity	4.08	0.10	*	mmhos/cm	1	6/19/2015 10:04:00 AM
PERCENT MOISTURE				LDNR 29-B		Analyst: MMT
Percent Moisture	42.4	1.0		wt%	1	6/12/2015 3:45:00 PM

Qualifiers:

- | | |
|--|---|
| * Value exceeds Maximum Contaminant Level. | B Analyte detected in the associated Method Blank |
| C Value is below Minimum Compound Limit. | E Value above quantitation range |
| H Holding times for preparation or analysis exceeded | J Analyte detected below quantitation limits |
| M Matrix Interference | ND Not Detected at the Reporting Limit |
| R RPD outside accepted recovery limits | RL Reporting Limit |
| S Spike Recovery outside accepted recovery limits | U Analyte not detected |



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Analytical Report

(consolidated)

WO#: 15060607

Date Reported: 7/1/2015

CLIENT: ICON Environmental Services
Project: Iberville Parish SB 9090-040-0100
Lab ID: 15060607-024
Client Sample ID SB-10 8-10

Collection Date: 6/12/2015 12:00:00 PM

Matrix: SOIL

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
29B SALTS						
CATION EXCHANGE CAPACITY						
Cation Exchange Capacity	43.6	0.1		meq/100g	1	6/23/2015 12:10:00 PM
29B SALTS						
ELECTRICAL CONDUCTIVITY @ SATURATION						
Electrical Conductivity	14.4	0.10	*	mmhos/cm	1	6/19/2015 10:06:00 AM
29B SALTS						
EXCHANGEABLE SODIUM PERCENTAGE						
Exchangeable Sodium %	8.4	0.1		%	1	6/23/2015 12:10:00 PM
PERCENT MOISTURE						
Percent Moisture	32.9	1.0		wt%	1	6/12/2015 3:45:00 PM
29B SALTS						
SODIUM ADSORPTION RATIO						
Sodium Adsorption Ratio	14.7	0.100	*		1	6/25/2015
Soluble Calcium	48.3	1.00		meq/L	1	6/25/2015
Soluble Magnesium	21.1	1.00		meq/L	1	6/25/2015
Soluble Sodium	86.6	1.00		meq/L	1	6/25/2015
29B METALS						
MERCURY IN SOIL OR SLUDGE						
Mercury	< 0.10	0.10		mg/Kg-dry	1	6/16/2015 1:11:31 PM
INORGANIC ANIONS IN LEACHATE BY IC						
Chloride	994	25.0		mg/L	100	6/25/2015 2:02:31 PM
29B METALS						
METALS IN SOIL OR SLUDGE BY ICP						
Arsenic	3.22	0.99		mg/Kg-dry	1	6/16/2015 8:21:08 PM
Barium	151	0.99		mg/Kg-dry	1	6/16/2015 8:21:08 PM

Qualifiers:

- | | |
|--|---|
| * Value exceeds Maximum Contaminant Level. | B Analyte detected in the associated Method Blank |
| C Value is below Minimum Compound Limit. | E Value above quantitation range |
| H Holding times for preparation or analysis exceeded | J Analyte detected below quantitation limits |
| M Matrix Interference | ND Not Detected at the Reporting Limit |
| R RPD outside accepted recovery limits | RL Reporting Limit |
| S Spike Recovery outside accepted recovery limits | U Analyte not detected |



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Analytical Report

(consolidated)

WO#: **15060607**

Date Reported: **7/1/2015**

CLIENT: ICON Environmental Services
Project: Iberville Parish SB 9090-040-0100
Lab ID: 15060607-024
Client Sample ID SB-10 8-10

Collection Date: 6/12/2015 12:00:00 PM

Matrix: SOIL

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
29B METALS					SW6010B	SW3050B
METALS IN SOIL OR SLUDGE BY ICP						Analyst: STS
Cadmium	< 0.50	0.50		mg/Kg-dry	1	6/16/2015 8:21:08 PM
Chromium	9.09	0.99		mg/Kg-dry	1	6/16/2015 8:21:08 PM
Lead	10.3	0.99		mg/Kg-dry	1	6/16/2015 8:21:08 PM
Strontium	50.6	0.99		mg/Kg-dry	1	6/16/2015 8:21:08 PM
Zinc	39.1	0.99		mg/Kg-dry	1	6/16/2015 8:21:08 PM
29B METALS					LDNR 29-B	Analyst: STS
TRUE TOTAL BARIUM						
True Total Barium	272	49		mg/Kg-dry	1	6/16/2015 11:09:27 PM

Qualifiers:

- | | |
|--|---|
| * Value exceeds Maximum Contaminant Level. | B Analyte detected in the associated Method Blank |
| C Value is below Minimum Compound Limit. | E Value above quantitation range |
| H Holding times for preparation or analysis exceeded | J Analyte detected below quantitation limits |
| M Matrix Interference | ND Not Detected at the Reporting Limit |
| R RPD outside accepted recovery limits | RL Reporting Limit |
| S Spike Recovery outside accepted recovery limits | U Analyte not detected |



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Analytical Report

(consolidated)

WO#: 15060607

Date Reported: 7/1/2015

CLIENT: ICON Environmental Services
Project: Iberville Parish SB 9090-040-0100
Lab ID: 15060607-025
Client Sample ID SB-10 12-14

Collection Date: 6/12/2015 12:05:00 PM

Matrix: SOIL

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
ELECTRICAL CONDUCTIVITY @ SATURATION				LDNR 29-B		Analyst: MMT
Electrical Conductivity	15.5	0.10	*	mmhos/cm	1	6/19/2015 10:06:00 AM
EXCHANGEABLE SODIUM PERCENTAGE				LDNR 29-B	LDNR 29-B	Analyst: MMT
Exchangeable Sodium %	4.8	0.1		%	1	6/23/2015 12:10:00 PM
PERCENT MOISTURE				LDNR 29-B		Analyst: MMT
Percent Moisture	24.5	1.0		wt%	1	6/12/2015 3:45:00 PM
SODIUM ADSORPTION RATIO				LDNR 29-B	LDNR 29-B	Analyst: STS
Sodium Adsorption Ratio	11.7	0.100			1	6/25/2015
Soluble Calcium	58.2	1.00		meq/L	1	6/25/2015
Soluble Magnesium	28.3	1.00		meq/L	1	6/25/2015
Soluble Sodium	76.6	1.00		meq/L	1	6/25/2015

Qualifiers:

- | | |
|--|---|
| * Value exceeds Maximum Contaminant Level. | B Analyte detected in the associated Method Blank |
| C Value is below Minimum Compound Limit. | E Value above quantitation range |
| H Holding times for preparation or analysis exceeded | J Analyte detected below quantitation limits |
| M Matrix Interference | ND Not Detected at the Reporting Limit |
| R RPD outside accepted recovery limits | RL Reporting Limit |
| S Spike Recovery outside accepted recovery limits | U Analyte not detected |



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Analytical Report

(consolidated)

WO#: **15060607**

Date Reported: **7/1/2015**

CLIENT: ICON Environmental Services
Project: Iberville Parish SB 9090-040-0100
Lab ID: 15060607-026
Client Sample ID SB-10 20-22

Collection Date: 6/12/2015 12:15:00 PM

Matrix: SOIL

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
ELECTRICAL CONDUCTIVITY @ SATURATION				LDNR 29-B		Analyst: MMT
Electrical Conductivity	4.16	0.10	*	mmhos/cm	1	6/19/2015 10:06:00 AM
PERCENT MOISTURE				LDNR 29-B		Analyst: MMT
Percent Moisture	34.4	1.0		wt%	1	6/12/2015 3:45:00 PM

Qualifiers:

- | | |
|--|---|
| * Value exceeds Maximum Contaminant Level. | B Analyte detected in the associated Method Blank |
| C Value is below Minimum Compound Limit. | E Value above quantitation range |
| H Holding times for preparation or analysis exceeded | J Analyte detected below quantitation limits |
| M Matrix Interference | ND Not Detected at the Reporting Limit |
| R RPD outside accepted recovery limits | RL Reporting Limit |
| S Spike Recovery outside accepted recovery limits | U Analyte not detected |



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QC SUMMARY REPORT

WO#: 15060607
 01-Jul-15

Client: ICON Environmental Services
Project: Iberville Parish SB 9090-040-0100

BatchID: 15556

Sample ID	15060571-005AMS-	SampType:	MS	TestCode:	8015_DO_S	Units:	mg/Kg	Prep Date:	6/12/2015	RunNo:	44524			
Client ID:	ZZZZZZ	Batch ID:	15556	TestNo:	SW8015B		SW3550C	Analysis Date:	6/15/2015	SeqNo:	1071851			
Analyte		Result		PQL	SPK value	SPK Ref Val		%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

TPH (Diesel Range)	79.8	50.0	100.0	31.73	48.1	23.4	123							
Surr: 4-Terphenyl-d14	1.88		3.330		56.4	33	152							

Sample ID	15060571-005AMSD	SampType:	MSD	TestCode:	8015_DO_S	Units:	mg/Kg	Prep Date:	6/12/2015	RunNo:	44524			
Client ID:	ZZZZZZ	Batch ID:	15556	TestNo:	SW8015B		SW3550C	Analysis Date:	6/16/2015	SeqNo:	1071853			
Analyte		Result		PQL	SPK value	SPK Ref Val		%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

TPH (Diesel Range)	82.2	50.0	100.0	31.73	50.5	23.4	123	79.84	2.91	35.6
Surr: 4-Terphenyl-d14	1.89		3.330		56.8	33	152		0	40

Sample ID	LCS-D15556	SampType:	LCS	TestCode:	8015_DO_S	Units:	mg/Kg	Prep Date:	6/12/2015	RunNo:	44524			
Client ID:	LCSS	Batch ID:	15556	TestNo:	SW8015B		SW3550C	Analysis Date:	6/16/2015	SeqNo:	1071855			
Analyte		Result		PQL	SPK value	SPK Ref Val		%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

TPH (Diesel Range)	85.3	10.0	100.0	0	85.3	63.4	109							
Surr: 4-Terphenyl-d14	2.33		3.330		70.0	33	152							

Sample ID	LCSD-D15556	SampType:	LCSD	TestCode:	8015_DO_S	Units:	mg/Kg	Prep Date:	6/12/2015	RunNo:	44524			
Client ID:	LCSS02	Batch ID:	15556	TestNo:	SW8015B		SW3550C	Analysis Date:	6/16/2015	SeqNo:	1071856			
Analyte		Result		PQL	SPK value	SPK Ref Val		%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

TPH (Diesel Range)	81.2	10.0	100.0	0	81.2	63.4	109	85.31	4.94	17.2
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Qualifiers:

* Value exceeds Maximum Contaminant Level.	B Analyte detected in the associated Method Blank	C Value is below Minimum Compound Limit.
E Value above quantitation range	H Holding times for preparation or analysis exceeded	J Analyte detected below quantitation limits
M Matrix Interference	ND Not Detected at the Reporting Limit	R RPD outside accepted recovery limits
RL Reporting Limit	S Spike Recovery outside accepted recovery limits	U Analyte not detected



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QC SUMMARY REPORT

WO#: 15060607
 01-Jul-15

Client: ICON Environmental Services
Project: Iberville Parish SB 9090-040-0100

BatchID: 15556

Sample ID	LCSD-D15556	SampType:	LCSD	TestCode:	8015_DO_S	Units:	mg/Kg	Prep Date:	6/12/2015	RunNo:	44524			
Client ID:	LCSS02	Batch ID:	15556	TestNo:	SW8015B		SW3550C	Analysis Date:	6/16/2015	SeqNo:	1071856			
Analyte		Result		PQL	SPK value	SPK Ref Val		%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Surr: 4-Terphenyl-d14 2.39 3.330 71.7 33 152 0 40

Sample ID	LCSD-M15556	SampType:	LCSD	TestCode:	8015_DO_S	Units:	mg/Kg	Prep Date:	6/12/2015	RunNo:	44524			
Client ID:	LCSS02	Batch ID:	15556	TestNo:	SW8015B		SW3550C	Analysis Date:	6/15/2015	SeqNo:	1071858			
Analyte		Result		PQL	SPK value	SPK Ref Val		%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

TPH (Oil Range) 90.7 10.0 100.0 0 90.7 63.9 120 94.26 3.85 16.6
 Surr: 4-Terphenyl-d14 2.25 3.330 67.5 33 152 0 40

Sample ID	LCS-M15556	SampType:	LCS	TestCode:	8015_DO_S	Units:	mg/Kg	Prep Date:	6/12/2015	RunNo:	44524			
Client ID:	LCSS	Batch ID:	15556	TestNo:	SW8015B		SW3550C	Analysis Date:	6/15/2015	SeqNo:	1071859			
Analyte		Result		PQL	SPK value	SPK Ref Val		%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

TPH (Oil Range) 94.3 10.0 100.0 0 94.3 63.9 120
 Surr: 4-Terphenyl-d14 2.42 3.330 72.8 33 152

Sample ID	MB-15556	SampType:	MBLK	TestCode:	8015_DO_S	Units:	mg/Kg	Prep Date:	6/12/2015	RunNo:	44524			
Client ID:	PBS	Batch ID:	15556	TestNo:	SW8015B		SW3550C	Analysis Date:	6/15/2015	SeqNo:	1071861			
Analyte		Result		PQL	SPK value	SPK Ref Val		%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

TPH (Diesel Range) < 5.00 5.00
 TPH (Oil Range) < 5.00 5.00

Qualifiers:	* Value exceeds Maximum Contaminant Level.	B Analyte detected in the associated Method Blank	C Value is below Minimum Compound Limit.
	E Value above quantitation range	H Holding times for preparation or analysis exceeded	J Analyte detected below quantitation limits
	M Matrix Interference	ND Not Detected at the Reporting Limit	R RPD outside accepted recovery limits
	RL Reporting Limit	S Spike Recovery outside accepted recovery limits	U Analyte not detected



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QC SUMMARY REPORT

WO#: 15060607
 01-Jul-15

Client: ICON Environmental Services
Project: Iberville Parish SB 9090-040-0100

BatchID: 15556

Sample ID MB-15556	SampType: MBLK	TestCode: 8015_DO_S	Units: mg/Kg	Prep Date: 6/12/2015	RunNo: 44524						
Client ID: PBS	Batch ID: 15556	TestNo: SW8015B	SW3550C	Analysis Date: 6/15/2015	SeqNo: 1071861						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Surr: 4-Terphenyl-d14 2.19 3.330 65.8 33 152

Sample ID 15060571-005AMS-	SampType: MS	TestCode: 8015_DO_S	Units: mg/Kg	Prep Date: 6/12/2015	RunNo: 44524						
Client ID: ZZZZZZ	Batch ID: 15556	TestNo: SW8015B	SW3550C	Analysis Date: 6/16/2015	SeqNo: 1071870						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

TPH (Oil Range) 104 50.0 100.0 30.86 72.8 14.5 174
 Surr: 4-Terphenyl-d14 2.31 3.330 69.3 33 152

Sample ID 15060571-005AMSD	SampType: MSD	TestCode: 8015_DO_S	Units: mg/Kg	Prep Date: 6/12/2015	RunNo: 44524						
Client ID: ZZZZZZ	Batch ID: 15556	TestNo: SW8015B	SW3550C	Analysis Date: 6/16/2015	SeqNo: 1071871						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

TPH (Oil Range) 88.7 50.0 100.0 30.86 57.8 14.5 174 103.6 15.6 48.8
 Surr: 4-Terphenyl-d14 2.06 3.330 61.8 33 152 0 40

Qualifiers:

* Value exceeds Maximum Contaminant Level.	B Analyte detected in the associated Method Blank	C Value is below Minimum Compound Limit.
E Value above quantitation range	H Holding times for preparation or analysis exceeded	J Analyte detected below quantitation limits
M Matrix Interference	ND Not Detected at the Reporting Limit	R RPD outside accepted recovery limits
RL Reporting Limit	S Spike Recovery outside accepted recovery limits	U Analyte not detected



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QC SUMMARY REPORT

WO#: **15060607**
01-Jul-15

Client: ICON Environmental Services
Project: Iberville Parish SB 9090-040-0100

BatchID: 15571

Sample ID	MB-15571	SampType:	MBLK	TestCode:	6010_W	Units:	mg/L	Prep Date:	6/15/2015	RunNo:	44492
Client ID:	PBW	Batch ID:	15571	TestNo:	SW6010B			Analysis Date:	6/15/2015	SeqNo:	1070808
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	< 0.010	0.010									
Barium	< 0.010	0.010									
Cadmium	< 0.005	0.005									
Calcium	< 0.500	0.500									
Chromium	< 0.010	0.010									
Iron	< 0.010	0.010									
Lead	< 0.010	0.010									
Magnesium	< 0.500	0.500									
Manganese	< 0.010	0.010									
Potassium	< 5.00	5.00									
Sodium	< 5.00	5.00									
Strontium	< 0.010	0.010									
Zinc	< 0.010	0.010									

Sample ID	LCS-15571	SampType:	LCS	TestCode:	6010_W	Units:	mg/L	Prep Date:	6/15/2015	RunNo:	44492
Client ID:	LCSW	Batch ID:	15571	TestNo:	SW6010B			Analysis Date:	6/15/2015	SeqNo:	1070809
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	0.511	0.010	0.500	0	102	80	120				
Barium	0.519	0.010	0.500	0	104	80	120				
Cadmium	0.518	0.005	0.500	0	104	80	120				
Calcium	51.3	0.500	50.00	0	103	80	120				
Chromium	0.519	0.010	0.500	0	104	80	120				
Iron	0.528	0.010	0.500	0	106	80	120				
Lead	0.523	0.010	0.500	0	105	80	120				

Qualifiers:	* Value exceeds Maximum Contaminant Level.	B Analyte detected in the associated Method Blank	C Value is below Minimum Compound Limit.
	E Value above quantitation range	H Holding times for preparation or analysis exceeded	J Analyte detected below quantitation limits
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QC SUMMARY REPORT

WO#: 15060607
 01-Jul-15

Client: ICON Environmental Services
Project: Iberville Parish SB 9090-040-0100

BatchID: 15571

Sample ID	LCS-15571	SampType:	LCS	TestCode:	6010_W	Units:	mg/L	Prep Date:	6/15/2015	RunNo:	44492
Client ID:	LCSW	Batch ID:	15571	TestNo:	SW6010B			Analysis Date:	6/15/2015	SeqNo:	1070809
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Magnesium	51.7	0.500	50.00	0	103	80	120				
Manganese	0.522	0.010	0.500	0	104	80	120				
Potassium	50.8	5.00	50.00	0	102	80	120				
Sodium	52.2	5.00	50.00	0	104	80	120				
Strontium	0.535	0.010	0.500	0	107	80	120				
Zinc	0.516	0.010	0.500	0	103	80	120				

Sample ID	LCSD-15571	SampType:	LCSD	TestCode:	6010_W	Units:	mg/L	Prep Date:	6/15/2015	RunNo:	44492
Client ID:	LCSS02	Batch ID:	15571	TestNo:	SW6010B			Analysis Date:	6/15/2015	SeqNo:	1070810
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	0.509	0.010	0.500	0	102	80	120	0.511	0.333	20	
Barium	0.521	0.010	0.500	0	104	80	120	0.519	0.288	20	
Cadmium	0.519	0.005	0.500	0	104	80	120	0.518	0.135	20	
Calcium	51.6	0.500	50.00	0	103	80	120	51.33	0.486	20	
Chromium	0.520	0.010	0.500	0	104	80	120	0.519	0.135	20	
Iron	0.530	0.010	0.500	0	106	80	120	0.528	0.454	20	
Lead	0.513	0.010	0.500	0	103	80	120	0.523	2.05	20	
Magnesium	51.8	0.500	50.00	0	104	80	120	51.67	0.348	20	
Manganese	0.520	0.010	0.500	0	104	80	120	0.522	0.537	20	
Potassium	51.2	5.00	50.00	0	103	80	120	50.85	0.784	20	
Sodium	51.2	5.00	50.00	0	102	80	120	52.25	2.13	20	
Strontium	0.531	0.010	0.500	0	106	80	120	0.535	0.619	20	
Zinc	0.517	0.010	0.500	0	103	80	120	0.516	0.232	20	

Qualifiers:	* Value exceeds Maximum Contaminant Level.	B Analyte detected in the associated Method Blank	C Value is below Minimum Compound Limit.
	E Value above quantitation range	H Holding times for preparation or analysis exceeded	J Analyte detected below quantitation limits
	M Matrix Interference	ND Not Detected at the Reporting Limit	R RPD outside accepted recovery limits
	RL Reporting Limit	S Spike Recovery outside accepted recovery limits	U Analyte not detected



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QC SUMMARY REPORT

WO#: 15060607
 01-Jul-15

Client: ICON Environmental Services
Project: Iberville Parish SB 9090-040-0100

BatchID: 15571

Sample ID	15060626-002AMS	SampType:	MS	TestCode:	6010_W	Units:	mg/L	Prep Date:	6/15/2015	RunNo:	44492
Client ID:	ZZZZZZ	Batch ID:	15571	TestNo:	SW6010B			Analysis Date:	6/15/2015	SeqNo:	1070812
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	0.490	0.010	0.500	0	98.1	75	125				
Barium	0.619	0.010	0.500	0.131	97.6	75	125				
Cadmium	0.474	0.005	0.500	0	94.8	75	125				
Calcium	63.5	0.500	50.00	15.16	96.6	75	125				
Chromium	0.485	0.010	0.500	0.001	96.8	75	125				
Iron	6.05	0.010	0.500	5.701	69.4	75	125				S
Lead	0.474	0.010	0.500	0	94.9	75	125				
Magnesium	51.0	0.500	50.00	3.164	95.7	75	125				
Manganese	0.663	0.010	0.500	0.176	97.4	75	125				
Potassium	57.3	5.00	50.00	9.919	94.7	75	125				
Sodium	56.7	5.00	50.00	10.95	91.5	75	125				
Strontium	0.597	0.010	0.500	0.113	96.8	75	125				
Zinc	0.476	0.010	0.500	0	95.1	75	125				

Sample ID	15060626-002AMSD	SampType:	MSD	TestCode:	6010_W	Units:	mg/L	Prep Date:	6/15/2015	RunNo:	44492
Client ID:	ZZZZZZ	Batch ID:	15571	TestNo:	SW6010B			Analysis Date:	6/15/2015	SeqNo:	1070815
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	0.474	0.010	0.500	0	94.8	75	125	0.490	3.36	20	
Barium	0.600	0.010	0.500	0.131	93.9	75	125	0.619	3.07	20	
Cadmium	0.462	0.005	0.500	0	92.4	75	125	0.474	2.50	20	
Calcium	62.2	0.500	50.00	15.16	94.2	75	125	63.48	1.97	20	
Chromium	0.470	0.010	0.500	0.001	93.8	75	125	0.485	3.10	20	
Iron	5.98	0.010	0.500	5.701	55.2	75	125	6.048	1.18	20	S
Lead	0.459	0.010	0.500	0	91.7	75	125	0.474	3.34	20	

Qualifiers:

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QC SUMMARY REPORT

WO#: 15060607
 01-Jul-15

Client: ICON Environmental Services
Project: Iberville Parish SB 9090-040-0100

BatchID: 15571

Sample ID	15060626-002AMSD	SampType:	MSD	TestCode:	6010_W	Units:	mg/L	Prep Date:	6/15/2015	RunNo:	44492
Client ID:	ZZZZZZ	Batch ID:	15571	TestNo:	SW6010B			Analysis Date:	6/15/2015	SeqNo:	1070815
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Magnesium	49.9	0.500	50.00	3.164	93.4	75	125	51.00	2.24	20	
Manganese	0.650	0.010	0.500	0.176	94.7	75	125	0.663	2.01	20	
Potassium	55.8	5.00	50.00	9.919	91.7	75	125	57.27	2.62	20	
Sodium	55.7	5.00	50.00	10.95	89.4	75	125	56.72	1.89	20	
Strontium	0.585	0.010	0.500	0.113	94.5	75	125	0.597	1.96	20	
Zinc	0.464	0.010	0.500	0	92.9	75	125	0.476	2.38	20	

NOTES:

S - Analyte concentration in native sample was too high for accurate spike recovery(ies). The method is in control as indicated by the laboratory control sample (LCS).

Qualifiers:	* Value exceeds Maximum Contaminant Level.	B Analyte detected in the associated Method Blank	C Value is below Minimum Compound Limit.
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QC SUMMARY REPORT

WO#: 15060607
 01-Jul-15

Client: ICON Environmental Services
Project: Iberville Parish SB 9090-040-0100

BatchID: 15571

Sample ID	MB-15571	SampType:	MBLK	TestCode:	6010_W	Units:	mg/L	Prep Date:	6/15/2015	RunNo:	44536		
Client ID:	PBW	Batch ID:	15571	TestNo:	SW6010B			Analysis Date:	6/16/2015	SeqNo:	1072097		
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Potassium < 5.00 5.00

Sample ID	LCS-15571	SampType:	LCS	TestCode:	6010_W	Units:	mg/L	Prep Date:	6/15/2015	RunNo:	44536		
Client ID:	LCSW	Batch ID:	15571	TestNo:	SW6010B			Analysis Date:	6/16/2015	SeqNo:	1072098		
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Potassium 50.0 5.00 50.00 0 100 80 120

Sample ID	LCSD-15571	SampType:	LCSD	TestCode:	6010_W	Units:	mg/L	Prep Date:	6/15/2015	RunNo:	44536		
Client ID:	LCSS02	Batch ID:	15571	TestNo:	SW6010B			Analysis Date:	6/16/2015	SeqNo:	1072099		
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Potassium 50.8 5.00 50.00 0 102 80 120 49.99 1.69 20

Sample ID	15060626-002AMS	SampType:	MS	TestCode:	6010_W	Units:	mg/L	Prep Date:	6/15/2015	RunNo:	44536		
Client ID:	ZZZZZZ	Batch ID:	15571	TestNo:	SW6010B			Analysis Date:	6/16/2015	SeqNo:	1072101		
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Potassium 57.9 5.00 50.00 10.36 95.2 75 125

Qualifiers:

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QC SUMMARY REPORT

WO#: 15060607
 01-Jul-15

Client: ICON Environmental Services
Project: Iberville Parish SB 9090-040-0100

BatchID: 15571

Sample ID	15060626-002AMSD	SampType:	MSD	TestCode:	6010_W	Units:	mg/L	Prep Date:	6/15/2015	RunNo:	44536		
Client ID:	ZZZZZZ	Batch ID:	15571	TestNo:	SW6010B			Analysis Date:	6/16/2015	SeqNo:	1072105		
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Potassium		55.2		5.00	50.00	10.36	89.7	75	125	57.94	4.84	20	

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank	C	Value is below Minimum Compound Limit.
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	M	Matrix Interference	ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits
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QC SUMMARY REPORT

WO#: 15060607
 01-Jul-15

Client: ICON Environmental Services
Project: Iberville Parish SB 9090-040-0100

BatchID: 15582

Sample ID	LCSD-D15582	SampType:	LCS	TestCode:	8015_DO_W	Units:	mg/L	Prep Date:	6/15/2015	RunNo:	44548			
Client ID:	LCSW	Batch ID:	15582	TestNo:	SW8015B		SW3510C	Analysis Date:	6/16/2015	SeqNo:	1072421			
Analyte		Result		PQL	SPK value	SPK Ref Val		%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

TPH (Diesel Range)	2.53	0.13	3.00	0	84.4	62.3	110							
Surr: 4-Terphenyl-d14	0.06		0.10		55.6	36.8	128							

Sample ID	LCSD-D15582	SampType:	LCSD	TestCode:	8015_DO_W	Units:	mg/L	Prep Date:	6/15/2015	RunNo:	44548			
Client ID:	LCSS02	Batch ID:	15582	TestNo:	SW8015B		SW3510C	Analysis Date:	6/16/2015	SeqNo:	1072422			
Analyte		Result		PQL	SPK value	SPK Ref Val		%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

TPH (Diesel Range)	2.62	0.13	3.00	0	87.5	62.3	110	2.53	3.52	14.1
Surr: 4-Terphenyl-d14	0.05		0.10		46.0	36.8	128		0	40

Sample ID	LCSD-M15582	SampType:	LCSD	TestCode:	8015_DO_W	Units:	mg/L	Prep Date:	6/15/2015	RunNo:	44548			
Client ID:	LCSS02	Batch ID:	15582	TestNo:	SW8015B		SW3510C	Analysis Date:	6/16/2015	SeqNo:	1072423			
Analyte		Result		PQL	SPK value	SPK Ref Val		%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

TPH (Oil Range)	2.44	0.12	3.00	0	81.4	63.8	124	2.55	4.22	23.2
Surr: 4-Terphenyl-d14	0.05		0.10		47.6	36.8	128		0	40

Sample ID	LCS-M15582	SampType:	LCS	TestCode:	8015_DO_W	Units:	mg/L	Prep Date:	6/15/2015	RunNo:	44548			
Client ID:	LCSW	Batch ID:	15582	TestNo:	SW8015B		SW3510C	Analysis Date:	6/16/2015	SeqNo:	1072424			
Analyte		Result		PQL	SPK value	SPK Ref Val		%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

TPH (Oil Range)	2.55	0.12	3.00	0	84.9	63.8	124							
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Qualifiers:	* Value exceeds Maximum Contaminant Level.	B Analyte detected in the associated Method Blank	C Value is below Minimum Compound Limit.
	E Value above quantitation range	H Holding times for preparation or analysis exceeded	J Analyte detected below quantitation limits
	M Matrix Interference	ND Not Detected at the Reporting Limit	R RPD outside accepted recovery limits
	RL Reporting Limit	S Spike Recovery outside accepted recovery limits	U Analyte not detected



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QC SUMMARY REPORT

WO#: 15060607
 01-Jul-15

Client: ICON Environmental Services
Project: Iberville Parish SB 9090-040-0100

BatchID: 15582

Sample ID	LCS-M15582	SampType:	LCS	TestCode:	8015_DO_W	Units:	mg/L	Prep Date:	6/15/2015	RunNo:	44548			
Client ID:	LCSW	Batch ID:	15582	TestNo:	SW8015B		SW3510C	Analysis Date:	6/16/2015	SeqNo:	1072424			
Analyte		Result		PQL	SPK value	SPK Ref Val		%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Surr:	4-Terphenyl-d14	0.06			0.10			59.8	36.8	128				

Sample ID	MB-15582	SampType:	MBLK	TestCode:	8015_DO_W	Units:	mg/L	Prep Date:	6/15/2015	RunNo:	44548			
Client ID:	PBW	Batch ID:	15582	TestNo:	SW8015B		SW3510C	Analysis Date:	6/16/2015	SeqNo:	1072425			
Analyte		Result		PQL	SPK value	SPK Ref Val		%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
TPH (Diesel Range)		< 0.13		0.13										
TPH (Oil Range)		< 0.12		0.12										
Surr:	4-Terphenyl-d14	0.06			0.10			58.9	36.8	128				

Qualifiers:	* Value exceeds Maximum Contaminant Level.	B Analyte detected in the associated Method Blank	C Value is below Minimum Compound Limit.
	E Value above quantitation range	H Holding times for preparation or analysis exceeded	J Analyte detected below quantitation limits
	M Matrix Interference	ND Not Detected at the Reporting Limit	R RPD outside accepted recovery limits
	RL Reporting Limit	S Spike Recovery outside accepted recovery limits	U Analyte not detected



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QC SUMMARY REPORT

WO#: 15060607
 01-Jul-15

Client: ICON Environmental Services
Project: Iberville Parish SB 9090-040-0100

BatchID: 15585

Sample ID	MB-15585	SampType:	MBLK	TestCode:	HG_W_7470	Units:	mg/L	Prep Date:	6/15/2015	RunNo:	44500		
Client ID:	PBW	Batch ID:	15585	TestNo:	SW7470A			Analysis Date:	6/15/2015	SeqNo:	1071067		
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury		< 0.0002		0.0002									

Sample ID	LCS-15585	SampType:	LCS	TestCode:	HG_W_7470	Units:	mg/L	Prep Date:	6/15/2015	RunNo:	44500		
Client ID:	LCSW	Batch ID:	15585	TestNo:	SW7470A			Analysis Date:	6/15/2015	SeqNo:	1071068		
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury		0.0096		0.0002	0.0100	0	96.4	80	120				

Sample ID	LCSD-15585	SampType:	LCSD	TestCode:	HG_W_7470	Units:	mg/L	Prep Date:	6/15/2015	RunNo:	44500		
Client ID:	LCSS02	Batch ID:	15585	TestNo:	SW7470A			Analysis Date:	6/15/2015	SeqNo:	1071069		
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury		0.0081		0.0002	0.0100	0	81.3	80	120	0.0096	17.0	20	

Sample ID	15060626-002AMS	SampType:	MS	TestCode:	HG_W_7470	Units:	mg/L	Prep Date:	6/15/2015	RunNo:	44500		
Client ID:	ZZZZZZ	Batch ID:	15585	TestNo:	SW7470A			Analysis Date:	6/15/2015	SeqNo:	1071073		
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury		0.0079		0.0002	0.0100	0	79.2	75	125				

Qualifiers:

* Value exceeds Maximum Contaminant Level.	B Analyte detected in the associated Method Blank	C Value is below Minimum Compound Limit.
E Value above quantitation range	H Holding times for preparation or analysis exceeded	J Analyte detected below quantitation limits
M Matrix Interference	ND Not Detected at the Reporting Limit	R RPD outside accepted recovery limits
RL Reporting Limit	S Spike Recovery outside accepted recovery limits	U Analyte not detected



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 Website: www.element.com

QC SUMMARY REPORT

WO#: 15060607
 01-Jul-15

Client: ICON Environmental Services
Project: Iberville Parish SB 9090-040-0100

BatchID: 15585

Sample ID	15060626-002AMSD	SampType:	MSD	TestCode:	HG_W_7470	Units:	mg/L	Prep Date:	6/15/2015	RunNo:	44500		
Client ID:	ZZZZZZ	Batch ID:	15585	TestNo:	SW7470A			Analysis Date:	6/15/2015	SeqNo:	1071074		
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury		0.0075		0.0002	0.0100	0	75.0	75	125	0.0079	5.38	20	

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank	C	Value is below Minimum Compound Limit.
	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	M	Matrix Interference	ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits
	RL	Reporting Limit	S	Spike Recovery outside accepted recovery limits	U	Analyte not detected



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QC SUMMARY REPORT

WO#: 15060607
 01-Jul-15

Client: ICON Environmental Services
Project: Iberville Parish SB 9090-040-0100

BatchID: 15587

Sample ID	MB-15587	SampType:	MBLK	TestCode:	HG_S_29B	Units:	mg/Kg-dry	Prep Date:	6/16/2015	RunNo:	44523
Client ID:	PBS	Batch ID:	15587	TestNo:	29B/SW7471 SW7471A	Analysis Date:	6/16/2015	SeqNo:	1071831		
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD RPDLimit Qual

Mercury < 0.10 0.10

Sample ID	LCS-15587	SampType:	LCS	TestCode:	HG_S_29B	Units:	mg/Kg-dry	Prep Date:	6/16/2015	RunNo:	44523
Client ID:	LCSS	Batch ID:	15587	TestNo:	29B/SW7471 SW7471A	Analysis Date:	6/16/2015	SeqNo:	1071832		
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD RPDLimit Qual

Mercury 0.85 0.10 0.83 0 102 80 120

Sample ID	LCSD-15587	SampType:	LCSD	TestCode:	HG_S_29B	Units:	mg/Kg-dry	Prep Date:	6/16/2015	RunNo:	44523
Client ID:	LCSS02	Batch ID:	15587	TestNo:	29B/SW7471 SW7471A	Analysis Date:	6/16/2015	SeqNo:	1071833		
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD RPDLimit Qual

Mercury 0.86 0.10 0.83 0 103 80 120 0.85 0.91 20

Sample ID	15060451-011AMS	SampType:	MS	TestCode:	HG_S_29B	Units:	mg/Kg-dry	Prep Date:	6/16/2015	RunNo:	44523
Client ID:	ZZZZZZ	Batch ID:	15587	TestNo:	29B/SW7471 SW7471A	Analysis Date:	6/16/2015	SeqNo:	1071836		
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD RPDLimit Qual

Mercury 0.82 0.10 0.82 0 99.5 75 125

Qualifiers:

* Value exceeds Maximum Contaminant Level.	B Analyte detected in the associated Method Blank	C Value is below Minimum Compound Limit.
E Value above quantitation range	H Holding times for preparation or analysis exceeded	J Analyte detected below quantitation limits
M Matrix Interference	ND Not Detected at the Reporting Limit	R RPD outside accepted recovery limits
RL Reporting Limit	S Spike Recovery outside accepted recovery limits	U Analyte not detected



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QC SUMMARY REPORT

WO#: 15060607
 01-Jul-15

Client: ICON Environmental Services
Project: Iberville Parish SB 9090-040-0100

BatchID: 15587

Sample ID	15060451-011AMSD	SampType:	MSD	TestCode:	HG_S_29B	Units:	mg/Kg-dry	Prep Date:	6/16/2015	RunNo:	44523
Client ID:	ZZZZZZ	Batch ID:	15587	TestNo:	29B/SW7471 SW7471A	Analysis Date:	6/16/2015	SeqNo:	1071838		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	0.82	0.10	0.83	0	99.5	75	125	0.82	0.15	20	

Qualifiers:	* Value exceeds Maximum Contaminant Level.	B Analyte detected in the associated Method Blank	C Value is below Minimum Compound Limit.
	E Value above quantitation range	H Holding times for preparation or analysis exceeded	J Analyte detected below quantitation limits
	M Matrix Interference	ND Not Detected at the Reporting Limit	R RPD outside accepted recovery limits
	RL Reporting Limit	S Spike Recovery outside accepted recovery limits	U Analyte not detected



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QC SUMMARY REPORT

WO#: 15060607
 01-Jul-15

Client: ICON Environmental Services
Project: Iberville Parish SB 9090-040-0100

BatchID: 15588

Sample ID	MB-15588	SampType:	MBLK	TestCode:	6010_S_29B	Units:	mg/Kg-dry	Prep Date:	6/15/2015	RunNo:	44540		
Client ID:	PBS	Batch ID:	15588	TestNo:	SW6010B	SW3050B		Analysis Date:	6/16/2015	SeqNo:	1072253		
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic		< 2.00		2.00									
Barium		< 1.00		1.00									
Cadmium		< 0.50		0.50									
Chromium		< 1.00		1.00									
Lead		< 1.00		1.00									
Strontium		< 1.00		1.00									
Zinc		< 1.00		1.00									

Sample ID	LCS-15588	SampType:	LCS	TestCode:	6010_S_29B	Units:	mg/Kg-dry	Prep Date:	6/15/2015	RunNo:	44540		
Client ID:	LCSS	Batch ID:	15588	TestNo:	SW6010B	SW3050B		Analysis Date:	6/16/2015	SeqNo:	1072254		
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic		52.1		2.00	50.00	0	104	80	120				
Barium		56.2		1.00	50.00	0	112	80	120				
Cadmium		55.2		0.50	50.00	0	110	80	120				
Chromium		56.5		1.00	50.00	0	113	80	120				
Lead		53.6		1.00	50.00	0	107	80	120				
Strontium		58.4		1.00	50.00	0	117	80	120				
Zinc		53.6		1.00	50.00	0	107	80	120				

Qualifiers:	* Value exceeds Maximum Contaminant Level.	B Analyte detected in the associated Method Blank	C Value is below Minimum Compound Limit.
	E Value above quantitation range	H Holding times for preparation or analysis exceeded	J Analyte detected below quantitation limits
	M Matrix Interference	ND Not Detected at the Reporting Limit	R RPD outside accepted recovery limits
	RL Reporting Limit	S Spike Recovery outside accepted recovery limits	U Analyte not detected



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QC SUMMARY REPORT

WO#: 15060607
 01-Jul-15

Client: ICON Environmental Services
Project: Iberville Parish SB 9090-040-0100

BatchID: 15588

Sample ID	LCSD-15588	SampType:	LCSD	TestCode:	6010_S_29B	Units:	mg/Kg-dry	Prep Date:	6/15/2015	RunNo:	44540
Client ID:	LCSS02	Batch ID:	15588	TestNo:	SW6010B	SW3050B		Analysis Date:	6/16/2015	SeqNo:	1072255
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	52.8	2.00	50.00	0	106	80	120	52.11	1.39	20	
Barium	55.8	1.00	50.00	0	112	80	120	56.15	0.54	20	
Cadmium	54.8	0.50	50.00	0	110	80	120	55.23	0.71	20	
Chromium	56.2	1.00	50.00	0	112	80	120	56.48	0.46	20	
Lead	53.1	1.00	50.00	0	106	80	120	53.56	0.88	20	
Strontium	57.8	1.00	50.00	0	116	80	120	58.40	1.03	20	
Zinc	53.0	1.00	50.00	0	106	80	120	53.56	1.07	20	

Sample ID	15060569-001AMS	SampType:	MS	TestCode:	6010_S_29B	Units:	mg/Kg-dry	Prep Date:	6/15/2015	RunNo:	44540
Client ID:	ZZZZZZ	Batch ID:	15588	TestNo:	SW6010B	SW3050B		Analysis Date:	6/16/2015	SeqNo:	1072257
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	52.6	1.98	49.58	5.72	94.5	75	125				
Barium	775	0.99	49.58	741.4	67.8	75	125				S
Cadmium	48.0	0.50	49.58	0.17	96.4	75	125				
Chromium	61.7	0.99	49.58	11.40	102	75	125				
Lead	59.3	0.99	49.58	11.80	95.8	75	125				
Zinc	58.3	0.99	49.58	13.05	91.3	75	125				

Sample ID	15060569-001AMSD	SampType:	MSD	TestCode:	6010_S_29B	Units:	mg/Kg-dry	Prep Date:	6/15/2015	RunNo:	44540
Client ID:	ZZZZZZ	Batch ID:	15588	TestNo:	SW6010B	SW3050B		Analysis Date:	6/16/2015	SeqNo:	1072258
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Qualifiers:

* Value exceeds Maximum Contaminant Level.	B Analyte detected in the associated Method Blank	C Value is below Minimum Compound Limit.
E Value above quantitation range	H Holding times for preparation or analysis exceeded	J Analyte detected below quantitation limits
M Matrix Interference	ND Not Detected at the Reporting Limit	R RPD outside accepted recovery limits
RL Reporting Limit	S Spike Recovery outside accepted recovery limits	U Analyte not detected



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QC SUMMARY REPORT

WO#: 15060607
 01-Jul-15

Client: ICON Environmental Services
Project: Iberville Parish SB 9090-040-0100

BatchID: 15588

Sample ID	15060569-001AMSD	SampType:	MSD	TestCode:	6010_S_29B	Units:	mg/Kg-dry	Prep Date:	6/15/2015	RunNo:	44540
Client ID:	ZZZZZZ	Batch ID:	15588	TestNo:	SW6010B		SW3050B	Analysis Date:	6/16/2015	SeqNo:	1072258
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	51.2	1.98	49.57	5.72	91.7	75	125	52.59	2.68	20	
Barium	775	0.99	49.57	741.4	66.7	75	125	775.1	0.07	20	S
Cadmium	48.2	0.50	49.57	0.17	97.0	75	125	47.99	0.54	20	
Chromium	62.1	0.99	49.57	11.40	102	75	125	61.74	0.54	20	
Lead	59.5	0.99	49.57	11.80	96.2	75	125	59.30	0.28	20	
Zinc	58.4	0.99	49.57	13.05	91.5	75	125	58.30	0.17	20	

NOTES:

S - Analyte concentration in native sample was too high for accurate spike recovery(ies). The method is in control as indicated by the laboratory control sample (LCS).

Qualifiers:	* Value exceeds Maximum Contaminant Level.	B Analyte detected in the associated Method Blank	C Value is below Minimum Compound Limit.
	E Value above quantitation range	H Holding times for preparation or analysis exceeded	J Analyte detected below quantitation limits
	M Matrix Interference	ND Not Detected at the Reporting Limit	R RPD outside accepted recovery limits
	RL Reporting Limit	S Spike Recovery outside accepted recovery limits	U Analyte not detected



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QC SUMMARY REPORT

WO#: 15060607
 01-Jul-15

Client: ICON Environmental Services
Project: Iberville Parish SB 9090-040-0100

BatchID: 15588

Sample ID	15060569-001AMS	SampType:	MS	TestCode:	6010_S_29B	Units:	mg/Kg-dry	Prep Date:	6/15/2015	RunNo:	44863		
Client ID:	ZZZZZZ	Batch ID:	15588	TestNo:	SW6010B	SW3050B		Analysis Date:	6/30/2015	SeqNo:	1080409		
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Strontium		217		9.92	49.58	220.1	-6.27	75	125				S

Sample ID	15060569-001AMSD	SampType:	MSD	TestCode:	6010_S_29B	Units:	mg/Kg-dry	Prep Date:	6/15/2015	RunNo:	44863		
Client ID:	ZZZZZZ	Batch ID:	15588	TestNo:	SW6010B	SW3050B		Analysis Date:	6/30/2015	SeqNo:	1080410		
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Strontium		117		9.91	49.57	220.1	-208	75	125	217.0	59.7	20	RS

NOTES:

S - Spike recovery outside of recovery limits due to dilution. The method is in control as indicated by the laboratory control sample(s).

Qualifiers:	* Value exceeds Maximum Contaminant Level.	B Analyte detected in the associated Method Blank	C Value is below Minimum Compound Limit.
	E Value above quantitation range	H Holding times for preparation or analysis exceeded	J Analyte detected below quantitation limits
	M Matrix Interference	ND Not Detected at the Reporting Limit	R RPD outside accepted recovery limits
	RL Reporting Limit	S Spike Recovery outside accepted recovery limits	U Analyte not detected



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QC SUMMARY REPORT

WO#: 15060607
 01-Jul-15

Client: ICON Environmental Services
Project: Iberville Parish SB 9090-040-0100

BatchID: 15589

Sample ID MB-15589	SampType: MBLK	TestCode: TTBA	Units: mg/Kg-dry	Prep Date: 6/15/2015	RunNo: 44554						
Client ID: PBS	Batch ID: 15589	TestNo: LDNR 29-B		Analysis Date: 6/16/2015	SeqNo: 1072673						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

True Total Barium < 50 50

Sample ID LCS-15589	SampType: LCS	TestCode: TTBA	Units: mg/Kg-dry	Prep Date: 6/15/2015	RunNo: 44554						
Client ID: LCSS	Batch ID: 15589	TestNo: LDNR 29-B		Analysis Date: 6/16/2015	SeqNo: 1072674						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

True Total Barium 4,850 50 5,000 0 97 75 125

Sample ID LCSD-15589	SampType: LCSD	TestCode: TTBA	Units: mg/Kg-dry	Prep Date: 6/15/2015	RunNo: 44554						
Client ID: LCSS02	Batch ID: 15589	TestNo: LDNR 29-B		Analysis Date: 6/16/2015	SeqNo: 1072675						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

True Total Barium 4,890 50 5,000 0 98 75 125 4,852 0 20

Sample ID 15060569-001AMS	SampType: MS	TestCode: TTBA	Units: mg/Kg-dry	Prep Date: 6/15/2015	RunNo: 44554						
Client ID: ZZZZZZ	Batch ID: 15589	TestNo: LDNR 29-B		Analysis Date: 6/16/2015	SeqNo: 1072677						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

True Total Barium 5,390 46 4,613 971 96 75 125

Qualifiers:	* Value exceeds Maximum Contaminant Level.	B Analyte detected in the associated Method Blank	C Value is below Minimum Compound Limit.
	E Value above quantitation range	H Holding times for preparation or analysis exceeded	J Analyte detected below quantitation limits
	M Matrix Interference	ND Not Detected at the Reporting Limit	R RPD outside accepted recovery limits
	RL Reporting Limit	S Spike Recovery outside accepted recovery limits	U Analyte not detected



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QC SUMMARY REPORT

WO#: 15060607
 01-Jul-15

Client: ICON Environmental Services
Project: Iberville Parish SB 9090-040-0100

BatchID: 15589

Sample ID	15060569-001AMSD	SampType:	MSD	TestCode:	TTBA	Units:	mg/Kg-dry	Prep Date:	6/15/2015	RunNo:	44554		
Client ID:	ZZZZZZ	Batch ID:	15589	TestNo:	LDNR 29-B			Analysis Date:	6/16/2015	SeqNo:	1072678		
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
True Total Barium		5,430		46	4,621	971	96	75	125	5,387	0	20	

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank	C	Value is below Minimum Compound Limit.
	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	M	Matrix Interference	ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits
	RL	Reporting Limit	S	Spike Recovery outside accepted recovery limits	U	Analyte not detected



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QC SUMMARY REPORT

WO#: **15060607**
 01-Jul-15

Client: ICON Environmental Services
Project: Iberville Parish SB 9090-040-0100

BatchID: 15659

Sample ID 15060541-001ADUP	SampType: DUP	TestCode: ESP_S	Units: %	Prep Date: 6/19/2015	RunNo: 44680						
Client ID: ZZZZZZ	Batch ID: 15659	TestNo: LDNR 29-B	LDNR 29-B	Analysis Date: 6/23/2015	SeqNo: 1075584						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Exchangeable Sodium %	1.1	0.1						1.1	5.3	20	

Sample ID 15060571-006ADUP	SampType: DUP	TestCode: ESP_S	Units: %	Prep Date: 6/19/2015	RunNo: 44680						
Client ID: ZZZZZZ	Batch ID: 15659	TestNo: LDNR 29-B	LDNR 29-B	Analysis Date: 6/23/2015	SeqNo: 1075594						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Exchangeable Sodium %	49.3	0.1						55.8	12.4	20	*

Sample ID 15060607-013ADUP	SampType: DUP	TestCode: ESP_S	Units: %	Prep Date: 6/19/2015	RunNo: 44680						
Client ID: SB-7 12-14	Batch ID: 15659	TestNo: LDNR 29-B	LDNR 29-B	Analysis Date: 6/23/2015	SeqNo: 1077359						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Exchangeable Sodium %	15.6	0.1						14.7	5.8	20	*

Qualifiers:

* Value exceeds Maximum Contaminant Level.	B Analyte detected in the associated Method Blank	C Value is below Minimum Compound Limit.
E Value above quantitation range	H Holding times for preparation or analysis exceeded	J Analyte detected below quantitation limits
M Matrix Interference	ND Not Detected at the Reporting Limit	R RPD outside accepted recovery limits
RL Reporting Limit	S Spike Recovery outside accepted recovery limits	U Analyte not detected



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QC SUMMARY REPORT

WO#: 15060607
 01-Jul-15

Client: ICON Environmental Services
Project: Iberville Parish SB 9090-040-0100

BatchID: 15660

Sample ID	15060541-001ADUP	SampType:	DUP	TestCode:	CEC	Units:	meq/100g	Prep Date:	6/19/2015	RunNo:	44679		
Client ID:	ZZZZZZ	Batch ID:	15660	TestNo:	LDNR 29-B	LDNR 29-B		Analysis Date:	6/23/2015	SeqNo:	1075561		
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Cation Exchange Capacity		31.6		0.1						31.3	0.8	20	

Sample ID	15060571-006ADUP	SampType:	DUP	TestCode:	CEC	Units:	meq/100g	Prep Date:	6/19/2015	RunNo:	44679		
Client ID:	ZZZZZZ	Batch ID:	15660	TestNo:	LDNR 29-B	LDNR 29-B		Analysis Date:	6/23/2015	SeqNo:	1075571		
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Cation Exchange Capacity		36.7		0.1						36.9	0.5	20	

Sample ID	Ics-15660	SampType:	LCS	TestCode:	CEC	Units:	meq/100g	Prep Date:	6/19/2015	RunNo:	44679		
Client ID:	LCSS	Batch ID:	15660	TestNo:	LDNR 29-B	LDNR 29-B		Analysis Date:	6/23/2015	SeqNo:	1075581		
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Cation Exchange Capacity		21.2		0.1	25.0	0	84.6	76	124				

Sample ID	Icsd-15660	SampType:	LCSD	TestCode:	CEC	Units:	meq/100g	Prep Date:	6/19/2015	RunNo:	44679		
Client ID:	LCSS02	Batch ID:	15660	TestNo:	LDNR 29-B	LDNR 29-B		Analysis Date:	6/23/2015	SeqNo:	1075582		
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Cation Exchange Capacity		22.0		0.1	25.0	0	88.1	76	124	21.2	4.1	20	

Qualifiers:

* Value exceeds Maximum Contaminant Level.	B Analyte detected in the associated Method Blank	C Value is below Minimum Compound Limit.
E Value above quantitation range	H Holding times for preparation or analysis exceeded	J Analyte detected below quantitation limits
M Matrix Interference	ND Not Detected at the Reporting Limit	R RPD outside accepted recovery limits
RL Reporting Limit	S Spike Recovery outside accepted recovery limits	U Analyte not detected



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QC SUMMARY REPORT

WO#: 15060607
 01-Jul-15

Client: ICON Environmental Services
Project: Iberville Parish SB 9090-040-0100

BatchID: 15693

Sample ID	15060607-013ADUP	SampType:	DUP	TestCode:	SAR_S	Units:		Prep Date:	6/23/2015	RunNo:	44773		
Client ID:	SB-7 12-14	Batch ID:	15693	TestNo:	LDNR 29-B	LDNR 29-B		Analysis Date:	6/25/2015	SeqNo:	1077287		
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Sodium Adsorption Ratio	38.2	0.100								38.10	0.369	20	*
Soluble Calcium	62.6	1.00								64.07	2.28	20	
Soluble Magnesium	23.8	1.00								23.98	0.792	20	
Soluble Sodium	251	1.00								252.8	0.569	20	

Sample ID	15060611-001ADUP	SampType:	DUP	TestCode:	SAR_S	Units:		Prep Date:	6/23/2015	RunNo:	44773		
Client ID:	ZZZZZZ	Batch ID:	15693	TestNo:	LDNR 29-B	LDNR 29-B		Analysis Date:	6/25/2015	SeqNo:	1077293		
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Sodium Adsorption Ratio	3.56	0.100								3.522	0.947	20	
Soluble Calcium	5.29	1.00								5.314	0.471	20	
Soluble Magnesium	4.54	1.00								4.524	0.291	20	
Soluble Sodium	7.88	1.00								7.813	0.887	20	

Qualifiers:	* Value exceeds Maximum Contaminant Level.	B Analyte detected in the associated Method Blank	C Value is below Minimum Compound Limit.
	E Value above quantitation range	H Holding times for preparation or analysis exceeded	J Analyte detected below quantitation limits
	M Matrix Interference	ND Not Detected at the Reporting Limit	R RPD outside accepted recovery limits
	RL Reporting Limit	S Spike Recovery outside accepted recovery limits	U Analyte not detected



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QC SUMMARY REPORT

WO#: 15060607
 01-Jul-15

Client: ICON Environmental Services
Project: Iberville Parish SB 9090-040-0100

BatchID: R44464

Sample ID	MB-R44464	SampType:	MBLK	TestCode:	TDS_2540C	Units:	mg/L	Prep Date:		RunNo:	44464		
Client ID:	PBW	Batch ID:	R44464	TestNo:	SM2540C			Analysis Date:	6/15/2015	SeqNo:	1072441		
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Total Dissolved Solids (Residue, Filterable) < 20 20

Sample ID	LCSD-R44464	SampType:	LCSD	TestCode:	TDS_2540C	Units:	mg/L	Prep Date:		RunNo:	44464		
Client ID:	LCSS02	Batch ID:	R44464	TestNo:	SM2540C			Analysis Date:	6/15/2015	SeqNo:	1072442		
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Total Dissolved Solids (Residue, Filterable) 975 20 1,000 0 98 85 115 982 0 10

Sample ID	LCS-R44464	SampType:	LCS	TestCode:	TDS_2540C	Units:	mg/L	Prep Date:		RunNo:	44464		
Client ID:	LCSW	Batch ID:	R44464	TestNo:	SM2540C			Analysis Date:	6/15/2015	SeqNo:	1072443		
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Total Dissolved Solids (Residue, Filterable) 982 20 1,000 0 98 85 115

Sample ID	15060270-001BDUP	SampType:	DUP	TestCode:	TDS_2540C	Units:	mg/L	Prep Date:		RunNo:	44464		
Client ID:	ZZZZZ	Batch ID:	R44464	TestNo:	SM2540C			Analysis Date:	6/15/2015	SeqNo:	1072444		
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Total Dissolved Solids (Residue, Filterable) 22,700 2,000 22,200 2 10 H

Qualifiers:	* Value exceeds Maximum Contaminant Level.	B Analyte detected in the associated Method Blank	C Value is below Minimum Compound Limit.
	E Value above quantitation range	H Holding times for preparation or analysis exceeded	J Analyte detected below quantitation limits
	M Matrix Interference	ND Not Detected at the Reporting Limit	R RPD outside accepted recovery limits
	RL Reporting Limit	S Spike Recovery outside accepted recovery limits	U Analyte not detected



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QC SUMMARY REPORT

WO#: 15060607
 01-Jul-15

Client: ICON Environmental Services
Project: Iberville Parish SB 9090-040-0100

BatchID: R44464

Sample ID	15060270-001BDUP	SampType:	DUP	TestCode:	TDS_2540C	Units:	mg/L	Prep Date:		RunNo:	44464		
Client ID:	ZZZZZZ	Batch ID:	R44464	TestNo:	SM2540C			Analysis Date:	6/15/2015	SeqNo:	1072444		
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Sample ID	15060577-001DDUP	SampType:	DUP	TestCode:	TDS_2540C	Units:	mg/L	Prep Date:		RunNo:	44464		
Client ID:	ZZZZZZ	Batch ID:	R44464	TestNo:	SM2540C			Analysis Date:	6/15/2015	SeqNo:	1072451		
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Dissolved Solids (Residue, Filterable)		11,000		500						11,480	4	10	

Qualifiers:	* Value exceeds Maximum Contaminant Level.	B Analyte detected in the associated Method Blank	C Value is below Minimum Compound Limit.
	E Value above quantitation range	H Holding times for preparation or analysis exceeded	J Analyte detected below quantitation limits
	M Matrix Interference	ND Not Detected at the Reporting Limit	R RPD outside accepted recovery limits
	RL Reporting Limit	S Spike Recovery outside accepted recovery limits	U Analyte not detected



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QC SUMMARY REPORT

WO#: 15060607
 01-Jul-15

Client: ICON Environmental Services
Project: Iberville Parish SB 9090-040-0100

BatchID: R44499

Sample ID	BTEX_W LCS	SampType:	LCS	TestCode:	8021_BTEX_	Units:	mg/L	Prep Date:		RunNo:	44499
Client ID:	LCSW	Batch ID:	R44499	TestNo:	SW8021B			Analysis Date:	6/15/2015	SeqNo:	1071054
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	0.0551	0.00500	0.05000	0	110	72	120				
Ethylbenzene	0.0487	0.00500	0.05000	0	97.4	76	129				
Toluene	0.0513	0.0100	0.05000	0	103	78	120				
Xylenes, Total	0.149	0.0500	0.1500	0	99.3	75	125				
Surr: alpha, alpha, alpha-Trifluorotoluene	0.0484		0.05000		96.8	70	130				

Sample ID	BTEX_W LCSD	SampType:	LCSD	TestCode:	8021_BTEX_	Units:	mg/L	Prep Date:		RunNo:	44499
Client ID:	LCSS02	Batch ID:	R44499	TestNo:	SW8021B			Analysis Date:	6/15/2015	SeqNo:	1071055
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	0.0548	0.00500	0.05000	0	110	72	120	0.05510	0.546	20	
Ethylbenzene	0.0479	0.00500	0.05000	0	95.8	76	129	0.04870	1.66	20	
Toluene	0.0509	0.0100	0.05000	0	102	78	120	0.05130	0.783	20	
Xylenes, Total	0.147	0.0500	0.1500	0	98.3	75	125	0.1490	1.08	20	
Surr: alpha, alpha, alpha-Trifluorotoluene	0.0470		0.05000		94.0	70	130		0	20	

Sample ID	MB ACID	SampType:	MBLK	TestCode:	8021_BTEX_	Units:	mg/L	Prep Date:		RunNo:	44499
Client ID:	PBW	Batch ID:	R44499	TestNo:	SW8021B			Analysis Date:	6/15/2015	SeqNo:	1071056
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	< 0.00500	0.00500									
Ethylbenzene	< 0.00500	0.00500									

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank	C	Value is below Minimum Compound Limit.
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
M	Matrix Interference	ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits
RL	Reporting Limit	S	Spike Recovery outside accepted recovery limits	U	Analyte not detected



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QC SUMMARY REPORT

WO#: 15060607
 01-Jul-15

Client: ICON Environmental Services
Project: Iberville Parish SB 9090-040-0100

BatchID: R44499

Sample ID	MB ACID	SampType:	MBLK	TestCode:	8021_BTEX_	Units:	mg/L	Prep Date:		RunNo:	44499
Client ID:	PBW	Batch ID:	R44499	TestNo:	SW8021B			Analysis Date:	6/15/2015	SeqNo:	1071056
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Toluene	< 0.0100	0.0100									
Xylenes, Total	< 0.0500	0.0500									
Surr: alpha, alpha, alpha-Trifluorotoluene	0.0471		0.05000		94.2	70	130				

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank	C	Value is below Minimum Compound Limit.
	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	M	Matrix Interference	ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits
	RL	Reporting Limit	S	Spike Recovery outside accepted recovery limits	U	Analyte not detected



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QC SUMMARY REPORT

WO#: 15060607
 01-Jul-15

Client: ICON Environmental Services
Project: Iberville Parish SB 9090-040-0100

BatchID: R44502

Sample ID MB ACID	SampType: MBLK	TestCode: 8015_G_W	Units: mg/L	Prep Date:	RunNo: 44502						
Client ID: PBW	Batch ID: R44502	TestNo: SW8015B	Analysis Date: 6/15/2015	SeqNo: 1071107							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
TPH (Gasoline Range)	< 0.15	0.15									
Surr: alpha, alpha-Trifluorotoluene	0.05		0.05		97.8	70	130				

Sample ID GAS_W LCS	SampType: LCS	TestCode: 8015_G_W	Units: mg/L	Prep Date:	RunNo: 44502						
Client ID: LCSW	Batch ID: R44502	TestNo: SW8015B	Analysis Date: 6/15/2015	SeqNo: 1071124							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
TPH (Gasoline Range)	15.9	0.15	12.50	0	127	80	130				

Sample ID GAS_W LCSD	SampType: LCSD	TestCode: 8015_G_W	Units: mg/L	Prep Date:	RunNo: 44502						
Client ID: LCSS02	Batch ID: R44502	TestNo: SW8015B	Analysis Date: 6/15/2015	SeqNo: 1071125							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
TPH (Gasoline Range)	15.9	0.15	12.50	0	127	80	130	15.87	0.06	20	

Qualifiers:

* Value exceeds Maximum Contaminant Level.	B Analyte detected in the associated Method Blank	C Value is below Minimum Compound Limit.
E Value above quantitation range	H Holding times for preparation or analysis exceeded	J Analyte detected below quantitation limits
M Matrix Interference	ND Not Detected at the Reporting Limit	R RPD outside accepted recovery limits
RL Reporting Limit	S Spike Recovery outside accepted recovery limits	U Analyte not detected



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QC SUMMARY REPORT

WO#: 15060607
 01-Jul-15

Client: ICON Environmental Services
Project: Iberville Parish SB 9090-040-0100

BatchID: R44505

Sample ID	MBLK	SampType:	MBLK	TestCode:	9056_W	Units:	mg/L	Prep Date:		RunNo:	44505			
Client ID:	PBW	Batch ID:	R44505	TestNo:	SW9056A			Analysis Date:	6/16/2015	SeqNo:	1072298			
Analyte		Result		PQL	SPK value	SPK Ref Val		%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Chloride		< 0.25		0.25										
Sulfate		< 0.25		0.25										

Sample ID	LCS	SampType:	LCS	TestCode:	9056_W	Units:	mg/L	Prep Date:		RunNo:	44505			
Client ID:	LCSW	Batch ID:	R44505	TestNo:	SW9056A			Analysis Date:	6/16/2015	SeqNo:	1072299			
Analyte		Result		PQL	SPK value	SPK Ref Val		%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Chloride		10.2		0.25	10.00	0		102	80	120				
Sulfate		10.0		0.25	10.00	0		100	80	120				

Sample ID	LCSD	SampType:	LCSD	TestCode:	9056_W	Units:	mg/L	Prep Date:		RunNo:	44505			
Client ID:	LCSS02	Batch ID:	R44505	TestNo:	SW9056A			Analysis Date:	6/16/2015	SeqNo:	1072300			
Analyte		Result		PQL	SPK value	SPK Ref Val		%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Chloride		10.0		0.25	10.00	0		100	80	120	10.16	1.57	15	
Sulfate		9.96		0.25	10.00	0		99.6	80	120	10.03	0.72	15	

Sample ID	15060607-009AMS	SampType:	MS	TestCode:	9056_W	Units:	mg/L	Prep Date:		RunNo:	44505			
Client ID:	SB-1	Batch ID:	R44505	TestNo:	SW9056A			Analysis Date:	6/16/2015	SeqNo:	1072302			
Analyte		Result		PQL	SPK value	SPK Ref Val		%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Chloride		1,490		25.0	500.0	1,019		94.3	80	120				
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- Qualifiers:**
- * Value exceeds Maximum Contaminant Level.
 - E Value above quantitation range
 - M Matrix Interference
 - RL Reporting Limit
 - B Analyte detected in the associated Method Blank
 - H Holding times for preparation or analysis exceeded
 - ND Not Detected at the Reporting Limit
 - S Spike Recovery outside accepted recovery limits
 - C Value is below Minimum Compound Limit.
 - J Analyte detected below quantitation limits
 - R RPD outside accepted recovery limits
 - U Analyte not detected



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QC SUMMARY REPORT

WO#: 15060607
 01-Jul-15

Client: ICON Environmental Services
Project: Iberville Parish SB 9090-040-0100

BatchID: R44505

Sample ID	15060607-009AMS	SampType:	MS	TestCode:	9056_W	Units:	mg/L	Prep Date:		RunNo:	44505		
Client ID:	SB-1	Batch ID:	R44505	TestNo:	SW9056A			Analysis Date:	6/16/2015	SeqNo:	1072302		
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate		481		25.0	500.0	2.92	95.5	80	120				

Sample ID	15060607-009AMSD	SampType:	MSD	TestCode:	9056_W	Units:	mg/L	Prep Date:		RunNo:	44505		
Client ID:	SB-1	Batch ID:	R44505	TestNo:	SW9056A			Analysis Date:	6/16/2015	SeqNo:	1072303		
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride		1,480		25.0	500.0	1,019	92.8	80	120	1,491	0.53	15	
Sulfate		481		25.0	500.0	2.92	95.6	80	120	480.6	0.08	15	

Qualifiers:

* Value exceeds Maximum Contaminant Level.	B Analyte detected in the associated Method Blank	C Value is below Minimum Compound Limit.
E Value above quantitation range	H Holding times for preparation or analysis exceeded	J Analyte detected below quantitation limits
M Matrix Interference	ND Not Detected at the Reporting Limit	R RPD outside accepted recovery limits
RL Reporting Limit	S Spike Recovery outside accepted recovery limits	U Analyte not detected



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QC SUMMARY REPORT

WO#: **15060607**
 01-Jul-15

Client: ICON Environmental Services
Project: Iberville Parish SB 9090-040-0100

BatchID: R44516

Sample ID	MB-R44516	SampType:	MBLK	TestCode:	ALK	Units:	mgCaCO3/L	Prep Date:		RunNo:	44516		
Client ID:	PBW	Batch ID:	R44516	TestNo:	SM2320 B			Analysis Date:	6/16/2015	SeqNo:	1072078		
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Alkalinity, Bicarbonate (As CaCO3) < 10
 Alkalinity, Carbonate (As CaCO3) < 10
 Alkalinity, Total (As CaCO3) < 10

Sample ID	LCS-R44516	SampType:	LCS	TestCode:	ALK	Units:	mgCaCO3/L	Prep Date:		RunNo:	44516		
Client ID:	LCSW	Batch ID:	R44516	TestNo:	SM2320 B			Analysis Date:	6/16/2015	SeqNo:	1072079		
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Alkalinity, Total (As CaCO3) 50 10 50 0 100 80 120

Sample ID	15060607-009ADUP	SampType:	DUP	TestCode:	ALK	Units:	mgCaCO3/L	Prep Date:		RunNo:	44516		
Client ID:	SB-1	Batch ID:	R44516	TestNo:	SM2320 B			Analysis Date:	6/16/2015	SeqNo:	1072081		
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Alkalinity, Bicarbonate (As CaCO3) 1,340 20 1,345 0 20
 Alkalinity, Carbonate (As CaCO3) < 20 20 0 0 20
 Alkalinity, Total (As CaCO3) 1,340 20 1,345 0 20

Qualifiers:

* Value exceeds Maximum Contaminant Level.	B Analyte detected in the associated Method Blank	C Value is below Minimum Compound Limit.
E Value above quantitation range	H Holding times for preparation or analysis exceeded	J Analyte detected below quantitation limits
M Matrix Interference	ND Not Detected at the Reporting Limit	R RPD outside accepted recovery limits
RL Reporting Limit	S Spike Recovery outside accepted recovery limits	U Analyte not detected



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QC SUMMARY REPORT

WO#: 15060607
 01-Jul-15

Client: ICON Environmental Services
Project: Iberville Parish SB 9090-040-0100

BatchID: R44580

Sample ID	15060571-006ADUP	SampType:	DUP	TestCode:	PMOIST	Units:	wt%	Prep Date:		RunNo:	44580		
Client ID:	ZZZZZZ	Batch ID:	R44580	TestNo:	LDNR 29-B			Analysis Date:	6/12/2015	SeqNo:	1073336		
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Percent Moisture		40.3		1.0						36.1	11.0	20	

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank	C	Value is below Minimum Compound Limit.
	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	M	Matrix Interference	ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits
	RL	Reporting Limit	S	Spike Recovery outside accepted recovery limits	U	Analyte not detected



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QC SUMMARY REPORT

WO#: **15060607**
 01-Jul-15

Client: ICON Environmental Services
Project: Iberville Parish SB 9090-040-0100

BatchID: R44581

Sample ID 15060607-013ADUP	SampType: DUP	TestCode: PMOIST	Units: wt%	Prep Date:	RunNo: 44581						
Client ID: SB-7 12-14	Batch ID: R44581	TestNo: LDNR 29-B		Analysis Date: 6/12/2015	SeqNo: 1073350						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Percent Moisture	27.9	1.0						25.8	7.9	20	

Qualifiers:	* Value exceeds Maximum Contaminant Level.	B Analyte detected in the associated Method Blank	C Value is below Minimum Compound Limit.
	E Value above quantitation range	H Holding times for preparation or analysis exceeded	J Analyte detected below quantitation limits
	M Matrix Interference	ND Not Detected at the Reporting Limit	R RPD outside accepted recovery limits
	RL Reporting Limit	S Spike Recovery outside accepted recovery limits	U Analyte not detected



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QC SUMMARY REPORT

WO#: 15060607
 01-Jul-15

Client: ICON Environmental Services
Project: Iberville Parish SB 9090-040-0100

BatchID: R44591

Sample ID	15060649-005AMS	SampType:	MS	TestCode:	8021_BTEX_	Units:	mg/L	Prep Date:		RunNo:	44591
Client ID:	ZZZZZZ	Batch ID:	R44591	TestNo:	SW8021B			Analysis Date:	6/17/2015	SeqNo:	1073485
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	0.0467	0.00500	0.05000	0	93.4	26	161				
Ethylbenzene	0.0393	0.00500	0.05000	0	78.6	66	153				
Toluene	0.0428	0.0100	0.05000	0.0009000	83.8	68	141				
Xylenes, Total	0.122	0.0500	0.1500	0.002700	79.9	48	154				
Surr: alpha, alpha, alpha-Trifluorotoluene	0.0450		0.05000		90.0	70	130				

Sample ID	15060649-005AMSD	SampType:	MSD	TestCode:	8021_BTEX_	Units:	mg/L	Prep Date:		RunNo:	44591
Client ID:	ZZZZZZ	Batch ID:	R44591	TestNo:	SW8021B			Analysis Date:	6/17/2015	SeqNo:	1073486
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	0.0576	0.00500	0.05000	0	115	26	161	0.04670	20.9	20	R
Ethylbenzene	0.0469	0.00500	0.05000	0	93.8	66	153	0.03930	17.6	20	
Toluene	0.0519	0.0100	0.05000	0.0009000	102	68	141	0.04280	19.2	20	
Xylenes, Total	0.146	0.0500	0.1500	0.002700	95.3	48	154	0.1225	17.3	20	
Surr: alpha, alpha, alpha-Trifluorotoluene	0.0452		0.05000		90.4	70	130		0	20	

NOTES:

R - MS/MSD RPD above the control limit. Recovery of the analyte was within the acceptance limits in both MS/MSD. The LCS/LCSD RPD was within the control limits.

Sample ID	BTEX_W LCS	SampType:	LCS	TestCode:	8021_BTEX_	Units:	mg/L	Prep Date:		RunNo:	44591
Client ID:	LCSW	Batch ID:	R44591	TestNo:	SW8021B			Analysis Date:	6/17/2015	SeqNo:	1073491
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	0.0545	0.00500	0.05000	0	109	72	120				

Qualifiers:	* Value exceeds Maximum Contaminant Level.	B Analyte detected in the associated Method Blank	C Value is below Minimum Compound Limit.
	E Value above quantitation range	H Holding times for preparation or analysis exceeded	J Analyte detected below quantitation limits
	M Matrix Interference	ND Not Detected at the Reporting Limit	R RPD outside accepted recovery limits
	RL Reporting Limit	S Spike Recovery outside accepted recovery limits	U Analyte not detected



Element Materials Technology Lafayette
 2417 W. Pinhook Road
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 TEL: (337) 235-0483 FAX: (337) 233-6540
 Website: www.element.com

QC SUMMARY REPORT

WO#: 15060607
 01-Jul-15

Client: ICON Environmental Services
Project: Iberville Parish SB 9090-040-0100

BatchID: R44591

Sample ID	BTEX_W LCS	SampType:	LCS	TestCode:	8021_BTEX_	Units:	mg/L	Prep Date:		RunNo:	44591			
Client ID:	LCSW	Batch ID:	R44591	TestNo:	SW8021B			Analysis Date:	6/17/2015	SeqNo:	1073491			
Analyte		Result		PQL	SPK value	SPK Ref Val		%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Ethylbenzene		0.0478		0.00500	0.05000	0		95.6	76	129				
Toluene		0.0507		0.0100	0.05000	0		101	78	120				
Xylenes, Total		0.147		0.0500	0.1500	0		97.7	75	125				
Surr: alpha, alpha, alpha-Trifluorotoluene		0.0482			0.05000			96.4	70	130				

Sample ID	BTEX_W LCSD	SampType:	LCSD	TestCode:	8021_BTEX_	Units:	mg/L	Prep Date:		RunNo:	44591			
Client ID:	LCSS02	Batch ID:	R44591	TestNo:	SW8021B			Analysis Date:	6/17/2015	SeqNo:	1073492			
Analyte		Result		PQL	SPK value	SPK Ref Val		%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene		0.0526		0.00500	0.05000	0		105	72	120	0.05450	3.55	20	
Ethylbenzene		0.0462		0.00500	0.05000	0		92.4	76	129	0.04780	3.40	20	
Toluene		0.0488		0.0100	0.05000	0		97.6	78	120	0.05070	3.82	20	
Xylenes, Total		0.141		0.0500	0.1500	0		93.9	75	125	0.1466	3.97	20	
Surr: alpha, alpha, alpha-Trifluorotoluene		0.0476			0.05000			95.2	70	130		0	20	

Sample ID	MB ACID	SampType:	MBLK	TestCode:	8021_BTEX_	Units:	mg/L	Prep Date:		RunNo:	44591			
Client ID:	PBW	Batch ID:	R44591	TestNo:	SW8021B			Analysis Date:	6/17/2015	SeqNo:	1073493			
Analyte		Result		PQL	SPK value	SPK Ref Val		%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene		< 0.00500		0.00500										
Ethylbenzene		< 0.00500		0.00500										
Toluene		< 0.0100		0.0100										

Qualifiers:

* Value exceeds Maximum Contaminant Level.	B Analyte detected in the associated Method Blank	C Value is below Minimum Compound Limit.
E Value above quantitation range	H Holding times for preparation or analysis exceeded	J Analyte detected below quantitation limits
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QC SUMMARY REPORT

WO#: 15060607
 01-Jul-15

Client: ICON Environmental Services
Project: Iberville Parish SB 9090-040-0100

BatchID: R44591

Sample ID	MB ACID	SampType:	MBLK	TestCode:	8021_BTEX_	Units:	mg/L	Prep Date:		RunNo:	44591		
Client ID:	PBW	Batch ID:	R44591	TestNo:	SW8021B			Analysis Date:	6/17/2015	SeqNo:	1073493		
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Xylenes, Total		< 0.0500		0.0500									
Surr: alpha, alpha, alpha-Trifluorotoluene		0.0483			0.05000		96.6	70	130				

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank	C	Value is below Minimum Compound Limit.
	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	M	Matrix Interference	ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits
	RL	Reporting Limit	S	Spike Recovery outside accepted recovery limits	U	Analyte not detected



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QC SUMMARY REPORT

WO#: 15060607
 01-Jul-15

Client: ICON Environmental Services
Project: Iberville Parish SB 9090-040-0100

BatchID: R44592

Sample ID	GAS_W LCS	SampType:	LCS	TestCode:	8015_G_W	Units:	mg/L	Prep Date:		RunNo:	44592			
Client ID:	LCSW	Batch ID:	R44592	TestNo:	SW8015B			Analysis Date:	6/17/2015	SeqNo:	1073494			
Analyte		Result		PQL	SPK value	SPK Ref Val		%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
TPH (Gasoline Range)		16.0		0.15	12.50	0		128	80	130				

Sample ID	GAS_W LCSD	SampType:	LCSD	TestCode:	8015_G_W	Units:	mg/L	Prep Date:		RunNo:	44592			
Client ID:	LCSS02	Batch ID:	R44592	TestNo:	SW8015B			Analysis Date:	6/17/2015	SeqNo:	1073495			
Analyte		Result		PQL	SPK value	SPK Ref Val		%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
TPH (Gasoline Range)		15.6		0.15	12.50	0		125	80	130	16.02	2.44	20	

Sample ID	MB ACID	SampType:	MBLK	TestCode:	8015_G_W	Units:	mg/L	Prep Date:		RunNo:	44592			
Client ID:	PBW	Batch ID:	R44592	TestNo:	SW8015B			Analysis Date:	6/17/2015	SeqNo:	1073496			
Analyte		Result		PQL	SPK value	SPK Ref Val		%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
TPH (Gasoline Range)		< 0.15		0.15										
Surr: alpha, alpha, alpha-Trifluorotoluene		0.05			0.05			102	70	130				

Sample ID	15060649-005AMS	SampType:	MS	TestCode:	8015_G_W	Units:	mg/L	Prep Date:		RunNo:	44592			
Client ID:	ZZZZZ	Batch ID:	R44592	TestNo:	SW8015B			Analysis Date:	6/17/2015	SeqNo:	1073499			
Analyte		Result		PQL	SPK value	SPK Ref Val		%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
TPH (Gasoline Range)		12.3		0.15	12.50	0.03		98.1	70	130				
Surr: alpha, alpha, alpha-Trifluorotoluene		0.06			0.05			125	70	130				

Qualifiers:	* Value exceeds Maximum Contaminant Level.	B Analyte detected in the associated Method Blank	C Value is below Minimum Compound Limit.
	E Value above quantitation range	H Holding times for preparation or analysis exceeded	J Analyte detected below quantitation limits
	M Matrix Interference	ND Not Detected at the Reporting Limit	R RPD outside accepted recovery limits
	RL Reporting Limit	S Spike Recovery outside accepted recovery limits	U Analyte not detected



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QC SUMMARY REPORT

WO#: 15060607
 01-Jul-15

Client: ICON Environmental Services
Project: Iberville Parish SB 9090-040-0100

BatchID: R44592

Sample ID	15060649-005AMS	SampType:	MS	TestCode:	8015_G_W	Units:	mg/L	Prep Date:		RunNo:	44592		
Client ID:	ZZZZZZ	Batch ID:	R44592	TestNo:	SW8015B			Analysis Date:	6/17/2015	SeqNo:	1073499		
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Sample ID	15060649-005AMSD	SampType:	MSD	TestCode:	8015_G_W	Units:	mg/L	Prep Date:		RunNo:	44592		
Client ID:	ZZZZZZ	Batch ID:	R44592	TestNo:	SW8015B			Analysis Date:	6/17/2015	SeqNo:	1073500		
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
TPH (Gasoline Range)		12.5		0.15	12.50	0.03	99.9	70	130	12.29	1.85	20	
Surr: alpha, alpha, alpha-Trifluorotoluene		0.06			0.05		125	70	130		0	20	

Qualifiers:	* Value exceeds Maximum Contaminant Level.	B Analyte detected in the associated Method Blank	C Value is below Minimum Compound Limit.
	E Value above quantitation range	H Holding times for preparation or analysis exceeded	J Analyte detected below quantitation limits
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QC SUMMARY REPORT

WO#: 15060607
 01-Jul-15

Client: ICON Environmental Services
Project: Iberville Parish SB 9090-040-0100

BatchID: R44617

Sample ID MB-R44617	SampType: MBLK	TestCode: EC_S	Units: mmhos/cm	Prep Date:	RunNo: 44617						
Client ID: PBS	Batch ID: R44617	TestNo: LDNR 29-B		Analysis Date: 6/19/2015	SeqNo: 1074054						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Electrical Conductivity	< 0.10	0.10									
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Sample ID R44617LCS1	SampType: LCS1	TestCode: EC_S	Units: mmhos/cm	Prep Date:	RunNo: 44617						
Client ID: ZZZZZZ	Batch ID: R44617	TestNo: LDNR 29-B		Analysis Date: 6/19/2015	SeqNo: 1074055						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Electrical Conductivity	0.47	0.10	0.47	0	99.6	89.87	110.12				
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Sample ID R44617LCS2	SampType: LCS2	TestCode: EC_S	Units: mmhos/cm	Prep Date:	RunNo: 44617						
Client ID: ZZZZZZ	Batch ID: R44617	TestNo: LDNR 29-B		Analysis Date: 6/19/2015	SeqNo: 1074056						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Electrical Conductivity	52.5	0.10	53.00	0	99.1	90	110				
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Sample ID 15060607-013ADUP	SampType: DUP	TestCode: EC_S	Units: mmhos/cm	Prep Date:	RunNo: 44617						
Client ID: SB-7 12-14	Batch ID: R44617	TestNo: LDNR 29-B		Analysis Date: 6/19/2015	SeqNo: 1074067						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Electrical Conductivity	30.3	0.10						30.40	0.33	20	*
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Qualifiers:

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RL Reporting Limit	S Spike Recovery outside accepted recovery limits	U Analyte not detected



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QC SUMMARY REPORT

WO#: 15060607
 01-Jul-15

Client: ICON Environmental Services
Project: Iberville Parish SB 9090-040-0100

BatchID: R44618

Sample ID R44618LCS1	SampType: LCS1	TestCode: EC_S	Units: mmhos/cm	Prep Date:	RunNo: 44618						
Client ID: ZZZZZZ	Batch ID: R44618	TestNo: LDNR 29-B		Analysis Date: 6/19/2015	SeqNo: 1074075						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Electrical Conductivity 0.48 0.10 0.47 0 100 89.87 110.12

Sample ID MB-R44618	SampType: MBLK	TestCode: EC_S	Units: mmhos/cm	Prep Date:	RunNo: 44618						
Client ID: PBS	Batch ID: R44618	TestNo: LDNR 29-B		Analysis Date: 6/19/2015	SeqNo: 1074076						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Electrical Conductivity < 0.10 0.10

Sample ID R44618LCS2	SampType: LCS2	TestCode: EC_S	Units: mmhos/cm	Prep Date:	RunNo: 44618						
Client ID: ZZZZZZ	Batch ID: R44618	TestNo: LDNR 29-B		Analysis Date: 6/19/2015	SeqNo: 1074077						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Electrical Conductivity 52.3 0.10 53.00 0 98.7 90 110

Sample ID 15060611-001ADUP	SampType: DUP	TestCode: EC_S	Units: mmhos/cm	Prep Date:	RunNo: 44618						
Client ID: ZZZZZZ	Batch ID: R44618	TestNo: LDNR 29-B		Analysis Date: 6/19/2015	SeqNo: 1074081						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Electrical Conductivity 1.96 0.10 1.90 3.11 20

Qualifiers:

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RL Reporting Limit	S Spike Recovery outside accepted recovery limits	U Analyte not detected



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QC SUMMARY REPORT

WO#: 15060607
 01-Jul-15

Client: ICON Environmental Services
Project: Iberville Parish SB 9090-040-0100

BatchID: R44748

Sample ID	MBLK	SampType:	MBLK	TestCode:	9056_LEACH	Units:	mg/L	Prep Date:		RunNo:	44748		
Client ID:	PBW	Batch ID:	R44748	TestNo:	SW9056A			Analysis Date:	6/25/2015	SeqNo:	1077415		
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride		< 0.25		0.25									

Sample ID	LCS	SampType:	LCS	TestCode:	9056_LEACH	Units:	mg/L	Prep Date:		RunNo:	44748		
Client ID:	LCSW	Batch ID:	R44748	TestNo:	SW9056A			Analysis Date:	6/25/2015	SeqNo:	1077416		
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride		10.2		0.25	10.00	0	102	80	120				

Sample ID	LCSD	SampType:	LCSD	TestCode:	9056_LEACH	Units:	mg/L	Prep Date:		RunNo:	44748		
Client ID:	LCSS02	Batch ID:	R44748	TestNo:	SW9056A			Analysis Date:	6/25/2015	SeqNo:	1077417		
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride		10.2		0.25	10.00	0	102	80	120	10.20	0.24	15	

Sample ID	15060571-009AMS	SampType:	MS	TestCode:	9056_LEACH	Units:	mg/L	Prep Date:		RunNo:	44748		
Client ID:	ZZZZZZ	Batch ID:	R44748	TestNo:	SW9056A			Analysis Date:	6/25/2015	SeqNo:	1077419		
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride		961		12.5	250.0	739.0	88.6	80	120				

Qualifiers:

* Value exceeds Maximum Contaminant Level.	B Analyte detected in the associated Method Blank	C Value is below Minimum Compound Limit.
E Value above quantitation range	H Holding times for preparation or analysis exceeded	J Analyte detected below quantitation limits
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RL Reporting Limit	S Spike Recovery outside accepted recovery limits	U Analyte not detected



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QC SUMMARY REPORT

WO#: 15060607
 01-Jul-15

Client: ICON Environmental Services
Project: Iberville Parish SB 9090-040-0100

BatchID: R44748

Sample ID	15060571-009AMSD	SampType:	MSD	TestCode:	9056_LEACH	Units:	mg/L	Prep Date:		RunNo:	44748		
Client ID:	ZZZZZZ	Batch ID:	R44748	TestNo:	SW9056A			Analysis Date:	6/25/2015	SeqNo:	1077420		
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride		961		12.5	250.0	739.0	88.8	80	120	960.5	0.04	15	

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank	C	Value is below Minimum Compound Limit.
	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	M	Matrix Interference	ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits
	RL	Reporting Limit	S	Spike Recovery outside accepted recovery limits	U	Analyte not detected



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Sample Log-In Check List

Client Name: **ICON_ENV**

Work Order Number: **15060607**

RcptNo: **1**

Logged by: **Heather Delay** **6/12/2015 2:50:00 PM**

Heather Delay

Completed By: **Heather Delay** **6/12/2015 3:08:11 PM**

Heather Delay

Reviewed By: **Caitlin Duplantis** **6/17/2015 12:27:30 PM**

Caitlin Duplantis

Chain of Custody

- 1. Is Chain of Custody complete? Yes No Not Present
- 2. How was the sample delivered? Client

Log In

- 3. Coolers are present? Yes No NA
- 4. Shipping container/cooler in good condition? Yes No
- Custody seals intact on shipping container/cooler? Yes No Not Present
- No. Seal Date: Signed By:
- 5. Was an attempt made to cool the samples? Yes No NA
- 6. Were all samples received at a temperature of >0° C to 6.0°C Yes No NA
- 7. Sample(s) in proper container(s)? Yes No
- 8. Sufficient sample volume for indicated test(s)? Yes No
- 9. Are samples (except VOA and ONG) properly preserved? Yes No
- 10. Was preservative added to bottles? Yes No NA
- 11. Is the headspace in the VOA vials less than 1/4 inch or 6 mm? Yes No No VOA Vials
- 12. Were any sample containers received broken? Yes No
- 13. Does paperwork match bottle labels? Yes No
(Note discrepancies on chain of custody)
- 14. Are matrices correctly identified on Chain of Custody? Yes No
- 15. Is it clear what analyses were requested? Yes No
- 16. Were all holding times able to be met? Yes No
(If no, notify customer for authorization.)

