3R – 444

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2013 ANNUAL GROUNDWATER REPORT

DOGIE COMPRESSOR STATION J VENT CONDENSATE RELEASE

ADMINISTRATIVE/ENVIRONMENTAL ORDER NUMBER 3R-444

FEBRUARY 2014

Prepared for:

WILLIAMS FOUR CORNERS LLC
Bloomfield, New Mexico

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Prepared for:

WILLIAMS FOUR CORNERS LLC
188 County Road 4900
Bloomfield, New Mexico 87413

Prepared by:

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EXECUTIVE SUMMARY

LT Environmental Inc., (LTE) was retained by Williams Field Services LLC (Williams) to apply BOS 200® to remediate impacted soil and groundwater and monitor groundwater quality for site closure at the former J Vent in the Dogie Compressor Station (Site). The New Mexico Oil Conservation Division (NMOCD) assigned Administrative/Environmental Order Number 3R-444 to the Site.

In 2011, Williams observed visible petroleum hydrocarbon staining on the ground surface during maintenance work to relocate and upgrade blowdown equipment at the Site. In September 2012, Williams excavated soil beneath the former J Vent until groundwater was encountered. A groundwater sample was collected from the groundwater seeping into the excavation and analyzed for benzene, toluene, ethylbenzene, and total xylenes (BTEX). Concentrations of benzene, toluene, and total xylenes exceeded the New Mexico Water Quality Control Commission (NMWQCC) standards.

In September 2013, LTE applied a total of 1,000 pounds of BOS 200® to the bottom of the excavation prior to backfilling in accordance with the *Revised Work Plan for BOS 200® Amendment* dated April 23, 3013, and approved by NMOCD on May 31, 2013. The BOS 200® was mixed into the smear zone soil and groundwater in powder form using a trackhoe. Once the BOS 200® was applied, the excavation was backfilled with clean overburden stockpiled on site during the original excavation and additional clean fill material obtained from an offsite location. A groundwater sample was collected from within the excavation prior to the application of BOS 200® for analysis of BTEX, nitrate/nitrite as N, chloride, iron, sulfate, and total dissolved solids (TDS) to determine existing water quality characteristics.

On October 22, 2013, LTE installed four monitoring wells to monitor groundwater remediation and document groundwater quality for site closure. The monitoring wells were developed on October 30, 2013 and surveyed and sampled on November 4, 2013. Depth to groundwater data from the monitoring wells indicate the groundwater flow is to the northwest. Concentrations of BTEX, nitrate/nitrite as N, and chloride were compliant with the NMWQCC standards in groundwater samples collected from the four monitoring wells. Iron, sulfate, and TDS concentrations exceeded the NMWQCC standards in samples from the four monitoring wells sampled during the November 2013 monitoring event, including the upgradient monitoring well. Background groundwater quality was collected on December 17, 1997 from former monitoring well MW-1 at the Site and from the sample collected from the excavation just prior to the application of BOS 200® in September 2013. The 1997 background sample indicates sulfate and TDS naturally exceed the NMWQCC standards. Iron was not analyzed in the 1997 groundwater sample collected from MW-1, however detected iron concentrations are consistent in the four monitoring wells sampled in November 2013.

The addition of BOS 200® at the Site has decreased concentrations of BTEX in groundwater samples to compliance with NMWQCC standards. Concentrations of iron, sulfate, and TDS exceed NMWQCC standards, but are consistent with background concentrations and appear to be naturally occurring. Williams proposes to continue quarterly groundwater sampling at the Site until NMWQCC standards have been met for eight consecutive quarters.

1.0 INTRODUCTION

LT Environmental, Inc. (LTE), on behalf of Williams Four Corners LLC (Williams), has prepared this report detailing groundwater remediation and monitoring activities completed from January 2013 through December 2013 at the Former J Vent in the Dogie Compressor Station (Site). The New Mexico Oil Conservation Division (NMOCD) has assigned Administrative/Environmental Order Number 3R-444 to the Site. The scope of work for this project included application of BOS 200® to address historical petroleum hydrocarbon impacts to groundwater in accordance with the *Revised Work Plan for BOS 200® Amendment* dated April 23, 3013 (BOS 200® Work Plan) and included as Appendix A. The NMOCD approved the BOS 200® Work Plan on May 31, 2013 and a copy of the approval is included in Appendix B. Additionally, four monitoring wells were installed to monitor groundwater remediation progress and document groundwater quality for site closure.

1.1 LOCATION

The Site is located in the northwest quarter of the northwest quarter of Section 4, Township 25 North, and Range 6 West in Rio Arriba County, New Mexico, in Largo Canyon as depicted on Figure 1. Largo Wash, which drains into the San Juan River approximately 28 miles to the north, is approximately 900 feet to the north-northeast.

1.2 HISTORY

The former J Vent was periodically used to vent natural gas at the Site during emergency shutdown. In 2011, the venting equipment was updated and moved south approximately 75 feet. When the equipment was relocated, visible petroleum hydrocarbon staining was observed on the ground surface. Natural gas condensate is often a byproduct of the blowdown process and is the most likely source of the staining.

In September 2012, Williams excavated soil beneath the former J Vent to the extent illustrated on Figure 2. The excavation was approximately 80 feet long and 60 feet wide. The total depth of the excavation ranged from 5 feet to 7 feet below ground surface (bgs). Confirmation soil samples were collected above the smear zone along the sidewalls of the excavation. Groundwater was encountered in the excavation at approximately 6 feet bgs and LTE collected a grab sample labeled GW-1 for analysis of benzene, toluene, ethylbenzene, and total xylenes (BTEX). Analytical results are included in Table 1 and indicated BTEX concentrations exceeded the New Mexico Water Quality Control Commission (NMWQCC) standards. Additional details of the excavation, including analytical results from confirmation soil samples, are included in the BOS 200® Work Plan.

2.0 METHODOLOGY

2.1 BOS 200® APPLICATION

In September 2013, LTE collected a grab sample of the groundwater within the excavation prior to the application of BOS 200® for analysis of BTEX, nitrate/nitrite as N, chloride, iron, sulfate,

and TDS to determine existing water quality characteristics. The approximate location of the sample is depicted on Figure 2.