Special Handling (if applicable)

- 17. Was client notified of all discrepancies with this order? Yes No NA

Person Notified:	<input type="text"/>	Date	<input type="text"/>
By Whom:	<input type="text"/>	Via:	<input type="checkbox"/> eMail <input type="checkbox"/> Phone <input type="checkbox"/> Fax <input type="checkbox"/> In Person
Regarding:	<input type="text"/>		
Client Instructions:	<input type="text"/>		

- 18. Additional remarks:
 Improper error correction(s) made by client

Cooler Information

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	0.2	Good	Not Present			



Chain of Custody

Laboratory Number: 1500000

Page 1 of 4
 Matrix Code
 DW = Drinking Water
 WW = Waste Water
 GW = Ground Water
 AQ = Aqueous
 OT = Other
 SL = Sludge
 SOL = Solid
 SO = Soil
 O = Oil
 F = Food
 SW = Swab
 NG = Natural Gas
 NGL = Natural Gas Liquid
 PW = Produced Water
 CF = Completion Fluid

Client Information:
 Company Name: Iron Env
 Contact Name: Greg Muller
 Address: 204 Commercial Dr
 City, State Zip: Port Allen La 70767
 Phone Number: 225 344 8900
 Fax Number:
 E-mail Address:

Billing Information:
 PO Number:
 Quote Number:
 Required QC Level:
 Bill Monthly:
 Yes
 No

Project Name/Number:
 Ironville Parish SB
 900-040-0100
 Sampler's Signature:
 Shipping Method:
 UPS / FedEx / Airborne
 DHL / Element / Hand / Mail

Ext:
 Rush turn times will incur a surcharge and must be pre-approved by (lab.)

Turn Time:
 Standard
 RUSH
 1 Day
 2 Day
 Other

Which Regulations Apply:
 RCRA
 POTW
 NPDES
 USOA/FDA
 RECAP/RIIS
 Other

Sample ID/Description	Date	Time	Collection Information		Matrix	Quantity	Container Type P=Plastic, V=Vial	Pres. HCl, HNO ₃ , H ₂ SO ₄ , NaOH, Na ₂ S ₂ O ₃	Requested Tests			Comments
			Date	Time					Grab / Composite	Leach/CI	29B Metals	
SB-2	6-8	930	G	SOL		1	P	-	X	X	X	TPH-D10
SB-2	12-14	940							X	X	X	
SB-2	70-22	950							X	X	X	
SB-2	78-30	1000							X	X	X	
SB-1	6-8	1100							X	X	X	
SB-1	12-14	1110							X	X	X	
SB-1	18-20	1115							X	X	X	
SB-1	22-24	1125							X	X	X	

Relinquished by	Date/Time	Received by	Date/Time	Field Notes
<i>[Signature]</i>	6-12-15/1300	<i>[Signature]</i>	6-12-15/1300	Received at lab on ice?
<i>[Signature]</i>	6-12-15/1450	<i>[Signature]</i>	6-12-15/14:50	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Temp: <i>[Signature]</i>

Element Materials Technology reserves the right to return unused sample portions.

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629 Washington St, Suite 300
 Columbus, IN 47201-0231 USA
 P 812-375-0531 F 812-375-0731

2121 East Washington Boulevard
 Fort Wayne, IN 46803-1328 USA
 P 260-471-7000 F 260-471-7777

566 South Zimmer Road
 Warsaw, IN 46580-2368 USA
 P 574-267-3305 F 574-269-6566

3371 Cleveland Road, Suite 100A
 South Bend, IN 46628-9750 USA
 P 574-277-0707 F 574-273-6699

2417 W. Pinhook Rd
 Lafayette, LA 70508-3344 USA
 P 337-235-0483 F 337-233-6540



Chain of Custody

Laboratory Number: 1500000

Client Information:
 Company Name: Iron
 Contact Name:
 Address:
 City, State Zip:
 Phone Number:
 Fax Number:
 E-mail Address:

Billing Information:
 PO Number:
 Quote Number:
 Required QC Level:
 Bill Monthly:
 Yes
 No
 Ext:

Project Name/Number:
 Ivesville Paris SB
 9090-040-0100
Sampler's Signature:
[Signature]
Shipping Method:
 UPS / FedEx / Airborne
 DHL / Element / Hand / Mail

Page 2 of 4
Matrix Code

- DW = Drinking Water
- WW = Waste Water
- GW = Ground Water
- AQ = Aqueous
- OT = Other
- SL = Sludge
- O = Oil
- F = Food
- NG = Natural Gas
- NGL = Natural Gas Liquid
- PW = Produced Water
- CF = Completion Fluid

Sample ID/Description	Which Regulations Apply:			Turn Time	Collection Information	Container	Pres.	Requested Tests	Comments
	Rush Turn Times								
	Date	Time	Matrix						
SB-1	<input checked="" type="checkbox"/> RCRA <input checked="" type="checkbox"/> POTW <input checked="" type="checkbox"/> NPDES <input checked="" type="checkbox"/> USDA/FDA <input checked="" type="checkbox"/> RECAP/ISC	<input checked="" type="checkbox"/> Standard <input type="checkbox"/> RUSH <input type="checkbox"/> 1 Day <input type="checkbox"/> 2 Day <input type="checkbox"/> Other	6-8-15	1515	G	Quantity Type T=Plastic, V=Vial	HCl, HNO ₃ , H ₂ SO ₄ NaOH, Na ₂ S ₂ O ₃	<input checked="" type="checkbox"/> Metals <input checked="" type="checkbox"/> TDS <input checked="" type="checkbox"/> Chlorides <input checked="" type="checkbox"/> Anions <input checked="" type="checkbox"/> Cations	Metals As Ba Cd Cr Fe Mn Pb Sr Zn Hg Cations Na K Mg Ca Anions Sulfate AlK Carbonate AlK Bicarbonate
SB-2			6-11-15	1600	V				
Trip Blank			6/8/15		AG		HCl		

Retinquished by	Date/Time		Received by		Date/Time		Field Notes:
	Signature	Date/Time	Signature	Date/Time	Date/Time	Date/Time	
<i>[Signature]</i>	6/12/15	1300	<i>[Signature]</i>	6/12/15	1300	6/12-15/1300	Received at lab on ice? <input type="checkbox"/> Yes <input type="checkbox"/> No Temp:
<i>[Signature]</i>	6/12/15	1450	<i>[Signature]</i>	6/12/15	1450	6/12/15 1450	

All samples submitted to Element Materials Technology for analysis are accepted on a custodial basis only. Ownership of the material remains with the client submitting the samples. Element Materials Technology reserves the right to return unused sample portions.

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 Daleville, IN 47334-0569 USA
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 F 765-378-4109

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 F 812-375-0731

2121 East Washington Boulevard
 Fort Wayne, IN 46903-1328 USA
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 F 260-471-7777

560 South Zimmer Road
 Warsaw, IN 46580-2365 USA
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 F 574-269-6969

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 F 574-273-5699

2417 W. Pinhook Rd
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 P 337-235-0483
 F 337-233-6540



Element Materials Technology Lafayette
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July 08, 2015

Greg Miller
ICON Environmental Services
2049 Commercial Drive
Port Allen, LA 70767
TEL: (225) 344-8490
FAX (225) 344-6654

RE: Iberville Parish SB 9090-040-0100

Order No.: 15060956

Dear Greg Miller:

Element Materials Technology Lafayette, LLC received 28 sample(s) on 6/22/2015 for the analyses presented in the following report.

In accordance with your instructions Element Lafayette conducted the analysis shown on the following pages on samples submitted by your company. The results related only to the items tested. Unless otherwise noted, all analyses were conducted using EPA approved methodologies and all test results meet all requirements of TNI. All relevant sampling information is on the attached Chain-of-Custody form.

All soil data, except for 29-B, are on a wet-weight basis unless otherwise indicated in the units field as -dry.

LELAP Certification No.: 01997. TCEQ Certification No.: T104704261-14-6. A scope of accredited parameters is available upon request. A "#" by the test method or analyte indicates this parameter is outside the scope of accreditation.

Estimated uncertainty is available upon request. This report shall not be reproduced except in full, without the written approval of the laboratory.

If you have any questions regarding these test results, please feel free to call.

A handwritten signature in blue ink, appearing to read 'Cristina Thibeaux'.

Cristina Thibeaux
Customer Service Supervisor
2417 W. Pinhook Road
Lafayette, LA 70508-3344



Element Materials Technology Lafayette
2417 W. Pinhook Road
Lafayette, LA 70508-3344
TEL: (337) 235-0483 FAX: (337) 233-6540
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Case Narrative

WO#: 15060956
Date: 7/8/2015

CLIENT: ICON Environmental Services
Project: Iberville Parish SB 9090-040-0100

Unless specified by the client, a duplicate or MS/MSD, wherever applicable, is randomly selected and analyzed from each analytical batch provided sample volume is sufficient. The sample chosen for duplicate or MS/MSD may or may not be a sample submitted in this workorder. A method blank and/or a lab control sample (LCS)/lab control sample duplicate (LCSD), wherever applicable, are processed as a quality control check for each analytical batch. When the matrix QC data is not available due to insufficient sample volume or when the results indicate possible matrix effect, the validity of the batch is determined by the method blank and LCS/LCSD.

The results of the laboratory internal quality control data are provided in the QC Summary Report section of the report for your review. Laboratory-related QC exceptions that may impact the validity of data are discussed in the case narrative. Sample-related QC exceptions are flagged either in the results page(s) or in the QC report page(s). End users should consider QC exceptions when evaluating sample data against data quality objectives.

Any other exceptions associated with this report will be footnoted in the results page(s) or the QC summary page(s).

Due to limited sample, Lab IDs 15060956-001, 002, -006, and -007 were prepared for Leachate Chloride, using less than 100g of the soil (dry wt basis). The amount of the extraction fluid was proportionally reduced to yield a 1:4 sample to fluid ratio.

15060956-001A - Insufficient sample for chloride leachate, used 33.0g

15060956-002A - Insufficient sample for chloride leachate, used 85.0g

15060956-006A - Insufficient sample for chloride leachate, used 35.0g

15060956-007A - Insufficient sample for chloride leachate, used 51.0g



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Analytical Report

(consolidated)

WO#: **15060956**

Date Reported: **7/8/2015**

CLIENT: ICON Environmental Services
Project: Iberville Parish SB 9090-040-0100
Lab ID: 15060956-001
Client Sample ID SB-15 0-2

Collection Date: 6/15/2015 10:00:00 AM

Matrix: SOIL

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
29B SALTS						
CATION EXCHANGE CAPACITY						
Cation Exchange Capacity	73.1	0.1		meq/100g	1	7/3/2015 10:02:00 AM
29B SALTS						
ELECTRICAL CONDUCTIVITY @ SATURATION						
Electrical Conductivity	1.04	0.10		mmhos/cm	1	6/30/2015 12:47:00 PM
29B SALTS						
EXCHANGEABLE SODIUM PERCENTAGE						
Exchangeable Sodium %	2.2	0.1		%	1	7/3/2015 10:02:00 AM
PERCENT MOISTURE						
Percent Moisture	29.7	1.0		wt%	1	6/23/2015 9:50:00 AM
29B SALTS						
SODIUM ADSORPTION RATIO						
Sodium Adsorption Ratio	3.74	0.100			1	7/1/2015
Soluble Calcium	2.82	1.00		meq/L	1	7/1/2015
Soluble Magnesium	1.44	1.00		meq/L	1	7/1/2015
Soluble Sodium	5.46	1.00		meq/L	1	7/1/2015
29B METALS						
MERCURY IN SOIL OR SLUDGE						
Mercury	< 0.10	0.10		mg/Kg-dry	1	6/29/2015 11:10:35 AM
INORGANIC ANIONS IN LEACHATE BY IC						
Chloride	35.0	2.50		mg/L	10	7/6/2015 5:03:10 PM
29B METALS						
METALS IN SOIL OR SLUDGE BY ICP						
Arsenic	4.15	0.99		mg/Kg-dry	1	7/1/2015 8:22:55 PM
Barium	504	0.99		mg/Kg-dry	1	7/1/2015 8:22:55 PM

Qualifiers:

- | | |
|--|---|
| * Value exceeds Maximum Contaminant Level. | B Analyte detected in the associated Method Blank |
| C Value is below Minimum Compound Limit. | E Value above quantitation range |
| H Holding times for preparation or analysis exceeded | J Analyte detected below quantitation limits |
| M Matrix Interference | ND Not Detected at the Reporting Limit |
| R RPD outside accepted recovery limits | RL Reporting Limit |
| S Spike Recovery outside accepted recovery limits | U Analyte not detected |



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Analytical Report

(consolidated)

WO#: **15060956**

Date Reported: **7/8/2015**

CLIENT: ICON Environmental Services
Project: Iberville Parish SB 9090-040-0100
Lab ID: 15060956-001
Client Sample ID SB-15 0-2

Collection Date: 6/15/2015 10:00:00 AM

Matrix: SOIL

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
29B METALS					SW6010B	SW3050B
METALS IN SOIL OR SLUDGE BY ICP						Analyst: STS
Cadmium	< 0.50	0.50		mg/Kg-dry	1	7/1/2015 8:22:55 PM
Chromium	19.0	0.99		mg/Kg-dry	1	7/1/2015 8:22:55 PM
Lead	16.0	0.99		mg/Kg-dry	1	7/1/2015 8:22:55 PM
Selenium	< 1.99	1.99		mg/Kg-dry	1	7/1/2015 8:22:55 PM
Strontium	88.3	0.99		mg/Kg-dry	1	7/1/2015 8:22:55 PM
Zinc	67.8	0.99		mg/Kg-dry	1	7/1/2015 8:22:55 PM
29B METALS					LDNR 29-B	Analyst: STS
TRUE TOTAL BARIUM						
True Total Barium	772	47		mg/Kg-dry	1	7/1/2015 4:06:10 AM

Qualifiers:	* Value exceeds Maximum Contaminant Level.	B Analyte detected in the associated Method Blank
	C Value is below Minimum Compound Limit.	E Value above quantitation range
	H Holding times for preparation or analysis exceeded	J Analyte detected below quantitation limits
	M Matrix Interference	ND Not Detected at the Reporting Limit
	R RPD outside accepted recovery limits	RL Reporting Limit
	S Spike Recovery outside accepted recovery limits	U Analyte not detected



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Analytical Report

(consolidated)

WO#: **15060956**

Date Reported: **7/8/2015**

CLIENT: ICON Environmental Services
Project: Iberville Parish SB 9090-040-0100
Lab ID: 15060956-002
Client Sample ID SB-15 4-6

Collection Date: 6/15/2015 10:05:00 AM

Matrix: SOIL

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
29B SALTS						
CATION EXCHANGE CAPACITY						
Cation Exchange Capacity	70.1	0.1		meq/100g	1	7/3/2015 10:02:00 AM
29B SALTS						
ELECTRICAL CONDUCTIVITY @ SATURATION						
Electrical Conductivity	3.45	0.10		mmhos/cm	1	6/30/2015 12:48:00 PM
29B SALTS						
EXCHANGEABLE SODIUM PERCENTAGE						
Exchangeable Sodium %	7.5	0.1		%	1	7/3/2015 10:02:00 AM
PERCENT MOISTURE						
Percent Moisture	34.5	1.0		wt%	1	6/23/2015 9:50:00 AM
29B SALTS						
SODIUM ADSORPTION RATIO						
Sodium Adsorption Ratio	11.0	0.100			1	7/1/2015
Soluble Calcium	6.29	1.00		meq/L	1	7/1/2015
Soluble Magnesium	3.42	1.00		meq/L	1	7/1/2015
Soluble Sodium	24.2	1.00		meq/L	1	7/1/2015
29B METALS						
MERCURY IN SOIL OR SLUDGE						
Mercury	< 0.10	0.10		mg/Kg-dry	1	6/29/2015 11:18:30 AM
INORGANIC ANIONS IN LEACHATE BY IC						
Chloride	128	5.00		mg/L	20	7/6/2015 5:44:22 PM
29B METALS						
METALS IN SOIL OR SLUDGE BY ICP						
Arsenic	4.86	1.00		mg/Kg-dry	1	7/1/2015 8:33:13 PM
Barium	215	1.00		mg/Kg-dry	1	7/1/2015 8:33:13 PM

Qualifiers:

- | | |
|--|---|
| * Value exceeds Maximum Contaminant Level. | B Analyte detected in the associated Method Blank |
| C Value is below Minimum Compound Limit. | E Value above quantitation range |
| H Holding times for preparation or analysis exceeded | J Analyte detected below quantitation limits |
| M Matrix Interference | ND Not Detected at the Reporting Limit |
| R RPD outside accepted recovery limits | RL Reporting Limit |
| S Spike Recovery outside accepted recovery limits | U Analyte not detected |



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Analytical Report

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WO#: **15060956**

Date Reported: **7/8/2015**

CLIENT: ICON Environmental Services
Project: Iberville Parish SB 9090-040-0100
Lab ID: 15060956-002
Client Sample ID SB-15 4-6

Collection Date: 6/15/2015 10:05:00 AM

Matrix: SOIL

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
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29B METALS METALS IN SOIL OR SLUDGE BY ICP **SW6010B SW3050B Analyst: STS**

Cadmium	< 0.50	0.50		mg/Kg-dry	1	7/1/2015 8:33:13 PM
Chromium	18.4	1.00		mg/Kg-dry	1	7/1/2015 8:33:13 PM
Lead	17.8	1.00		mg/Kg-dry	1	7/1/2015 8:33:13 PM
Selenium	< 1.99	1.99		mg/Kg-dry	1	7/1/2015 8:33:13 PM
Strontium	73.7	1.00		mg/Kg-dry	1	7/1/2015 8:33:13 PM
Zinc	79.2	1.00		mg/Kg-dry	1	7/1/2015 8:33:13 PM

29B METALS TRUE TOTAL BARIUM **LDNR 29-B Analyst: STS**

True Total Barium	372	46		mg/Kg-dry	1	7/1/2015 4:19:40 AM
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Qualifiers:

- | | |
|--|---|
| * Value exceeds Maximum Contaminant Level. | B Analyte detected in the associated Method Blank |
| C Value is below Minimum Compound Limit. | E Value above quantitation range |
| H Holding times for preparation or analysis exceeded | J Analyte detected below quantitation limits |
| M Matrix Interference | ND Not Detected at the Reporting Limit |
| R RPD outside accepted recovery limits | RL Reporting Limit |
| S Spike Recovery outside accepted recovery limits | U Analyte not detected |



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WO#: **15060956**

Date Reported: **7/8/2015**

CLIENT: ICON Environmental Services
Project: Iberville Parish SB 9090-040-0100
Lab ID: 15060956-003
Client Sample ID SB-15 14-16

Collection Date: 6/15/2015 10:15:00 AM

Matrix: SOIL

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
ELECTRICAL CONDUCTIVITY @ SATURATION				LDNR 29-B		Analyst: MMT
Electrical Conductivity	7.06	0.10	*	mmhos/cm	1	6/30/2015 12:48:00 PM
PERCENT MOISTURE				LDNR 29-B		Analyst: MMT
Percent Moisture	39.2	1.0		wt%	1	6/23/2015 9:50:00 AM

Qualifiers:

- | | |
|--|---|
| * Value exceeds Maximum Contaminant Level. | B Analyte detected in the associated Method Blank |
| C Value is below Minimum Compound Limit. | E Value above quantitation range |
| H Holding times for preparation or analysis exceeded | J Analyte detected below quantitation limits |
| M Matrix Interference | ND Not Detected at the Reporting Limit |
| R RPD outside accepted recovery limits | RL Reporting Limit |
| S Spike Recovery outside accepted recovery limits | U Analyte not detected |



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Analytical Report

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WO#: **15060956**

Date Reported: **7/8/2015**

CLIENT: ICON Environmental Services
Project: Iberville Parish SB 9090-040-0100
Lab ID: 15060956-004
Client Sample ID SB-15 24-26

Collection Date: 6/15/2015 10:30:00 AM

Matrix: SOIL

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
ELECTRICAL CONDUCTIVITY @ SATURATION				LDNR 29-B		Analyst: MMT
Electrical Conductivity	2.47	0.10		mmhos/cm	1	6/30/2015 12:48:00 PM
PERCENT MOISTURE				LDNR 29-B		Analyst: MMT
Percent Moisture	33.4	1.0		wt%	1	6/23/2015 9:50:00 AM

Qualifiers:

- | | |
|--|---|
| * Value exceeds Maximum Contaminant Level. | B Analyte detected in the associated Method Blank |
| C Value is below Minimum Compound Limit. | E Value above quantitation range |
| H Holding times for preparation or analysis exceeded | J Analyte detected below quantitation limits |
| M Matrix Interference | ND Not Detected at the Reporting Limit |
| R RPD outside accepted recovery limits | RL Reporting Limit |
| S Spike Recovery outside accepted recovery limits | U Analyte not detected |



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Analytical Report

(consolidated)

WO#: **15060956**

Date Reported: **7/8/2015**

CLIENT: ICON Environmental Services
Project: Iberville Parish SB 9090-040-0100
Lab ID: 15060956-005
Client Sample ID SB-15 32-34

Collection Date: 6/15/2015 10:40:00 AM

Matrix: SOIL

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
ELECTRICAL CONDUCTIVITY @ SATURATION				LDNR 29-B		Analyst: MMT
Electrical Conductivity	1.77	0.10		mmhos/cm	1	6/30/2015 12:49:00 PM
PERCENT MOISTURE				LDNR 29-B		Analyst: MMT
Percent Moisture	36.1	1.0		wt%	1	6/23/2015 9:50:00 AM

Qualifiers:

- | | |
|--|---|
| * Value exceeds Maximum Contaminant Level. | B Analyte detected in the associated Method Blank |
| C Value is below Minimum Compound Limit. | E Value above quantitation range |
| H Holding times for preparation or analysis exceeded | J Analyte detected below quantitation limits |
| M Matrix Interference | ND Not Detected at the Reporting Limit |
| R RPD outside accepted recovery limits | RL Reporting Limit |
| S Spike Recovery outside accepted recovery limits | U Analyte not detected |



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Analytical Report

(consolidated)

WO#: **15060956**

Date Reported: **7/8/2015**

CLIENT: ICON Environmental Services
Project: Iberville Parish SB 9090-040-0100
Lab ID: 15060956-006
Client Sample ID SB-16 0-2

Collection Date: 6/15/2015 4:00:00 PM

Matrix: SOIL

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
29B SALTS						
CATION EXCHANGE CAPACITY						
Cation Exchange Capacity	71.3	0.1		meq/100g	1	7/3/2015 10:02:00 AM
29B SALTS						
ELECTRICAL CONDUCTIVITY @ SATURATION						
Electrical Conductivity	1.50	0.10		mmhos/cm	1	6/30/2015 12:49:00 PM
29B SALTS						
EXCHANGEABLE SODIUM PERCENTAGE						
Exchangeable Sodium %	1.7	0.1		%	1	7/3/2015 10:02:00 AM
PERCENT MOISTURE						
Percent Moisture	46.0	1.0		wt%	1	6/23/2015 9:50:00 AM
29B SALTS						
SODIUM ADSORPTION RATIO						
Sodium Adsorption Ratio	3.74	0.100			1	7/1/2015
Soluble Calcium	5.72	1.00		meq/L	1	7/1/2015
Soluble Magnesium	2.67	1.00		meq/L	1	7/1/2015
Soluble Sodium	7.66	1.00		meq/L	1	7/1/2015
29B METALS						
MERCURY IN SOIL OR SLUDGE						
Mercury	< 0.10	0.10		mg/Kg-dry	1	6/29/2015 11:20:53 AM
INORGANIC ANIONS IN LEACHATE BY IC						
Chloride	45.5	2.50		mg/L	10	7/6/2015 5:58:06 PM
29B METALS						
METALS IN SOIL OR SLUDGE BY ICP						
Arsenic	3.57	0.99		mg/Kg-dry	1	7/1/2015 8:37:15 PM
Barium	248	0.99		mg/Kg-dry	1	7/1/2015 8:37:15 PM

Qualifiers:

- | | |
|--|---|
| * Value exceeds Maximum Contaminant Level. | B Analyte detected in the associated Method Blank |
| C Value is below Minimum Compound Limit. | E Value above quantitation range |
| H Holding times for preparation or analysis exceeded | J Analyte detected below quantitation limits |
| M Matrix Interference | ND Not Detected at the Reporting Limit |
| R RPD outside accepted recovery limits | RL Reporting Limit |
| S Spike Recovery outside accepted recovery limits | U Analyte not detected |



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Analytical Report

(consolidated)

WO#: **15060956**

Date Reported: **7/8/2015**

CLIENT: ICON Environmental Services
Project: Iberville Parish SB 9090-040-0100
Lab ID: 15060956-006
Client Sample ID SB-16 0-2

Collection Date: 6/15/2015 4:00:00 PM

Matrix: SOIL

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
29B METALS					SW6010B	SW3050B
METALS IN SOIL OR SLUDGE BY ICP						Analyst: STS
Cadmium	0.50	0.50		mg/Kg-dry	1	7/1/2015 8:37:15 PM
Chromium	20.7	0.99		mg/Kg-dry	1	7/1/2015 8:37:15 PM
Lead	20.0	0.99		mg/Kg-dry	1	7/1/2015 8:37:15 PM
Selenium	< 1.98	1.98		mg/Kg-dry	1	7/1/2015 8:37:15 PM
Strontium	87.2	0.99		mg/Kg-dry	1	7/1/2015 8:37:15 PM
Zinc	96.2	0.99		mg/Kg-dry	1	7/1/2015 8:37:15 PM
29B METALS					LDNR 29-B	Analyst: STS
TRUE TOTAL BARIUM						
True Total Barium	450	46		mg/Kg-dry	1	7/1/2015 4:33:15 AM

Qualifiers:

- | | |
|--|---|
| * Value exceeds Maximum Contaminant Level. | B Analyte detected in the associated Method Blank |
| C Value is below Minimum Compound Limit. | E Value above quantitation range |
| H Holding times for preparation or analysis exceeded | J Analyte detected below quantitation limits |
| M Matrix Interference | ND Not Detected at the Reporting Limit |
| R RPD outside accepted recovery limits | RL Reporting Limit |
| S Spike Recovery outside accepted recovery limits | U Analyte not detected |



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Analytical Report

(consolidated)

WO#: **15060956**

Date Reported: **7/8/2015**

CLIENT: ICON Environmental Services
Project: Iberville Parish SB 9090-040-0100
Lab ID: 15060956-007
Client Sample ID SB-16 4-6

Collection Date: 6/15/2015 4:05:00 PM

Matrix: SOIL

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
29B SALTS						
CATION EXCHANGE CAPACITY						
Cation Exchange Capacity	78.8	0.1		meq/100g	1	7/3/2015 10:02:00 AM
29B SALTS						
ELECTRICAL CONDUCTIVITY @ SATURATION						
Electrical Conductivity	12.0	0.10	*	mmhos/cm	1	6/30/2015 12:49:00 PM
29B SALTS						
EXCHANGEABLE SODIUM PERCENTAGE						
Exchangeable Sodium %	7.0	0.1		%	1	7/3/2015 10:02:00 AM
PERCENT MOISTURE						
Percent Moisture	44.9	1.0		wt%	1	6/23/2015 9:50:00 AM
29B SALTS						
SODIUM ADSORPTION RATIO						
Sodium Adsorption Ratio	29.8	0.100	*		1	7/1/2015
Soluble Calcium	15.4	1.00		meq/L	1	7/1/2015
Soluble Magnesium	7.15	1.00		meq/L	1	7/1/2015
Soluble Sodium	99.9	1.00		meq/L	1	7/1/2015
29B METALS						
MERCURY IN SOIL OR SLUDGE						
Mercury	< 0.10	0.10		mg/Kg-dry	1	6/29/2015 11:23:40 AM
INORGANIC ANIONS IN LEACHATE BY IC						
Chloride	506	12.5		mg/L	50	7/6/2015 6:11:50 PM
29B METALS						
METALS IN SOIL OR SLUDGE BY ICP						
Arsenic	4.50	0.99		mg/Kg-dry	1	7/1/2015 8:40:45 PM
Barium	254	0.99		mg/Kg-dry	1	7/1/2015 8:40:45 PM

Qualifiers:

- | | |
|--|---|
| * Value exceeds Maximum Contaminant Level. | B Analyte detected in the associated Method Blank |
| C Value is below Minimum Compound Limit. | E Value above quantitation range |
| H Holding times for preparation or analysis exceeded | J Analyte detected below quantitation limits |
| M Matrix Interference | ND Not Detected at the Reporting Limit |
| R RPD outside accepted recovery limits | RL Reporting Limit |
| S Spike Recovery outside accepted recovery limits | U Analyte not detected |



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Analytical Report

(consolidated)

WO#: **15060956**

Date Reported: **7/8/2015**

CLIENT: ICON Environmental Services
Project: Iberville Parish SB 9090-040-0100
Lab ID: 15060956-007
Client Sample ID SB-16 4-6

Collection Date: 6/15/2015 4:05:00 PM

Matrix: SOIL

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
29B METALS					SW6010B	SW3050B
METALS IN SOIL OR SLUDGE BY ICP						Analyst: STS
Cadmium	< 0.50	0.50		mg/Kg-dry	1	7/1/2015 8:40:45 PM
Chromium	18.4	0.99		mg/Kg-dry	1	7/1/2015 8:40:45 PM
Lead	16.2	0.99		mg/Kg-dry	1	7/1/2015 8:40:45 PM
Selenium	< 1.99	1.99		mg/Kg-dry	1	7/1/2015 8:40:45 PM
Strontium	99.3	9.95		mg/Kg-dry	10	7/1/2015 10:40:22 PM
Zinc	64.8	0.99		mg/Kg-dry	1	7/1/2015 8:40:45 PM
29B METALS					LDNR 29-B	Analyst: STS
TRUE TOTAL BARIUM						
True Total Barium	362	46		mg/Kg-dry	1	7/1/2015 4:37:45 AM

Qualifiers:

- | | |
|--|---|
| * Value exceeds Maximum Contaminant Level. | B Analyte detected in the associated Method Blank |
| C Value is below Minimum Compound Limit. | E Value above quantitation range |
| H Holding times for preparation or analysis exceeded | J Analyte detected below quantitation limits |
| M Matrix Interference | ND Not Detected at the Reporting Limit |
| R RPD outside accepted recovery limits | RL Reporting Limit |
| S Spike Recovery outside accepted recovery limits | U Analyte not detected |



Element Materials Technology Lafayette
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 TEL: (337) 235-0483 FAX: (337) 233-6540
 Website: www.element.com

Analytical Report

(consolidated)

WO#: **15060956**

Date Reported: **7/8/2015**

CLIENT: ICON Environmental Services
Project: Iberville Parish SB 9090-040-0100
Lab ID: 15060956-008
Client Sample ID SB-16 8-10

Collection Date: 6/15/2015 4:10:00 PM

Matrix: SOIL

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
29B SALTS						
CATION EXCHANGE CAPACITY						
Cation Exchange Capacity	66.4	0.1		meq/100g	1	7/3/2015 10:02:00 AM
29B SALTS						
ELECTRICAL CONDUCTIVITY @ SATURATION						
Electrical Conductivity	10.2	0.10	*	mmhos/cm	1	6/30/2015 12:50:00 PM
29B SALTS						
EXCHANGEABLE SODIUM PERCENTAGE						
Exchangeable Sodium %	14.1	0.1		%	1	7/3/2015 10:02:00 AM
PERCENT MOISTURE						
Percent Moisture	42.1	1.0		wt%	1	6/23/2015 9:50:00 AM
29B SALTS						
SODIUM ADSORPTION RATIO						
Sodium Adsorption Ratio	20.1	0.100	*		1	7/1/2015
Soluble Calcium	18.7	1.00		meq/L	1	7/1/2015
Soluble Magnesium	8.34	1.00		meq/L	1	7/1/2015
Soluble Sodium	73.8	1.00		meq/L	1	7/1/2015

Qualifiers:

- | | |
|--|---|
| * Value exceeds Maximum Contaminant Level. | B Analyte detected in the associated Method Blank |
| C Value is below Minimum Compound Limit. | E Value above quantitation range |
| H Holding times for preparation or analysis exceeded | J Analyte detected below quantitation limits |
| M Matrix Interference | ND Not Detected at the Reporting Limit |
| R RPD outside accepted recovery limits | RL Reporting Limit |
| S Spike Recovery outside accepted recovery limits | U Analyte not detected |



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Analytical Report

(consolidated)

WO#: **15060956**

Date Reported: **7/8/2015**

CLIENT: ICON Environmental Services
Project: Iberville Parish SB 9090-040-0100
Lab ID: 15060956-009
Client Sample ID SB-16 14-16

Collection Date: 6/15/2015 4:20:00 PM

Matrix: SOIL

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
ELECTRICAL CONDUCTIVITY @ SATURATION				LDNR 29-B		Analyst: MMT
Electrical Conductivity	15.9	0.10	*	mmhos/cm	1	6/30/2015 12:50:00 PM
PERCENT MOISTURE				LDNR 29-B		Analyst: MMT
Percent Moisture	26.4	1.0		wt%	1	6/23/2015 9:50:00 AM

Qualifiers:

- | | |
|--|---|
| * Value exceeds Maximum Contaminant Level. | B Analyte detected in the associated Method Blank |
| C Value is below Minimum Compound Limit. | E Value above quantitation range |
| H Holding times for preparation or analysis exceeded | J Analyte detected below quantitation limits |
| M Matrix Interference | ND Not Detected at the Reporting Limit |
| R RPD outside accepted recovery limits | RL Reporting Limit |
| S Spike Recovery outside accepted recovery limits | U Analyte not detected |



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Analytical Report

(consolidated)

WO#: **15060956**

Date Reported: **7/8/2015**

CLIENT: ICON Environmental Services
Project: Iberville Parish SB 9090-040-0100
Lab ID: 15060956-010
Client Sample ID SB-16 28-30

Collection Date: 6/15/2015 4:55:00 PM

Matrix: SOIL

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
ELECTRICAL CONDUCTIVITY @ SATURATION				LDNR 29-B		Analyst: MMT
Electrical Conductivity	1.40	0.10		mmhos/cm	1	6/30/2015 12:50:00 PM
PERCENT MOISTURE				LDNR 29-B		Analyst: MMT
Percent Moisture	24.6	1.0		wt%	1	6/23/2015 9:50:00 AM

Qualifiers:

- | | |
|--|---|
| * Value exceeds Maximum Contaminant Level. | B Analyte detected in the associated Method Blank |
| C Value is below Minimum Compound Limit. | E Value above quantitation range |
| H Holding times for preparation or analysis exceeded | J Analyte detected below quantitation limits |
| M Matrix Interference | ND Not Detected at the Reporting Limit |
| R RPD outside accepted recovery limits | RL Reporting Limit |
| S Spike Recovery outside accepted recovery limits | U Analyte not detected |



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Analytical Report

(consolidated)

WO#: **15060956**

Date Reported: **7/8/2015**

CLIENT: ICON Environmental Services
Project: Iberville Parish SB 9090-040-0100
Lab ID: 15060956-011
Client Sample ID SB-17 0-2

Collection Date: 6/16/2015 3:00:00 PM

Matrix: SOIL

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
29B SALTS						
CATION EXCHANGE CAPACITY						
Cation Exchange Capacity	70.9	0.1		meq/100g	1	7/3/2015 10:02:00 AM
29B SALTS						
ELECTRICAL CONDUCTIVITY @ SATURATION						
Electrical Conductivity	3.77	0.10		mmhos/cm	1	6/30/2015 12:51:00 PM
29B SALTS						
EXCHANGEABLE SODIUM PERCENTAGE						
Exchangeable Sodium %	4.8	0.1		%	1	7/3/2015 10:02:00 AM
PERCENT MOISTURE						
Percent Moisture	63.2	1.0		wt%	1	6/23/2015 9:50:00 AM
29B SALTS						
SODIUM ADSORPTION RATIO						
Sodium Adsorption Ratio	7.23	0.100			1	7/1/2015
Soluble Calcium	9.04	1.00		meq/L	1	7/1/2015
Soluble Magnesium	4.26	1.00		meq/L	1	7/1/2015
Soluble Sodium	18.6	1.00		meq/L	1	7/1/2015
29B METALS						
MERCURY IN SOIL OR SLUDGE						
Mercury	< 0.10	0.10		mg/Kg-dry	1	6/29/2015 11:26:03 AM
INORGANIC ANIONS IN LEACHATE BY IC						
Chloride	498	5.00		mg/L	20	7/6/2015 6:25:35 PM
29B METALS						
METALS IN SOIL OR SLUDGE BY ICP						
Arsenic	5.35	0.99		mg/Kg-dry	1	7/1/2015 8:44:42 PM
Barium	463	0.99		mg/Kg-dry	1	7/1/2015 8:44:42 PM

Qualifiers:

- | | |
|--|---|
| * Value exceeds Maximum Contaminant Level. | B Analyte detected in the associated Method Blank |
| C Value is below Minimum Compound Limit. | E Value above quantitation range |
| H Holding times for preparation or analysis exceeded | J Analyte detected below quantitation limits |
| M Matrix Interference | ND Not Detected at the Reporting Limit |
| R RPD outside accepted recovery limits | RL Reporting Limit |
| S Spike Recovery outside accepted recovery limits | U Analyte not detected |



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Analytical Report

(consolidated)

WO#: **15060956**

Date Reported: **7/8/2015**

CLIENT: ICON Environmental Services
Project: Iberville Parish SB 9090-040-0100
Lab ID: 15060956-011
Client Sample ID SB-17 0-2

Collection Date: 6/16/2015 3:00:00 PM

Matrix: SOIL

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
29B METALS					SW6010B	SW3050B
METALS IN SOIL OR SLUDGE BY ICP						Analyst: STS
Cadmium	< 0.50	0.50		mg/Kg-dry	1	7/1/2015 8:44:42 PM
Chromium	19.2	0.99		mg/Kg-dry	1	7/1/2015 8:44:42 PM
Lead	18.9	0.99		mg/Kg-dry	1	7/1/2015 8:44:42 PM
Selenium	< 1.99	1.99		mg/Kg-dry	1	7/1/2015 8:44:42 PM
Strontium	87.6	0.99		mg/Kg-dry	1	7/1/2015 8:44:42 PM
Zinc	97.6	0.99		mg/Kg-dry	1	7/1/2015 8:44:42 PM
29B METALS					LDNR 29-B	Analyst: STS
TRUE TOTAL BARIUM						
True Total Barium	673	46		mg/Kg-dry	1	7/1/2015 4:42:14 AM

Qualifiers:	* Value exceeds Maximum Contaminant Level.	B Analyte detected in the associated Method Blank
	C Value is below Minimum Compound Limit.	E Value above quantitation range
	H Holding times for preparation or analysis exceeded	J Analyte detected below quantitation limits
	M Matrix Interference	ND Not Detected at the Reporting Limit
	R RPD outside accepted recovery limits	RL Reporting Limit
	S Spike Recovery outside accepted recovery limits	U Analyte not detected



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Analytical Report

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WO#: **15060956**

Date Reported: **7/8/2015**

CLIENT: ICON Environmental Services
Project: Iberville Parish SB 9090-040-0100
Lab ID: 15060956-012
Client Sample ID SB-17 2-4

Collection Date: 6/16/2015 3:05:00 PM

Matrix: SOIL

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
29B SALTS						
CATION EXCHANGE CAPACITY						
Cation Exchange Capacity	68.0	0.1		meq/100g	1	7/3/2015 10:02:00 AM
29B SALTS						
ELECTRICAL CONDUCTIVITY @ SATURATION						
Electrical Conductivity	4.16	0.10	*	mmhos/cm	1	6/30/2015 12:51:00 PM
29B SALTS						
EXCHANGEABLE SODIUM PERCENTAGE						
Exchangeable Sodium %	6.8	0.1		%	1	7/3/2015 10:02:00 AM
PERCENT MOISTURE						
Percent Moisture	58.3	1.0		wt%	1	6/23/2015 9:50:00 AM
29B SALTS						
SODIUM ADSORPTION RATIO						
Sodium Adsorption Ratio	10.2	0.100			1	7/1/2015
Soluble Calcium	8.76	1.00		meq/L	1	7/1/2015
Soluble Magnesium	3.79	1.00		meq/L	1	7/1/2015
Soluble Sodium	25.5	1.00		meq/L	1	7/1/2015
29B METALS						
MERCURY IN SOIL OR SLUDGE						
Mercury	< 0.10	0.10		mg/Kg-dry	1	6/29/2015 11:33:40 AM
INORGANIC ANIONS IN LEACHATE BY IC						
Chloride	205	12.5		mg/L	50	7/6/2015 6:39:19 PM
29B METALS						
METALS IN SOIL OR SLUDGE BY ICP						
Arsenic	4.99	0.99		mg/Kg-dry	1	7/1/2015 8:48:14 PM
Barium	1,700	0.99		mg/Kg-dry	1	7/1/2015 8:48:14 PM

Qualifiers:

- | | |
|--|---|
| * Value exceeds Maximum Contaminant Level. | B Analyte detected in the associated Method Blank |
| C Value is below Minimum Compound Limit. | E Value above quantitation range |
| H Holding times for preparation or analysis exceeded | J Analyte detected below quantitation limits |
| M Matrix Interference | ND Not Detected at the Reporting Limit |
| R RPD outside accepted recovery limits | RL Reporting Limit |
| S Spike Recovery outside accepted recovery limits | U Analyte not detected |



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Analytical Report

(consolidated)

WO#: **15060956**

Date Reported: **7/8/2015**

CLIENT: ICON Environmental Services
Project: Iberville Parish SB 9090-040-0100
Lab ID: 15060956-012
Client Sample ID SB-17 2-4

Collection Date: 6/16/2015 3:05:00 PM

Matrix: SOIL

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
29B METALS					SW6010B	SW3050B
METALS IN SOIL OR SLUDGE BY ICP						Analyst: STS
Cadmium	< 0.50	0.50		mg/Kg-dry	1	7/1/2015 8:48:14 PM
Chromium	27.1	0.99		mg/Kg-dry	1	7/1/2015 8:48:14 PM
Lead	21.2	0.99		mg/Kg-dry	1	7/1/2015 8:48:14 PM
Selenium	< 1.98	1.98		mg/Kg-dry	1	7/1/2015 8:48:14 PM
Strontium	185	9.91		mg/Kg-dry	10	7/1/2015 10:59:45 PM
Zinc	87.5	0.99		mg/Kg-dry	1	7/1/2015 8:48:14 PM
29B METALS					LDNR 29-B	Analyst: STS
TRUE TOTAL BARIUM						
True Total Barium	4,460	46		mg/Kg-dry	1	7/1/2015 4:46:43 AM

Qualifiers:

- | | |
|--|---|
| * Value exceeds Maximum Contaminant Level. | B Analyte detected in the associated Method Blank |
| C Value is below Minimum Compound Limit. | E Value above quantitation range |
| H Holding times for preparation or analysis exceeded | J Analyte detected below quantitation limits |
| M Matrix Interference | ND Not Detected at the Reporting Limit |
| R RPD outside accepted recovery limits | RL Reporting Limit |
| S Spike Recovery outside accepted recovery limits | U Analyte not detected |



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Analytical Report

(consolidated)

WO#: **15060956**

Date Reported: **7/8/2015**

CLIENT: ICON Environmental Services
Project: Iberville Parish SB 9090-040-0100
Lab ID: 15060956-013
Client Sample ID SB-18 0-2

Collection Date: 6/16/2015 3:30:00 PM

Matrix: SOIL

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
29B SALTS						
CATION EXCHANGE CAPACITY						
Cation Exchange Capacity	57.4	0.1		meq/100g	1	7/3/2015 10:02:00 AM
29B SALTS						
ELECTRICAL CONDUCTIVITY @ SATURATION						
Electrical Conductivity	1.62	0.10		mmhos/cm	1	6/30/2015 12:52:00 PM
29B SALTS						
EXCHANGEABLE SODIUM PERCENTAGE						
Exchangeable Sodium %	1.1	0.1		%	1	7/3/2015 10:02:00 AM
PERCENT MOISTURE						
Percent Moisture	59.7	1.0		wt%	1	6/23/2015 9:50:00 AM
29B SALTS						
SODIUM ADSORPTION RATIO						
Sodium Adsorption Ratio	1.73	0.100			1	7/1/2015
Soluble Calcium	8.75	1.00		meq/L	1	7/1/2015
Soluble Magnesium	3.91	1.00		meq/L	1	7/1/2015
Soluble Sodium	4.36	1.00		meq/L	1	7/1/2015
29B METALS						
MERCURY IN SOIL OR SLUDGE						
Mercury	< 0.10	0.10		mg/Kg-dry	1	6/29/2015 11:36:03 AM
INORGANIC ANIONS IN LEACHATE BY IC						
Chloride	17.0	2.50		mg/L	10	7/6/2015 6:53:04 PM
29B METALS						
METALS IN SOIL OR SLUDGE BY ICP						
Arsenic	5.55	0.99		mg/Kg-dry	1	7/1/2015 8:58:53 PM
Barium	1,570	0.99		mg/Kg-dry	1	7/1/2015 8:58:53 PM

Qualifiers:

- | | |
|--|---|
| * Value exceeds Maximum Contaminant Level. | B Analyte detected in the associated Method Blank |
| C Value is below Minimum Compound Limit. | E Value above quantitation range |
| H Holding times for preparation or analysis exceeded | J Analyte detected below quantitation limits |
| M Matrix Interference | ND Not Detected at the Reporting Limit |
| R RPD outside accepted recovery limits | RL Reporting Limit |
| S Spike Recovery outside accepted recovery limits | U Analyte not detected |



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Analytical Report

(consolidated)

WO#: **15060956**

Date Reported: **7/8/2015**

CLIENT: ICON Environmental Services
Project: Iberville Parish SB 9090-040-0100
Lab ID: 15060956-013
Client Sample ID SB-18 0-2

Collection Date: 6/16/2015 3:30:00 PM

Matrix: SOIL

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
29B METALS					SW6010B	SW3050B
METALS IN SOIL OR SLUDGE BY ICP						Analyst: STS
Cadmium	0.62	0.50		mg/Kg-dry	1	7/1/2015 8:58:53 PM
Chromium	19.0	0.99		mg/Kg-dry	1	7/1/2015 8:58:53 PM
Lead	26.9	0.99		mg/Kg-dry	1	7/1/2015 8:58:53 PM
Selenium	< 1.98	1.98		mg/Kg-dry	1	7/1/2015 8:58:53 PM
Strontium	125	9.92		mg/Kg-dry	10	7/1/2015 11:04:58 PM
Zinc	110	0.99		mg/Kg-dry	1	7/1/2015 8:58:53 PM
29B METALS					LDNR 29-B	Analyst: STS
TRUE TOTAL BARIUM						
True Total Barium	6,910	47		mg/Kg-dry	1	7/1/2015 4:51:13 AM

Qualifiers:	* Value exceeds Maximum Contaminant Level.	B Analyte detected in the associated Method Blank
	C Value is below Minimum Compound Limit.	E Value above quantitation range
	H Holding times for preparation or analysis exceeded	J Analyte detected below quantitation limits
	M Matrix Interference	ND Not Detected at the Reporting Limit
	R RPD outside accepted recovery limits	RL Reporting Limit
	S Spike Recovery outside accepted recovery limits	U Analyte not detected



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Analytical Report

(consolidated)

WO#: **15060956**

Date Reported: **7/8/2015**

CLIENT: ICON Environmental Services
Project: Iberville Parish SB 9090-040-0100
Lab ID: 15060956-014
Client Sample ID SB-18 2-4

Collection Date: 6/16/2015 3:35:00 PM

Matrix: SOIL

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
29B SALTS						
CATION EXCHANGE CAPACITY						
Cation Exchange Capacity	50.4	0.1		meq/100g	1	7/3/2015 10:02:00 AM
29B SALTS						
ELECTRICAL CONDUCTIVITY @ SATURATION						
Electrical Conductivity	1.22	0.10		mmhos/cm	1	6/30/2015 12:52:00 PM
29B SALTS						
EXCHANGEABLE SODIUM PERCENTAGE						
Exchangeable Sodium %	1.5	0.1		%	1	7/3/2015 10:02:00 AM
PERCENT MOISTURE						
Percent Moisture	50.9	1.0		wt%	1	6/23/2015 9:50:00 AM
29B SALTS						
SODIUM ADSORPTION RATIO						
Sodium Adsorption Ratio	2.49	0.100			1	7/1/2015
Soluble Calcium	4.54	1.00		meq/L	1	7/1/2015
Soluble Magnesium	2.23	1.00		meq/L	1	7/1/2015
Soluble Sodium	4.57	1.00		meq/L	1	7/1/2015
29B METALS						
MERCURY IN SOIL OR SLUDGE						
Mercury	< 0.10	0.10		mg/Kg-dry	1	6/29/2015 11:38:52 AM
INORGANIC ANIONS IN LEACHATE BY IC						
Chloride	20.2	2.50		mg/L	10	7/6/2015 7:06:48 PM
29B METALS						
METALS IN SOIL OR SLUDGE BY ICP						
Arsenic	5.89	1.00		mg/Kg-dry	1	7/1/2015 9:02:19 PM
Barium	1,840	1.00		mg/Kg-dry	1	7/1/2015 9:02:19 PM

Qualifiers:

- | | |
|--|---|
| * Value exceeds Maximum Contaminant Level. | B Analyte detected in the associated Method Blank |
| C Value is below Minimum Compound Limit. | E Value above quantitation range |
| H Holding times for preparation or analysis exceeded | J Analyte detected below quantitation limits |
| M Matrix Interference | ND Not Detected at the Reporting Limit |
| R RPD outside accepted recovery limits | RL Reporting Limit |
| S Spike Recovery outside accepted recovery limits | U Analyte not detected |



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Analytical Report

(consolidated)

WO#: **15060956**

Date Reported: **7/8/2015**

CLIENT: ICON Environmental Services
Project: Iberville Parish SB 9090-040-0100
Lab ID: 15060956-014
Client Sample ID SB-18 2-4

Collection Date: 6/16/2015 3:35:00 PM

Matrix: SOIL

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
29B METALS					SW6010B	SW3050B
METALS IN SOIL OR SLUDGE BY ICP						Analyst: STS
Cadmium	0.70	0.50		mg/Kg-dry	1	7/1/2015 9:02:19 PM
Chromium	17.9	1.00		mg/Kg-dry	1	7/1/2015 9:02:19 PM
Lead	36.0	1.00		mg/Kg-dry	1	7/1/2015 9:02:19 PM
Selenium	< 1.99	1.99		mg/Kg-dry	1	7/1/2015 9:02:19 PM
Strontium	146	9.96		mg/Kg-dry	10	7/1/2015 11:10:08 PM
Zinc	123	1.00		mg/Kg-dry	1	7/1/2015 9:02:19 PM
29B METALS					LDNR 29-B	Analyst: STS
TRUE TOTAL BARIUM						
True Total Barium	11,000	47		mg/Kg-dry	1	7/1/2015 4:55:44 AM

Qualifiers:

- | | |
|--|---|
| * Value exceeds Maximum Contaminant Level. | B Analyte detected in the associated Method Blank |
| C Value is below Minimum Compound Limit. | E Value above quantitation range |
| H Holding times for preparation or analysis exceeded | J Analyte detected below quantitation limits |
| M Matrix Interference | ND Not Detected at the Reporting Limit |
| R RPD outside accepted recovery limits | RL Reporting Limit |
| S Spike Recovery outside accepted recovery limits | U Analyte not detected |



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Analytical Report

(consolidated)

WO#: **15060956**

Date Reported: **7/8/2015**

CLIENT: ICON Environmental Services
Project: Iberville Parish SB 9090-040-0100
Lab ID: 15060956-015
Client Sample ID SB-19 0-2

Collection Date: 6/16/2015 4:00:00 PM

Matrix: SOIL

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
29B SALTS						
CATION EXCHANGE CAPACITY						
Cation Exchange Capacity	67.9	0.1		meq/100g	1	7/3/2015 10:02:00 AM
29B SALTS						
ELECTRICAL CONDUCTIVITY @ SATURATION						
Electrical Conductivity	3.11	0.10		mmhos/cm	1	6/30/2015 12:52:00 PM
29B SALTS						
EXCHANGEABLE SODIUM PERCENTAGE						
Exchangeable Sodium %	2.6	0.1		%	1	7/3/2015 10:02:00 AM
PERCENT MOISTURE						
Percent Moisture	63.9	1.0		wt%	1	6/23/2015 9:50:00 AM
29B SALTS						
SODIUM ADSORPTION RATIO						
Sodium Adsorption Ratio	5.01	0.100			1	7/1/2015
Soluble Calcium	11.3	1.00		meq/L	1	7/1/2015
Soluble Magnesium	5.34	1.00		meq/L	1	7/1/2015
Soluble Sodium	14.5	1.00		meq/L	1	7/1/2015
29B METALS						
MERCURY IN SOIL OR SLUDGE						
Mercury	< 0.10	0.10		mg/Kg-dry	1	6/29/2015 11:42:26 AM
INORGANIC ANIONS IN LEACHATE BY IC						
Chloride	67.2	5.00		mg/L	20	7/6/2015 7:20:33 PM
29B METALS						
METALS IN SOIL OR SLUDGE BY ICP						
Arsenic	6.26	1.00		mg/Kg-dry	1	7/1/2015 9:05:38 PM
Barium	913	1.00		mg/Kg-dry	1	7/1/2015 9:05:38 PM

Qualifiers:

- | | |
|--|---|
| * Value exceeds Maximum Contaminant Level. | B Analyte detected in the associated Method Blank |
| C Value is below Minimum Compound Limit. | E Value above quantitation range |
| H Holding times for preparation or analysis exceeded | J Analyte detected below quantitation limits |
| M Matrix Interference | ND Not Detected at the Reporting Limit |
| R RPD outside accepted recovery limits | RL Reporting Limit |
| S Spike Recovery outside accepted recovery limits | U Analyte not detected |



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Analytical Report

(consolidated)

WO#: **15060956**

Date Reported: **7/8/2015**

CLIENT: ICON Environmental Services
Project: Iberville Parish SB 9090-040-0100
Lab ID: 15060956-015
Client Sample ID SB-19 0-2

Collection Date: 6/16/2015 4:00:00 PM

Matrix: SOIL

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
29B METALS					SW6010B	SW3050B
METALS IN SOIL OR SLUDGE BY ICP						Analyst: STS
Cadmium	< 0.50	0.50		mg/Kg-dry	1	7/1/2015 9:05:38 PM
Chromium	22.2	1.00		mg/Kg-dry	1	7/1/2015 9:05:38 PM
Lead	20.9	1.00		mg/Kg-dry	1	7/1/2015 9:05:38 PM
Selenium	< 1.99	1.99		mg/Kg-dry	1	7/1/2015 9:05:38 PM
Strontium	116	9.96		mg/Kg-dry	10	7/1/2015 11:15:18 PM
Zinc	103	1.00		mg/Kg-dry	1	7/1/2015 9:05:38 PM
29B METALS					LDNR 29-B	Analyst: STS
TRUE TOTAL BARIUM						
True Total Barium	1,410	46		mg/Kg-dry	1	7/1/2015 5:00:13 AM

Qualifiers:	* Value exceeds Maximum Contaminant Level.	B Analyte detected in the associated Method Blank
	C Value is below Minimum Compound Limit.	E Value above quantitation range
	H Holding times for preparation or analysis exceeded	J Analyte detected below quantitation limits
	M Matrix Interference	ND Not Detected at the Reporting Limit
	R RPD outside accepted recovery limits	RL Reporting Limit
	S Spike Recovery outside accepted recovery limits	U Analyte not detected



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Analytical Report

(consolidated)

WO#: **15060956**

Date Reported: **7/8/2015**

CLIENT: ICON Environmental Services
Project: Iberville Parish SB 9090-040-0100
Lab ID: 15060956-016
Client Sample ID SB-19 2-4

Collection Date: 6/16/2015 4:05:00 PM

Matrix: SOIL

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
29B SALTS						
CATION EXCHANGE CAPACITY						
Cation Exchange Capacity	65.1	0.1		meq/100g	1	7/3/2015 10:02:00 AM
29B SALTS						
ELECTRICAL CONDUCTIVITY @ SATURATION						
Electrical Conductivity	2.26	0.10		mmhos/cm	1	6/30/2015 12:53:00 PM
29B SALTS						
EXCHANGEABLE SODIUM PERCENTAGE						
Exchangeable Sodium %	4.4	0.1		%	1	7/3/2015 10:02:00 AM
PERCENT MOISTURE						
Percent Moisture	53.5	1.0		wt%	1	6/23/2015 9:50:00 AM
29B SALTS						
SODIUM ADSORPTION RATIO						
Sodium Adsorption Ratio	7.67	0.100			1	7/1/2015
Soluble Calcium	4.39	1.00		meq/L	1	7/1/2015
Soluble Magnesium	2.07	1.00		meq/L	1	7/1/2015
Soluble Sodium	13.8	1.00		meq/L	1	7/1/2015
29B METALS						
MERCURY IN SOIL OR SLUDGE						
Mercury	< 0.10	0.10		mg/Kg-dry	1	6/29/2015 11:45:15 AM
INORGANIC ANIONS IN LEACHATE BY IC						
Chloride	78.6	5.00		mg/L	20	7/6/2015 7:34:17 PM
29B METALS						
METALS IN SOIL OR SLUDGE BY ICP						
Arsenic	5.27	0.99		mg/Kg-dry	1	7/1/2015 9:08:52 PM
Barium	1,920	0.99		mg/Kg-dry	1	7/1/2015 9:08:52 PM

Qualifiers:

- | | |
|--|---|
| * Value exceeds Maximum Contaminant Level. | B Analyte detected in the associated Method Blank |
| C Value is below Minimum Compound Limit. | E Value above quantitation range |
| H Holding times for preparation or analysis exceeded | J Analyte detected below quantitation limits |
| M Matrix Interference | ND Not Detected at the Reporting Limit |
| R RPD outside accepted recovery limits | RL Reporting Limit |
| S Spike Recovery outside accepted recovery limits | U Analyte not detected |



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Analytical Report

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WO#: **15060956**

Date Reported: **7/8/2015**

CLIENT: ICON Environmental Services
Project: Iberville Parish SB 9090-040-0100
Lab ID: 15060956-016
Client Sample ID SB-19 2-4

Collection Date: 6/16/2015 4:05:00 PM

Matrix: SOIL

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
29B METALS					SW6010B	SW3050B
METALS IN SOIL OR SLUDGE BY ICP						Analyst: STS
Cadmium	< 0.50	0.50		mg/Kg-dry	1	7/1/2015 9:08:52 PM
Chromium	22.5	0.99		mg/Kg-dry	1	7/1/2015 9:08:52 PM
Lead	19.1	0.99		mg/Kg-dry	1	7/1/2015 9:08:52 PM
Selenium	< 1.98	1.98		mg/Kg-dry	1	7/1/2015 9:08:52 PM
Strontium	153	9.92		mg/Kg-dry	10	7/1/2015 11:20:28 PM
Zinc	82.8	0.99		mg/Kg-dry	1	7/1/2015 9:08:52 PM
29B METALS					LDNR 29-B	Analyst: STS
TRUE TOTAL BARIUM						
True Total Barium	3,400	47		mg/Kg-dry	1	7/1/2015 5:04:44 AM

Qualifiers:

- | | |
|--|---|
| * Value exceeds Maximum Contaminant Level. | B Analyte detected in the associated Method Blank |
| C Value is below Minimum Compound Limit. | E Value above quantitation range |
| H Holding times for preparation or analysis exceeded | J Analyte detected below quantitation limits |
| M Matrix Interference | ND Not Detected at the Reporting Limit |
| R RPD outside accepted recovery limits | RL Reporting Limit |
| S Spike Recovery outside accepted recovery limits | U Analyte not detected |



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Analytical Report

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WO#: **15060956**

Date Reported: **7/8/2015**

CLIENT: ICON Environmental Services
Project: Iberville Parish SB 9090-040-0100
Lab ID: 15060956-017
Client Sample ID SB-20 0-2

Collection Date: 6/17/2015 1:00:00 PM

Matrix: SOIL

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
29B SALTS						
CATION EXCHANGE CAPACITY						
Cation Exchange Capacity	60.5	0.1		meq/100g	1	7/3/2015 10:02:00 AM
29B SALTS						
ELECTRICAL CONDUCTIVITY @ SATURATION						
Electrical Conductivity	1.15	0.10		mmhos/cm	1	6/30/2015 12:53:00 PM
29B SALTS						
EXCHANGEABLE SODIUM PERCENTAGE						
Exchangeable Sodium %	0.6	0.1		%	1	7/3/2015 10:02:00 AM
PERCENT MOISTURE						
Percent Moisture	61.3	1.0		wt%	1	6/23/2015 9:50:00 AM
29B SALTS						
SODIUM ADSORPTION RATIO						
Sodium Adsorption Ratio	1.37	0.100			1	7/1/2015
Soluble Calcium	5.10	1.00		meq/L	1	7/1/2015
Soluble Magnesium	2.51	1.00		meq/L	1	7/1/2015
Soluble Sodium	2.68	1.00		meq/L	1	7/1/2015
29B METALS						
MERCURY IN SOIL OR SLUDGE						
Mercury	< 0.10	0.10		mg/Kg-dry	1	6/29/2015 11:48:02 AM
INORGANIC ANIONS IN LEACHATE BY IC						
Chloride	9.11	1.25		mg/L	5	7/6/2015 8:15:30 PM
29B METALS						
METALS IN SOIL OR SLUDGE BY ICP						
Arsenic	6.39	0.99		mg/Kg-dry	1	7/1/2015 9:12:36 PM
Barium	2,670	0.99		mg/Kg-dry	1	7/1/2015 9:12:36 PM

Qualifiers:

- | | |
|--|---|
| * Value exceeds Maximum Contaminant Level. | B Analyte detected in the associated Method Blank |
| C Value is below Minimum Compound Limit. | E Value above quantitation range |
| H Holding times for preparation or analysis exceeded | J Analyte detected below quantitation limits |
| M Matrix Interference | ND Not Detected at the Reporting Limit |
| R RPD outside accepted recovery limits | RL Reporting Limit |
| S Spike Recovery outside accepted recovery limits | U Analyte not detected |



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WO#: **15060956**

Date Reported: **7/8/2015**

CLIENT: ICON Environmental Services
Project: Iberville Parish SB 9090-040-0100
Lab ID: 15060956-017
Client Sample ID SB-20 0-2

Collection Date: 6/17/2015 1:00:00 PM

Matrix: SOIL

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
29B METALS					SW6010B	SW3050B
METALS IN SOIL OR SLUDGE BY ICP						Analyst: STS
Cadmium	0.53	0.50		mg/Kg-dry	1	7/1/2015 9:12:36 PM
Chromium	24.5	0.99		mg/Kg-dry	1	7/1/2015 9:12:36 PM
Lead	30.5	0.99		mg/Kg-dry	1	7/1/2015 9:12:36 PM
Selenium	< 1.99	1.99		mg/Kg-dry	1	7/1/2015 9:12:36 PM
Strontium	88.2	0.99		mg/Kg-dry	1	7/1/2015 9:12:36 PM
Zinc	103	0.99		mg/Kg-dry	1	7/1/2015 9:12:36 PM
29B METALS					LDNR 29-B	Analyst: STS
TRUE TOTAL BARIUM						
True Total Barium	14,900	49		mg/Kg-dry	1	7/1/2015 5:09:15 AM

Qualifiers:

- | | |
|--|---|
| * Value exceeds Maximum Contaminant Level. | B Analyte detected in the associated Method Blank |
| C Value is below Minimum Compound Limit. | E Value above quantitation range |
| H Holding times for preparation or analysis exceeded | J Analyte detected below quantitation limits |
| M Matrix Interference | ND Not Detected at the Reporting Limit |
| R RPD outside accepted recovery limits | RL Reporting Limit |
| S Spike Recovery outside accepted recovery limits | U Analyte not detected |



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WO#: **15060956**

Date Reported: **7/8/2015**

CLIENT: ICON Environmental Services
Project: Iberville Parish SB 9090-040-0100
Lab ID: 15060956-018
Client Sample ID SB-20 2-4

Collection Date: 6/17/2015 1:05:00 PM

Matrix: SOIL

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
29B SALTS						
CATION EXCHANGE CAPACITY						
Cation Exchange Capacity	60.0	0.1		meq/100g	1	7/3/2015 10:02:00 AM
29B SALTS						
ELECTRICAL CONDUCTIVITY @ SATURATION						
Electrical Conductivity	0.90	0.10		mmhos/cm	1	6/30/2015 12:53:00 PM
29B SALTS						
EXCHANGEABLE SODIUM PERCENTAGE						
Exchangeable Sodium %	1.1	0.1		%	1	7/3/2015 10:02:00 AM
PERCENT MOISTURE						
Percent Moisture	55.3	1.0		wt%	1	6/23/2015 9:50:00 AM
29B SALTS						
SODIUM ADSORPTION RATIO						
Sodium Adsorption Ratio	1.97	0.100			1	7/1/2015
Soluble Calcium	2.97	1.00		meq/L	1	7/1/2015
Soluble Magnesium	1.48	1.00		meq/L	1	7/1/2015
Soluble Sodium	2.93	1.00		meq/L	1	7/1/2015
29B METALS						
MERCURY IN SOIL OR SLUDGE						
Mercury	< 0.10	0.10		mg/Kg-dry	1	6/29/2015 11:50:44 AM
INORGANIC ANIONS IN LEACHATE BY IC						
Chloride	13.3	1.25		mg/L	5	7/6/2015 8:29:15 PM
29B METALS						
METALS IN SOIL OR SLUDGE BY ICP						
Arsenic	6.26	0.99		mg/Kg-dry	1	7/1/2015 9:16:30 PM
Barium	1,850	0.99		mg/Kg-dry	1	7/1/2015 9:16:30 PM

Qualifiers:

- | | |
|--|---|
| * Value exceeds Maximum Contaminant Level. | B Analyte detected in the associated Method Blank |
| C Value is below Minimum Compound Limit. | E Value above quantitation range |
| H Holding times for preparation or analysis exceeded | J Analyte detected below quantitation limits |
| M Matrix Interference | ND Not Detected at the Reporting Limit |
| R RPD outside accepted recovery limits | RL Reporting Limit |
| S Spike Recovery outside accepted recovery limits | U Analyte not detected |



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Analytical Report

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WO#: **15060956**

Date Reported: **7/8/2015**

CLIENT: ICON Environmental Services
Project: Iberville Parish SB 9090-040-0100
Lab ID: 15060956-018
Client Sample ID SB-20 2-4

Collection Date: 6/17/2015 1:05:00 PM

Matrix: SOIL

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
29B METALS					SW6010B	SW3050B
METALS IN SOIL OR SLUDGE BY ICP						Analyst: STS
Cadmium	< 0.50	0.50		mg/Kg-dry	1	7/1/2015 9:16:30 PM
Chromium	22.6	0.99		mg/Kg-dry	1	7/1/2015 9:16:30 PM
Lead	26.9	0.99		mg/Kg-dry	1	7/1/2015 9:16:30 PM
Selenium	< 1.99	1.99		mg/Kg-dry	1	7/1/2015 9:16:30 PM
Strontium	107	0.99		mg/Kg-dry	1	7/1/2015 9:16:30 PM
Zinc	95.4	0.99		mg/Kg-dry	1	7/1/2015 9:16:30 PM
29B METALS					LDNR 29-B	Analyst: STS
TRUE TOTAL BARIUM						
True Total Barium	5,630	48		mg/Kg-dry	1	7/1/2015 5:13:46 AM

Qualifiers:

- | | |
|--|---|
| * Value exceeds Maximum Contaminant Level. | B Analyte detected in the associated Method Blank |
| C Value is below Minimum Compound Limit. | E Value above quantitation range |
| H Holding times for preparation or analysis exceeded | J Analyte detected below quantitation limits |
| M Matrix Interference | ND Not Detected at the Reporting Limit |
| R RPD outside accepted recovery limits | RL Reporting Limit |
| S Spike Recovery outside accepted recovery limits | U Analyte not detected |



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WO#: **15060956**

Date Reported: **7/8/2015**

CLIENT: ICON Environmental Services
Project: Iberville Parish SB 9090-040-0100
Lab ID: 15060956-019
Client Sample ID SB-21 0-2

Collection Date: 6/17/2015 1:10:00 PM

Matrix: SOIL

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
29B SALTS						
CATION EXCHANGE CAPACITY						
Cation Exchange Capacity	45.0	0.1		meq/100g	1	7/3/2015 10:02:00 AM
29B SALTS						
ELECTRICAL CONDUCTIVITY @ SATURATION						
Electrical Conductivity	1.12	0.10		mmhos/cm	1	7/1/2015 12:45:00 PM
29B SALTS						
EXCHANGEABLE SODIUM PERCENTAGE						
Exchangeable Sodium %	1.0	0.1		%	1	7/3/2015 10:02:00 AM
PERCENT MOISTURE						
Percent Moisture	50.5	1.0		wt%	1	6/23/2015 9:50:00 AM
29B SALTS						
SODIUM ADSORPTION RATIO						
Sodium Adsorption Ratio	1.63	0.100			1	7/1/2015
Soluble Calcium	5.58	1.00		meq/L	1	7/1/2015
Soluble Magnesium	2.31	1.00		meq/L	1	7/1/2015
Soluble Sodium	3.24	1.00		meq/L	1	7/1/2015
29B METALS						
MERCURY IN SOIL OR SLUDGE						
Mercury	0.16	0.10		mg/Kg-dry	1	6/29/2015 11:53:28 AM
INORGANIC ANIONS IN LEACHATE BY IC						
Chloride	4.97	2.50		mg/L	10	7/6/2015 8:42:58 PM
29B METALS						
METALS IN SOIL OR SLUDGE BY ICP						
Arsenic	8.72	0.99		mg/Kg-dry	1	7/1/2015 9:21:00 PM
Barium	4,180	0.99		mg/Kg-dry	1	7/1/2015 9:21:00 PM

Qualifiers:

- | | |
|--|---|
| * Value exceeds Maximum Contaminant Level. | B Analyte detected in the associated Method Blank |
| C Value is below Minimum Compound Limit. | E Value above quantitation range |
| H Holding times for preparation or analysis exceeded | J Analyte detected below quantitation limits |
| M Matrix Interference | ND Not Detected at the Reporting Limit |
| R RPD outside accepted recovery limits | RL Reporting Limit |
| S Spike Recovery outside accepted recovery limits | U Analyte not detected |



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Analytical Report

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WO#: **15060956**

Date Reported: **7/8/2015**

CLIENT: ICON Environmental Services
Project: Iberville Parish SB 9090-040-0100
Lab ID: 15060956-019
Client Sample ID SB-21 0-2

Collection Date: 6/17/2015 1:10:00 PM

Matrix: SOIL

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
29B METALS					SW6010B	SW3050B
METALS IN SOIL OR SLUDGE BY ICP						Analyst: STS
Cadmium	0.66	0.50		mg/Kg-dry	1	7/1/2015 9:21:00 PM
Chromium	29.9	0.99		mg/Kg-dry	1	7/1/2015 9:21:00 PM
Lead	203	0.99		mg/Kg-dry	1	7/1/2015 9:21:00 PM
Selenium	< 1.98	1.98		mg/Kg-dry	1	7/1/2015 9:21:00 PM
Strontium	139	9.92		mg/Kg-dry	10	7/1/2015 11:36:12 PM
Zinc	213	0.99		mg/Kg-dry	1	7/1/2015 9:21:00 PM
29B METALS					LDNR 29-B	Analyst: STS
TRUE TOTAL BARIUM						
True Total Barium	151,000	47	*	mg/Kg-dry	1	7/1/2015 5:27:22 AM

Qualifiers:	* Value exceeds Maximum Contaminant Level.	B Analyte detected in the associated Method Blank
	C Value is below Minimum Compound Limit.	E Value above quantitation range
	H Holding times for preparation or analysis exceeded	J Analyte detected below quantitation limits
	M Matrix Interference	ND Not Detected at the Reporting Limit
	R RPD outside accepted recovery limits	RL Reporting Limit
	S Spike Recovery outside accepted recovery limits	U Analyte not detected



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Analytical Report

(consolidated)

WO#: **15060956**

Date Reported: **7/8/2015**

CLIENT: ICON Environmental Services
Project: Iberville Parish SB 9090-040-0100
Lab ID: 15060956-020
Client Sample ID SB-21 2-4

Collection Date: 6/17/2015 1:15:00 PM

Matrix: SOIL

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
29B SALTS						
CATION EXCHANGE CAPACITY						
Cation Exchange Capacity	48.6	0.1		meq/100g	1	7/3/2015 10:02:00 AM
29B SALTS						
ELECTRICAL CONDUCTIVITY @ SATURATION						
Electrical Conductivity	1.05	0.10		mmhos/cm	1	7/1/2015 12:45:00 PM
29B SALTS						
EXCHANGEABLE SODIUM PERCENTAGE						
Exchangeable Sodium %	1.1	0.1		%	1	7/3/2015 10:02:00 AM
PERCENT MOISTURE						
Percent Moisture	49.5	1.0		wt%	1	6/23/2015 9:50:00 AM
29B SALTS						
SODIUM ADSORPTION RATIO						
Sodium Adsorption Ratio	2.27	0.100			1	7/1/2015
Soluble Calcium	4.25	1.00		meq/L	1	7/1/2015
Soluble Magnesium	1.73	1.00		meq/L	1	7/1/2015
Soluble Sodium	3.93	1.00		meq/L	1	7/1/2015
29B METALS						
MERCURY IN SOIL OR SLUDGE						
Mercury	0.14	0.10		mg/Kg-dry	1	6/29/2015 11:56:11 AM
INORGANIC ANIONS IN LEACHATE BY IC						
Chloride	8.20	1.25		mg/L	5	7/6/2015 8:56:43 PM
29B METALS						
METALS IN SOIL OR SLUDGE BY ICP						
Arsenic	9.24	1.00		mg/Kg-dry	1	7/1/2015 9:24:46 PM
Barium	4,830	1.00		mg/Kg-dry	1	7/1/2015 9:24:46 PM

Qualifiers:

- | | |
|--|---|
| * Value exceeds Maximum Contaminant Level. | B Analyte detected in the associated Method Blank |
| C Value is below Minimum Compound Limit. | E Value above quantitation range |
| H Holding times for preparation or analysis exceeded | J Analyte detected below quantitation limits |
| M Matrix Interference | ND Not Detected at the Reporting Limit |
| R RPD outside accepted recovery limits | RL Reporting Limit |
| S Spike Recovery outside accepted recovery limits | U Analyte not detected |



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WO#: **15060956**

Date Reported: **7/8/2015**

CLIENT: ICON Environmental Services
Project: Iberville Parish SB 9090-040-0100
Lab ID: 15060956-020
Client Sample ID SB-21 2-4

Collection Date: 6/17/2015 1:15:00 PM

Matrix: SOIL

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
29B METALS					SW6010B	SW3050B
METALS IN SOIL OR SLUDGE BY ICP						Analyst: STS
Cadmium	0.54	0.50		mg/Kg-dry	1	7/1/2015 9:24:46 PM
Chromium	28.4	1.00		mg/Kg-dry	1	7/1/2015 9:24:46 PM
Lead	97.4	1.00		mg/Kg-dry	1	7/1/2015 9:24:46 PM
Selenium	< 1.99	1.99		mg/Kg-dry	1	7/1/2015 9:24:46 PM
Strontium	141	9.95		mg/Kg-dry	10	7/1/2015 11:41:28 PM
Zinc	131	1.00		mg/Kg-dry	1	7/1/2015 9:24:46 PM
29B METALS					LDNR 29-B	Analyst: STS
TRUE TOTAL BARIUM						
True Total Barium	88,900	47	*	mg/Kg-dry	1	7/1/2015 5:32:57 AM

Qualifiers:	* Value exceeds Maximum Contaminant Level.	B Analyte detected in the associated Method Blank
	C Value is below Minimum Compound Limit.	E Value above quantitation range
	H Holding times for preparation or analysis exceeded	J Analyte detected below quantitation limits
	M Matrix Interference	ND Not Detected at the Reporting Limit
	R RPD outside accepted recovery limits	RL Reporting Limit
	S Spike Recovery outside accepted recovery limits	U Analyte not detected



Element Materials Technology Lafayette
 2417 W. Pinhook Road
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 TEL: (337) 235-0483 FAX: (337) 233-6540
 Website: www.element.com

Analytical Report

(consolidated)

WO#: **15060956**

Date Reported: **7/8/2015**

CLIENT: ICON Environmental Services
Project: Iberville Parish SB 9090-040-0100
Lab ID: 15060956-021
Client Sample ID SB-22 0-2

Collection Date: 6/17/2015 1:20:00 PM

Matrix: SOIL

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
29B SALTS						
CATION EXCHANGE CAPACITY						
Cation Exchange Capacity	58.1	0.1		meq/100g	1	7/3/2015 10:02:00 AM
29B SALTS						
ELECTRICAL CONDUCTIVITY @ SATURATION						
Electrical Conductivity	0.96	0.10		mmhos/cm	1	7/1/2015 12:46:00 PM
29B SALTS						
EXCHANGEABLE SODIUM PERCENTAGE						
Exchangeable Sodium %	0.7	0.1		%	1	7/3/2015 10:02:00 AM
PERCENT MOISTURE						
Percent Moisture	57.1	1.0		wt%	1	6/23/2015 10:35:00 AM
29B SALTS						
SODIUM ADSORPTION RATIO						
Sodium Adsorption Ratio	1.45	0.100			1	7/1/2015
Soluble Calcium	4.21	1.00		meq/L	1	7/1/2015
Soluble Magnesium	2.07	1.00		meq/L	1	7/1/2015
Soluble Sodium	2.56	1.00		meq/L	1	7/1/2015
29B METALS						
MERCURY IN SOIL OR SLUDGE						
Mercury	< 0.10	0.10		mg/Kg-dry	1	6/29/2015 11:58:56 AM
INORGANIC ANIONS IN LEACHATE BY IC						
Chloride	8.63	1.25		mg/L	5	7/6/2015 9:10:26 PM
29B METALS						
METALS IN SOIL OR SLUDGE BY ICP						
Arsenic	6.43	0.99		mg/Kg-dry	1	7/1/2015 9:30:39 PM
Barium	2,710	0.99		mg/Kg-dry	1	7/1/2015 9:30:39 PM

Qualifiers:

- | | |
|--|---|
| * Value exceeds Maximum Contaminant Level. | B Analyte detected in the associated Method Blank |
| C Value is below Minimum Compound Limit. | E Value above quantitation range |
| H Holding times for preparation or analysis exceeded | J Analyte detected below quantitation limits |
| M Matrix Interference | ND Not Detected at the Reporting Limit |
| R RPD outside accepted recovery limits | RL Reporting Limit |
| S Spike Recovery outside accepted recovery limits | U Analyte not detected |



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Analytical Report

(consolidated)

WO#: **15060956**

Date Reported: **7/8/2015**

CLIENT: ICON Environmental Services
Project: Iberville Parish SB 9090-040-0100
Lab ID: 15060956-021
Client Sample ID SB-22 0-2

Collection Date: 6/17/2015 1:20:00 PM

Matrix: SOIL

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
29B METALS					SW6010B	SW3050B
METALS IN SOIL OR SLUDGE BY ICP						Analyst: STS
Cadmium	0.51	0.50		mg/Kg-dry	1	7/1/2015 9:30:39 PM
Chromium	22.2	0.99		mg/Kg-dry	1	7/1/2015 9:30:39 PM
Lead	26.1	0.99		mg/Kg-dry	1	7/1/2015 9:30:39 PM
Selenium	< 1.99	1.99		mg/Kg-dry	1	7/1/2015 9:30:39 PM
Strontium	85.7	0.99		mg/Kg-dry	1	7/1/2015 9:30:39 PM
Zinc	105	0.99		mg/Kg-dry	1	7/1/2015 9:30:39 PM
29B METALS					LDNR 29-B	Analyst: STS
TRUE TOTAL BARIUM						
True Total Barium	10,600	47		mg/Kg-dry	1	7/1/2015 5:38:34 AM

Qualifiers:	* Value exceeds Maximum Contaminant Level.	B Analyte detected in the associated Method Blank
	C Value is below Minimum Compound Limit.	E Value above quantitation range
	H Holding times for preparation or analysis exceeded	J Analyte detected below quantitation limits
	M Matrix Interference	ND Not Detected at the Reporting Limit
	R RPD outside accepted recovery limits	RL Reporting Limit
	S Spike Recovery outside accepted recovery limits	U Analyte not detected



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Analytical Report

(consolidated)

WO#: **15060956**

Date Reported: **7/8/2015**

CLIENT: ICON Environmental Services
Project: Iberville Parish SB 9090-040-0100
Lab ID: 15060956-022
Client Sample ID SB-22 2-4

Collection Date: 6/17/2015 1:25:00 PM

Matrix: SOIL

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
29B SALTS						
CATION EXCHANGE CAPACITY						
Cation Exchange Capacity	54.9	0.1		meq/100g	1	7/3/2015 10:02:00 AM
29B SALTS						
ELECTRICAL CONDUCTIVITY @ SATURATION						
Electrical Conductivity	0.89	0.10		mmhos/cm	1	7/1/2015 12:47:00 PM
29B SALTS						
EXCHANGEABLE SODIUM PERCENTAGE						
Exchangeable Sodium %	0.9	0.1		%	1	7/3/2015 10:02:00 AM
PERCENT MOISTURE						
Percent Moisture	53.7	1.0		wt%	1	6/23/2015 10:35:00 AM
29B SALTS						
SODIUM ADSORPTION RATIO						
Sodium Adsorption Ratio	1.77	0.100			1	7/1/2015
Soluble Calcium	3.94	1.00		meq/L	1	7/1/2015
Soluble Magnesium	1.86	1.00		meq/L	1	7/1/2015
Soluble Sodium	3.01	1.00		meq/L	1	7/1/2015
29B METALS						
MERCURY IN SOIL OR SLUDGE						
Mercury	< 0.10	0.10		mg/Kg-dry	1	6/29/2015 12:06:53 PM
INORGANIC ANIONS IN LEACHATE BY IC						
Chloride	12.2	1.25		mg/L	5	7/6/2015 9:24:10 PM
29B METALS						
METALS IN SOIL OR SLUDGE BY ICP						
Arsenic	5.82	1.00		mg/Kg-dry	1	7/1/2015 9:36:24 PM
Barium	2,620	1.00		mg/Kg-dry	1	7/1/2015 9:36:24 PM

Qualifiers:

- | | |
|--|---|
| * Value exceeds Maximum Contaminant Level. | B Analyte detected in the associated Method Blank |
| C Value is below Minimum Compound Limit. | E Value above quantitation range |
| H Holding times for preparation or analysis exceeded | J Analyte detected below quantitation limits |
| M Matrix Interference | ND Not Detected at the Reporting Limit |
| R RPD outside accepted recovery limits | RL Reporting Limit |
| S Spike Recovery outside accepted recovery limits | U Analyte not detected |



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Analytical Report

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WO#: **15060956**

Date Reported: **7/8/2015**

CLIENT: ICON Environmental Services
Project: Iberville Parish SB 9090-040-0100
Lab ID: 15060956-022
Client Sample ID SB-22 2-4

Collection Date: 6/17/2015 1:25:00 PM

Matrix: SOIL

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
----------	--------	----	------	-------	----	---------------

29B METALS METALS IN SOIL OR SLUDGE BY ICP **SW6010B SW3050B Analyst: STS**

Cadmium	< 0.50	0.50		mg/Kg-dry	1	7/1/2015 9:36:24 PM
Chromium	20.5	1.00		mg/Kg-dry	1	7/1/2015 9:36:24 PM
Lead	28.4	1.00		mg/Kg-dry	1	7/1/2015 9:36:24 PM
Selenium	< 1.99	1.99		mg/Kg-dry	1	7/1/2015 9:36:24 PM
Strontium	85.4	1.00		mg/Kg-dry	1	7/1/2015 9:36:24 PM
Zinc	74.3	1.00		mg/Kg-dry	1	7/1/2015 9:36:24 PM

29B METALS TRUE TOTAL BARIUM **LDNR 29-B Analyst: STS**

True Total Barium	13,000	48		mg/Kg-dry	1	7/1/2015 5:43:05 AM
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Qualifiers:

- | | |
|--|---|
| * Value exceeds Maximum Contaminant Level. | B Analyte detected in the associated Method Blank |
| C Value is below Minimum Compound Limit. | E Value above quantitation range |
| H Holding times for preparation or analysis exceeded | J Analyte detected below quantitation limits |
| M Matrix Interference | ND Not Detected at the Reporting Limit |
| R RPD outside accepted recovery limits | RL Reporting Limit |
| S Spike Recovery outside accepted recovery limits | U Analyte not detected |



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WO#: **15060956**

Date Reported: **7/8/2015**

CLIENT: ICON Environmental Services
Project: Iberville Parish SB 9090-040-0100
Lab ID: 15060956-023
Client Sample ID SB-23 0-2

Collection Date: 6/19/2015 9:00:00 AM

Matrix: SOIL

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
29B SALTS						
CATION EXCHANGE CAPACITY						
Cation Exchange Capacity	66.6	0.1		meq/100g	1	7/3/2015 10:02:00 AM
29B SALTS						
ELECTRICAL CONDUCTIVITY @ SATURATION						
Electrical Conductivity	0.72	0.10		mmhos/cm	1	7/1/2015 12:47:00 PM
29B SALTS						
EXCHANGEABLE SODIUM PERCENTAGE						
Exchangeable Sodium %	1.0	0.1		%	1	7/3/2015 10:02:00 AM
PERCENT MOISTURE						
Percent Moisture	30.5	1.0		wt%	1	6/23/2015 10:35:00 AM
29B SALTS						
SODIUM ADSORPTION RATIO						
Sodium Adsorption Ratio	1.66	0.100			1	7/1/2015
Soluble Calcium	2.56	1.00		meq/L	1	7/1/2015
Soluble Magnesium	1.37	1.00		meq/L	1	7/1/2015
Soluble Sodium	2.32	1.00		meq/L	1	7/1/2015
29B METALS						
MERCURY IN SOIL OR SLUDGE						
Mercury	< 0.10	0.10		mg/Kg-dry	1	6/29/2015 12:09:36 PM
INORGANIC ANIONS IN LEACHATE BY IC						
Chloride	6.43	1.25		mg/L	5	7/6/2015 9:37:54 PM
29B METALS						
METALS IN SOIL OR SLUDGE BY ICP						
Arsenic	5.65	0.99		mg/Kg-dry	1	7/1/2015 9:51:26 PM
Barium	256	0.99		mg/Kg-dry	1	7/1/2015 9:51:26 PM

Qualifiers:

- | | |
|--|---|
| * Value exceeds Maximum Contaminant Level. | B Analyte detected in the associated Method Blank |
| C Value is below Minimum Compound Limit. | E Value above quantitation range |
| H Holding times for preparation or analysis exceeded | J Analyte detected below quantitation limits |
| M Matrix Interference | ND Not Detected at the Reporting Limit |
| R RPD outside accepted recovery limits | RL Reporting Limit |
| S Spike Recovery outside accepted recovery limits | U Analyte not detected |



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WO#: **15060956**

Date Reported: **7/8/2015**

CLIENT: ICON Environmental Services
Project: Iberville Parish SB 9090-040-0100
Lab ID: 15060956-023
Client Sample ID SB-23 0-2

Collection Date: 6/19/2015 9:00:00 AM

Matrix: SOIL

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
29B METALS					SW6010B	SW3050B
METALS IN SOIL OR SLUDGE BY ICP						Analyst: STS
Cadmium	< 0.50	0.50		mg/Kg-dry	1	7/1/2015 9:51:26 PM
Chromium	18.6	0.99		mg/Kg-dry	1	7/1/2015 9:51:26 PM
Lead	15.8	0.99		mg/Kg-dry	1	7/1/2015 9:51:26 PM
Selenium	< 1.98	1.98		mg/Kg-dry	1	7/1/2015 9:51:26 PM
Strontium	41.4	0.99		mg/Kg-dry	1	7/1/2015 9:51:26 PM
Zinc	79.7	0.99		mg/Kg-dry	1	7/1/2015 9:51:26 PM
29B METALS					LDNR 29-B	Analyst: STS
TRUE TOTAL BARIUM						
True Total Barium	420	47		mg/Kg-dry	1	7/1/2015 5:47:35 AM

Qualifiers:

- | | |
|--|---|
| * Value exceeds Maximum Contaminant Level. | B Analyte detected in the associated Method Blank |
| C Value is below Minimum Compound Limit. | E Value above quantitation range |
| H Holding times for preparation or analysis exceeded | J Analyte detected below quantitation limits |
| M Matrix Interference | ND Not Detected at the Reporting Limit |
| R RPD outside accepted recovery limits | RL Reporting Limit |
| S Spike Recovery outside accepted recovery limits | U Analyte not detected |



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Analytical Report

(consolidated)

WO#: **15060956**

Date Reported: **7/8/2015**

CLIENT: ICON Environmental Services
Project: Iberville Parish SB 9090-040-0100
Lab ID: 15060956-024
Client Sample ID SB-23 4-6

Collection Date: 6/19/2015 9:05:00 AM

Matrix: SOIL

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
29B SALTS						
CATION EXCHANGE CAPACITY						
Cation Exchange Capacity	72.4	0.1		meq/100g	1	7/3/2015 10:02:00 AM
29B SALTS						
ELECTRICAL CONDUCTIVITY @ SATURATION						
Electrical Conductivity	2.28	0.10		mmhos/cm	1	7/1/2015 12:47:00 PM
29B SALTS						
EXCHANGEABLE SODIUM PERCENTAGE						
Exchangeable Sodium %	3.1	0.1		%	1	7/3/2015 10:02:00 AM
PERCENT MOISTURE						
Percent Moisture	31.8	1.0		wt%	1	6/23/2015 10:35:00 AM
29B SALTS						
SODIUM ADSORPTION RATIO						
Sodium Adsorption Ratio	4.98	0.100			1	7/1/2015
Soluble Calcium	7.83	1.00		meq/L	1	7/1/2015
Soluble Magnesium	4.22	1.00		meq/L	1	7/1/2015
Soluble Sodium	12.2	1.00		meq/L	1	7/1/2015
29B METALS						
MERCURY IN SOIL OR SLUDGE						
Mercury	< 0.10	0.10		mg/Kg-dry	1	6/29/2015 12:11:58 PM
INORGANIC ANIONS IN LEACHATE BY IC						
Chloride	37.0	5.00		mg/L	20	7/6/2015 9:51:39 PM
29B METALS						
METALS IN SOIL OR SLUDGE BY ICP						
Arsenic	5.47	0.99		mg/Kg-dry	1	7/1/2015 9:57:24 PM
Barium	246	0.99		mg/Kg-dry	1	7/1/2015 9:57:24 PM

Qualifiers:

- | | |
|--|---|
| * Value exceeds Maximum Contaminant Level. | B Analyte detected in the associated Method Blank |
| C Value is below Minimum Compound Limit. | E Value above quantitation range |
| H Holding times for preparation or analysis exceeded | J Analyte detected below quantitation limits |
| M Matrix Interference | ND Not Detected at the Reporting Limit |
| R RPD outside accepted recovery limits | RL Reporting Limit |
| S Spike Recovery outside accepted recovery limits | U Analyte not detected |



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Analytical Report

(consolidated)

WO#: **15060956**

Date Reported: **7/8/2015**

CLIENT: ICON Environmental Services
Project: Iberville Parish SB 9090-040-0100
Lab ID: 15060956-024
Client Sample ID SB-23 4-6

Collection Date: 6/19/2015 9:05:00 AM

Matrix: SOIL

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
29B METALS					SW6010B	SW3050B
METALS IN SOIL OR SLUDGE BY ICP						Analyst: STS
Cadmium	< 0.50	0.50		mg/Kg-dry	1	7/1/2015 9:57:24 PM
Chromium	16.9	0.99		mg/Kg-dry	1	7/1/2015 9:57:24 PM
Lead	15.5	0.99		mg/Kg-dry	1	7/1/2015 9:57:24 PM
Selenium	< 1.99	1.99		mg/Kg-dry	1	7/1/2015 9:57:24 PM
Strontium	52.9	0.99		mg/Kg-dry	1	7/1/2015 9:57:24 PM
Zinc	69.1	0.99		mg/Kg-dry	1	7/1/2015 9:57:24 PM
29B METALS					LDNR 29-B	Analyst: STS
TRUE TOTAL BARIUM						
True Total Barium	500	48		mg/Kg-dry	1	7/1/2015 5:52:06 AM

Qualifiers:

- | | |
|--|---|
| * Value exceeds Maximum Contaminant Level. | B Analyte detected in the associated Method Blank |
| C Value is below Minimum Compound Limit. | E Value above quantitation range |
| H Holding times for preparation or analysis exceeded | J Analyte detected below quantitation limits |
| M Matrix Interference | ND Not Detected at the Reporting Limit |
| R RPD outside accepted recovery limits | RL Reporting Limit |
| S Spike Recovery outside accepted recovery limits | U Analyte not detected |



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Analytical Report

(consolidated)

WO#: **15060956**

Date Reported: **7/8/2015**

CLIENT: ICON Environmental Services
Project: Iberville Parish SB 9090-040-0100
Lab ID: 15060956-025
Client Sample ID SB-23 10-12

Collection Date: 6/19/2015 10:30:00 AM

Matrix: SOIL

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
ELECTRICAL CONDUCTIVITY @ SATURATION				LDNR 29-B		Analyst: MMT
Electrical Conductivity	1.25	0.10		mmhos/cm	1	7/1/2015 12:48:00 PM
PERCENT MOISTURE				LDNR 29-B		Analyst: MMT
Percent Moisture	35.1	1.0		wt%	1	6/23/2015 10:35:00 AM

Qualifiers:

- | | |
|--|---|
| * Value exceeds Maximum Contaminant Level. | B Analyte detected in the associated Method Blank |
| C Value is below Minimum Compound Limit. | E Value above quantitation range |
| H Holding times for preparation or analysis exceeded | J Analyte detected below quantitation limits |
| M Matrix Interference | ND Not Detected at the Reporting Limit |
| R RPD outside accepted recovery limits | RL Reporting Limit |
| S Spike Recovery outside accepted recovery limits | U Analyte not detected |



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Analytical Report

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WO#: **15060956**

Date Reported: **7/8/2015**

CLIENT: ICON Environmental Services
Project: Iberville Parish SB 9090-040-0100
Lab ID: 15060956-026
Client Sample ID SB-23 22-24

Collection Date: 6/19/2015 11:00:00 AM

Matrix: SOIL

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
ELECTRICAL CONDUCTIVITY @ SATURATION				LDNR 29-B		Analyst: MMT
Electrical Conductivity	1.08	0.10		mmhos/cm	1	7/1/2015 12:48:00 PM
PERCENT MOISTURE				LDNR 29-B		Analyst: MMT
Percent Moisture	27.5	1.0		wt%	1	6/23/2015 10:35:00 AM

Qualifiers:

- | | |
|--|---|
| * Value exceeds Maximum Contaminant Level. | B Analyte detected in the associated Method Blank |
| C Value is below Minimum Compound Limit. | E Value above quantitation range |
| H Holding times for preparation or analysis exceeded | J Analyte detected below quantitation limits |
| M Matrix Interference | ND Not Detected at the Reporting Limit |
| R RPD outside accepted recovery limits | RL Reporting Limit |
| S Spike Recovery outside accepted recovery limits | U Analyte not detected |



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WO#: **15060956**

Date Reported: **7/8/2015**

CLIENT: ICON Environmental Services
Project: Iberville Parish SB 9090-040-0100
Lab ID: 15060956-027
Client Sample ID SB-23 32-34

Collection Date: 6/19/2015 2:40:00 PM

Matrix: SOIL

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
ELECTRICAL CONDUCTIVITY @ SATURATION				LDNR 29-B		Analyst: MMT
Electrical Conductivity	1.41	0.10		mmhos/cm	1	7/1/2015 12:48:00 PM
PERCENT MOISTURE				LDNR 29-B		Analyst: MMT
Percent Moisture	36.9	1.0		wt%	1	6/23/2015 10:35:00 AM

Qualifiers:

- | | |
|--|---|
| * Value exceeds Maximum Contaminant Level. | B Analyte detected in the associated Method Blank |
| C Value is below Minimum Compound Limit. | E Value above quantitation range |
| H Holding times for preparation or analysis exceeded | J Analyte detected below quantitation limits |
| M Matrix Interference | ND Not Detected at the Reporting Limit |
| R RPD outside accepted recovery limits | RL Reporting Limit |
| S Spike Recovery outside accepted recovery limits | U Analyte not detected |



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WO#: **15060956**

Date Reported: **7/8/2015**

CLIENT: ICON Environmental Services
Project: Iberville Parish SB 9090-040-0100
Lab ID: 15060956-028
Client Sample ID SB-16

Collection Date: 6/17/2015 2:15:00 PM

Matrix: AQUEOUS

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
TPH-D/O IN WATER BY SW8015						
TPH DRO/ORO IN WATER BY SW8015						
TPH (Diesel Range)	1.06	0.13		mg/L	1	6/26/2015 2:11:00 PM
TPH (Oil Range)	0.72	0.12		mg/L	1	6/26/2015 2:11:00 PM
Surr: 4-Terphenyl-d14	60.6	36.8 - 128		%REC	1	6/26/2015 2:11:00 PM
BTEX/TPH-G IN WATER BY SW8021/8015						
TPH-GRO IN WATER BY SW8015						
TPH (Gasoline Range)	< 0.15	0.15		mg/L	1	6/24/2015 11:43:00 PM
Surr: alpha, alpha, alpha-Trifluorotoluene	96.8	70 - 130		%REC	1	6/24/2015 11:43:00 PM
BTEX/TPH-G IN WATER BY SW8021/8015						
BTEX IN WATER BY SW8021						
Benzene	< 0.00500	0.00500		mg/L	1	6/24/2015 11:43:00 PM
Ethylbenzene	< 0.00500	0.00500		mg/L	1	6/24/2015 11:43:00 PM
Toluene	< 0.0100	0.0100		mg/L	1	6/24/2015 11:43:00 PM
Xylenes, Total	< 0.0500	0.0500		mg/L	1	6/24/2015 11:43:00 PM
Surr: alpha, alpha, alpha-Trifluorotoluene	106	70 - 130		%REC	1	6/24/2015 11:43:00 PM
MERCURY IN GROUND WATER, DISSOLVED						
Mercury	< 0.0002	0.0002		mg/L	1	6/30/2015 1:21:20 PM
MERCURY IN GROUND WATER, TOTAL						
Mercury	0.0003	0.0002		mg/L	1	6/30/2015 12:56:35 PM
INORGANIC ANIONS IN WATER BY IC						
Chloride	309	12.5		mg/L	50	6/26/2015 10:25:48 AM
Sulfate	0.78	0.25		mg/L	1	6/26/2015 11:34:32 AM
METALS IN WATER BY ICP, TOTALS						

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- C Value is below Minimum Compound Limit.
- H Holding times for preparation or analysis exceeded
- M Matrix Interference
- R RPD outside accepted recovery limits
- S Spike Recovery outside accepted recovery limits
- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- J Analyte detected below quantitation limits
- ND Not Detected at the Reporting Limit
- RL Reporting Limit
- U Analyte not detected



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Analytical Report

(consolidated)

WO#: **15060956**

Date Reported: **7/8/2015**

CLIENT: ICON Environmental Services
Project: Iberville Parish SB 9090-040-0100
Lab ID: 15060956-028
Client Sample ID SB-16

Collection Date: 6/17/2015 2:15:00 PM

Matrix: AQUEOUS

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
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METALS IN WATER BY ICP, TOTALS

SW6010B

Analyst: **STS**

Arsenic	0.090	0.010		mg/L	1	6/30/2015 8:43:30 PM
Barium	2.04	0.010		mg/L	1	6/30/2015 8:43:30 PM
Cadmium	< 0.005	0.005		mg/L	1	6/30/2015 8:43:30 PM
Calcium	353	5.00		mg/L	10	6/30/2015 8:47:54 PM
Chromium	0.120	0.010		mg/L	1	6/30/2015 8:43:30 PM
Iron	122	0.100		mg/L	10	6/30/2015 8:47:54 PM
Lead	0.062	0.010		mg/L	1	6/30/2015 8:43:30 PM
Magnesium	135	5.00		mg/L	10	6/30/2015 8:47:54 PM
Manganese	3.49	0.010		mg/L	1	6/30/2015 8:43:30 PM
Potassium	23.4	5.00		mg/L	1	6/30/2015 8:43:30 PM
Sodium	135	50.0		mg/L	10	6/30/2015 8:47:54 PM
Strontium	2.01	0.100		mg/L	10	6/30/2015 8:47:54 PM
Zinc	0.449	0.010		mg/L	1	6/30/2015 8:43:30 PM

METALS IN WATER BY ICP, DISSOLVED

SW6010B

Analyst: **STS**

Arsenic	0.060	0.010		mg/L	1	7/1/2015 2:25:20 AM
Barium	0.848	0.010		mg/L	1	7/1/2015 2:25:20 AM
Cadmium	< 0.005	0.005		mg/L	1	7/1/2015 2:25:20 AM
Chromium	< 0.010	0.010		mg/L	1	7/1/2015 2:25:20 AM
Iron	13.0	0.100		mg/L	10	7/1/2015 2:49:30 AM
Lead	< 0.010	0.010		mg/L	1	7/1/2015 2:25:20 AM
Manganese	0.424	0.010		mg/L	1	7/1/2015 2:25:20 AM
Strontium	1.64	0.100		mg/L	10	7/1/2015 2:49:30 AM
Zinc	< 0.010	0.010		mg/L	1	7/1/2015 2:25:20 AM

ALKALINITY; TOTAL, CARB, BICARB

SM2320 B

Analyst: **TBB**

Alkalinity, Bicarbonate (As CaCO3)	745	10		mgCaCO3/L	1	6/25/2015 12:02:04 PM
Alkalinity, Carbonate (As CaCO3)	< 10	10		mgCaCO3/L	1	6/25/2015 12:02:04 PM
Alkalinity, Total (As CaCO3)	745	10		mgCaCO3/L	1	6/25/2015 12:02:04 PM

TOTAL DISSOLVED SOLIDS

SM2540C

Analyst: **GMS**

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
C	Value is below Minimum Compound Limit.	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
M	Matrix Interference	ND	Not Detected at the Reporting Limit
R	RPD outside accepted recovery limits	RL	Reporting Limit
S	Spike Recovery outside accepted recovery limits	U	Analyte not detected



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Analytical Report

(consolidated)

WO#: **15060956**

Date Reported: **7/8/2015**

CLIENT: ICON Environmental Services
Project: Iberville Parish SB 9090-040-0100
Lab ID: 15060956-028
Client Sample ID SB-16

Collection Date: 6/17/2015 2:15:00 PM

Matrix: AQUEOUS

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
TOTAL DISSOLVED SOLIDS					SM2540C	Analyst: GMS
Total Dissolved Solids (Residue, Filterable)	1,540	100		mg/L	5	6/23/2015 9:15:00 AM

Qualifiers:

- | | |
|--|---|
| * Value exceeds Maximum Contaminant Level. | B Analyte detected in the associated Method Blank |
| C Value is below Minimum Compound Limit. | E Value above quantitation range |
| H Holding times for preparation or analysis exceeded | J Analyte detected below quantitation limits |
| M Matrix Interference | ND Not Detected at the Reporting Limit |
| R RPD outside accepted recovery limits | RL Reporting Limit |
| S Spike Recovery outside accepted recovery limits | U Analyte not detected |



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QC SUMMARY REPORT

WO#: 15060956
 08-Jul-15

Client: ICON Environmental Services
Project: Iberville Parish SB 9090-040-0100

BatchID: 15681

Sample ID	MB-15681	SampType:	MBLK	TestCode:	HG_S_29B	Units:	mg/Kg-dry	Prep Date:	6/29/2015	RunNo:	44811		
Client ID:	PBS	Batch ID:	15681	TestNo:	29B/SW7471 SW7471A	Analysis Date:	6/29/2015	SeqNo:	1078886				
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury		< 0.10		0.10									

Sample ID	LCS-15681	SampType:	LCS	TestCode:	HG_S_29B	Units:	mg/Kg-dry	Prep Date:	6/29/2015	RunNo:	44811		
Client ID:	LCSS	Batch ID:	15681	TestNo:	29B/SW7471 SW7471A	Analysis Date:	6/29/2015	SeqNo:	1078887				
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury		0.86		0.10	0.83	0	103	80	120				

Sample ID	LCSD-15681	SampType:	LCSD	TestCode:	HG_S_29B	Units:	mg/Kg-dry	Prep Date:	6/29/2015	RunNo:	44811		
Client ID:	LCSS02	Batch ID:	15681	TestNo:	29B/SW7471 SW7471A	Analysis Date:	6/29/2015	SeqNo:	1078888				
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury		0.85		0.10	0.83	0	102	80	120	0.86	0.47	20	

Sample ID	15060956-001AMS	SampType:	MS	TestCode:	HG_S_29B	Units:	mg/Kg-dry	Prep Date:	6/29/2015	RunNo:	44811		
Client ID:	SB-15 0-2	Batch ID:	15681	TestNo:	29B/SW7471 SW7471A	Analysis Date:	6/29/2015	SeqNo:	1078907				
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury		0.92		0.10	0.83	0	111	75	125				

Qualifiers:

* Value exceeds Maximum Contaminant Level.	B Analyte detected in the associated Method Blank	C Value is below Minimum Compound Limit.
E Value above quantitation range	H Holding times for preparation or analysis exceeded	J Analyte detected below quantitation limits
M Matrix Interference	ND Not Detected at the Reporting Limit	R RPD outside accepted recovery limits
RL Reporting Limit	S Spike Recovery outside accepted recovery limits	U Analyte not detected



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QC SUMMARY REPORT

WO#: 15060956
 08-Jul-15

Client: ICON Environmental Services
Project: Iberville Parish SB 9090-040-0100

BatchID: 15681

Sample ID	15060956-001AMSD	SampType:	MSD	TestCode:	HG_S_29B	Units:	mg/Kg-dry	Prep Date:	6/29/2015	RunNo:	44811		
Client ID:	SB-15 0-2	Batch ID:	15681	TestNo:	29B/SW7471 SW7471A	Analysis Date:	6/29/2015	SeqNo:	1078908				
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury		0.93		0.10	0.83	0	112	75	125	0.92	1.25	20	

Qualifiers:	* Value exceeds Maximum Contaminant Level.	B Analyte detected in the associated Method Blank	C Value is below Minimum Compound Limit.
	E Value above quantitation range	H Holding times for preparation or analysis exceeded	J Analyte detected below quantitation limits
	M Matrix Interference	ND Not Detected at the Reporting Limit	R RPD outside accepted recovery limits
	RL Reporting Limit	S Spike Recovery outside accepted recovery limits	U Analyte not detected



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QC SUMMARY REPORT

WO#: 15060956
 08-Jul-15

Client: ICON Environmental Services
Project: Iberville Parish SB 9090-040-0100

BatchID: 15692

Sample ID	LCSD-D15692	SampType:	LCS	TestCode:	8015_DO_W	Units:	mg/L	Prep Date:	6/24/2015	RunNo:	44793			
Client ID:	LCSW	Batch ID:	15692	TestNo:	SW8015B		SW3510C	Analysis Date:	6/26/2015	SeqNo:	1077773			
Analyte		Result		PQL	SPK value	SPK Ref Val		%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

TPH (Diesel Range)	2.95	0.13	3.00	0	98.3	62.3	110							
Surr: 4-Terphenyl-d14	0.07		0.10		69.6	36.8	128							

Sample ID	LCSD-D15692	SampType:	LCSD	TestCode:	8015_DO_W	Units:	mg/L	Prep Date:	6/24/2015	RunNo:	44793			
Client ID:	LCSS02	Batch ID:	15692	TestNo:	SW8015B		SW3510C	Analysis Date:	6/26/2015	SeqNo:	1077774			
Analyte		Result		PQL	SPK value	SPK Ref Val		%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

TPH (Diesel Range)	3.11	0.13	3.00	0	104	62.3	110	2.95	5.27	14.1
Surr: 4-Terphenyl-d14	0.06		0.10		60.6	36.8	128	0	40	

Sample ID	LCSD-M15692	SampType:	LCSD	TestCode:	8015_DO_W	Units:	mg/L	Prep Date:	6/24/2015	RunNo:	44793			
Client ID:	LCSS02	Batch ID:	15692	TestNo:	SW8015B		SW3510C	Analysis Date:	6/26/2015	SeqNo:	1077775			
Analyte		Result		PQL	SPK value	SPK Ref Val		%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

TPH (Oil Range)	2.87	0.12	3.00	0	95.6	63.8	124	2.89	0.72	23.2
Surr: 4-Terphenyl-d14	0.06		0.10		62.1	36.8	128	0	40	

Sample ID	LCS-M15692	SampType:	LCS	TestCode:	8015_DO_W	Units:	mg/L	Prep Date:	6/24/2015	RunNo:	44793			
Client ID:	LCSW	Batch ID:	15692	TestNo:	SW8015B		SW3510C	Analysis Date:	6/26/2015	SeqNo:	1077776			
Analyte		Result		PQL	SPK value	SPK Ref Val		%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

TPH (Oil Range)	2.89	0.12	3.00	0	96.3	63.8	124							
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Qualifiers:	* Value exceeds Maximum Contaminant Level.	B Analyte detected in the associated Method Blank	C Value is below Minimum Compound Limit.
	E Value above quantitation range	H Holding times for preparation or analysis exceeded	J Analyte detected below quantitation limits
	M Matrix Interference	ND Not Detected at the Reporting Limit	R RPD outside accepted recovery limits
	RL Reporting Limit	S Spike Recovery outside accepted recovery limits	U Analyte not detected



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QC SUMMARY REPORT

WO#: 15060956
 08-Jul-15

Client: ICON Environmental Services
Project: Iberville Parish SB 9090-040-0100

BatchID: 15692

Sample ID	LCS-M15692	SampType:	LCS	TestCode:	8015_DO_W	Units:	mg/L	Prep Date:	6/24/2015	RunNo:	44793			
Client ID:	LCSW	Batch ID:	15692	TestNo:	SW8015B	SW3510C		Analysis Date:	6/26/2015	SeqNo:	1077776			
Analyte		Result		PQL	SPK value	SPK Ref Val		%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Surr:	4-Terphenyl-d14	0.06			0.10			61.6	36.8	128				

Sample ID	MB-15692	SampType:	MBLK	TestCode:	8015_DO_W	Units:	mg/L	Prep Date:	6/24/2015	RunNo:	44793			
Client ID:	PBW	Batch ID:	15692	TestNo:	SW8015B	SW3510C		Analysis Date:	6/26/2015	SeqNo:	1077777			
Analyte		Result		PQL	SPK value	SPK Ref Val		%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
TPH (Diesel Range)		< 0.13		0.13										
TPH (Oil Range)		< 0.12		0.12										
Surr:	4-Terphenyl-d14	0.06			0.10			60.6	36.8	128				

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank	C	Value is below Minimum Compound Limit.
	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
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QC SUMMARY REPORT

WO#: 15060956
 08-Jul-15

Client: ICON Environmental Services
Project: Iberville Parish SB 9090-040-0100

BatchID: 15714

Sample ID	MB-15714	SampType:	MBLK	TestCode:	6010_S_29B	Units:	mg/Kg-dry	Prep Date:	6/26/2015	RunNo:	44922		
Client ID:	PBS	Batch ID:	15714	TestNo:	SW6010B	SW3050B		Analysis Date:	7/1/2015	SeqNo:	1083089		
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic		< 1.00		1.00									
Barium		< 1.00		1.00									
Cadmium		< 0.50		0.50									
Chromium		< 1.00		1.00									
Lead		< 1.00		1.00									
Selenium		< 2.00		2.00									
Strontium		< 1.00		1.00									
Zinc		< 1.00		1.00									

Sample ID	LCS-15714	SampType:	LCS	TestCode:	6010_S_29B	Units:	mg/Kg-dry	Prep Date:	6/26/2015	RunNo:	44922		
Client ID:	LCSS	Batch ID:	15714	TestNo:	SW6010B	SW3050B		Analysis Date:	7/1/2015	SeqNo:	1083095		
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic		54.9		1.00	50.00	0	110	80	120				
Barium		54.8		1.00	50.00	0	110	80	120				
Cadmium		54.6		0.50	50.00	0	109	80	120				
Chromium		54.6		1.00	50.00	0	109	80	120				
Lead		55.1		1.00	50.00	0	110	80	120				
Selenium		55.9		2.00	50.00	0	112	80	120				
Strontium		55.2		1.00	50.00	0	110	80	120				
Zinc		55.7		1.00	50.00	0	111	80	120				

Qualifiers:	* Value exceeds Maximum Contaminant Level.	B Analyte detected in the associated Method Blank	C Value is below Minimum Compound Limit.
	E Value above quantitation range	H Holding times for preparation or analysis exceeded	J Analyte detected below quantitation limits
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	RL Reporting Limit	S Spike Recovery outside accepted recovery limits	U Analyte not detected



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QC SUMMARY REPORT

WO#: 15060956
 08-Jul-15

Client: ICON Environmental Services
Project: Iberville Parish SB 9090-040-0100

BatchID: 15714

Sample ID	LCSD-15714	SampType:	LCSD	TestCode:	6010_S_29B	Units:	mg/Kg-dry	Prep Date:	6/26/2015	RunNo:	44922
Client ID:	LCSS02	Batch ID:	15714	TestNo:	SW6010B	SW3050B		Analysis Date:	7/1/2015	SeqNo:	1083096
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	55.7	1.00	50.00	0	111	80	120	54.90	1.46	20	
Barium	55.8	1.00	50.00	0	112	80	120	54.79	1.79	20	
Cadmium	55.6	0.50	50.00	0	111	80	120	54.61	1.81	20	
Chromium	55.6	1.00	50.00	0	111	80	120	54.64	1.81	20	
Lead	55.7	1.00	50.00	0	111	80	120	55.13	1.10	20	
Selenium	56.6	2.00	50.00	0	113	80	120	55.89	1.30	20	
Strontium	55.5	1.00	50.00	0	111	80	120	55.17	0.52	20	
Zinc	56.8	1.00	50.00	0	114	80	120	55.71	1.99	20	

Sample ID	15060956-001AMS	SampType:	MS	TestCode:	6010_S_29B	Units:	mg/Kg-dry	Prep Date:	6/26/2015	RunNo:	44922
Client ID:	SB-15 0-2	Batch ID:	15714	TestNo:	SW6010B	SW3050B		Analysis Date:	7/1/2015	SeqNo:	1083098
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	44.8	0.99	49.70	4.15	81.8	75	125				
Barium	535	0.99	49.70	503.9	63.6	75	125				S
Cadmium	39.4	0.50	49.70	0.44	78.3	75	125				
Chromium	58.2	0.99	49.70	18.98	79.0	75	125				
Lead	55.3	0.99	49.70	16.04	79.0	75	125				
Selenium	36.1	1.99	49.70	0	72.6	75	125				S
Zinc	106	0.99	49.70	67.80	77.4	75	125				

Qualifiers:

* Value exceeds Maximum Contaminant Level.	B Analyte detected in the associated Method Blank	C Value is below Minimum Compound Limit.
E Value above quantitation range	H Holding times for preparation or analysis exceeded	J Analyte detected below quantitation limits
M Matrix Interference	ND Not Detected at the Reporting Limit	R RPD outside accepted recovery limits
RL Reporting Limit	S Spike Recovery outside accepted recovery limits	U Analyte not detected



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QC SUMMARY REPORT

WO#: 15060956
 08-Jul-15

Client: ICON Environmental Services
Project: Iberville Parish SB 9090-040-0100

BatchID: 15714

Sample ID	15060956-001AMSD	SampType:	MSD	TestCode:	6010_S_29B	Units:	mg/Kg-dry	Prep Date:	6/26/2015	RunNo:	44922
Client ID:	SB-15 0-2	Batch ID:	15714	TestNo:	SW6010B	SW3050B		Analysis Date:	7/1/2015	SeqNo:	1083099
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	46.6	1.00	49.75	4.15	85.3	75	125	44.81	3.84	20	
Barium	537	1.00	49.75	503.9	66.0	75	125	535.5	0.23	20	S
Cadmium	40.2	0.50	49.75	0.44	80.0	75	125	39.35	2.22	20	
Chromium	59.3	1.00	49.75	18.98	81.0	75	125	58.24	1.72	20	
Lead	56.1	1.00	49.75	16.04	80.4	75	125	55.33	1.31	20	
Selenium	36.8	1.99	49.75	0	74.0	75	125	36.08	1.98	20	S
Zinc	107	1.00	49.75	67.80	79.7	75	125	106.3	1.12	20	

NOTES:

S - Spike recovery indicates matrix interference. The method is in control as indicated by the Lab Control Sample.

Sample ID	15060956-001AMS	SampType:	MS	TestCode:	6010_S_29B	Units:	mg/Kg-dry	Prep Date:	6/26/2015	RunNo:	44922
Client ID:	SB-15 0-2	Batch ID:	15714	TestNo:	SW6010B	SW3050B		Analysis Date:	7/1/2015	SeqNo:	1083124
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Strontium	134	9.94	49.70	91.80	85.9	75	125				

Sample ID	15060956-001AMSD	SampType:	MSD	TestCode:	6010_S_29B	Units:	mg/Kg-dry	Prep Date:	6/26/2015	RunNo:	44922
Client ID:	SB-15 0-2	Batch ID:	15714	TestNo:	SW6010B	SW3050B		Analysis Date:	7/1/2015	SeqNo:	1083125
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Strontium	131	9.95	49.75	91.80	78.3	75	125	134.5	2.83	20	

Qualifiers:	* Value exceeds Maximum Contaminant Level.	B Analyte detected in the associated Method Blank	C Value is below Minimum Compound Limit.
	E Value above quantitation range	H Holding times for preparation or analysis exceeded	J Analyte detected below quantitation limits
	M Matrix Interference	ND Not Detected at the Reporting Limit	R RPD outside accepted recovery limits
	RL Reporting Limit	S Spike Recovery outside accepted recovery limits	U Analyte not detected



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QC SUMMARY REPORT

WO#: 15060956
 08-Jul-15

Client: ICON Environmental Services
Project: Iberville Parish SB 9090-040-0100

BatchID: 15715

Sample ID MB-15715	SampType: MBLK	TestCode: TTBA	Units: mg/Kg-dry	Prep Date: 6/26/2015	RunNo: 44888						
Client ID: PBS	Batch ID: 15715	TestNo: LDNR 29-B		Analysis Date: 7/1/2015	SeqNo: 1081035						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
True Total Barium	< 50	50									

Sample ID LCS-15715	SampType: LCS	TestCode: TTBA	Units: mg/Kg-dry	Prep Date: 6/26/2015	RunNo: 44888						
Client ID: LCSS	Batch ID: 15715	TestNo: LDNR 29-B		Analysis Date: 7/1/2015	SeqNo: 1081036						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
True Total Barium	5,320	50	5,000	0	106	75	125				

Sample ID LCSD-15715	SampType: LCSD	TestCode: TTBA	Units: mg/Kg-dry	Prep Date: 6/26/2015	RunNo: 44888						
Client ID: LCSS02	Batch ID: 15715	TestNo: LDNR 29-B		Analysis Date: 7/1/2015	SeqNo: 1081037						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
True Total Barium	5,320	50	5,000	0	106	75	125	5,325	0	20	

Sample ID 15060956-001AMS	SampType: MS	TestCode: TTBA	Units: mg/Kg-dry	Prep Date: 6/26/2015	RunNo: 44888						
Client ID: SB-15 0-2	Batch ID: 15715	TestNo: LDNR 29-B		Analysis Date: 7/1/2015	SeqNo: 1081039						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
True Total Barium	5,520	47	4,726	772	100	75	125				

Qualifiers:

* Value exceeds Maximum Contaminant Level.	B Analyte detected in the associated Method Blank	C Value is below Minimum Compound Limit.
E Value above quantitation range	H Holding times for preparation or analysis exceeded	J Analyte detected below quantitation limits
M Matrix Interference	ND Not Detected at the Reporting Limit	R RPD outside accepted recovery limits
RL Reporting Limit	S Spike Recovery outside accepted recovery limits	U Analyte not detected



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 Website: www.element.com

QC SUMMARY REPORT

WO#: 15060956
 08-Jul-15

Client: ICON Environmental Services
Project: Iberville Parish SB 9090-040-0100

BatchID: 15715

Sample ID	15060956-001AMSD	SampType:	MSD	TestCode:	TTBA	Units:	mg/Kg-dry	Prep Date:	6/26/2015	RunNo:	44888		
Client ID:	SB-15 0-2	Batch ID:	15715	TestNo:	LDNR 29-B			Analysis Date:	7/1/2015	SeqNo:	1081040		
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
True Total Barium		5,190		48	4,757	772	93	75	125	5,520	6	20	

Qualifiers:	* Value exceeds Maximum Contaminant Level.	B Analyte detected in the associated Method Blank	C Value is below Minimum Compound Limit.
	E Value above quantitation range	H Holding times for preparation or analysis exceeded	J Analyte detected below quantitation limits
	M Matrix Interference	ND Not Detected at the Reporting Limit	R RPD outside accepted recovery limits
	RL Reporting Limit	S Spike Recovery outside accepted recovery limits	U Analyte not detected



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QC SUMMARY REPORT

WO#: 15060956
 08-Jul-15

Client: ICON Environmental Services
Project: Iberville Parish SB 9090-040-0100

BatchID: 15729

Sample ID	MB-15729	SampType:	MBLK	TestCode:	6010_W	Units:	mg/L	Prep Date:	6/29/2015	RunNo:	44888
Client ID:	PBW	Batch ID:	15729	TestNo:	SW6010B			Analysis Date:	6/30/2015	SeqNo:	1080937
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	< 0.010	0.010									
Barium	< 0.010	0.010									
Cadmium	< 0.005	0.005									
Calcium	< 0.500	0.500									
Chromium	< 0.010	0.010									
Iron	0.019	0.010									
Lead	< 0.010	0.010									
Magnesium	< 0.500	0.500									
Manganese	< 0.010	0.010									
Potassium	< 5.00	5.00									
Sodium	< 5.00	5.00									
Strontium	< 0.010	0.010									
Zinc	< 0.010	0.010									

Sample ID	LCS-15729	SampType:	LCS	TestCode:	6010_W	Units:	mg/L	Prep Date:	6/29/2015	RunNo:	44888
Client ID:	LCSW	Batch ID:	15729	TestNo:	SW6010B			Analysis Date:	6/30/2015	SeqNo:	1080938
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	0.538	0.010	0.500	0	108	80	120				
Barium	0.539	0.010	0.500	0	108	80	120				
Cadmium	0.532	0.005	0.500	0	106	80	120				
Calcium	53.6	0.500	50.00	0	107	80	120				
Chromium	0.539	0.010	0.500	0	108	80	120				
Iron	0.550	0.010	0.500	0	110	80	120				B
Lead	0.536	0.010	0.500	0	107	80	120				

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank	C	Value is below Minimum Compound Limit.
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
M	Matrix Interference	ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits
RL	Reporting Limit	S	Spike Recovery outside accepted recovery limits	U	Analyte not detected



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QC SUMMARY REPORT

WO#: 15060956
 08-Jul-15

Client: ICON Environmental Services
Project: Iberville Parish SB 9090-040-0100

BatchID: 15729

Sample ID	LCS-15729	SampType:	LCS	TestCode:	6010_W	Units:	mg/L	Prep Date:	6/29/2015	RunNo:	44888			
Client ID:	LCSW	Batch ID:	15729	TestNo:	SW6010B			Analysis Date:	6/30/2015	SeqNo:	1080938			
Analyte		Result		PQL	SPK value	SPK Ref Val		%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Magnesium		53.7		0.500	50.00	0		107	80	120				
Manganese		0.538		0.010	0.500	0		108	80	120				
Potassium		52.4		5.00	50.00	0		105	80	120				
Sodium		54.4		5.00	50.00	0		109	80	120				
Strontium		0.540		0.010	0.500	0		108	80	120				
Zinc		0.552		0.010	0.500	0		110	80	120				

Sample ID	LCSD-15729	SampType:	LCSD	TestCode:	6010_W	Units:	mg/L	Prep Date:	6/29/2015	RunNo:	44888			
Client ID:	LCSS02	Batch ID:	15729	TestNo:	SW6010B			Analysis Date:	6/30/2015	SeqNo:	1080939			
Analyte		Result		PQL	SPK value	SPK Ref Val		%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic		0.524		0.010	0.500	0		105	80	120	0.538	2.49	20	
Barium		0.530		0.010	0.500	0		106	80	120	0.539	1.63	20	
Cadmium		0.525		0.005	0.500	0		105	80	120	0.532	1.46	20	
Calcium		52.8		0.500	50.00	0		106	80	120	53.55	1.39	20	
Chromium		0.532		0.010	0.500	0		106	80	120	0.539	1.33	20	
Iron		0.544		0.010	0.500	0		109	80	120	0.550	1.10	20	B
Lead		0.530		0.010	0.500	0		106	80	120	0.536	1.20	20	
Magnesium		53.0		0.500	50.00	0		106	80	120	53.72	1.26	20	
Manganese		0.531		0.010	0.500	0		106	80	120	0.538	1.42	20	
Potassium		52.2		5.00	50.00	0		104	80	120	52.43	0.516	20	
Sodium		54.1		5.00	50.00	0		108	80	120	54.36	0.516	20	
Strontium		0.531		0.010	0.500	0		106	80	120	0.540	1.63	20	
Zinc		0.544		0.010	0.500	0		109	80	120	0.552	1.52	20	

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank	C	Value is below Minimum Compound Limit.
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
M	Matrix Interference	ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits
RL	Reporting Limit	S	Spike Recovery outside accepted recovery limits	U	Analyte not detected



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QC SUMMARY REPORT

WO#: 15060956
 08-Jul-15

Client: ICON Environmental Services
Project: Iberville Parish SB 9090-040-0100

BatchID: 15729

Sample ID	15061095-002AMS	SampType:	MS	TestCode:	6010_W	Units:	mg/L	Prep Date:	6/29/2015	RunNo:	44888
Client ID:	ZZZZZZ	Batch ID:	15729	TestNo:	SW6010B	Analysis Date:	6/30/2015	SeqNo:	1080949		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	0.524	0.010	0.500	0	105	75	125				
Barium	0.528	0.010	0.500	0.018	102	75	125				
Cadmium	0.495	0.005	0.500	0	99.1	75	125				
Calcium	53.5	0.500	50.00	2.397	102	75	125				
Chromium	0.508	0.010	0.500	0	102	75	125				
Iron	0.934	0.010	0.500	0.499	86.9	75	125				B
Lead	0.512	0.010	0.500	0	103	75	125				
Magnesium	50.8	0.500	50.00	0.182	101	75	125				
Manganese	0.520	0.010	0.500	0.008	103	75	125				
Potassium	50.1	5.00	50.00	0.253	99.7	75	125				
Sodium	51.5	5.00	50.00	2.375	98.3	75	125				
Strontium	0.510	0.010	0.500	0.002	102	75	125				
Zinc	0.516	0.010	0.500	0.019	99.5	75	125				

Sample ID	15061095-002AMSD	SampType:	MSD	TestCode:	6010_W	Units:	mg/L	Prep Date:	6/29/2015	RunNo:	44888
Client ID:	ZZZZZZ	Batch ID:	15729	TestNo:	SW6010B	Analysis Date:	6/30/2015	SeqNo:	1080950		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	0.504	0.010	0.500	0	101	75	125	0.524	3.85	20	
Barium	0.521	0.010	0.500	0.018	101	75	125	0.528	1.26	20	
Cadmium	0.486	0.005	0.500	0	97.2	75	125	0.495	1.94	20	
Calcium	53.5	0.500	50.00	2.397	102	75	125	53.46	0.131	20	
Chromium	0.495	0.010	0.500	0	98.9	75	125	0.508	2.57	20	
Iron	1.01	0.010	0.500	0.499	101	75	125	0.934	7.36	20	B
Lead	0.490	0.010	0.500	0	98.1	75	125	0.512	4.39	20	

Qualifiers:

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E	Value above quantitation range	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
M	Matrix Interference	ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits
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QC SUMMARY REPORT

WO#: 15060956
 08-Jul-15

Client: ICON Environmental Services
Project: Iberville Parish SB 9090-040-0100

BatchID: 15729

Sample ID	15061095-002AMSD	SampType:	MSD	TestCode:	6010_W	Units:	mg/L	Prep Date:	6/29/2015	RunNo:	44888
Client ID:	ZZZZZZ	Batch ID:	15729	TestNo:	SW6010B			Analysis Date:	6/30/2015	SeqNo:	1080950
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Magnesium	50.8	0.500	50.00	0.182	101	75	125	50.75	0	20	
Manganese	0.508	0.010	0.500	0.008	100	75	125	0.520	2.35	20	
Potassium	49.9	5.00	50.00	0.253	99.2	75	125	50.09	0.460	20	
Sodium	51.6	5.00	50.00	2.375	98.5	75	125	51.54	0.174	20	
Strontium	0.493	0.010	0.500	0.002	98.1	75	125	0.510	3.49	20	
Zinc	0.509	0.010	0.500	0.019	97.9	75	125	0.516	1.54	20	

Qualifiers:	* Value exceeds Maximum Contaminant Level.	B Analyte detected in the associated Method Blank	C Value is below Minimum Compound Limit.
	E Value above quantitation range	H Holding times for preparation or analysis exceeded	J Analyte detected below quantitation limits
	M Matrix Interference	ND Not Detected at the Reporting Limit	R RPD outside accepted recovery limits
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QC SUMMARY REPORT

WO#: 15060956
 08-Jul-15

Client: ICON Environmental Services
Project: Iberville Parish SB 9090-040-0100

BatchID: 15750

Sample ID	MB-15750	SampType:	MBLK	TestCode:	HG_W_7470	Units:	mg/L	Prep Date:	6/30/2015	RunNo:	44851			
Client ID:	PBW	Batch ID:	15750	TestNo:	SW7470A			Analysis Date:	6/30/2015	SeqNo:	1080078			
Analyte		Result		PQL	SPK value	SPK Ref Val		%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury		< 0.0002		0.0002										

Sample ID	LCS-15750	SampType:	LCS	TestCode:	HG_W_7470	Units:	mg/L	Prep Date:	6/30/2015	RunNo:	44851			
Client ID:	LCSW	Batch ID:	15750	TestNo:	SW7470A			Analysis Date:	6/30/2015	SeqNo:	1080079			
Analyte		Result		PQL	SPK value	SPK Ref Val		%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury		0.0092		0.0002	0.0100	0		92.5	80	120				

Sample ID	LCSD-15750	SampType:	LCSD	TestCode:	HG_W_7470	Units:	mg/L	Prep Date:	6/30/2015	RunNo:	44851			
Client ID:	LCSS02	Batch ID:	15750	TestNo:	SW7470A			Analysis Date:	6/30/2015	SeqNo:	1080082			
Analyte		Result		PQL	SPK value	SPK Ref Val		%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury		0.0098		0.0002	0.0100	0		97.6	80	120	0.0092	5.42	20	

Sample ID	15061210-001DMS	SampType:	MS	TestCode:	HG_W_7470	Units:	mg/L	Prep Date:	6/30/2015	RunNo:	44851			
Client ID:	ZZZZZZ	Batch ID:	15750	TestNo:	SW7470A			Analysis Date:	6/30/2015	SeqNo:	1080084			
Analyte		Result		PQL	SPK value	SPK Ref Val		%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury		0.0094		0.0002	0.0100	0.0001		92.6	75	125				

Qualifiers:

* Value exceeds Maximum Contaminant Level.	B Analyte detected in the associated Method Blank	C Value is below Minimum Compound Limit.
E Value above quantitation range	H Holding times for preparation or analysis exceeded	J Analyte detected below quantitation limits
M Matrix Interference	ND Not Detected at the Reporting Limit	R RPD outside accepted recovery limits
RL Reporting Limit	S Spike Recovery outside accepted recovery limits	U Analyte not detected



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QC SUMMARY REPORT

WO#: 15060956
 08-Jul-15

Client: ICON Environmental Services
Project: Iberville Parish SB 9090-040-0100

BatchID: 15750

Sample ID	15061210-001DMSD	SampType:	MSD	TestCode:	HG_W_7470	Units:	mg/L	Prep Date:	6/30/2015	RunNo:	44851		
Client ID:	ZZZZZZ	Batch ID:	15750	TestNo:	SW7470A			Analysis Date:	6/30/2015	SeqNo:	1080085		
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury		0.0094		0.0002	0.0100	0.0001	92.7	75	125	0.0094	0.178	20	

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank	C	Value is below Minimum Compound Limit.
	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	M	Matrix Interference	ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits
	RL	Reporting Limit	S	Spike Recovery outside accepted recovery limits	U	Analyte not detected



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QC SUMMARY REPORT

WO#: 15060956
 08-Jul-15

Client: ICON Environmental Services
Project: Iberville Parish SB 9090-040-0100

BatchID: 15751

Sample ID	MB-15751	SampType:	MBLK	TestCode:	HG_D_7470A	Units:	mg/L	Prep Date:	6/30/2015	RunNo:	44852			
Client ID:	PBW	Batch ID:	15751	TestNo:	SW7470A			Analysis Date:	6/30/2015	SeqNo:	1080106			
Analyte		Result		PQL	SPK value	SPK Ref Val		%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury		< 0.0002		0.0002										

Sample ID	LCS-15751	SampType:	LCS	TestCode:	HG_D_7470A	Units:	mg/L	Prep Date:	6/30/2015	RunNo:	44852			
Client ID:	LCSW	Batch ID:	15751	TestNo:	SW7470A			Analysis Date:	6/30/2015	SeqNo:	1080109			
Analyte		Result		PQL	SPK value	SPK Ref Val		%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury		0.0092		0.0002	0.0100	0		92.3	80	120				

Sample ID	LCSD-15751	SampType:	LCSD	TestCode:	HG_D_7470A	Units:	mg/L	Prep Date:	6/30/2015	RunNo:	44852			
Client ID:	LCSS02	Batch ID:	15751	TestNo:	SW7470A			Analysis Date:	6/30/2015	SeqNo:	1080110			
Analyte		Result		PQL	SPK value	SPK Ref Val		%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury		0.0088		0.0002	0.0100	0		88.0	80	120	0.0092	4.76	20	

Sample ID	15060956-028DMS	SampType:	MS	TestCode:	HG_D_7470A	Units:	mg/L	Prep Date:	6/30/2015	RunNo:	44852			
Client ID:	SB-16	Batch ID:	15751	TestNo:	SW7470A			Analysis Date:	6/30/2015	SeqNo:	1080112			
Analyte		Result		PQL	SPK value	SPK Ref Val		%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury		0.0096		0.0002	0.0100	0.0001		94.5	75	125				

Qualifiers:

* Value exceeds Maximum Contaminant Level.	B Analyte detected in the associated Method Blank	C Value is below Minimum Compound Limit.
E Value above quantitation range	H Holding times for preparation or analysis exceeded	J Analyte detected below quantitation limits
M Matrix Interference	ND Not Detected at the Reporting Limit	R RPD outside accepted recovery limits
RL Reporting Limit	S Spike Recovery outside accepted recovery limits	U Analyte not detected



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QC SUMMARY REPORT

WO#: 15060956
 08-Jul-15

Client: ICON Environmental Services
Project: Iberville Parish SB 9090-040-0100

BatchID: 15751

Sample ID	15060956-028DMSD	SampType:	MSD	TestCode:	HG_D_7470A	Units:	mg/L	Prep Date:	6/30/2015	RunNo:	44852											
Client ID:	SB-16	Batch ID:	15751	TestNo:	SW7470A			Analysis Date:	6/30/2015	SeqNo:	1080113											
Analyte		Result		PQL		SPK value		SPK Ref Val		%REC		LowLimit		HighLimit		RPD Ref Val		%RPD		RPDLimit		Qual
Mercury		0.0097		0.0002		0.0100		0.0001		95.5		75		125		0.0096		0.996		20		

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank	C	Value is below Minimum Compound Limit.
	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	M	Matrix Interference	ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits
	RL	Reporting Limit	S	Spike Recovery outside accepted recovery limits	U	Analyte not detected



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QC SUMMARY REPORT

WO#: 15060956
 08-Jul-15

Client: ICON Environmental Services
Project: Iberville Parish SB 9090-040-0100

BatchID: 15761

Sample ID	15060980-001ADUP	SampType:	DUP	TestCode:	SAR_S	Units:		Prep Date:	6/30/2015	RunNo:	44894		
Client ID:	ZZZZZZ	Batch ID:	15761	TestNo:	LDNR 29-B	LDNR 29-B		Analysis Date:	7/1/2015	SeqNo:	1081328		
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Sodium Adsorption Ratio	0.974	0.100								0.9887	1.47	20
Soluble Calcium	1.34	1.00								1.331	1.01	20
Soluble Magnesium	< 1.00	1.00								0	0	20
Soluble Sodium	< 1.00	1.00								0	0	20

Sample ID	15060956-011ADUP	SampType:	DUP	TestCode:	SAR_S	Units:		Prep Date:	6/30/2015	RunNo:	44894		
Client ID:	SB-17 0-2	Batch ID:	15761	TestNo:	LDNR 29-B	LDNR 29-B		Analysis Date:	7/1/2015	SeqNo:	1081932		
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Sodium Adsorption Ratio	7.29	0.100								7.229	0.828	20
Soluble Calcium	9.15	1.00								9.037	1.21	20
Soluble Magnesium	4.33	1.00								4.261	1.67	20
Soluble Sodium	18.9	1.00								18.64	1.51	20

Qualifiers:	* Value exceeds Maximum Contaminant Level.	B Analyte detected in the associated Method Blank	C Value is below Minimum Compound Limit.
	E Value above quantitation range	H Holding times for preparation or analysis exceeded	J Analyte detected below quantitation limits
	M Matrix Interference	ND Not Detected at the Reporting Limit	R RPD outside accepted recovery limits
	RL Reporting Limit	S Spike Recovery outside accepted recovery limits	U Analyte not detected



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QC SUMMARY REPORT

WO#: 15060956
 08-Jul-15

Client: ICON Environmental Services
Project: Iberville Parish SB 9090-040-0100

BatchID: 15772

Sample ID	15060956-021ADUP	SampType:	DUP	TestCode:	SAR_S	Units:		Prep Date:	6/30/2015	RunNo:	44894
Client ID:	SB-22 0-2	Batch ID:	15772	TestNo:	LDNR 29-B	LDNR 29-B		Analysis Date:	7/1/2015	SeqNo:	1081985
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Sodium Adsorption Ratio	1.42	0.100						1.446	1.86	20	
Soluble Calcium	4.23	1.00						4.206	0.627	20	
Soluble Magnesium	2.09	1.00						2.075	0.790	20	
Soluble Sodium	2.52	1.00						2.563	1.52	20	

Qualifiers:	* Value exceeds Maximum Contaminant Level.	B Analyte detected in the associated Method Blank	C Value is below Minimum Compound Limit.
	E Value above quantitation range	H Holding times for preparation or analysis exceeded	J Analyte detected below quantitation limits
	M Matrix Interference	ND Not Detected at the Reporting Limit	R RPD outside accepted recovery limits
	RL Reporting Limit	S Spike Recovery outside accepted recovery limits	U Analyte not detected



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 Website: www.element.com

QC SUMMARY REPORT

WO#: 15060956
 08-Jul-15

Client: ICON Environmental Services
Project: Iberville Parish SB 9090-040-0100

BatchID: 15782

Sample ID	15060956-011ADUP	SampType:	DUP	TestCode:	ESP_S	Units:	%	Prep Date:	6/29/2015	RunNo:	44951		
Client ID:	SB-17 0-2	Batch ID:	15782	TestNo:	LDNR 29-B	LDNR 29-B		Analysis Date:	7/3/2015	SeqNo:	1085813		
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Exchangeable Sodium %		4.9		0.1						4.8	2.2	20	

Sample ID	15060956-021ADUP	SampType:	DUP	TestCode:	ESP_S	Units:	%	Prep Date:	6/29/2015	RunNo:	44951		
Client ID:	SB-22 0-2	Batch ID:	15782	TestNo:	LDNR 29-B	LDNR 29-B		Analysis Date:	7/3/2015	SeqNo:	1085824		
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Exchangeable Sodium %		0.7		0.1						0.7	6.5	20	

Qualifiers:	* Value exceeds Maximum Contaminant Level.	B Analyte detected in the associated Method Blank	C Value is below Minimum Compound Limit.
	E Value above quantitation range	H Holding times for preparation or analysis exceeded	J Analyte detected below quantitation limits
	M Matrix Interference	ND Not Detected at the Reporting Limit	R RPD outside accepted recovery limits
	RL Reporting Limit	S Spike Recovery outside accepted recovery limits	U Analyte not detected



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QC SUMMARY REPORT

WO#: 15060956
 08-Jul-15

Client: ICON Environmental Services
Project: Iberville Parish SB 9090-040-0100

BatchID: 15784

Sample ID	15060956-011ADUP	SampType:	DUP	TestCode:	CEC	Units:	meq/100g	Prep Date:	6/29/2015	RunNo:	44950		
Client ID:	SB-17 0-2	Batch ID:	15784	TestNo:	LDNR 29-B	LDNR 29-B		Analysis Date:	7/3/2015	SeqNo:	1085790		
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Cation Exchange Capacity		67.7		0.1						70.9	4.6	20	

Sample ID	15060956-021ADUP	SampType:	DUP	TestCode:	CEC	Units:	meq/100g	Prep Date:	6/29/2015	RunNo:	44950		
Client ID:	SB-22 0-2	Batch ID:	15784	TestNo:	LDNR 29-B	LDNR 29-B		Analysis Date:	7/3/2015	SeqNo:	1085801		
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Cation Exchange Capacity		59.7		0.1						58.1	2.7	20	

Sample ID	Ics-15784	SampType:	LCS	TestCode:	CEC	Units:	meq/100g	Prep Date:	6/29/2015	RunNo:	44950		
Client ID:	LCSS	Batch ID:	15784	TestNo:	LDNR 29-B	LDNR 29-B		Analysis Date:	7/3/2015	SeqNo:	1085805		
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Cation Exchange Capacity		22.6		0.1	25.0	0	90.2	76	124				

Sample ID	Icsd-15784	SampType:	LCSD	TestCode:	CEC	Units:	meq/100g	Prep Date:	6/29/2015	RunNo:	44950		
Client ID:	LCSS02	Batch ID:	15784	TestNo:	LDNR 29-B	LDNR 29-B		Analysis Date:	7/3/2015	SeqNo:	1085806		
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Cation Exchange Capacity		22.1		0.1	25.0	0	88.3	76	124	22.6	2.2	20	

Qualifiers:

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E Value above quantitation range	H Holding times for preparation or analysis exceeded	J Analyte detected below quantitation limits
M Matrix Interference	ND Not Detected at the Reporting Limit	R RPD outside accepted recovery limits
RL Reporting Limit	S Spike Recovery outside accepted recovery limits	U Analyte not detected



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QC SUMMARY REPORT

WO#: 15060956
 08-Jul-15

Client: ICON Environmental Services
Project: Iberville Parish SB 9090-040-0100

BatchID: R44670

Sample ID	MB-R44670	SampType:	MBLK	TestCode:	TDS_2540C	Units:	mg/L	Prep Date:		RunNo:	44670		
Client ID:	PBW	Batch ID:	R44670	TestNo:	SM2540C			Analysis Date:	6/23/2015	SeqNo:	1076719		
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Total Dissolved Solids (Residue, Filterable) < 20 20

Sample ID	LCSD-R44670	SampType:	LCSD	TestCode:	TDS_2540C	Units:	mg/L	Prep Date:		RunNo:	44670		
Client ID:	LCSS02	Batch ID:	R44670	TestNo:	SM2540C			Analysis Date:	6/23/2015	SeqNo:	1076720		
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Total Dissolved Solids (Residue, Filterable) 1,020 20 1,000 0 102 85 115 997 2 10

Sample ID	LCS-R44670	SampType:	LCS	TestCode:	TDS_2540C	Units:	mg/L	Prep Date:		RunNo:	44670		
Client ID:	LCSW	Batch ID:	R44670	TestNo:	SM2540C			Analysis Date:	6/23/2015	SeqNo:	1076721		
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Total Dissolved Solids (Residue, Filterable) 997 20 1,000 0 100 85 115

Sample ID	15060740-001BDUP	SampType:	DUP	TestCode:	TDS_2540C	Units:	mg/L	Prep Date:		RunNo:	44670		
Client ID:	ZZZZZ	Batch ID:	R44670	TestNo:	SM2540C			Analysis Date:	6/23/2015	SeqNo:	1076722		
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Total Dissolved Solids (Residue, Filterable) 23,700 2,000 23,300 2 10 H

Qualifiers:	* Value exceeds Maximum Contaminant Level.	B Analyte detected in the associated Method Blank	C Value is below Minimum Compound Limit.
	E Value above quantitation range	H Holding times for preparation or analysis exceeded	J Analyte detected below quantitation limits
	M Matrix Interference	ND Not Detected at the Reporting Limit	R RPD outside accepted recovery limits
	RL Reporting Limit	S Spike Recovery outside accepted recovery limits	U Analyte not detected



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QC SUMMARY REPORT

WO#: 15060956
 08-Jul-15

Client: ICON Environmental Services
Project: Iberville Parish SB 9090-040-0100

BatchID: R44670

Sample ID	15060740-001BDUP	SampType:	DUP	TestCode:	TDS_2540C	Units:	mg/L	Prep Date:		RunNo:	44670		
Client ID:	ZZZZZZ	Batch ID:	R44670	TestNo:	SM2540C			Analysis Date:	6/23/2015	SeqNo:	1076722		
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Sample ID	15060898-001ADUP	SampType:	DUP	TestCode:	TDS_2540C	Units:	mg/L	Prep Date:		RunNo:	44670		
Client ID:	ZZZZZZ	Batch ID:	R44670	TestNo:	SM2540C			Analysis Date:	6/23/2015	SeqNo:	1076729		
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Dissolved Solids (Residue, Filterable)		1,020		100						1,060	4	10	

Qualifiers:	* Value exceeds Maximum Contaminant Level.	B Analyte detected in the associated Method Blank	C Value is below Minimum Compound Limit.
	E Value above quantitation range	H Holding times for preparation or analysis exceeded	J Analyte detected below quantitation limits
	M Matrix Interference	ND Not Detected at the Reporting Limit	R RPD outside accepted recovery limits
	RL Reporting Limit	S Spike Recovery outside accepted recovery limits	U Analyte not detected



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QC SUMMARY REPORT

WO#: 15060956
 08-Jul-15

Client: ICON Environmental Services
Project: Iberville Parish SB 9090-040-0100

BatchID: R44738

Sample ID	BTEX LCS_W	SampType:	LCS	TestCode:	8021_BTEX_	Units:	mg/L	Prep Date:		RunNo:	44738
Client ID:	LCSW	Batch ID:	R44738	TestNo:	SW8021B			Analysis Date:	6/24/2015	SeqNo:	1076766
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	0.0526	0.00500	0.05000	0	105	72	120				
Ethylbenzene	0.0464	0.00500	0.05000	0	92.8	76	129				
Toluene	0.0491	0.0100	0.05000	0	98.2	78	120				
Xylenes, Total	0.142	0.0500	0.1500	0	94.9	75	125				
Surr: alpha, alpha, alpha-Trifluorotoluene	0.0470		0.05000		94.0	70	130				

Sample ID	BTEX LCSD_W	SampType:	LCSD	TestCode:	8021_BTEX_	Units:	mg/L	Prep Date:		RunNo:	44738
Client ID:	LCSS02	Batch ID:	R44738	TestNo:	SW8021B			Analysis Date:	6/24/2015	SeqNo:	1076767
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	0.0515	0.00500	0.05000	0	103	72	120	0.05260	2.11	20	
Ethylbenzene	0.0452	0.00500	0.05000	0	90.4	76	129	0.04640	2.62	20	
Toluene	0.0478	0.0100	0.05000	0	95.6	78	120	0.04910	2.68	20	
Xylenes, Total	0.138	0.0500	0.1500	0	92.3	75	125	0.1424	2.78	20	
Surr: alpha, alpha, alpha-Trifluorotoluene	0.0468		0.05000		93.6	70	130		0	20	

Sample ID	MB ACID	SampType:	MBLK	TestCode:	8021_BTEX_	Units:	mg/L	Prep Date:		RunNo:	44738
Client ID:	PBW	Batch ID:	R44738	TestNo:	SW8021B			Analysis Date:	6/24/2015	SeqNo:	1076768
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	< 0.00500	0.00500									
Ethylbenzene	< 0.00500	0.00500									

Qualifiers:

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E	Value above quantitation range	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
M	Matrix Interference	ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits
RL	Reporting Limit	S	Spike Recovery outside accepted recovery limits	U	Analyte not detected



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QC SUMMARY REPORT

WO#: 15060956
 08-Jul-15

Client: ICON Environmental Services
Project: Iberville Parish SB 9090-040-0100

BatchID: R44738

Sample ID	MB ACID	SampType:	MBLK	TestCode:	8021_BTEX_	Units:	mg/L	Prep Date:		RunNo:	44738
Client ID:	PBW	Batch ID:	R44738	TestNo:	SW8021B			Analysis Date:	6/24/2015	SeqNo:	1076768
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Toluene	< 0.0100	0.0100									
Xylenes, Total	< 0.0500	0.0500									
Surr: alpha, alpha, alpha-Trifluorotoluene	0.0463		0.05000		92.6	70	130				

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank	C	Value is below Minimum Compound Limit.
	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	M	Matrix Interference	ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits
	RL	Reporting Limit	S	Spike Recovery outside accepted recovery limits	U	Analyte not detected



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QC SUMMARY REPORT

WO#: 15060956
 08-Jul-15

Client: ICON Environmental Services
Project: Iberville Parish SB 9090-040-0100

BatchID: R44745

Sample ID	GAS LCS_W	SampType:	LCS	TestCode:	8015_G_W	Units:	mg/L	Prep Date:		RunNo:	44745			
Client ID:	LCSW	Batch ID:	R44745	TestNo:	SW8015B			Analysis Date:	6/24/2015	SeqNo:	1076879			
Analyte		Result		PQL	SPK value	SPK Ref Val		%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
TPH (Gasoline Range)		14.5		0.15	12.50	0		116	80	130				

Sample ID	GAS LCSD_W	SampType:	LCSD	TestCode:	8015_G_W	Units:	mg/L	Prep Date:		RunNo:	44745			
Client ID:	LCSS02	Batch ID:	R44745	TestNo:	SW8015B			Analysis Date:	6/24/2015	SeqNo:	1076880			
Analyte		Result		PQL	SPK value	SPK Ref Val		%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
TPH (Gasoline Range)		14.3		0.15	12.50	0		114	80	130	14.52	1.45	20	

Sample ID	MB ACID	SampType:	MBLK	TestCode:	8015_G_W	Units:	mg/L	Prep Date:		RunNo:	44745			
Client ID:	PBW	Batch ID:	R44745	TestNo:	SW8015B			Analysis Date:	6/24/2015	SeqNo:	1076881			
Analyte		Result		PQL	SPK value	SPK Ref Val		%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
TPH (Gasoline Range)		< 0.15		0.15										
Surr: alpha, alpha, alpha-Trifluorotoluene		0.04			0.05			87.0	70	130				

Qualifiers:

* Value exceeds Maximum Contaminant Level.	B Analyte detected in the associated Method Blank	C Value is below Minimum Compound Limit.
E Value above quantitation range	H Holding times for preparation or analysis exceeded	J Analyte detected below quantitation limits
M Matrix Interference	ND Not Detected at the Reporting Limit	R RPD outside accepted recovery limits
RL Reporting Limit	S Spike Recovery outside accepted recovery limits	U Analyte not detected



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QC SUMMARY REPORT

WO#: 15060956
 08-Jul-15

Client: ICON Environmental Services
Project: Iberville Parish SB 9090-040-0100

BatchID: R44750

Sample ID	MB-R44750	SampType:	MBLK	TestCode:	ALK	Units:	mgCaCO3/L	Prep Date:		RunNo:	44750		
Client ID:	PBW	Batch ID:	R44750	TestNo:	SM2320 B			Analysis Date:	6/25/2015	SeqNo:	1077140		
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Alkalinity, Bicarbonate (As CaCO3) < 10
 Alkalinity, Carbonate (As CaCO3) < 10
 Alkalinity, Total (As CaCO3) < 10

Sample ID	LCS-R44750	SampType:	LCS	TestCode:	ALK	Units:	mgCaCO3/L	Prep Date:		RunNo:	44750		
Client ID:	LCSW	Batch ID:	R44750	TestNo:	SM2320 B			Analysis Date:	6/25/2015	SeqNo:	1077141		
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Alkalinity, Total (As CaCO3) 49 10 50 0 98 80 120

Sample ID	15060898-001BDUP	SampType:	DUP	TestCode:	ALK	Units:	mgCaCO3/L	Prep Date:		RunNo:	44750		
Client ID:	ZZZZZZ	Batch ID:	R44750	TestNo:	SM2320 B			Analysis Date:	6/25/2015	SeqNo:	1077143		
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Alkalinity, Bicarbonate (As CaCO3) 283 10 278 2 20
 Alkalinity, Carbonate (As CaCO3) < 10 10 0 0 20
 Alkalinity, Total (As CaCO3) 283 10 278 2 20

Qualifiers:

* Value exceeds Maximum Contaminant Level.	B Analyte detected in the associated Method Blank	C Value is below Minimum Compound Limit.
E Value above quantitation range	H Holding times for preparation or analysis exceeded	J Analyte detected below quantitation limits
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QC SUMMARY REPORT

WO#: 15060956
 08-Jul-15

Client: ICON Environmental Services
Project: Iberville Parish SB 9090-040-0100

BatchID: R44776

Sample ID	MBLK	SampType:	MBLK	TestCode:	9056_W	Units:	mg/L	Prep Date:		RunNo:	44776		
Client ID:	PBW	Batch ID:	R44776	TestNo:	SW9056A			Analysis Date:	6/26/2015	SeqNo:	1077602		
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Chloride		< 0.25		0.25									
Sulfate		< 0.25		0.25									

Sample ID	LCS	SampType:	LCS	TestCode:	9056_W	Units:	mg/L	Prep Date:		RunNo:	44776		
Client ID:	LCSW	Batch ID:	R44776	TestNo:	SW9056A			Analysis Date:	6/26/2015	SeqNo:	1077603		
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Chloride		10.2		0.25	10.00	0	102	80	120				
Sulfate		10.2		0.25	10.00	0	102	80	120				

Sample ID	LCSD	SampType:	LCSD	TestCode:	9056_W	Units:	mg/L	Prep Date:		RunNo:	44776		
Client ID:	LCSS02	Batch ID:	R44776	TestNo:	SW9056A			Analysis Date:	6/26/2015	SeqNo:	1077604		
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Chloride		10.2		0.25	10.00	0	102	80	120	10.21	0.05	15	
Sulfate		10.2		0.25	10.00	0	102	80	120	10.24	0.05	15	

Sample ID	15060898-001AMS	SampType:	MS	TestCode:	9056_W	Units:	mg/L	Prep Date:		RunNo:	44776		
Client ID:	ZZZZZZ	Batch ID:	R44776	TestNo:	SW9056A			Analysis Date:	6/26/2015	SeqNo:	1077607		
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Chloride		419		12.5	250.0	159.5	104	80	120				
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Qualifiers:

* Value exceeds Maximum Contaminant Level.	B Analyte detected in the associated Method Blank	C Value is below Minimum Compound Limit.
E Value above quantitation range	H Holding times for preparation or analysis exceeded	J Analyte detected below quantitation limits
M Matrix Interference	ND Not Detected at the Reporting Limit	R RPD outside accepted recovery limits
RL Reporting Limit	S Spike Recovery outside accepted recovery limits	U Analyte not detected



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QC SUMMARY REPORT

WO#: 15060956
 08-Jul-15

Client: ICON Environmental Services
Project: Iberville Parish SB 9090-040-0100

BatchID: R44776

Sample ID	15060898-001AMS	SampType:	MS	TestCode:	9056_W	Units:	mg/L	Prep Date:		RunNo:	44776		
Client ID:	ZZZZZZ	Batch ID:	R44776	TestNo:	SW9056A			Analysis Date:	6/26/2015	SeqNo:	1077607		
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate		600		12.5	250.0	349.5	100	80	120				

Sample ID	15060898-001AMSD	SampType:	MSD	TestCode:	9056_W	Units:	mg/L	Prep Date:		RunNo:	44776		
Client ID:	ZZZZZZ	Batch ID:	R44776	TestNo:	SW9056A			Analysis Date:	6/26/2015	SeqNo:	1077608		
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride		419		12.5	250.0	159.5	104	80	120	418.8	0.13	15	
Sulfate		601		12.5	250.0	349.5	101	80	120	599.9	0.21	15	

Qualifiers:	* Value exceeds Maximum Contaminant Level.	B Analyte detected in the associated Method Blank	C Value is below Minimum Compound Limit.
	E Value above quantitation range	H Holding times for preparation or analysis exceeded	J Analyte detected below quantitation limits
	M Matrix Interference	ND Not Detected at the Reporting Limit	R RPD outside accepted recovery limits
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QC SUMMARY REPORT

WO#: 15060956
 08-Jul-15

Client: ICON Environmental Services
Project: Iberville Parish SB 9090-040-0100

BatchID: R44835

Sample ID	15060956-011ADUP	SampType:	dup	TestCode:	PMOIST	Units:	wt%	Prep Date:		RunNo:	44835		
Client ID:	SB-17 0-2	Batch ID:	R44835	TestNo:	LDNR 29-B			Analysis Date:	6/23/2015	SeqNo:	1079295		
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Percent Moisture		62.5		1.0						63.2	1.1	20	

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank	C	Value is below Minimum Compound Limit.
	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	M	Matrix Interference	ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits
	RL	Reporting Limit	S	Spike Recovery outside accepted recovery limits	U	Analyte not detected



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QC SUMMARY REPORT

WO#: **15060956**
08-Jul-15

Client: ICON Environmental Services
Project: Iberville Parish SB 9090-040-0100

BatchID: R44836

Sample ID 15060956-021ADUP	SampType: dup	TestCode: PMOIST	Units: wt%	Prep Date:	RunNo: 44836						
Client ID: SB-22 0-2	Batch ID: R44836	TestNo: LDNR 29-B		Analysis Date: 6/23/2015	SeqNo: 1079306						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Percent Moisture	58.2	1.0						57.1	1.8	20	

Qualifiers:	* Value exceeds Maximum Contaminant Level.	B Analyte detected in the associated Method Blank	C Value is below Minimum Compound Limit.
	E Value above quantitation range	H Holding times for preparation or analysis exceeded	J Analyte detected below quantitation limits
	M Matrix Interference	ND Not Detected at the Reporting Limit	R RPD outside accepted recovery limits
	RL Reporting Limit	S Spike Recovery outside accepted recovery limits	U Analyte not detected



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 Website: www.element.com

QC SUMMARY REPORT

WO#: 15060956
 08-Jul-15

Client: ICON Environmental Services
Project: Iberville Parish SB 9090-040-0100

BatchID: R44845

Sample ID MB-R44845	SampType: MBLK	TestCode: EC_S	Units: mmhos/cm	Prep Date:	RunNo: 44845						
Client ID: PBS	Batch ID: R44845	TestNo: LDNR 29-B		Analysis Date: 6/30/2015	SeqNo: 1079859						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Electrical Conductivity < 0.10 0.10

Sample ID R44845LCS1	SampType: LCS1	TestCode: EC_S	Units: mmhos/cm	Prep Date:	RunNo: 44845						
Client ID: ZZZZZZ	Batch ID: R44845	TestNo: LDNR 29-B		Analysis Date: 6/30/2015	SeqNo: 1079860						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Electrical Conductivity 0.49 0.10 0.47 0 104 89.87 110.12

Sample ID R44845LCS2	SampType: LCS2	TestCode: EC_S	Units: mmhos/cm	Prep Date:	RunNo: 44845						
Client ID: ZZZZZZ	Batch ID: R44845	TestNo: LDNR 29-B		Analysis Date: 6/30/2015	SeqNo: 1079861						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Electrical Conductivity 54.6 0.10 53.00 0 103 90 110

Sample ID 15060980-001ADUP	SampType: DUP	TestCode: EC_S	Units: mmhos/cm	Prep Date:	RunNo: 44845						
Client ID: ZZZZZZ	Batch ID: R44845	TestNo: LDNR 29-B		Analysis Date: 6/30/2015	SeqNo: 1079864						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Electrical Conductivity 0.34 0.10 0.31 12.0 20

Qualifiers:

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E Value above quantitation range	H Holding times for preparation or analysis exceeded	J Analyte detected below quantitation limits
M Matrix Interference	ND Not Detected at the Reporting Limit	R RPD outside accepted recovery limits
RL Reporting Limit	S Spike Recovery outside accepted recovery limits	U Analyte not detected



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QC SUMMARY REPORT

WO#: 15060956
 08-Jul-15

Client: ICON Environmental Services
Project: Iberville Parish SB 9090-040-0100

BatchID: R44845

Sample ID	15060956-011ADUP	SampType:	DUP	TestCode:	EC_S	Units:	mmhos/cm	Prep Date:		RunNo:	44845		
Client ID:	SB-17 0-2	Batch ID:	R44845	TestNo:	LDNR 29-B			Analysis Date:	6/30/2015	SeqNo:	1079876		
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Electrical Conductivity		3.39		0.10						3.77	10.6	20	

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank	C	Value is below Minimum Compound Limit.
	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	M	Matrix Interference	ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits
	RL	Reporting Limit	S	Spike Recovery outside accepted recovery limits	U	Analyte not detected



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QC SUMMARY REPORT

WO#: 15060956
 08-Jul-15

Client: ICON Environmental Services
Project: Iberville Parish SB 9090-040-0100

BatchID: R44886

Sample ID MB-R44886	SampType: MBLK	TestCode: EC_S	Units: mmhos/cm	Prep Date:	RunNo: 44886						
Client ID: PBS	Batch ID: R44886	TestNo: LDNR 29-B		Analysis Date: 7/1/2015	SeqNo: 1081142						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Electrical Conductivity < 0.10 0.10

Sample ID R44886LCS1	SampType: LCS1	TestCode: EC_S	Units: mmhos/cm	Prep Date:	RunNo: 44886						
Client ID: ZZZZZZ	Batch ID: R44886	TestNo: LDNR 29-B		Analysis Date: 7/1/2015	SeqNo: 1081143						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Electrical Conductivity 0.50 0.10 0.47 0 105 89.87 110.12

Sample ID R44886LCS2	SampType: LCS2	TestCode: EC_S	Units: mmhos/cm	Prep Date:	RunNo: 44886						
Client ID: ZZZZZZ	Batch ID: R44886	TestNo: LDNR 29-B		Analysis Date: 7/1/2015	SeqNo: 1081144						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Electrical Conductivity 54.4 0.10 53.00 0 103 90 110

Sample ID 15060956-021ADUP	SampType: DUP	TestCode: EC_S	Units: mmhos/cm	Prep Date:	RunNo: 44886						
Client ID: SB-22 0-2	Batch ID: R44886	TestNo: LDNR 29-B		Analysis Date: 7/1/2015	SeqNo: 1081147						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Electrical Conductivity 1.08 0.10 0.96 11.7 20

Qualifiers:

* Value exceeds Maximum Contaminant Level.	B Analyte detected in the associated Method Blank	C Value is below Minimum Compound Limit.
E Value above quantitation range	H Holding times for preparation or analysis exceeded	J Analyte detected below quantitation limits
M Matrix Interference	ND Not Detected at the Reporting Limit	R RPD outside accepted recovery limits
RL Reporting Limit	S Spike Recovery outside accepted recovery limits	U Analyte not detected



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QC SUMMARY REPORT

WO#: 15060956
 08-Jul-15

Client: ICON Environmental Services
Project: Iberville Parish SB 9090-040-0100

BatchID: R44888

Sample ID	MB-15717	SampType:	MBLK	TestCode:	6010-D	Units:	mg/L	Prep Date:	6/26/2015	RunNo:	44888		
Client ID:	PBW	Batch ID:	R44888	TestNo:	SW6010B			Analysis Date:	7/1/2015	SeqNo:	1081013		
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic		< 0.010		0.010									
Barium		< 0.010		0.010									
Cadmium		< 0.005		0.005									
Chromium		< 0.010		0.010									
Iron		< 0.010		0.010									
Lead		< 0.010		0.010									
Manganese		< 0.010		0.010									
Strontium		< 0.010		0.010									
Zinc		< 0.010		0.010									

Sample ID	LCS	SampType:	LCS	TestCode:	6010-D	Units:	mg/L	Prep Date:		RunNo:	44888		
Client ID:	LCSW	Batch ID:	R44888	TestNo:	SW6010B			Analysis Date:	7/1/2015	SeqNo:	1081014		
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic		0.510		0.010	0.500	0	102	80	120				
Barium		0.512		0.010	0.500	0	102	80	120				
Cadmium		0.505		0.005	0.500	0	101	80	120				
Chromium		0.511		0.010	0.500	0	102	80	120				
Iron		0.512		0.010	0.500	0	102	80	120				
Lead		0.502		0.010	0.500	0	100	80	120				
Manganese		0.511		0.010	0.500	0	102	80	120				
Strontium		0.509		0.010	0.500	0	102	80	120				
Zinc		0.509		0.010	0.500	0	102	80	120				

Qualifiers:	* Value exceeds Maximum Contaminant Level.	B Analyte detected in the associated Method Blank	C Value is below Minimum Compound Limit.
	E Value above quantitation range	H Holding times for preparation or analysis exceeded	J Analyte detected below quantitation limits
	M Matrix Interference	ND Not Detected at the Reporting Limit	R RPD outside accepted recovery limits
	RL Reporting Limit	S Spike Recovery outside accepted recovery limits	U Analyte not detected



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QC SUMMARY REPORT

WO#: 15060956
 08-Jul-15

Client: ICON Environmental Services
Project: Iberville Parish SB 9090-040-0100

BatchID: R44888

Sample ID	LCSD	SampType:	LCSD	TestCode:	6010-D	Units:	mg/L	Prep Date:	RunNo:	44888		
Client ID:	LCSS02	Batch ID:	R44888	TestNo:	SW6010B	Analysis Date:	7/1/2015	SeqNo:	1081015			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual	
Arsenic	0.505	0.010	0.500	0	101	80	120	0.510	0.984	20		
Barium	0.508	0.010	0.500	0	102	80	120	0.512	0.824	20		
Cadmium	0.501	0.005	0.500	0	100	80	120	0.505	0.795	20		
Chromium	0.508	0.010	0.500	0	102	80	120	0.511	0.629	20		
Iron	0.509	0.010	0.500	0	102	80	120	0.512	0.607	20		
Lead	0.506	0.010	0.500	0	101	80	120	0.502	0.635	20		
Manganese	0.507	0.010	0.500	0	101	80	120	0.511	0.746	20		
Strontium	0.510	0.010	0.500	0	102	80	120	0.509	0.177	20		
Zinc	0.506	0.010	0.500	0	101	80	120	0.509	0.552	20		

Sample ID	15060956-028DMS	SampType:	MS	TestCode:	6010-D	Units:	mg/L	Prep Date:	RunNo:	44888		
Client ID:	SB-16	Batch ID:	R44888	TestNo:	SW6010B	Analysis Date:	7/1/2015	SeqNo:	1081017			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual	
Arsenic	0.596	0.010	0.500	0.060	107	75	125					
Barium	1.35	0.010	0.500	0.848	100	75	125					
Cadmium	0.514	0.005	0.500	0.002	103	75	125					
Chromium	0.512	0.010	0.500	0	102	75	125					
Lead	0.504	0.010	0.500	0	101	75	125					
Manganese	0.931	0.010	0.500	0.424	101	75	125					
Zinc	0.529	0.010	0.500	0	106	75	125					

Qualifiers:

* Value exceeds Maximum Contaminant Level.	B Analyte detected in the associated Method Blank	C Value is below Minimum Compound Limit.
E Value above quantitation range	H Holding times for preparation or analysis exceeded	J Analyte detected below quantitation limits
M Matrix Interference	ND Not Detected at the Reporting Limit	R RPD outside accepted recovery limits
RL Reporting Limit	S Spike Recovery outside accepted recovery limits	U Analyte not detected



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QC SUMMARY REPORT

WO#: 15060956
 08-Jul-15

Client: ICON Environmental Services
Project: Iberville Parish SB 9090-040-0100

BatchID: R44888

Sample ID	15060956-028DMSD	SampType:	MSD	TestCode:	6010-D	Units:	mg/L	Prep Date:		RunNo:	44888
Client ID:	SB-16	Batch ID:	R44888	TestNo:	SW6010B			Analysis Date:	7/1/2015	SeqNo:	1081020
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	0.593	0.010	0.500	0.060	107	75	125	0.596	0.387	20	
Barium	1.35	0.010	0.500	0.848	100	75	125	1.348	0.148	20	
Cadmium	0.513	0.005	0.500	0.002	102	75	125	0.514	0.234	20	
Chromium	0.513	0.010	0.500	0	103	75	125	0.512	0.117	20	
Lead	0.505	0.010	0.500	0	101	75	125	0.504	0.079	20	
Manganese	0.933	0.010	0.500	0.424	102	75	125	0.931	0.215	20	
Zinc	0.531	0.010	0.500	0	106	75	125	0.529	0.302	20	

Sample ID	15060956-028DMS	SampType:	MS	TestCode:	6010-D	Units:	mg/L	Prep Date:		RunNo:	44888
Client ID:	SB-16	Batch ID:	R44888	TestNo:	SW6010B			Analysis Date:	7/1/2015	SeqNo:	1081022
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	13.4	0.100	0.500	13.02	74.0	75	125				S
Strontium	2.13	0.100	0.500	1.638	98.6	75	125				

Sample ID	15060956-028DMSD	SampType:	MSD	TestCode:	6010-D	Units:	mg/L	Prep Date:		RunNo:	44888
Client ID:	SB-16	Batch ID:	R44888	TestNo:	SW6010B			Analysis Date:	7/1/2015	SeqNo:	1081023
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	13.3	0.100	0.500	13.02	60.0	75	125	13.39	0.524	20	S
Strontium	2.14	0.100	0.500	1.638	99.8	75	125	2.131	0.281	20	

NOTES:

S - Spike recovery outside of recovery limits due to dilution. The method is in control as indicated by the laboratory control sample(s).