LTE applied a total of 1,000 pounds of BOS 200® to the base of the excavation prior to backfilling. LTE designed the application to reduce benzene concentrations from 630 micrograms per liter (µg/L) to less than 10 µg/L by applying approximately 20 pounds of BOS 200® to every 10-foot square area of the exposed smear zone using a trackhoe to mix the BOS 200® into soil and groundwater at the smear zone. Once the BOS 200® was applied, the excavation was backfilled with clean overburden stockpiled on site during the original excavation and additional clean fill material obtained from an offsite location. The backfilled excavation was graded to match the surrounding topography upon completion.

2.2 GROUNDWATER MONITORING WELL INSTALLATION

In October 2013, LTE installed four groundwater monitoring wells (MW-13, MW-14, MW-15, and MW-16) at the Site as depicted on Figure 2. The monitoring wells were constructed of schedule 40, 2-inch diameter polyvinyl-chloride (PVC) and included 15 feet of 0.001-inch machine slotted flush-threaded PVC well screen. Twelve to thirteen feet of screen was set in the water table and two to three feet above to allow for seasonal fluctuations and construct a proper seal on the monitoring well. A clean 10-20 grade silica sand gravel pack was placed from the bottom of the boring to one foot above the top of the screen. At least two feet of 3/8-inch natural bentonite chips were set above the gravel pack to the ground surface and a concrete surface completion with a steel well protector and locking cap were installed around the PVC stick-up. Monitoring well completion diagrams and borehole logs are included in Appendix C.

Following installation, the four monitoring well locations were obtained using a Trimble GeoXT global positioning system, then surveyed for top-of casing elevations to an accuracy of plus or minus 0.01 feet so that groundwater flow direction and gradient could be determined. Total depth of each monitoring well was obtained using a Keck oil/water interface probe. The four new monitoring wells were developed utilizing a new PVC bailer. LTE purged fluid until pH, specific conductivity, and temperature stabilized and turbidity was reduced to the greatest possible extent. All purged water was disposed of at a produced water tank on site. Well development field forms are attached in Appendix D.

2.3 WATER AND PRODUCT LEVEL MEASUREMENTS

Groundwater level monitoring included recording depth to groundwater measurements with a Keck oil/water interface probe. The interface probe was decontaminated with Alconox™ soap and rinsed with de-ionized water prior to each measurement. Groundwater elevation data are summarized in Table 2.

2.4 GROUNDWATER SAMPLING

Prior to sampling groundwater, depth to groundwater and total depth of monitoring wells were measured with a Keck oil/water interface probe. The volume of water in each monitoring well was calculated, and a minimum of three well casing volumes of water was purged from each well using a new disposable PVC bailer. As water was removed from the monitoring well, pH, electric conductivity, and temperature were monitored. Monitoring wells were purged until these

properties stabilized, indicating the purge water was representative of aquifer conditions. Stabilization was defined as three consecutive stable readings for each water property: ±0.4 units for pH, ±10 percent for electric conductivity and ±2 degrees Celsius (º C) for temperature. All purge water was disposed of in an on-site produced water tank. Copies of the groundwater sampling field notes are presented in Appendix E.

Once each monitoring well was properly purged, groundwater samples were collected by filling laboratory-supplied bottles. Samples were labeled with the date and time of collection, monitoring well designation, project name, collector's name, and parameters to be analyzed. They were immediately sealed and packed on ice. The samples were transferred to Hall Environmental Analysis Laboratory (HEAL) for analysis. Samples were stored on ice in a sealed cooler and maintained under strict chain-of-custody (COC) procedures. COC forms were completed documenting the date and time sampled, sample number, type of sample, sampler's name, preservative used (if any), analyses required, and sampler's signature. Samples were analyzed for BTEX by United States Environmental Protection Agency (USEPA) Method 8021B; chloride, nitrate, and sulfate by USEPA Method 300.0, iron by USEPA Method 200.7, and TDS by Method SM2540C. A copy of the laboratory analytical report is included in Appendix F.

2.5 GROUNDWATER CONTOUR MAPS

LTE surveyed the four new monitoring wells using a survey level to measure the top-of-casing elevations. The top-of-casing elevations and depth to groundwater measurements obtained from monitoring wells during the November 2013 site visit were used to draft a groundwater contour map (Figure 3). Contours were inferred based on groundwater elevations obtained and observations of physical characteristics at the Site (topography, proximity to washes, etc).

3.0 RESULTS

Groundwater analytical results indicate concentrations of BTEX and nitrate in groundwater samples collected after the BOS 200® application from monitoring wells MW-13, MW-14, MW-15, and MW-16 were below laboratory detection limits. Additionally, the chloride concentration in MW-13, MW-14, MW-15, and MW-16 was compliant with the NMWQCC standards. Iron, sulfate, and TDS concentrations exceeded the NMWQCC standards in the groundwater samples for the November 2013 event, including background samples. Background concentrations of groundwater quality parameters are represented by analytical results from a grab sample collected from the open excavation prior to the BOS 200® on September 17, 2013 and a groundwater sample collected from former monitoring well MW-1 on September 17, 1997. Table 1 summarizes the groundwater analytical results and copies of the laboratory reports are included in Appendix F.

Depth to groundwater data obtained during the November 2013 monitoring event are summarized in Table 2. Groundwater flow direction was determined to be to the northwest as depicted on Figure 3. Additionally, the analytical results are depicted on a cross section with the monitoring wells, excavation, and BOS 200® application as related to groundwater flow direction on Figure 4. The location of the cross section is depicted on Figure 2.

4.0 CONCLUSIONS

The addition of BOS 200® to impacted groundwater at the Site has remediated BTEX concentrations. Sulfate, chloride, iron, nitrate, and TDS concentrations are monitored to demonstrate consumption of electron acceptors as remediation progresses. The groundwater analytical results indicate the BOS 200® has not affected these groundwater quality parameters, which remain consistent with site background conditions.

5.0 RECOMMENDATIONS

LTE recommends Williams continue quarterly groundwater sampling until NMWQCC standards have been meet for eight consecutive quarters as required in the NMOCD approved BOS 200® Work Plan.

FIGURES

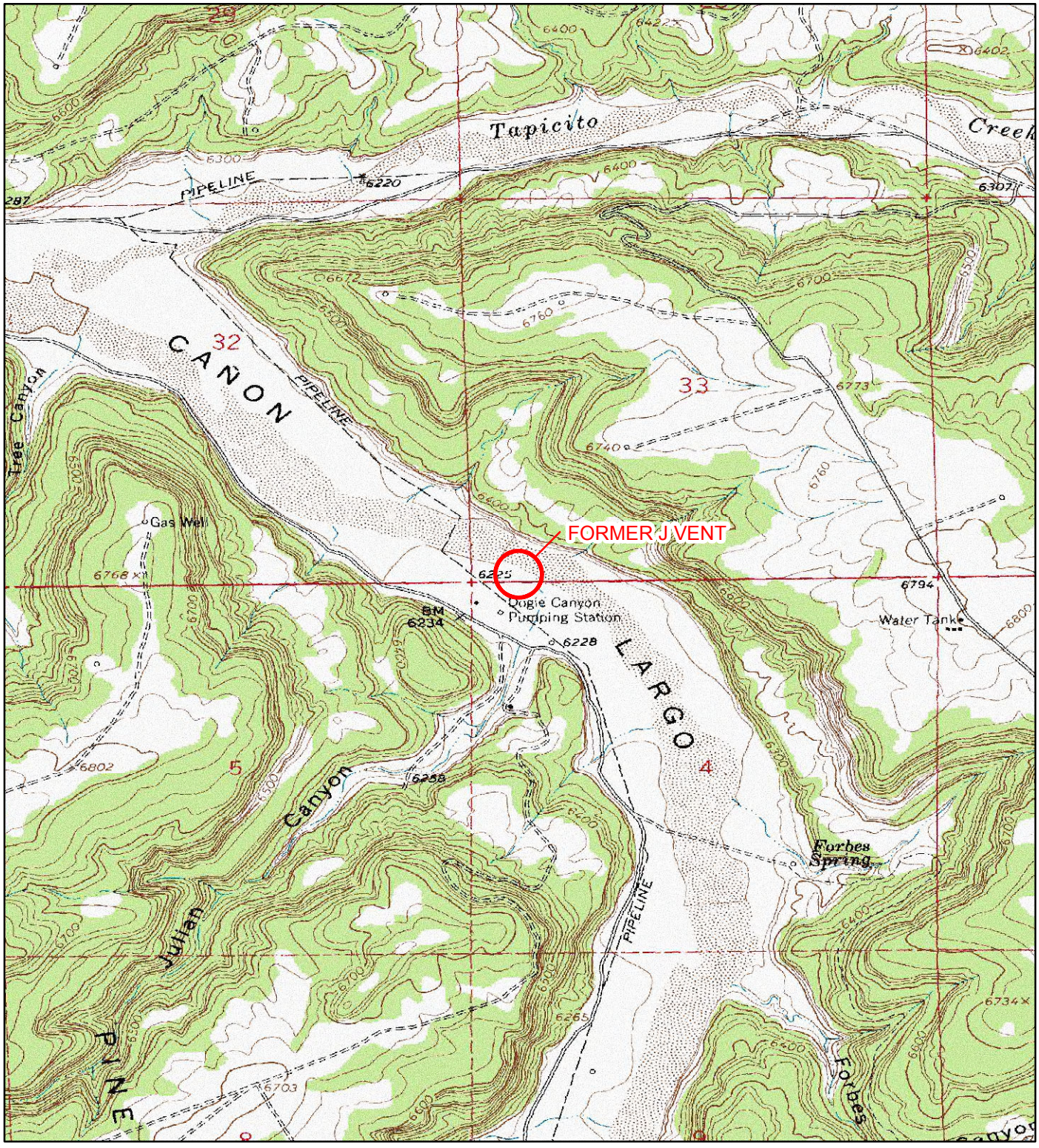


IMAGE COURTESY OF USDA/NRCS, VARIOUS DATES

LEGEND

SITE LOCATION

0 2,000 4,000

Feet

N

FIGURE 1
SITE LOCATION MAP
FORMER J VENT
DOGIE COMPRESSOR STATION
RIO ARRIBA COUNTY, NEW MEXICO
WILLIAMS FOUR CORNERS LLC

P:\Williams Four Corners\GIS\MXD\034012001_DOGIE\034012002_DOGIE_FIG01_SL_MAP.mxd

IMAGE COURTESY OF ESRI/BING MAPS

LEGEND

- FORMER MONITORING WELL
- MONITORING WELL
- GRAB SAMPLE FROM EXCAVATION
- CROSS SECTION A-A'
- FENCE
- EXCAVATION EXTENT
- FORMER J VENT

0 100 200
Feet

N

FIGURE 2
SITE MAP
FORMER J VENT
DOGIE COMPRESSOR STATION
RIO ARRIBA COUNTY, NEW MEXICO
WILLIAMS FOUR CORNERS LLC

P:\Williams Four Corners\GIS\MXD\034013012_JVENT\034013012_J_VENT_FIG02_SITE_XSEC.mxd