Qualifiers:	* Value exceeds Maximum Contaminant Level.	B Analyte detected in the associated Method Blank	C Value is below Minimum Compound Limit.
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QC SUMMARY REPORT

WO#: 15060956
 08-Jul-15

Client: ICON Environmental Services
Project: Iberville Parish SB 9090-040-0100

BatchID: R44976

Sample ID	MBLK	SampType:	MBLK	TestCode:	9056_LEACH	Units:	mg/L	Prep Date:		RunNo:	44976		
Client ID:	PBW	Batch ID:	R44976	TestNo:	SW9056A			Analysis Date:	7/6/2015	SeqNo:	1086733		
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride		< 0.25		0.25									

Sample ID	LCS	SampType:	LCS	TestCode:	9056_LEACH	Units:	mg/L	Prep Date:		RunNo:	44976		
Client ID:	LCSW	Batch ID:	R44976	TestNo:	SW9056A			Analysis Date:	7/6/2015	SeqNo:	1086734		
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride		10.6		0.25	10.00	0	106	80	120				

Sample ID	LCSD	SampType:	LCSD	TestCode:	9056_LEACH	Units:	mg/L	Prep Date:		RunNo:	44976		
Client ID:	LCSS02	Batch ID:	R44976	TestNo:	SW9056A			Analysis Date:	7/6/2015	SeqNo:	1086735		
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride		9.97		0.25	10.00	0	99.7	80	120	10.60	6.21	15	

Sample ID	15060956-001AMS	SampType:	MS	TestCode:	9056_LEACH	Units:	mg/L	Prep Date:		RunNo:	44976		
Client ID:	SB-15 0-2	Batch ID:	R44976	TestNo:	SW9056A			Analysis Date:	7/6/2015	SeqNo:	1086737		
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride		77.2		2.50	50.00	34.98	84.4	80	120				

Qualifiers:

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E Value above quantitation range	H Holding times for preparation or analysis exceeded	J Analyte detected below quantitation limits
M Matrix Interference	ND Not Detected at the Reporting Limit	R RPD outside accepted recovery limits
RL Reporting Limit	S Spike Recovery outside accepted recovery limits	U Analyte not detected



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QC SUMMARY REPORT

WO#: 15060956
 08-Jul-15

Client: ICON Environmental Services
Project: Iberville Parish SB 9090-040-0100

BatchID: R44976

Sample ID	15060956-001AMSD	SampType:	MSD	TestCode:	9056_LEACH	Units:	mg/L	Prep Date:		RunNo:	44976
Client ID:	SB-15 0-2	Batch ID:	R44976	TestNo:	SW9056A			Analysis Date:	7/6/2015	SeqNo:	1086738
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	77.4	2.50	50.00	34.98	84.8	80	120	77.18	0.23	15	

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank	C	Value is below Minimum Compound Limit.
	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	M	Matrix Interference	ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits
	RL	Reporting Limit	S	Spike Recovery outside accepted recovery limits	U	Analyte not detected



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Sample Log-In Check List

Client Name: **ICON_ENV**

Work Order Number: **15060956**

RcptNo: **1**

Logged by: **Heather Delay** **6/22/2015 5:00:00 PM**

Heather Delay

Completed By: **Heather Delay** **6/23/2015 8:01:45 AM**

Heather Delay

Reviewed By: **Caitlin Duplantis** **6/25/2015 11:57:47 AM**

Caitlin Duplantis

Chain of Custody

1. Is Chain of Custody complete? Yes No Not Present
 2. How was the sample delivered? Client

Log In

3. Coolers are present? Yes No NA
 4. Shipping container/cooler in good condition? Yes No
 Custody seals intact on shipping container/cooler? Yes No Not Present
 No. Seal Date: Signed By:
 5. Was an attempt made to cool the samples? Yes No NA
 6. Were all samples received at a temperature of >0° C to 6.0°C Yes No NA
 7. Sample(s) in proper container(s)? Yes No
 8. Sufficient sample volume for indicated test(s)? Yes No
 9. Are samples (except VOA and ONG) properly preserved? Yes No
 10. Was preservative added to bottles? Yes No NA
 11. Is the headspace in the VOA vials less than 1/4 inch or 6 mm? Yes No No VOA Vials
 12. Were any sample containers received broken? Yes No
 13. Does paperwork match bottle labels? Yes No
 (Note discrepancies on chain of custody)
 14. Are matrices correctly identified on Chain of Custody? Yes No
 15. Is it clear what analyses were requested? Yes No
 16. Were all holding times able to be met? Yes No
 (If no, notify customer for authorization.)

Special Handling (if applicable)

17. Was client notified of all discrepancies with this order? Yes No NA

Person Notified:	<input type="text"/>	Date	<input type="text"/>
By Whom:	<input type="text"/>	Via:	<input type="checkbox"/> eMail <input type="checkbox"/> Phone <input type="checkbox"/> Fax <input type="checkbox"/> In Person
Regarding:	<input type="text"/>		
Client Instructions:	<input type="text"/>		

18. Additional remarks:
 Improper error correction(s) made by client

Cooler Information

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	5.3	Good	Not Present			



Chain of Custody

Laboratory Number: 150000950

Client Information: **Turn** Billing Information: PO Number: **Theraville SB** Project Name/Number: **9090-040-0100** Page 2 of 4
 Matrix Code
 DW = Drinking Water
 WW = Waste Water
 GW = Ground Water
 AD = Aqueous
 OT = Other
 SL = Sludge SOL = Solid
 O = Oil SO = Soil
 F = Food SW = Swab
 NG = Natural Gas
 NGL = Natural Gas Liquid
 PW = Produced Water
 CF = Completion Fluid

Company Name: **Turn** Contact Name: **Turn** Address: **Turn** City, State Zip: **Turn** Phone Number: **Turn** Fax Number: **Turn** E-mail Address: **Turn**

Required QC Level: Yes No Bill Monthly: Yes No Shipping Method: **UPS / FedEx / Airborne** DHL / Element / Hand / Mail

Sample ID/Description	Which Regulations Apply: <input type="checkbox"/> RCRA <input type="checkbox"/> POTW <input type="checkbox"/> NPDES <input type="checkbox"/> USDA/FDA <input checked="" type="checkbox"/> RECAP/IRIS <input type="checkbox"/> Other	Turn Time <input checked="" type="checkbox"/> Standard RUSH <input type="checkbox"/> 1 Day <input type="checkbox"/> 2 Day <input type="checkbox"/> Other	Collection Information		Matrix	Quantity	Container Type P=Plastic, V=Vial	Pres. HCL, HNO ₃ , H ₂ SO ₄ , NaOH, Na ₂ S ₂ O ₈	Requested Tests	Comments
			Date	Time						
SB-16	78-30	6-15-15	1655	G	1	P			298 Metals 1/2 Moisture	
SB-17	0-2	6-16-15	1500	Comp						
SB-17	2-4		1505							
SB-18	0-2		1530							
SB-18	2-4		1535							
SB-19	0-2		1600							
SB-19	2-4		1605							
SB-20	0-2	6-17-15	1320							
SB-20	2-4		1305							

Relinquished by	Date/Time	Received by	Date/Time
<i>[Signature]</i>	6-22-15 1700	<i>[Signature]</i>	6-22-15 1900
<i>[Signature]</i>	6-22-15 1700	<i>[Signature]</i>	6-22-15 1900

Field Notes: Received at lab on ice? Yes No Temp: Yes No

All samples submitted to Element Materials Technology for analysis are accepted on a custodial basis only. Ownership of the material remains with the client submitting the samples. Element Materials Technology reserves the right to return unused sample portions.

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629 Washington St. Suite 300
 Columbus, IN 47201-6231 USA
 P 812-375-6531 F 812-375-0731

2121 East Washington Boulevard
 Fort Wayne, IN 46803-1326 USA
 P 260-471-7000 F 260-471-7777

568 South Zimmer Road
 Warsaw, IN 46580-2368 USA
 P 574-267-3305 F 574-269-6569

3371 Cleveland Road, Suite 100A
 South Bend, IN 46628-9780 USA
 P 574-277-0707 F 574-273-5899

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Chain of Custody

Laboratory Number: 15000950

Page 3 of 4
Matrix Code
 DW = Drinking Water
 WW = Waste Water
 GW = Ground Water
 AQ = Aqueous
 SL = Sludge SOL = Solid
 O = Oil SO = Soil
 F = Food SW = Swab
 NG = Natural Gas
 NGL = Natural Gas Liquid
 PW = Produced Water
 CF = Completion Fluid

Project Name/Number:
 Iberville Parish SP
 9290-040-0100
 Sampler's Signature:
 [Signature]
 Shipping Method:
 UPS / FedEx / Airborne
 DHL / Element / Hand / Mail

PO Number:
 Quote Number:
 Required QC Level:
 Bill Monthly:
 Yes
 No

Ext:
 Ext:

City, State, Zip:
 Phone Number:
 Fax Number:
 E-mail Address:

Client Information:
 Billing Information:
 Turn Time:
 Standard
 RUSH
 1 Day
 2 Day
 Other

Which Regulations Apply:
 RCRA
 POTW
 NPDES
 USDA/FDA
 RECAP/ISC
 Drinking Water
 Distribution
 Special
 State
 Other

Sample ID/Description	Turn Time	Collection Information	Container	Pres.	Requested Tests	Comments						
							Date	Time	Matrix	Quantity	Type	G=Glass, V=Vial
5b-21	0-2	6-17-15 1310	2	1	CEC							
5b-21	2-4	6-17-15 1315	1	1	CEC							
5b-22	0-2	6-19-15 900	1	1	CEC							
5b-23	0-2	6-19-15 905	1	1	CEC							
5b-23	4-6	10-12 1100	1	1	CEC							
5b-23	10-12	1100	1	1	CEC							
5b-23	22-24	1440	1	1	CEC							
5b-23	31-34		1	1	CEC							

Relinquished by	Date/Time	Received by	Date/Time	Field Notes:
[Signature]	6-22-15 1530	[Signature]	6-22-15 1700	Received at lab on ice?
[Signature]	6-22-15 1700	[Signature]	6-22-15 1700	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No Temp:

All samples submitted to Element Materials Technology for analysis are accepted on a custodial basis only. Ownership of the material remains with the client submitting the samples. Element Materials Technology reserves the right to return unused sample portions.

9301 Innovation Drive, Suite 115
 Daleville, IN
 47334-0569 USA
 P 765-378-4103
 F 765-378-4109

629 Washington St. Suite 300
 Columbus, IN
 47201-6231 USA
 P 812-375-0331
 F 812-375-0731

2121 East Washington Boulevard
 Fort Wayne, IN
 46803-1326 USA
 P 260-471-7000
 F 260-471-7777

560 South Zimmer Road
 Warsaw, IN
 46680-2368 USA
 P 574-267-3305
 F 574-269-6599

3371 Cleveland Road, Suite 100A
 South Bend, IN
 46626-9780 USA
 P 574-277-0707
 F 574-273-5699

2417 W. Pinhook Rd
 Lafayette, LA
 70508-3544 USA
 P 337-235-0483
 F 337-233-6540



Chain of Custody

Laboratory Number: 15000050

Client Information:
 Company Name: Jean
 Contact Name:
 Address:
 City, State Zip:
 Phone Number:
 Fax Number:
 E-mail Address:

Billing Information:
 PO Number:
 Quote Number:
 Required QC Level
 Bill Monthly
 Yes
 No
 Ext:

Project Name/Number: 9990-040-0100
 Matrix Code
 DW = Drinking Water
 WW = Waste Water
 GW = Ground Water
 AQ = Aqueous
 OT = Other
 O = Oil
 F = Food
 NG = Natural Gas
 PW = Produced Water
 CF = Completion Fluid
 SOL = Solid
 SO = Soil
 SW = Swab
 NGL = Natural Gas Liquid
 UPS / FedEx / Airborne
 DHL / Element / Hand / Mail

Page 4 of 4

Sample ID/Description	Which Regulations Apply:		Turn Time	Rush turn times will incur a surcharge and must be pre-approved by lab.)	Container	Pres.	Requested Tests	Comments
	<input type="checkbox"/> RCRA	<input type="checkbox"/> POTW						
	Date	Time	Collection Information					
	Grab / Composite	Matrix						
SB-16	6-17-15	12:15	G	AQ	7	P, G, V	Cations Anions Total Metals Dissolved Metals Chlorides TDS TPH TPH 6/BTEX	Metals As Ba Cd Cr Fe Mn Pb Sr Zn Hg Cations Na K Mg Ca Anions Sulfate Alk Carbonate Alk Bicarbonate

Relinquished by	Date/Time	Received by	Date/Time	Field Notes:
<i>[Signature]</i>	6-22-15 05:30	<i>[Signature]</i>	6-22-15 15:30	Received at lab on ice? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No Temp: 5.3C
<i>[Signature]</i>	6-22-15 17:00	<i>[Signature]</i>	6-22-15 17:00	

All samples submitted to Element Materials Technology for analysis are accepted on a custodial basis only. Ownership of the material remains with the client submitting the samples. Element Materials Technology reserves the right to return unused sample portions.

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 Fort Wayne, IN 46803-1328 USA
 P 260-471-7000 F 260-471-7777

560 South Zimmer Road
 Warsaw, IN 46580-2368 USA
 P 574-267-3305 F 574-269-5565

3371 Cleveland Road, Suite 100A
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 P 574-277-6707 F 574-273-5695

2417 W. Pintook Rd
 Lafayette, LA 70508-3344 USA
 P 337-235-0483 F 337-233-6550



Element Materials Technology Lafayette
2417 W. Pinhook Road
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TEL: (337) 235-0483 FAX: (337) 233-6540
Website: www.element.com

July 15, 2015

Greg Miller
ICON Environmental Services
2049 Commercial Drive
Port Allen, LA 70767
TEL: (225) 344-8490
FAX (225) 344-6654

RE: IPSB 9090-040-0100

Order No.: 15061318

Dear Greg Miller:

Element Materials Technology Lafayette, LLC received 18 sample(s) on 6/30/2015 for the analyses presented in the following report.

In accordance with your instructions Element Lafayette conducted the analysis shown on the following pages on samples submitted by your company. The results related only to the items tested. Unless otherwise noted, all analyses were conducted using EPA approved methodologies and all test results meet all requirements of TNI. All relevant sampling information is on the attached Chain-of-Custody form.

All soil data, except for 29-B, are on a wet-weight basis unless otherwise indicated in the units field as -dry.

LELAP Certification No.: 01997. TCEQ Certification No.: T104704261-14-6. A scope of accredited parameters is available upon request. A "#" by the test method or analyte indicates this parameter is outside the scope of accreditation.

Estimated uncertainty is available upon request. This report shall not be reproduced except in full, without the written approval of the laboratory.

If you have any questions regarding these test results, please feel free to call.

A handwritten signature in blue ink, appearing to read 'Cristina Thibeaux'.

Cristina Thibeaux
Customer Service Supervisor
2417 W. Pinhook Road
Lafayette, LA 70508-3344



Element Materials Technology Lafayette
2417 W. Pinhook Road
Lafayette, LA 70508-3344
TEL: (337) 235-0483 FAX: (337) 233-6540
Website: www.element.com

Case Narrative

WO#: 15061318
Date: 7/15/2015

CLIENT: ICON Environmental Services
Project: IPSB 9090-040-0100

Unless specified by the client, a duplicate or MS/MSD, wherever applicable, is randomly selected and analyzed from each analytical batch provided sample volume is sufficient. The sample chosen for duplicate or MS/MSD may or may not be a sample submitted in this workorder. A method blank and/or a lab control sample (LCS)/lab control sample duplicate (LCSD), wherever applicable, are processed as a quality control check for each analytical batch. When the matrix QC data is not available due to insufficient sample volume or when the results indicate possible matrix effect, the validity of the batch is determined by the method blank and LCS/LCSD.

The results of the laboratory internal quality control data are provided in the QC Summary Report section of the report for your review. Laboratory-related QC exceptions that may impact the validity of data are discussed in the case narrative. Sample-related QC exceptions are flagged either in the results page(s) or in the QC report page(s). End users should consider QC exceptions when evaluating sample data against data quality objectives.

Any other exceptions associated with this report will be footnoted in the results page(s) or the QC summary page(s).

Due to limited sample, the following Lab IDs were prepared for Leachate Chloride, using less than 100g of the soil (dry wt basis). The amount of the extraction fluid was proportionally reduced to yield a 1:4 sample to fluid ratio.

15061318-001A - Insufficient volume for chloride leachate, used 65.0g
15061318-002A - Insufficient volume for chloride leachate, used 65.0g
15061318-007A - Insufficient volume for chloride leachate, used 73.0g
15061318-013A - Insufficient volume for chloride leachate, used 43.0g
15061318-014A - Insufficient volume for chloride leachate, used 39.0g
15061318-015A - Insufficient volume for chloride leachate, used 47.0g
15061318-016A - Insufficient volume for chloride leachate, used 70.0g



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 Lafayette, LA 70508-3344
 TEL: (337) 235-0483 FAX: (337) 233-6540
 Website: www.element.com

Analytical Report

(consolidated)

WO#: **15061318**

Date Reported: **7/15/2015**

CLIENT: ICON Environmental Services

Collection Date: 6/22/2015 3:30:00 PM

Project: IPSB 9090-040-0100

Lab ID: 15061318-001

Matrix: SOIL

Client Sample ID SB-24 0-2

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
29B SALTS						
CATION EXCHANGE CAPACITY						
Cation Exchange Capacity	73.1	0.1		meq/100g	1	7/14/2015 1:18:00 PM
29B SALTS						
ELECTRICAL CONDUCTIVITY @ SATURATION						
Electrical Conductivity	2.58	0.10		mmhos/cm	1	7/7/2015 2:03:00 PM
29B SALTS						
EXCHANGEABLE SODIUM PERCENTAGE						
Exchangeable Sodium %	10.7	0.1		%	1	7/14/2015 1:18:00 PM
PERCENT MOISTURE						
Percent Moisture	31.7	1.0		wt%	1	6/30/2015 4:35:00 PM
29B SALTS						
SODIUM ADSORPTION RATIO						
Sodium Adsorption Ratio	17.2	0.100	*		1	7/7/2015
Soluble Calcium	2.03	1.00		meq/L	1	7/7/2015
Soluble Magnesium	1.06	1.00		meq/L	1	7/7/2015
Soluble Sodium	21.4	1.00		meq/L	1	7/7/2015
29B METALS						
MERCURY IN SOIL OR SLUDGE						
Mercury	< 0.10	0.10		mg/Kg-dry	1	7/6/2015 10:50:34 AM
INORGANIC ANIONS IN LEACHATE BY IC						
Chloride	137	2.50		mg/L	10	7/14/2015 11:25:04 AM
29B METALS						
METALS IN SOIL OR SLUDGE BY ICP						
Arsenic	5.46	0.99		mg/Kg-dry	1	7/8/2015 4:11:05 PM
Barium	457	0.99		mg/Kg-dry	1	7/8/2015 4:11:05 PM

Qualifiers:

- | | |
|--|---|
| * Value exceeds Maximum Contaminant Level. | B Analyte detected in the associated Method Blank |
| C Value is below Minimum Compound Limit. | E Value above quantitation range |
| H Holding times for preparation or analysis exceeded | J Analyte detected below quantitation limits |
| M Matrix Interference | ND Not Detected at the Reporting Limit |
| R RPD outside accepted recovery limits | RL Reporting Limit |
| S Spike Recovery outside accepted recovery limits | U Analyte not detected |



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Analytical Report

(consolidated)

WO#: **15061318**

Date Reported: **7/15/2015**

CLIENT: ICON Environmental Services

Collection Date: 6/22/2015 3:30:00 PM

Project: IPSB 9090-040-0100

Lab ID: 15061318-001

Matrix: SOIL

Client Sample ID SB-24 0-2

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
29B METALS					SW6010B	SW3050B
METALS IN SOIL OR SLUDGE BY ICP						Analyst: STS
Cadmium	0.50	0.50		mg/Kg-dry	1	7/8/2015 4:11:05 PM
Chromium	21.3	0.99		mg/Kg-dry	1	7/8/2015 4:11:05 PM
Lead	18.9	0.99		mg/Kg-dry	1	7/8/2015 4:11:05 PM
Selenium	< 1.99	1.99		mg/Kg-dry	1	7/8/2015 4:11:05 PM
Strontium	73.3	0.99		mg/Kg-dry	1	7/8/2015 4:11:05 PM
Zinc	79.9	0.99		mg/Kg-dry	1	7/8/2015 4:11:05 PM
29B METALS					LDNR 29-B	Analyst: STS
TRUE TOTAL BARIUM						
True Total Barium	2,620	47		mg/Kg-dry	1	7/8/2015 10:50:25 PM

Qualifiers:

- | | |
|--|---|
| * Value exceeds Maximum Contaminant Level. | B Analyte detected in the associated Method Blank |
| C Value is below Minimum Compound Limit. | E Value above quantitation range |
| H Holding times for preparation or analysis exceeded | J Analyte detected below quantitation limits |
| M Matrix Interference | ND Not Detected at the Reporting Limit |
| R RPD outside accepted recovery limits | RL Reporting Limit |
| S Spike Recovery outside accepted recovery limits | U Analyte not detected |



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Analytical Report

(consolidated)

WO#: **15061318**

Date Reported: **7/15/2015**

CLIENT: ICON Environmental Services

Collection Date: 6/22/2015 3:40:00 PM

Project: IPSB 9090-040-0100

Lab ID: 15061318-002

Matrix: SOIL

Client Sample ID SB-24 4-6

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
29B SALTS					LDNR 29-B	LDNR 29-B Analyst: MMT
CATION EXCHANGE CAPACITY						
Cation Exchange Capacity	55.8	0.1		meq/100g	1	7/14/2015 1:18:00 PM
29B SALTS					LDNR 29-B	Analyst: MXF
ELECTRICAL CONDUCTIVITY @ SATURATION						
Electrical Conductivity	2.51	0.10		mmhos/cm	1	7/7/2015 2:03:00 PM
29B SALTS					LDNR 29-B	LDNR 29-B Analyst: MMT
EXCHANGEABLE SODIUM PERCENTAGE						
Exchangeable Sodium %	7.6	0.1		%	1	7/14/2015 1:18:00 PM
PERCENT MOISTURE					LDNR 29-B	Analyst: MMT
Percent Moisture	22.4	1.0		wt%	1	6/30/2015 4:35:00 PM
29B SALTS					LDNR 29-B	LDNR 29-B Analyst: STS
SODIUM ADSORPTION RATIO						
Sodium Adsorption Ratio	8.18	0.100			1	7/7/2015
Soluble Calcium	5.03	1.00		meq/L	1	7/7/2015
Soluble Magnesium	2.61	1.00		meq/L	1	7/7/2015
Soluble Sodium	16.0	1.00		meq/L	1	7/7/2015
29B METALS					29B/SW7471A	SW7471A Analyst: BAS
MERCURY IN SOIL OR SLUDGE						
Mercury	< 0.10	0.10		mg/Kg-dry	1	7/6/2015 10:53:12 AM
INORGANIC ANIONS IN LEACHATE BY IC					SW9056A	Analyst: SGP
Chloride	235	5.00		mg/L	20	7/14/2015 12:06:16 PM
29B METALS					SW6010B	SW3050B Analyst: STS
METALS IN SOIL OR SLUDGE BY ICP						
Arsenic	4.63	1.00		mg/Kg-dry	1	7/8/2015 4:14:39 PM
Barium	196	1.00		mg/Kg-dry	1	7/8/2015 4:14:39 PM

Qualifiers:

- | | |
|--|---|
| * Value exceeds Maximum Contaminant Level. | B Analyte detected in the associated Method Blank |
| C Value is below Minimum Compound Limit. | E Value above quantitation range |
| H Holding times for preparation or analysis exceeded | J Analyte detected below quantitation limits |
| M Matrix Interference | ND Not Detected at the Reporting Limit |
| R RPD outside accepted recovery limits | RL Reporting Limit |
| S Spike Recovery outside accepted recovery limits | U Analyte not detected |



Element Materials Technology Lafayette
 2417 W. Pinhook Road
 Lafayette, LA 70508-3344
 TEL: (337) 235-0483 FAX: (337) 233-6540
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Analytical Report

(consolidated)

WO#: **15061318**

Date Reported: **7/15/2015**

CLIENT: ICON Environmental Services

Collection Date: 6/22/2015 3:40:00 PM

Project: IPSB 9090-040-0100

Lab ID: 15061318-002

Matrix: SOIL

Client Sample ID SB-24 4-6

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
29B METALS					SW6010B	SW3050B
METALS IN SOIL OR SLUDGE BY ICP						Analyst: STS
Cadmium	< 0.50	0.50		mg/Kg-dry	1	7/8/2015 4:14:39 PM
Chromium	19.3	1.00		mg/Kg-dry	1	7/8/2015 4:14:39 PM
Lead	15.3	1.00		mg/Kg-dry	1	7/8/2015 4:14:39 PM
Selenium	< 1.99	1.99		mg/Kg-dry	1	7/8/2015 4:14:39 PM
Strontium	40.9	1.00		mg/Kg-dry	1	7/8/2015 4:14:39 PM
Zinc	62.5	1.00		mg/Kg-dry	1	7/8/2015 4:14:39 PM
29B METALS					LDNR 29-B	Analyst: STS
TRUE TOTAL BARIUM						
True Total Barium	339	46		mg/Kg-dry	1	7/8/2015 11:02:50 PM

Qualifiers:

- | | |
|--|---|
| * Value exceeds Maximum Contaminant Level. | B Analyte detected in the associated Method Blank |
| C Value is below Minimum Compound Limit. | E Value above quantitation range |
| H Holding times for preparation or analysis exceeded | J Analyte detected below quantitation limits |
| M Matrix Interference | ND Not Detected at the Reporting Limit |
| R RPD outside accepted recovery limits | RL Reporting Limit |
| S Spike Recovery outside accepted recovery limits | U Analyte not detected |



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Analytical Report

(consolidated)

WO#: **15061318**

Date Reported: **7/15/2015**

CLIENT: ICON Environmental Services

Collection Date: 6/22/2015 3:50:00 PM

Project: IPSB 9090-040-0100

Lab ID: 15061318-003

Matrix: SOIL

Client Sample ID SB-24 8-10

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
29B SALTS						
CATION EXCHANGE CAPACITY						
Cation Exchange Capacity	28.8	0.1		meq/100g	1	7/14/2015 1:18:00 PM
29B SALTS						
ELECTRICAL CONDUCTIVITY @ SATURATION						
Electrical Conductivity	3.44	0.10		mmhos/cm	1	7/7/2015 2:03:00 PM
29B SALTS						
EXCHANGEABLE SODIUM PERCENTAGE						
Exchangeable Sodium %	3.3	0.1		%	1	7/14/2015 1:18:00 PM
PERCENT MOISTURE						
Percent Moisture	22.3	1.0		wt%	1	6/30/2015 4:35:00 PM
29B SALTS						
SODIUM ADSORPTION RATIO						
Sodium Adsorption Ratio	5.38	0.100			1	7/7/2015
Soluble Calcium	12.2	1.00		meq/L	1	7/7/2015
Soluble Magnesium	6.31	1.00		meq/L	1	7/7/2015
Soluble Sodium	16.4	1.00		meq/L	1	7/7/2015
29B METALS						
MERCURY IN SOIL OR SLUDGE						
Mercury	< 0.10	0.10		mg/Kg-dry	1	7/6/2015 10:55:33 AM
INORGANIC ANIONS IN LEACHATE BY IC						
Chloride	128	2.50		mg/L	10	7/14/2015 12:20:00 PM
29B METALS						
METALS IN SOIL OR SLUDGE BY ICP						
Arsenic	4.16	1.00		mg/Kg-dry	1	7/8/2015 4:25:26 PM
Barium	190	1.00		mg/Kg-dry	1	7/8/2015 4:25:26 PM

Qualifiers:

- | | |
|--|---|
| * Value exceeds Maximum Contaminant Level. | B Analyte detected in the associated Method Blank |
| C Value is below Minimum Compound Limit. | E Value above quantitation range |
| H Holding times for preparation or analysis exceeded | J Analyte detected below quantitation limits |
| M Matrix Interference | ND Not Detected at the Reporting Limit |
| R RPD outside accepted recovery limits | RL Reporting Limit |
| S Spike Recovery outside accepted recovery limits | U Analyte not detected |



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Analytical Report

(consolidated)

WO#: **15061318**

Date Reported: **7/15/2015**

CLIENT: ICON Environmental Services

Collection Date: 6/22/2015 3:50:00 PM

Project: IPSB 9090-040-0100

Lab ID: 15061318-003

Matrix: SOIL

Client Sample ID SB-24 8-10

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
29B METALS					SW6010B	SW3050B
METALS IN SOIL OR SLUDGE BY ICP						Analyst: STS
Cadmium	< 0.50	0.50		mg/Kg-dry	1	7/8/2015 4:25:26 PM
Chromium	12.2	1.00		mg/Kg-dry	1	7/8/2015 4:25:26 PM
Lead	10.9	1.00		mg/Kg-dry	1	7/8/2015 4:25:26 PM
Selenium	< 1.99	1.99		mg/Kg-dry	1	7/8/2015 4:25:26 PM
Strontium	35.8	1.00		mg/Kg-dry	1	7/8/2015 4:25:26 PM
Zinc	48.4	1.00		mg/Kg-dry	1	7/8/2015 4:25:26 PM
29B METALS					LDNR 29-B	Analyst: STS
TRUE TOTAL BARIUM						
True Total Barium	311	46		mg/Kg-dry	1	7/8/2015 11:07:00 PM

Qualifiers:

- | | |
|--|---|
| * Value exceeds Maximum Contaminant Level. | B Analyte detected in the associated Method Blank |
| C Value is below Minimum Compound Limit. | E Value above quantitation range |
| H Holding times for preparation or analysis exceeded | J Analyte detected below quantitation limits |
| M Matrix Interference | ND Not Detected at the Reporting Limit |
| R RPD outside accepted recovery limits | RL Reporting Limit |
| S Spike Recovery outside accepted recovery limits | U Analyte not detected |



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Analytical Report

(consolidated)

WO#: **15061318**

Date Reported: **7/15/2015**

CLIENT: ICON Environmental Services

Collection Date: 6/22/2015 4:00:00 PM

Project: IPSB 9090-040-0100

Lab ID: 15061318-004

Matrix: SOIL

Client Sample ID SB-24 14-16

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
ELECTRICAL CONDUCTIVITY @ SATURATION				LDNR 29-B		Analyst: MXF
Electrical Conductivity	2.09	0.10		mmhos/cm	1	7/7/2015 2:03:00 PM
PERCENT MOISTURE				LDNR 29-B		Analyst: MMT
Percent Moisture	25.3	1.0		wt%	1	6/30/2015 4:35:00 PM

Qualifiers:

- | | |
|--|---|
| * Value exceeds Maximum Contaminant Level. | B Analyte detected in the associated Method Blank |
| C Value is below Minimum Compound Limit. | E Value above quantitation range |
| H Holding times for preparation or analysis exceeded | J Analyte detected below quantitation limits |
| M Matrix Interference | ND Not Detected at the Reporting Limit |
| R RPD outside accepted recovery limits | RL Reporting Limit |
| S Spike Recovery outside accepted recovery limits | U Analyte not detected |



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Analytical Report

(consolidated)

WO#: **15061318**

Date Reported: **7/15/2015**

CLIENT: ICON Environmental Services

Collection Date: 6/22/2015 4:05:00 PM

Project: IPSB 9090-040-0100

Lab ID: 15061318-005

Matrix: SOIL

Client Sample ID SB-24 20-22

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
ELECTRICAL CONDUCTIVITY @ SATURATION				LDNR 29-B		Analyst: MXF
Electrical Conductivity	1.14	0.10		mmhos/cm	1	7/7/2015 2:03:00 PM
PERCENT MOISTURE				LDNR 29-B		Analyst: MMT
Percent Moisture	24.4	1.0		wt%	1	6/30/2015 4:35:00 PM

Qualifiers:

- | | |
|--|---|
| * Value exceeds Maximum Contaminant Level. | B Analyte detected in the associated Method Blank |
| C Value is below Minimum Compound Limit. | E Value above quantitation range |
| H Holding times for preparation or analysis exceeded | J Analyte detected below quantitation limits |
| M Matrix Interference | ND Not Detected at the Reporting Limit |
| R RPD outside accepted recovery limits | RL Reporting Limit |
| S Spike Recovery outside accepted recovery limits | U Analyte not detected |



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 Lafayette, LA 70508-3344
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 Website: www.element.com

Analytical Report

(consolidated)

WO#: **15061318**

Date Reported: **7/15/2015**

CLIENT: ICON Environmental Services

Collection Date: 6/25/2015 8:45:00 AM

Project: IPSB 9090-040-0100

Lab ID: 15061318-006

Matrix: SOIL

Client Sample ID SB-25 0-2

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
29B SALTS						
CATION EXCHANGE CAPACITY						
Cation Exchange Capacity	61.7	0.1		meq/100g	1	7/14/2015 1:18:00 PM
29B SALTS						
ELECTRICAL CONDUCTIVITY @ SATURATION						
Electrical Conductivity	0.66	0.10		mmhos/cm	1	7/7/2015 2:03:00 PM
29B SALTS						
EXCHANGEABLE SODIUM PERCENTAGE						
Exchangeable Sodium %	9.0	0.1		%	1	7/14/2015 1:18:00 PM
PERCENT MOISTURE						
Percent Moisture	46.9	1.0		wt%	1	6/30/2015 4:35:00 PM
29B SALTS						
SODIUM ADSORPTION RATIO						
Sodium Adsorption Ratio	10.6	0.100			1	7/7/2015
Soluble Calcium	< 1.00	1.00		meq/L	1	7/7/2015
Soluble Magnesium	< 1.00	1.00		meq/L	1	7/7/2015
Soluble Sodium	6.06	1.00		meq/L	1	7/7/2015
TPH-D/O IN SOIL BY SW8015						
TPH DRO/ORO IN SOIL BY SW8015						
TPH (Diesel Range)	6,080	500		mg/Kg	50	7/1/2015 8:24:00 PM
TPH (Oil Range)	4,310	500		mg/Kg	50	7/1/2015 8:24:00 PM
Surr: 4-Terphenyl-d14	0	33 - 152	SD	%REC	50	7/1/2015 8:24:00 PM
NOTES:						
SD - Surrogate diluted out due to dilution.						
29B METALS						
MERCURY IN SOIL OR SLUDGE						
Mercury	< 0.10	0.10		mg/Kg-dry	1	7/6/2015 10:57:52 AM

Qualifiers:

- | | |
|--|---|
| * Value exceeds Maximum Contaminant Level. | B Analyte detected in the associated Method Blank |
| C Value is below Minimum Compound Limit. | E Value above quantitation range |
| H Holding times for preparation or analysis exceeded | J Analyte detected below quantitation limits |
| M Matrix Interference | ND Not Detected at the Reporting Limit |
| R RPD outside accepted recovery limits | RL Reporting Limit |
| S Spike Recovery outside accepted recovery limits | U Analyte not detected |



Element Materials Technology Lafayette
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Analytical Report

(consolidated)

WO#: **15061318**

Date Reported: **7/15/2015**

CLIENT: ICON Environmental Services

Collection Date: 6/25/2015 8:45:00 AM

Project: IPSB 9090-040-0100

Lab ID: 15061318-006

Matrix: SOIL

Client Sample ID SB-25 0-2

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
INORGANIC ANIONS IN LEACHATE BY IC					SW9056A	Analyst: SGP
Chloride	6.24	2.50		mg/L	10	7/14/2015 12:33:44 PM
29B METALS METALS IN SOIL OR SLUDGE BY ICP					SW6010B SW3050B	Analyst: STS
Arsenic	5.05	0.99		mg/Kg-dry	1	7/8/2015 4:28:51 PM
Barium	5,190	9.95		mg/Kg-dry	10	7/8/2015 4:54:01 PM
Cadmium	< 0.50	0.50		mg/Kg-dry	1	7/8/2015 4:28:51 PM
Chromium	68.4	0.99		mg/Kg-dry	1	7/8/2015 4:28:51 PM
Lead	50.2	0.99		mg/Kg-dry	1	7/8/2015 4:28:51 PM
Selenium	< 1.99	1.99		mg/Kg-dry	1	7/8/2015 4:28:51 PM
Strontium	341	9.95		mg/Kg-dry	10	7/8/2015 4:54:01 PM
Zinc	78.8	0.99		mg/Kg-dry	1	7/8/2015 4:28:51 PM
29B METALS TRUE TOTAL BARIUM					LDNR 29-B	Analyst: STS
True Total Barium	34,500	46		mg/Kg-dry	1	7/8/2015 11:11:08 PM

Qualifiers:

- | | |
|--|---|
| * Value exceeds Maximum Contaminant Level. | B Analyte detected in the associated Method Blank |
| C Value is below Minimum Compound Limit. | E Value above quantitation range |
| H Holding times for preparation or analysis exceeded | J Analyte detected below quantitation limits |
| M Matrix Interference | ND Not Detected at the Reporting Limit |
| R RPD outside accepted recovery limits | RL Reporting Limit |
| S Spike Recovery outside accepted recovery limits | U Analyte not detected |



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Analytical Report

(consolidated)

WO#: **15061318**

Date Reported: **7/15/2015**

CLIENT: ICON Environmental Services

Collection Date: 6/25/2015

Project: IPSB 9090-040-0100

Lab ID: 15061318-007

Matrix: SOIL

Client Sample ID SB-26 0-2

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
29B SALTS						
CATION EXCHANGE CAPACITY						
Cation Exchange Capacity	58.7	0.1		meq/100g	1	7/14/2015 1:18:00 PM
29B SALTS						
ELECTRICAL CONDUCTIVITY @ SATURATION						
Electrical Conductivity	1.05	0.10		mmhos/cm	1	7/7/2015 2:03:00 PM
29B SALTS						
EXCHANGEABLE SODIUM PERCENTAGE						
Exchangeable Sodium %	0.8	0.1		%	1	7/14/2015 1:18:00 PM
PERCENT MOISTURE						
Percent Moisture	25.9	1.0		wt%	1	6/30/2015 4:35:00 PM
29B SALTS						
SODIUM ADSORPTION RATIO						
Sodium Adsorption Ratio	1.21	0.100			1	7/7/2015
Soluble Calcium	5.43	1.00		meq/L	1	7/7/2015
Soluble Magnesium	2.89	1.00		meq/L	1	7/7/2015
Soluble Sodium	2.46	1.00		meq/L	1	7/7/2015
29B METALS						
MERCURY IN SOIL OR SLUDGE						
Mercury	< 0.10	0.10		mg/Kg-dry	1	7/6/2015 11:00:31 AM
INORGANIC ANIONS IN LEACHATE BY IC						
Chloride	16.8	1.25		mg/L	5	7/14/2015 12:47:30 PM
29B METALS						
METALS IN SOIL OR SLUDGE BY ICP						
Arsenic	7.23	0.99		mg/Kg-dry	1	7/8/2015 4:32:19 PM
Barium	270	0.99		mg/Kg-dry	1	7/8/2015 4:32:19 PM

Qualifiers:

- | | |
|--|---|
| * Value exceeds Maximum Contaminant Level. | B Analyte detected in the associated Method Blank |
| C Value is below Minimum Compound Limit. | E Value above quantitation range |
| H Holding times for preparation or analysis exceeded | J Analyte detected below quantitation limits |
| M Matrix Interference | ND Not Detected at the Reporting Limit |
| R RPD outside accepted recovery limits | RL Reporting Limit |
| S Spike Recovery outside accepted recovery limits | U Analyte not detected |



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Analytical Report

(consolidated)

WO#: **15061318**

Date Reported: **7/15/2015**

CLIENT: ICON Environmental Services

Collection Date: 6/25/2015

Project: IPSB 9090-040-0100

Lab ID: 15061318-007

Matrix: SOIL

Client Sample ID SB-26 0-2

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
29B METALS					SW6010B	SW3050B
METALS IN SOIL OR SLUDGE BY ICP						Analyst: STS
Cadmium	< 0.50	0.50		mg/Kg-dry	1	7/8/2015 4:32:19 PM
Chromium	15.8	0.99		mg/Kg-dry	1	7/8/2015 4:32:19 PM
Lead	14.7	0.99		mg/Kg-dry	1	7/8/2015 4:32:19 PM
Selenium	< 1.99	1.99		mg/Kg-dry	1	7/8/2015 4:32:19 PM
Strontium	42.4	0.99		mg/Kg-dry	1	7/8/2015 4:32:19 PM
Zinc	66.0	0.99		mg/Kg-dry	1	7/8/2015 4:32:19 PM
29B METALS					LDNR 29-B	Analyst: STS
TRUE TOTAL BARIUM						
True Total Barium	824	48		mg/Kg-dry	1	7/8/2015 11:15:19 PM

Qualifiers:

- | | |
|--|---|
| * Value exceeds Maximum Contaminant Level. | B Analyte detected in the associated Method Blank |
| C Value is below Minimum Compound Limit. | E Value above quantitation range |
| H Holding times for preparation or analysis exceeded | J Analyte detected below quantitation limits |
| M Matrix Interference | ND Not Detected at the Reporting Limit |
| R RPD outside accepted recovery limits | RL Reporting Limit |
| S Spike Recovery outside accepted recovery limits | U Analyte not detected |



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Analytical Report

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WO#: **15061318**

Date Reported: **7/15/2015**

CLIENT: ICON Environmental Services

Collection Date: 6/25/2015

Project: IPSB 9090-040-0100

Lab ID: 15061318-008

Matrix: SOIL

Client Sample ID SB-26 12-14

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
ELECTRICAL CONDUCTIVITY @ SATURATION				LDNR 29-B		Analyst: MXF
Electrical Conductivity	0.56	0.10		mmhos/cm	1	7/7/2015 2:03:00 PM
PERCENT MOISTURE				LDNR 29-B		Analyst: MMT
Percent Moisture	23.7	1.0		wt%	1	6/30/2015 4:35:00 PM

Qualifiers:

- | | |
|--|---|
| * Value exceeds Maximum Contaminant Level. | B Analyte detected in the associated Method Blank |
| C Value is below Minimum Compound Limit. | E Value above quantitation range |
| H Holding times for preparation or analysis exceeded | J Analyte detected below quantitation limits |
| M Matrix Interference | ND Not Detected at the Reporting Limit |
| R RPD outside accepted recovery limits | RL Reporting Limit |
| S Spike Recovery outside accepted recovery limits | U Analyte not detected |



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Analytical Report

(consolidated)

WO#: **15061318**

Date Reported: **7/15/2015**

CLIENT: ICON Environmental Services

Collection Date: 6/25/2015

Project: IPSB 9090-040-0100

Lab ID: 15061318-009

Matrix: SOIL

Client Sample ID SB-26 20-22

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
ELECTRICAL CONDUCTIVITY @ SATURATION				LDNR 29-B		Analyst: MXF
Electrical Conductivity	0.95	0.10		mmhos/cm	1	7/7/2015 2:03:00 PM
PERCENT MOISTURE				LDNR 29-B		Analyst: MMT
Percent Moisture	19.5	1.0		wt%	1	6/30/2015 4:35:00 PM

Qualifiers:

- | | |
|--|---|
| * Value exceeds Maximum Contaminant Level. | B Analyte detected in the associated Method Blank |
| C Value is below Minimum Compound Limit. | E Value above quantitation range |
| H Holding times for preparation or analysis exceeded | J Analyte detected below quantitation limits |
| M Matrix Interference | ND Not Detected at the Reporting Limit |
| R RPD outside accepted recovery limits | RL Reporting Limit |
| S Spike Recovery outside accepted recovery limits | U Analyte not detected |



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Analytical Report

(consolidated)

WO#: **15061318**

Date Reported: **7/15/2015**

CLIENT: ICON Environmental Services

Collection Date: 6/26/2015 10:15:00 AM

Project: IPSB 9090-040-0100

Lab ID: 15061318-010

Matrix: AQUEOUS

Client Sample ID SB-26

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	
TPH-D/O IN WATER BY SW8015							
					SW8015B	SW3510C	Analyst: MMV
TPH DRO/ORO IN WATER BY SW8015							
TPH (Diesel Range)	0.26	0.14		mg/L	1	7/1/2015 3:31:00 PM	
TPH (Oil Range)	0.21	0.12		mg/L	1	7/1/2015 3:31:00 PM	
Surr: 4-Terphenyl-d14	61.3	36.8 - 128		%REC	1	7/1/2015 3:31:00 PM	
BTEX/TPH-G IN WATER BY SW8021/8015							
					SW8015B	Analyst: MMV	
TPH-GRO IN WATER BY SW8015							
TPH (Gasoline Range)	< 0.15	0.15		mg/L	1	7/3/2015 4:04:00 AM	
Surr: alpha, alpha, alpha-Trifluorotoluene	96.8	70 - 130		%REC	1	7/3/2015 4:04:00 AM	
BTEX/TPH-G IN WATER BY SW8021/8015							
					SW8021B	Analyst: MMV	
BTEX IN WATER BY SW8021							
Benzene	< 0.00500	0.00500		mg/L	1	7/3/2015 4:04:00 AM	
Ethylbenzene	< 0.00500	0.00500		mg/L	1	7/3/2015 4:04:00 AM	
Toluene	< 0.0100	0.0100		mg/L	1	7/3/2015 4:04:00 AM	
Xylenes, Total	< 0.0500	0.0500		mg/L	1	7/3/2015 4:04:00 AM	
Surr: alpha, alpha, alpha-Trifluorotoluene	95.2	70 - 130		%REC	1	7/3/2015 4:04:00 AM	
MERCURY IN GROUND WATER, TOTAL							
					SW7470A	Analyst: BAS	
Mercury	< 0.0002	0.0002		mg/L	1	7/2/2015 12:48:26 PM	
INORGANIC ANIONS IN WATER BY IC							
					SW9056A	Analyst: SGP	
Chloride	160	12.5		mg/L	50	7/10/2015 10:37:54 AM	
Sulfate	1.80	0.25		mg/L	1	7/10/2015 2:45:07 PM	
METALS IN WATER BY ICP, TOTALS							
					SW6010B	Analyst: STS	
Arsenic	0.020	0.010		mg/L	1	7/10/2015 5:59:12 PM	
Barium	0.894	0.010		mg/L	1	7/10/2015 5:59:12 PM	
Cadmium	< 0.005	0.005		mg/L	1	7/10/2015 5:59:12 PM	
Calcium	196	5.00		mg/L	10	7/10/2015 7:27:55 PM	

Qualifiers:

- | | |
|--|---|
| * Value exceeds Maximum Contaminant Level. | B Analyte detected in the associated Method Blank |
| C Value is below Minimum Compound Limit. | E Value above quantitation range |
| H Holding times for preparation or analysis exceeded | J Analyte detected below quantitation limits |
| M Matrix Interference | ND Not Detected at the Reporting Limit |
| R RPD outside accepted recovery limits | RL Reporting Limit |
| S Spike Recovery outside accepted recovery limits | U Analyte not detected |



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Analytical Report

(consolidated)

WO#: **15061318**

Date Reported: **7/15/2015**

CLIENT: ICON Environmental Services

Collection Date: 6/26/2015 10:15:00 AM

Project: IPSB 9090-040-0100

Lab ID: 15061318-010

Matrix: AQUEOUS

Client Sample ID SB-26

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
METALS IN WATER BY ICP, TOTALS				SW6010B		Analyst: STS
Chromium	0.010	0.010		mg/L	1	7/10/2015 5:59:12 PM
Iron	20.8	0.100		mg/L	10	7/10/2015 7:27:55 PM
Lead	< 0.010	0.010		mg/L	1	7/10/2015 5:59:12 PM
Magnesium	69.6	0.500		mg/L	1	7/10/2015 5:59:12 PM
Manganese	2.92	0.010		mg/L	1	7/10/2015 5:59:12 PM
Potassium	5.45	5.00		mg/L	1	7/10/2015 5:59:12 PM
Sodium	71.7	5.00		mg/L	1	7/10/2015 5:59:12 PM
Strontium	1.23	0.100		mg/L	10	7/10/2015 7:27:55 PM
Zinc	0.027	0.010		mg/L	1	7/10/2015 5:59:12 PM
ALKALINITY; TOTAL, CARB, BICARB				SM2320 B		Analyst: TBB
Alkalinity, Bicarbonate (As CaCO3)	783	10		mgCaCO3/L	1	7/9/2015 11:47:09 AM
Alkalinity, Carbonate (As CaCO3)	< 10	10		mgCaCO3/L	1	7/9/2015 11:47:09 AM
Alkalinity, Total (As CaCO3)	783	10		mgCaCO3/L	1	7/9/2015 11:47:09 AM
TOTAL DISSOLVED SOLIDS				SM2540C		Analyst: GMS
Total Dissolved Solids (Residue, Filterable)	950	100		mg/L	5	7/2/2015 8:00:00 AM

Qualifiers:

- | | |
|--|---|
| * Value exceeds Maximum Contaminant Level. | B Analyte detected in the associated Method Blank |
| C Value is below Minimum Compound Limit. | E Value above quantitation range |
| H Holding times for preparation or analysis exceeded | J Analyte detected below quantitation limits |
| M Matrix Interference | ND Not Detected at the Reporting Limit |
| R RPD outside accepted recovery limits | RL Reporting Limit |
| S Spike Recovery outside accepted recovery limits | U Analyte not detected |



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Analytical Report

(consolidated)

WO#: **15061318**

Date Reported: **7/15/2015**

CLIENT: ICON Environmental Services

Collection Date: 6/29/2015 10:45:00 AM

Project: IPSB 9090-040-0100

Lab ID: 15061318-011

Matrix: AQUEOUS

Client Sample ID SB-27

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
TPH-D/O IN WATER BY SW8015						
TPH DRO/ORO IN WATER BY SW8015						
TPH (Diesel Range)	0.20	0.13		mg/L	1	7/1/2015 3:47:00 PM
TPH (Oil Range)	0.16	0.12		mg/L	1	7/1/2015 3:47:00 PM
Surr: 4-Terphenyl-d14	69.4	36.8 - 128		%REC	1	7/1/2015 3:47:00 PM
BTEX/TPH-G IN WATER BY SW8021/8015						
TPH-GRO IN WATER BY SW8015						
TPH (Gasoline Range)	< 0.15	0.15		mg/L	1	7/3/2015 4:31:00 AM
Surr: alpha, alpha, alpha-Trifluorotoluene	99.6	70 - 130		%REC	1	7/3/2015 4:31:00 AM
BTEX/TPH-G IN WATER BY SW8021/8015						
BTEX IN WATER BY SW8021						
Benzene	< 0.00500	0.00500		mg/L	1	7/3/2015 4:31:00 AM
Ethylbenzene	< 0.00500	0.00500		mg/L	1	7/3/2015 4:31:00 AM
Toluene	< 0.0100	0.0100		mg/L	1	7/3/2015 4:31:00 AM
Xylenes, Total	< 0.0500	0.0500		mg/L	1	7/3/2015 4:31:00 AM
Surr: alpha, alpha, alpha-Trifluorotoluene	97.2	70 - 130		%REC	1	7/3/2015 4:31:00 AM
MERCURY IN GROUND WATER,TOTAL						
Mercury	< 0.0002	0.0002		mg/L	1	7/2/2015 12:56:28 PM
INORGANIC ANIONS IN WATER BY IC						
Chloride	142	12.5		mg/L	50	7/10/2015 11:19:07 AM
Sulfate	< 0.25	0.25		mg/L	1	7/10/2015 2:58:52 PM
METALS IN WATER BY ICP, TOTALS						
Arsenic	0.199	0.010		mg/L	1	7/10/2015 6:03:20 PM
Barium	0.675	0.010		mg/L	1	7/10/2015 6:03:20 PM
Cadmium	0.007	0.005		mg/L	1	7/10/2015 6:03:20 PM
Calcium	188	5.00		mg/L	10	7/10/2015 7:41:11 PM

Qualifiers:

- | | |
|--|---|
| * Value exceeds Maximum Contaminant Level. | B Analyte detected in the associated Method Blank |
| C Value is below Minimum Compound Limit. | E Value above quantitation range |
| H Holding times for preparation or analysis exceeded | J Analyte detected below quantitation limits |
| M Matrix Interference | ND Not Detected at the Reporting Limit |
| R RPD outside accepted recovery limits | RL Reporting Limit |
| S Spike Recovery outside accepted recovery limits | U Analyte not detected |



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Analytical Report

(consolidated)

WO#: **15061318**

Date Reported: **7/15/2015**

CLIENT: ICON Environmental Services

Collection Date: 6/29/2015 10:45:00 AM

Project: IPSB 9090-040-0100

Lab ID: 15061318-011

Matrix: AQUEOUS

Client Sample ID SB-27

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
METALS IN WATER BY ICP, TOTALS				SW6010B		Analyst: STS
Chromium	< 0.010	0.010		mg/L	1	7/10/2015 6:03:20 PM
Iron	21.6	0.100		mg/L	10	7/10/2015 7:41:11 PM
Lead	< 0.010	0.010		mg/L	1	7/10/2015 6:03:20 PM
Magnesium	71.4	0.500		mg/L	1	7/10/2015 6:03:20 PM
Manganese	2.03	0.010		mg/L	1	7/10/2015 6:03:20 PM
Potassium	< 5.00	5.00		mg/L	1	7/10/2015 6:03:20 PM
Sodium	80.7	5.00		mg/L	1	7/10/2015 6:03:20 PM
Strontium	1.26	0.100		mg/L	10	7/10/2015 7:41:11 PM
Zinc	< 0.010	0.010		mg/L	1	7/10/2015 6:03:20 PM
ALKALINITY; TOTAL, CARB, BICARB				SM2320 B		Analyst: TBB
Alkalinity, Bicarbonate (As CaCO3)	772	10		mgCaCO3/L	1	7/9/2015 11:47:09 AM
Alkalinity, Carbonate (As CaCO3)	< 10	10		mgCaCO3/L	1	7/9/2015 11:47:09 AM
Alkalinity, Total (As CaCO3)	772	10		mgCaCO3/L	1	7/9/2015 11:47:09 AM
TOTAL DISSOLVED SOLIDS				SM2540C		Analyst: GMS
Total Dissolved Solids (Residue, Filterable)	950	100		mg/L	5	7/2/2015 8:00:00 AM

Qualifiers:

- | | |
|--|---|
| * Value exceeds Maximum Contaminant Level. | B Analyte detected in the associated Method Blank |
| C Value is below Minimum Compound Limit. | E Value above quantitation range |
| H Holding times for preparation or analysis exceeded | J Analyte detected below quantitation limits |
| M Matrix Interference | ND Not Detected at the Reporting Limit |
| R RPD outside accepted recovery limits | RL Reporting Limit |
| S Spike Recovery outside accepted recovery limits | U Analyte not detected |



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Analytical Report

(consolidated)

WO#: **15061318**

Date Reported: **7/15/2015**

CLIENT: ICON Environmental Services

Collection Date: 6/23/2015 9:45:00 AM

Project: IPSB 9090-040-0100

Lab ID: 15061318-012

Matrix: AQUEOUS

Client Sample ID SB-24

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
TPH-D/O IN WATER BY SW8015						
TPH DRO/ORO IN WATER BY SW8015						
TPH (Diesel Range)	0.24	0.13		mg/L	1	7/1/2015 4:03:00 PM
TPH (Oil Range)	0.22	0.12		mg/L	1	7/1/2015 4:03:00 PM
Surr: 4-Terphenyl-d14	81.3	36.8 - 128		%REC	1	7/1/2015 4:03:00 PM
BTEX/TPH-G IN WATER BY SW8021/8015						
TPH-GRO IN WATER BY SW8015						
TPH (Gasoline Range)	< 0.15	0.15		mg/L	1	7/3/2015 6:19:00 AM
Surr: alpha, alpha, alpha-Trifluorotoluene	98.4	70 - 130		%REC	1	7/3/2015 6:19:00 AM
BTEX/TPH-G IN WATER BY SW8021/8015						
BTEX IN WATER BY SW8021						
Benzene	< 0.00500	0.00500		mg/L	1	7/3/2015 6:19:00 AM
Ethylbenzene	< 0.00500	0.00500		mg/L	1	7/3/2015 6:19:00 AM
Toluene	< 0.0100	0.0100		mg/L	1	7/3/2015 6:19:00 AM
Xylenes, Total	< 0.0500	0.0500		mg/L	1	7/3/2015 6:19:00 AM
Surr: alpha, alpha, alpha-Trifluorotoluene	95.6	70 - 130		%REC	1	7/3/2015 6:19:00 AM
MERCURY IN GROUND WATER,TOTAL						
Mercury	< 0.0002	0.0002		mg/L	1	7/2/2015 12:58:50 PM
INORGANIC ANIONS IN WATER BY IC						
Chloride	449	12.5		mg/L	50	7/10/2015 11:32:51 AM
Sulfate	90.0	12.5		mg/L	50	7/10/2015 11:32:51 AM
METALS IN WATER BY ICP, TOTALS						
Arsenic	< 0.010	0.010		mg/L	1	7/10/2015 6:15:52 PM
Barium	0.724	0.010		mg/L	1	7/10/2015 6:15:52 PM
Cadmium	< 0.005	0.005		mg/L	1	7/10/2015 6:15:52 PM
Calcium	313	5.00		mg/L	10	7/10/2015 7:53:34 PM

Qualifiers:

- | | |
|--|---|
| * Value exceeds Maximum Contaminant Level. | B Analyte detected in the associated Method Blank |
| C Value is below Minimum Compound Limit. | E Value above quantitation range |
| H Holding times for preparation or analysis exceeded | J Analyte detected below quantitation limits |
| M Matrix Interference | ND Not Detected at the Reporting Limit |
| R RPD outside accepted recovery limits | RL Reporting Limit |
| S Spike Recovery outside accepted recovery limits | U Analyte not detected |



Element Materials Technology Lafayette
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Analytical Report

(consolidated)

WO#: **15061318**

Date Reported: **7/15/2015**

CLIENT: ICON Environmental Services

Collection Date: 6/23/2015 9:45:00 AM

Project: IPSB 9090-040-0100

Lab ID: 15061318-012

Matrix: AQUEOUS

Client Sample ID SB-24

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
METALS IN WATER BY ICP, TOTALS				SW6010B		Analyst: STS
Chromium	< 0.010	0.010		mg/L	1	7/10/2015 6:15:52 PM
Iron	14.3	0.100		mg/L	10	7/10/2015 7:53:34 PM
Lead	< 0.010	0.010		mg/L	1	7/10/2015 6:15:52 PM
Magnesium	105	0.500		mg/L	1	7/10/2015 6:15:52 PM
Manganese	3.52	0.010		mg/L	1	7/10/2015 6:15:52 PM
Potassium	7.23	5.00		mg/L	1	7/10/2015 6:15:52 PM
Sodium	186	50.0		mg/L	10	7/10/2015 7:53:34 PM
Strontium	1.80	0.100		mg/L	10	7/10/2015 7:53:34 PM
Zinc	0.077	0.010		mg/L	1	7/10/2015 6:15:52 PM
ALKALINITY; TOTAL, CARB, BICARB				SM2320 B		Analyst: TBB
Alkalinity, Bicarbonate (As CaCO3)	848	10		mgCaCO3/L	1	6/30/2015 5:05:00 PM
Alkalinity, Carbonate (As CaCO3)	< 10	10		mgCaCO3/L	1	6/30/2015 5:05:00 PM
Alkalinity, Total (As CaCO3)	848	10		mgCaCO3/L	1	6/30/2015 5:05:00 PM
TOTAL DISSOLVED SOLIDS				SM2540C		Analyst: GMS
Total Dissolved Solids (Residue, Filterable)	1,880	100		mg/L	5	6/30/2015 4:35:00 PM

Qualifiers:

- | | |
|--|---|
| * Value exceeds Maximum Contaminant Level. | B Analyte detected in the associated Method Blank |
| C Value is below Minimum Compound Limit. | E Value above quantitation range |
| H Holding times for preparation or analysis exceeded | J Analyte detected below quantitation limits |
| M Matrix Interference | ND Not Detected at the Reporting Limit |
| R RPD outside accepted recovery limits | RL Reporting Limit |
| S Spike Recovery outside accepted recovery limits | U Analyte not detected |



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Analytical Report

(consolidated)

WO#: **15061318**

Date Reported: **7/15/2015**

CLIENT: ICON Environmental Services

Collection Date: 6/26/2015 1:30:00 PM

Project: IPSB 9090-040-0100

Lab ID: 15061318-013

Matrix: SOIL

Client Sample ID SB-27 0-2

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
29B SALTS						
CATION EXCHANGE CAPACITY						
Cation Exchange Capacity	62.3	0.1		meq/100g	1	7/14/2015 1:18:00 PM
29B SALTS						
ELECTRICAL CONDUCTIVITY @ SATURATION						
Electrical Conductivity	0.49	0.10		mmhos/cm	1	7/7/2015 2:03:00 PM
29B SALTS						
EXCHANGEABLE SODIUM PERCENTAGE						
Exchangeable Sodium %	1.4	0.1		%	1	7/14/2015 1:18:00 PM
PERCENT MOISTURE						
Percent Moisture	24.6	1.0		wt%	1	6/30/2015 4:35:00 PM
29B SALTS						
SODIUM ADSORPTION RATIO						
Sodium Adsorption Ratio	2.42	0.100			1	7/7/2015
Soluble Calcium	1.50	1.00		meq/L	1	7/7/2015
Soluble Magnesium	< 1.00	1.00		meq/L	1	7/7/2015
Soluble Sodium	2.64	1.00		meq/L	1	7/7/2015
29B METALS						
MERCURY IN SOIL OR SLUDGE						
Mercury	< 0.10	0.10		mg/Kg-dry	1	7/6/2015 11:10:32 AM
INORGANIC ANIONS IN LEACHATE BY IC						
Chloride	8.09	1.25		mg/L	5	7/14/2015 1:01:15 PM
29B METALS						
METALS IN SOIL OR SLUDGE BY ICP						
Arsenic	4.52	0.99		mg/Kg-dry	1	7/8/2015 4:36:06 PM
Barium	229	0.99		mg/Kg-dry	1	7/8/2015 4:36:06 PM

Qualifiers:

- | | |
|--|---|
| * Value exceeds Maximum Contaminant Level. | B Analyte detected in the associated Method Blank |
| C Value is below Minimum Compound Limit. | E Value above quantitation range |
| H Holding times for preparation or analysis exceeded | J Analyte detected below quantitation limits |
| M Matrix Interference | ND Not Detected at the Reporting Limit |
| R RPD outside accepted recovery limits | RL Reporting Limit |
| S Spike Recovery outside accepted recovery limits | U Analyte not detected |



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Analytical Report

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WO#: **15061318**

Date Reported: **7/15/2015**

CLIENT: ICON Environmental Services

Collection Date: 6/26/2015 1:30:00 PM

Project: IPSB 9090-040-0100

Lab ID: 15061318-013

Matrix: SOIL

Client Sample ID SB-27 0-2

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
29B METALS					SW6010B	SW3050B
METALS IN SOIL OR SLUDGE BY ICP						Analyst: STS
Cadmium	0.61	0.50		mg/Kg-dry	1	7/8/2015 4:36:06 PM
Chromium	14.2	0.99		mg/Kg-dry	1	7/8/2015 4:36:06 PM
Lead	14.1	0.99		mg/Kg-dry	1	7/8/2015 4:36:06 PM
Selenium	< 1.99	1.99		mg/Kg-dry	1	7/8/2015 4:36:06 PM
Strontium	44.4	0.99		mg/Kg-dry	1	7/8/2015 4:36:06 PM
Zinc	68.6	0.99		mg/Kg-dry	1	7/8/2015 4:36:06 PM
29B METALS					LDNR 29-B	Analyst: STS
TRUE TOTAL BARIUM						
True Total Barium	523	46		mg/Kg-dry	1	7/8/2015 11:19:07 PM

Qualifiers:

- | | |
|--|---|
| * Value exceeds Maximum Contaminant Level. | B Analyte detected in the associated Method Blank |
| C Value is below Minimum Compound Limit. | E Value above quantitation range |
| H Holding times for preparation or analysis exceeded | J Analyte detected below quantitation limits |
| M Matrix Interference | ND Not Detected at the Reporting Limit |
| R RPD outside accepted recovery limits | RL Reporting Limit |
| S Spike Recovery outside accepted recovery limits | U Analyte not detected |



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Analytical Report

(consolidated)

WO#: **15061318**

Date Reported: **7/15/2015**

CLIENT: ICON Environmental Services

Collection Date: 6/26/2015 1:35:00 PM

Project: IPSB 9090-040-0100

Lab ID: 15061318-014

Matrix: SOIL

Client Sample ID SB-27 4-6

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
29B SALTS						
CATION EXCHANGE CAPACITY						
Cation Exchange Capacity	65.6	0.1		meq/100g	1	7/14/2015 1:18:00 PM
29B SALTS						
ELECTRICAL CONDUCTIVITY @ SATURATION						
Electrical Conductivity	1.23	0.10		mmhos/cm	1	7/7/2015 2:03:00 PM
29B SALTS						
EXCHANGEABLE SODIUM PERCENTAGE						
Exchangeable Sodium %	1.1	0.1		%	1	7/14/2015 1:18:00 PM
PERCENT MOISTURE						
Percent Moisture	44.8	1.0		wt%	1	6/30/2015 4:35:00 PM
29B SALTS						
SODIUM ADSORPTION RATIO						
Sodium Adsorption Ratio	2.13	0.100			1	7/7/2015
Soluble Calcium	5.31	1.00		meq/L	1	7/7/2015
Soluble Magnesium	2.86	1.00		meq/L	1	7/7/2015
Soluble Sodium	4.30	1.00		meq/L	1	7/7/2015
29B METALS						
MERCURY IN SOIL OR SLUDGE						
Mercury	< 0.10	0.10		mg/Kg-dry	1	7/6/2015 11:23:50 AM
INORGANIC ANIONS IN LEACHATE BY IC						
Chloride	34.1	2.50		mg/L	10	7/14/2015 1:14:59 PM
29B METALS						
METALS IN SOIL OR SLUDGE BY ICP						
Arsenic	7.90	1.00		mg/Kg-dry	1	7/8/2015 4:39:59 PM
Barium	757	1.00		mg/Kg-dry	1	7/8/2015 4:39:59 PM

Qualifiers:

- | | |
|--|---|
| * Value exceeds Maximum Contaminant Level. | B Analyte detected in the associated Method Blank |
| C Value is below Minimum Compound Limit. | E Value above quantitation range |
| H Holding times for preparation or analysis exceeded | J Analyte detected below quantitation limits |
| M Matrix Interference | ND Not Detected at the Reporting Limit |
| R RPD outside accepted recovery limits | RL Reporting Limit |
| S Spike Recovery outside accepted recovery limits | U Analyte not detected |



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Analytical Report

(consolidated)

WO#: **15061318**

Date Reported: **7/15/2015**

CLIENT: ICON Environmental Services

Collection Date: 6/26/2015 1:35:00 PM

Project: IPSB 9090-040-0100

Lab ID: 15061318-014

Matrix: SOIL

Client Sample ID SB-27 4-6

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
29B METALS					SW6010B	SW3050B
METALS IN SOIL OR SLUDGE BY ICP						Analyst: STS
Cadmium	0.64	0.50		mg/Kg-dry	1	7/8/2015 4:39:59 PM
Chromium	17.0	1.00		mg/Kg-dry	1	7/8/2015 4:39:59 PM
Lead	18.7	1.00		mg/Kg-dry	1	7/8/2015 4:39:59 PM
Selenium	< 2.00	2.00		mg/Kg-dry	1	7/8/2015 4:39:59 PM
Strontium	61.4	1.00		mg/Kg-dry	1	7/8/2015 4:39:59 PM
Zinc	89.7	1.00		mg/Kg-dry	1	7/8/2015 4:39:59 PM
29B METALS					LDNR 29-B	Analyst: STS
TRUE TOTAL BARIUM						
True Total Barium	2,180	48		mg/Kg-dry	1	7/8/2015 11:22:56 PM

Qualifiers:

- | | |
|--|---|
| * Value exceeds Maximum Contaminant Level. | B Analyte detected in the associated Method Blank |
| C Value is below Minimum Compound Limit. | E Value above quantitation range |
| H Holding times for preparation or analysis exceeded | J Analyte detected below quantitation limits |
| M Matrix Interference | ND Not Detected at the Reporting Limit |
| R RPD outside accepted recovery limits | RL Reporting Limit |
| S Spike Recovery outside accepted recovery limits | U Analyte not detected |



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Analytical Report

(consolidated)

WO#: **15061318**

Date Reported: **7/15/2015**

CLIENT: ICON Environmental Services

Collection Date: 6/26/2015 1:40:00 PM

Project: IPSB 9090-040-0100

Lab ID: 15061318-015

Matrix: SOIL

Client Sample ID SB-27 8-10

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
29B SALTS						
CATION EXCHANGE CAPACITY						
Cation Exchange Capacity	60.5	0.1		meq/100g	1	7/14/2015 1:18:00 PM
29B SALTS						
ELECTRICAL CONDUCTIVITY @ SATURATION						
Electrical Conductivity	0.71	0.10		mmhos/cm	1	7/7/2015 2:03:00 PM
29B SALTS						
EXCHANGEABLE SODIUM PERCENTAGE						
Exchangeable Sodium %	0.9	0.1		%	1	7/14/2015 1:18:00 PM
PERCENT MOISTURE						
Percent Moisture	38.1	1.0		wt%	1	6/30/2015 4:35:00 PM
29B SALTS						
SODIUM ADSORPTION RATIO						
Sodium Adsorption Ratio	1.31	0.100			1	7/7/2015
Soluble Calcium	2.96	1.00		meq/L	1	7/7/2015
Soluble Magnesium	1.58	1.00		meq/L	1	7/7/2015
Soluble Sodium	1.97	1.00		meq/L	1	7/7/2015
29B METALS						
MERCURY IN SOIL OR SLUDGE						
Mercury	< 0.10	0.10		mg/Kg-dry	1	7/6/2015 11:26:09 AM
INORGANIC ANIONS IN LEACHATE BY IC						
Chloride	42.7	2.50		mg/L	10	7/14/2015 1:28:44 PM
29B METALS						
METALS IN SOIL OR SLUDGE BY ICP						
Arsenic	6.89	0.99		mg/Kg-dry	1	7/8/2015 4:43:35 PM
Barium	242	0.99		mg/Kg-dry	1	7/8/2015 4:43:35 PM

Qualifiers:

- | | |
|--|---|
| * Value exceeds Maximum Contaminant Level. | B Analyte detected in the associated Method Blank |
| C Value is below Minimum Compound Limit. | E Value above quantitation range |
| H Holding times for preparation or analysis exceeded | J Analyte detected below quantitation limits |
| M Matrix Interference | ND Not Detected at the Reporting Limit |
| R RPD outside accepted recovery limits | RL Reporting Limit |
| S Spike Recovery outside accepted recovery limits | U Analyte not detected |



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Analytical Report

(consolidated)

WO#: **15061318**

Date Reported: **7/15/2015**

CLIENT: ICON Environmental Services

Collection Date: 6/26/2015 1:40:00 PM

Project: IPSB 9090-040-0100

Lab ID: 15061318-015

Matrix: SOIL

Client Sample ID SB-27 8-10

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
29B METALS					SW6010B	SW3050B
METALS IN SOIL OR SLUDGE BY ICP						Analyst: STS
Cadmium	0.53	0.50		mg/Kg-dry	1	7/8/2015 4:43:35 PM
Chromium	13.8	0.99		mg/Kg-dry	1	7/8/2015 4:43:35 PM
Lead	15.7	0.99		mg/Kg-dry	1	7/8/2015 4:43:35 PM
Selenium	< 1.99	1.99		mg/Kg-dry	1	7/8/2015 4:43:35 PM
Strontium	41.6	0.99		mg/Kg-dry	1	7/8/2015 4:43:35 PM
Zinc	55.2	0.99		mg/Kg-dry	1	7/8/2015 4:43:35 PM
29B METALS					LDNR 29-B	Analyst: STS
TRUE TOTAL BARIUM						
True Total Barium	359	46		mg/Kg-dry	1	7/8/2015 11:38:40 PM

Qualifiers:

- | | |
|--|---|
| * Value exceeds Maximum Contaminant Level. | B Analyte detected in the associated Method Blank |
| C Value is below Minimum Compound Limit. | E Value above quantitation range |
| H Holding times for preparation or analysis exceeded | J Analyte detected below quantitation limits |
| M Matrix Interference | ND Not Detected at the Reporting Limit |
| R RPD outside accepted recovery limits | RL Reporting Limit |
| S Spike Recovery outside accepted recovery limits | U Analyte not detected |



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Analytical Report

(consolidated)

WO#: **15061318**

Date Reported: **7/15/2015**

CLIENT: ICON Environmental Services

Collection Date: 6/26/2015 1:50:00 PM

Project: IPSB 9090-040-0100

Lab ID: 15061318-016

Matrix: SOIL

Client Sample ID SB-27 14-16

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
29B SALTS						
CATION EXCHANGE CAPACITY						
Cation Exchange Capacity	8.2	0.1		meq/100g	1	7/14/2015 1:18:00 PM
29B SALTS						
ELECTRICAL CONDUCTIVITY @ SATURATION						
Electrical Conductivity	0.59	0.10		mmhos/cm	1	7/7/2015 2:03:00 PM
29B SALTS						
EXCHANGEABLE SODIUM PERCENTAGE						
Exchangeable Sodium %	1.4	0.1		%	1	7/14/2015 1:18:00 PM
PERCENT MOISTURE						
Percent Moisture	20.4	1.0		wt%	1	6/30/2015 4:35:00 PM
29B SALTS						
SODIUM ADSORPTION RATIO						
Sodium Adsorption Ratio	1.47	0.100			1	7/7/2015
Soluble Calcium	2.25	1.00		meq/L	1	7/7/2015
Soluble Magnesium	1.28	1.00		meq/L	1	7/7/2015
Soluble Sodium	1.95	1.00		meq/L	1	7/7/2015
29B METALS						
MERCURY IN SOIL OR SLUDGE						
Mercury	< 0.10	0.10		mg/Kg-dry	1	7/6/2015 11:28:29 AM
INORGANIC ANIONS IN LEACHATE BY IC						
Chloride	9.57	0.50		mg/L	2	7/14/2015 1:42:28 PM
29B METALS						
METALS IN SOIL OR SLUDGE BY ICP						
Arsenic	2.26	0.99		mg/Kg-dry	1	7/8/2015 4:47:01 PM
Barium	96.6	0.99		mg/Kg-dry	1	7/8/2015 4:47:01 PM

Qualifiers:

- | | |
|--|---|
| * Value exceeds Maximum Contaminant Level. | B Analyte detected in the associated Method Blank |
| C Value is below Minimum Compound Limit. | E Value above quantitation range |
| H Holding times for preparation or analysis exceeded | J Analyte detected below quantitation limits |
| M Matrix Interference | ND Not Detected at the Reporting Limit |
| R RPD outside accepted recovery limits | RL Reporting Limit |
| S Spike Recovery outside accepted recovery limits | U Analyte not detected |



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Analytical Report

(consolidated)

WO#: **15061318**

Date Reported: **7/15/2015**

CLIENT: ICON Environmental Services

Collection Date: 6/26/2015 1:50:00 PM

Project: IPSB 9090-040-0100

Lab ID: 15061318-016

Matrix: SOIL

Client Sample ID SB-27 14-16

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
29B METALS					SW6010B	SW3050B
METALS IN SOIL OR SLUDGE BY ICP						Analyst: STS
Cadmium	< 0.50	0.50		mg/Kg-dry	1	7/8/2015 4:47:01 PM
Chromium	8.78	0.99		mg/Kg-dry	1	7/8/2015 4:47:01 PM
Lead	6.05	0.99		mg/Kg-dry	1	7/8/2015 4:47:01 PM
Selenium	< 1.98	1.98		mg/Kg-dry	1	7/8/2015 4:47:01 PM
Strontium	20.2	0.99		mg/Kg-dry	1	7/8/2015 4:47:01 PM
Zinc	30.3	0.99		mg/Kg-dry	1	7/8/2015 4:47:01 PM
29B METALS					LDNR 29-B	Analyst: STS
TRUE TOTAL BARIUM						
True Total Barium	128	48		mg/Kg-dry	1	7/8/2015 11:42:47 PM

Qualifiers:

- | | |
|--|---|
| * Value exceeds Maximum Contaminant Level. | B Analyte detected in the associated Method Blank |
| C Value is below Minimum Compound Limit. | E Value above quantitation range |
| H Holding times for preparation or analysis exceeded | J Analyte detected below quantitation limits |
| M Matrix Interference | ND Not Detected at the Reporting Limit |
| R RPD outside accepted recovery limits | RL Reporting Limit |
| S Spike Recovery outside accepted recovery limits | U Analyte not detected |



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Analytical Report

(consolidated)

WO#: **15061318**

Date Reported: **7/15/2015**

CLIENT: ICON Environmental Services

Collection Date: 6/23/2015

Project: IPSB 9090-040-0100

Lab ID: 15061318-017

Matrix: AQUEOUS

Client Sample ID TB

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
BTEX/TPH-G IN WATER BY SW8021/8015				SW8015B	Analyst: MMV	
TPH-GRO IN WATER BY SW8015						
TPH (Gasoline Range)	< 0.15	0.15		mg/L	1	7/3/2015 12:28:00 AM
Surr: alpha, alpha, alpha-Trifluorotoluene	97.6	70 - 130		%REC	1	7/3/2015 12:28:00 AM
BTEX/TPH-G IN WATER BY SW8021/8015				SW8021B	Analyst: MMV	
BTEX IN WATER BY SW8021						
Benzene	< 0.00500	0.00500		mg/L	1	7/3/2015 12:28:00 AM
Ethylbenzene	< 0.00500	0.00500		mg/L	1	7/3/2015 12:28:00 AM
Toluene	< 0.0100	0.0100		mg/L	1	7/3/2015 12:28:00 AM
Xylenes, Total	< 0.0500	0.0500		mg/L	1	7/3/2015 12:28:00 AM
Surr: alpha, alpha, alpha-Trifluorotoluene	96.2	70 - 130		%REC	1	7/3/2015 12:28:00 AM

Qualifiers:

- | | |
|--|---|
| * Value exceeds Maximum Contaminant Level. | B Analyte detected in the associated Method Blank |
| C Value is below Minimum Compound Limit. | E Value above quantitation range |
| H Holding times for preparation or analysis exceeded | J Analyte detected below quantitation limits |
| M Matrix Interference | ND Not Detected at the Reporting Limit |
| R RPD outside accepted recovery limits | RL Reporting Limit |
| S Spike Recovery outside accepted recovery limits | U Analyte not detected |



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Analytical Report

(consolidated)

WO#: **15061318**

Date Reported: **7/15/2015**

CLIENT: ICON Environmental Services

Collection Date: 6/25/2015 11:05:00 AM

Project: IPSB 9090-040-0100

Lab ID: 15061318-018

Matrix: SOIL

Client Sample ID SB-26 4-6

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
29B SALTS						
CATION EXCHANGE CAPACITY						
Cation Exchange Capacity	53.3	0.1		meq/100g	1	7/14/2015 1:18:00 PM
29B SALTS						
ELECTRICAL CONDUCTIVITY @ SATURATION						
Electrical Conductivity	0.81	0.10		mmhos/cm	1	7/7/2015 2:03:00 PM
29B SALTS						
EXCHANGEABLE SODIUM PERCENTAGE						
Exchangeable Sodium %	1.0	0.1		%	1	7/14/2015 1:18:00 PM
PERCENT MOISTURE						
Percent Moisture	25.3	1.0		wt%	1	7/2/2015 3:50:00 PM
29B SALTS						
SODIUM ADSORPTION RATIO						
Sodium Adsorption Ratio	1.57	0.100			1	7/7/2015
Soluble Calcium	3.39	1.00		meq/L	1	7/7/2015
Soluble Magnesium	1.82	1.00		meq/L	1	7/7/2015
Soluble Sodium	2.54	1.00		meq/L	1	7/7/2015
29B METALS						
MERCURY IN SOIL OR SLUDGE						
Mercury	< 0.10	0.10		mg/Kg-dry	1	7/6/2015 11:30:48 AM
29B METALS						
METALS IN SOIL OR SLUDGE BY ICP						
Arsenic	6.07	0.99		mg/Kg-dry	1	7/8/2015 4:50:33 PM
Barium	287	0.99		mg/Kg-dry	1	7/8/2015 4:50:33 PM
Cadmium	< 0.50	0.50		mg/Kg-dry	1	7/8/2015 4:50:33 PM
Chromium	12.1	0.99		mg/Kg-dry	1	7/8/2015 4:50:33 PM
Lead	14.6	0.99		mg/Kg-dry	1	7/8/2015 4:50:33 PM
Selenium	< 1.99	1.99		mg/Kg-dry	1	7/8/2015 4:50:33 PM
Strontium	41.4	0.99		mg/Kg-dry	1	7/8/2015 4:50:33 PM

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- C Value is below Minimum Compound Limit.
- H Holding times for preparation or analysis exceeded
- M Matrix Interference
- R RPD outside accepted recovery limits
- S Spike Recovery outside accepted recovery limits

- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- J Analyte detected below quantitation limits
- ND Not Detected at the Reporting Limit
- RL Reporting Limit
- U Analyte not detected



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Analytical Report

(consolidated)

WO#: **15061318**

Date Reported: **7/15/2015**

CLIENT: ICON Environmental Services

Collection Date: 6/25/2015 11:05:00 AM

Project: IPSB 9090-040-0100

Lab ID: 15061318-018

Matrix: SOIL

Client Sample ID SB-26 4-6

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
29B METALS					SW6010B	SW3050B
METALS IN SOIL OR SLUDGE BY ICP						Analyst: STS
Zinc	54.5	0.99		mg/Kg-dry	1	7/8/2015 4:50:33 PM
29B METALS					LDNR 29-B	Analyst: STS
TRUE TOTAL BARIUM						
True Total Barium	401	48		mg/Kg-dry	1	7/8/2015 11:46:54 PM

Qualifiers:

- | | |
|--|---|
| * Value exceeds Maximum Contaminant Level. | B Analyte detected in the associated Method Blank |
| C Value is below Minimum Compound Limit. | E Value above quantitation range |
| H Holding times for preparation or analysis exceeded | J Analyte detected below quantitation limits |
| M Matrix Interference | ND Not Detected at the Reporting Limit |
| R RPD outside accepted recovery limits | RL Reporting Limit |
| S Spike Recovery outside accepted recovery limits | U Analyte not detected |



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QC SUMMARY REPORT

WO#: 15061318
 15-Jul-15

Client: ICON Environmental Services
Project: IPSB 9090-040-0100

BatchID: 15740

Sample ID	LCSS-D15740	SampType:	LCS	TestCode:	8015_DO_S	Units:	mg/Kg	Prep Date:	6/30/2015	RunNo:	44874			
Client ID:	LCSS	Batch ID:	15740	TestNo:	SW8015B		SW3550C	Analysis Date:	6/30/2015	SeqNo:	1080727			
Analyte		Result		PQL	SPK value	SPK Ref Val		%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

TPH (Diesel Range)	91.6	10.0	100.0	0	91.6	63.4	109							
Surr: 4-Terphenyl-d14	2.65		3.330		79.5	33	152							

Sample ID	LCSS-D15740	SampType:	LCSD	TestCode:	8015_DO_S	Units:	mg/Kg	Prep Date:	6/30/2015	RunNo:	44874			
Client ID:	LCSS02	Batch ID:	15740	TestNo:	SW8015B		SW3550C	Analysis Date:	6/30/2015	SeqNo:	1080728			
Analyte		Result		PQL	SPK value	SPK Ref Val		%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

TPH (Diesel Range)	104	10.0	100.0	0	104	63.4	109	91.57	12.9	17.2				
Surr: 4-Terphenyl-d14	2.72		3.330		81.8	33	152		0	40				

Sample ID	LCSS-M15740	SampType:	LCSD	TestCode:	8015_DO_S	Units:	mg/Kg	Prep Date:	6/30/2015	RunNo:	44874			
Client ID:	LCSS02	Batch ID:	15740	TestNo:	SW8015B		SW3550C	Analysis Date:	6/30/2015	SeqNo:	1080729			
Analyte		Result		PQL	SPK value	SPK Ref Val		%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

TPH (Oil Range)	91.1	10.0	100.0	0	91.1	63.9	120	95.50	4.75	16.6				
Surr: 4-Terphenyl-d14	2.38		3.330		71.5	33	152		0	40				

Sample ID	LCSS-M15740	SampType:	LCS	TestCode:	8015_DO_S	Units:	mg/Kg	Prep Date:	6/30/2015	RunNo:	44874			
Client ID:	LCSS	Batch ID:	15740	TestNo:	SW8015B		SW3550C	Analysis Date:	6/30/2015	SeqNo:	1080730			
Analyte		Result		PQL	SPK value	SPK Ref Val		%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

TPH (Oil Range)	95.5	10.0	100.0	0	95.5	63.9	120							
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Qualifiers:	* Value exceeds Maximum Contaminant Level.	B Analyte detected in the associated Method Blank	C Value is below Minimum Compound Limit.
	E Value above quantitation range	H Holding times for preparation or analysis exceeded	J Analyte detected below quantitation limits
	M Matrix Interference	ND Not Detected at the Reporting Limit	R RPD outside accepted recovery limits
	RL Reporting Limit	S Spike Recovery outside accepted recovery limits	U Analyte not detected



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QC SUMMARY REPORT

WO#: 15061318
 15-Jul-15

Client: ICON Environmental Services
Project: IPSB 9090-040-0100

BatchID: 15740

Sample ID	LCS-M15740	SampType:	LCS	TestCode:	8015_DO_S	Units:	mg/Kg	Prep Date:	6/30/2015	RunNo:	44874			
Client ID:	LCSS	Batch ID:	15740	TestNo:	SW8015B		SW3550C	Analysis Date:	6/30/2015	SeqNo:	1080730			
Analyte		Result		PQL	SPK value	SPK Ref Val		%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Surr: 4-Terphenyl-d14		2.53			3.330			75.8	33	152				

Sample ID	MB-15740	SampType:	MBLK	TestCode:	8015_DO_S	Units:	mg/Kg	Prep Date:	6/30/2015	RunNo:	44874			
Client ID:	PBS	Batch ID:	15740	TestNo:	SW8015B		SW3550C	Analysis Date:	6/30/2015	SeqNo:	1080731			
Analyte		Result		PQL	SPK value	SPK Ref Val		%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
TPH (Diesel Range)		< 5.00		5.00										
TPH (Oil Range)		< 5.00		5.00										
Surr: 4-Terphenyl-d14		2.31			3.330			69.2	33	152				

Sample ID	15061188-001BMS-	SampType:	MS	TestCode:	8015_DO_S	Units:	mg/Kg	Prep Date:	6/30/2015	RunNo:	44874			
Client ID:	ZZZZZZ	Batch ID:	15740	TestNo:	SW8015B		SW3550C	Analysis Date:	7/1/2015	SeqNo:	1082657			
Analyte		Result		PQL	SPK value	SPK Ref Val		%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
TPH (Oil Range)		1,500		1,000	100.0	2,731		-1,230	14.5	174				SD
Surr: 4-Terphenyl-d14		0			3.330			0	33	152				SD

NOTES:
 SD - Surrogate and matrix spike diluted out due to dilution.

Sample ID	15061188-001BMSD	SampType:	MSD	TestCode:	8015_DO_S	Units:	mg/Kg	Prep Date:	6/30/2015	RunNo:	44874			
Client ID:	ZZZZZZ	Batch ID:	15740	TestNo:	SW8015B		SW3550C	Analysis Date:	7/1/2015	SeqNo:	1082658			
Analyte		Result		PQL	SPK value	SPK Ref Val		%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Qualifiers:	* Value exceeds Maximum Contaminant Level.	B Analyte detected in the associated Method Blank	C Value is below Minimum Compound Limit.
	E Value above quantitation range	H Holding times for preparation or analysis exceeded	J Analyte detected below quantitation limits
	M Matrix Interference	ND Not Detected at the Reporting Limit	R RPD outside accepted recovery limits
	RL Reporting Limit	S Spike Recovery outside accepted recovery limits	U Analyte not detected



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QC SUMMARY REPORT

WO#: 15061318
 15-Jul-15

Client: ICON Environmental Services
Project: IPSB 9090-040-0100

BatchID: 15740

Sample ID	15061188-001BMSD	SampType:	MSD	TestCode:	8015_DO_S	Units:	mg/Kg	Prep Date:	6/30/2015	RunNo:	44874			
Client ID:	ZZZZZZ	Batch ID:	15740	TestNo:	SW8015B		SW3550C	Analysis Date:	7/1/2015	SeqNo:	1082658			
Analyte		Result		PQL	SPK value	SPK Ref Val		%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
TPH (Oil Range)		2,030		1,000	100.0	2,731		-698	14.5	174	1,498	30.3	48.8	SD
Surr: 4-Terphenyl-d14		0			3.330			0	33	152		0	40	SD

Sample ID	15061188-001BMS-	SampType:	MS	TestCode:	8015_DO_S	Units:	mg/Kg	Prep Date:	6/30/2015	RunNo:	44874			
Client ID:	ZZZZZZ	Batch ID:	15740	TestNo:	SW8015B		SW3550C	Analysis Date:	7/1/2015	SeqNo:	1082681			
Analyte		Result		PQL	SPK value	SPK Ref Val		%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
TPH (Diesel Range)		7,660		1,000	100.0	6,423		1,240	23.4	123				SD
Surr: 4-Terphenyl-d14		0			3.330			0	33	152				SD

NOTES:
 SD - Surrogate and matrix spike diluted out due to dilution.

Sample ID	15061188-001BMSD	SampType:	MSD	TestCode:	8015_DO_S	Units:	mg/Kg	Prep Date:	6/30/2015	RunNo:	44874			
Client ID:	ZZZZZZ	Batch ID:	15740	TestNo:	SW8015B		SW3550C	Analysis Date:	7/1/2015	SeqNo:	1082683			
Analyte		Result		PQL	SPK value	SPK Ref Val		%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
TPH (Diesel Range)		6,710		1,000	100.0	6,423		283	23.4	123	7,661	13.3	35.6	SD
Surr: 4-Terphenyl-d14		0			3.330			0	33	152		0	40	SD

Qualifiers:	* Value exceeds Maximum Contaminant Level.	B Analyte detected in the associated Method Blank	C Value is below Minimum Compound Limit.
	E Value above quantitation range	H Holding times for preparation or analysis exceeded	J Analyte detected below quantitation limits
	M Matrix Interference	ND Not Detected at the Reporting Limit	R RPD outside accepted recovery limits
	RL Reporting Limit	S Spike Recovery outside accepted recovery limits	U Analyte not detected



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QC SUMMARY REPORT

WO#: 15061318
 15-Jul-15

Client: ICON Environmental Services
Project: IPSB 9090-040-0100

BatchID: 15762

Sample ID	LCSD-D15762	SampType:	LCS	TestCode:	8015_DO_W	Units:	mg/L	Prep Date:	6/30/2015	RunNo:	44917			
Client ID:	LCSW	Batch ID:	15762	TestNo:	SW8015B		SW3510C	Analysis Date:	7/1/2015	SeqNo:	1082575			
Analyte		Result		PQL	SPK value	SPK Ref Val		%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

TPH (Diesel Range)	2.96	0.13	3.00	0	98.6	62.3	110							
Surr: 4-Terphenyl-d14	0.07		0.10		71.9	36.8	128							

Sample ID	LCSD-D15762	SampType:	LCSD	TestCode:	8015_DO_W	Units:	mg/L	Prep Date:	6/30/2015	RunNo:	44917			
Client ID:	LCSS02	Batch ID:	15762	TestNo:	SW8015B		SW3510C	Analysis Date:	7/1/2015	SeqNo:	1082578			
Analyte		Result		PQL	SPK value	SPK Ref Val		%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

TPH (Diesel Range)	3.19	0.13	3.00	0	106	62.3	110	2.96	7.72	14.1				
Surr: 4-Terphenyl-d14	0.06		0.10		58.7	36.8	128		0	40				

Sample ID	LCSD-M15762	SampType:	LCSD	TestCode:	8015_DO_W	Units:	mg/L	Prep Date:	6/30/2015	RunNo:	44917			
Client ID:	LCSS02	Batch ID:	15762	TestNo:	SW8015B		SW3510C	Analysis Date:	7/1/2015	SeqNo:	1082580			
Analyte		Result		PQL	SPK value	SPK Ref Val		%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

TPH (Oil Range)	2.86	0.12	3.00	0	95.4	63.8	124	2.91	1.60	23.2				
Surr: 4-Terphenyl-d14	0.05		0.10		51.1	36.8	128		0	40				

Sample ID	LCS-M15762	SampType:	LCS	TestCode:	8015_DO_W	Units:	mg/L	Prep Date:	6/30/2015	RunNo:	44917			
Client ID:	LCSW	Batch ID:	15762	TestNo:	SW8015B		SW3510C	Analysis Date:	7/1/2015	SeqNo:	1082584			
Analyte		Result		PQL	SPK value	SPK Ref Val		%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

TPH (Oil Range)	2.91	0.12	3.00	0	96.9	63.8	124							
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Qualifiers:	* Value exceeds Maximum Contaminant Level.	B Analyte detected in the associated Method Blank	C Value is below Minimum Compound Limit.
	E Value above quantitation range	H Holding times for preparation or analysis exceeded	J Analyte detected below quantitation limits
	M Matrix Interference	ND Not Detected at the Reporting Limit	R RPD outside accepted recovery limits
	RL Reporting Limit	S Spike Recovery outside accepted recovery limits	U Analyte not detected



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QC SUMMARY REPORT

WO#: 15061318
 15-Jul-15

Client: ICON Environmental Services
Project: IPSB 9090-040-0100

BatchID: 15762

Sample ID	LCS-M15762	SampType:	LCS	TestCode:	8015_DO_W	Units:	mg/L	Prep Date:	6/30/2015	RunNo:	44917			
Client ID:	LCSW	Batch ID:	15762	TestNo:	SW8015B	SW3510C		Analysis Date:	7/1/2015	SeqNo:	1082584			
Analyte		Result		PQL	SPK value	SPK Ref Val		%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Surr:	4-Terphenyl-d14	0.06			0.10			62.4	36.8	128				

Sample ID	MB-15762	SampType:	MBLK	TestCode:	8015_DO_W	Units:	mg/L	Prep Date:	6/30/2015	RunNo:	44917			
Client ID:	PBW	Batch ID:	15762	TestNo:	SW8015B	SW3510C		Analysis Date:	7/1/2015	SeqNo:	1082586			
Analyte		Result		PQL	SPK value	SPK Ref Val		%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
TPH (Diesel Range)		< 0.13		0.13										
TPH (Oil Range)		< 0.12		0.12										
Surr:	4-Terphenyl-d14	0.08			0.10			78.4	36.8	128				

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank	C	Value is below Minimum Compound Limit.
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
M	Matrix Interference	ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits
RL	Reporting Limit	S	Spike Recovery outside accepted recovery limits	U	Analyte not detected



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QC SUMMARY REPORT

WO#: 15061318
 15-Jul-15

Client: ICON Environmental Services
Project: IPSB 9090-040-0100

BatchID: 15773

Sample ID	MB-15773	SampType:	MBLK	TestCode:	6010_S_29B	Units:	mg/Kg-dry	Prep Date:	7/1/2015	RunNo:	45054		
Client ID:	PBS	Batch ID:	15773	TestNo:	SW6010B	SW3050B		Analysis Date:	7/8/2015	SeqNo:	1088208		
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic		< 1.00		1.00									
Barium		< 1.00		1.00									
Cadmium		< 0.50		0.50									
Chromium		< 1.00		1.00									
Lead		< 1.00		1.00									
Selenium		< 2.00		2.00									
Strontium		< 1.00		1.00									
Zinc		< 1.00		1.00									

Sample ID	LCS-15773	SampType:	LCS	TestCode:	6010_S_29B	Units:	mg/Kg-dry	Prep Date:	7/1/2015	RunNo:	45054		
Client ID:	LCSS	Batch ID:	15773	TestNo:	SW6010B	SW3050B		Analysis Date:	7/8/2015	SeqNo:	1088209		
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic		51.0		1.00	50.00	0	102	80	120				
Barium		50.8		1.00	50.00	0	102	80	120				
Cadmium		50.5		0.50	50.00	0	101	80	120				
Chromium		50.7		1.00	50.00	0	101	80	120				
Lead		50.7		1.00	50.00	0	101	80	120				
Selenium		50.8		2.00	50.00	0	102	80	120				
Strontium		50.8		1.00	50.00	0	102	80	120				
Zinc		50.5		1.00	50.00	0	101	80	120				

Qualifiers:	* Value exceeds Maximum Contaminant Level.	B Analyte detected in the associated Method Blank	C Value is below Minimum Compound Limit.
	E Value above quantitation range	H Holding times for preparation or analysis exceeded	J Analyte detected below quantitation limits
	M Matrix Interference	ND Not Detected at the Reporting Limit	R RPD outside accepted recovery limits
	RL Reporting Limit	S Spike Recovery outside accepted recovery limits	U Analyte not detected



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QC SUMMARY REPORT

WO#: 15061318
 15-Jul-15

Client: ICON Environmental Services
Project: IPSB 9090-040-0100

BatchID: 15773

Sample ID	LCSD-15773	SampType:	LCSD	TestCode:	6010_S_29B	Units:	mg/Kg-dry	Prep Date:	7/1/2015	RunNo:	45054
Client ID:	LCSS02	Batch ID:	15773	TestNo:	SW6010B	SW3050B		Analysis Date:	7/8/2015	SeqNo:	1088210
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	50.9	1.00	50.00	0	102	80	120	50.99	0.16	20	
Barium	51.3	1.00	50.00	0	103	80	120	50.83	0.94	20	
Cadmium	51.0	0.50	50.00	0	102	80	120	50.52	0.97	20	
Chromium	51.2	1.00	50.00	0	102	80	120	50.70	1.06	20	
Lead	51.2	1.00	50.00	0	102	80	120	50.73	0.90	20	
Selenium	51.0	2.00	50.00	0	102	80	120	50.77	0.49	20	
Strontium	51.5	1.00	50.00	0	103	80	120	50.79	1.37	20	
Zinc	51.0	1.00	50.00	0	102	80	120	50.52	0.97	20	

Sample ID	15061213-001AMS	SampType:	MS	TestCode:	6010_S_29B	Units:	mg/Kg-dry	Prep Date:	7/1/2015	RunNo:	45054
Client ID:	ZZZZZZ	Batch ID:	15773	TestNo:	SW6010B	SW3050B		Analysis Date:	7/8/2015	SeqNo:	1088212
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	54.7	0.99	49.66	5.39	99.2	75	125				
Barium	209	0.99	49.66	162.4	93.4	75	125				
Cadmium	47.7	0.50	49.66	0.41	95.3	75	125				
Chromium	59.6	0.99	49.66	11.53	96.7	75	125				
Lead	59.1	0.99	49.66	10.98	96.8	75	125				
Selenium	42.8	1.99	49.66	0	86.2	75	125				
Strontium	70.7	0.99	49.66	22.97	96.2	75	125				
Zinc	93.5	0.99	49.66	46.32	94.9	75	125				

Qualifiers:	* Value exceeds Maximum Contaminant Level.	B Analyte detected in the associated Method Blank	C Value is below Minimum Compound Limit.
	E Value above quantitation range	H Holding times for preparation or analysis exceeded	J Analyte detected below quantitation limits
	M Matrix Interference	ND Not Detected at the Reporting Limit	R RPD outside accepted recovery limits
	RL Reporting Limit	S Spike Recovery outside accepted recovery limits	U Analyte not detected



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QC SUMMARY REPORT

WO#: 15061318
 15-Jul-15

Client: ICON Environmental Services
Project: IPSB 9090-040-0100

BatchID: 15773

Sample ID	15061213-001AMSD	SampType:	MSD	TestCode:	6010_S_29B	Units:	mg/Kg-dry	Prep Date:	7/1/2015	RunNo:	45054
Client ID:	ZZZZZZ	Batch ID:	15773	TestNo:	SW6010B		SW3050B	Analysis Date:	7/8/2015	SeqNo:	1088215
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	53.7	0.99	49.67	5.39	97.4	75	125	54.67	1.69	20	
Barium	209	0.99	49.67	162.4	94.4	75	125	208.8	0.25	20	
Cadmium	47.7	0.50	49.67	0.41	95.3	75	125	47.75	0.03	20	
Chromium	59.8	0.99	49.67	11.53	97.2	75	125	59.57	0.38	20	
Lead	59.1	0.99	49.67	10.98	96.8	75	125	59.08	0	20	
Selenium	43.0	1.99	49.67	0	86.5	75	125	42.80	0.43	20	
Strontium	70.7	0.99	49.67	22.97	96.2	75	125	70.74	0.02	20	
Zinc	93.8	0.99	49.67	46.32	95.5	75	125	93.46	0.32	20	

Qualifiers:	* Value exceeds Maximum Contaminant Level.	B Analyte detected in the associated Method Blank	C Value is below Minimum Compound Limit.
	E Value above quantitation range	H Holding times for preparation or analysis exceeded	J Analyte detected below quantitation limits
	M Matrix Interference	ND Not Detected at the Reporting Limit	R RPD outside accepted recovery limits
	RL Reporting Limit	S Spike Recovery outside accepted recovery limits	U Analyte not detected



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QC SUMMARY REPORT

WO#: 15061318
 15-Jul-15

Client: ICON Environmental Services
Project: IPSB 9090-040-0100

BatchID: 15789

Sample ID	MB-15789	SampType:	MBLK	TestCode:	HG_W_7470	Units:	mg/L	Prep Date:	7/2/2015	RunNo:	44929			
Client ID:	PBW	Batch ID:	15789	TestNo:	SW7470A			Analysis Date:	7/2/2015	SeqNo:	1083818			
Analyte		Result		PQL	SPK value	SPK Ref Val		%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury		< 0.0002		0.0002										

Sample ID	LCS-15789	SampType:	LCS	TestCode:	HG_W_7470	Units:	mg/L	Prep Date:	7/2/2015	RunNo:	44929			
Client ID:	LCSW	Batch ID:	15789	TestNo:	SW7470A			Analysis Date:	7/2/2015	SeqNo:	1083819			
Analyte		Result		PQL	SPK value	SPK Ref Val		%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury		0.0107		0.0002	0.0100	0		107	80	120				

Sample ID	LCSD-15789	SampType:	LCSD	TestCode:	HG_W_7470	Units:	mg/L	Prep Date:	7/2/2015	RunNo:	44929			
Client ID:	LCSS02	Batch ID:	15789	TestNo:	SW7470A			Analysis Date:	7/2/2015	SeqNo:	1083820			
Analyte		Result		PQL	SPK value	SPK Ref Val		%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury		0.0104		0.0002	0.0100	0		104	80	120	0.0107	3.01	20	

Sample ID	15061318-010CMS	SampType:	MS	TestCode:	HG_W_7470	Units:	mg/L	Prep Date:	7/2/2015	RunNo:	44929			
Client ID:	SB-26	Batch ID:	15789	TestNo:	SW7470A			Analysis Date:	7/2/2015	SeqNo:	1083822			
Analyte		Result		PQL	SPK value	SPK Ref Val		%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury		0.0096		0.0002	0.0100	0		96.0	75	125				

Qualifiers:

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E Value above quantitation range	H Holding times for preparation or analysis exceeded	J Analyte detected below quantitation limits
M Matrix Interference	ND Not Detected at the Reporting Limit	R RPD outside accepted recovery limits
RL Reporting Limit	S Spike Recovery outside accepted recovery limits	U Analyte not detected



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QC SUMMARY REPORT

WO#: 15061318
 15-Jul-15

Client: ICON Environmental Services
Project: IPSB 9090-040-0100

BatchID: 15789

Sample ID	15061318-010CMSD	SampType:	MSD	TestCode:	HG_W_7470	Units:	mg/L	Prep Date:	7/2/2015	RunNo:	44929		
Client ID:	SB-26	Batch ID:	15789	TestNo:	SW7470A			Analysis Date:	7/2/2015	SeqNo:	1083823		
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury		0.0099		0.0002	0.0100	0	98.7	75	125	0.0096	2.77	20	

Qualifiers:	* Value exceeds Maximum Contaminant Level.	B Analyte detected in the associated Method Blank	C Value is below Minimum Compound Limit.
	E Value above quantitation range	H Holding times for preparation or analysis exceeded	J Analyte detected below quantitation limits
	M Matrix Interference	ND Not Detected at the Reporting Limit	R RPD outside accepted recovery limits
	RL Reporting Limit	S Spike Recovery outside accepted recovery limits	U Analyte not detected



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QC SUMMARY REPORT

WO#: 15061318
 15-Jul-15

Client: ICON Environmental Services
Project: IPSB 9090-040-0100

BatchID: 15797

Sample ID	15061188-001AMS	SampType:	MS	TestCode:	HG_S_29B	Units:	mg/Kg-dry	Prep Date:	7/2/2015	RunNo:	44975
Client ID:	ZZZZZZ	Batch ID:	15797	TestNo:	29B/SW7471 SW7471A	Analysis Date:	7/6/2015	SeqNo:	1086073		
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD RPDLimit Qual
Mercury		0.89		0.10	0.84	0.08	97.1	75	125		

Sample ID	15061188-001AMSD	SampType:	MSD	TestCode:	HG_S_29B	Units:	mg/Kg-dry	Prep Date:	7/2/2015	RunNo:	44975
Client ID:	ZZZZZZ	Batch ID:	15797	TestNo:	29B/SW7471 SW7471A	Analysis Date:	7/6/2015	SeqNo:	1086074		
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD RPDLimit Qual
Mercury		0.89		0.10	0.83	0.08	97.2	75	125	0.89	0.21 20

Sample ID	MB-15797	SampType:	MBLK	TestCode:	HG_S_29B	Units:	mg/Kg-dry	Prep Date:	7/2/2015	RunNo:	44975
Client ID:	PBS	Batch ID:	15797	TestNo:	29B/SW7471 SW7471A	Analysis Date:	7/6/2015	SeqNo:	1086146		
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD RPDLimit Qual
Mercury		< 0.10		0.10							

Sample ID	LCS-15797	SampType:	LCS	TestCode:	HG_S_29B	Units:	mg/Kg-dry	Prep Date:	7/2/2015	RunNo:	44975
Client ID:	LCSS	Batch ID:	15797	TestNo:	29B/SW7471 SW7471A	Analysis Date:	7/6/2015	SeqNo:	1086147		
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD RPDLimit Qual
Mercury		0.90		0.10	0.83	0	108	80	120		

Qualifiers:

* Value exceeds Maximum Contaminant Level.	B Analyte detected in the associated Method Blank	C Value is below Minimum Compound Limit.
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RL Reporting Limit	S Spike Recovery outside accepted recovery limits	U Analyte not detected



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QC SUMMARY REPORT

WO#: 15061318
 15-Jul-15

Client: ICON Environmental Services
Project: IPSB 9090-040-0100

BatchID: 15797

Sample ID	LCSD-15797	SampType:	LCSD	TestCode:	HG_S_29B	Units:	mg/Kg-dry	Prep Date:	7/2/2015	RunNo:	44975		
Client ID:	LCSS02	Batch ID:	15797	TestNo:	29B/SW7471	SW7471A		Analysis Date:	7/6/2015	SeqNo:	1086148		
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury		0.90		0.10	0.83	0	108	80	120	0.90	0.01	20	

Qualifiers:	* Value exceeds Maximum Contaminant Level.	B Analyte detected in the associated Method Blank	C Value is below Minimum Compound Limit.
	E Value above quantitation range	H Holding times for preparation or analysis exceeded	J Analyte detected below quantitation limits
	M Matrix Interference	ND Not Detected at the Reporting Limit	R RPD outside accepted recovery limits
	RL Reporting Limit	S Spike Recovery outside accepted recovery limits	U Analyte not detected



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QC SUMMARY REPORT

WO#: 15061318
 15-Jul-15

Client: ICON Environmental Services
Project: IPSB 9090-040-0100

BatchID: 15798

Sample ID	MB-15798	SampType:	MBLK	TestCode:	HG_S_29B	Units:	mg/Kg-dry	Prep Date:	7/2/2015	RunNo:	44975		
Client ID:	PBS	Batch ID:	15798	TestNo:	29B/SW7471 SW7471A	Analysis Date:	7/6/2015	SeqNo:	1086098				
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury		< 0.10		0.10									

Sample ID	LCS-15798	SampType:	LCS	TestCode:	HG_S_29B	Units:	mg/Kg-dry	Prep Date:	7/2/2015	RunNo:	44975		
Client ID:	LCSS	Batch ID:	15798	TestNo:	29B/SW7471 SW7471A	Analysis Date:	7/6/2015	SeqNo:	1086099				
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury		0.92		0.10	0.83	0	110	80	120				

Sample ID	LCSD-15798	SampType:	LCSD	TestCode:	HG_S_29B	Units:	mg/Kg-dry	Prep Date:	7/2/2015	RunNo:	44975		
Client ID:	LCSS02	Batch ID:	15798	TestNo:	29B/SW7471 SW7471A	Analysis Date:	7/6/2015	SeqNo:	1086100				
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury		0.91		0.10	0.83	0	110	80	120	0.92	0.85	20	

Sample ID	15061318-013AMS	SampType:	MS	TestCode:	HG_S_29B	Units:	mg/Kg-dry	Prep Date:	7/2/2015	RunNo:	44975		
Client ID:	SB-27 0-2	Batch ID:	15798	TestNo:	29B/SW7471 SW7471A	Analysis Date:	7/6/2015	SeqNo:	1086102				
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury		0.94		0.10	0.84	0	112	75	125				

Qualifiers:

* Value exceeds Maximum Contaminant Level.	B Analyte detected in the associated Method Blank	C Value is below Minimum Compound Limit.
E Value above quantitation range	H Holding times for preparation or analysis exceeded	J Analyte detected below quantitation limits
M Matrix Interference	ND Not Detected at the Reporting Limit	R RPD outside accepted recovery limits
RL Reporting Limit	S Spike Recovery outside accepted recovery limits	U Analyte not detected



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QC SUMMARY REPORT

WO#: 15061318
 15-Jul-15

Client: ICON Environmental Services
Project: IPSB 9090-040-0100

BatchID: 15798

Sample ID	15061318-013AMSD	SampType:	MSD	TestCode:	HG_S_29B	Units:	mg/Kg-dry	Prep Date:	7/2/2015	RunNo:	44975
Client ID:	SB-27 0-2	Batch ID:	15798	TestNo:	29B/SW7471 SW7471A	Analysis Date:	7/6/2015	SeqNo:	1086105		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	0.91	0.10	0.83	0	109	75	125	0.94	3.58	20	

Qualifiers:	* Value exceeds Maximum Contaminant Level.	B Analyte detected in the associated Method Blank	C Value is below Minimum Compound Limit.
	E Value above quantitation range	H Holding times for preparation or analysis exceeded	J Analyte detected below quantitation limits
	M Matrix Interference	ND Not Detected at the Reporting Limit	R RPD outside accepted recovery limits
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QC SUMMARY REPORT

WO#: 15061318
 15-Jul-15

Client: ICON Environmental Services
Project: IPSB 9090-040-0100

BatchID: 15802

Sample ID MB-15802	SampType: MBLK	TestCode: TTBA	Units: mg/Kg-dry	Prep Date: 7/2/2015	RunNo: 45075						
Client ID: PBS	Batch ID: 15802	TestNo: LDNR 29-B		Analysis Date: 7/8/2015	SeqNo: 1088705						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
True Total Barium	< 50	50									

Sample ID LCS-15802	SampType: LCS	TestCode: TTBA	Units: mg/Kg-dry	Prep Date: 7/2/2015	RunNo: 45075						
Client ID: LCSS	Batch ID: 15802	TestNo: LDNR 29-B		Analysis Date: 7/8/2015	SeqNo: 1088706						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
True Total Barium	5,830	50	5,000	0	117	75	125				

Sample ID LCSD-15802	SampType: LCSD	TestCode: TTBA	Units: mg/Kg-dry	Prep Date: 7/2/2015	RunNo: 45075						
Client ID: LCSS02	Batch ID: 15802	TestNo: LDNR 29-B		Analysis Date: 7/8/2015	SeqNo: 1088710						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
True Total Barium	5,860	50	5,000	0	117	75	125	5,830	0	20	

Sample ID 15061318-001AMS	SampType: MS	TestCode: TTBA	Units: mg/Kg-dry	Prep Date: 7/2/2015	RunNo: 45075						
Client ID: SB-24 0-2	Batch ID: 15802	TestNo: LDNR 29-B		Analysis Date: 7/8/2015	SeqNo: 1088712						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
True Total Barium	8,200	46	4,638	2,623	120	75	125				

Qualifiers:

* Value exceeds Maximum Contaminant Level.	B Analyte detected in the associated Method Blank	C Value is below Minimum Compound Limit.
E Value above quantitation range	H Holding times for preparation or analysis exceeded	J Analyte detected below quantitation limits
M Matrix Interference	ND Not Detected at the Reporting Limit	R RPD outside accepted recovery limits
RL Reporting Limit	S Spike Recovery outside accepted recovery limits	U Analyte not detected



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QC SUMMARY REPORT

WO#: 15061318
 15-Jul-15

Client: ICON Environmental Services
Project: IPSB 9090-040-0100

BatchID: 15802

Sample ID	15061318-001AMSD	SampType:	MSD	TestCode:	TTBA	Units:	mg/Kg-dry	Prep Date:	7/2/2015	RunNo:	45075		
Client ID:	SB-24 0-2	Batch ID:	15802	TestNo:	LDNR 29-B			Analysis Date:	7/8/2015	SeqNo:	1088713		
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
True Total Barium		7,970		47	4,651	2,623	115	75	125	8,196	3	20	

Qualifiers:	* Value exceeds Maximum Contaminant Level.	B Analyte detected in the associated Method Blank	C Value is below Minimum Compound Limit.
	E Value above quantitation range	H Holding times for preparation or analysis exceeded	J Analyte detected below quantitation limits
	M Matrix Interference	ND Not Detected at the Reporting Limit	R RPD outside accepted recovery limits
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QC SUMMARY REPORT

WO#: 15061318
 15-Jul-15

Client: ICON Environmental Services
Project: IPSB 9090-040-0100

BatchID: 15837

Sample ID	15061318-006ADUP	SampType:	DUP	TestCode:	SAR_S	Units:		Prep Date:	7/6/2015	RunNo:	45020
Client ID:	SB-25 0-2	Batch ID:	15837	TestNo:	LDNR 29-B	LDNR 29-B		Analysis Date:	7/7/2015	SeqNo:	1087659
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Sodium Adsorption Ratio	10.6	0.100						10.56	0.0713	20	
Soluble Calcium	< 1.00	1.00						0	0	20	
Soluble Magnesium	< 1.00	1.00						0	0	20	
Soluble Sodium	6.03	1.00						6.060	0.504	20	

Qualifiers:	* Value exceeds Maximum Contaminant Level.	B Analyte detected in the associated Method Blank	C Value is below Minimum Compound Limit.
	E Value above quantitation range	H Holding times for preparation or analysis exceeded	J Analyte detected below quantitation limits
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QC SUMMARY REPORT

WO#: 15061318
 15-Jul-15

Client: ICON Environmental Services
Project: IPSB 9090-040-0100

BatchID: 15877

Sample ID	MB-15877	SampType:	MBLK	TestCode:	6010_W	Units:	mg/L	Prep Date:	7/10/2015	RunNo:	45145
Client ID:	PBW	Batch ID:	15877	TestNo:	SW6010B	Analysis Date:	7/10/2015	SeqNo:	1090466		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	< 0.010	0.010									
Barium	< 0.010	0.010									
Cadmium	< 0.005	0.005									
Calcium	< 0.500	0.500									
Chromium	< 0.010	0.010									
Iron	< 0.010	0.010									
Lead	< 0.010	0.010									
Magnesium	< 0.500	0.500									
Manganese	< 0.010	0.010									
Potassium	< 5.00	5.00									
Sodium	< 5.00	5.00									
Strontium	< 0.010	0.010									
Zinc	< 0.010	0.010									

Sample ID	LCS-15877	SampType:	LCS	TestCode:	6010_W	Units:	mg/L	Prep Date:	7/10/2015	RunNo:	45145
Client ID:	LCSW	Batch ID:	15877	TestNo:	SW6010B	Analysis Date:	7/10/2015	SeqNo:	1090467		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	0.480	0.010	0.500	0	96.1	80	120				
Barium	0.477	0.010	0.500	0	95.5	80	120				
Cadmium	0.471	0.005	0.500	0	94.2	80	120				
Calcium	46.3	0.500	50.00	0	92.5	80	120				
Chromium	0.476	0.010	0.500	0	95.2	80	120				
Iron	0.477	0.010	0.500	0	95.4	80	120				
Lead	0.480	0.010	0.500	0	95.9	80	120				

Qualifiers:	* Value exceeds Maximum Contaminant Level.	B Analyte detected in the associated Method Blank	C Value is below Minimum Compound Limit.
	E Value above quantitation range	H Holding times for preparation or analysis exceeded	J Analyte detected below quantitation limits
	M Matrix Interference	ND Not Detected at the Reporting Limit	R RPD outside accepted recovery limits
	RL Reporting Limit	S Spike Recovery outside accepted recovery limits	U Analyte not detected



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QC SUMMARY REPORT

WO#: 15061318
 15-Jul-15

Client: ICON Environmental Services
Project: IPSB 9090-040-0100

BatchID: 15877

Sample ID	LCS-15877	SampType:	LCS	TestCode:	6010_W	Units:	mg/L	Prep Date:	7/10/2015	RunNo:	45145
Client ID:	LCSW	Batch ID:	15877	TestNo:	SW6010B			Analysis Date:	7/10/2015	SeqNo:	1090467
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Magnesium	46.8	0.500	50.00	0	93.5	80	120				
Manganese	0.480	0.010	0.500	0	96.0	80	120				
Potassium	46.5	5.00	50.00	0	93.0	80	120				
Sodium	47.3	5.00	50.00	0	94.6	80	120				
Strontium	0.481	0.010	0.500	0	96.3	80	120				
Zinc	0.472	0.010	0.500	0	94.4	80	120				

Sample ID	LCSD-15877	SampType:	LCSD	TestCode:	6010_W	Units:	mg/L	Prep Date:	7/10/2015	RunNo:	45145
Client ID:	LCSS02	Batch ID:	15877	TestNo:	SW6010B			Analysis Date:	7/10/2015	SeqNo:	1090470
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	0.482	0.010	0.500	0	96.3	80	120	0.480	0.229	20	
Barium	0.478	0.010	0.500	0	95.5	80	120	0.477	0.042	20	
Cadmium	0.471	0.005	0.500	0	94.2	80	120	0.471	0.021	20	
Calcium	46.3	0.500	50.00	0	92.7	80	120	46.27	0.130	20	
Chromium	0.475	0.010	0.500	0	95.0	80	120	0.476	0.168	20	
Iron	0.476	0.010	0.500	0	95.1	80	120	0.477	0.273	20	
Lead	0.475	0.010	0.500	0	95.0	80	120	0.480	0.985	20	
Magnesium	46.8	0.500	50.00	0	93.7	80	120	46.75	0.214	20	
Manganese	0.480	0.010	0.500	0	96.0	80	120	0.480	0.021	20	
Potassium	46.5	5.00	50.00	0	92.9	80	120	46.50	0.086	20	
Sodium	46.6	5.00	50.00	0	93.2	80	120	47.31	1.51	20	
Strontium	0.476	0.010	0.500	0	95.2	80	120	0.481	1.09	20	
Zinc	0.473	0.010	0.500	0	94.5	80	120	0.472	0.127	20	

Qualifiers:	* Value exceeds Maximum Contaminant Level.	B Analyte detected in the associated Method Blank	C Value is below Minimum Compound Limit.
	E Value above quantitation range	H Holding times for preparation or analysis exceeded	J Analyte detected below quantitation limits
	M Matrix Interference	ND Not Detected at the Reporting Limit	R RPD outside accepted recovery limits
	RL Reporting Limit	S Spike Recovery outside accepted recovery limits	U Analyte not detected



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QC SUMMARY REPORT

WO#: 15061318
 15-Jul-15

Client: ICON Environmental Services
Project: IPSB 9090-040-0100

BatchID: 15877

Sample ID	15061318-011CMS	SampType:	MS	TestCode:	6010_W	Units:	mg/L	Prep Date:	7/10/2015	RunNo:	45145
Client ID:	SB-27	Batch ID:	15877	TestNo:	SW6010B			Analysis Date:	7/10/2015	SeqNo:	1090473
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	0.708	0.010	0.500	0.199	102	75	125				
Barium	1.17	0.010	0.500	0.675	98.1	75	125				
Cadmium	0.477	0.005	0.500	0.007	94.0	75	125				
Chromium	0.479	0.010	0.500	0.002	95.3	75	125				
Lead	0.470	0.010	0.500	0	94.1	75	125				
Magnesium	119	0.500	50.00	71.39	95.8	75	125				
Manganese	2.52	0.010	0.500	2.031	98.8	75	125				
Potassium	50.8	5.00	50.00	2.258	97.1	75	125				
Sodium	130	5.00	50.00	80.74	98.1	75	125				
Zinc	0.475	0.010	0.500	0	95.1	75	125				

Sample ID	15061318-011CMSD	SampType:	MSD	TestCode:	6010_W	Units:	mg/L	Prep Date:	7/10/2015	RunNo:	45145
Client ID:	SB-27	Batch ID:	15877	TestNo:	SW6010B			Analysis Date:	7/10/2015	SeqNo:	1090474
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	0.704	0.010	0.500	0.199	101	75	125	0.708	0.553	20	
Barium	1.17	0.010	0.500	0.675	99.1	75	125	1.166	0.428	20	
Cadmium	0.480	0.005	0.500	0.007	94.8	75	125	0.477	0.815	20	
Chromium	0.484	0.010	0.500	0.002	96.3	75	125	0.479	1.06	20	
Lead	0.468	0.010	0.500	0	93.7	75	125	0.470	0.447	20	
Magnesium	119	0.500	50.00	71.39	95.8	75	125	119.3	0	20	
Manganese	2.55	0.010	0.500	2.031	104	75	125	2.525	0.985	20	
Potassium	50.9	5.00	50.00	2.258	97.3	75	125	50.83	0.138	20	
Sodium	130	5.00	50.00	80.74	99.1	75	125	129.8	0.384	20	
Zinc	0.480	0.010	0.500	0	96.0	75	125	0.475	0.984	20	

Qualifiers:

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E	Value above quantitation range	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
M	Matrix Interference	ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits
RL	Reporting Limit	S	Spike Recovery outside accepted recovery limits	U	Analyte not detected



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QC SUMMARY REPORT

WO#: 15061318
 15-Jul-15

Client: ICON Environmental Services
Project: IPSB 9090-040-0100

BatchID: 15877

Sample ID	15061318-011CMSD	SampType:	MSD	TestCode:	6010_W	Units:	mg/L	Prep Date:	7/10/2015	RunNo:	45145			
Client ID:	SB-27	Batch ID:	15877	TestNo:	SW6010B			Analysis Date:	7/10/2015	SeqNo:	1090474			
Analyte		Result		PQL	SPK value	SPK Ref Val		%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Sample ID	15061318-011CMS	SampType:	MS	TestCode:	6010_W	Units:	mg/L	Prep Date:	7/10/2015	RunNo:	45145			
Client ID:	SB-27	Batch ID:	15877	TestNo:	SW6010B			Analysis Date:	7/10/2015	SeqNo:	1090495			
Analyte		Result		PQL	SPK value	SPK Ref Val		%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium		236		5.00	50.00	188.1		96.0	75	125				
Iron		22.2		0.100	0.500	21.57		134	75	125				S
Strontium		1.76		0.100	0.500	1.261		99.6	75	125				

Sample ID	15061318-011CMSD	SampType:	MSD	TestCode:	6010_W	Units:	mg/L	Prep Date:	7/10/2015	RunNo:	45145			
Client ID:	SB-27	Batch ID:	15877	TestNo:	SW6010B			Analysis Date:	7/10/2015	SeqNo:	1090496			
Analyte		Result		PQL	SPK value	SPK Ref Val		%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium		231		5.00	50.00	188.1		86.4	75	125	236.1	2.05	20	
Iron		28.2		0.100	0.500	21.57		1,330	75	125	22.24	23.6	20	RS
Strontium		1.72		0.100	0.500	1.261		91.4	75	125	1.759	2.36	20	

NOTES:

S - Analyte concentration in native sample was too high for accurate spike recovery(ies). The method is in control as indicated by the laboratory control sample (LCS).

Qualifiers:	* Value exceeds Maximum Contaminant Level.	B Analyte detected in the associated Method Blank	C Value is below Minimum Compound Limit.
	E Value above quantitation range	H Holding times for preparation or analysis exceeded	J Analyte detected below quantitation limits
	M Matrix Interference	ND Not Detected at the Reporting Limit	R RPD outside accepted recovery limits
	RL Reporting Limit	S Spike Recovery outside accepted recovery limits	U Analyte not detected



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QC SUMMARY REPORT

WO#: 15061318
 15-Jul-15

Client: ICON Environmental Services
Project: IPSB 9090-040-0100

BatchID: 15897

Sample ID	15061318-006ADUP	SampType:	DUP	TestCode:	ESP_S	Units:	%	Prep Date:	7/3/2015	RunNo:	45187		
Client ID:	SB-25 0-2	Batch ID:	15897	TestNo:	LDNR 29-B	LDNR 29-B		Analysis Date:	7/14/2015	SeqNo:	1091562		
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Exchangeable Sodium %		8.8		0.1						9.0	2.5	20	

Sample ID	15070003-001ADUP	SampType:	DUP	TestCode:	ESP_S	Units:	%	Prep Date:	7/3/2015	RunNo:	45187		
Client ID:	ZZZZZZ	Batch ID:	15897	TestNo:	LDNR 29-B	LDNR 29-B		Analysis Date:	7/14/2015	SeqNo:	1091570		
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Exchangeable Sodium %		0.7		0.1						0.8	7.8	20	

Qualifiers:

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M	Matrix Interference	ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits
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QC SUMMARY REPORT

WO#: 15061318
 15-Jul-15

Client: ICON Environmental Services
Project: IPSB 9090-040-0100

BatchID: 15898

Sample ID	15061318-006ADUP	SampType:	DUP	TestCode:	CEC	Units:	meq/100g	Prep Date:	7/3/2015	RunNo:	45186		
Client ID:	SB-25 0-2	Batch ID:	15898	TestNo:	LDNR 29-B	LDNR 29-B		Analysis Date:	7/14/2015	SeqNo:	1091539		
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Cation Exchange Capacity		66.7		0.1						61.7	7.7	20	

Sample ID	15070003-001ADUP	SampType:	DUP	TestCode:	CEC	Units:	meq/100g	Prep Date:	7/3/2015	RunNo:	45186		
Client ID:	ZZZZZZ	Batch ID:	15898	TestNo:	LDNR 29-B	LDNR 29-B		Analysis Date:	7/14/2015	SeqNo:	1091547		
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Cation Exchange Capacity		16.3		0.1						16.3	0	20	

Sample ID	LCS-15898	SampType:	LCS	TestCode:	CEC	Units:	meq/100g	Prep Date:	7/3/2015	RunNo:	45186		
Client ID:	LCSS	Batch ID:	15898	TestNo:	LDNR 29-B	LDNR 29-B		Analysis Date:	7/14/2015	SeqNo:	1091556		
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Cation Exchange Capacity		22.1		0.1	25.0	0	88.3	76	124				

Sample ID	LCSD-15898	SampType:	LCSD	TestCode:	CEC	Units:	meq/100g	Prep Date:	7/3/2015	RunNo:	45186		
Client ID:	LCSS02	Batch ID:	15898	TestNo:	LDNR 29-B	LDNR 29-B		Analysis Date:	7/14/2015	SeqNo:	1091557		
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Cation Exchange Capacity		22.4		0.1	25.0	0	89.7	76	124	22.1	1.6	20	

Qualifiers:

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M Matrix Interference	ND Not Detected at the Reporting Limit	R RPD outside accepted recovery limits
RL Reporting Limit	S Spike Recovery outside accepted recovery limits	U Analyte not detected



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QC SUMMARY REPORT

WO#: 15061318
 15-Jul-15

Client: ICON Environmental Services
Project: IPSB 9090-040-0100

BatchID: R44827

Sample ID	MB-R44827	SampType:	MBLK	TestCode:	TDS_2540C	Units:	mg/L	Prep Date:		RunNo:	44827		
Client ID:	PBW	Batch ID:	R44827	TestNo:	SM2540C			Analysis Date:	6/30/2015	SeqNo:	1083664		
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Dissolved Solids (Residue, Filterable)		< 20		20									

Sample ID	LCSD-R44827	SampType:	LCSD	TestCode:	TDS_2540C	Units:	mg/L	Prep Date:		RunNo:	44827		
Client ID:	LCSS02	Batch ID:	R44827	TestNo:	SM2540C			Analysis Date:	6/30/2015	SeqNo:	1083665		
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Dissolved Solids (Residue, Filterable)		1,000		20	1,000	0	100	85	115	992	1	10	

Sample ID	LCS-R44827	SampType:	LCS	TestCode:	TDS_2540C	Units:	mg/L	Prep Date:		RunNo:	44827		
Client ID:	LCSW	Batch ID:	R44827	TestNo:	SM2540C			Analysis Date:	6/30/2015	SeqNo:	1083666		
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Dissolved Solids (Residue, Filterable)		992		20	1,000	0	99	85	115				

Sample ID	15061210-001CDUP	SampType:	DUP	TestCode:	TDS_2540C	Units:	mg/L	Prep Date:		RunNo:	44827		
Client ID:	ZZZZZ	Batch ID:	R44827	TestNo:	SM2540C			Analysis Date:	6/30/2015	SeqNo:	1083668		
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Dissolved Solids (Residue, Filterable)		3,570		200						3,590	0	10	

Qualifiers:

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M	Matrix Interference	ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits
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QC SUMMARY REPORT

WO#: 15061318
 15-Jul-15

Client: ICON Environmental Services
Project: IPSB 9090-040-0100

BatchID: R44827

Sample ID	15061210-001CDUP	SampType:	DUP	TestCode:	TDS_2540C	Units:	mg/L	Prep Date:		RunNo:	44827		
Client ID:	ZZZZZZ	Batch ID:	R44827	TestNo:	SM2540C			Analysis Date:	6/30/2015	SeqNo:	1083668		
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Sample ID	15061210-005CDUP	SampType:	DUP	TestCode:	TDS_2540C	Units:	mg/L	Prep Date:		RunNo:	44827		
Client ID:	ZZZZZZ	Batch ID:	R44827	TestNo:	SM2540C			Analysis Date:	6/30/2015	SeqNo:	1083673		
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Dissolved Solids (Residue, Filterable)		14,100		500						14,050	0	10	

Qualifiers:	* Value exceeds Maximum Contaminant Level.	B Analyte detected in the associated Method Blank	C Value is below Minimum Compound Limit.
	E Value above quantitation range	H Holding times for preparation or analysis exceeded	J Analyte detected below quantitation limits
	M Matrix Interference	ND Not Detected at the Reporting Limit	R RPD outside accepted recovery limits
	RL Reporting Limit	S Spike Recovery outside accepted recovery limits	U Analyte not detected



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QC SUMMARY REPORT

WO#: 15061318
 15-Jul-15

Client: ICON Environmental Services
Project: IPSB 9090-040-0100

BatchID: R44846

Sample ID MB-R44846	SampType: MBLK	TestCode: ALK	Units: mgCaCO3/L	Prep Date:	RunNo: 44846						
Client ID: PBW	Batch ID: R44846	TestNo: SM2320 B		Analysis Date: 6/30/2015	SeqNo: 1080223						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Alkalinity, Bicarbonate (As CaCO3) < 10
 Alkalinity, Carbonate (As CaCO3) < 10
 Alkalinity, Total (As CaCO3) < 10

Sample ID LCS-R44846	SampType: LCS	TestCode: ALK	Units: mgCaCO3/L	Prep Date:	RunNo: 44846						
Client ID: LCSW	Batch ID: R44846	TestNo: SM2320 B		Analysis Date: 6/30/2015	SeqNo: 1080224						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Alkalinity, Total (As CaCO3) 49 10 50 0 98 80 120

Sample ID 15061210-001EDUP	SampType: DUP	TestCode: ALK	Units: mgCaCO3/L	Prep Date:	RunNo: 44846						
Client ID: ZZZZZZ	Batch ID: R44846	TestNo: SM2320 B		Analysis Date: 6/30/2015	SeqNo: 1080226						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Alkalinity, Bicarbonate (As CaCO3) 350 10 358 2 20
 Alkalinity, Carbonate (As CaCO3) < 10 10 0 0 20
 Alkalinity, Total (As CaCO3) 350 10 358 2 20

- Qualifiers:**
- * Value exceeds Maximum Contaminant Level.
 - E Value above quantitation range
 - M Matrix Interference
 - RL Reporting Limit
 - B Analyte detected in the associated Method Blank
 - H Holding times for preparation or analysis exceeded
 - ND Not Detected at the Reporting Limit
 - S Spike Recovery outside accepted recovery limits
 - C Value is below Minimum Compound Limit.
 - J Analyte detected below quantitation limits
 - R RPD outside accepted recovery limits
 - U Analyte not detected



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QC SUMMARY REPORT

WO#: 15061318
 15-Jul-15

Client: ICON Environmental Services
Project: IPSB 9090-040-0100

BatchID: R44915

Sample ID	MB-R44915	SampType:	MBLK	TestCode:	TDS_2540C	Units:	mg/L	Prep Date:		RunNo:	44915		
Client ID:	PBW	Batch ID:	R44915	TestNo:	SM2540C			Analysis Date:	7/2/2015	SeqNo:	1086857		
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Dissolved Solids (Residue, Filterable)		< 20		20									

Sample ID	LCSD-R44915	SampType:	LCSD	TestCode:	TDS_2540C	Units:	mg/L	Prep Date:		RunNo:	44915		
Client ID:	LCSS02	Batch ID:	R44915	TestNo:	SM2540C			Analysis Date:	7/2/2015	SeqNo:	1086858		
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Dissolved Solids (Residue, Filterable)		979		20	1,000	0	98	85	115	981	0	10	

Sample ID	LCS-R44915	SampType:	LCS	TestCode:	TDS_2540C	Units:	mg/L	Prep Date:		RunNo:	44915		
Client ID:	LCSW	Batch ID:	R44915	TestNo:	SM2540C			Analysis Date:	7/2/2015	SeqNo:	1086859		
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Dissolved Solids (Residue, Filterable)		981		20	1,000	0	98	85	115				

Sample ID	15061299-005DDUP	SampType:	DUP	TestCode:	TDS_2540C	Units:	mg/L	Prep Date:		RunNo:	44915		
Client ID:	ZZZZZ	Batch ID:	R44915	TestNo:	SM2540C			Analysis Date:	7/2/2015	SeqNo:	1086869		
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Dissolved Solids (Residue, Filterable)		334		20						335	0	10	

Qualifiers:

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M Matrix Interference	ND Not Detected at the Reporting Limit	R RPD outside accepted recovery limits
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QC SUMMARY REPORT

WO#: 15061318
 15-Jul-15

Client: ICON Environmental Services
Project: IPSB 9090-040-0100

BatchID: R44915

Sample ID	15061299-005DDUP	SampType:	DUP	TestCode:	TDS_2540C	Units:	mg/L	Prep Date:		RunNo:	44915		
Client ID:	ZZZZZZ	Batch ID:	R44915	TestNo:	SM2540C			Analysis Date:	7/2/2015	SeqNo:	1086869		
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Sample ID	15061009-001BDUP	SampType:	DUP	TestCode:	TDS_2540C	Units:	mg/L	Prep Date:		RunNo:	44915		
Client ID:	ZZZZZZ	Batch ID:	R44915	TestNo:	SM2540C			Analysis Date:	7/2/2015	SeqNo:	1086877		
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Dissolved Solids (Residue, Filterable)		18,200		2,000						18,300	0	10	H

Qualifiers:	* Value exceeds Maximum Contaminant Level.	B Analyte detected in the associated Method Blank	C Value is below Minimum Compound Limit.
	E Value above quantitation range	H Holding times for preparation or analysis exceeded	J Analyte detected below quantitation limits
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	RL Reporting Limit	S Spike Recovery outside accepted recovery limits	U Analyte not detected



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QC SUMMARY REPORT

WO#: 15061318
 15-Jul-15

Client: ICON Environmental Services
Project: IPSB 9090-040-0100

BatchID: R44963

Sample ID BTEX LCS	SampType: LCS	TestCode: 8021_BTEX_	Units: mg/L	Prep Date:	RunNo: 44963						
Client ID: LCSW	Batch ID: R44963	TestNo: SW8021B	Analysis Date: 7/2/2015	SeqNo: 1085962							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	0.0513	0.00500	0.05000	0	103	72	120				
Ethylbenzene	0.0447	0.00500	0.05000	0	89.4	76	129				
Toluene	0.0477	0.0100	0.05000	0	95.4	78	120				
Xylenes, Total	0.138	0.0500	0.1500	0	91.9	75	125				
Surr: alpha, alpha, alpha-Trifluorotoluene	0.0502		0.05000		100	70	130				

Sample ID BTEX LCSD	SampType: LCSD	TestCode: 8021_BTEX_	Units: mg/L	Prep Date:	RunNo: 44963						
Client ID: LCSS02	Batch ID: R44963	TestNo: SW8021B	Analysis Date: 7/2/2015	SeqNo: 1085963							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	0.0517	0.00500	0.05000	0	103	72	120	0.05130	0.777	20	
Ethylbenzene	0.0456	0.00500	0.05000	0	91.2	76	129	0.04470	1.99	20	
Toluene	0.0481	0.0100	0.05000	0	96.2	78	120	0.04770	0.835	20	
Xylenes, Total	0.140	0.0500	0.1500	0	93.0	75	125	0.1379	1.15	20	
Surr: alpha, alpha, alpha-Trifluorotoluene	0.0490		0.05000		98.0	70	130		0	20	

Sample ID MB ACID	SampType: MBLK	TestCode: 8021_BTEX_	Units: mg/L	Prep Date:	RunNo: 44963						
Client ID: PBW	Batch ID: R44963	TestNo: SW8021B	Analysis Date: 7/3/2015	SeqNo: 1085964							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	< 0.00100	0.00100									
Ethylbenzene	< 0.00100	0.00100									

Qualifiers:

* Value exceeds Maximum Contaminant Level.	B Analyte detected in the associated Method Blank	C Value is below Minimum Compound Limit.
E Value above quantitation range	H Holding times for preparation or analysis exceeded	J Analyte detected below quantitation limits
M Matrix Interference	ND Not Detected at the Reporting Limit	R RPD outside accepted recovery limits
RL Reporting Limit	S Spike Recovery outside accepted recovery limits	U Analyte not detected



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QC SUMMARY REPORT

WO#: 15061318
 15-Jul-15

Client: ICON Environmental Services
Project: IPSB 9090-040-0100

BatchID: R44963

Sample ID	MB ACID	SampType:	MBLK	TestCode:	8021_BTEX_	Units:	mg/L	Prep Date:		RunNo:	44963		
Client ID:	PBW	Batch ID:	R44963	TestNo:	SW8021B			Analysis Date:	7/3/2015	SeqNo:	1085964		
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Toluene		< 0.00100		0.00100									
Xylenes, Total		< 0.00100		0.00100									
Surr: alpha, alpha, alpha-Trifluorotoluene		0.0480			0.05000		96.0	70	130				

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank	C	Value is below Minimum Compound Limit.
	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	M	Matrix Interference	ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits
	RL	Reporting Limit	S	Spike Recovery outside accepted recovery limits	U	Analyte not detected



Element Materials Technology Lafayette
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 TEL: (337) 235-0483 FAX: (337) 233-6540
 Website: www.element.com

QC SUMMARY REPORT

WO#: 15061318
 15-Jul-15

Client: ICON Environmental Services
Project: IPSB 9090-040-0100

BatchID: R44965

Sample ID	GAS LCS	SampType:	LCS	TestCode:	8015_G_W	Units:	mg/L	Prep Date:		RunNo:	44965			
Client ID:	LCSW	Batch ID:	R44965	TestNo:	SW8015B			Analysis Date:	7/2/2015	SeqNo:	1085967			
Analyte		Result		PQL	SPK value	SPK Ref Val		%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
TPH (Gasoline Range)		12.9		0.15	12.50	0		103	80	130				

Sample ID	GAS LCSD	SampType:	LCSD	TestCode:	8015_G_W	Units:	mg/L	Prep Date:		RunNo:	44965			
Client ID:	LCSS02	Batch ID:	R44965	TestNo:	SW8015B			Analysis Date:	7/2/2015	SeqNo:	1085968			
Analyte		Result		PQL	SPK value	SPK Ref Val		%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
TPH (Gasoline Range)		13.1		0.15	12.50	0		105	80	130	12.93	1.09	20	

Sample ID	MB ACID	SampType:	MBLK	TestCode:	8015_G_W	Units:	mg/L	Prep Date:		RunNo:	44965			
Client ID:	PBW	Batch ID:	R44965	TestNo:	SW8015B			Analysis Date:	7/3/2015	SeqNo:	1085969			
Analyte		Result		PQL	SPK value	SPK Ref Val		%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
TPH (Gasoline Range)		< 0.15		0.15										
Surr: alpha, alpha, alpha-Trifluorotoluene		0.05			0.05			97.6	70	130				

Qualifiers:

* Value exceeds Maximum Contaminant Level.	B Analyte detected in the associated Method Blank	C Value is below Minimum Compound Limit.
E Value above quantitation range	H Holding times for preparation or analysis exceeded	J Analyte detected below quantitation limits
M Matrix Interference	ND Not Detected at the Reporting Limit	R RPD outside accepted recovery limits
RL Reporting Limit	S Spike Recovery outside accepted recovery limits	U Analyte not detected



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QC SUMMARY REPORT

WO#: **15061318**
15-Jul-15

Client: ICON Environmental Services
Project: IPSB 9090-040-0100

BatchID: R45001

Sample ID 15061318-006ADUP	SampType: DUP	TestCode: PMOIST	Units: wt%	Prep Date:	RunNo: 45001						
Client ID: SB-25 0-2	Batch ID: R45001	TestNo: LDNR 29-B		Analysis Date: 6/30/2015	SeqNo: 1086948						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Percent Moisture	51.7	1.0						46.9	9.7	20	

Qualifiers:	* Value exceeds Maximum Contaminant Level.	B Analyte detected in the associated Method Blank	C Value is below Minimum Compound Limit.
	E Value above quantitation range	H Holding times for preparation or analysis exceeded	J Analyte detected below quantitation limits
	M Matrix Interference	ND Not Detected at the Reporting Limit	R RPD outside accepted recovery limits
	RL Reporting Limit	S Spike Recovery outside accepted recovery limits	U Analyte not detected



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QC SUMMARY REPORT

WO#: 15061318
 15-Jul-15

Client: ICON Environmental Services
Project: IPSB 9090-040-0100

BatchID: R45015

Sample ID MB-R45015	SampType: MBLK	TestCode: EC_S	Units: mmhos/cm	Prep Date:	RunNo: 45015						
Client ID: PBS	Batch ID: R45015	TestNo: LDNR 29-B		Analysis Date: 7/7/2015	SeqNo: 1087366						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Electrical Conductivity < 0.10 0.10

Sample ID R45015LCS1	SampType: LCS1	TestCode: EC_S	Units: mmhos/cm	Prep Date:	RunNo: 45015						
Client ID: ZZZZZZ	Batch ID: R45015	TestNo: LDNR 29-B		Analysis Date: 7/7/2015	SeqNo: 1087367						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Electrical Conductivity 0.49 0.10 0.47 0 104 89.87 110.12

Sample ID R45015LCS2	SampType: LCS2	TestCode: EC_S	Units: mmhos/cm	Prep Date:	RunNo: 45015						
Client ID: ZZZZZZ	Batch ID: R45015	TestNo: LDNR 29-B		Analysis Date: 7/7/2015	SeqNo: 1087368						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Electrical Conductivity 52.1 0.10 53.00 0 98.3 90 110

Sample ID 15061318-006ADUP	SampType: DUP	TestCode: EC_S	Units: mmhos/cm	Prep Date:	RunNo: 45015						
Client ID: SB-25 0-2	Batch ID: R45015	TestNo: LDNR 29-B		Analysis Date: 7/7/2015	SeqNo: 1087375						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Electrical Conductivity 0.69 0.10 0.66 4.28 20

Qualifiers:

* Value exceeds Maximum Contaminant Level.	B Analyte detected in the associated Method Blank	C Value is below Minimum Compound Limit.
E Value above quantitation range	H Holding times for preparation or analysis exceeded	J Analyte detected below quantitation limits
M Matrix Interference	ND Not Detected at the Reporting Limit	R RPD outside accepted recovery limits
RL Reporting Limit	S Spike Recovery outside accepted recovery limits	U Analyte not detected



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QC SUMMARY REPORT

WO#: 15061318
 15-Jul-15

Client: ICON Environmental Services
Project: IPSB 9090-040-0100

BatchID: R45074

Sample ID	MB-R45074	SampType:	MBLK	TestCode:	ALK	Units:	mgCaCO3/L	Prep Date:		RunNo:	45074		
Client ID:	PBW	Batch ID:	R45074	TestNo:	SM2320 B			Analysis Date:	7/9/2015	SeqNo:	1089047		
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Alkalinity, Bicarbonate (As CaCO3) < 10
 Alkalinity, Carbonate (As CaCO3) < 10
 Alkalinity, Total (As CaCO3) < 10

Sample ID	LCS-R45074	SampType:	LCS	TestCode:	ALK	Units:	mgCaCO3/L	Prep Date:		RunNo:	45074		
Client ID:	LCSW	Batch ID:	R45074	TestNo:	SM2320 B			Analysis Date:	7/9/2015	SeqNo:	1089048		
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Alkalinity, Total (As CaCO3) 50 10 50 0 99 80 120

Sample ID	15061318-010ADUP	SampType:	DUP	TestCode:	ALK	Units:	mgCaCO3/L	Prep Date:		RunNo:	45074		
Client ID:	SB-26	Batch ID:	R45074	TestNo:	SM2320 B			Analysis Date:	7/9/2015	SeqNo:	1089050		
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Alkalinity, Bicarbonate (As CaCO3) 795 10 783 2 20
 Alkalinity, Carbonate (As CaCO3) < 10 10 0 0 20
 Alkalinity, Total (As CaCO3) 795 10 783 2 20

Qualifiers:	* Value exceeds Maximum Contaminant Level.	B Analyte detected in the associated Method Blank	C Value is below Minimum Compound Limit.
	E Value above quantitation range	H Holding times for preparation or analysis exceeded	J Analyte detected below quantitation limits
	M Matrix Interference	ND Not Detected at the Reporting Limit	R RPD outside accepted recovery limits
	RL Reporting Limit	S Spike Recovery outside accepted recovery limits	U Analyte not detected



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QC SUMMARY REPORT

WO#: 15061318
 15-Jul-15

Client: ICON Environmental Services
Project: IPSB 9090-040-0100

BatchID: R45115

Sample ID	MBLK	SampType:	MBLK	TestCode:	9056_W	Units:	mg/L	Prep Date:		RunNo:	45115			
Client ID:	PBW	Batch ID:	R45115	TestNo:	SW9056A			Analysis Date:	7/10/2015	SeqNo:	1090174			
Analyte		Result		PQL	SPK value	SPK Ref Val		%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Chloride		< 0.25		0.25										
Sulfate		< 0.25		0.25										

Sample ID	LCS	SampType:	LCS	TestCode:	9056_W	Units:	mg/L	Prep Date:		RunNo:	45115			
Client ID:	LCSW	Batch ID:	R45115	TestNo:	SW9056A			Analysis Date:	7/10/2015	SeqNo:	1090175			
Analyte		Result		PQL	SPK value	SPK Ref Val		%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Chloride		9.67		0.25	10.00	0		96.7	80	120				
Sulfate		9.93		0.25	10.00	0		99.3	80	120				

Sample ID	LCSD	SampType:	LCSD	TestCode:	9056_W	Units:	mg/L	Prep Date:		RunNo:	45115			
Client ID:	LCSS02	Batch ID:	R45115	TestNo:	SW9056A			Analysis Date:	7/10/2015	SeqNo:	1090176			
Analyte		Result		PQL	SPK value	SPK Ref Val		%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Chloride		9.71		0.25	10.00	0		97.1	80	120	9.67	0.39	15	
Sulfate		10.1		0.25	10.00	0		101	80	120	9.93	1.83	15	

Sample ID	15061318-010AMS	SampType:	MS	TestCode:	9056_W	Units:	mg/L	Prep Date:		RunNo:	45115			
Client ID:	SB-26	Batch ID:	R45115	TestNo:	SW9056A			Analysis Date:	7/10/2015	SeqNo:	1090178			
Analyte		Result		PQL	SPK value	SPK Ref Val		%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Chloride		436		12.5	250.0	159.8		110	80	120				
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Qualifiers:	* Value exceeds Maximum Contaminant Level.	B Analyte detected in the associated Method Blank	C Value is below Minimum Compound Limit.
	E Value above quantitation range	H Holding times for preparation or analysis exceeded	J Analyte detected below quantitation limits
	M Matrix Interference	ND Not Detected at the Reporting Limit	R RPD outside accepted recovery limits
	RL Reporting Limit	S Spike Recovery outside accepted recovery limits	U Analyte not detected



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QC SUMMARY REPORT

WO#: 15061318
 15-Jul-15

Client: ICON Environmental Services
Project: IPSB 9090-040-0100

BatchID: R45115

Sample ID	15061318-010AMS	SampType:	MS	TestCode:	9056_W	Units:	mg/L	Prep Date:		RunNo:	45115		
Client ID:	SB-26	Batch ID:	R45115	TestNo:	SW9056A			Analysis Date:	7/10/2015	SeqNo:	1090178		
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate		273		12.5	250.0	4.69	107	80	120				

Sample ID	15061318-010AMSD	SampType:	MSD	TestCode:	9056_W	Units:	mg/L	Prep Date:		RunNo:	45115		
Client ID:	SB-26	Batch ID:	R45115	TestNo:	SW9056A			Analysis Date:	7/10/2015	SeqNo:	1090179		
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride		403		12.5	250.0	159.8	97.2	80	120	436.0	7.91	15	
Sulfate		251		12.5	250.0	4.69	98.4	80	120	273.0	8.53	15	

Qualifiers:

* Value exceeds Maximum Contaminant Level.	B Analyte detected in the associated Method Blank	C Value is below Minimum Compound Limit.
E Value above quantitation range	H Holding times for preparation or analysis exceeded	J Analyte detected below quantitation limits
M Matrix Interference	ND Not Detected at the Reporting Limit	R RPD outside accepted recovery limits
RL Reporting Limit	S Spike Recovery outside accepted recovery limits	U Analyte not detected



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QC SUMMARY REPORT

WO#: 15061318
 15-Jul-15

Client: ICON Environmental Services
Project: IPSB 9090-040-0100

BatchID: R45174

Sample ID	MBLK	SampType:	MBLK	TestCode:	9056_LEACH	Units:	mg/L	Prep Date:		RunNo:	45174		
Client ID:	PBW	Batch ID:	R45174	TestNo:	SW9056A			Analysis Date:	7/14/2015	SeqNo:	1091383		
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride		< 0.25		0.25									

Sample ID	LCS	SampType:	LCS	TestCode:	9056_LEACH	Units:	mg/L	Prep Date:		RunNo:	45174		
Client ID:	LCSW	Batch ID:	R45174	TestNo:	SW9056A			Analysis Date:	7/14/2015	SeqNo:	1091384		
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride		10.1		0.25	10.00	0	101	80	120				

Sample ID	LCSD	SampType:	LCSD	TestCode:	9056_LEACH	Units:	mg/L	Prep Date:		RunNo:	45174		
Client ID:	LCSS02	Batch ID:	R45174	TestNo:	SW9056A			Analysis Date:	7/14/2015	SeqNo:	1091385		
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride		10.0		0.25	10.00	0	100	80	120	10.05	0.19	15	

Sample ID	15061318-001AMS	SampType:	MS	TestCode:	9056_LEACH	Units:	mg/L	Prep Date:		RunNo:	45174		
Client ID:	SB-24 0-2	Batch ID:	R45174	TestNo:	SW9056A			Analysis Date:	7/14/2015	SeqNo:	1091387		
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride		174		2.50	50.00	137.3	73.1	80	120				S

NOTES:
 S - Spike recovery indicates matrix interference. The method is in control as indicated by the Lab Control Sample.