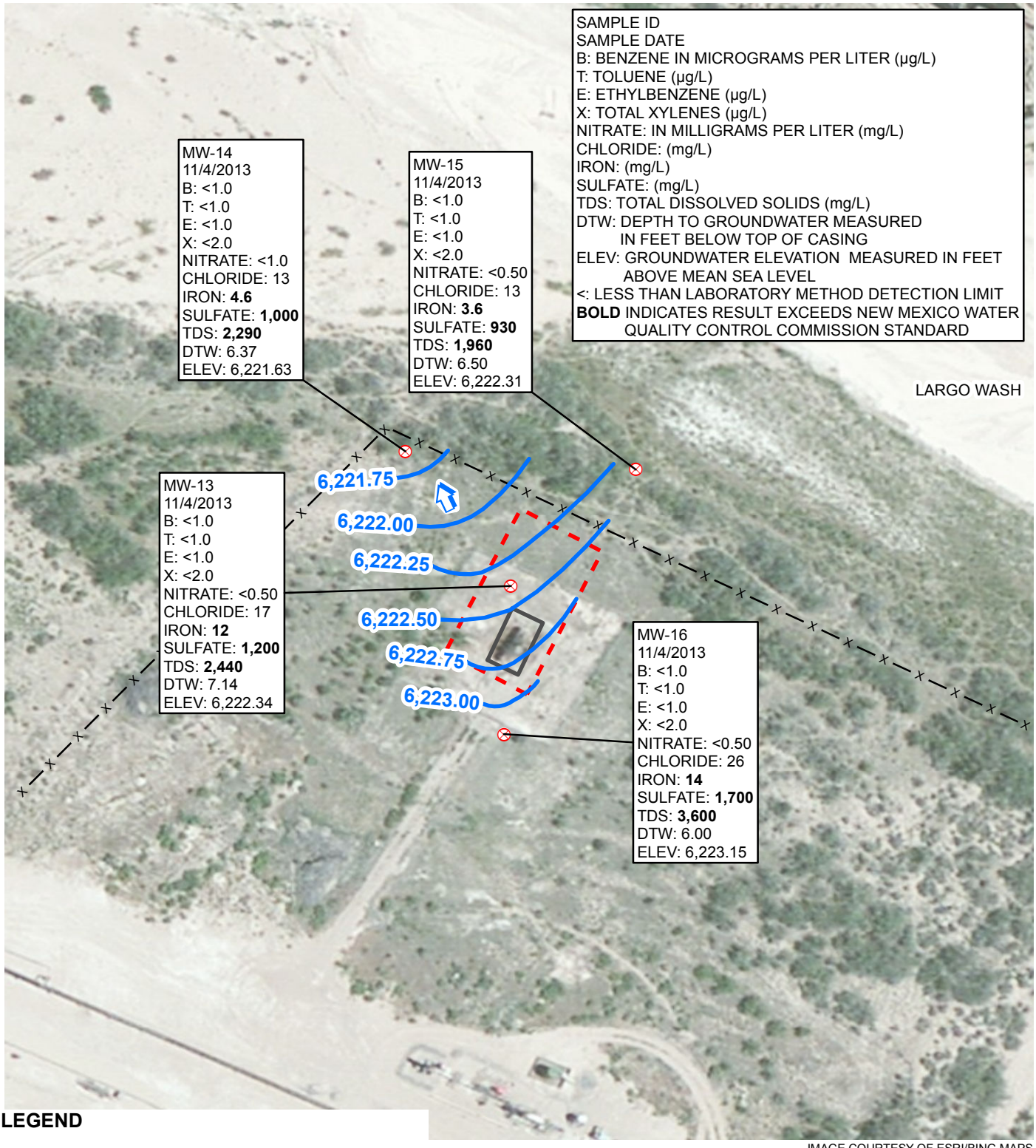
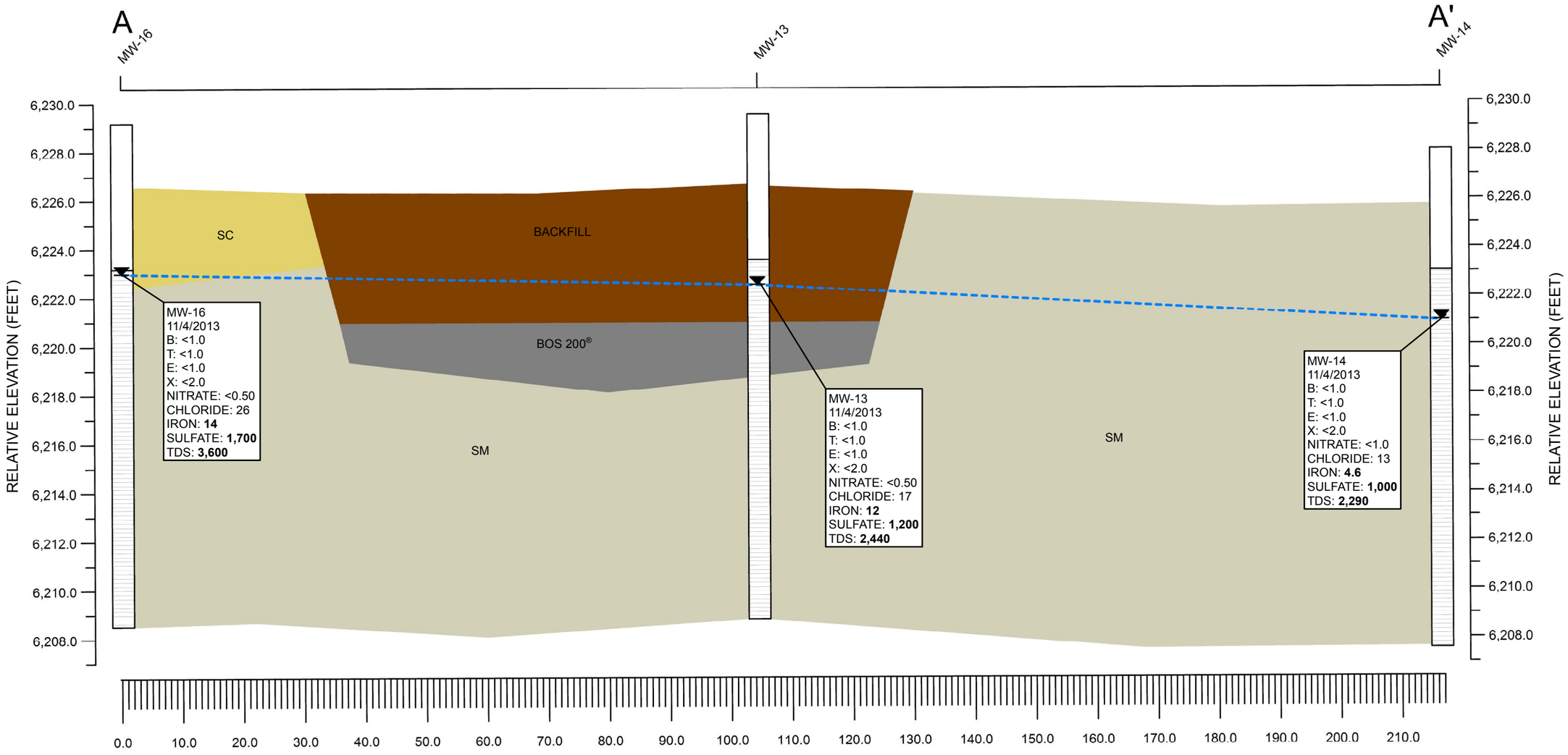