Qualifiers:	* Value exceeds Maximum Contaminant Level.	B Analyte detected in the associated Method Blank	C Value is below Minimum Compound Limit.
	E Value above quantitation range	H Holding times for preparation or analysis exceeded	J Analyte detected below quantitation limits
	M Matrix Interference	ND Not Detected at the Reporting Limit	R RPD outside accepted recovery limits
	RL Reporting Limit	S Spike Recovery outside accepted recovery limits	U Analyte not detected



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QC SUMMARY REPORT

WO#: 15061318
 15-Jul-15

Client: ICON Environmental Services
Project: IPSB 9090-040-0100

BatchID: R45174

Sample ID	15061318-001AMSD	SampType:	MSD	TestCode:	9056_LEACH	Units:	mg/L	Prep Date:		RunNo:	45174		
Client ID:	SB-24 0-2	Batch ID:	R45174	TestNo:	SW9056A			Analysis Date:	7/14/2015	SeqNo:	1091388		
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride		180		2.50	50.00	137.3	86.2	80	120	173.9	3.68	15	

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank	C	Value is below Minimum Compound Limit.
	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	M	Matrix Interference	ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits
	RL	Reporting Limit	S	Spike Recovery outside accepted recovery limits	U	Analyte not detected



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Sample Log-In Check List

Client Name: **ICON_ENV**

Work Order Number: **15061318**

RcptNo: **1**

Logged by: **Heather Delay** **6/30/2015 3:40:00 PM**

Heather Delay

Completed By: **Heather Delay** **6/30/2015 4:21:16 PM**

Heather Delay

Reviewed By: **Caitlin Duplantis** **7/6/2015 1:52:55 PM**

Caitlin Duplantis

Chain of Custody

- 1. Is Chain of Custody complete? Yes No Not Present
- 2. How was the sample delivered? Element

Log In

- 3. Coolers are present? Yes No NA
- 4. Shipping container/cooler in good condition? Yes No
- Custody seals intact on shipping container/cooler? Yes No Not Present
- No. Seal Date: Signed By:
- 5. Was an attempt made to cool the samples? Yes No NA
- 6. Were all samples received at a temperature of >0° C to 6.0°C Yes No NA
- 7. Sample(s) in proper container(s)? Yes No
- 8. Sufficient sample volume for indicated test(s)? Yes No
- 9. Are samples (except VOA and ONG) properly preserved? Yes No
- 10. Was preservative added to bottles? Yes No NA
- 11. Is the headspace in the VOA vials less than 1/4 inch or 6 mm? Yes No No VOA Vials
- 12. Were any sample containers received broken? Yes No
- 13. Does paperwork match bottle labels? Yes No
(Note discrepancies on chain of custody)
- 14. Are matrices correctly identified on Chain of Custody? Yes No
- 15. Is it clear what analyses were requested? Yes No
- 16. Were all holding times able to be met? Yes No
(If no, notify customer for authorization.)

Special Handling (if applicable)

- 17. Was client notified of all discrepancies with this order? Yes No NA

Person Notified:	<input type="text" value="Jason Sills"/>	Date:	<input type="text" value="6/30/2015"/>
By Whom:	<input type="text" value="Caitlin Duplantis"/>	Via:	<input checked="" type="checkbox"/> eMail <input type="checkbox"/> Phone <input type="checkbox"/> Fax <input type="checkbox"/> In Person
Regarding:	<input type="text" value="SB-26 4-6' not on the COC."/>		
Client Instructions:	<input type="text" value="Please analyze sample for EC/ESP/SAR/CEC/29b Metals (our usual list)."/>		

- 18. Additional remarks:
 Improper error correction(s) made by client
 Added the trip blank to the COC as per sample received.

Cooler Information

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	4.5	Good	Not Present			



Chain of Custody

Laboratory Number: 15001318

Client Information: **Leo Env**
Greg Miller
 2019 Commercial Dr
 Port Allen La 70767
 Ext: 225 3448490

PO Number: **990-040-0100**
 Quote Number: **990-040-0100**
 Required QC Level: Yes No
 Bill Monthly: Yes No

Project Name/Number: **EP515**
 Sampler's Signature: *[Signature]*
 Shipping Method: **UPS / FedEx / Airborne**
DHL / Element / Hand / Mail

Matrix Code:
 DW = Drinking Water
 WW = Waste Water
 GW = Ground Water
 AQ = Aqueous
 OT = Other
 SL = Sludge SOL = Solid
 O = Oil SO = Soil
 F = Food SW = Swab
 NG = Natural Gas
 NGL = Natural Gas Liquid
 PW = Produced Water
 CF = Completion Fluid

Sample ID/Description	Which Regulations Apply:		Turn Time	Container	Pres.	Requested Tests	Comments
	RCRA	POTW					
Sample ID/Description	Collection Information		Date	Time	Matrix	Quantity	Comments
	Date	Time					
SB-24	0-2	Standard	6-22-15	1530	G	1 P	
SB-24	4-6	RUSH	1540				
SB-24	8-10	1 Day	1550				
SB-24	14-16	2 Day	1600				
SB-24	20-22	Other	1605				
SB-25	0-2	Standard	6-25-15	845	comp	2 P, 6	
SB-26	0-2	Standard			G	1 P	
SB-26	12-14						
SB-26	20-22						

Relinquished by	Date/Time	Received by	Date/Time
<i>[Signature]</i>	6-30-15 1320	<i>[Signature]</i>	6-30-15 1320
<i>[Signature]</i>	6-30-15 1540	<i>[Signature]</i>	6-30-15 1540

All samples submitted to Element Materials Technology for analysis are accepted on a custodial basis only. Ownership of the material remains with the client submitting the samples. Element Materials Technology reserves the right to return unused sample portions.

9301 Innovation Drive, Suite 115
 Daleville, IN
 47334-0569 USA
 P 765-378-4103
 F 765-378-4109

629 Washington St, Suite 300
 Columbus, IN
 47201-6231 USA
 P 812-375-0531
 F 812-375-0731

2121 East Washington Boulevard
 Fort Wayne, IN
 46803-1328 USA
 P 260-471-7000
 F 260-471-7777

590 South Zimmer Road
 Warsaw, IN
 46580-2265 USA
 P 574-287-3305
 F 574-289-6569

3371 Cleveland Road, Suite 100A
 South Bend, IN
 46628-9780 USA
 P 574-277-0707
 F 574-273-5699

2417 W. Pinhook Rd
 Lafayette, LA
 70508-3344 USA
 P 337-235-6483
 F 337-233-6540



Chain of Custody

Laboratory Number: 15061376

Client Information: **ICMA** PO Number: **9040-040-D100** Project Name/Number: **IP50** Page **7** of **3**

Company Name: **ICMA** Quote Number: **9040-040-D100** Matrix Code: **DW = Drinking Water, WW = Waste Water, GW = Ground Water, AQ = Aqueous, OT = Other, SL = Sludge, SOL = Solid, O = Oil, SO = Sol, F = Food, SW = Swab, NG = Natural Gas, NGL = Natural Gas Liquid, PW = Produced Water, CF = Completion Fluid**

Address: **ICMA** Required QC Level: **Yes** Bill Monthly: **Yes** Shipping Method: **UPS / FedEx / Airborne**

City, State Zip: **ICMA** Ext: **ICMA** Sampler's Signature: *[Signature]* DHL / Element / Hand / Mail

Sample ID/Description	Which Regulations Apply: <input type="checkbox"/> RCRA <input type="checkbox"/> Drinking Water <input type="checkbox"/> POTW <input type="checkbox"/> Distribution <input type="checkbox"/> INPOES <input type="checkbox"/> Special <input checked="" type="checkbox"/> USPA/FDA <input type="checkbox"/> State <i>(MNR)</i> <input type="checkbox"/> REC/PRISC <input type="checkbox"/> Other	Turn Time <input checked="" type="checkbox"/> Standard <input type="checkbox"/> RUSH <input type="checkbox"/> 1 Day <input type="checkbox"/> 2 Day <input type="checkbox"/> Other	Collection Information		Container Type Quantity	Pres. HCl, HNO ₃ , H ₂ SO ₄ , NaOH, Na ₂ SO ₄	Requested Tests	Comments
			Date	Time				
SB-26		6-26-15 1015	G	AG	P-Plastic		TPH-D/O Chlorides TDS Anions Cations	<u>Metals</u> As Ba Cd Cr Fe Mn Pb Sr Zn Hg
SB-27		6-29-15 1045	↓	↓	↓			<u>Cations</u> Na K Mg Ca
SB-24		6-23-15 945	↓	↓	↓			<u>Anions</u> Sulfate AK Carbonate AK Bicarbonate

Relinquished by	Date/Time	Received by	Date/Time	Field Notes
<i>[Signature]</i>	6-30-15 1320	<i>[Signature]</i>	6-30-15 1320	Received at lab on ice? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No Temp: 4.5°C
<i>[Signature]</i>	6-30-15 1540	<i>[Signature]</i>	6-30-15 1540	

All samples submitted to Element Materials Technology for analysis are accepted on a custodial basis only. Ownership of the material remains with the client submitting the samples. Element Materials Technology reserves the right to return unused sample portions.

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629 Washington St. Suite 300 Columbus, IN 47201-6231 USA P 812-375-0531 F 812-375-0731

2121 East Washington Boulevard Fort Wayne, IN 46803-1328 USA P 260-471-7000 F 260-471-7777

560 South Zimmer Road Warsaw, IN 46580-2265 USA P 574-267-3205 F 574-269-6569

3371 Cleveland Road, Suite 100A South Bend, IN 46628-9789 USA P 574-277-0707 F 574-273-5699

2417 W. Pinhook Rd Lafayette, LA 70508-3344 USA P 337-235-0483 F 337-233-6540

APPENDIX D
RESUMES AND LIST OF TESTIMONY EXPERIENCE



Gregory W. Miller, P.G.
ICON Environmental Services, Inc.
2049 Commercial Drive
Port Allen, Louisiana 70767

Qualifications Summary

Geologist and project manager with over twenty years of professional experience in the Gulf Coast and northeastern United States area. Extensive experience in all aspects of groundwater sciences, including project planning, field methods, data evaluation, report preparation, modeling, predictive analysis, fate and transport analysis, regulatory liaison, and project management. Routinely involved with evaluations of hydrology and geochemical interaction of vadose zone, surface water, and groundwater regimes; frequently perform surface and borehole geophysical investigations. Commonly develop and implement innovative field characterization methods.

Professional Experience

- (5/94 - Present) ICON Environmental Services; Baton Rouge, LA
Sr. Geologist/Principal Hydrogeologist; Corporate President
- (8/91 - 5/94) Environmental Consulting & Technology, Inc.; Baton Rouge, LA
Sr. Staff Geologist/Hydrogeology Department Manager
- (6/90 - 2/91) Woodward-Clyde Consultants; Baton Rouge, LA; *Staff Geologist*
- (12/86 - 6/90) The Johnson Company, Inc.; Montpelier, VT; *Project Geologist*
- (6/86 - 12/86) Industrial and Environmental Analysts; Essex Junction, VT; *Scientist*
- (5/83 - 2/86) Core Laboratories, Inc.; Lafayette, LA; *Log and Core Analyst*

Selected Relevant Project Experience

INNOVATIVE TECHNOLOGY

Project Manager, Principal Hydrogeologist; Subsurface Assessment Using Innovative Technology; US NAVY, Jacksonville, LA – Developed innovative procedure for subsurface assessment utilizing direct push methods. Lithology is determined through sealed casing using borehole geophysics. A small diameter permanent well is installed through the sealed casing, and includes proper grout to surface. Two sites were characterized using the new technology, and using conventional technology. The results of the two methods were compared, and results were presented to the FDEP and EPA, and were used to fulfill contaminant investigation requirements as per the site HSWA permit.

“Missing Link Technology” – Utilize direct push tooling to allow sampling of groundwater, natural gamma logging of soils for lithological characterization, and pressure grouting for permeability reduction. The technology, patented by ICON personnel, relies on hammering a screen or tool port ahead of the primary string to allow sampling or grouting in the permeable zone of interest, while maintaining a hydraulic seal around the primary string due to lithological compaction.

CONTAMINATION ASSESSMENT, REMEDIATION, RISK ASSESSMENT

Project Manger and Principal Investigator; RECAP Risk Assessment, Shreveport Atlas Refinery – Project involved review of historical aerial photos to identify former process locations. All historical environmental data ever generated at the subject refinery were used to develop a site-specific fate and transport model, to which resulting constituent concentrations at the point of exposure were evaluated using the Louisiana RECAP protocol. Conducted soil and groundwater

delineation assessment to characterize 18 areas of concern, including parameters for natural attenuation modeling.

Project Manager; Hydrogeological Assessments; Boeing Petroleum Services, Inc.--Six Department of Energy Strategic Petroleum Reserve sites in Louisiana and Texas were screened for groundwater contamination using a limited soil boring program, soil gas surveys, and electromagnetic terrain conductivity surveys. Data were evaluated and presented with pertinent historical site specific information in a report with recommendations for verification sampling.

Project Manager; Groundwater Contamination Delineation and Corrective Action; Exxon Company, USA--Delineated the extent of a brine plume at a former gas plant including the rapid-assessment technique of drive-point sampling, and vertical discrete groundwater sampling. Conducted a pumping test of an existing well, predictive groundwater modeling, and designed and installed a groundwater recovery system.

Project Manager; Groundwater Assessment and Remediation, Tensas Parish Police Jury--Delineated the extent of subsurface impact from petroleum fuels at a maintenance facility; assessment included installation of borings and monitor wells, and the rapid-assessment technique of drive-point sampling and a soil gas survey. Conducted a limited risk assessment with remedial action plan selection. Implemented excavation of 7000 yards³ of soil and onsite treatment using biodegradation/volatilization, and groundwater extraction and treatment using air stripping; utilized client's machinery and labor as available to minimize total project costs.

Principal Investigator; Oil Industry Subsurface Assessments, Exxon Company, U.S.A., Vastar Resources, Inc., and Others- Evaluated historical aerial photographs to document past field development and impacts. Conducted comprehensive evaluation of subsurface soils and groundwater for impacts from past oil and gas activities including impacts by petroleum hydrocarbons, heavy metals, and brine at gas plants, bulk storage tank sites, and shorebase facilities. Conducted a Risk Based Corrective Evaluation for closure and/or remedial goals.

Project Geologist/Field Coordinator; Exxon Chemical Company--Completed a detailed soil and groundwater assessment at three areas within a tank farm. Successfully conducted field investigations under a very restricted schedule by coordinating four simultaneously operating field crews. Compiled a report including data assessment, hydrogeological conditions, and corrective action design, and presented the results to regulatory authorities.

Project Manager; Hydrogeologic and Contaminant Assessment, Calumet Refining Company, Cotton Valley, LA; Delineated the lateral extent of a petroleum hydrocarbon plume at a specialties (solvent, thinners) refinery; conducted risk assessment and developed a corrective action plan.

Project Manager; Underground Storage Tank Assessment Sites in Louisiana; Various Clients--Manage assessment and remedial activities at numerous underground storage tank sites. Activities include UST removal, preliminary assessment, contaminant assessment, remedial alternatives analysis, and corrective action planning and implementation.

Staff Geologist; Local Contamination Assessment, Confidential Client, Various Locations-- Completed soil and groundwater investigations for PCB contamination at petroleum pipeline compressor stations throughout Mississippi.

GROUNDWATER CHARACTERIZATION AND MONITORING SYSTEM DESIGN

Project Manager; Hydrogeologic Evaluation, Tensas Parish Municipal Landfill, St. Joseph, LA- Conducted comprehensive hydrogeological evaluation in compliance with US EPA Subtitle D Regulations, including the installation of shallow and deep exploratory borings and monitoring wells, borehole geophysical wireline logging, and several years of monitoring well sampling and data evaluation.

Project Geologist; Freeport McMoran, Inc.--Designed vadose zone monitoring program to determine the suitability of using phosphogypsum as a roadbase material. The program included the installation of 33 lysimeters, and six groundwater monitoring wells, sampled over a six year period.

Principal Investigator; Pennzoil Products Company, Atlas Refinery, Shreveport, LA – Conducted site-wide subsurface characterization using conventional boring data, CPT data, borehole geophysical data, and hydraulic head data from existing wells. Designed perimeter groundwater monitoring system.

Hydrogeologist; Sabine Parish Landfill, La – Completed site-wide hydrogeologic evaluation and monitoring well network design using conventional and borehole geophysical data.

Project Geologist; Arrowhead Cogeneration Corporation--Determined site suitability for subsurface wastewater disposal, by performing soil and groundwater investigations, wastewater renovation studies (laboratory models), and pilot loading tests. Utilized computer models to predict effects of hydraulic loading. Acquired permits and designed compliance monitoring program.

LITIGATION SUPPORT AND EXPERT WITNESS TESTIMONY

Hydrogeology Expert; Long Point Partners, L.P. – Evaluated and modeled the potential for caprock dissolution and the potential for subsequent subsidence at a solid waste landfill site. Provided an expert report, provided deposition and trial testimony at an adjudicatory in Austin, Texas. Was accepted as an expert in the field of Hydrogeology.

Geology, Hydrogeology and Site Assessment Expert - Norfolk Southern Corp. et al v. California Union Insurance Company and Certain Underwriting Members of Lloyds: Pearl River, Bayou Bonfouca, Southern Wood Piedmont Site, Jennison Wright Facility, Baystreet Site, and Oneida Site Sites. – Provided comprehensive hydrogeological evaluation and review of historical aerial photography and contamination distribution at each site, rendered expert reports, provided deposition testimony and trial testimony in a four-year long litigation (1998-2002) involving numerous sites previously operated by Norfolk Southern Corp. who was attempting to recover costs for historical remediation at each site. Was recognized as an expert in Geology, Hydrogeology and Site Assessment during five separate trials in the 19th Judicial District Court, Baton Rouge, LA.

Geology, Hydrogeology and Site Assessment Expert - Davison Transport, Inc. and Melamine Decorative Laminate v United Technologies Automotive, Inc., the City of Ruston, and Essex Group. Designed and managed a subsurface assessment, developed a corrective action plan, provided deposition testimony and trial testimony as an expert in the fields of Hydrogeology and Site Assessment and Remediation at the 3rd Judicial District Court, Lincoln Parish, 1999 to 2000.

Geology, Hydrogeology and Site Assessment Expert, Project Manager and Principal Investigator – Numerous Oil and Gas Field Assessments in Louisiana. Performed comprehensive site assessments of over 100 oil field sites for various plaintiffs using surface geophysics (electromagnetic surveys), historical aerial photograph interpretation, borehole screening tools (conductivity probing and borehole geophysical surveys), installation of groundwater monitoring wells, collection and evaluation of soil and groundwater samples, sediment sampling, sludge sampling, aquifer testing, and review of historical records. Provided expert reports and deposition and trial testimony for various District Court and Federal Court venues. Successfully defended methodology and qualifications at numerous Daubert hearings and was recognized by the court as an expert in the fields of Geology, Hydrogeology, Site Assessment, Regulatory Liaison, and Implementation of the Louisiana Department of Environmental Quality's "Risk Evaluation and Corrective Action Program" (RECAP). Evaluated data in accordance with standards in Louisiana Department of Natural Resources regulations, Act 312 procedures and the LDEQ RECAP document; and performed predictive groundwater modeling to design groundwater remediation systems.

Geology, Hydrogeology and Site Assessment Expert - Firemen's Charitable & Benevolent Association of New Orleans v Orkin, Inc. Performed a site assessment at a former pesticide management facility in New Orleans. The assessment included soil and groundwater sampling. Provided deposition and trial testimony in United States District Court, Section S (2005-2006). Was recognized by the court as an expert in the areas of geology, hydrogeology and site assessment.

SITE ASSESSMENT AND RISK MINIMIZATION EVALUATION AND PLANNING

Project Manager; Environmental Audit, Exxon Company, U.S.A., Production Department--

Managed and performed inspections of 40 non-hazardous waste disposal/treatment sites in five states. The project involved assessment of compliance with regulation, potential/degree of environmental impact, and conformance to good management practices.

Principal Author; OPA and SPCC Plans, Exxon Company, Jordon Oil Company, Lemoine Distributors, S&W Services. Etc. --Designed and compiled vessel and facility response plans for the northern Gulf of Mexico region and inland waters in accordance with the Oil Pollution Act of 1990 (OPA '90) regulations. The plans were interactive, designed for ease of site-specific modification and use in the event of a spill. SPCC plans were designed as per 40 CFR, Part 112, for aboveground storage tanks in excess of 1,320 gallons.

Phase I and II Transaction Site Assessments – Numerous clients in Louisiana and Mississippi

-- Performed assessment for real estate and oil production property transaction using site specific methods, ASTM guidelines, and Nations Bank protocol. Routinely utilize document review, historical aerial photographs, and process knowledge to preliminarily identify areas of concern.

Project Manager; Phase I and II Environmental Site Assessment; Confidential Client--

Conducted surface and sub-surface assessment at an oilfield pipe reconditioning yard in Lafayette, Louisiana, for contamination by hydrocarbons, heavy metals, and naturally occurring radioactive material (NORM).

LAND PLANNING AND PERMITTING

Project Manager; Cabot Cooperative Creamery--Developed a land application-nutrient recovery program for a dairy manufacturing facility with a wastewater load of 100,000 gallons per day. Performed site evaluations, wastewater fate analysis, receiving stream impact analysis, report preparation, permit acquisition, and groundwater monitoring. The project involved field identification of soils at 150 agricultural sites, with emphasis on predicting seasonal saturation. The entire project proceeded under close scrutiny of organized area residents.

Project Geologist; Rainbow Trust, Inc.--Performed evaluation of 450 acres to assess potential for residential development. Evaluations included water supply development (involving geophysical surveys, aerial photography and fracture trace analysis), subsurface sanitary wastewater disposal, groundwater modeling using *Modflow*, soils identification for wetlands delineation, and land planning (access, roads, etc.).

Project Manager; Wastewater Discharge Permitting, Kraft Foods, Inc, Various Truck

Washing and Barge Rehab Facilities --Acquired surface discharge permit for disposal of non-contact cooling water, industrial water, residual contents, and stormwater. Utilized water quality sampling, stream and effluent discharge measurements, and a dye study to perform a thermal assimilation study.

Gregory W. Miller, P.G.

LIST OF LITIGATION TESTIMONY

Anne Anderson et al v Cryovac a Division of W.R. Grace & Co. et al, US District Court District of Massachusetts, Civil Action No. 82-1672-S (1984-1985) Assisted in preparation of defense for Unifirst Corporation, Woburn, Massachusetts for litigation in the contamination of two water supply wells, Wells G & H.

Lorio v Western Waste Industries. Pointe Coupee Parish. (Judge Jack Marrioneaux). Fact witness. Provided deposition and preparation for trial. Case Settled ~ 1997.

Ostheimer v VenVirotek of Louisiana. Lafourche Parish.. Provided expert opinion (written report), and deposition testimony. Case Settled ~1998.

Wayne Simoneaux et.al. v Amoco, 23rd Judicial District Court, Assumption Parish, Division D. 1998-2000, Assumption Parish, Louisiana. Performed hydrogeological assessment and provided multiple deposition and trial testimony as a fact witness.

Adjudicatory Hearing for Application of Long Point Partners, L.P. for Permit No. MSW-2270, July 2000, Austin, Texas. Provided expert opinion (written report), deposition and hearing testimony. Was accepted as an expert in the field of Hydrogeology.

Tensas Parish Police Jury v Louisiana Department of Environmental Quality, 1997. Provided deposition testimony as fact witness.

Norfolk Southern Corp. et al v. California Union Insurance Company and Certain Underwriting Members of Lloyds, Baton Rouge, Louisiana: Pearl River, Bayou Bonfoucca Sites. September 1998-October 1999. Provided expert opinion (written report), multiple deposition testimony, and bench and jury trial testimony regarding the Pearl River site in Louisiana. Was recognized as an expert in the field of Geology.

Norfolk Southern Corp. et al v. California Union Insurance Company and Certain Underwriting Members of Lloyds, et al: Southern Wood Piedmont Site. 1999-2000, 19th Judicial District Court, Division D, East Baton Rouge Parish, LA. Provided expert opinion (written report), deposition testimony, and trial testimony regarding the Southern Wood Piedmont site in Macon, Georgia. Was recognized as an expert in the field of Geology.

Norfolk Southern Corp. et al v. California Union Insurance Company and Certain Underwriting Members of Lloyds, et al, Jennison Wright Facility. November 2001. 19th Judicial District Court, Division D, East Baton Rouge Parish, LA. Provided expert opinion, deposition testimony, and trial testimony regarding the Jennison Wright Facility in Toledo, Ohio. Was recognized as an expert in the field of Geology.

Norfolk Southern Corp. et al v. California Union Insurance Company and Certain Underwriting Members of Lloyds, et al, Baystreet Site. December 2001. 19th Judicial District Court, Division D, East Baton Rouge Parish, LA. Provided expert opinion, and deposition testimony. Provided evidence that led to a successful motion for judgement as a matter of law regarding the Baystreet Tank Facility in Savannah, Georgia.

Norfolk Southern Corp. et al v. California Union Insurance Company and Certain Underwriting Members of Lloyds, et al, Oneida Site. January-February 2002. 19th Judicial District Court, Division D, East Baton Rouge Parish, LA. Provided expert opinion, and deposition testimony concerning the Oneida, Tennessee rail yard.

Davison Transport, Inc. and Melamine Decorative Laminate v United Technologies Automotive, Inc., the City of Ruston, and Essex Group, 3rd Judicial District Court, Lincoln Parish, 1999,2000. Conducted subsurface assessment and developed a corrective action plan. Provided deposition testimony and trial testimony as an expert in the fields of Hydrogeology and Site Assessment and Remediation.

Mary Michael Morril v Shell Oil Company, 23rd Judicial District Court, Division A, May 2001. Conducted site assessment of an active oilfield using surface and borehole geophysical surveys, conventional drilling and sampling techniques and monitor well installation and sampling. Provided expert opinion and deposition testimony.

B&C Land, Inc and Hackberry Farms v Exxon Mobil Corporation, et al, 23rd Judicial District Court, Division D, St. James Parish, LA. November 2002. Conducted site assessment of a former brine pit, injection well, and former oil and gas production locations in the Vacherie Field. Provided deposition testimony.

Martinez Seafood v Thibaut Oil, 23rd Judicial District Court, Ascension Parish, LA. December 2001. Performed removal of UST, remediation of impacted soils, groundwater monitoring and site closure. Provided deposition testimony.

Victor Vegas and Jane Vegas v Miller Exploration Company, et al, Civil District Court, Orleans Parish, LA. August 2002. Conducted site assessment of gas well blowout in Foules Dome Field, Catahoula Parish, LA. using surface and borehole geophysics, conventional drilling and sampling techniques, and the installation of nested monitoring wells to a depth of 200 feet. Provided deposition testimony.

Vienne v Conoco, Inc., 15th Judicial District Court, Division C. May 2004. Performed a site assessment of an oilfield and former gas fractionation plant using surface geophysical surveys, NORM screening, and soil and water sampling. Provided deposition testimony.

J. Paulin Duhe, Inc. v Texaco, Inc., et al., 16th JDC, Iberia Parish, Louisiana. November 2004 and June 2005. Performed a site assessment at an oilfield in south Louisiana that included production facilities, salt water injection wells, former pits, and separation/fractionation facilities. The assessment included surface geophysical

surveys, direct push conductivity logging, soil and groundwater sampling, and NORM screening. Provided deposition testimony.

Armelise Planting Company, et al v. BP Amoco, et al., 23rd JDC, Assumption Parish, Louisiana. December 2004. Performed a site assessment at the Napoleonville Oilfield in south Louisiana that included former production facilities, salt water injection wells, former pits, and separation/fractionation facilities. The assessment included surface geophysical surveys, direct push conductivity logging, borehole geophysical logging, soil and groundwater sampling, and NORM screening. Provided deposition testimony.

Cheryl Lanoux, et al v. Crompton Manufacturing Company, Inc., et al, 23rd JDC, Ascension Parish, Louisiana, February 2005. Performed a site assessment of an uncontrolled hazardous waste dumping site that had historically received toluene tars and sludge. The dumping site was later developed for private residences and a child daycare facility. The assessment included soil and groundwater sampling; surface water and sediment sampling; and determination of groundwater flow direction, velocity and estimated yield and interaction with an adjacent surface water body. The shallow regional geological regime was evaluated using drillers logs of registered water wells within a two mile radius. Provided deposition testimony.

Weeks, et al v. Shell, 23rd JDC, St. Mary Parish, Louisiana, May 2005. Performed limited site assessment including soil and sludge/sediment sampling, and shallow groundwater sampling at a former oil and gas field in a South Louisiana Marsh. Provided deposition testimony.

Armelise Planting Company, et al v. BP Amoco, et al., 23rd JDC, Assumption Parish, Louisiana. August 2005. Performed a site assessment at active salt dome storage facilities on Napoleonville Dome. The assessment included surface geophysics, conductivity probing, and shallow soil and groundwater sampling at brine storage pits at two of the cavern wells. Performed water well sampling and cavern evaluation across the dome. Provided deposition testimony.

Firemen's Charitable & Benevolent Association of New Orleans v Orkin, Inc., United States District Court, Section S, December 2005 and March 2006. Performed a site assessment at a former pesticide management facility in New Orleans. The assessment included soil and groundwater sampling. Provided deposition testimony. Provided trial testimony as an expert in the areas of geology, hydrogeology and site assessment.

Grand Lake Rod & Gun Club Inc and Roy O. Martin Lumber Company, Inc. v BP America Production Company, et al, 12th Judicial District Court, Division B, Avoyelles Parish, Louisiana, February 2006. Performed a site assessment at Five Mile Bayou Field, Three Mile Bayou Field, and Milligan Bayou Field in Avoyelles Parish, Louisiana. Provided deposition testimony.

Alex Simoneaux et al v. Southern Natural Gas Co. et al, 23rd JDC, Assumption Parish, Louisiana, April 2006. Performed a site assessment of soil and groundwater in

northern Napoleonville Field, Assumption Parish, LA. The assessment included surface geophysics, soil and groundwater sampling, conductivity probing, and pump testing of wells to determine aquifer yield. Provided deposition testimony. Successfully defended well yield methodology in a Daubert Hearing and was qualified as an expert in geology, hydrogeology and site assessment.

Lejeune Brothers, LLC v. Goodrich Petroleum Company, LLC., 16th JDC, Iberia Parish, LA, June 2006. Performed a site assessment of soil and groundwater at an oil and gas well tank battery and former pit area. The assessment included surface geophysics, soil and groundwater sampling, and conductivity probing. Provided deposition testimony.

Robert H. Feaster et al. v. Reliant Energy Gas Transmission Co., Inc. et al, 1st JDC, Caddo Parish, LA, June 2006. Performed a site assessment of groundwater contamination by petroleum hydrocarbons caused by a former gas plant. The assessment included sampling existing water supply wells, drilling and sampling of boreholes, performing borehole geophysical logging, installation of monitoring wells, sampling of monitoring wells, development of a conceptual site model and evaluation of plume fate and transport through multiple aquifers. Provided deposition testimony.

Tebow, William M. v Bradex Oil & Gas, Inc., 12th JDC, Avoyelles Parish, LA, August 2006. Performed a site assessment of soil and groundwater contamination by former oil and gas exploration and production facilities in the Haas Oil and Gas field, Avoyelles Parish, LA. The assessment included surface geophysics, direct push conductivity probing, historical aerial photograph interpretation, soil and groundwater sampling, borehole geophysical logging, and review of published data. Provided deposition testimony. Successfully defended qualifications and methodology in a Daubert hearing. Provided jury trial testimony and was qualified by the court as an expert in geology, hydrogeology and site assessment.

Abshire, Evelyn et al v BP Corporation North America et al, 15th JDC, Acadia Parish, LA, August 2006. Performed a site assessment of the Jennings Oilfield, the oldest oil and gas field in Louisiana. The assessment included surface and borehole geophysics, soil and groundwater sampling, installation and sampling of numerous double cased boreholes to depths as great as 220 feet. Provided deposition testimony.

Donald Marin et al v Exxon Mobil Corporation, 16th JDC, St. Mary Parish, LA, August 2006. Performed a site assessment of the Bayou Sale oil and gas field using historical aerial photography interpretation, surface geophysics, direct push conductivity logging, soil and groundwater sampling, and subaqueous sediment sampling. Provided deposition testimony. Provided bench trial testimony and was qualified by the court as an expert in geology, hydrogeology, and site assessment.

Fleming Companies, Inc, v Baker Petrolite Corp, 15th JDC, Lafayette Parish, LA, November 2006. Performed an evaluation of hydrocarbon contamination in the Chicot Aquifer, and performed a predictive groundwater flow model that allowed development

of cost for remediation. Provided deposition testimony and trial testimony. Was accepted as an expert in the fields of Geology, Hydrogeology and Site Assessment.

Brownell Land Co. L.L.C. v Oxy USA Inc, et al, U.S. District Court, Eastern District, Section K, Civil Action No. 05-CV-225, July 2007. Performed a contamination assessment at the Bay Natchez oilfield using surface geophysics, intrusive assessment, historical aerial photograph interpretation, and a review of DNR production files. Issued an expert report that used onsite closure criteria listed in Statewide Order 29B to evaluate soil contamination, and used the LDEQ RECAP protocol to evaluate groundwater contamination. Provided deposition testimony.

J. Gerald Dupont v Metairie Energy Company, Inc, et al. 18th JDC, Division B, Iberville Parish, LA, April 2007. Performed a contamination assessment at Bayou Choctaw oilfield using surface geophysics, intrusive assessment, historical aerial photograph interpretation, and a review of DNR production files. Issued an expert report that used onsite closure criteria listed in Statewide Order 29B to evaluate soil contamination, and used the LDEQ RECAP protocol to evaluate groundwater contamination. Provided deposition testimony.

Roy O. Martin Lumber Company, L.L.C. v Mobil Exploration and Producing North America Inc, et al, 18th JDC, Pointe Coupee Parish, LA., October 2007. Performed a contamination assessment at the Bayou Latenatche-Ravenswood oilfield utilizing Statewide Order 29B to evaluate soil contamination, and performed a RECAP analysis to evaluate groundwater contamination. Provided remediation cost estimates. Provided deposition testimony.

Tensas Poppadoc, Inc v Chevron USA, Inc et al; 7th JDC, Docket No. 40769, Div B, Concordia Parish, Louisiana, March 2008 through January 2009. Performed a contamination assessment and evaluated contaminated Class 1 groundwater using RECAP approach. Soil was evaluated using Statewide Order 29B closure standards. Provided deposition testimony. Provided trial testimony in a jury trial, and was qualified as an expert in geology, hydrogeology, site assessment, implementation of RECAP (Louisiana's risk based regulatory standards), and regulatory compliance. Provided testimony at Louisiana's first Act 312 hearing at the Department of Natural Resources, and was accepted as an expert in areas previously qualified.

Gloria Ned, Individually and on Behalf of Jessie January and Jacqueline January v No. 2003-001100, Division "D" Union Pacific Corp; Union Pacific Railroad Corp; PPG Industries, Inc.; W.J. Peard: A.L. Greathouse; Harry C. Hank; Tommy G Brown and Dallas Stutes, Lake Charles, Calcasieu Parish, LA, January and March 2009. Performed an evaluation of fate and transport of PCE and daughter products in groundwater, and evaluated risk in the framework of the RECAP document. Provided trial testimony in a bench trial on prematurity, and was accepted as an expert in geology, hydrogeology, site assessment, RECAP, and regulatory compliance.

Black River Real Estate Company, Inc v Hunt Oil Company, et al, 7th JDC, Concordia Parish, Div B, Ross Bayou Field, late 2008-early 2009. Performed a

contamination assessment and evaluated contaminated Class 1 groundwater using RECAP approach. Soil was evaluated using Statewide Order 29B closure standards. Assessment utilized surface and borehole geophysics, conventional soil and groundwater sampling, aquifer testing, groundwater flow gradient considering density effects of brine contamination, and predictive groundwater modeling to determine groundwater capture/recovery zones for remediation design. Provided deposition testimony.

Clyde Tucker, Ronald Johnson, Gloria Laubach v Shell Oil, et al, 3rd JDC, Union Parish, Ora Field, early-2010. Testified at a prematurity and improper cumulation hearing, was accepted as an expert in the fields of geology, hydrogeology, site assessment, regulatory compliance and implementation of RECAP.

Sandra Bernard, et al v BP Amoco, et al, 38th JDC, Cameron Parish, LA, Hackberry Field, mid-2010. Performed a contamination assessment and remedial alternatives study. Utilized Statewide Order 29B to evaluate soil contamination, and performed a RECAP analysis to evaluate soil, sediment, and groundwater contamination. Provided remediation cost estimates. Provided depositional testimony. Successfully defended qualifications and methodology in a Daubert hearing.

State of Louisiana (Vermilion Parish School Board) et al v Louisiana Land and Exploration Company, et al, 15th JDC, Vermilion Parish, Louisiana, July 2010. Performed a contamination assessment in an inundated wetlands area, and defined the extent of contamination to subaqueous sediment, soil and groundwater within the Chicot Aquifer and overlying Class 3 groundwater. Prepared a contamination assessment report, and a remedial alternatives analysis with a cost estimate for a remediation alternative. Provided deposition testimony.

Joseph Ray LeJeune, Jr et al v Reed Rubinstein, et al, 18th JDC, Point Coupee Parish, Louisiana, July 2010. Performed a file review and onsite assessment of drums, a UST, soil and groundwater to evaluate the presence of unknown solvent and organic chemicals that had historically been dumped on residential property. Provided report and deposition testimony. Testified in a bench trial and was accepted as an expert in the fields of geology, hydrogeology, site assessment, implementation of Louisiana's RECAP, and remediation.

Mary Belva Benard v Chevron USA, ConocoPhillips Company, Hilcorp Energy Company and Plains Resources, Inc., 15th JDC, Vermilion Parish, LA, August 2010. Performed a contamination assessment and remedial alternatives study for property in the Erath Field, Vermilion Parish, LA. Utilized Statewide Order 29B and the LDEQ RECAP standards to evaluate soil contamination, and performed a RECAP analysis to evaluate soil, sediment, and groundwater contamination. Provided remediation cost estimates. Provided depositional testimony.

Daniel Hardee et al v ARCO et al, 14th JDC, Calcasieu Parish, LA, October 2010. Performed a contamination assessment and remedial alternatives study for property in the Gueydan Field, Vermilion Parish, LA. Utilized Statewide Order 29B and the LDEQ

RECAP standards to evaluate soil contamination, and performed a RECAP analysis to evaluate groundwater contamination. Provided remediation cost estimates. Provided depositional testimony.

Hebert v Energen Resources Corp, et al, 14th JDC, Calcasieu Parish, LA, October 2010. Performed a contamination assessment and remedial alternatives study for property in the Section 32 Field, Calcasieu Parish, LA. Utilized Statewide Order 29B and the LDEQ RECAP standards to evaluate soil contamination, and performed a RECAP analysis to evaluate groundwater contamination. Provided remediation cost estimates. Provided depositional testimony.

Labarre v Texas Brine, et al, February 2011. Provided deposition testimony regarding facts that potentially would be used in a prematurity hearing.

Clyde Tucker et al v. Shell Oil, et al; Docket 42934, Div A; 3rd Judicial District, Union Parish, LA, Ora Field, LA. Provided testimony at a prescription hearing as an expert in geology, hydrogeology, site assessment and regulatory liaison.

Hazel Richard Savoie, et al v Pioneer Exploration, Ltd, et al, Docket 10-18078, 38th JDC, Cameron Parish, LA, 2011. Performed contamination assessment and remedial alternatives study with cost estimates for remediation. Provided depositional testimony and jury trial testimony. Was qualified as an expert in geology, hydrogeology, site assessment, remediation, regulatory compliance, and implementation of LDEQ RECAP. Provided deposition testimony in preparation for preponderance hearing.

Broussard Heirs Intervention of Texaco Exploration and Production Inc. v Hilcorp Energy Company, et al, 15th JDC, Docket 98-71298-D, Vermilion Parish, Louisiana; November 2012. Performed contamination assessment of the Henry Gas Plant and pipeline hub, and of former operations associated with the Erath Oil and Gas Field. Utilized Statewide Order 29B and the LDEQ RECAP protocol to evaluate soil, sediment and groundwater contamination. Performed a RECAP analysis to evaluate groundwater contamination. Prepared a remedial alternatives study and cost model to address soil, sediment and groundwater contamination. Provided depositional testimony.

Ruby Mhire et al v Total Petrochemicals USA, et al; 38th JDC, Docket 10-18239; Cameron Parish, Louisiana, November 2012. Performed contamination assessment of historical exploration and production activities and a former production pit on property within the Grand Chenier Oil Field, Cameron Parish, LA. Utilized Statewide Order 29B and the LDEQ RECAP protocol to evaluate soil, sediment and groundwater contamination. Performed a RECAP analysis to evaluate groundwater contamination. Prepared a remedial alternatives study and cost model to address soil, sediment and groundwater contamination. Provided depositional testimony.

Sterling Sugars, Inc. v BP America Production Company, et al; 16th JDC, Case No. 113095, Div "E", St. Mary Parish, Louisiana, November 2012. Performed contamination assessment of historical exploration and production activities on property

within the Charenton and Franklin Oil Fields, St. Mary Parish, LA Utilized Statewide Order 29B and the LDEQ RECAP protocol to evaluate soil, sediment and groundwater contamination. Performed a RECAP analysis to evaluate groundwater contamination. Prepared a remedial alternatives study and cost model to address soil, sediment and groundwater contamination. Provided depositional testimony.

Joseph Dupont and Doris Petrus v Mobil Oil E&P Southeast, Inc., et al; Docket 52090, Division “Ad Hoc”, 18th JDC, Iberville Parish, LA; February 2013. Performed contamination assessment and remedial alternatives study with cost estimates for remediation. Utilized Statewide Order 29B and the LDEQ RECAP protocol to evaluate soil, sediment and groundwater contamination. Performed a RECAP analysis to evaluate groundwater contamination. Provided deposition testimony.

Gustave J Labarre et al v Texas Brine Company, LLC and Georgia Gulf Chemicals & Vinyls, LLC; 23rd JDC, Div “C”, #30650, Napoleonville Storage Dome, Assumption Parish, LA; October 2013. Performed contamination assessment and remedial alternatives study of a leaking pit used to store solution mined brine. Utilized Statewide Order 29B and the LDEQ RECAP protocol to evaluate soil and groundwater contamination. Provided deposition testimony.

Tillman et al v Chevron USA Inc, et al; Docket #44096; Div “B”; 7th JDC, Concordia Parish, LA; Lake St. John Oilfield, Concordia Parish, LA, February 2014. Performed contamination assessment and remedial alternatives study with cost estimates for remediation. Utilized Statewide Order 29B and the LDEQ RECAP protocol to evaluate soil and groundwater contamination. ModFlow and Winflow groundwater predictive models were used to design a groundwater recovery system. Demonstrative exhibits included a 3-dimensional computer model of groundwater contaminant plumes. Provided deposition testimony.

Lexington Land Development, LLC v Chevron Pipeline Company, et al; Docket No. 561893, Division “22”; 19th JDC, East Baton Rouge Parish, Louisiana, April 2014. Provided depositional testimony concerning historical oil and gas contamination, and a leak of gasoline-diesel mixture from a hole in a transmission pipeline that was installed within one year of the leak. The leak occurred at the center of a brine contamination plume originating at a former production pit, beneath an electrical transmission line corridor.

Clyde Tucker et al v Shell Oil Company, et al; Docket No. 42934, Division “B”; 3rd JDC, Union Parish, Louisiana, Ora Oil Field, November 2014. Performed contamination assessment and authored an assessment report and Plan for Additional Assessment and Remediation in accordance with Statewide Order 29B. Provided deposition testimony.

State of Louisiana (Vermilion Parish School Board) et al v Louisiana Land and Exploration Company, et al, 15th JDC, Vermilion Parish, Louisiana, November 2014. Performed a contamination assessment and a remedial alternatives analysis with a cost

estimate for a remediation alternative. Provided deposition testimony. Provided testimony at jury trial, and was qualified as an expert in geology, hydrogeology, site assessment, remediation, and implementation of regulations.

Joseph Dupont et al v Mobil Oil E&P Southeast, Inc., et al; Docket 52090, Division “Ad Hoc”, 18th JDC, Iberville Parish, LA; February 2015. Performed contamination assessment and remedial alternatives study with cost estimates for remediation. Utilized Statewide Order 29B and the LDEQ RECAP protocol to evaluate soil, sediment and groundwater contamination. Performed a RECAP analysis to evaluate groundwater contamination. Provided deposition testimony.

Claude Coulon Jumonville, et al v Sunset Petroleum, et al; Docket 44491, Division “C”, 18th JDC, Pointe Coupee Parish, LA; Moore Sams Field, Iberville Parish, LA; June 2015. Performed contamination assessment of an oil-based mud drilling pit and remedial alternatives study with cost estimates for remediation. Utilized Statewide Order 29B to evaluate soil and groundwater contamination. Provided deposition testimony.

Frank B Allain et al v Exxon Mobil Corporation, et al; Docket No. 62430; 18th JDC; Iberville Parish, LA; Bayou Des Glaives Field, Louisiana, April 2015. Performed a contamination assessment and a remedial alternatives analysis with a cost estimate for a remediation alternative. Provided deposition testimony in October 2015.

Sterling Sugars, Inc. v Amerada Hess Corp, et al; 17th JDC, No. 100091, Division “D”; Raceland Oil Field, Lafourche Parish, LA. Performed a contamination assessment and a remedial alternatives analysis with a cost estimate for a remediation alternative. Provided deposition testimony in August 2015. Provided testimony at a limited admission hearing at the Louisiana Department of Natural Resources in November 2015; and was accepted as an expert in geology, hydrogeology, site assessment, remediation, and regulatory compliance.

State of Louisiana (Vermilion Parish School Board) et al v Louisiana Land and Exploration Company, et al, 15th JDC, Vermilion Parish, Louisiana, March 2016. Prepared a Feasible Plan for remediation and additional assessment for the Vermilion Parish School board. Provided testimony at the DNR hearing, and was qualified as an expert in geology, hydrogeology, site assessment, remediation, and implementation of regulations.

State of Louisiana and Iberville Parish School Board v BP America Production Company et al; Docket No. 72605; 18th JDC, Division “A”; Grand River Field, Iberville Parish, LA. Performed a contamination assessment and a remedial alternatives analysis with a cost estimate for a remediation alternative. Provided deposition testimony in May and June 2016.

Barbara Mayeaux et al v Atlantic Richfield, et al; Docket No. 65591, Div “C”; 18th JDC, Iberville Parish, LA. Performed a contamination assessment and a remedial alternatives analysis with a cost estimate for a remediation alternative. Provided deposition testimony in September 2016.

Ritchie Grocer Co. v 2H Inc., et al; Docket No. 1:14-CV-02867, U.S.D.C.; Western District of Louisiana, Alexandria Division; Northern Eola Oil Field, Avoyelles Parish, LA. Performed a contamination assessment and a remedial alternatives analysis with a cost estimate for a remediation alternative. Provided deposition testimony in October 2016.

Elizabeth Miller Lefebvre Family LLC et al v Petrohawk Energy Corporation, et al; Docket 40199, Division “A”, 18th JDC; West Baton Rouge Parish, LA. Performed a contamination assessment and a remedial alternatives analysis with a cost estimate for a remediation alternative. Provided deposition testimony in October 2016.

Darryl Williams, et al v Motiva Enterprises, LLC, et al; CDC No. 2003-6746, Sec 7 (M); Orleans Parish, LA. Performed a contamination assessment and vapor intrusion evaluation for leaking underground storage tank system into adjacent businesses and restaurants. Provided deposition testimony in December 2016. Provided trial testimony in February 2017 and was accepted as an expert in the fields of Geology, Hydrogeology, Site Assessment, Remediation and Regulatory Compliance including RECAP. The court rendered a verdict favorable to the plaintiffs, including a monetary award for the full value of our damage model.

Catherine Alford, et al v Chevron USA Inc. et al; Civil Action No. 2:13-cv-05464; Sec. R Div 3, US Eastern District of LA; Potash Oil Field, Plaquemines Parish, LA. Performed contamination assessment and remedial plan to address oilfield pits and contaminated canal sediment. Provided depositional testimony January 2017.

Mathew Willis v Tennessee Gas Pipeline Company, LLC, et al; Docket No. 82,888; 16th JDC; North Cecilia Field, St. Martin Parish, LA. Performed contamination assessment and remedial plan to address soil and groundwater contamination originating from oilfield pits and production equipment. Provided depositional testimony in August 2017. All parties settled before trial.

Monique Gutierrez Inc., et al v ExxonMobil Corporation, et al; No. 201610135; 15th JDC, Div. “A”; Bosco Field, Acadia Parish, LA. Performed contamination assessment of oilfield pits and production equipment, and completed a remedial alternatives study with cost estimates for remediation. Provided deposition testimony in August 2017. All parties settled before trial.

David V. Currie, et al v B.P. America Production Company, et al; Docket No. 10-18837; 38th JDC; West Hackberry Oil Field, Cameron Parish, LA. Performed contamination assessment of this property in the West Hackberry Field where production began in 1928, and completed a remedial alternatives study with cost estimates for remediation. Provided deposition testimony in March 2018.

BCR Holdings Inc v Baby Oil Inc, et al; Docket #127030, Div “B”; 17th JDC, Lafourche Parish, LA, Bully Camp Oil Field, Lafourche Parish, LA. Performed a contamination assessment of soils, sediment and surface water, and completed a remedial alternatives evaluation with cost estimates for decontamination. Provided deposition testimony in June 2018.

Spanish Lake Restoration, LLC v Shell Oil Company, et al.; Docket 69702 18th JDC, Division “C”, Ascension Parish, LA; St. Gabriel Field, Ascension Parish, LA. Performed a contamination assessment of soils and groundwater, and completed a remedial alternatives evaluation with cost estimates for decontamination. Provided deposition testimony and testimony at a prescription hearing in July 2018, and was accepted as an expert in geology, hydrogeology, site assessment and remediation.

State of Louisiana and Two O’Clock Bayou Land Co. et al v Chevron USA, Inc, et al; Docket No. 12C5528, Div “B”; 27th JDC, St. Landry Parish, LA; Krotz Springs Field, St. Landry Parish, LA. Performed contamination assessment of oilfield pits soil and groundwater, and completed a remedial alternatives study with cost estimates for remediation. Provided deposition testimony in August 2018.

New 90 LLC and Louisiana Wetlands LLC v Grigsby Petroleum Inc and Chevron USA Inc; Docket No. 130528, 16th JDC; Franklin Oil Field, St. Mary Parish, LA. Performed a contamination assessment of historical oilfield exploration and production pollution to soil and groundwater, and completed a remedial alternatives study with cost estimates for remediation. Provided deposition testimony in November 2018.

Mary Josephine Buquoi Primeaux et al v Bil-Mik, Enc et al; Docket No. 62857, 18th JDC; Bayou Des Glaises Oil Field, Iberville Parish, LA. Performed a contamination assessment of historical oilfield exploration and production pollution to soil and groundwater, and completed a remedial alternatives study with cost estimates for remediation. Provided deposition testimony in January 2019.

Dwayne Belaire v Margone, LLC, et al; #20181016; 5th JDC, Div “B”; Near the Bosco Field Crude Oil Gathering System and Tank Farm, Lafayette Parish, LA. Performed a contamination assessment of historical oilfield exploration and production pollution to soil and groundwater at a property adjacent to the facility, and completed a remedial alternatives study with cost estimates for remediation. Provided deposition testimony in June 2019.

Global Marketing Solutions, LLC et al v Blue Mills Farms, Inc. et al; docket No. 35373, Div “A”; 18th JDC, West Baton Rouge Parish, LA. Performed limited environmental assessment of soil and groundwater contamination resulting from historical oil and gas exploration and production activities. Testified at a prescription hearing in April 2019 and was qualified as an expert in geology, hydrogeology, site assessment, and remediation.

Lexington Land Development LLC v Chevron Pipeline Company et al; Docket 561893, Div 22, 19th JDC, East Baton Rouge Parish, LA. Performed a contamination assessment of historical oilfield exploration and production pollution to soil and groundwater, and completed a remedial alternatives study with cost estimates for remediation. Provided testimony at a hearing for prescription and was qualified as an expert in geology, hydrogeology, site assessment, and remediation.

Bowie Lumber Associates v White Oak Operating Company LLC, et al; Docket 129052, Div “B”; 17th JDC; South Bayou Boeuf Field, Lafourche Parish, LA. Performed a contamination assessment of historical oilfield exploration and production pollution to soil and groundwater, and completed a remedial alternatives study with cost estimates for remediation of pit sludges, and soil and groundwater contamination. Provided depositional testimony in August 2019.

Hine/Kyle Properties et al v M-I LLC et al; No. 129750; 16th JDC, Div “D”; Berwick, St. Mary Parish, LA. Performed a contamination assessment of pollution to soil and groundwater from historical operations associated with a shore-based oilfield drilling fluid and chemical staging and mixing facility, and completed a remedial alternatives study with cost estimates for remediation of pit sludges, and soil and groundwater contamination. Provided depositional testimony in September 2019.

Jack Anthony Devillier et al v Chevron USA, Inc, et al; Docket No. 12-C-5530, Div “C”; 27th JDC, St. Landry Parish, LA; Port Barre Oilfield, St. Landry Parish, LA. Performed a contamination assessment of historical oilfield exploration and production pollution to soil and groundwater, and completed a remedial alternatives study with cost estimates for remediation. Provided deposition testimony in May 2020.

Hero Lands Company LLC v Chevron USA Inc, et al; Docket #64320 Div “A”; 25th JDC; Stella Oil Field, Plaquemines Parish, LA. Performed a contamination assessment of historical oilfield exploration and production pollution to soil and groundwater, and completed a remedial alternatives study with cost estimates for remediation. Provided deposition testimony in October 2020. Provided trial testimony in May 2021 and was accepted as an expert in Geology, Hydrogeology, Site Assessment, Remediation, and Regulatory Compliance.

Litel Explorations LLC v Aegis Development Co. LLC, et al; 31st JDC; Docket C-823-17; South Thornwell Gas Field, Jefferson Davis Parish, LA. Performed a contamination assessment of historical oilfield exploration and production pollution to soil and groundwater, including an actively leaking oil well that exhibited excessive pressure at the wellhead. Mapped a buried channel sand deposit in communication with the underlying Chicot Aquifer using information from water well driller’s logs. Completed a remedial alternatives study with cost estimates for remediation. Provided deposition testimony in November 2020.

Emerald Land Corporation v Trimont Energy (BL) LLC et al; Civil Action No. 6:17-CV-01655; Bateman Lake Oil Field, St. Mary Parish, LA. Performed a contamination assessment of historical oilfield exploration and production pollution to a freshwater marsh environment and characterized waste residuals in abandoned oilfield pits. Provided a restoration plan to detoxify the property. Provided deposition testimony in January 2021.

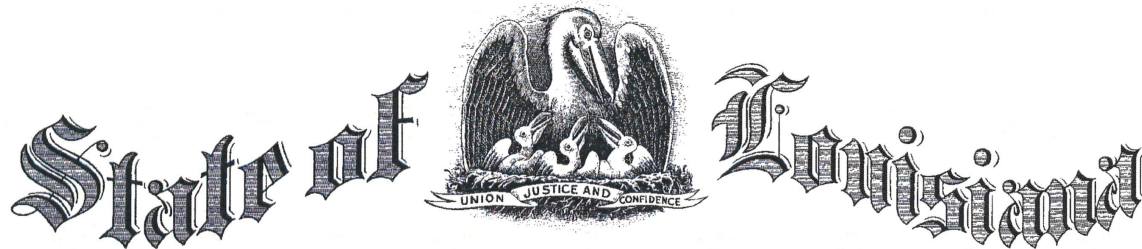
Jointly Administered Chapter 11 Case Numbers 87 B 20142 (ASH) and 87 B 20143 (ASH); State of Louisiana and Vermilion Parish School Board v Chevron Corporation; Docket No. 83536; 15th JDC, Division “6”; Florence Oil Field, Vermilion Parish, LA, and Tomlinson Realty Company LLC et al v Chevron USA Inc, et al; Docket No. 12-C-5529, Div “D”; 27th JDC, Port Barre Oil Field, St. Landry Parish, LA. The Vermilion Parish case involved a geophysical survey using terrain conductivity instrumentation to document environmental impact from former oilfield exploration and production operations. The St. Landry Parish case was a subset of a comprehensive environmental assessment of historical oilfield operations throughout the Port Barre oilfield, and work included delineation of soil and groundwater contamination. A conceptual site model was developed that included identifying a large buried paleo-Mississippi River point bar aquifer in communication with aquifers comprised of overlying and adjacent distributary deposits and underlying massive sands of the Atchafalaya Aquifer. Provided a restoration model with cost estimates. Provided deposition testimony in February 2021.

James J. Martin Family, LLC v BP America Production Company et al; Robert Patricia Fleming, LLC v BP America Production Company et al; Div. “C”; 16th JDC, St. Martin Parish, LA; Anse La Butte Oil Field, St. Martin Parish, LA. Performed a contamination assessment of historical oil exploration and production in an urban area just outside of Lafayette, Louisiana. The site included contamination to soil and to the principal aquifer in the region used for domestic and public potable supply. Performed capture zone modeling of a pump-and-treat remediation program and provided a cost estimate for restoration of soil and groundwater. Provided deposition testimony in March 2021.

Delores H. Lewis, et al v Quintana Petroleum Corp., et al; Docket No. 10-20211; 38th JDC, Cameron Parish, LA; Hog Bayou and Lower Mud Lake Oil Field, Cameron Parish, LA. Performed a contamination assessment of soil and subaqueous sediment at the Hog Bayou Oil Field that is accessible by boat. Provided a restoration plan to clean the property to meet lease obligations. Provided deposition testimony in April 2021.

State of Louisiana and The St. Martin Parish School Board v Shell Oil Company, et al; 16th JDC, Civil Action 85170, Div “C”, West Lake Verret Oil Field, St. Martin Parish, LA. Performed file reviews and a limited contamination assessment of soil, sediment and groundwater around a crater associated with a former blowout. Provided a plan for assessment. Provided depositional testimony in August 2001.

Doyle Boudreaux and Montez Prejean v ConocoPhillips Company et al; 15th JDC, Division “D”; Civil Action No. 20171849; North Ossun Oil Field, Lafayette Parish, LA. Performed a contamination assessment of soil and groundwater including constituents that included heavy metals, petroleum hydrocarbons, salt constituents, and technologically enhanced radioactive materials. Provided an assessment report and a restoration plan that included predictive groundwater modeling. Provided depositional testimony in October 2021.



State Licensing Board for Contractors

This is to Certify that: **ICON ENVIRONMENTAL SERVICES, INC.**
2049 Commercial Dr.
Port Allen, LA 70767

is duly licensed and entitled to practice the following classifications

SPECIALTY: HAZARDOUS MATERIALS SITE REMEDIATION



Witness our hand and seal of the Board dated,
Baton Rouge, LA 20th day of August 2019

Will B. Mallett
Director

See Mallett
Chairman

Andy Demme
Treasurer

Expiration Date: August 19, 2022

License No: 35504

This License Is Not Transferrable

Louisiana Professional Engineering
and
Land Surveying Board

Hereby Certifies that

ICON Environmental Services, Inc.

*has complied with the regulation of this Board and is authorized
to provide or to offer to provide engineering services in the State of
Louisiana contingent upon payment of the annual renewal fee.*

Baton Rouge, Louisiana · 02/20/2009



License Number 4001

[Signature]
Chairman
[Signature]
Secretary



Jason S. Sills, E.I.

Professional Qualifications

I have more than nineteen (19) years of experience implementing environmental engineering and remediation projects in Texas, Alabama, Tennessee, Georgia, Mississippi, and Louisiana. My projects have been in a wide variety of disciplines including hydrology, groundwater/soil remediation, surveying, geotechnical, environmental engineering, and construction project management. I have conducted and directed work entailing subsurface investigations, groundwater monitoring, groundwater/soil remediation system installation, corrective action plan development and implementation, site investigations, Risk Evaluation Corrective Action Plans (RECAP), hazardous and non-hazardous waste removal, and transportation/disposal. I am experienced with processing GEM surveys collected in the field, developing contour maps, and interpretation of GEM surveys to determine salt impact at various oil field related sites.

I have been responsible for the investigation and remediation of potentially contaminated sites for a number of companies in the southeastern United States. I have personally conducted a wide range of field and managerial duties including installation of soil borings and monitoring wells, soil and groundwater sampling, integration and analysis of data, interpretation of findings, data reduction, risk evaluation, corrective action design, corrective action implementation, scheduling of subcontractors, supervision of subcontractors and company personnel, and preparation of reports including Phase I assessments, Phase II assessments, Corrective Action Plans, and Louisiana RECAP evaluations.

Education

- Louisiana State University, Baton Rouge, Louisiana
Bachelor of Science in Environmental Engineering, Graduated August 2000
Dates attended: 8/98 – 8/00
- Hinds Community College, Raymond, Mississippi
Pre-Engineering Courses
Dates attended: 8/96 – 5/98
- Graduated Warren Central High School, Vicksburg, Mississippi, 1996

Registration/Certification

- E.I. Registration No. T-20568
- OSHA 40-Hour HAZWOPER Training
- Annual 8-hour HAZWOPER Refreshers (2001-Present)

Experience and Background

2009- Project Manager, ICON Environmental Services, Pres. Port Allen, Louisiana

I am responsible for preparing proposals, cost analysis, and coordination of site assessment activities, remediation projects, routine soil and groundwater monitoring activities, interpretation of findings, data reduction, LDEQ Motor Fuels Trust Fund projects, Risk assessment (RECAP) of multi-media impact from industrial sources in accordance with LDEQ RECAP and LDNR 29B, and I have ten (10) years of experience with AutoCAD. Specific duties include:

- Project Manager for multiple Underground Storage Tank (UST) facilities, including budgeting, scheduling, remediation, compliance monitoring and reporting.
- Client/Agency Liaison for Eligibility, Site Investigations, RECAP, Remediation, and NFA Closures.
- Conveyance Notice Preparation for NFA Closures.
- Preparation of Site Investigation/Contamination Assessments, RECAP Evaluations, Sampling and Analysis Plans, Health and Safety Plans, and Quality Assurance Plans.
- CAP Design/Implementation, cost estimation, and Bid Submittals.
- CAP Activities Including Soil Removal, NAPL/Groundwater Recovery, and UST Closure.
- Remediation system design, procurement, startup, and O&M (including preparation of O&M activities and scheduling).
- Compliance Monitoring and Reporting for UST facilities.
- Monitor Well/Piezometer Installations.
- Discharge Permitting and Reporting under LPDES.
- Technical evaluation of remediation system effectiveness, including system efficiency, contaminant reduction, system optimization.
- Initial site findings audits on production facilities for major oil & gas production/exploration companies.
- Preparation of site findings reports and remediation plans for oil production facilities.
- Depositional testimony for litigation associated with soil and groundwater contamination from oilfield activities.

- Interpretation of GEM surveys conducted at oil field sites and comparing lab analytical to GEM survey response.

**2000- Project Manager, Southern Environmental Management & Specialties (SEMS),
2009 Baton Rouge, Louisiana.**

I was responsible for project activities including preparation of proposals (work plans and cost estimates), conducting site investigations, managing subcontractors and onsite SEMS personnel, and preparing risk evaluations, corrective action plans, and site findings. Specific duties include:

- Project Manager for multiple petroleum retail sites with underground storage tanks (USTs) in Louisiana.
- Development and execution of site investigations to define contamination at various facilities, which includes soil and groundwater sampling, integration and analysis of collected data, interpretation of findings, data reduction, prepare findings report, risk evaluation, corrective action design, and corrective action implementation.
- Assisted in the preparation of stormwater pollution plans for multiple clients in the southeast.
- Preparation of Phase I, Phase II, risk evaluation including Louisiana's RECAP, site characterization, and corrective action plans.
- Preparation of site assessment work proposals that include cost estimates, site work plans, Sampling and Analysis Plans, Health and Safety Plans, and Quality Assurance Plans.
- Project Manager for groundwater and soil corrective action design and track implementation to remediate organic constituents for multiple clients in the southeast.
- Project Coordinator for groundwater sampling, analysis, and reporting at several Resource Conservation and Recovery Act (RCRA) facilities.
- Emergency Response Coordinator for an electrical company in Louisiana. I was one of the onsite managers of response personnel.
- Project Manager for compliance inspections for the LDEQ at over 250 underground storage tank facilities that were affected by hurricanes in Louisiana.

Jason S. Sills, E.I.

LIST OF LITIGATION TESTIMONY

Charles Keith Montgomery v Citgo Petroleum Corp, et al, 27th Judicial District Court, Docket No. 10-4151-A and 10-5128-B, St. Landry Parish Parish, August 2013. Provided expert opinion (written report), and deposition testimony. Case Settled ~2013.

Clyde Tucker et al v Shell Oil Company, et al; Docket No. 42934, Division “B”; 3rd JDC, Union Parish, Louisiana, Ora Oil Field, December 2014. Provided expert opinion (written report), and deposition testimony. Case Settled ~2015.

Frank B Allain et al v Exxon Mobil Corporation, et al; Docket No. 62430; 18th JDC; Iberville Parish, LA; Bayou Des Glaisses Field, Louisiana, April 2015. Provided expert opinion (written report), and deposition testimony. Case Settled ~2016.

Ritchie Grocer Co. v 2H Inc., et al; Docket No. 1:14-CV-02867, U.S.D.C.; Western District of Louisiana, Alexandria Division; Northern Eola Oil Field, Avoyelles Parish, LA, August 2016. Provided expert opinion (written report), and deposition testimony.

Barbara Mayeaux et al v Atlantic Richfield, et al; Docket No. 65591, Div “C”; 18th JDC, Iberville Parish, LA, September 2015. Provided expert opinion (written report), and deposition testimony in November 2016.

Matthew Willis v. Tennessee Gas Pipeline Company, LLC, et al; Docket No. 82,888; 16th JDC; Parish of Saint Martin North Cecilia Field, LA, February 2017. Provided expert opinion (written report), and deposition testimony in August 2017.

State of Louisiana and Two O’Clock Bayou Land Co. et al v Chevron USA, Inc, et al; Docket No. 12C5528, Div “B”; 27th JDC, St. Landry Parish, LA; Krotz Springs Field, March 2017. Provided expert opinion (written report), and deposition testimony in August 2018.

Dwayne Belaire v Margone, LLC, et al; #20181016; 5th JDC, Div “B”; Near the Bosco Field Crude Oil Gathering System and Tank Farm, Lafayette Parish, LA. Provided expert opinion (written report), and deposition testimony in June 2019.

Bowie Lumber Associates v White Oak Operating Company LLC, et al; Docket 129052, Div “B”; 17th JDC; South Bayou Boeuf Field, Lafourche Parish, LA. Provided expert opinion (written report), and deposition testimony in August 2019.

Kenneth Paul Lyons, et al v Axiall Corporation, et al; Docket No. 2015-1008; Div. “E”; 14th JDC; Calcasieu Parish, LA. Performed a contamination assessment of pipeline right-of-way, completed a remedial alternatives study with cost estimates for

remediation of soil and groundwater contamination. Provided depositional testimony in August 2019.

Jack Anthony Devillier et al v Chevron USA, Inc, et al; Docket No. 12-C-5530, Div “C”; 27th JDC, St. Landry Parish, LA; Port Barre Oilfield, St. Landry Parish, LA. Performed a contamination assessment of historical oilfield exploration and production pollution to soil and groundwater, and completed a remedial alternatives study with cost estimates for remediation. Provided deposition testimony in May 2020.

Hero Lands Company LLC v Chevron USA Inc, et al; Docket #64320 Div “A”; 25th JDC; Stella Oil Field, Plaquemines Parish, LA. Performed a contamination assessment of historical oilfield exploration and production pollution to soil and groundwater, and completed a remedial alternatives study with cost estimates for remediation. Provided deposition testimony in October 2020.

Litel Explorations LLC v Aegis Development Co. LLC, et al; 31st JDC; Docket C-823-17; South Thornwell Gas Field, Jefferson Davis Parish, LA. Performed a contamination assessment of historical oilfield exploration and production pollution to soil and groundwater. Completed a remedial alternatives study with cost estimates for remediation. Provided deposition testimony in November 2020.

Emerald Land Corporation v Trimont Energy (BL) LLC et al; Civil Action No. 6:17-CV-01655; Bateman Lake Oil Field, St. Mary Parish, LA. Performed a contamination assessment of historical oilfield exploration and production pollution to a freshwater marsh environment. Provided a restoration plan to remove contamination. Provided deposition testimony in January 2021.

James J. Martin Family, LLC v BP America Production Company et al; Robert Patricia Fleming, LLC v BP America Production Company et al; Div. “C”; 16th JDC, St. Martin Parish, LA; Anse La Butte Oil Field, St. Martin Parish, LA. Performed a contamination assessment of historical oil exploration and production in an urban area just outside of Lafayette, Louisiana. The site included contamination to soil and to the principal aquifer in the region used for domestic and public potable supply. Performed capture zone modeling of a pump-and-treat remediation program and provided a cost estimate for restoration of soil and groundwater. Provided deposition testimony in March 2021.

Delores H. Lewis, et al v Quintana Petroleum Corp., et al; Docket No. 10-20211; 38th JDC, Cameron Parish, LA; Hog Bayou and Lower Mud Lake Oil Field, Cameron Parish, LA. Performed a contamination assessment of soil and subaqueous sediment at the Hog Bayou Oil Field that is accessible by boat. Provided a restoration plan to clean the property to meet lease obligations. Provided deposition testimony in April 2021.

Hero Lands Company LLC v Chevron USA Inc, et al; Docket #64320 Div “A”; 25th JDC; Stella Oil Field, Plaquemines Parish, LA. Performed a contamination assessment of historical oilfield exploration and production pollution to soil and groundwater, and completed a remedial alternatives study with cost estimates for

remediation. Provided testimony at the trial and was qualified as an expert in site assessment and remediation in May 2021.

Doyle Boudreaux and Montez Prejean v ConocoPhillips Company et al; 15th JDC, Division “D”; Civil Action No. 20171849; North Ossun Oil Field, Lafayette Parish, LA. Performed a contamination assessment of soil and groundwater including constituents that included heavy metals, petroleum hydrocarbons, salt constituents, and technologically enhanced radioactive materials. Provided an assessment report and a restoration plan. Provided depositional testimony in October 2021.

Durel Joseph Romaine, et al v Freeport-Mcmoran Oil & Gas, et al; 15th JDC; Division “A”; Civil Action No. 108131; Kaplan Field, Vermillion Parish, Louisiana. Performed a contamination assessment of soil and groundwater including constituents that included heavy metals, petroleum hydrocarbons, salt constituents, and technologically enhanced radioactive materials. Provided an assessment report and a restoration plan. Provided depositional testimony in December 2021.

Lake Charles Harbor & Terminal District v. Reynolds Metal Co., et al., U.S.D.C. W.D. La. No. 2:17-cv-1114 W.D. Louisiana. Performed a sampling assessment and volume calculation of closed landfill. Provided an assessment and restoration plan. Provided depositional testimony in January 2022.



J. Wayne Prejean, Jr., P.E.
Senior Environmental Engineer
Louisiana Professional Engineer Registration No. 32502

ICON Environmental Services, Inc.
2049 Commercial Drive
Port Allen, Louisiana 70767

PROFESSIONAL QUALIFICATIONS

Professional engineer and project manager with over 20 years of experience. Experienced in site investigation, project planning/management, risk assessment, corrective action, statistical data evaluation, environmental permitting, contaminant fate and transport analysis, and groundwater modeling. Routinely conducts risk evaluation in accordance with the Louisiana Risk Evaluation and Corrective Action Planning (RECAP) program; prepares facility plans in accordance with OPA 90 and SPCC regulations, performs project costing for environmental remediation of legacy oilfield sites, and represent clients as a liaison to regulatory agencies. Manages Resource Conservation and Recovery Act (RCRA) groundwater compliance for Type I, Type II, and Type III solid and hazardous waste processing and disposal facilities. Has provided expert opinion, depositional and hearing testimony, and technical knowledge in support of litigation testimony by other experts.

EDUCATION

- Louisiana State University, Baton Rouge, LA; BS, Environmental Engineering (1999)

REGISTRATION/CERTIFICATION

- 2006 – Registered Professional Engineer in Environmental Engineering (LA Reg. No. 32502)
- 2003 - Registered Engineer Intern in Environmental Engineering (LA Reg. No. 20639)

SUMMARY OF EXPERIENCE

Louisiana Motor Fuels UST Trust Fund Facilities:

- Project Manager for multiple Underground Storage Tank (UST) facilities, including budgeting, scheduling, remediation, compliance monitoring and reporting
- Client/Agency Liaison for Eligibility, Site Investigations, RECAP, Remediation, and NFA Closures
- Conveyance Notice Preparation For NFA Closures

- Site Investigation/Contamination Assessments and RECAP Evaluations
- CAP Design/Implementation, cost estimation, and Bid Submittals
- CAP Activities Including Soil Removal, NAPL/Groundwater Recovery, and UST Closure
- Remediation system design, procurement, startup, and O&M (including preparation of O&M activities and scheduling)
- Compliance Monitoring and Reporting
- Monitor Well/Piezometer Installations
- Discharge Permitting and Reporting under LPDES
- Technical evaluation of remediation system effectiveness, including system efficiency, contaminant reduction, system optimization

Industrial Chemical Facilities – Plastics and Chemical Stock Producers, Refineries, Mineral Extraction Facilities, Agricultural Product Facilities:

- Multi-media Environmental Risk Evaluation for a Major Louisiana Refinery, including fate and transport of environmental contaminants
- RECAP Investigations at Major Facilities
- Site Investigations and Remediation Projects
- Groundwater Certifications

Litigation Support – Groundwater and Soil Contamination from Industrial Sources:

- Risk assessment (RECAP) of multi-media impact from industrial sources in accordance with LDEQ RECAP and LDNR 29B.
- Site remediation technology evaluation and selection
- Design of remediation systems
- Cost estimates for multi-media remediation activities

Litigation Support – Expert and Fact Witness Experience:

- Provided expert opinion, deposition testimony, and trial testimony for litigation associated with environmental risk from industrial chemical spill.
- Provided expert opinion, deposition testimony, and hearing testimony for litigation associated with Underground Storage Tank facility.
- Depositional testimony for litigation associated with soil and groundwater contamination from oilfield activities.

Oil Production and Distribution Facilities:

- Preparation of SPCC Plans for Bulk Oil Distribution facilities, marine transport related facilities, oil drilling, and production facilities.
- Preparation of Facility Response Plans and Operations Manuals for Bulk Oil Distribution facilities, marine transport related facilities, and oil drilling facilities.

Solid Waste Facilities - Major Waste Disposal Companies and Industrial Facilities with Solid Waste Impoundments as well as Parish Owned Disposal Facilities:

- Project management, including budgeting, scheduling, and compliance monitoring, regulatory compliance and reporting.
- Solid Waste Permit Application preparation/Professional Engineer Certification; including Permit Modifications and Renewals.
- Preparation of Groundwater Sampling and Analysis Plans, Methane Monitoring Plans, and Statistical Evaluation Plans.
- Statistical evaluation and database management of groundwater monitoring data for Type I, Type II and Type III and hazardous waste facilities.
- Groundwater and methane monitoring network design and evaluation.
- Louisiana Pollutant Discharge Elimination System (LPDES) permitting and compliance reporting.
- Client/administrative authority liaison for solid waste permitting and compliance issues.

J. Wayne Prejean, Jr., P.E.

DEPOSITIONAL TESTIMONY

- August 2008** *Gloria Ned, Individually and on Behalf of Jessie January and Jacqueline January v No. 2003-00100, Division “D” Union Pacific Corp; Union Pacific Railroad Corp; PPG Industries, Inc.; W.J. Peard; A.L. Greathouse; Harry C. Hank; Tommy G. Brown and Dallas Stutes, Lake Charles, Calcasieu Parish, LA.*
- October 2010** *State of Louisiana and the Vermilion Parish School Board, et al v Louisiana Land and Exploration Company, et al, 15th JDC, Vermilion Parish, Louisiana, Docket No. 82162.*
- February 2011** *Morel G. Lemoine Distributors, Inc. v Shirley G. Soprano D/B/A Gino’s Exxon, 18th JDC, Pointe Coupee Parish, Louisiana, Docket No. 33,520-C Consolidated With Shirley G. Soprano v Morel G. Lemoine Distributors, Inc., 18th JDC, Pointe Coupee Parish, Louisiana, Docket No. 34,173-B.*
- January 2012** *Morel G. Lemoine Distributors, Inc. v Shirley G. Soprano D/B/A Gino’s Exxon, 18th JDC, Pointe Coupee Parish, Louisiana, Docket No. 33,520-C Consolidated With Shirley G. Soprano v Morel G. Lemoine Distributors, Inc., 18th JDC, Pointe Coupee Parish, Louisiana, Docket No. 34,173-B.*
- November 2012** *Sterling Sugars, Inc. v BP America Production Company, et al, 16th JDC, St. Mary Parish, Louisiana, Docket No. 113,095.*
- December 2012** *Texaco Exploration and Production Inc. v Hilcorp Energy Company, 15th JDC, Vermilion Parish, Louisiana, Docket No. 98-71298-C.*
- September 2015** *Sterling Sugars, Inc. v. Amerada Hess Corporation, et al., Docket No. 100091 “D”, 17th JDC, Lafourche Parish, LA.*
- November 2015** *Frank B. Allain, et al. v Exxon Mobil Corporation, et al; Docket No. 62430; 18th JDC, Iberville Parish, LA.*
- June 2016** *State of Louisiana and Iberville Parish School Board v BP America Production Company, et al; Docket No. 72605; 18th JDC, Division “A”; Iberville Parish, LA.*
- November 2016** *Barbara Mayeaux, et al. v Atlantic Richfield Company, et al.; Docket No. 65591; 18th JDC, Division “C”; Iberville Parish, LA.*
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- January 2017** *Catherine Alford, et al. v Chevron USA Inc., et al.; Civil Action No. 2:13-cv-05464; Sec. R Division 3, U.S. Eastern District of Louisiana; Plaquemines Parish, LA.*
- August 2017** *Monique Gutierrez, Inc. et al. v ExxonMobil Corporation, et al.; Docket No. 201610135; 15th JDC, Division “A”; Acadia Parish, LA.*
- March 2018** *David V. Currie, et al. v BP America Production Company, et al.; Docket No. 10-18837; 38th JDC; Cameron Parish, LA.*
- November 2018** *New 90 LLC and Louisiana Wetlands LLC v Grigsby Petroleum, Inc. and Chevron USA, Inc.; Docket No. 130528; 16th JDC; St. Mary Parish, LA.*
- January 2019** *Mary Josephine Buquoi Primeaux, et al v Bil-Mik, Inc., et al; Docket No. 62857; Div. “A”; 18th JDC; Iberville Parish, LA.*
- August 2019** *Kenneth Paul Lyons, et al v Axiall Corporation, et al; Docket No. 2015-1008; Div. “E”; 14th JDC; Calcasieu Parish, LA.*
- September 2019** *Hine/Kyle Properties et al v M-I LLC et al; No. 129750; 16th JDC, Div. “D”; Berwick, St. Mary Parish, LA.*
- November 2021** *Robert Lee Boudreaux and Shirley A. Boudreaux v. Axiall Corporation, et al; Civil Action No. 2:18-cv-0956-DEW-KK; United States District Court; Western District of Louisiana; Lake Charles Division; Calcasieu Parish, LA.*
- January 2022** *Jeanerette Lumber and Shingle Company, LLC v ConocoPhillips Company, et al; No. 134307 Division “E”; 16th JDC; Iberia Parish, LA.*
- May 2022** *Henning Management, LLC v Chevron USA, Inc., et al; Docket No. 73318 Division “C”; 31st JDC; Jefferson Davis Parish, LA.*
- June 2022** *Louisiana Wetlands, LLC and New 90, LLC v Energen Resources Corp., et al; No. 130-527 Division “B”; 16th JDC; St. Mary Parish, LA.*

TRIAL/HEARING TESTIMONY

- Jan/March 2009** *Gloria Ned, Individually and on Behalf of Jessie January and Jacqueline January v No. 2003-00100, Division “D” Union Pacific Corp; Union Pacific Railroad Corp; PPG Industries, Inc.; W.J. Peard; A.L. Greathouse; Harry*
-

C. Hank; Tommy G. Brown and Dallas Stutes, Lake Charles, Calcasieu Parish, LA, January and March 2009. Performed calculations for fate and transport evaluation of PCE and daughter compounds in groundwater. Performed evaluation of volatilization of PCE and daughter compounds to air from groundwater recovery and treatment system. Provided testimony in bench trial on prematurity, and was qualified in Louisiana State District Court as an expert in environmental engineering.

March 2011

Morel G. Lemoine Distributors, Inc. v Shirley G. Soprano D/B/A Gino's Exxon, 18th JDC, Pointe Coupee Parish, Louisiana, Docket No. 33,520-C Consolidated With Shirley G. Soprano v Morel G. Lemoine Distributors, Inc., 18th JDC, Pointe Coupee Parish, Louisiana, Docket No. 34,173-B. Performed UST inventory reconciliation calculations, reviewed documents, provided testimony in hearing on prescription, and was qualified as an expert in environmental assessment and remediation.

Louisiana Professional Engineering
and
Land Surveying Board

Hereby Certifies that

Mr. John Wayne Prejean Jr.

having qualified before this Board in accordance with laws is licensed as a

Professional Engineer

and is hereby entitled to practice engineering in the State of Louisiana.