FIGURE 3
GROUNDWATER ELEVATION
& ANALYTICAL RESULTS
FORMER J VENT
DOGIE COMPRESSOR STATION
RIO ARRIBA COUNTY, NEW MEXICO
WILLIAMS FOUR CORNERS LLC

P:\Williams Four Corners\GIS\MXD\034013012_JVENT\034013012_J_VENT_FIG03_GWE_GWA_2013_Q4.mxd

CROSS SECTION A-A'



LEGEND

SCREENED INTERVAL

GROUNDWATER ELEVATION MEASURED ON 11/14/13

APPROXIMATE GROUNDWATER ELEVATION

VERTICAL SCALE: 1" = 4.5'

HORIZONTAL SCALE: 1" = 18'

LITHOLOGY INDEX

- CLAYEY SAND (SC)
- BACKFILL
- BOS 200® (AS APPLIED IN EXCAVATION)
- SILTY SAND (SM)

SAMPLE ID
SAMPLE DATE
B: BENZENE IN MICROGRAMS PER LITER (µg/L)
T: TOLUENE (µg/L)
E: ETHYLBENZENE (µg/L)
X: TOTAL XYLENES (µg/L)
NITRATE: IN MILLIGRAMS PER LITER (mg/L)
CHLORIDE: (mg/L)
IRON: (mg/L)
SULFATE: (mg/L)
TDS: TOTAL DISSOLVED SOLIDS (mg/L)
<: LESS THAN LABORATORY METHOD DETECTION LIMIT
BOLD INDICATES RESULT EXCEEDS NEW MEXICO WATER QUALITY CONTROL COMMISSION STANDARD

FIGURE 4
CROSS SECTION A-A'
FORMER J VENT
DOGIE COMPRESSOR STATION
RIO ARRIBA COUNTY, NEW MEXICO
WILLIAMS FOUR CORNERS LLC

P:\Williams Four Corners\GIS\MXD\034013012_JVENT\034013012_J_VENT_FIG03_XSEC_AA'_2013_Q4.mxd

TABLES

TABLE 1

GROUNDWATER ANALYTICAL RESULTS
FORMER J-VENT
WILLIAMS FOUR CORNERS, LLC

Sample Identification	Sample Date	Benzene (µg/L)	Toluene (µg/L)	Ethylbenzene (µg/L)	Total Xylenes (µg/L)	Nitrate + Nitrite as N (mg/L)	Chloride (mg/L)	Iron (mg/L)	Sulfate (mg/L)	Total Dissolved Solids (mg/L)
NMWQCC Standard	NA	10	750	750	620	10	250	1.0	600	1,000
Background MW-1	9/17/1997	<0.2	<0.2	<0.2	<0.4	NT	13.6	NT	**889**	**1,983**
GW-1	9/17/2012	**630**	**2,800**	190	**2,000**	NT	NT	NT	NT	NT
MW-13	11/4/2013	<1.0	<1.0	<1.0	<2.0	<0.50	17	**12**	**1,200**	**2,440**
MW-14	11/4/2013	<1.0	<1.0	<1.0	<2.0	<1.0	13	**4.6**	**1,000**	**2,290**
MW-15	11/4/2013	<1.0	<1.0	<1.0	<2.0	<0.50	13	**3.6**	**930**	**1,960**
MW-16	11/4/2013	<1.0	<1.0	<1.0	<2.0	<0.50	26	**14**	**1,700**	**3,600**

Notes:
Bold - indicates sample exceeds NMWQCC standard
mg/L - milligrams per liter
NA - not applicable
NMWQCC - New Mexico Water Quality Control Commission
NT - not tested
µg/L - micrograms per liter
< - indicates result is less than the stated laboratory method detection limit

TABLE 2

GROUNDWATER ELEVATION SUMMARY
FORMER J VENT
WILLIAMS FIELD SERVICES LLC

Well Number	Date	Top of Casing Elevation (feet)	Depth to Groundwater (feet BTOC)	Adjusted Groundwater Elevation (feet AMSL)
MW-13	11/4/2013	6,229.48	7.14	6,222.34
MW-14	11/4/2013	6,228.00	6.37	6,221.63
MW-15	11/4/2013	6,228.81	6.50	6,222.31
MW-16	11/4/2013	6,229.15	6.00	6,223.15

Notes:
AMSL - Above Mean Sea Level
BTOC - Below Top of Casing

APPENDIX A

REVISED WORK PLAN FOR BOS 200® AMENDMENT

COMPLIANCE / ENGINEERING / REMEDIATION

LT Environmental Inc.

2243 Main Avenue, Suite 3
Durango, Colorado 81301
T 970.385.1096 / F 970.385.1873

April 23, 2013

Mr. Matt Webre
Williams Four Corners, LLC
188 County Road 4900
Bloomfield, NM 87413

RE: Revised Work Plan for BOS 200® Amendment
Williams Four Corners, LLC
Dogie Compressor Station
Rio Arriba County, New Mexico

Dear Mr. Webre:

LT Environmental, Inc. (LTE) is providing the following work plan to Williams Four Corners, LLC (Williams) to apply BOS 200® to an open excavation at the former J Vent at the Dogie Compressor Station (Site) to address historical petroleum hydrocarbon impacts to groundwater. The BOS 200® application and subsequent groundwater monitoring is proposed as a groundwater remediation program since a majority of the impacted soil has been removed and groundwater infiltration is impeding additional excavation progress. The following work plan provides details of the proposed remediation for which Williams is requesting temporary permission for a discharge for a period not to exceed 120 days from the New Mexico Oil Conservation Division (NMOCD) under 20.6.2.3106B of the New Mexico Administrative Code (NMAC).

Site Description and Background

The Site is located in the northwest quarter of the northwest quarter of Section 4, Township 25N, and Range 6W in Rio Arriba County, New Mexico in Largo Canyon as depicted in Figure 1. The former J Vent was periodically used to vent natural gas at the Site during emergency shutdown. In 2011, the venting equipment was updated and moved to the south approximately 75 feet. Petroleum hydrocarbon staining was visible at the location of the former J Vent, most likely the source of natural gas condensate, which is often a byproduct of the blow down process.

Williams excavated soil beneath the former J Vent to the extent shown on Figure 2. The excavation is approximately 80 feet long and 60 feet wide. The total depth of the excavation ranges from 5 feet to 7 feet below ground surface (bgs). Confirmation soil samples were collected above the smear zone along the sidewalls of the excavation by depositing five aliquots of soil into plastic bags, thoroughly mixing the contents and sampling into four ounce glass jars. Soil samples were stored on ice and delivered to Hall Environmental Analysis Laboratory (HEAL) in Albuquerque, New Mexico following strict chain-of-custody procedures. The soil samples were analyzed for benzene, toluene, ethylbenzene and total xylenes (BTEX) by United States Environmental Protection Agency (USEPA) Method 8021B and total petroleum hydrocarbons (TPH) by USEPA Method 8015B. Laboratory analytical results are listed in

Table 1 and indicate soil samples did not exceed NMOCD standards. The complete laboratory analytical report is included in Attachment A.

Groundwater was encountered in the excavation at approximately 6 feet bgs. No sheen or odor was observed on the pooling groundwater. Groundwater was sampled by collecting a grab sample identified as GW-1 on September 17, 2012 from the location presented in Figure 2 in a decontaminated glass jar and immediately filling three pre-cleaned and pre-preserved 40-milliliter (ml) glass vials with zero headspace to prevent degradation of the sample. The groundwater sample was delivered on ice to HEAL and analyzed for BTEX according to USEPA Method 8021B. Table 2 includes the laboratory analytical results and indicates benzene, toluene, and total xylenes concentrations exceeded New Mexico Water Quality Control Commission (NMWQCC) standards. The complete laboratory analytical report is included in Attachment A.

Proposed Work Plan

To address the remaining impacted soil present on the bottom of the excavation and impacted groundwater, LTE proposes to apply an amendment in a single application for no more than 120 days to the excavation floor to enhance bioremediation of the smear zone, then backfill and monitor groundwater quality to document remediation progress and final closure. The BOS 200® product is a mix of activated carbon, petroleum-consuming microbes, calcium sulfate (gypsum), and nutrients. A material safety data sheet is included in Attachment B. The product removes hydrocarbons from the groundwater and saturated sediments through biological degradation of the hydrocarbon compounds. The product is applied directly to the smear zone during backfilling and the activated carbon attracts the hydrocarbons and adsorbs them where the hydrocarbons are co-located with microbes, nutrients, and electron acceptors. As the hydrocarbons are adsorbed into the activated carbon, microbes will use the hydrocarbons as a food source for respiratory and metabolic processes.

The following sections provide detailed information for a discharge as required by 20.6.2.3106C NMAC. It is important to note that the proposed addition of BOS 200® to the groundwater exposed by the open excavation is not designed as a slurry injection, but rather addition of the powder form of BOS 200® directly to the smear zone.

20.6.2.3106C (1)

LTE will apply a total of 1,000 pounds of BOS 200® to the base of the excavation prior to backfilling. The BOS 200® will be mixed into the smear zone soil and groundwater in powder form using a trackhoe. Once the BOS 200® has been applied, the excavation will be backfilled with clean overburden stockpiled onsite during the original excavation and additional clean fill material obtained from an offsite location. The backfilled excavation will be graded to match the surrounding topography upon completion.

In evaluating the Site, LTE has designed the application to reduce benzene concentrations from 630 micrograms per liter (µg/l) to less than 10 µg/l by applying approximately 20 pounds of BOS 200® to each 10-foot square area of the exposed smear zone.

BOS 200® is a mixture of approximately 80 percent (%) powdered or granulated activated carbon which is combined with a blend of sulfate reduction material and micronutrients at the factory. The selected nutrients include phosphorus (calcium phosphate), nitrogen (ammonium nitrate), and potassium (potassium chloride). Additional electron acceptors include iron, nitrate, and a time-release source of sulfate. The source of the time-release sulfate is gypsum or calcium sulfate.

When the BOS 200® is applied to the groundwater, the resulting mixture will have elevated concentrations of nitrate, sulfate, and chloride, but the effects will be minimal and temporary. At first, microbes will utilize oxygen during aerobic degradation. When oxygen is depleted, nitrate is the next highest energy electron acceptor. The first step in the de-nitrification is the formation of nitrite. Over the first month or two (post application), nitrate concentrations typically drop and low levels of nitrite are often observed. Finally, fermentation, sulfate reduction, and methanogenic respiration become the dominant pathways.

Metabolic by-products of the application will vary depending on what metabolic pathway is being used for hydrocarbon degradation. Carbon dioxide and water are the ultimate products of aerobic and most anaerobic biodegradations of hydrocarbons. The intermediate products of aerobic degradation may include simple acids, alcohols, and fatty acids. Acetate is produced by aerobic conditions, anaerobic fermentation, and methanogenic respiration. Other products include lactate, formate, butyrate, isobutyrate, pyruvate, and proprionate, along with methane.

Remediation Products, Inc. (RPI), the manufacturer of BOS 200®, used the following site-specific characteristics and design criteria of the application to estimate the concentrations of ingredients of concern for this application:

- The excavation area is approximately 4,800 square feet
- The open excavation contains approximately 1 foot of standing groundwater
- The default porosity value of the silty sand is 0.3
- LTE will apply 1,000 pounds of product.

Based on these assumptions and the composition of BOS 200®, RPI estimated concentrations of ingredients of concern as shown on Table 3. The remaining ingredients are activated carbon, calcium from the gypsum, and a proprietary blend of microbes.

LTE compared the ingredients of BOS 200® and associated by-products of the remediation process to the list of constituents identified in Subsections A and B of 20.6.2.3103 NMAC. The only constituents that are included in BOS 200® are nitrate, sulfate, chloride, and iron. These concentrations do not exceed NMWQCC standards (Table 4). Additionally, there are not enough water-soluble salts in BOS 200® given the parameters of this application to exceed 1,000 ppm total dissolved solids (TDS).