Baton Rouge, Louisiana · 06/21/2006



License Number 32502

Richard H. O'Connell
Chairman
Kevin M. Ibanks
Secretary

APPENDIX E
SOIL REMEDIATION CALCULATIONS AND
BACKUP DOCUMENTATION

SOIL CONTAMINATION VOLUMES
 AUGUST J. LEVERT, ET AL V BP AMERICA PRODUCTION CO.; 18TH JDC; DOCKET #78953
 GRAND RIVER FIELD, IBERVILLE PARISH, LOUISIANA
 PREPARED FOR JONES, SWANSON, HUDDLELL, & DASCHBACH LLC

CONTAMINATED VOLUME

Soil Interval	Impacted Thickness (ft)	Surface Area of Soil Contamination (m ²)	Surface Area of Soil Contamination (ft ²)	Surface Area of Soil Contamination (acres)	Volume of Soil Contamination (ft ³)	Volume of Soil Contamination (BCY)
0-8'	8	5,284	56,876	1.31	455,012	16,852
0-4'	4	249	2,680	0.06	10,721	397
0-8'	8	59	635	0.01	5,081	188
0-6'	6	412	4,435	0.10	26,608	985
0-8'	8	59	635	0.01	5,081	188
0-5'	5	247	2,659	0.06	13,293	492

1.56

19,104

CLEAN OVERBURDEN

Soil Interval	Thickness (ft)	Surface Area of Overburden (ft ²)	Volume of Overburden (ft ³)	Volume of Overburden (BCY)
	0	0	0	0
	0	0	0	0
	0	0	0	0
	0	0	0	0
	0	0	0	0
	0	0	0	0

0

**COST ESTIMATE FOR REMEDIATION OF CONTAMINATED SOIL/SEDIMENT
AUGUST J. LEVERT, ET AL V BP AMERICA PRODUCTION CO.; 18TH JDC; DOCKET #78953
GRAND RIVER FIELD, IBERVILLE PARISH, LOUISIANA
PREPARED FOR JONES, SWANSON, HUDELLE, & DASCHBACH LLC**

RS Means Reference Number	Quantity	Unit	Description	Unit Cost	Total
			<i>Permitting</i>		
	60	hour	Permitting	\$95.00	\$5,700
	1.56	acre	Wetlands Mitigation	\$15,000.00	\$23,389
			<i>Excavation, Disposal, Backfilling</i>		
31 41 16.10 1300	6,240	ft ²	Sheet Pile	\$20.21	\$126,098
31 23 16.42 5400 31 23 23.15 6070	19,104	yd ³	Soil Excavation	\$5.59	\$106,693
	119,779	bbl	Transportation of Contaminated Soil	\$1.13	\$135,750
	119,779	bbl	Disposal	\$25.00	\$2,994,478
31 23 23.15 6070	19,104	yd ³	Backfill material and transportation	\$16.99	\$324,473
31 23 16.42 5400 31 23 23.15 6070	19,104	yd ³	Backfilling of excavation (equipment & labor)	\$4.29	\$82,017
			<i>Soil Confirmatory Sampling</i>		
	150	sample	Personnel and equipment	\$398	\$59,625
	150	sample	Laboratory analysis (includes 20% markup)	\$556	\$83,340
			<i>Project Management</i>		
	19,104	yd ³	Excavation oversight (geologist/engineer)	\$2.68	\$51,102
	19,104	yd ³	Backfilling oversight (geologist/engineer)	\$0.90	\$17,177

Project Total: **\$4,009,842**

Notes

Heavy Construction Costs With RSMeans Data, 36th Edition, 2022
RS Means Location Factor for Baton Rouge, LA = 84.2

April 2022 South Louisiana Gate Pricing

Disposal Products		Mermentau	Bourg	Marine Transfer Stations	Unit
Saltwater	<1% solids	\$ 6.00	\$ 6.00	NA	bbl
Saltwater	≥1%<5% solids	\$ 13.00	\$ 13.00	NA	bbl
Oil Base Drilling waste		\$ 19.00	\$ 25.00	\$ 39.00	bbl
Water Base Drilling waste	20,000 ppm Chlorides & <5% oil	\$ 18.00	\$ 25.00	\$ 39.00	bbl
Water Base Drilling waste - elevated levels of CL or oils	20,000 ppm Chlorides or ≥5% oil	\$ 19.00	\$ 25.00	\$ 39.00	bbl
Flowback Water (injectable)	<1% solids	job specific	job specific	job specific	bbl
Flowback Water (non-injectable)	>1% solids	job specific	job specific	job specific	bbl
Completion Fluids		\$ 25.00	\$ 25.00	\$ 39.00	bbl
Production Pit Sludges		\$ 22.00	\$ 25.00	\$ 39.00	bbl
Storage Tank Sludges		\$ 22.00	\$ 25.00	\$ 39.00	bbl
Production Sands and Solids		\$ 22.00	\$ 25.00	\$ 39.00	bbl
(NORM pricing may apply to any product)	NORM ≥5 pci/gr	Gate plus \$1.50 per pci/gr over 5	Gate plus \$1.50 per pci/gr over 5	Gate plus \$1.50 per pci/gr over 5	bbl
Freshwater	< 20,000 ppm Cl & <5% solids	\$ 13.00	\$ 25.00	\$ 39.00	bbl
Washout Water	< 20,000 ppm Cl & <5% solids	\$ 13.00	\$ 25.00	\$ 39.00	bbl
Washout Pit Water	< 20,000 ppm Cl & <5% solids	\$ 13.00	\$ 25.00	\$ 39.00	bbl
Pipeline water/waste	<20,000 ppm Cl & <5% solids	\$ 13.00	\$ 25.00	\$ 39.00	bbl
Rainwater	< 20,000 ppm Cl & <5% solids	\$ 13.00	\$ 25.00	\$ 39.00	bbl
Freshwater	≥20,000 ppm Cl or ≥5% solids	\$ 19.00	\$ 25.00	\$ 39.00	bbl
Washout Water	≥20,000 ppm Cl or ≥5% solids	\$ 19.00	\$ 25.00	\$ 39.00	bbl
Washout Pit Water	≥20,000 ppm Cl or ≥5% solids	\$ 19.00	\$ 25.00	\$ 39.00	bbl
Pipeline water/waste	≥20,000 ppm Cl or ≥5% solids	\$ 19.00	\$ 25.00	\$ 39.00	bbl
Rainwater	≥20,000 ppm Cl or ≥5% solids	\$ 19.00	\$ 25.00	\$ 39.00	bbl
Washout Water	R360 Facility Water	\$ 13.00	\$ 25.00	\$ 39.00	bbl
Commercial Facility Waste		\$ 22.00	\$ 25.00	\$ 39.00	bbl
Oil Spill Waste	(True oil spill waste, not remediation)	\$ 24.00	\$ 25.00	\$ 39.00	bbl
Wash Rack and Pumping Equipment		\$ 185.00	\$ 185.00	\$ 185.00	hr
Marine deliveries to Mermentau will be billed at \$25/bbl					
Facility Services and Extras quoted seperately					

APPENDIX F
GROUNDWATER REMEDIATION CALCULATIONS
AND BACKUP DOCUMENTATION

PORE VOLUME FLUSHING ANALYSIS - REMEDIATION TO BACKGROUND
AUGUST J. LEVERT, ET AL V BP AMERICA PRODUCTION CO.; 18TH JDC; DOCKET #78953
GRAND RIVER FIELD, IBERVILLE PARISH, LOUISIANA
PREPARED FOR JONES, SWANSON, HUDDALL, & DASCHBACH LLC

Governing Equations:

Single Pore Volume of Plume: $PV = BnA$

Number of Pore Volume Flushes: $NPV = -R_f \ln\left(\frac{C_f}{C_o}\right)$

PORE VOLUME FLUSHING AND REMEDIATION TIME

PARAMETER	UNIT	CHLORIDE
Impacted Thickness	ft	7
Porosity	unitless	0.3
Area of Plume	ft ²	2,087,817
Pore Volume	gal	32,795,429
Retardation Factor (Rf)	unitless	1
Target Concentration (Cf)	unitless	124
Initial Concentration (Co)	unitless	10,931
NPV		4.5
Recovery volume to achieve remediation target	gal	146,893,237
Aquifer pumping rate (single well)	gpm	0.135
Number of recovery wells	ea	40
Depth of recovery wells	ft	20
GW Recovery Rate	gpd	7,776
Time to reach remedial target	years	51.8

COST FOR GROUNDWATER RECOVERY AND OFFSITE DISPOSAL OF RETENTATE - REMEDIATION TO BACKGROUND
AUGUST J. LEVERT, ET AL V BP AMERICA PRODUCTION CO.; 18TH JDC; DOCKET #78953
GRAND RIVER FIELD, IBERVILLE PARISH, LOUISIANA
PREPARED FOR JONES, SWANSON, HUDELLE, & DASCHBACH LLC

Description	Unit Cost	Unit	Quantity	Markup (20%)	Total
Capital Costs					
<u>GW Recovery Wells</u>					
Rig mobilization/demobilization	\$2,500	ea	1		\$2,500
Drill Rig and Crew	\$3,500	day	20		\$70,000
4" PVC recovery well installation (labor & materials)	\$69	foot	800		\$55,200
Submersible recovery pump and installation	\$926	ea	40		\$37,048
Storage Tanks	\$15,800	ea	1		\$15,800
Generator/Fuel Tank	\$26,387	ea	1		\$26,387
Recovery/Injection piping and fittings (incl. labor & materials)	\$94,930	unit	1		\$94,930
Well Surface Completions	\$800	ea	40		\$32,000
Electrical (equipment, labor & materials)	\$98,076	unit	1		\$98,076
					Capital Costs Subtotal
					\$431,942
Engineering Design (5% of capital costs)			5%		\$21,597
Construction Management (6% of capital costs)			6%		\$25,916
Contingency for pilot testing and remediation system optimization (10% of capital costs)			10%		\$43,194
					TOTAL CAPITAL COSTS
					\$522,649
Operation and Maintenance					
<u>GW Monitoring</u>					
GW Sampling	\$7,000	QTR	207		\$1,449,141
GW Laboratory Analysis	\$13,200	QTR	207	\$546,533	\$3,279,200
GW Report	\$5,000	ea	104		\$517,550
					Subtotal
					\$5,245,891
<u>Recovery Well & System O&M</u>					
Pump Replacement	\$37,048	event	10		\$370,480
Generator Fuel	\$4.00	gallons	748,067		\$2,992,270
Discharge Sampling	\$2,850	QTR	207		\$590,008
Discharge Lab Analysis	\$900	QTR	207	\$37,264	\$223,582
					Subtotal
					\$4,176,339
					O&M Costs Subtotal
					\$9,422,230
Technical Support (2% of O&M costs)			2%		\$188,445
Project Management (5% of O&M costs)			5%		\$471,112
					TOTAL O&M COSTS
					\$10,081,786
Offsite Disposal of Concentrated Wastewater From RO					
Offsite Disposal	\$6.00	bbl	2,448,221		\$14,689,324
Transportation	\$1.13	bbl	2,448,221		\$2,774,650
					TOTAL DISPOSAL COSTS
					\$17,463,974
					TOTAL ESTIMATE FOR PROJECT
					\$28,068,409

Notes

Heavy Construction Costs With RSMeans Data, 36th Edition, 2022
RS Means Location Factor for Baton Rouge, LA = 84.2

COST FOR GROUNDWATER RECOVERY AND ONSITE INJECTION OF RETENTATE - REMEDIATION TO BACKGROUND
AUGUST J. LEVERT, ET AL V BP AMERICA PRODUCTION CO.; 18TH JDC; DOCKET #78953
GRAND RIVER FIELD, IBERVILLE PARISH, LOUISIANA
PREPARED FOR JONES, SWANSON, HUDELLE, & DASCHBACH LLC

Description	Unit Cost	Unit	Quantity	Markup (20%)	Total
Capital Costs					
<u>GW Recovery Wells</u>					
Rig mobilization/demobilization	\$2,500	ea	1		\$2,500
Drill Rig and Crew	\$3,500	day	20		\$70,000
4" PVC recovery well installation (labor & materials)	\$69	foot	800		\$55,200
Submersible recovery pump and installation	\$926	ea	40		\$37,048
Storage Tanks	\$15,800	ea	1		\$15,800
Generator/Fuel Tank	\$26,387	ea	1		\$26,387
Recovery/Injection piping and fittings (incl. labor & materials)	\$94,930	unit	1		\$94,930
Well Surface Completions	\$800	ea	40		\$32,000
Electrical (equipment, labor & materials)	\$98,076	unit	1		<u>\$98,076</u>
					Capital Costs Subtotal
					\$431,942
Engineering Design (5% of capital costs)			5%		\$21,597
Construction Management (6% of capital costs)			6%		\$25,916
Contingency for pilot testing and remediation system optimization (10% of capital costs)			10%		<u>\$43,194</u>
					TOTAL CAPITAL COSTS
					\$522,649
Operation and Maintenance					
<u>GW Monitoring</u>					
GW Sampling	\$7,000	QTR	207		\$1,449,141
GW Laboratory Analysis	\$13,200	QTR	207	\$546,533	\$3,279,200
GW Report	\$5,000	ea	104		<u>\$517,550</u>
					Subtotal
					\$5,245,891
<u>Recovery Well & System O&M</u>					
Pump Replacement	\$37,048	event	10		\$370,480
Generator Fuel	\$4.00	gallons	748,067		\$2,992,270
Discharge Sampling	\$2,850	QTR	207		\$590,008
Discharge Lab Analysis	\$900	QTR	207	\$37,264	<u>\$223,582</u>
					Subtotal
					\$4,176,339
					O&M Costs Subtotal
					\$9,422,230
Technical Support (2% of O&M costs)			2%		\$188,445
Project Management (5% of O&M costs)			5%		<u>\$471,112</u>
					TOTAL O&M COSTS
					\$10,081,786
					TOTAL ESTIMATE FOR PROJECT
					\$10,604,436

Notes

Heavy Construction Costs With RSMeans Data, 36th Edition, 2022
RS Means Location Factor for Baton Rouge, LA = 84.2

**PIPING CALCULATIONS - REMEDIATION TO BACKGROUND
AUGUST J. LEVERT, ET AL V BP AMERICA PRODUCTION CO.; 18TH JDC; DOCKET #78953
GRAND RIVER FIELD, IBERVILLE PARISH, LOUISIANA
PREPARED FOR JONES, SWANSON, HUDDLELL, & DASCHBACH LLC**

PIPING, FITTINGS AND WIRING REQUIREMENTS

GW distribution pipe 3" Schedule 40 PVC	12,000
1.5" discharge line from pump to distribution piping	600
3" Elbow fittings (45°)	80
3" Couplings	600
3" T fittings	40
3/4 "electrical conduit	12,000

CAPITAL AND O&M COSTS FOR REVERSE OSMOSIS SYSTEM - REMEDIATION TO BACKGROUND
AUGUST J. LEVERT, ET AL V BP AMERICA PRODUCTION CO.; 18TH JDC; DOCKET #78953
GRAND RIVER FIELD, IBERVILLE PARISH, LOUISIANA
PREPARED FOR JONES, SWANSON, HUDDLELL, & DASCHBACH LLC

Description	Quantity	Unit	Unit Cost	Markup (20%)	Total
Capital Costs					
<u>Reverse Osmosis System</u>					
Pre-treatment Unit (stripperator)	1	ea	\$19,193		\$19,193
RO Unit	1	ea	\$377,543		\$377,543
Storage Tanks (for Retentate)	5	ea	\$15,800		\$79,000
Generator/Fuel Tank	1	ea	\$152,922		<u>\$152,922</u>
					Capital Costs Subtotal
					\$628,658
Engineering Design (5% of capital costs subtotal)	5%				\$31,433
Construction Management (6% of capital costs subtotal)	6%				\$37,719
Contingency for pilot testing and remediation system optimization (10% of project subtotal)	10%				<u>\$62,866</u>
					TOTAL CAPITAL COSTS
					\$760,676
Operation and Maintenance					
<u>Reverse Osmosis System O&M</u>					
RO Membrane Replacement (every 2 years)	25	event	\$19,440		\$486,000
Generator Fuel	\$4.00	gallons	869,722		<u>\$3,478,888</u>
					O&M Subtotal
					\$3,964,888
Technical Support (2% of O&M subtotal)	2%				\$79,298
Project Management (5% of O&M subtotal)	5%				<u>\$198,244</u>
					TOTAL O&M COSTS
					\$4,242,430
					TOTAL ESTIMATE
					\$5,003,106

Notes

Heavy Construction Costs With RSMeans Data, 36th Edition, 2022
RS Means Location Factor for Baton Rouge, LA = 84.2

CAPITAL AND O&M COSTS FOR SALTWATER DISPOSAL WELLS - REMEDIATION TO BACKGROUND
AUGUST J. LEVERT, ET AL V BP AMERICA PRODUCTION CO.; 18TH JDC; DOCKET #78953
GRAND RIVER FIELD, IBERVILLE PARISH, LOUISIANA
PREPARED FOR JONES, SWANSON, HUDDALL, & DASCHBACH LLC

Description	Quantity	Unit	Unit Cost	Markup (20%)	Total
<i>Capital Costs</i>					
Saltwater Disposal Wells (2)					\$6,100,000
<i>Operation and Maintenance</i>					
Annual O&M	51.8	event	\$112,180		<u>\$5,810,924</u>
					TOTAL ESTIMATE \$11,910,924

**PORE VOLUME FLUSHING ANALYSIS - REMEDIATION TO MEET SURFACE WATER QUALITY CRITERIA
 AUGUST J. LEVERT, ET AL V BP AMERICA PRODUCTION CO.; 18TH JDC; DOCKET #78953
 GRAND RIVER FIELD, IBERVILLE PARISH, LOUISIANA
 PREPARED FOR JONES, SWANSON, HUDDALL, & DASCHBACH LLC**

Governing Equations:

Single Pore Volume of Plume: $PV = BnA$

Number of Pore Volume Flushes: $NPV = -R_f \ln\left(\frac{C_f}{C_o}\right)$

PORE VOLUME FLUSHING AND REMEDIATION TIME

PARAMETER	UNIT	CHLORIDE
Impacted Thickness	ft	7
Porosity	unitless	0.3
Area of Plume	ft ²	1,431,858
Pore Volume	gal	22,491,625
Retardation Factor (Rf)	unitless	1
Target Concentration (Cf)	unitless	250
Initial Concentration (Co)	unitless	11,826
NPV		3.9
Recovery volume to achieve remediation target	gal	86,740,612
Aquifer pumping rate (single well)	gpm	0.135
Number of recovery wells	ea	28
Depth of recovery wells	ft	20
GW Recovery Rate	gpd	5,443
Time to reach remedial target	years	43.7

COST FOR GROUNDWATER RECOVERY AND OFFSITE DISPOSAL OF RETENTATE - REMEDIATION TO MEET SURFACE WATER QUALITY CRITERIA
AUGUST J. LEVERT, ET AL V BP AMERICA PRODUCTION CO.; 18TH JDC; DOCKET #78953
GRAND RIVER FIELD, IBERVILLE PARISH, LOUISIANA
PREPARED FOR JONES, SWANSON, HUDELLE, & DASCHBACH LLC

Description	Unit Cost	Unit	Quantity	Markup (20%)	Total
Capital Costs					
<u>GW Recovery Wells</u>					
Rig mobilization/demobilization	\$2,500	ea	1		\$2,500
Drill Rig and Crew	\$3,500	day	14		\$49,000
4" PVC recovery well installation (labor & materials)	\$69	foot	560		\$38,640
Submersible recovery pump and installation	\$926	ea	28		\$25,934
Storage Tanks	\$15,800	ea	1		\$15,800
Generator/Fuel Tank	\$26,387	ea	1		\$26,387
Recovery/Injection piping and fittings (incl. labor & materials)	\$66,451	unit	1		\$66,451
Well Surface Completions	\$800	ea	28		\$22,400
Electrical (equipment, labor & materials)	\$68,653	unit	1		\$68,653
					Capital Costs Subtotal
					\$315,765
Engineering Design (5% of capital costs)			5%		\$15,788
Construction Management (6% of capital costs)			6%		\$18,946
Contingency for pilot testing and remediation system optimization (10% of capital costs)			10%		\$31,577
					TOTAL CAPITAL COSTS
					\$382,076
Operation and Maintenance					
<u>GW Monitoring</u>					
GW Sampling	\$4,900	QTR	175		\$855,719
GW Laboratory Analysis	\$9,600	QTR	175	\$335,302	\$2,011,814
GW Report	\$5,000	ea	87		\$436,592
					Subtotal
					\$3,304,125
<u>Recovery Well & System O&M</u>					
Pump Replacement	\$25,934	event	8		\$207,469
Generator Fuel	\$4.00	gallons	631,049		\$2,524,198
Discharge Sampling	\$2,850	QTR	175		\$497,714
Discharge Lab Analysis	\$900	QTR	175	\$31,435	\$188,608
					Subtotal
					\$3,417,988
					O&M Costs Subtotal
					\$6,722,113
Technical Support (2% of O&M costs)			2%		\$134,442
Project Management (5% of O&M costs)			5%		\$336,106
					TOTAL O&M COSTS
					\$7,192,661
Offsite Disposal of Concentrated Wastewater From RO					
Offsite Disposal	\$6.00	bbl	1,445,677		\$8,674,061
Transportation	\$1.13	bbl	1,445,677		\$1,638,434
					TOTAL DISPOSAL COSTS
					\$10,312,495
					TOTAL ESTIMATE FOR PROJECT
					\$17,887,232

Notes

Heavy Construction Costs With RSMMeans Data, 36th Edition, 2022
RS Means Location Factor for Baton Rouge, LA = 84.2

COST FOR GROUNDWATER RECOVERY AND ONSITE INJECTION OF RETENTATE - REMEDIATION TO MEET SURFACE WATER QUALITY CRITERIA
AUGUST J. LEVERT, ET AL V BP AMERICA PRODUCTION CO.; 18TH JDC; DOCKET #78953
GRAND RIVER FIELD, IBERVILLE PARISH, LOUISIANA
PREPARED FOR JONES, SWANSON, HUDDLELL, & DASCHBACH LLC

Description	Unit Cost	Unit	Quantity	Markup (20%)	Total
Capital Costs					
<u>GW Recovery Wells</u>					
Rig mobilization/demobilization	\$2,500	ea	1		\$2,500
Drill Rig and Crew	\$3,500	day	14		\$49,000
4" PVC recovery well installation (labor & materials)	\$69	foot	560		\$38,640
Submersible recovery pump and installation	\$926	ea	28		\$25,934
Storage Tanks	\$15,800	ea	1		\$15,800
Generator/Fuel Tank	\$26,387	ea	1		\$26,387
Recovery/Injection piping and fittings (incl. labor & materials)	\$66,451	unit	1		\$66,451
Well Surface Completions	\$800	ea	28		\$22,400
Electrical (equipment, labor & materials)	\$68,653	unit	1		<u>\$68,653</u>
					Capital Costs Subtotal
					\$315,765
Engineering Design (5% of capital costs)			5%		\$15,788
Construction Management (6% of capital costs)			6%		\$18,946
Contingency for pilot testing and remediation system optimization (10% of capital costs)			10%		<u>\$31,577</u>
					TOTAL CAPITAL COSTS
					\$382,076
Operation and Maintenance					
<u>GW Monitoring</u>					
GW Sampling	\$4,900	QTR	175		\$855,719
GW Laboratory Analysis	\$9,600	QTR	175	\$335,302	\$2,011,814
GW Report	\$5,000	ea	87		<u>\$436,592</u>
					Subtotal
					\$3,304,125
<u>Recovery Well & System O&M</u>					
Pump Replacement	\$25,934	event	8		\$207,469
Generator Fuel	\$4.00	gallons	631,049		\$2,524,198
Discharge Sampling	\$2,850	QTR	175		\$497,714
Discharge Lab Analysis	\$900	QTR	175	\$31,435	<u>\$188,608</u>
					Subtotal
					\$3,417,988
					O&M Costs Subtotal
					\$6,722,113
Technical Support (2% of O&M costs)			2%		\$134,442
Project Management (5% of O&M costs)			5%		<u>\$336,106</u>
					TOTAL O&M COSTS
					\$7,192,661
					TOTAL ESTIMATE FOR PROJECT
					\$7,574,737

Notes

Heavy Construction Costs With RSMeans Data, 36th Edition, 2022
RS Means Location Factor for Baton Rouge, LA = 84.2

**PIPING CALCULATIONS - REMEDIATION TO MEET SURFACE WATER QUALITY CRITERIA
AUGUST J. LEVERT, ET AL V BP AMERICA PRODUCTION CO.; 18TH JDC; DOCKET #78953
GRAND RIVER FIELD, IBERVILLE PARISH, LOUISIANA
PREPARED FOR JONES, SWANSON, HUDDALL, & DASCHBACH LLC**

PIPING, FITTINGS AND WIRING REQUIREMENTS

GW distribution pipe 3" Schedule 40 PVC	8,400
1.5" discharge line from pump to distribution piping	420
3" Elbow fittings (45°)	56
3" Couplings	420
3" T fittings	28
3/4 "electrical conduit	8,400

CAPITAL AND O&M COSTS FOR REVERSE OSMOSIS SYSTEM- REMEDIATION TO MEET SURFACE WATER QUALITY CRITERIA
AUGUST J. LEVERT, ET AL V BP AMERICA PRODUCTION CO.; 18TH JDC; DOCKET #78953
GRAND RIVER FIELD, IBERVILLE PARISH, LOUISIANA
PREPARED FOR JONES, SWANSON, HUDDLELL, & DASCHBACH LLC

Description	Quantity	Unit	Unit Cost	Markup (20%)	Total
Capital Costs					
<u>Reverse Osmosis System</u>					
Pre-treatment Unit (stripperator)	1	ea	\$19,193		\$19,193
RO Unit	1	ea	\$377,543		\$377,543
Storage Tanks (for Retentate)	5	ea	\$15,800		\$79,000
Generator/Fuel Tank	1	ea	\$152,922		<u>\$152,922</u>
					Capital Costs Subtotal
					\$628,658
Engineering Design (5% of capital costs subtotal)	5%				\$31,433
Construction Management (6% of capital costs subtotal)	6%				\$37,719
Contingency for pilot testing and remediation system optimization (10% of project subtotal)	10%				<u>\$62,866</u>
					TOTAL CAPITAL COSTS
					\$760,676
Operation and Maintenance					
<u>Reverse Osmosis System O&M</u>					
RO Membrane Replacement (every 2 years)	21	event	\$19,440		\$408,240
Generator Fuel	\$4.00	gallons	733,723		<u>\$2,934,892</u>
					O&M Subtotal
					\$3,343,132
Technical Support (2% of O&M subtotal)	2%				\$66,863
Project Management (5% of O&M subtotal)	5%				<u>\$167,157</u>
					TOTAL O&M COSTS
					\$3,577,151
					TOTAL ESTIMATE
					\$4,337,827

Notes

Heavy Construction Costs With RSMeans Data, 36th Edition, 2022
RS Means Location Factor for Baton Rouge, LA = 84.2

CAPITAL AND O&M COSTS FOR SALTWATER DISPOSAL WELLS - REMEDIATION TO MEET SURFACE WATER QUALITY CRITERIA
AUGUST J. LEVERT, ET AL V BP AMERICA PRODUCTION CO.; 18TH JDC; DOCKET #78953
GRAND RIVER FIELD, IBERVILLE PARISH, LOUISIANA
PREPARED FOR JONES, SWANSON, HUDDALL, & DASCHBACH LLC

Description	Quantity	Unit	Unit Cost	Markup (20%)	Total
Capital Costs					
Saltwater Disposal Wells (2)					\$6,100,000
Operation and Maintenance					
Annual O&M	43.7	event	\$112,180		\$4,902,266
					TOTAL ESTIMATE \$11,002,266

CALCULATION OF PREDICTED DRAWDOWN VS DISTANCE FROM PUMPING WELL

Method: Back-calculate drawdown using Theis nonequilibrium equation to predict a cone of depression around a pumping well assuming an initially flat wtr table, laterally extensive aquifer, no dewatering effects or aquifer/water compressibility. Then superimpose the cone of depression onto the highest observed potentiometric maps to predict zone of capture.

Site: **Levert-Grand River**

Pumping well: 4-inch Diameter Recovery well

Hydraulic Conductivity: **0.401** (ft/day) Sat thick (b): **7** (ft)

Conversions

10690 (gpd) 7.42 (gpm)

$u = \frac{r^2 S}{4Tt}$

r (distance from well) *see values below*
 S (storativity) **0.1**
 T (transmissivity) **2.807** (ft²/day)
 t (time since pumping began) **120** (days)
 u (well function exponential integral) *see values below*

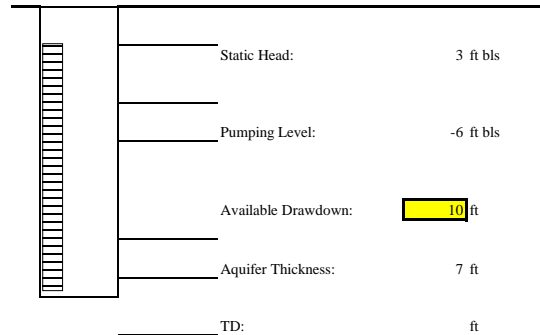
Radius of drainage for RW in time **22** (feet)
7 (meters)

z	u	W(u)	Q =			
0.1 (feet)	7.42E-07	13.536443	0.135 (gpm)	26 (cfd)	3,119	Cubic feet of water pumped in time
0.5 (feet)	1.86E-05	10.317585			10,396	Cubic feet of aquifer drained in time
1 (feet)	7.42E-05	8.931346	194.4 (gpd)		3	Number of wells in Area
10 (feet)	7.42E-03	4.3335098			9,356	Total volume of wtr in Area in time
20 (feet)	2.97E-02	2.9692761				
30 (feet)	6.68E-02	2.1945752				
40 (feet)	1.19E-01	1.6688292				
50 (feet)	1.86E-01	1.2845097				
100 (feet)	7.42E-01	0.3453035				
200 (feet)	2.97E+00	0.0135776				
300 (feet)	6.68E+00	0.0001659				
400 (feet)	1.19E+01	5.437E-07				
500 (feet)	1.86E+01	0				
1000 (feet)	7.42E+01	0				
1800 (feet)	2.40E+02	0				

$ho-h = \frac{Q * W(u)}{4 \pi T}$

Q (discharge) 25.9893 (ft³/day)
 W(u) (well function value) from table
 ho-h (drawdown)

z	ho-h (ft)	
0.1 (feet)	9.97	
0.5 (feet)	7.60	
1 (feet)	6.58	
10 (feet)	3.19	
20 (feet)	2.19	
30 (feet)	1.62	
40 (feet)	1.23	
50 (feet)	0.95	
100 (feet)	0.25	
200 (feet)	0.0100038	125600 FT2
300 (feet)	0.0001222	
400 (feet)	4.006E-07	
500 (feet)	0	
1000 (feet)	0	
1800 (feet)	0	





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QUOTATION 108739-0

July 1, 2019

Prepared by: **May Higazy**



Company: Icon Environmental Services	Country: United States
Name: Wayne Prejean, P.E.	Phone: 225-344-8490
Email: wprejean@iconenv.com	Fax:

Qty	Part No.	Description	Unit Price (\$)	Ext Price (\$)
100,000 GPD Sea Water Reverse Osmosis System				
Recommended Pre-Treatment				
1	CDS-G-35	Prechlorination Dosing System, 36 GPD, Adjustable Metering Pumps, Polyethylene Solution Tank, Manual, 220V/1pH/60Hz	\$633.00	\$633.00
1	FP	Feed Pump , MFG: Ampco USA, duplex 2205 SS, TEFC, 460V/3pH/60Hz, (skid mounted - wired by others to main panel on RO skid)	\$16,550.00	\$16,550.00
1	BP	Back wash Pump , MFG: Ampco USA, duplex 2205 SS, TEFC, 460V/3pH/60Hz, (skid mounted - wired by others to main panel on RO skid)	\$12,007.00	\$12,007.00
6	MLF48-A-F	48" FRP tank multimedia filter complete with media, valve, 3" pipe size, 220V/1pH/60Hz	\$11,740.00	\$70,440.00
1	CDS-G-35-ORP	Dechlorination Dosing System, 36 GPD, Adjustable Metering Pumps, Polyethylene Solution Tank, ORP monitor Manual, 220V/1pH/60Hz	\$1,350.00	\$1,350.00
1	CDS-G-35	Antiscalant Dosing System, 36 GPD, Adjustable Metering Pumps, Polyethylene Solution Tank, Manual, 220V/1pH/60Hz	\$633.00	\$633.00
SWRO System				
1	SW-136K-6680	Sea Water Reverse Osmosis System modified to produce 100,000 GPD at maximum 60,000 ppm feed water TDS, 460V/3pH/60Hz. It includes the following: <ul style="list-style-type: none"> · Powder coated carbon steel frame · (6) FRP pressure vessels (Protec or codeline) rated at 1000 PSI · (36) 8" TFC spiral wound sea water membranes (Filmtec or Hydranautics) · VFD · (5) Pressure gauges · Low & high pressure switches in duplex SS · (2) Flow meters for reject and product line · High pressure pump with energy recovery turbine (Fedco or equal) · 5 micron pre-filter with FRP housing (Eden or equal) · PLC control panel (Siemens S7-1200). · High pressure piping in duplex SS and low pressure piping in SCH 80 PVC 	\$256,900.00	\$256,900.00
Recommended Post Treatment				
1	CDS-G-15	Post chlorination dosing system, adjustable metering pump, polyethylene solution tank, manual, 220V/1pH/60Hz	\$430.00	\$430.00

QUOTATION 108739-0

July 1, 2019

Prepared by: **May Higazy**

Qty	Part No.	Description	Unit Price (\$)	Ext Price (\$)
1	CDS-G-35-pH	Post pH adjustment dosing system 12 GPD, Adjustable Metering Pump, Polyethylene Solution Tank, Manual, pH Monitor,220V/1pH/60Hz	\$1,350.00	\$1,350.00
1	CS8-6	Flushing Skid for 8" membranes, to clean (6) pressure vessels at a time, 460V/3pH/60Hz	\$17,250.00	\$17,250.00

Terms and Conditions	
Payment:	50% down/50% at shipping
Lead Time:	24-26 weeks
Validity:	30 days
FRT Terms:	Exworks Santa Ana, CA – USA

Sub Total:	\$377,543.00
Discount 0%:	\$0.00
Tax 0%:	\$0.00
Freight:	\$0.00
Total (USD):	\$377,543.00

No Credit Card Payments, Only Check or Wire Transfer.

TERMS AND CONDITIONS OF SALE

All products and services processed by Pure Aqua, Inc., its affiliates or subsidiaries shall be in accordance with the following terms and conditions

All products and services processed by Pure Aqua, Inc., its affiliates or subsidiaries shall be in accordance with the following terms and conditions.

ORDER ACCEPTANCE: Pure Aqua reserves the right to accept or reject an order request. Possession of a price sheet or a product catalog is not an offer to sell the product listed. Pure Aqua sells wholesale only and does not sell to end users. These terms and conditions shall be considered a part of all accepted orders and accepted purchase orders. No purported acceptance of any order on terms and conditions which modify, supersede, supplement or otherwise alter the accepted order shall be binding upon Pure Aqua and such terms and conditions shall be deemed rejected and replaced by the accepted order, notwithstanding Pure Aqua's acceptance of any money. In the event of a conflict between the accepted order and any prior or contemporaneous agreement or document exchanged between the parties, the accepted order governs. Some orders may require a down payment. If client approval is required for an order, client approval must be made within 14 days to proceed with the project. If 14 days have passed without client approval, then Pure Aqua may revise any pricing before proceeding with the project or accepting the order.

CANCELLATION OR CHANGE OF ORDER: Orders are processed as they are received. Buyer's add-ons or changes to orders are subject to Pure Aqua acceptance. Once an order is in process (or production), if as a consequence of an instruction from you regarding any change to the order including add-ons, we delay or suspend (but not cancel) an order or any part of an order, we may vary the price for the order and/or separate portions of the order. You may not cancel an order, or any part of it, without our written consent, which may be withheld in our absolute discretion. In addition, any cancellation of an order may incur a minimum 35% restocking fee. Without prejudice to our right to refuse consent for you to cancel an order, as a condition of giving such consent we may require that you pay any and all costs reasonably incurred by us in relation to the cancelled order or the cancelled part of the order plus a reasonable profit to the date of cancellation. Pure Aqua may delay or cancel an order or delivery of an order at any time if: a) we reasonably form the opinion that you are insolvent or at material risk of insolvency; b) you fail to pay any amount on the due date; c) where an account is found delinquent and no arrangements have been made with the Credit Department to settle the account; or d) we reasonably form the opinion that fulfilling the order to you may have a negative impact upon our business or commercial reputation or image.

STANDARDS: The Pure Aqua system is designed to Pure Aqua's standards and is not NSF or UL listed. Pure Aqua makes no claim or guarantee that the system meets NSF or any other standards. NSF components are supplied where applicable. It is your obligation to determine if any components meet installation requirements and the legal requirements. Component data sheets are supplied from the respective manufacturers for various components as is.

CUSTOM EQUIPMENT: Custom equipment is subject to the terms and conditions detailed on the separate Pure Aqua quote form and will require a minimum 35% down payment.

PRICES: Products are sold at prices currently in effect at time of order, together with any applicable taxes, charges and delivery costs in relation to the products and are exworks Santa Ana, CA-USA unless otherwise specified. Prices generally coincide with dated Pure Aqua printed price sheets and website information, exclusive of any applicable taxes, charges and delivery costs in relation to the order. However, Pure Aqua reserves the right to change prices at any time, without notice and without updating published material on our website or in print. Freight costs are for the customer's account.

DELIVERY: Stock items distributed by Pure Aqua are generally shipped within 1 to 4 working days after our acceptance of an order. We may require additional time on special orders, large orders, or items not stocked. The risk in the order shall pass to you upon placement of the order onto transport for delivery to you. If your shipment is delayed, lost, weathered or damaged in transit, Pure Aqua is not responsible for any liability for any loss, damage, consequence or expense. Pure Aqua is not responsible for delays due to conditions beyond our control.

SHIPPING CHARGES: All shipments are exworks Santa Ana, CA-USA, unless otherwise specified and shipping costs are the customer's responsibility.

TERMS OF PAYMENT:

1. Via Wire Transfers
2. Via Letter of Credit (L/C)
 - Letter of credit must be irrevocable, advised and confirmed by any MAJOR financial institution in the United States with draft payable at sight.
 - Letter of Credit must state that all bank charges inside and outside the United states are to be borne by the opener. Payment terms apply as per contract and include penalties for late payment. A minimum purchase requirement of \$250 is necessary to help defer handling.

OPEN ACCOUNT: To establish an open account, we will conduct a complete credit analysis. This requires correspondence with you, your suppliers, and your bank or financial institution. The time involved depends on the response time from the references you give us. You will be notified when your credit is approved. In the interim, all orders must be prepaid. No open account terms for customers outside of the United States.

DAMAGED MERCHANDISE: The risk in the order shall pass to you upon placement of the order onto transport for delivery to you. If your shipment is delayed, lost, weathered or damaged in transit, Pure Aqua is not responsible for any liability for any loss, damage, consequence or expense. It is your responsibility to check shipments for damage before acceptance or note on freight bill "Subject to inspection for concealed damage." Consignee is responsible for filing a claim with the freight carrier for any and all damages or losses. Return of Damaged Goods will not be authorized. We will not accept Return of Damaged Goods.

ERRORS AND RETURN GOODS AUTHORIZATION: No returns will be accepted without prior authorization. Call Pure Aqua to request an RGA number. You must prepay all freight/shipping charges. An RGA not used in 30 days will expire. We will refuse a return 30 days after an RGA is issued and any invoice will be payable within terms. Special order goods are not returnable. All authorized returns are subject to a 35% restocking fee.

DEFECTIVE GOODS & WARRANTY PROCESSING: An item returned for warranty consideration without prior authorization will be refused. Call Pure Aqua to obtain an RGA number. Pure Aqua and its manufacturers reserve the right to repair or replace defective merchandise. If pre-warranty replacement merchandise has been sent and the warranted goods are repairable, the repaired product will be returned to you at our expense and the pre-warranty invoice will be for your account. If the warranted product is not repairable, an offsetting credit invoice will be issued to your account. If the warranty consideration is denied, all expenses are for your account.

PROPRIETARY RIGHTS: Any and all of Pure Aqua's designs, trademarks, trade names specifications, patents, copyrights, formulas and manufacturing information are its intellectual property and proprietary data and shall be utilized for purposes intended in the order only.

LIMITED WARRANTY: This limited warranty and the remedies set for are exclusive and in lieu of all other warranties, remedies and conditions, whether oral, written, statutory, express or implied. Pure Aqua disclaims all statutory and implied warranties, including without limitation, warranties of merchantability and fitness for a particular purpose and warranties against hidden or latent defects, to the extent permitted by law. In so far as such warranties cannot be disclaimed, Pure Aqua limits the duration and remedies of such warranties to the duration of this express warranty and, at Pure Aqua's option, the repair or replacement services described below. Products manufactured by Pure Aqua are warranted to be free of defects in material and workmanship for a period of one year from the system start up and commissioning, or fourteen months from the ship date, whichever comes first. Pure Aqua's responsibility and liability shall be limited solely and exclusively to the replacement or the repair of parts manufactured by Pure Aqua and will not be liable for any cost arising from removal, installation, transportation or any other charges that may arise in connection with the warranty claim. Products and/or system components sold by Pure Aqua and manufactured by others are subject to the warranty provided by the manufacturer of said products and/or components and not by Pure Aqua's warranty. Pure Aqua will not be liable for damage to products caused by incorrect operation, misuse, abuse, unauthorized alteration, repair, accident or if products were not installed and operated in accordance to the Pure Aqua operation and installation manual. Pure Aqua will not be liable for any incidental or consequential damages, losses, or expenses arising from installation, use or any other causes.

Industrial Sea Water RO Systems

Capacity: 8,000 to 660,000 GPD

SWI
SERIES

Pure Aqua's sea water reverse osmosis systems are capable of removing salts as well as other impurities such as bacteria, sugars, proteins, dyes and constituents that have a molecular weight greater than 150-250 Daltons.



SW-224K-8780

Pure Aqua supplies a full line of standard and customizable sea water reverse osmosis systems, all of which are engineered using advanced 3D computer modeling and process design software for accurate and customized solutions.

Standard Features

- Powder coated steel frame
- Heavy duty 5 micron cartridge prefilter
- Sea water resistant SS pump
- Microprocessor/PLC based control panel & VFD
- Glycerin-filled 316 SS pressure gauges
- Product & reject flow meters
- TFC spiral wound membranes
- FRP membrane housings
- 460V/3ph/60Hz power requirement
- Low & high pressure switches
- Permeate TDS monitor
- Stainless steel high pressure piping
- Stainless steel throttling valve for reject stream
- Automatic feed shut off valve
- Energy recovery on 64K GPD and larger

Available Options

- Feed and re-pressurization pumps
- 380-415V/3ph/50Hz power requirement
- Remote monitoring
- Product tank level switch
- pH controller with sensor
- ORP controller with sensor
- Cleaning skid
- 50 micron bag filter for open intake
- Carbon prefilter
- Multimedia prefilter
- Post UV sterilizer
- Custom designed units
- Export crating
- Chemical dosing units
- Containerized RO systems

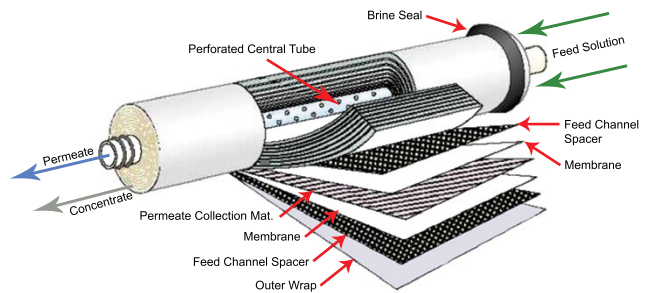
 **Pure Aqua, Inc.**[®]

Industrial Sea Water RO Systems

Capacity: 8,000 to 660,000 GPD

The spiral membrane is constructed from one or more membrane envelopes wound around a perforated central tube. The permeate passes through the membrane into the envelope and spirals inward to the central tube for collection. The layers of the membrane envelope are detailed in the diagram to the right.

**SWI
SERIES**



Operation Specifications

- Max. feed water temperature: 42°C
- Feed water pressure: 40 to 80 psi
- Operating pressure: 700 to 1,000 psi
- H₂S, turbidity and organics must be removed
- Max. iron content: 0.05 ppm
- Feed water TDS: 10,000-42,000 ppm
- Equipment upgrade for TDS up to 50,000 ppm
- Antiscalant dosing is required
- pH tolerance range: 3-11
- Biological or organic content must be removed

Model #	Permeate Flow Rate		Qty. of 8" Membranes (Single Stage)	Motor HP at 42,000 ppm		Approx. Weight (lbs)	Dimensions L"xW"xH"
	GPD	M ³ /D		60Hz	50Hz		
SW-8K-1280	8,000	30	2	15	15	2,600	120x42x72
SW-12K-1380	12,000	45	3	20	25	2,650	160x42x72
SW-16K-1480	16,000	61	4	25	30	2,700	195x60x72
SW-24K-2380	24,000	91	6	40	45	3,200	160x60x72
SW-32K-2480	32,000	121	8	60	65	4,200	195x72x72
SW-48K-2680	48,000	182	12	75	80	5,600	280x72x72
SW-64K-4480	64,000	242	16	60	65	6,500	195x72x72
SW-72K-3680	72,000	273	18	60	65	12,000	280x72x80
SW-96K-4680	96,000	363	24	85	100	13,000	280x72x80
SW-112K-4780	112,000	424	28	100	110	14,000	350x72x80
SW-136K-5680	136,000	515	30	110	120	15,000	280x72x80
SW-168K-6780	168,000	636	42	120	130	16,000	350x72x80
SW-196K-7780	196,000	742	49	130	150	16,500	350x72x80
SW-224K-8780	224,000	848	56	160	175	17,000	350x72x79
SW-252K-9780	252,000	954	63	175	190	18,000	350x72x79
SW-280K-10780	280,000	1,060	70	190	190	19,000	350x72x79
SW-317K-12780	317,000	1,200	84	190	290	20,000	350x85x80
SW-420K-15780	420,000	1,590	105	290	320	21,200	350x85x80
SW-500K-18780	500,000	1,893	126	320	320	22,000	350x85x81
SW-660K-18880	660,000	2,500	144	350	350	27,000	395x85x81

Pure Aqua also supplies: Custom Engineered Solutions, Multimedia Pretreatment, Activated Carbon Pretreatment, Water Conditioning, Chemical Dosing Systems, Ultraviolet (UV) Sterilizers and Ozonation Systems.

		<p>Authorized Dealer:</p>
<p>Water Treatment and Reverse Osmosis Systems sales@pureaqua.com Tel: +1-714-432-9996 www.pureaqua.com Fax: +1-714-432-9898</p>		

MK ENVIRONMENTAL INC

765 Springer Dr
Lombard, IL 60148

etung@mkenv.com

QUOTATION

p 1 of 1

Quotation valid for 90 days

SOLD TO:	SHIP TO:
Jason Sills ICON Environmental Services, Inc. 2049 Commercial Drive Port Allen, Louisiana 70767 (225) 344-8490	ICON Environmental Services, Inc. 2049 Commercial Drive Port Allen, Louisiana 70767

Date	4/25/2019
Quote No.	219519
Reference	Iron removal
Terms	Net 30
Freight	included
Ship Via	FLATBED
F.O.B.	Factory

QTY	DESCRIPTION	UNIT PRICE	AMOUNT
1	30 amp 120/240 volt 3 phase, 4 wire plus ground electrical service Brought to NEMA 3R control Panel Motors will be TEFC construction MKE Model SA15H Stripperator 15 GPM capacity Oil/Water Separator and air stripper treatment system Coalescing separator with product skimming weir Polypropylene coalescing pack with 1/2" spacing for efficient oil removal Low profile air stripper with 2 hp AMCA aluminum blower Nylon tube aeration air stripper for high mass removal rates with low maintenance Low, high, and high-high sump conductivity probes Clean out hatch Low blower pressure alarm Sump level sight glass	16,760.00	\$16,760.00
1	Centrifugal 1.5 hp transfer pump, 3450 rpm, TEFC motor Cast Iron housing with composite impeller, anti air lock design		
1	Bag Filter, size 2 Bag filters constructed of stainless steel with quick release bolts. Includes (20) 25-micron filter bags. Optional 5 or 10 micron		
1	Master Control Panel System, Including: NEMA 3R control panel IEC Magnetic motor starters, thermal overloads, safety switches, H-O-A controls Fused control transformer intrinsically safe relays, alarm indicator LED's, output channels Hard wired relay logic (1) exterior GFCI utility outlet Blower low pressure alarm Anti-falsing alarm circuit to prevent nuisance tripping		

Does not include permits, fees, etc....
Offloading & placement by others.

EQUIPMENT SUB TOTAL		\$16,760.00
EQUIP. SALES TAX	9.450%	\$1,583.82
FREIGHT		\$850.00
NET TOTAL		\$19,193.82



Remit to:
3314 N. Richmond Rd.
Johnsburg, IL 60051
P:815-385-2350
F:815-385-2940

www.ameritempgroup.com

Rented from
 3314 N. RICHMOND ROAD 815-385-2350 Phone
 JOHNSBURG, IL 60051 815-385-2940 Fax

Customer #: 34890
 ICON ENVIRONMENTAL SERVICES
 2049 COMMERCIAL DRIVE
 ATTN: ACCOUNTS PAYABLE
 Port Allen, LA 70767 Phone 225-344-8490

Status: Quote
 Quote #: q7232
 Quoted: Fri 12/18/2020 9:00AM
 Billed Thru: Fri 12/18/2020
 Job Loc: 2049 COMMERCIAL DRIVE ; Port Alle
 Ordered By: Jason Sills
 Terms: UPON RECEIPT
 Operator: STEVE MORLEY
 Job Descr: Doosan Portable Generators
 PO #: TBD

Salesman: STEVE MORLEY 630--30-0-8062 Steve@ameritempltd.com

Used at Address

225-344-8490
 Icon Environmental Services

FOB: Factory*ORDER CONTACT/PHONE: Jason Sills 225-344-8490
 *SITE CONTACT/PHONE: Same
 *SALES REP: Steve Morley
 *RENTAL/SALES PERIOD: Doosan Generators

FOB: Factory
 Availability: Stock - 6 weeks

Qty	Key	Items Sold	Part#	Each	Price
1	G25WDO-3A-T4F SD	G25WDO-3A-T4F Generator-Trailer Mounted	G25WDO-3A-T4F	\$22,988.00	\$22,988.00
		Model #G25WDO-3A-T4F PRIME POWER RATING: @ 480/277V-3Ø WYE, 0.8PF, 60Hz 25 kVA (20 kW), 30 Amps @ 240/139V-3Ø WYE, 0.8PF, 60Hz 25 kVA (20 kW), 60 Amps @ 208/120V-3Ø WYE, 0.8PF, 60Hz 22 kVA (17 kW), 61 Amps @ 240/120V-1Ø ZIG ZAG, 1.0PF, 60Hz 16.5 kVA (16.5 kW), 69 Amps @ 400/230V WYE-1Ø, 1.0PF, 50Hz 20 kVA (16 kW), 29 Amps Voltage Configuration 3-Position Switch Frequency Capability 50Hz/60Hz Switchable ENGINE: Engine Make / Model Doosan D18 Power Output @ 1800 RPM 33.5 (25) Emissions Tier Level Tier 4 Final Fuel Tank Capacity - Gal (L) 47 (177) Runtime @ 100% Load - Hr 25.9 DIMENSIONS w/RUNNING GEAR: Length - in (mm) 130.5 (3317) Width - in (mm) 72.8 (1849) Height - in (mm) 76.6 (1938) Weight (Ready to Run) - lb (kg) 3140 (1424) Sound Level @ 23 ft (7m) and 100% Load - dB(A) 63 Doosan Item Number: 46664043 Standard Unit G25WDO-3A-T4F SD: Package Standard unit List \$33,717.00 G25WDO-3A-T4F LE: package Options/Upgrades included: Block heater, Battery charger, and Fuel System, External Fuel List \$34,809.00 G25WDO-3A-T4F SE: Package Options/Upgrades Included: ILMS, G25 LHG System List \$40,842.00 G25WDO-3A-T4F ME: Package Options/Upgrades Included: Fuel System, External Fuel, Engine Block Heater, 120V Battery Charger, ILMS, G25 LHG System List \$41,934.00 pricing subject to change without notice depending upon equipment options			

Qty	Key	Items Sold	Part#	Each	Price
1	G400WCU-3B-T4FSD	G400WCU-3B-T4F Generator Trailer Mounted Model #G400WCU-3B-T4F PRIME POWER RATING: @ 600/346V-3Ø WYE, 0.8PF, 60Hz N/A @ 480/277V-3Ø WYE, 0.8PF, 60Hz 402 kVA (321 kW), 484 Amps @ 240/139V-3Ø WYE, 0.8PF, 60Hz 402 kVA (321 kW), 969 Amps @ 208/120V-3Ø WYE, 0.8PF, 60Hz 402 kVA (321 kW), 1118 Amps @ 240/120V-1Ø ZIG ZAG, 1.0PF, 60Hz 216 kVA (216 kW), 900 Amps @ 400/230V-3Ø WYE, 0.8PF, 50Hz 387 kVA (310 kW), 559 Amps Voltage Configuration Link Board Panel Frequency Capability 50Hz/60Hz Switchable ENGINE: Engine Make / Model Cummins QSG12 Displacement (L) 11.8 Number of Cylinders 6 Power Output @ 1800 RPM - HP (kWm) 475 (354) Emissions Tier Level Tier 4 Final After treatment Technology DOC / DPF / SCR Fuel Tank Capacity - Gal (L) 470 (1780) Diesel Exhaust Fluid (DEF) Capacity - Gal (L) 46 (174) Run time @ 100% Load - Hr 20.2 DIMENSIONS WITH RUNNING GEAR:Length - in (mm) 241 (6121) Length - in (mm) 241 (6121) Width - in (mm) 83 (2109) Height - in (mm) 115 (2921) Weight (Ready to Run) - lb (kg) 15450 (7022) Sound Level @ 23 ft (7m) and 100% Load - dB(A) 79 Doosan Item Number 46730385 G400WCU-3B-T4F SD: package Standard unit List \$219,300.00 G400WCU-3B-T4F LE: package Options/Upgrades included: Cold Weather Package, Battery Charger, and Fuel System Remote List \$221,825.00 pricing subject to change without notice depending upon equipment options	G400WCU-3B-T4F	\$149,523.00	\$149,523.00
1	FREIGHT	FREIGHT EQUIPMENT		\$0.00	\$0.00
	FOB: Factory				

Quote valid for 30 days.

Quote

AMERITEMP TERMS AND CONDITIONS APPLY TO ALL INVOICES AND AGREEMENTS.
Equipment is billed for time out NOT time used Except generators + light tower rentals shift rates apply.
1 DAY=24 HOURS, 3 DAYS= 1 WEEK, 3 WEEKS = 1 MONTH (28 DAYS)
GENERATORS AND LIGHT TOWERS ARE BASED ON A SHIFT SYSTEM. SINGLE SHIFT IS DEFINED AS {0-10} HOURS IN A DAY, {0-50} HOURS IN A WEEK OR {0-200} HOURS IN A 28 DAY MONTH. DOUBLE SHIFT IS DEFINED {11-16} HOURS IN A DAY, {51-80} HOURS IN A WEEK OR {201-320} HOURS IN A 28 DAY MONTH. TRIPLE SHIFT IS DEFINED {17-24} HOURS IN A DAY, {81-168} HOURS IN A WEEK OR {321-672} HOURS IN A 28 DAY MONTH. ALL GENERATORS AND LIGHT TOWERS REQUIRE ROUTINE AND MINOR REPAIRS AND MAINTENANCE NECESSARY TO KEEP THE EQUIPMENT IN GOOD RUNNING ORDER. SERVICE IS REQUIRED TO BE SCHEDULED MAINTENANCE, OPERATION AND REPAIRS REFERS TO #7 ON BACK OF CONTRACT UNLESS OTHER IS AGREED UPON IN WRITING BETWEEN ALL PARTIES. ALL INVOICES BEING PAID BY CREDIT CARD WILL BE CHARGED A 3.5% CREDIT CARD TRANSACTION FEE. By executing this acknowledgement, I certify that I am authorized to enter into this agreement of behalf of lessee and, if a credit card number is given, then I authorize, in advance, payment in full of all amounts as they become due. By executing this acknowledgement, I certify that I am authorized to enter into this agreement of behalf of lessee and, if a credit card number is given, then I authorize, in advance, payment in full of all amounts as they become due. I, the undersigned renter, specifically acknowledge that I have received and understand the instructions regarding the use and

Sales:	\$172,511.00
Subtotal:	\$172,511.00
Total:	\$172,511.00
Paid:	\$0.00
Amount Due:	\$172,511.00

Signature: _____
ICON ENVIRONMENTAL SERVICES

AMERITEMP LTD. TERMS AND CONDITIONS

1. DEFINITIONS:
 - a) "Lessee" shall mean the party to this contract identified herein other than the Ameri-Temp Ltd. entity identified on the face of this Agreement.
 - b) "Lessor" shall mean the Ameri-Temp Ltd. entity identified on the face of this Agreement.
2. RENTAL PERIOD: The rental period shall commence from the date of shipment of the equipment covered by this agreement (the "Equipment") from the point of shipment and shall continue until the Equipment is returned to lessor's yard or such other point as lessor shall in writing direct.
3. DETERMINATION OF RENTAL CHARGES: Lessee shall pay for the rental period on each piece of Equipment named in the list of equipment in this agreement, including any parts encompassed thereby, at the rate herein stipulated. A rental rate is for a minimum rental period of one full week (seven days). Any portion of a week will be charged as a full week. A MONTH IS DEFINED AS A PERIOD OF TWENTY-EIGHT (28) DAYS. Unless otherwise advised in writing, all rental rates are based on a shift system, single shift is defined as eight (8) hours in a day, forty (40) hours in a week or one hundred sixty (160) hours in a twenty-eight (28) day month. Double shift is defined as eighty (80) hours in a week or three hundred twenty (320) hours in a twenty-eight (28) day month. Triple shift is unlimited hours in a twenty-eight (28) day month.
4. PAYMENT: All rentals due under this agreement are due and payable within 30 days from the date of invoice, provided applicable credit limits are approved by Ameri-Temp Ltd. If applicable credit terms are not approved rentals shall be due and payable in advance on a weekly basis to lessor at the address set forth in this Agreement and in which case payment for the minimum rental period shall be due before the delivery of the Equipment to lessee or the latter's agent or carrier, unless otherwise agreed in writing. A deposit may be required for equipment if terms are not established. All overdue payments, for all charges including damages and losses referred to in Sections 9 and 18, Lessee shall, to the extent permitted by law, pay a finance charge equal to two (2%) per month of the amount due for each thirty (30) days or portion thereof that said overdue payments are not made. All credit card payments are subject to a 3% transaction fee.
5. LOADING, UNLOADING AND TRANSPORTATION: Lessee shall bear the expense of and responsibility for unloading and reloading the Equipment at lessee's receiving point, including all injuries and damages resulting therefrom, and shall pay all demurrage charges incurred at the shipping or receiving points. Lessee shall be responsible for shipping expenses from the original point of shipment to lessee's receiving point and all return shipping expenses to lessor's yard or such other point as lessor shall in writing direct, regardless of whether these costs are advanced by lessor. However, if lessor directs lessee in writing to return all Equipment to a place other than lessor's yard, then lessee shall pay the shipping expenses up to but not beyond the amount that would have been required to return the Equipment to lessor's yard. Lessee must have an authorized agent available to sign a bill of lading upon delivery of the Equipment by the carrier. If no agent is provided at the time of delivery and an employee of lessor is on site at said time, Lessee authorizes lessor's employee to execute the bill of lading as lessee's agent and such execution shall be deemed an acceptance of the condition of the Equipment upon delivery and for all losses occurring to the Equipment thereafter while in Lessee's possession, except as expressly set forth in Section 18 below.
6. RECALLING AND RETURNING NOTICE: Lessor may recall any or all Equipment upon thirty (30) days written notice to lessee and lessee may return any or all Equipment upon like notice to lessor. In the event of recall, lessee shall remain responsible for any loading, unloading, and transportation costs as referred to in Section 5.
7. MAINTENANCE, OPERATION AND REPAIRS: Unless otherwise agreed upon in writing, lessee shall not make any alterations, additions or improvements to the Equipment without lessor's prior written consent. Lessee shall at own expense operate, maintain and keep in good repair the Equipment and return it in the same condition in which it was received. Specifically, lessee must:
 - a) Ensure that the Equipment is operated by qualified personnel in accordance with applicable manufacturer's guidelines and instructions.
 - b) Ensure that the Equipment is used for applications within the capacity ratings of the Equipment.
 - c) Comply with all applicable federal, state and local laws and regulations in connection with operating, handling and transporting the Equipment.
 - d) Inspect the Equipment on a regular basis.
 - e) Supply all fuel, coolants and lubricants necessary to operate the Equipment.
 - f) Immediately notify lessor of any known problems or malfunctions or suspected malfunctions or problems or those that should reasonably be known or suspected upon regular inspection that are necessary to keep the Equipment in good running order.
 - g) Perform all routine and minor repairs and maintenance necessary to keep the equipment in good running order. Service to All Equipment is scheduled every 250 hours, unless otherwise agreed in writing.
 - h) Replace all broken or worn out parts on the Equipment, unless otherwise agreed in Writing, and notify lessor immediately of any broken or worn out parts on the Equipment.
 - i) Return the Equipment in a clean and unmarred condition.
8. INSPECTION: Before the Equipment is loaded for transit to lessee, lessee may require an inspection thereof by a qualified inspector. If lessee does not inspect the Equipment before it is loaded for transit, then lessee is conclusively deemed to have accepted that the Equipment is in good running order without broken or worn out parts and in a clean and unmarred condition. Lessor shall have the right at any time and from time to time to enter the premises occupied by the Equipment and shall be given free access thereto and afforded necessary facilities for the purpose of inspection and removal.
9. DAMAGE TO EQUIPMENT: Lessee shall be liable to lessor for all loss or damage to the Equipment, while it is in the possession of lessee, regardless of the cause or origin of such loss or damage, except as limited by Section 18. However, some requirements of this Section 9 may be waived in limited circumstances by purchasing a fire, theft and vandalism waiver from lessor. Subject to the provisions of Section 8 hereof, lessee shall advise lessor within seven (7) days of the receipt of the Equipment of any shortages or damage claim which it might have and unless such notice is given within such period such claim for shortage or damage shall be invalid and unenforceable. In the event of partial loss or damage to the Equipment, lessee shall immediately notify lessor of such, and if its failure to so notify lessor results in additional or consequential damage to lessor, lessee agrees to pay for all such damages. The repair of the damaged Equipment will be governed by Section 18. In the event of total loss to the Equipment while it is in the possession of lessee, lessee agrees to pay, within thirty (30) days from such loss, the amount printed on the face of this Agreement or the Bill of lading as -Replacement Cost-, -Declared Value- or "Insurance Value-", which the parties agree is the current fair replacement value of the Equipment. In the event this amount is not so identified, lessee agrees to pay such amount as identified on lessor's most current Schedule of Replacement Costs published prior to the date of loss, which the parties agree is the current fair replacement value of the Equipment and is available upon request. Additionally, the parties hereto acknowledge that the Equipment is unique in design and manufacture, and as to lessor, it is inherently valuable as rental equipment. Therefore, in the event of total loss of the Equipment, lessor and lessee agree that the loss to lessor comprises, in addition to the Replacement Cost. The loss of use of such rental Equipment (rentals) until it can be replaced. In such event, lessee shall also be liable for, and agrees to pay within thirty (30) days from receipt of lessor's invoice, the loss of rentals which such Equipment could have produced, based upon the rental rates identified on lessor's most current Schedule of Rental Rates published prior to the date of loss, for such period of time which elapses from the total loss until the Equipment can be replaced.
10. INDEMNIFICATION: LESSEE SHALL RELEASE, INDEMNIFY, DEFEND AND HOLD LESSOR HARMLESS AGAINST ANY CLAIM, DEMAND, LOSS, DAMAGE, LIABILITY, LAWSUIT, CAUSE OF ACTION, JUDGMENT, PENALTY AND/OR EXPENSE (INCLUDING, BUT NOT LIMITED TO, ATTORNEYS' FEES, COURT COSTS AND OTHER COSTS OF SUIT) ON ACCOUNT OF PROPERTY DAMAGE OR LOSS, OR PERSONAL INJURIES (INCLUDING ILLNESS, DISABILITY OR DEATH) RESULTING FROM THE OPERATION, USE OR HANDLING OF THE EQUIPMENT OR SERVICES PROVIDED HEREUNDER, TO THE EXTENT CAUSED BY THE NEGLIGENCE OR FAULT OF LESSEE AND/OR A THIRD PARTY.
11. INSURANCE: Lessee shall at lessee's own expense and for all relevant periods (i) maintain public liability and broad form property insurance policy to protect lessee and lessor against damage to property or persons from the operation, handling and transportation of the Equipment during the rental period, (ii) insure the Equipment at its full replacement value as specified in the rental agreement, bill of lading or, if not identified on either, as stated in Ameri-Temp LTD.'s most current schedule of insurance values published prior to the date of loss, for loss by fire, theft, vandalism, damage or other risk of loss customarily insured against in a commercial property loss policy, (iii) maintain workers compensation insurance for its employees in amounts required by the laws of the state in which the work is performed, (iv) maintain marine insurance on marine equipment, (v) maintain cargo insurance, and (vi) maintain such other insurance as may be requested by lessor in advance of shipment by lessor to lessee. Insurance protecting against loss of or damage to the Equipment shall be maintained in an amount not less than the sum shown on the Agreement or Bill of lading as "Replacement Cost" or "Insurance Value". Lessee shall cause its insurer to issue an endorsement identifying that all insurance identified in this Section 11 shall be primary to that of lessor to the extent of lessee's obligations herein and that lessee and its insurer agree to waive their subrogation rights with respect thereto. Lessee shall provide thirty (30) day advance written notice to lessor of termination of any such policy prior to cancellation and lessee shall cause lessor to be named as an additional insured on said policies. Lessee shall also provide lessor with an endorsement reflecting that upon request, lessee shall provide lessor with proof of any such insurance. Some requirements of this Section 11 may be waived in limited circumstances by obtaining fire, theft and vandalism protection from lessor (damage waiver insurance). A damage waiver of 15% of all rentals amounts will be charged on each invoice for customers that have failed to meet Ameri-Temp, Ltd.'s insurance requirements. Damage waivers have a deductible for loss or theft of 20% of the full replacement cost of the equipment up to the deductible amount of \$2,500.00. For catastrophic damages the damage waiver deductible is 20% of the full repair cost including parts, labor and shipping up to the deductible of \$2,500.00. Damage waivers cover the loss or theft of equipment that has been reported to the police within 18 hours. A police report is required. Catastrophic damage to rental equipment. This applies to rental equipment that is damaged due to accident and has a repair cost over \$2,500.00. Damaged equipment may be subject to additional rental charges until repairs are completed. Damage waivers do NOT cover: loss or theft not reported within 18 hours of loss; loss or theft without a written police report; loss or damage due to negligence or abandonment; damage due to wear, dirt, environment under client control, improper packaging and improper use; damaged equipment may be subject to additional rental charges until repairs are completed; loss of accessories, cables, adapters, and power cords; equipment confiscated, seized or held by government or third party. Additional rental charges will be applied until the equipment is returned; theft by employees of the lessee or of people to whom the equipment is entrusted; theft from an unlocked vehicle; loss or damage due to declared or undeclared war or warlike action by a military force or government authority; loss or damage due to terrorism that involves nuclear, pathogenic, poisonous biological or chemical materials; loss or damage due to direct or indirect acts of terrorism; damages that occur during shipping of equipment, damages due to equipment checked as luggage on commercial airlines. It is recommended that lessee's insure equipment for full replacement cost when shipping equipment. Federal Express, UPS and couriers do not automatically insure equipment and many claim limits of under \$100.00. Failure to provide the requisite insurance shall not be deemed as a waiver of this provision.
12. LEGAL EXPENSES: Lessee shall pay all costs, charges and expenses including reasonable attorney's fees incurred in retaking possession of the Equipment hereby rented, in the collection of any sums which may be due and owing lessor by lessee, including but not limited to the defense of any action brought against lessor for damages caused by the Equipment to any person while the Equipment is in the possession of lessee. The Equipment shall be deemed to be in the possession of lessee for all purposes of this agreement from the time lessee begins loading it for transit from lessor's yard until the time that lessee has completed unloading the Equipment at lessor's yard or such other points as lessor shall in writing direct, except as otherwise limited herein.
13. ENVIRONMENTAL FEES: Lessee shall pay all reasonable environmental fees in accordance with the fee structure established by lessor from time to time.
14. SUBLETTING & ASSIGNMENT: Lessee shall not re-rent any Equipment nor shall lessee assign or transfer any interest in this agreement without the prior written consent of lessor. If the Equipment is re-rent, Customer shall require its customer, the end user and any third party in contractual privity in between to be bound by the terms and conditions hereof. Any person or entity to which this Contract assigned pursuant to the provisions of the U.S. Bankruptcy Code, 11 U.S.C. Section 101 et seq., shall be deemed without further act or deed to have assumed all of the obligations arising under the rental agreement to which these terms and conditions apply on and after the date of such assignment. Any such assignee shall upon demand execute and deliver to lessor an instrument confirming such assumption, however a party's failure to deliver such documentation shall not relieve that party or its successor of the obligations created herein.
15. TERMINATION OF THE AGREEMENT: If any of the following events occur (i) lessee fails to make payment in accordance with the terms of this agreement and such failure continues for a period of five (5) days, (ii) lessee becomes bankrupt, insolvent or makes an assignment for the benefit of its creditors, (iii) lessee fails to maintain and/or operate or to return the Equipment as provided by this agreement, (iv) lessee fails to maintain the insurance required by Section 11, (v) lessor reasonably believes that lessee is unable to comply with the payment terms hereof or is likely to become bankrupt, insolvent or make an assignment for the benefit of its creditors, (vi) lessee violates any material provision hereof or (vii) the Equipment is lost, damaged, stolen, destroyed or seized by a governmental agency after it had been placed in the possession of lessee, then lessor may at its option, after three (3) days' notice in writing of such event terminate this agreement, retrieve the Equipment wherever it may be found without becoming liable for damages or for trespass, and/or, in addition to any other remedies lessor may have, recover all amounts due together with any damages for injury to the Equipment and all expenses incurred in recovering, retrieving or repossessing the Equipment.
16. WARRANTY: Lessee has selected the Equipment rented hereunder for its own purposes and lessee expressly disclaims any reliance upon any statements or representations made by lessor. EXCEPT FOR SATISFACTORY RATED OPERATION OF THE EQUIPMENT, LESSOR MAKES NO EXPRESS OR IMPLIED WARRANTIES OF ANY KIND, INCLUDING WITHOUT LIMITATION ANY WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE WITH RESPECT TO THE EQUIPMENT AND LESSOR HEREBY DISCLAIMS SAME. Lessor's liability under this Section 16 is limited to repairing or replacing (at the discretion of lessor) any Equipment not performing according to rated operation.
17. AUTHORITY OF AGENTS: The execution hereof by an agent of lessee shall conclusively establish the authority of such agent to contract herein, unless lessor receives written notification to the contrary prior to the loading of the Equipment for transit.
18. SPECIAL CONDITIONS: Notwithstanding any provisions contained herein to the contrary:
 - a) If the Equipment goes down for maintenance or repairs while in lessee's service, lessee may notify lessor and if lessee elects to return the down Equipment, lessor will make arrangements to send lessee Equipment to replace it. Lessee will be charged for all applicable transportation costs.
 - b) (i) If the Equipment goes down for maintenance or repairs while in lessee's service and lessee elects not to return the down Equipment, lessor will send a qualified technician to repair it. Lessee shall pay for travel time, mileage, labor, and parts for the services of each such technician.
 - (ii) If lessor determines that the required maintenance or repairs is lessor's responsibility, the labor and parts required for repair will be provided at no charge to lessee.
 - (iii) If lessor determines that any maintenance or repairs (including those resulting from improper maintenance or the failure to perform required maintenance, or for any reason other than lessor's negligence) is lessee's responsibility, then lessee agrees to pay, within thirty (30) days from receipt of lessor's invoice, all applicable transportation costs, travel time, mileage, labor, and parts for the repair, even if service is performed by lessor upon return of the Equipment. Additionally, the parties hereto acknowledge that the Equipment is unique in design and manufacture, and as to lessor, it is inherently valuable as rental Equipment. Therefore, in the event of damage to the Equipment which does not constitute a total loss, lessor and lessee agree that the loss to lessor comprises, in addition to the cost of labor and parts to repair the Equipment, as well as transportation costs, travel time, mileage, and other such incidental costs, the loss of use of such rental Equipment (rentals) until it can be fully repaired. In such event, lessee shall also be liable for, and agrees to pay within thirty (30) days from receipt of lessor's invoice, the loss of rentals which such damaged Equipment could have produced, at lessor's then current published rental rate, during the time it is being repaired, had it not been damaged.
19. TAXES AND FEES: Lessee shall pay all license fees, registration fees, assessments, duties and taxes which may now or hereafter be imposed upon the ownership, possession, lease or use of the Equipment, excepting only those based on lessor's net income or exempted by law. Lessee shall promptly notify lessor of the receipt of any tax notices, tax reports or inquiries or notices from taxing or other authorities concerning taxes, fees or assessments.

20. COMPLIANCE WITH LAWS: lessee shall comply with all environmental and other laws, rules and regulations with regard to the operation of the Equipment including any local, state or Federal Air Quality legislation.
21. OWNERSHIP OF EQUIPMENT: ENCUMBRANCES: The Equipment is, and shall at all times remain, the property of lessor, and lessee shall have no right, title or interest therein, or thereto except the right of possession and use of the Equipment pursuant to the terms of this agreement. Lessee shall not remove or deface any plate or marking on the Equipment identifying lessor as the owner of the Equipment or the manufacturer's serial number. The Equipment is, and shall at all times remain, personal property of Lessor notwithstanding that the Equipment or any part thereof may now be, or hereafter become, in any manner affixed or attached to any other personal or real property. Lessee shall keep the Equipment free and clear of any and all levies, liens, security interests and encumbrances of any kind, and shall give lessor prompt notice of any attachment or judicial process affecting the Equipment.
22. LIMITED LIABILITY: IN NO EVENT SHALL LESSOR BE LIABLE TO LESSEE OR ANY OTHER PARTY FOR ANY INCIDENTAL, CONSEQUENTIAL OR SPECIAL DAMAGES, INCLUDING LOSS OF USE AND LOSS OF REVENUES, PROFITS OR ANTICIPATED PROFITS.
23. SCOPE OF DAMAGES: LESSOR'S LIABILITY FOR DAMAGES SHALL IN NO EVENT EXCEED THE TOTAL RENTALS, IF ANY, RECEIVED FROM LESSEE BY LESSOR FOR THE EQUIPMENT WHICH IS THE SUBJECT OF CLAIM OR DISPUTE.
24. NOTICE: for purposes of this agreement, notice shall be provided and deemed made by the following methods only: (1) by U.S. certified or registered Mail, return receipt requested, postage prepaid, on the date the return receipt is signed or, if not signed and/or accepted, on the date the return receipt establishes the first attempt at delivery was made (2) by 24 hour nationally reputable private courier delivery service (i.e., Federal Express, UPS, Airborne Express), 24 hours after it is delivered to the private courier, (3) by hand delivery, upon delivery and acknowledgement of receipt by the party to whom ~ is delivered, or (4) by facsimile, upon documented receipt of successful transmission. Notice shall be provided to lessor at Ameri-Temp Ltd., 3314 North Richmond Road, Suite 100, Johnsburg, Illinois 60051 and to Lessee at the address identified on the front page of this agreement or at any other address subsequently provided to lessor by lessee by any method providing in this Section 24.
25. Miscellaneous: (1) This agreement shall be governed by the laws of the State of Illinois and constitutes the entire Agreement between Lessor and Lessee with respect to the rental of the Equipment, superseding all prior correspondence between the parties. No provision of this Agreement shall be deemed waiver, amended or modified by either party unless such waiver, amendment or modification is in writing and signed by each of the parties hereto. (2) Any notice provided for herein shall be in writing and sent by certified or registered mail to the parties at the address stated on the reverse side hereof. (3) If this Agreement shall be executed by lessor prior to being executed by lessee, it shall become voidable at lessors' option five (5) days after the date of lessor's execution hereof, unless Lessor shall have received by such date a copy hereof executed by a duly authorized representative of Lessee. (4) Any acceptance which contains terms and conditions which are in addition or inconsistent with the terms and conditions herein will be a counteroffer and will not be binding unless agreed to in writing by lessor.
26. CHANGES, MODIFICATIONS, WAIVERS, ETC: Changes, modifications, waivers, additions or amendments to the terms and conditions of this agreement shall be binding on lessor only if such are in writing and signed by a duly authorized representative of lessor. The failure of lessor to enforce, at any time or for any period of time, any of the provisions of this agreement shall not constitute a waiver of such provisions or of the right of lessor to enforce each and every provision.
27. FORCE MAJEURE: If the performance by either party of any of its obligations shall in any way be prevented, interrupted or hindered as a consequence of an Act of God, war, civil disturbance, riot, strike, lockout, fire, earthquake or other natural calamities, legislation or restriction of any government Of other authority, force majeure or any other circumstances beyond the reasonable control of such party, the obligations of the party concerned shall be wholly or partially suspended during the continuance and to the extent of such prevention of interruption or hindrance.
28. RESTRICTIONS ON EMPLOYMENT: Lessee shall not employ any employee of Lessor who performed work, directly or indirectly, on behalf or for the benefit of Lessee for twelve months following the last date Lessor's employee performed such work.
29. CONFIDENTIALITY: Unless required by law or all bids are made known to all competing vendors as part of the bidding process, Customer shall keep all competitive bidding information submitted by Ameri-Temp Ltd. confidential, regardless of whether said information is marked "Confidential".
30. APPLICABILITY OF TERMS & CONDITIONS: The terms and conditions hereof shall be deemed accepted and binding upon lessee upon transfer of custody of the Equipment to the carrier for delivery to lessee's receiving point, regardless of whether the Rental Agreement is signed by lessee. To the extent these Terms and Conditions are in conflict with any terms and conditions provided by lessee, the terms and conditions hereof shall dictate. To the extent these terms and conditions are in conflict with any terms and conditions of lessor's Master Service Agreement with lessee, the terms and conditions of the Master Service Agreement shall dictate unless the conflict is acknowledged in Writing in which the parties expressly agree to conflicting terms.

DOOSAN®

Portable Power

G25WDO-3A-T4F

Model	G25		
PRIME POWER RATING	AMPS	KW	KVA
@ 480V-3Ø, 0.8PF, 60Hz	30	20	25
@ 240V-3Ø, 0.8PF, 60Hz	60	20	25
@ 208V-3Ø, 0.8PF, 60Hz	61	17	22
@ 240V-1Ø, 1.0PF, 60Hz	69	16.5	16.5
@ 120V-1Ø, 1.0PF, 60Hz	69 × 2	16.5	16.5
@ 400V-3Ø, 0.8PF, 50Hz	29	16	20
Voltage Configuration	3-Position Switch		
Frequency Capability	50Hz/60Hz Switchable		
ENGINE			
Engine Make / Model	Doosan D18		
Displacement (L)	1.794		
Number of Cylinders	3		
Power Output @ 1800RPM - HP (kWm)	33.5 (25)		
Emissions Tier Level	Tier 4 Final		
Aftertreatment Technology	DOC		
Usable Fuel Tank Capacity - Gal (L)	46.7 (177)		
Diesel Exhaust Fluid (DEF) Capacity - Gal (L)	N/A		
Runtime @ 100% Load - Hr	25.9		
DIMENSIONS WITH RUNNING GEAR			
Length - in (mm)	130.5 (3315)		
Width - in (mm)	72.8 (1850)		
Height - in (mm)	76.6 (1946)		
Weight (Ready to Run) - lb (kg)	3140 (1424)		
Sound Level @ 23 ft (7m) and 100%	63		



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August Levert_BP Plan_002970

DOOSAN®

Portable Power

G400WCU-3B-T4F

Model	G400		
PRIME POWER RATING	AMPS	KW	KVA
@ 480V-3Ø, 0.8PF, 60Hz	484	322	402
@ 240V-3Ø, 0.8PF, 60Hz	967	322	402
@ 208V-3Ø, 0.8PF, 60Hz	1116	322	402
@ 240V-1Ø, 1.0PF, 60Hz	900	216	216
@ 120V-1Ø, 1.0PF, 60Hz	900 × 2	216	216
@ 400V-3Ø, 0.8PF, 50Hz	559	310	387
Voltage Configuration	Link Board Panel		
Frequency Capability	50Hz/60Hz Switchable		
ENGINE			
Engine Make / Model	Cummins QSG12		
Displacement (L)	11.8		
Number of Cylinders	6		
Power Output @ 1800RPM - HP (kWm)	475 (354)		
Emissions Tier Level	Tier 4 Final		
Aftertreatment Technology	DOC / DPF / SCR		
Usable Fuel Tank Capacity - Gal (L)	470 (1780)		
Diesel Exhaust Fluid (DEF) Capacity - Gal (L)	46 (174)		
Runtime @ 100% Load - Hr	20.2		
DIMENSIONS WITH RUNNING GEAR			
Length - in (mm)	241 (6121)		
Width - in (mm)	83 (2109)		
Height - in (mm)	115 (2921)		
Weight (Ready to Run) - lb (kg)	15450 (7022)		
Sound Level @ 23 ft (7m) and 100%	76		



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[Secondary Containment => Double Wall Tanks](#)

FuelCube Double Walled Stationary Steel Fuel Tank - 528 Gallons

Price: **\$3,398.99**

[Add to Cart](#)



Part Number: WG-FCP500
Mfr. Part Number: FCP500
Capacity: 528 Gallons
Dimensions: 87"L x 45"W x 50"H
Weight: 1460 lbs.
Ships From: MI, TX
USD Shipping: [Calculate Shipping](#)
Manufacturer: Western Global
Material: Steel
[Contact Us](#)

- Underground Water Storage Tanks (Cisterns)
- Underground Water Tanks
- RV Water & Waste Holding Tanks
- RV Fresh Water Tanks
- RV Holding Tanks
- Marine Water & Waste Holding Tanks for Boats
- Marine Water Storage Tanks for Boats
- Marine Holding Tanks
- Marine Fuel Tanks
- Water & Liquid Storage Tanks
- Plastic Water Tanks
- Plastic Storage Tanks
- Cone Bottom Tanks
- Horizontal Hauling & Storage Tanks
- Low Profile Hauling & Storage Tanks
- Flat Bottom Portable Water Tanks
- Truck Bed Water Tanks Specials
- Rectangular Water & Waste Tanks
- Double Wall Tanks
- Plastic Stock Tanks - Water Troughs
- Elliptical Cradle Tanks
- Auto Detailing Tanks
- Doorway Water Tanks (29")
- PCO Liquid Transport Tanks
- Stackable Water Tanks
- Brine Storage Tanks
- Forkliftable Water Tanks
- Stackable Oil Storage Totes
- Fuel Tanks
- Pumps
- Water Pumps
- Water Filtration
- New** Viqua Water Filtration
- Plastic Open Top Tanks
- Open Top Cylindrical Tanks
- Open Top Rectangular Tanks
- Open Top Cone Bottom Tanks
- Plastic Septic Tanks for Sale
- Plastic Septic Tanks
- Norwesco Bruiser Tanks
- Job Shack Holding Tanks
- ADS Leach Chambers
- Secondary Containment
- Spill Containment Trays
- Secondary Containment Basins
- Bulkhead Fittings - Lids - Gaskets
- Ball Valves
- Bulkhead Fittings
- Strainer Baskets
- Lids
- Inspection Lids



500 Gallon FuelCube Double Wall Diesel Fuel Tank

The Western Global 500-Gallon FuelCube is a compact and economic stationary steel fuel tank designed for onsite diesel fuel supply and fleet refueling. The FuelCube features double walls, an integral, lockable equipment cabinet for security and 4-way forklift pockets for easy mobility when empty.