Once added to the groundwater, the BOS 200® application will migrate downgradient as part of normal groundwater flow behavior. However, the ingredients of concern will not exceed

NMWQCC standards. Additionally, the BOS 200® application will help prevent migration of petroleum hydrocarbon impacts by remediating the source.

20.6.2.3106C (2)

Groundwater monitoring wells were installed previously to address impacted groundwater unrelated to the J-Vent. Currently there are six existing monitoring wells (MW-3, MW-9, MW-10, MW-11, MW-12, and TMW-1) at the Site. These monitoring wells were installed north, east, and west of the J-Vent as part of the Dogie North Pit groundwater remediation (NMOCD Administrative/Environmental Order 3RP-313). Monitoring of these wells is no longer performed. Depth to groundwater is approximately 6 feet bgs and groundwater flow direction is toward the northwest based on previous groundwater monitoring events. Groundwater quality was analyzed from a sample collected on December 17, 1997 from monitoring well MW-1, which appears to have not been impacted from releases associated with operations at the Site. The approximate location of former MW-1 is depicted on Figure 2. The laboratory analytical results are included on Table 4 as background water quality data and indicate the sulfate concentration is 889 milligrams per liter (mg/l) and total dissolved solids (TDS) are 1,983 mg/l. The background concentrations indicate that sulfate and TDS naturally exceed the NMWQCC standards of 600 mg/l and 1,000 mg/l, respectively.

It should be noted that sulfate concentrations already exceed the NMWQCC standard at the Site. The addition of sulfate through the BOS 200® application may not increase sulfate concentrations above existing concentrations. Chloride was detected in former monitoring well MW-1 at a concentration of 13.6 mg/l; therefore, an additional 1.15 parts per million (ppm) from the BOS 200® application will not cause the chloride concentration to exceed the NMWQCC standard of 250 mg/l. Nitrate and iron concentrations were not analyzed in the groundwater sample from MW-1; however, the concentrations estimated to be added through the BOS 200® application (6.6 mg/l and 0.4 mg/l respectively) do not exceed the NMWQCC standards of 10 mg/l for nitrate and 1 mg/l for iron.

20.6.2.3106C (4)

The Site is located within the Largo Canyon floodplain. Excessive precipitation, such as a 100-year flood event could result in flooding of the Site.

20.6.2.3106C (5)

Following the BOS 200® application and backfilling, LTE proposes to install four groundwater monitoring wells to monitor groundwater quality (Figure 3). The monitoring wells will be constructed of schedule 40, two-inch diameter polyvinyl-chloride (PVC) and will include 15 feet of 0.01-inch machine slotted flush-threaded PVC well screen. At least ten feet of screen will be set beneath the water table and approximately three feet above to allow for seasonal fluctuations and a proper seal during well construction. A clean 10-20 grade silica sand gravel pack will be placed from the bottom of the boring to two feet above the top of the screen. One foot of 3/8-inch natural bentonite chips will be set above the gravel pack to the surface and completed with a

locking protective steel casing. Wells located within or near vehicle right-of-ways will be surrounded by three protective posts to prevent vehicle impact to the well. The new wells will be surveyed after construction. Top-of-casing elevations will be determined to an accuracy of no less than plus or minus 0.01 feet so that groundwater flow direction and gradient can be determined.

Following installation of monitoring wells, each new well will be developed utilizing a clean, disposable PVC bailer. LTE will purge fluid until the pH, specific conductivity and temperature is stabilized and turbidity is reduced to the greatest extent possible. All purge water will be collected and properly disposed of in accordance with applicable regulations.

Post-excavation groundwater monitoring will be conducted quarterly with the goal of observing eight consecutive quarters with analytical results in compliance with NMWQCC standards. Results will be presented in subsequent monitoring reports. Depth to water and total depth of the wells will be measured with a Keck oil-water interface probe. The interface probe will be decontaminated with Aloconox™ soap and rinsed with de-ionized water prior to each measurement. A minimum of three casing volumes will be removed from each well while pH, specific conductivity and temperature are monitored for stabilization. Once these parameters stabilize, the wells will be sampled by filling three pre-cleaned and pre-preserved 40 milliliter (ml) glass vials with zero headspace. The groundwater samples will be shipped on ice to a laboratory and analyzed for BTEX according to USEPA Method 8021B. Additionally, sulfate, chloride, iron, nitrate, and TDS will be analyzed to monitor concentrations in groundwater and demonstrate eventual consumption of the electron acceptors. Strict chain-of-custody procedures will be followed during transport of the samples to the laboratory. Groundwater will be monitored quarterly until eight consecutive quarters show results that are below NMWQCC standards.

Although metabolic by-products are likely to occur, acetate, lactate, formate, butyrate, isobutyrate, pyruvate, and methane are not regulated by NMWQCC and will not be monitored. Concentrations are not expected to be significantly elevated.

Quarterly groundwater monitoring will be documented and submitted in annual reports to the NMOCD. Reports will include groundwater elevations, relevant figures including site location and potentiometric surface maps, and analytical results. The initial annual report will include soil boring and monitoring well completion logs as well as cross sections.

20.6.2.3106C (6)

Shallow groundwater occurs at approximately 6 feet bgs. Depth to bedrock is unknown.

20.6.2.3106C (7)

See Sections 20.6.2.3106C (1), 20.6.2.3106C (3), and 20.6.2.3106C (5).

20.6.2.3106C (8)

No injection wells are being installed.

If you have any questions or comments regarding the scope of work, please do not hesitate to contact me at (970) 385-1096 or via email at aager@ltenv.com. You may also contact Matt Webre at (505) 632-4442 or at matt.webre@williams.com.

Sincerely,

LT ENVIRONMENTAL, INC.