Features + Benefits

- Stationary steel fuel tank for onsite diesel fuel supply and fleet refueling
- FuelCube Plus double wall eliminates the need for spill basins
- Heavy-duty skid base and 4-way fork pockets
- Lockable equipment cabinet
- Stackable up to 3 high empty and 2 high full
- Heavy-duty skid base
- UL listed fuel tank
- Corner brackets for easy stacking while empty
- 110% percent contained
- Safe fill (95%): 502 U.S. gallons
- Brim fill: 528 U.S. gallons

What's Included

- (1) Fuel tank
- (1) Feed and return block
- (1) Pump feed block
- (1) Ships in 3-5 Days

QUALIFYING QUESTIONS

- **What type of fuel will go into the FCP (Stationary) Fuel tank?**
 - Diesel – Great nothing needed
 - Gasoline – Vent Stack needed for STATIONARY applications.
 - KIT-VENT-FCP250
 - KIT-VENT-FCP500
 - KIT-VENT-FCP1000
- **What type of fuel will go into the TCG (Transportable) Fuel tank?**
 - Diesel – Great nothing needed
 - Gasoline – Nothing needed for transporting, Vent Stack needed for STATIONARY applications
 - KIT-VENT-05TCG
 - KIT-VENT-10TCG
 - KIT-VENT-20TCG/30TCG
 - KIT-VENT-40TCG/50TCG
- **Do you need to transport your tanks full?**
 - The TCG's can be moved with fuel in them. The TCG's are DOT approved to be moved on public roads provided the driver has HazMat whereas the FCP's are designed to be moved with minimal fuel in them on a

11/17/2020

FuelCube Double Walled Stationary Steel Fuel Tank - 528 Gallons | Plastic-Mart

- Gaskets
- Water Tank Float Valves
- Siphon Tubes
- Baffle Balls - Surgebusters
- Pipe Plugs
- Heat Blankets
- Polypropylene Tanks
- Rainwater Tanks & Rain Barrels
- Rainwater Tanks
- Rain Barrels
- Custom Plastic Fabrication
- Tank Manufacturers

jobsite only.

- **Will you need to transport the TCG tank with fuel in it?**
 - If Yes, anything over 119 US gallons requires HazMat endorsement.
- **Will you lift or move them with a crane?**
 - Transcube – Set up for it
 - Fuelcube – could be strapped up and lifted empty only
- **Do you need a fuel gage?**
 - Transcube comes with one
 - Fuelcube does not come with one but it can be purchased separately
- **What kind of pumps will you need?**
 - Installed or not?
 - 115V 12 GPM
 - 115V 20 GPM
 - 12V 15 GPM
 - 12V 25 GPM

CUSTOMER QUESTIONS

- **Do I need a drip pan? Is any additional containment required?**
 - All our tanks are double walled tanks. In the rare occasion you may need a spill berm where a tank and a piece of equipment is connected. e.g. generator, water pump, HVAC unit...
- **What Certifications do these tanks have?**
 - UL 142 Listed
 - NFPA 30A rated
 - UN DOT, Transcube & Abbi
 - Transport Canada
- **To transport, do you need a HazMat endorsement on license?**
 - Yes, anything over 119 US gallons requires HazMat endorsement.
- **Do I need permits for these tanks?**
 - For certain jobsite and permanent installs permits may be required. Check with a local fire marshal and or local building inspector for this.
- **Do fuel gages come with the tank?**
 - Transcube comes with one
 - Fuelcube does not come with it
- **What venting is required? What venting comes standard?**
 - All required venting comes with the tanks except for some stationary applications. In stationary tank applications the local Fire Marshal and regulation apply.

Shipping Class 85

Freight subject to scratches during transport, this is not covered any under warranty

Customer must ensure they have the proper equipment to unload tanks

Western Global's FuelCube Product Overview



Related Items



[Spiral Gauge Direct Read for FCP250 and FCP500](#)

Part: WG-23.034

30"L x 4"W x 4"H

\$83.99



[Emergency Vent Kit for FCP500 Fuelcube](#)

Part: WG-KIT-VENT-FCP500

48"L x 8"W x 8"H

\$619.99



[Standard Pump Kit for Transcube, FuelCube, and ABBI 12VDC/15GPM](#)

Part: WG-M150SAUK

18"L x 18"W x 12"H

\$763.99



[Standard Pump Kit for Transcube, FuelCube, and ABBI 115VAC/12GPM](#)

Part: WG-M1115SAUK

18"L x 18"W x 12"H

\$801.99



[Deluxe Pump for Transcube, FuelCube, and ABBI-12VDC/15GPM](#)

Part: WG-M150SAUK-D

18"L x 18"W x 12"H

\$1,094.99



[Deluxe Pump for Transcube, FuelCube, and ABBI-115VAC/12GPM](#)

Part: WG-M1115SAUK-D

24"L x 18"W x 13"H

\$1,132.99



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April 2022 South Louisiana Gate Pricing

Disposal Products		Mermentau	Bourg	Marine Transfer Stations	Unit
Saltwater	<1% solids	\$ 6.00	\$ 6.00	NA	bbl
Saltwater	≥1%<5% solids	\$ 13.00	\$ 13.00	NA	bbl
Oil Base Drilling waste		\$ 19.00	\$ 25.00	\$ 39.00	bbl
Water Base Drilling waste	20,000 ppm Chlorides & <5% oil	\$ 18.00	\$ 25.00	\$ 39.00	bbl
Water Base Drilling waste - elevated levels of CL or oils	20,000 ppm Chlorides or ≥5% oil	\$ 19.00	\$ 25.00	\$ 39.00	bbl
Flowback Water (injectable)	<1% solids	job specific	job specific	job specific	bbl
Flowback Water (non-injectable)	>1% solids	job specific	job specific	job specific	bbl
Completion Fluids		\$ 25.00	\$ 25.00	\$ 39.00	bbl
Production Pit Sludges		\$ 22.00	\$ 25.00	\$ 39.00	bbl
Storage Tank Sludges		\$ 22.00	\$ 25.00	\$ 39.00	bbl
Production Sands and Solids		\$ 22.00	\$ 25.00	\$ 39.00	bbl
(NORM pricing may apply to any product)	NORM ≥5 pci/gr	Gate plus \$1.50 per pci/gr over 5	Gate plus \$1.50 per pci/gr over 5	Gate plus \$1.50 per pci/gr over 5	bbl
Freshwater	< 20,000 ppm Cl & <5% solids	\$ 13.00	\$ 25.00	\$ 39.00	bbl
Washout Water	< 20,000 ppm Cl & <5% solids	\$ 13.00	\$ 25.00	\$ 39.00	bbl
Washout Pit Water	< 20,000 ppm Cl & <5% solids	\$ 13.00	\$ 25.00	\$ 39.00	bbl
Pipeline water/waste	<20,000 ppm Cl & <5% solids	\$ 13.00	\$ 25.00	\$ 39.00	bbl
Rainwater	< 20,000 ppm Cl & <5% solids	\$ 13.00	\$ 25.00	\$ 39.00	bbl
Freshwater	≥20,000 ppm Cl or ≥5% solids	\$ 19.00	\$ 25.00	\$ 39.00	bbl
Washout Water	≥20,000 ppm Cl or ≥5% solids	\$ 19.00	\$ 25.00	\$ 39.00	bbl
Washout Pit Water	≥20,000 ppm Cl or ≥5% solids	\$ 19.00	\$ 25.00	\$ 39.00	bbl
Pipeline water/waste	≥20,000 ppm Cl or ≥5% solids	\$ 19.00	\$ 25.00	\$ 39.00	bbl
Rainwater	≥20,000 ppm Cl or ≥5% solids	\$ 19.00	\$ 25.00	\$ 39.00	bbl
Washout Water	R360 Facility Water	\$ 13.00	\$ 25.00	\$ 39.00	bbl
Commercial Facility Waste		\$ 22.00	\$ 25.00	\$ 39.00	bbl
Oil Spill Waste	(True oil spill waste, not remediation)	\$ 24.00	\$ 25.00	\$ 39.00	bbl
Wash Rack and Pumping Equipment		\$ 185.00	\$ 185.00	\$ 185.00	hr
Marine deliveries to Mermentau will be billed at \$25/bbl					
Facility Services and Extras quoted seperately					

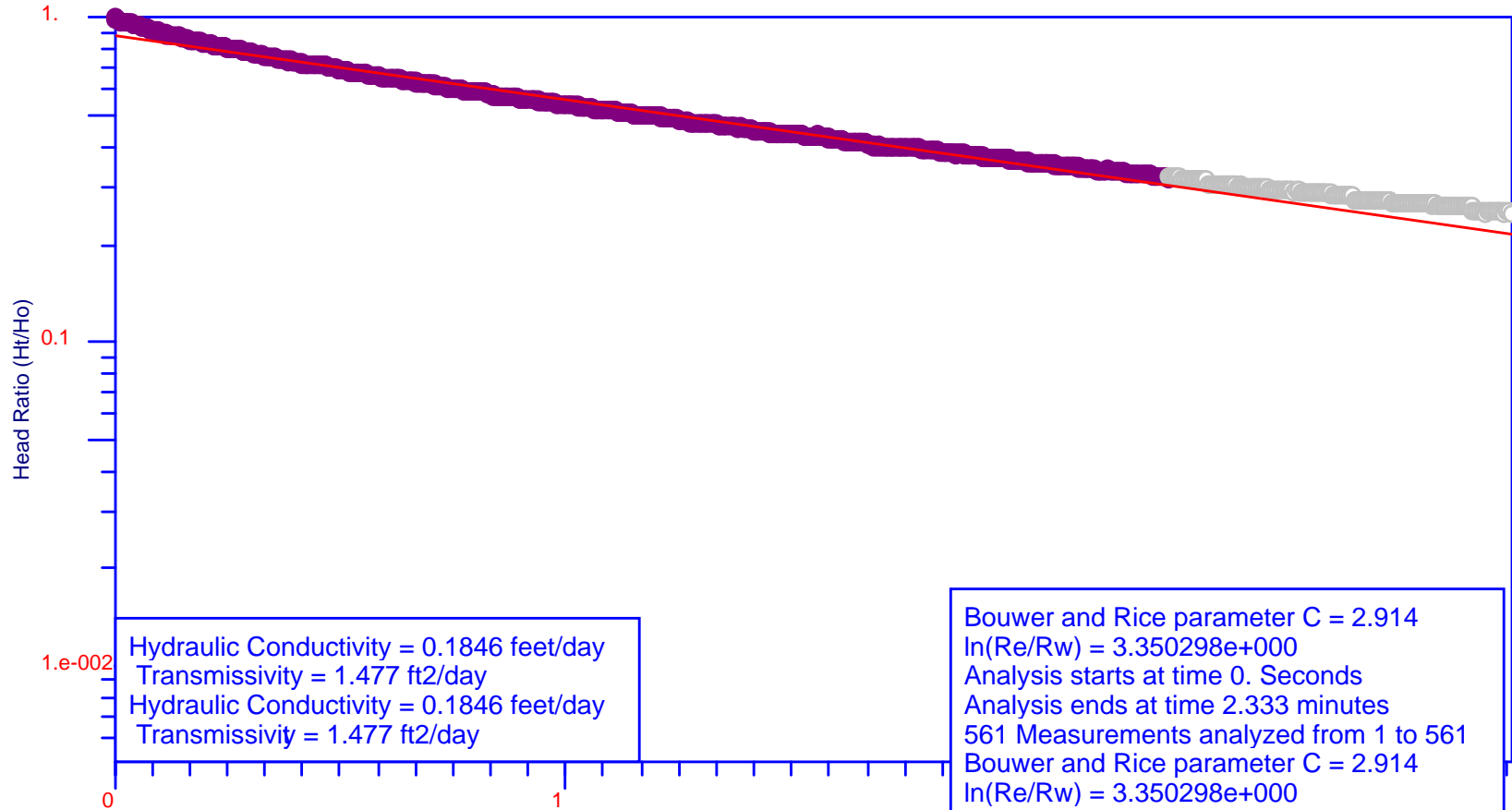
APPENDIX G
SLUG TEST DATA

Falling Head Test #1 6/9/15

Bower and Rice Graph

Iberville Parish School Board Grand River

SB-1



Hydraulic Conductivity = 0.1846 feet/day
Transmissivity = 1.477 ft²/day
Hydraulic Conductivity = 0.1846 feet/day
Transmissivity = 1.477 ft²/day

Bower and Rice parameter C = 2.914
ln(Re/Rw) = 3.350298e+000
Analysis starts at time 0. Seconds
Analysis ends at time 2.333 minutes
561 Measurements analyzed from 1 to 561
Bower and Rice parameter C = 2.914
ln(Re/Rw) = 3.350298e+000
Analysis starts at time 0. Seconds
Analysis ends at time 2.333 minutes
561 Measurements analyzed from 1 to 561

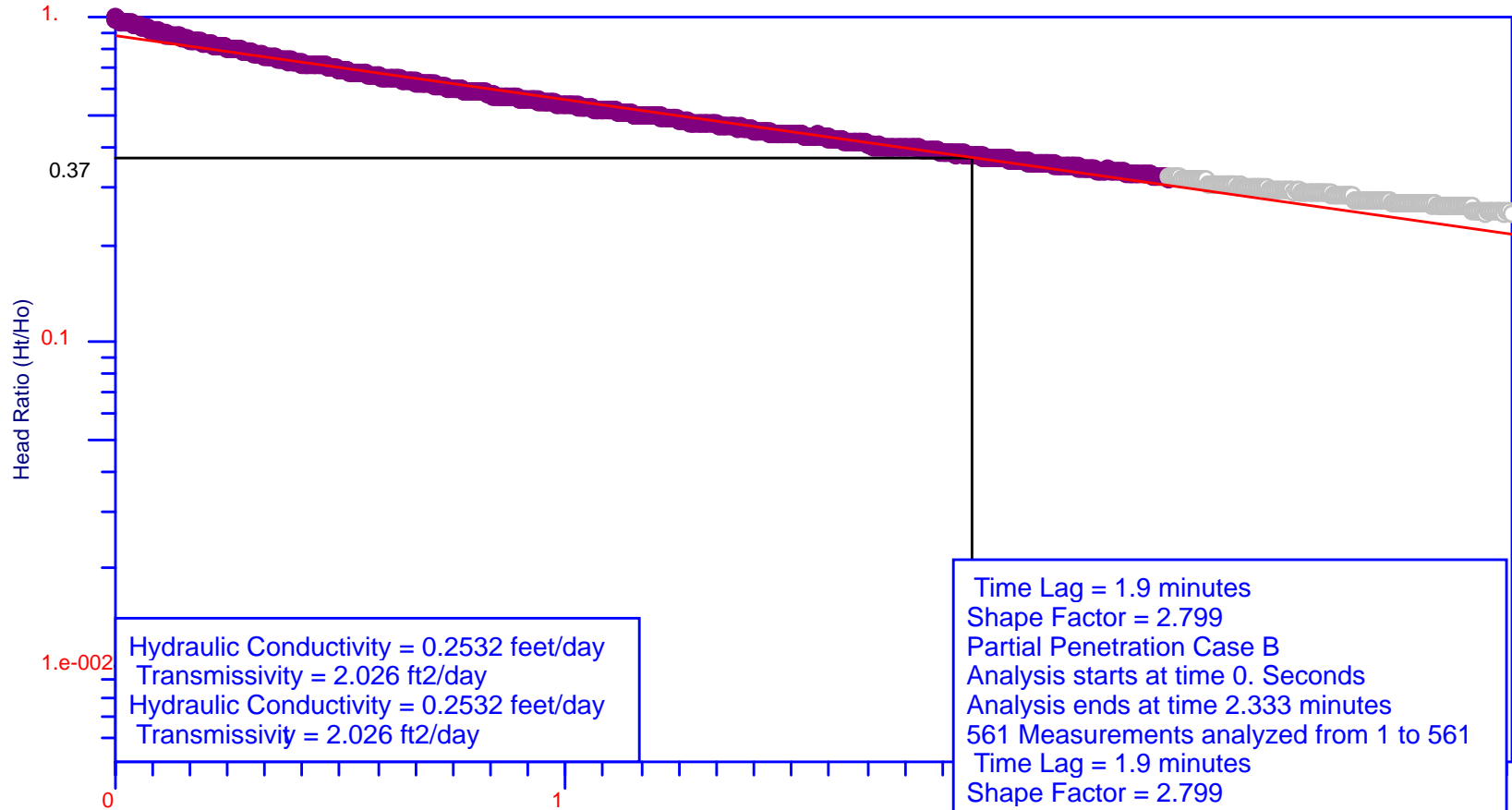
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Analysis by Starpoint Software

Falling Head Test #1 6/9/15

Hvorslev Graph

Iberville Parish School Board Grand River

SB-1



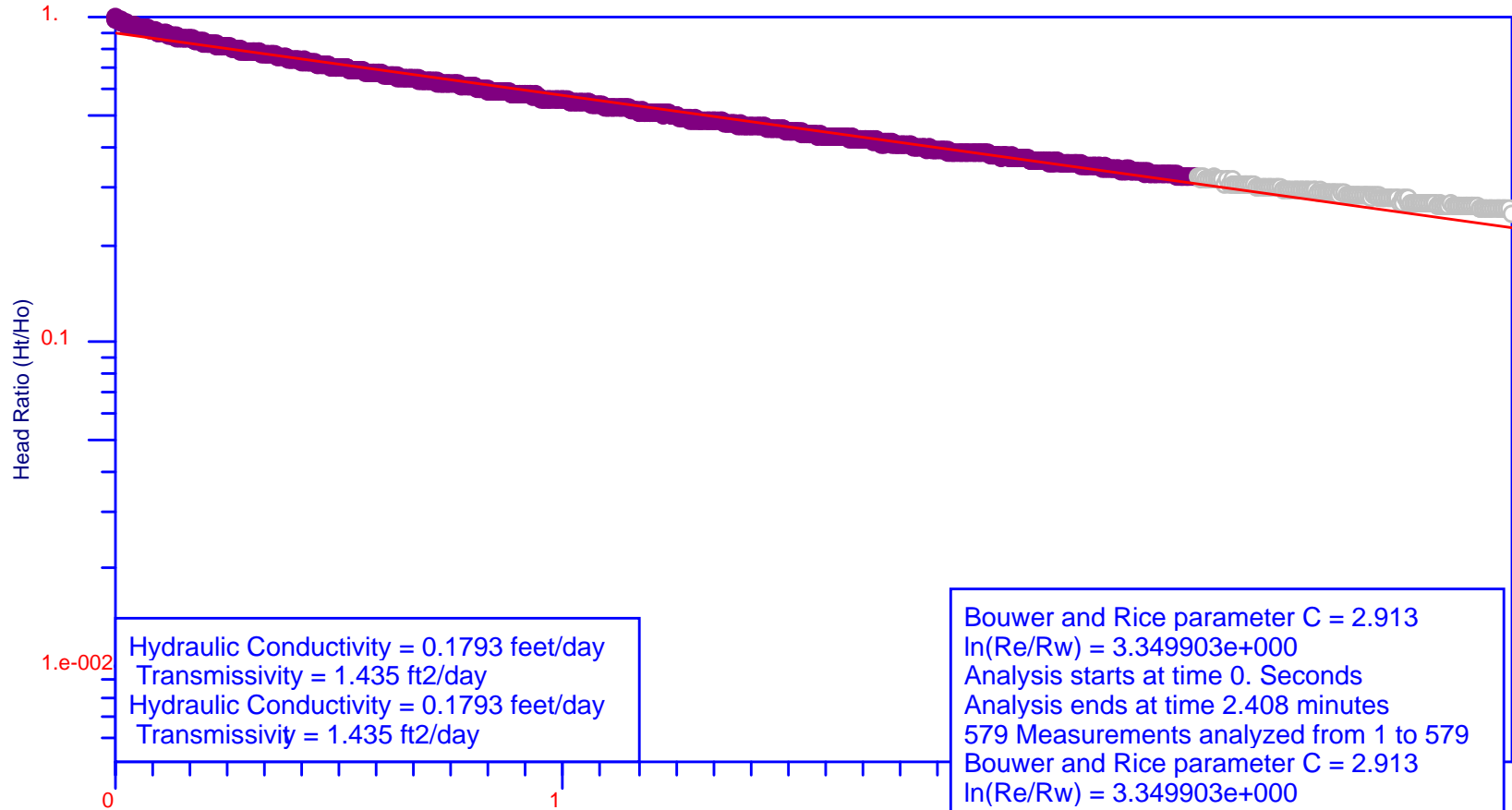
Project Number: 9090-040-0100 for Murray Law Firm
Analysis by Starpoint Software

Falling Head Test #2 6/9/15

Bouwer and Rice Graph

Iberville Parish School Board Grand River

SB-1



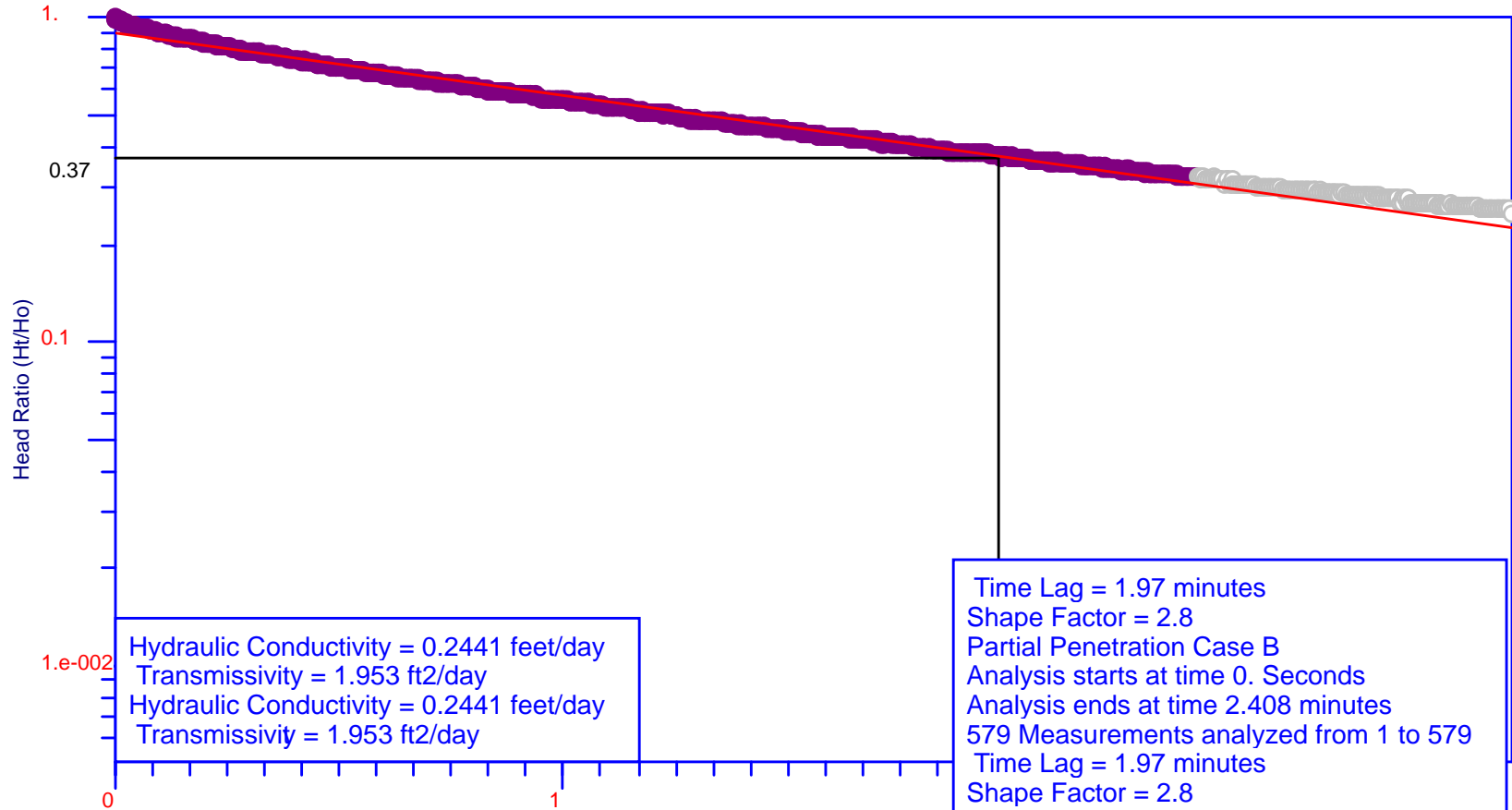
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Falling Head Test #2 6/9/15

Hvorslev Graph

Iberville Parish School Board Grand River

SB-1



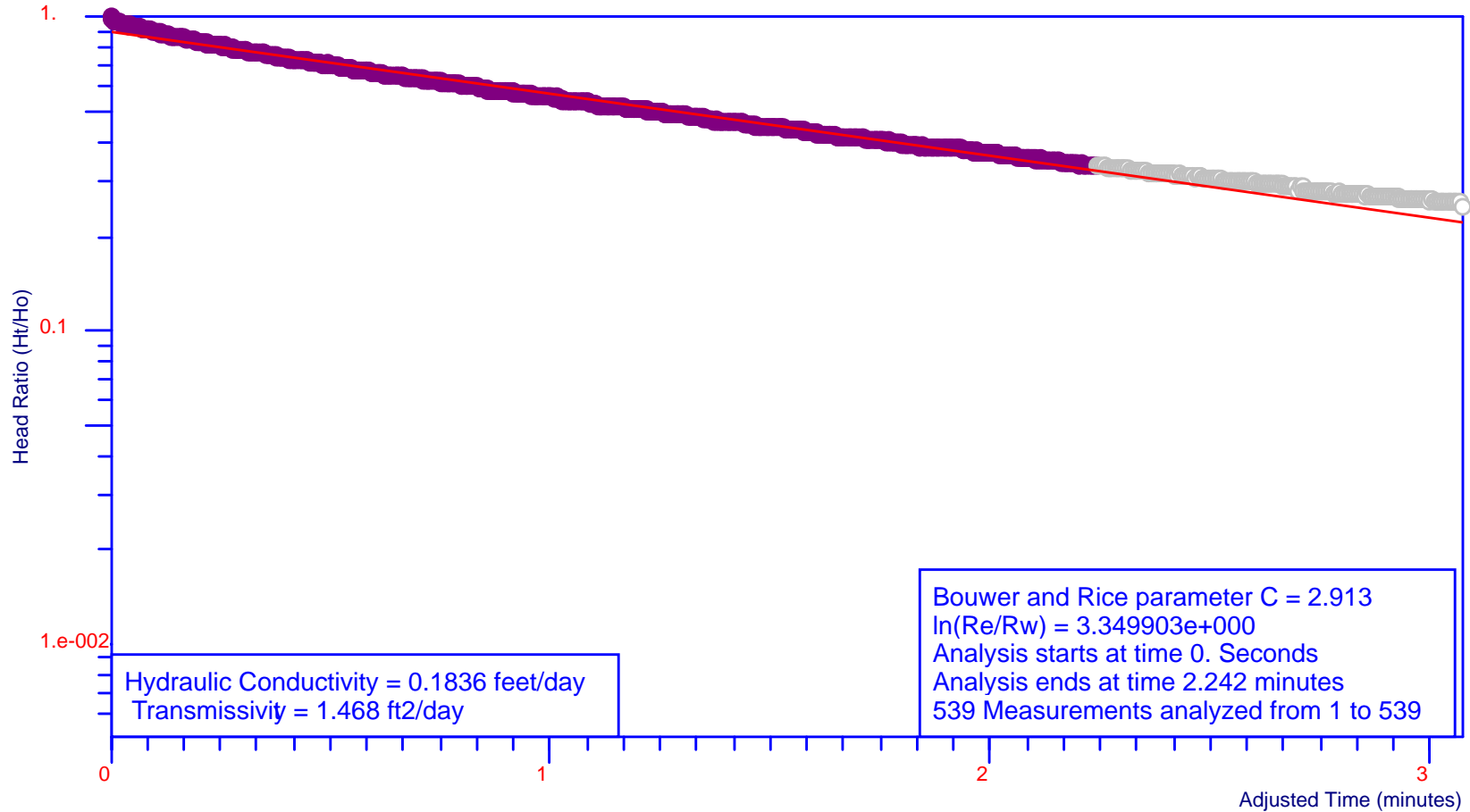
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Falling Head Test #3 6/9/15

Bouwer and Rice Graph

Iberville Parish School Board Grand River

SB-1



Hydraulic Conductivity = 0.1836 feet/day
Transmissivity = 1.468 ft²/day

Bouwer and Rice parameter $C = 2.913$
 $\ln(R_e/R_w) = 3.349903e+000$
Analysis starts at time 0. Seconds
Analysis ends at time 2.242 minutes
539 Measurements analyzed from 1 to 539

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Analysis by Starpoint Software

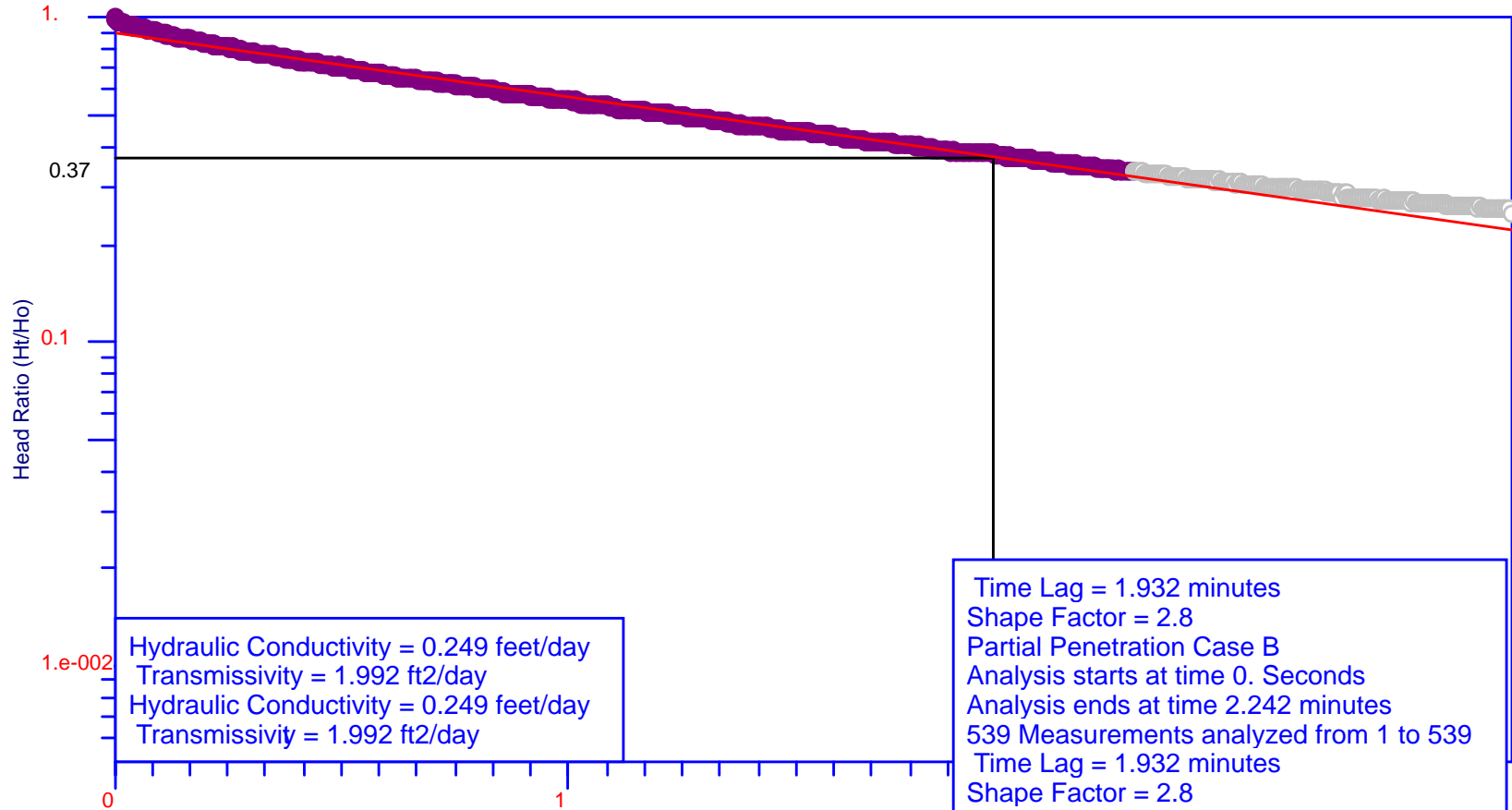
H_o is 1.6 feet at 0. Seconds

Falling Head Test #3 6/9/15

Hvorslev Graph

Iberville Parish School Board Grand River

SB-1



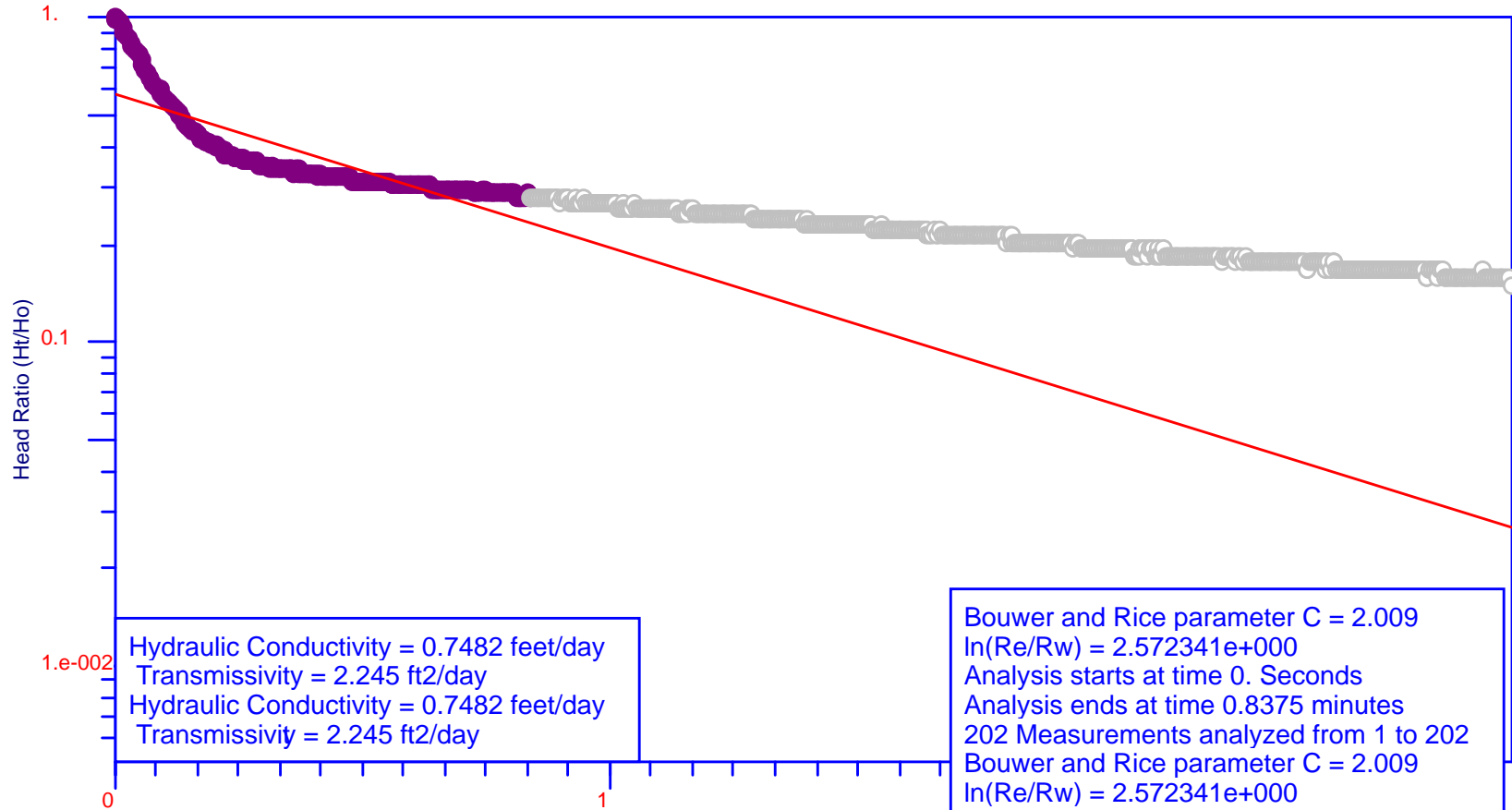
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Falling Head Test #1 6/12/15

Bouwer and Rice Graph

Iberville Parish School Board Grand River

SB-9



Hydraulic Conductivity = 0.7482 feet/day
Transmissivity = 2.245 ft²/day
Hydraulic Conductivity = 0.7482 feet/day
Transmissivity = 2.245 ft²/day

Bouwer and Rice parameter C = 2.009
 $\ln(R_e/R_w) = 2.572341e+000$
Analysis starts at time 0. Seconds
Analysis ends at time 0.8375 minutes
202 Measurements analyzed from 1 to 202
Bouwer and Rice parameter C = 2.009
 $\ln(R_e/R_w) = 2.572341e+000$
Analysis starts at time 0. Seconds
Analysis ends at time 0.8375 minutes
202 Measurements analyzed from 1 to 202

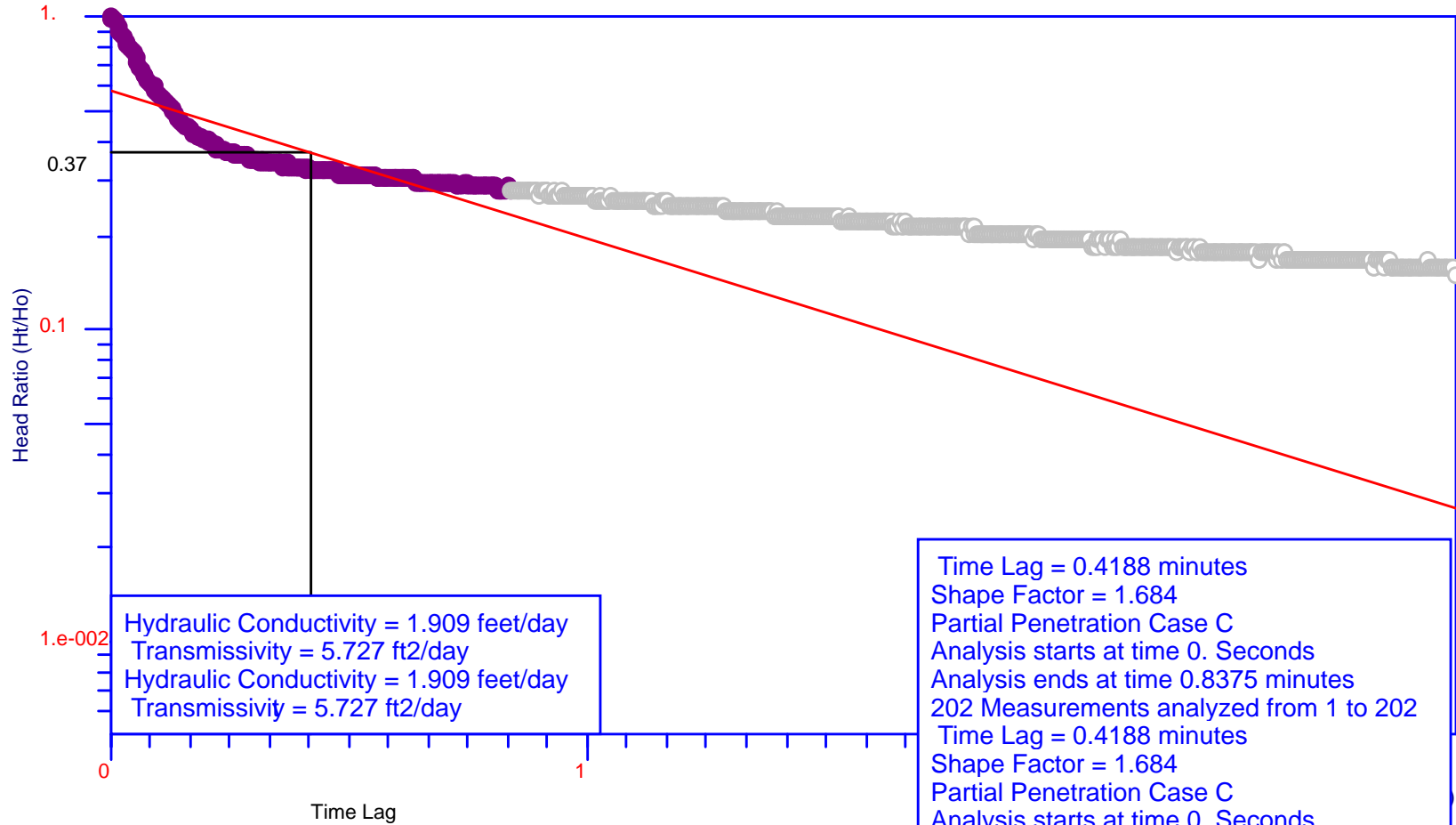
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Falling Head Test #1 6/12/15

Hvorslev Graph

Iberville Parish School Board Grand River

SB-9



Hydraulic Conductivity = 1.909 feet/day
Transmissivity = 5.727 ft²/day
Hydraulic Conductivity = 1.909 feet/day
Transmissivity = 5.727 ft²/day

Time Lag = 0.4188 minutes
Shape Factor = 1.684
Partial Penetration Case C
Analysis starts at time 0. Seconds
Analysis ends at time 0.8375 minutes
202 Measurements analyzed from 1 to 202
Time Lag = 0.4188 minutes
Shape Factor = 1.684
Partial Penetration Case C
Analysis starts at time 0. Seconds
Analysis ends at time 0.8375 minutes
202 Measurements analyzed from 1 to 202

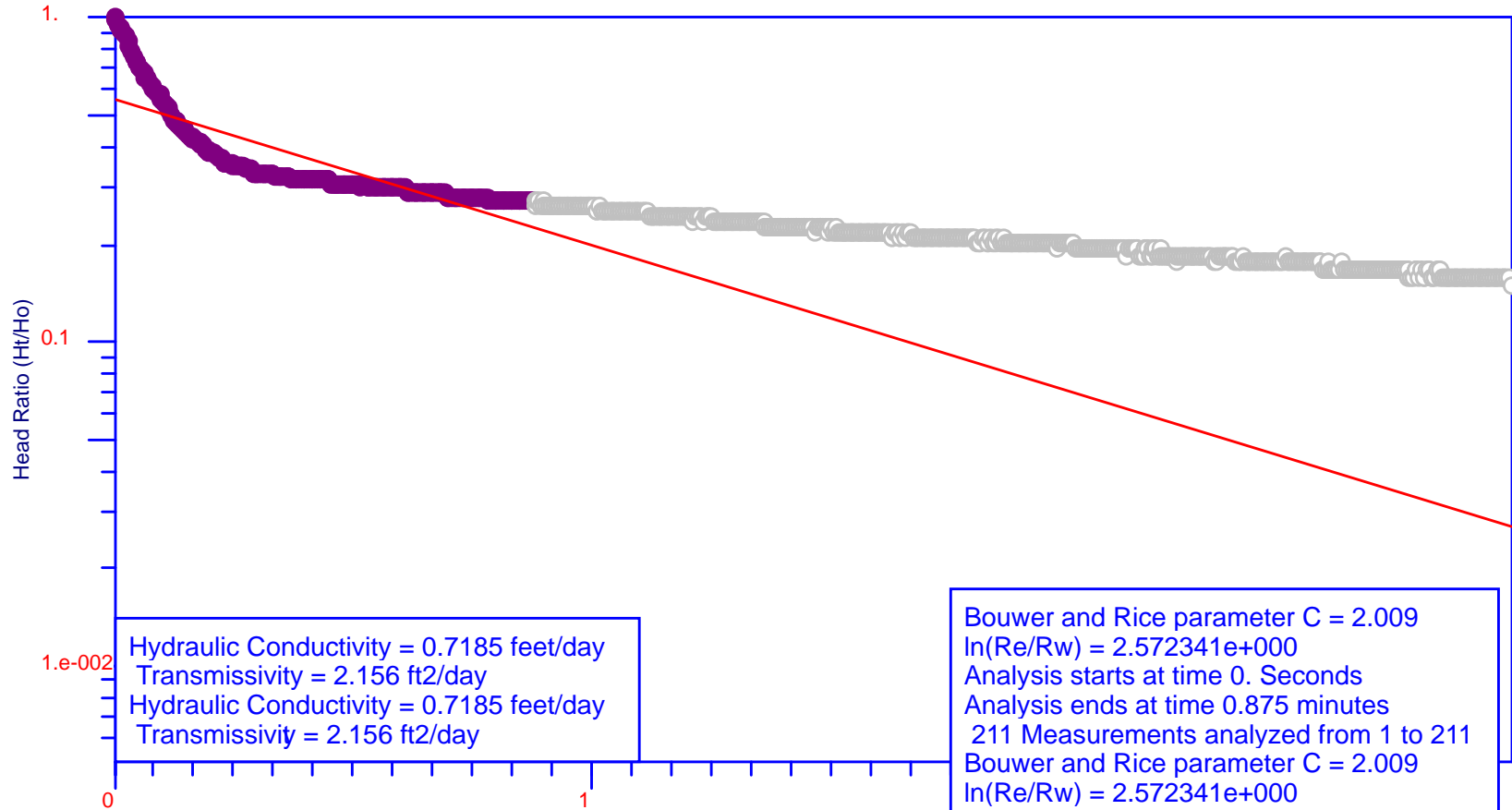
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Falling Head Test #2 6/12/15

Bouwer and Rice Graph

Iberville Parish School Board Grand River

SB-9



Bouwer and Rice parameter C = 2.009
ln(Re/Rw) = 2.572341e+000
Analysis starts at time 0. Seconds
Analysis ends at time 0.875 minutes
211 Measurements analyzed from 1 to 211
Bouwer and Rice parameter C = 2.009
ln(Re/Rw) = 2.572341e+000
Analysis starts at time 0. Seconds
Analysis ends at time 0.875 minutes
211 Measurements analyzed from 1 to 211

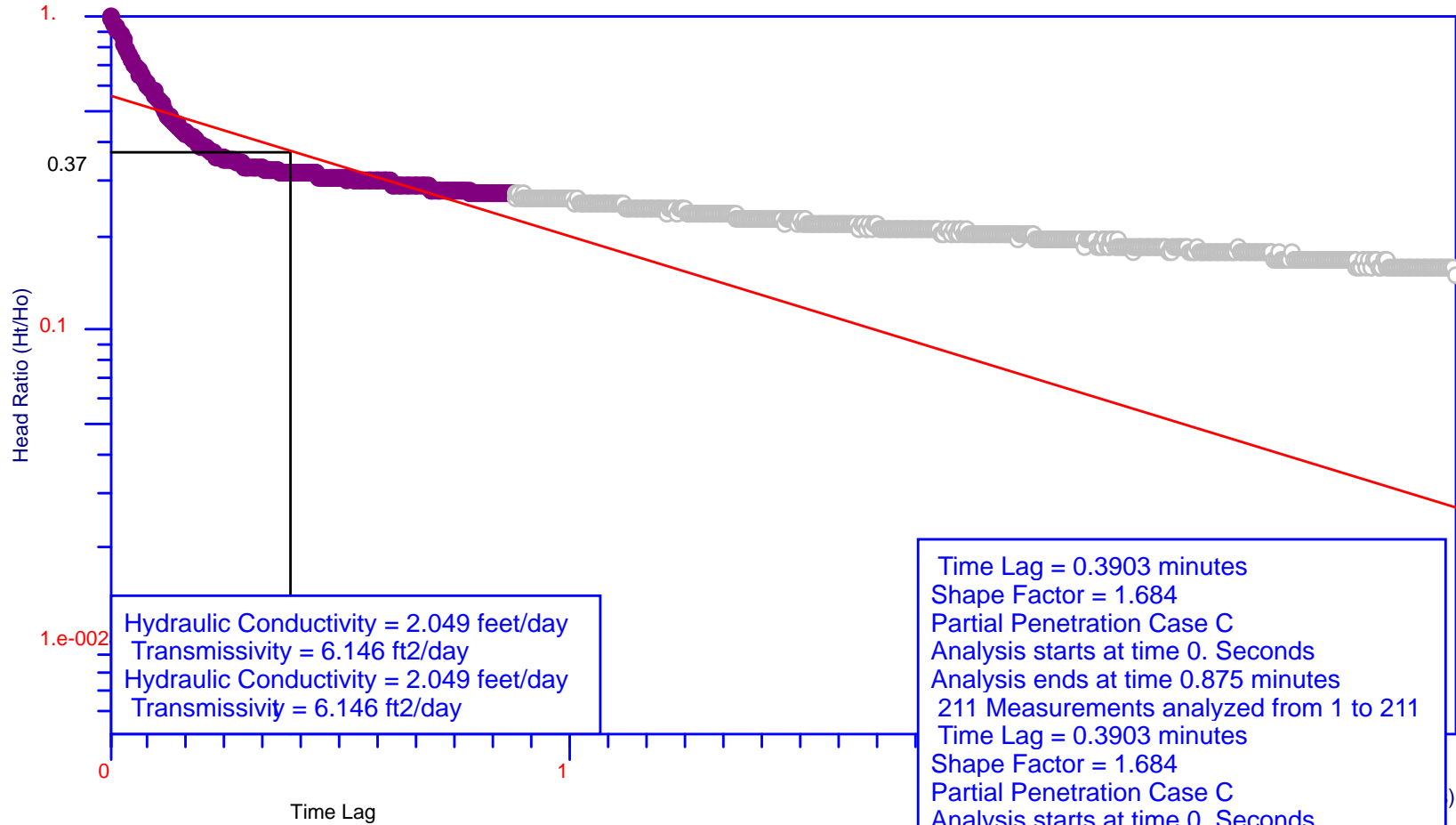
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Falling Head Test #2 6/12/15

Hvorslev Graph

Iberville Parish School Board Grand River

SB-9



Hydraulic Conductivity = 2.049 feet/day
Transmissivity = 6.146 ft²/day
Hydraulic Conductivity = 2.049 feet/day
Transmissivity = 6.146 ft²/day

Time Lag = 0.3903 minutes
Shape Factor = 1.684
Partial Penetration Case C
Analysis starts at time 0. Seconds
Analysis ends at time 0.875 minutes
211 Measurements analyzed from 1 to 211
Time Lag = 0.3903 minutes
Shape Factor = 1.684
Partial Penetration Case C
Analysis starts at time 0. Seconds
Analysis ends at time 0.875 minutes
211 Measurements analyzed from 1 to 211

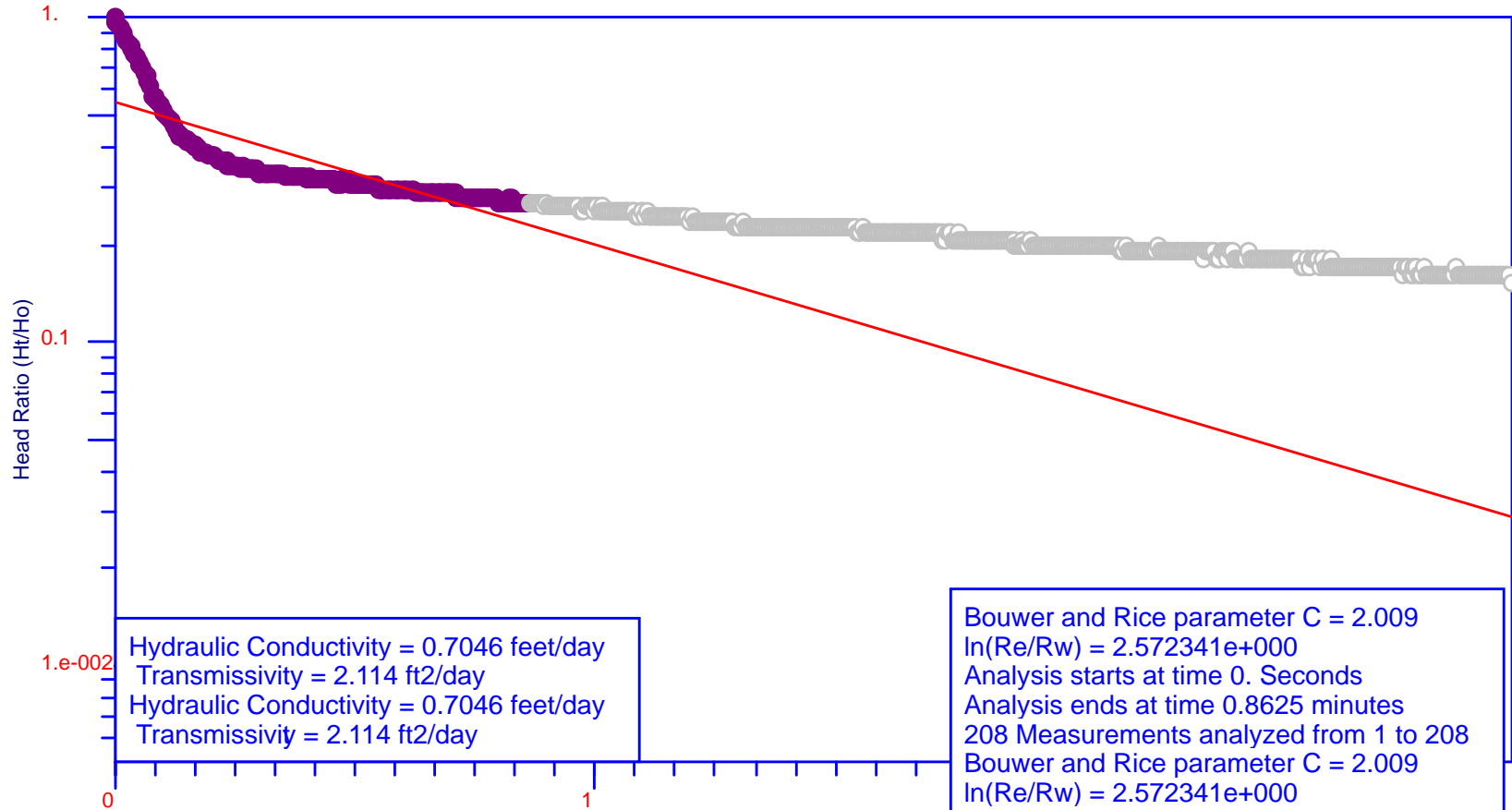
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Falling Head Test #3 6/12/15

Bower and Rice Graph

Iberville Parish School Board Grand River

SB-9



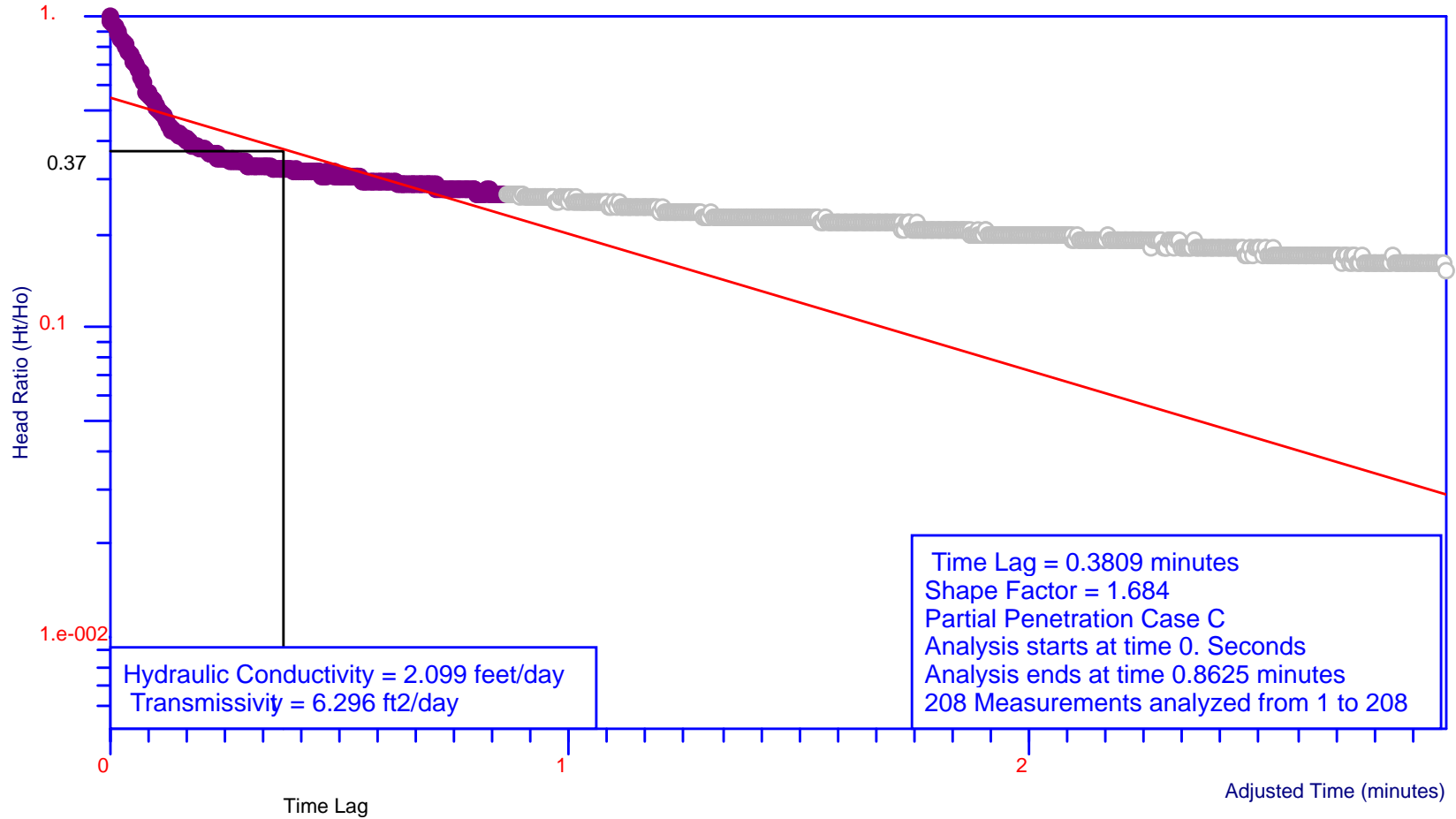
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Falling Head Test #3 6/12/15

Iberville Parish School Board Grand River

Hvorslev Graph

SB-9



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Analysis by Starpoint Software

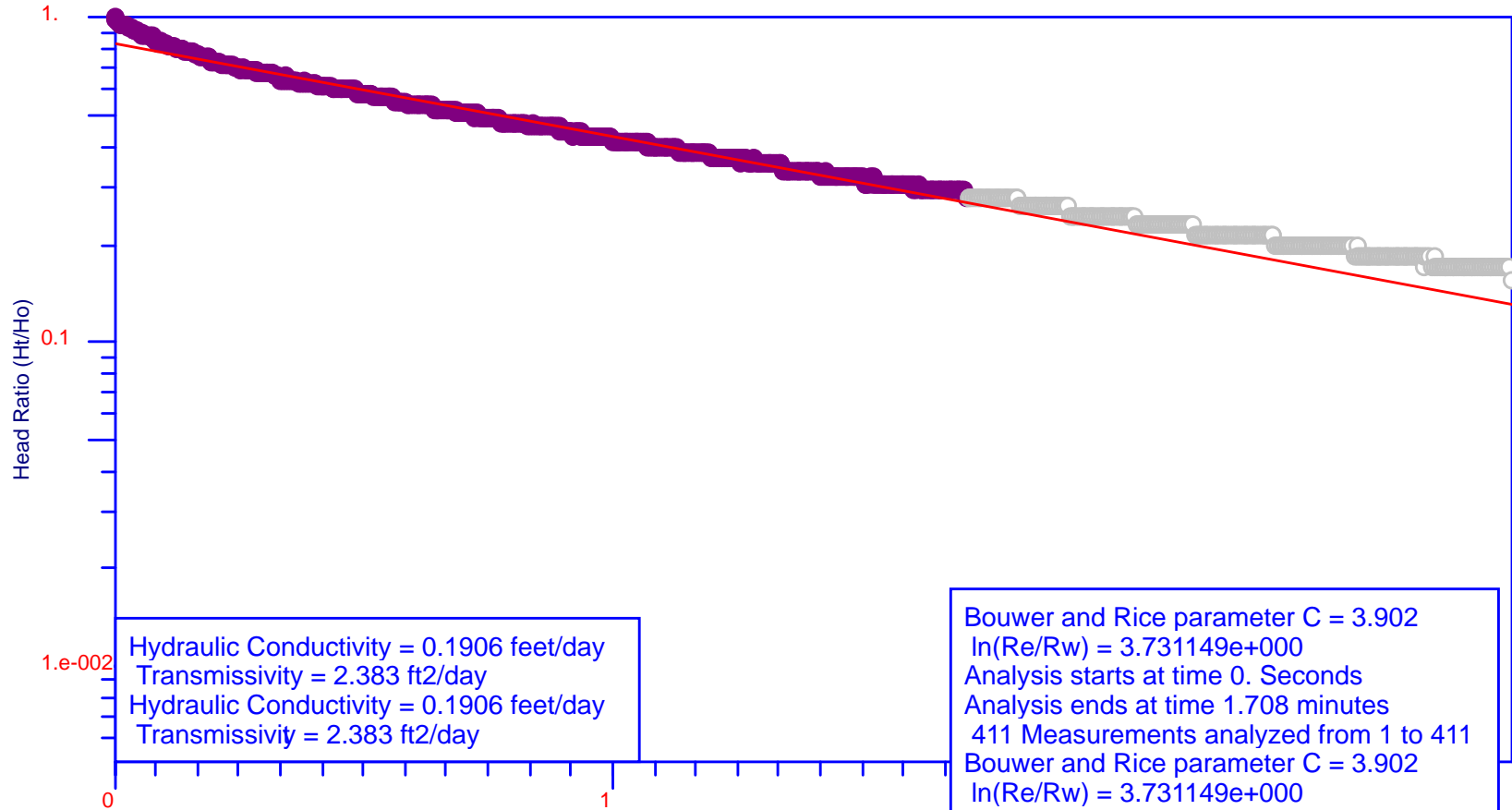
H_o is 1.11 feet at 0. Seconds

Falling Head Test #1 6/24/15

Bower and Rice Graph

Iberville Parish School Board Grand River

SB-24



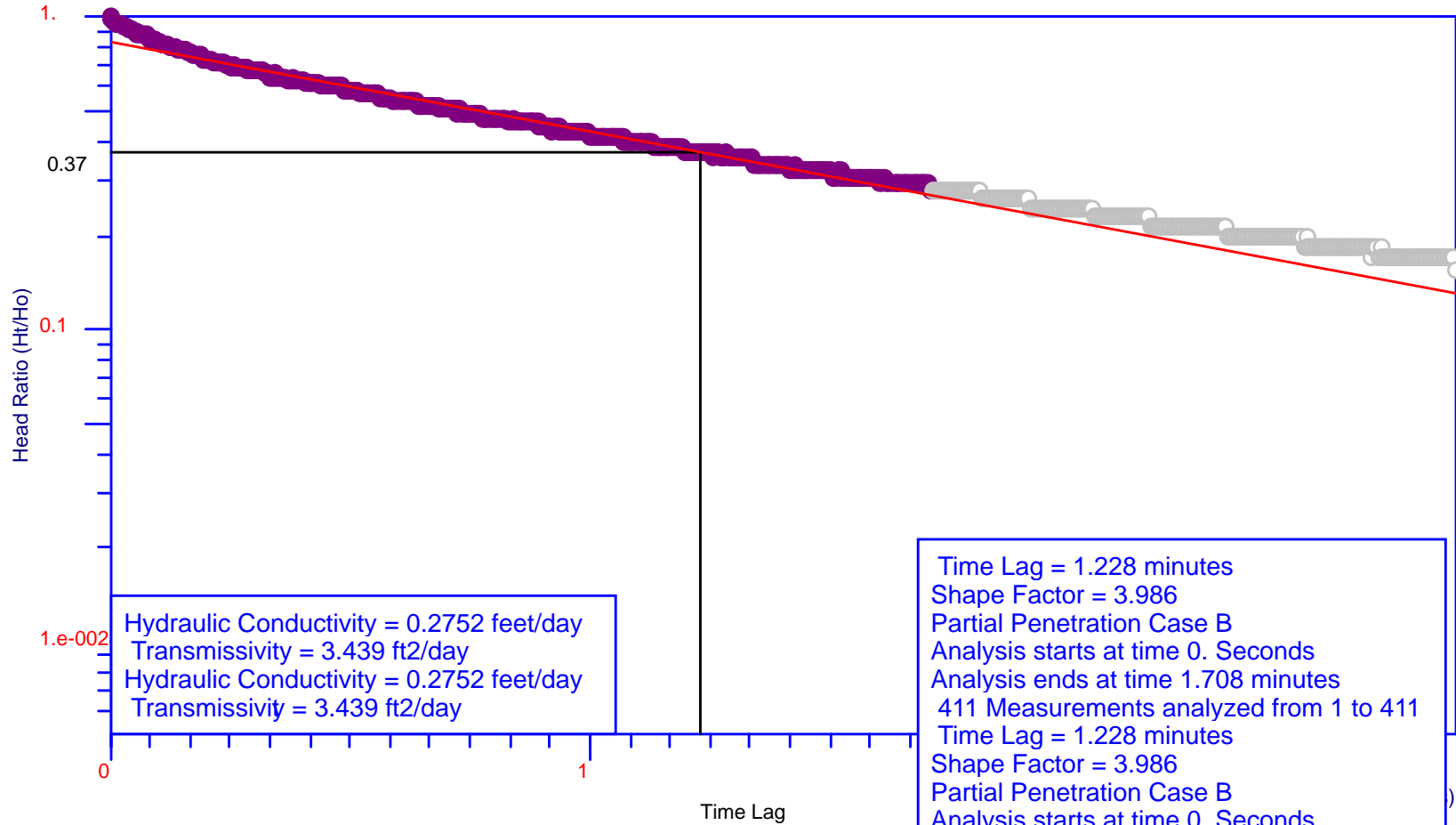
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Falling Head Test #1 6/24/15

Iberville Parish School Board Grand River

Hvorslev Graph

SB-24



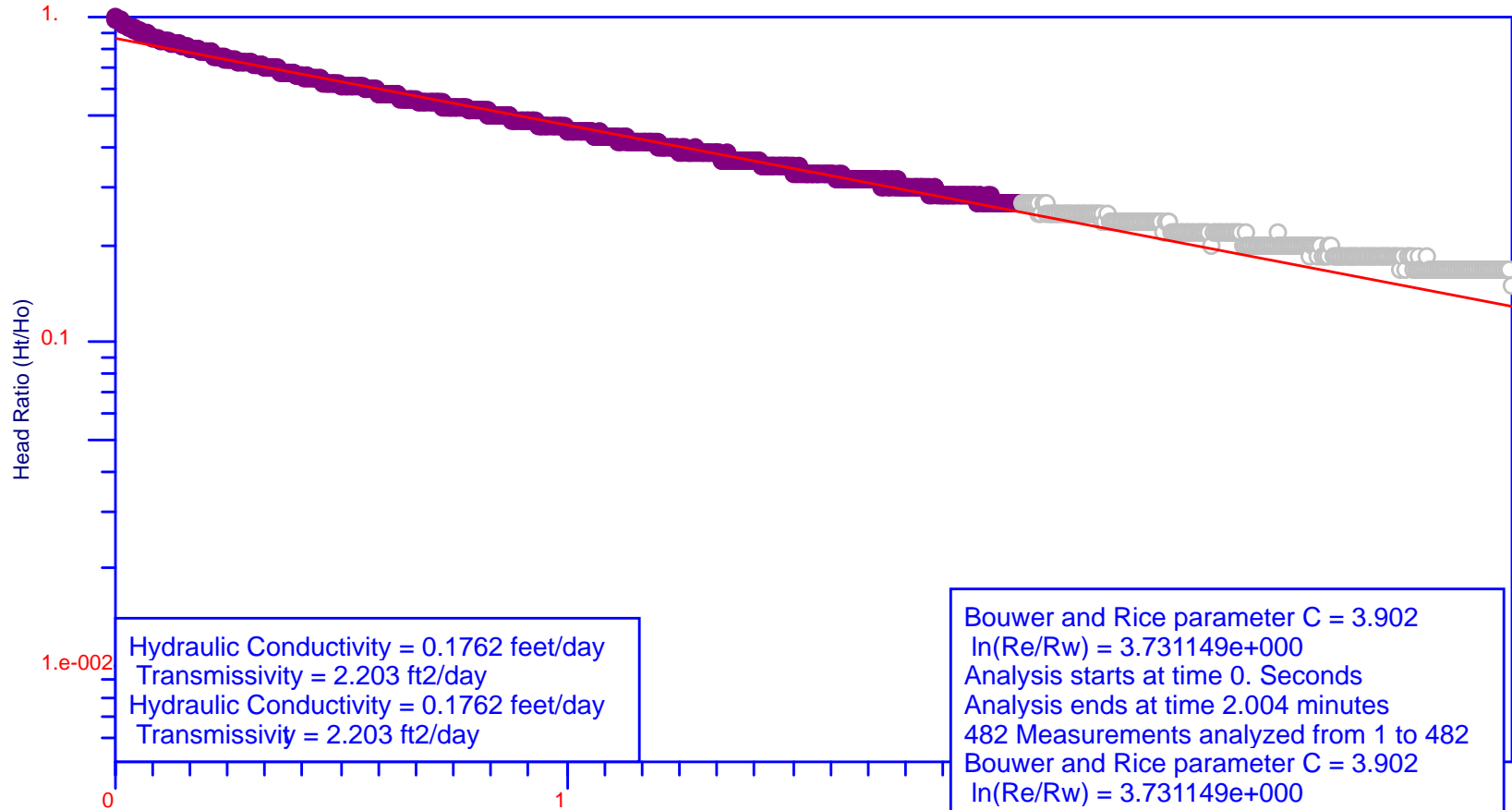
Project Number: 9090-040-0100 for Murray Law Firm
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Falling Head Test #2 6/24/15

Bower and Rice Graph

Iberville Parish School Board Grand River

SB-24



Bower and Rice parameter C = 3.902
ln(Re/Rw) = 3.731149e+000
Analysis starts at time 0. Seconds
Analysis ends at time 2.004 minutes
482 Measurements analyzed from 1 to 482
Bower and Rice parameter C = 3.902
ln(Re/Rw) = 3.731149e+000
Analysis starts at time 0. Seconds
Analysis ends at time 2.004 minutes
482 Measurements analyzed from 1 to 482

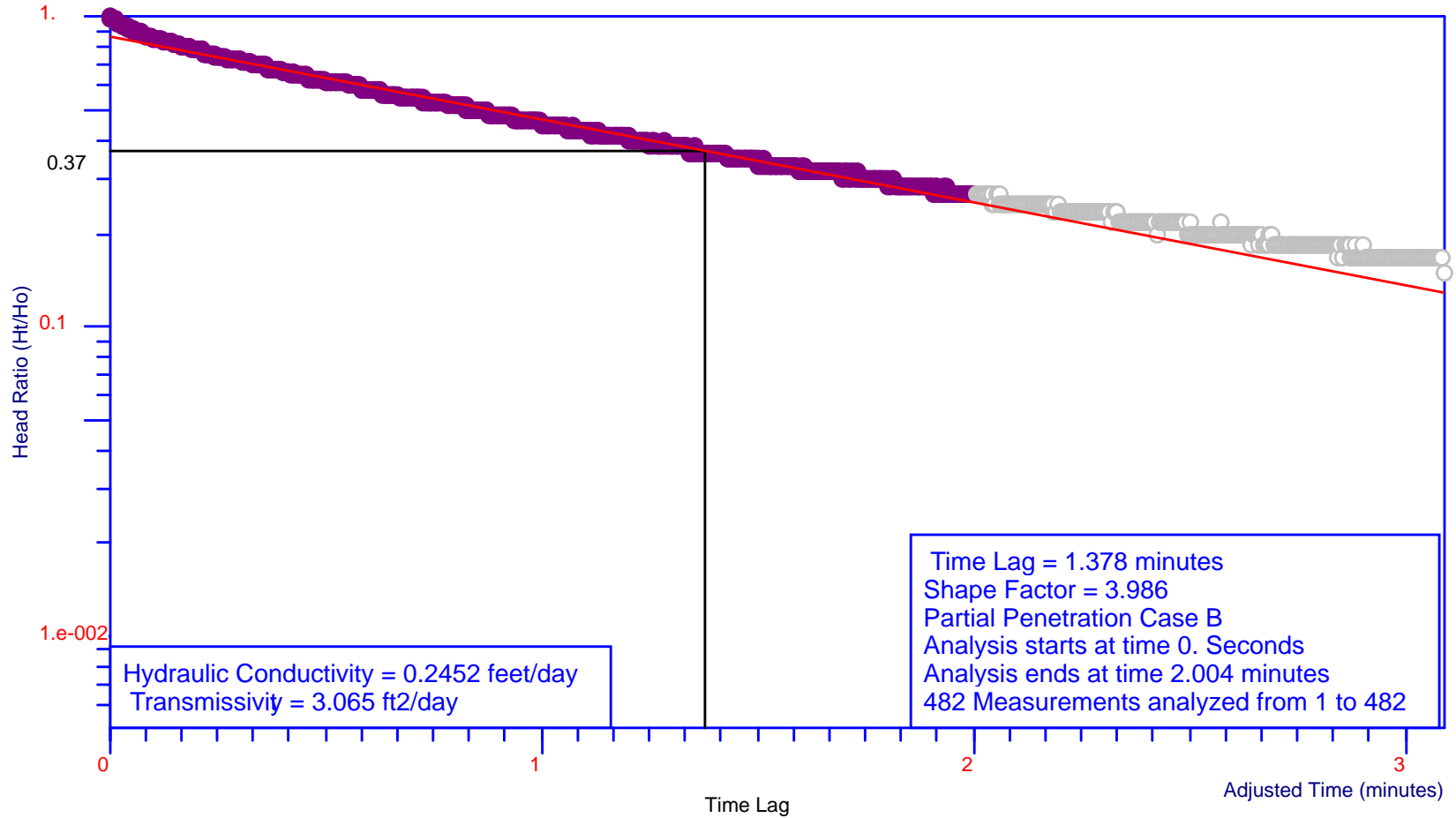
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Falling Head Test #2 6/24/15

Hvorslev Graph

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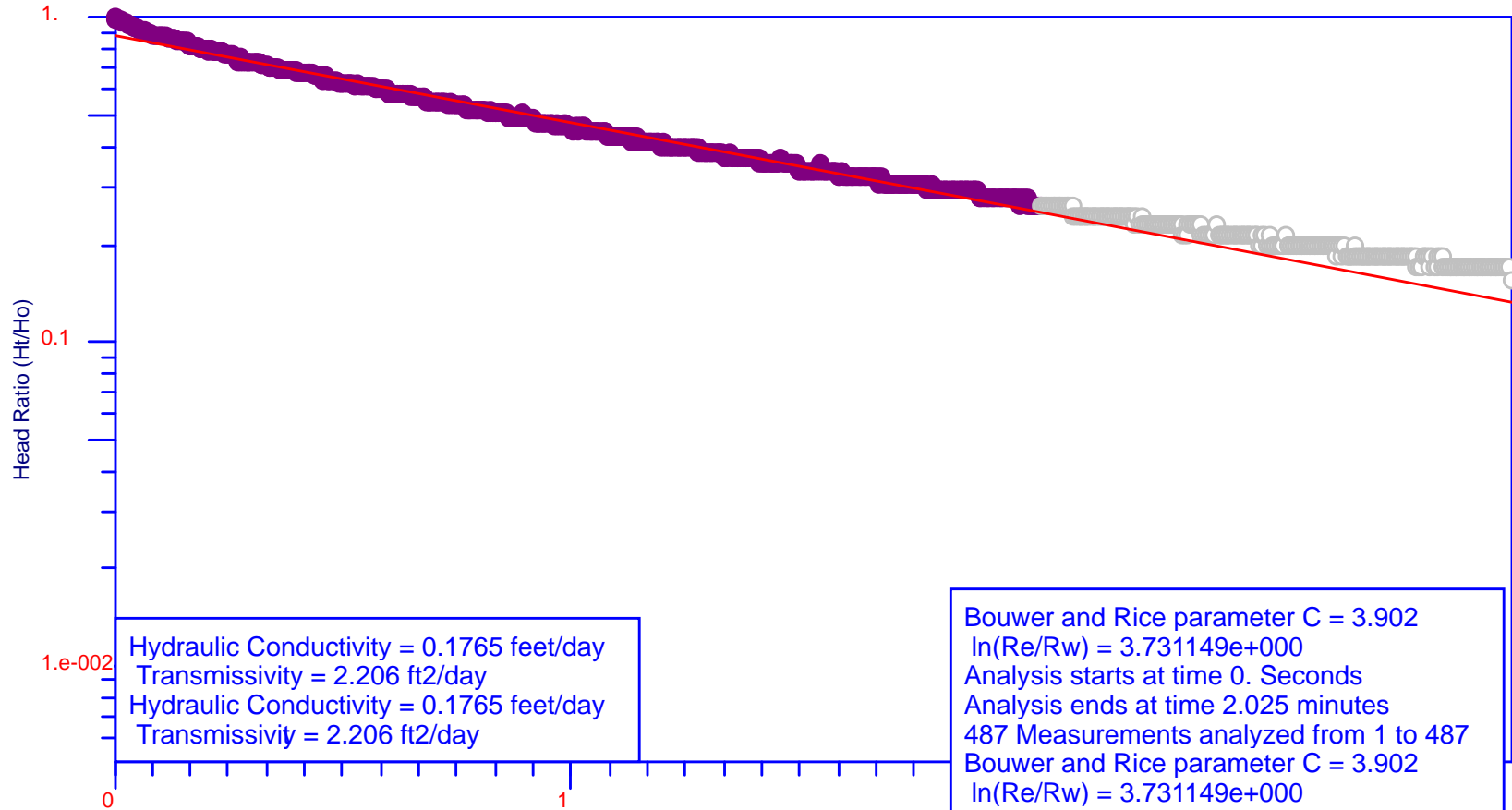
Ho is 0.6 feet at 0. Seconds

Falling Head Test #3 6/24/15

Bouwer and Rice Graph

Iberville Parish School Board Grand River

SB-24



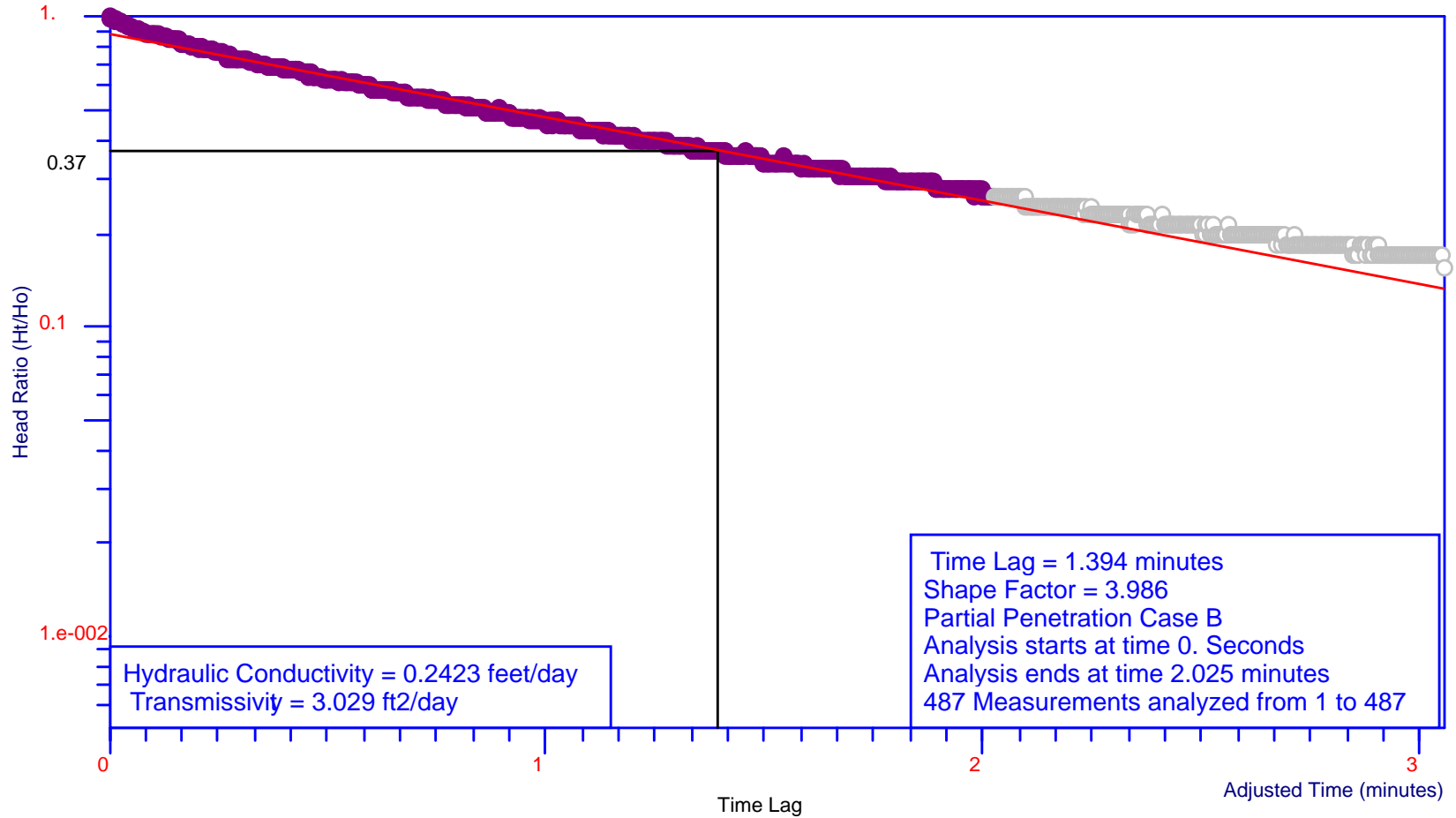
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Ho is 0.65 feet at 0. Seconds