Ashley L. Ager

Ashley L. Ager, M.S.
Senior Geologist

Attachments (9)

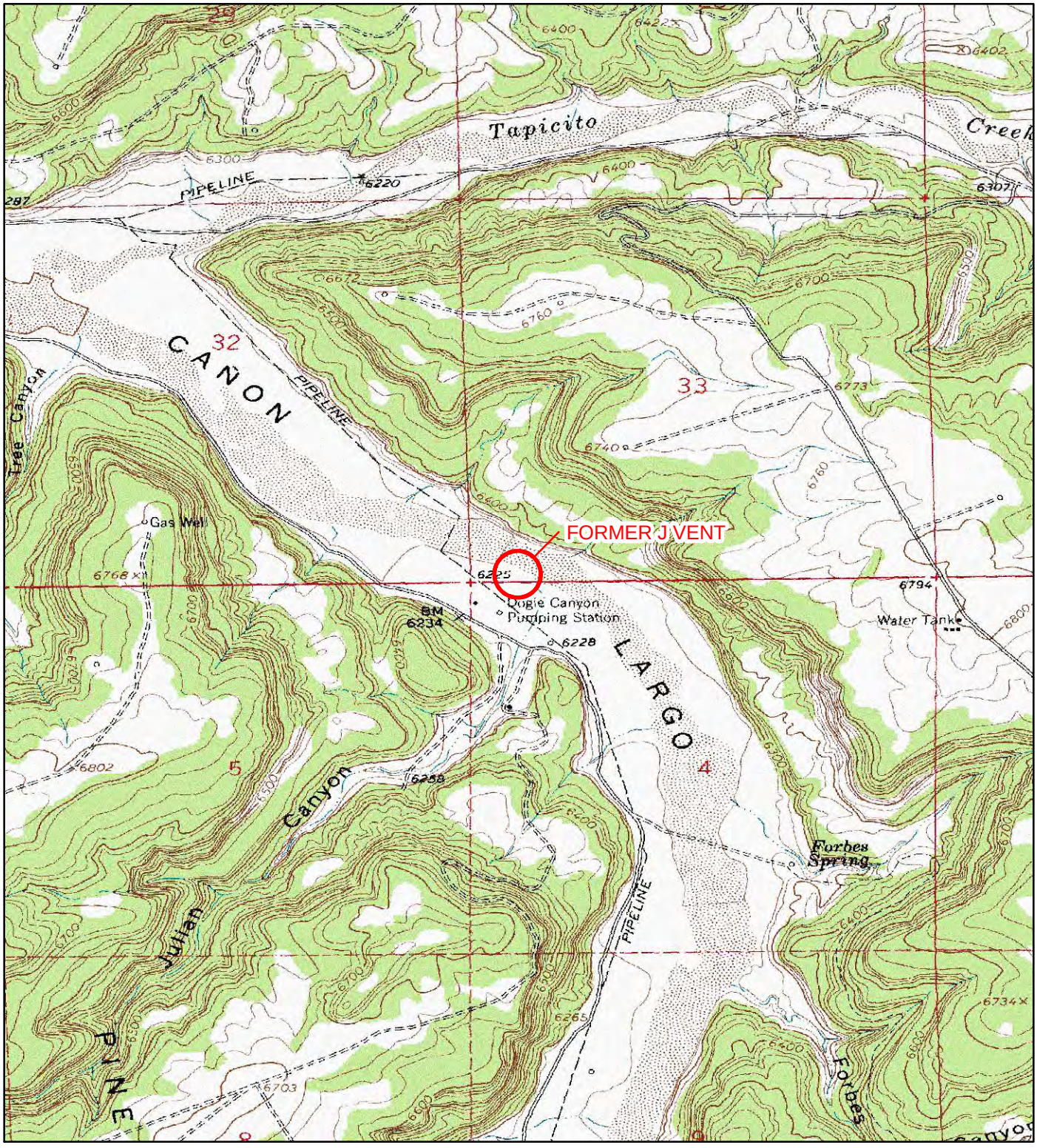
Figure 1 – Site Location Map
Figure 2 – Site Map
Figure 3 – Proposed Monitoring Well Locations

Table 1 – Soil Analytical Results
Table 2 – Groundwater Analytical Results
Table 3 – Concentrations of Ionic Ingredients of BOS 200® Amendment When Applied at the Site
Table 4 – Composition of BOS 200® Amendment Compared to NMWQCC Standards and Background Water Quality

Attachment A – Laboratory Analytical Reports

Attachment B - BOS 200® Material Safety Data Sheet

FIGURES



LEGEND

SITE LOCATION

IMAGE COURTESY OF USDA/NRCS, VARIOUS DATES

0 2,000 4,000

Feet

N

FIGURE 1
SITE LOCATION MAP
FORMER J VENT
DOGIE COMPRESSOR STATION
RIO ARRIBA COUNTY, NEW MEXICO
WILLIAMS FOUR CORNERS, LLC

P:\Williams Four Corners\GIS\MXD\034012001_DOGIE\034012002_DOGIE_FIG01_SL_MAP.mxd

IMAGE COURTESY OF ESRI/BING MAPS

LEGEND

- FORMER MONITORING WELL
- EXISTING MONITORING WELL
- GRAB SAMPLE FROM EXCAVATION
- FENCE
- FORMER J VENT
- EXCAVATION EXTENT

0 100 200
Feet

N

FIGURE 2
SITE MAP
FORMER J VENT
DOGIE COMPRESSOR STATION
RIO ARRIBA COUNTY, NEW MEXICO
WILLIAMS FOUR CORNERS, LLC

P:\Williams Four Corners\GIS\MXD\034012001_DOGIE\034012002_DOGIE_FIG02_SITE_MAP.mxd

IMAGE COURTESY OF ESRI/BING MAPS

LEGEND

- PROPOSED MONITORING WELL
- FENCE
- FORMER J VENT
- EXCAVATION EXTENT

0 100 200

Feet

N

FIGURE 3
PROPOSED MONITORING WELLS
FORMER J VENT
DOGIE COMPRESSOR STATION
RIO ARRIBA COUNTY, NEW MEXICO
WILLIAMS FOUR CORNERS, LLC

P:\Williams Four Corners\GIS\MXD\034012001_DOGIE\034012002_DOGIE_FIG03_PROP_MW.mxd

TABLES

TABLE 1

EXCAVATION SOIL ANALYTICAL RESULTS
FORMER J-VENT
WILLIAMS FOUR CORNERS, LLC

Sample ID	Date Sampled	Benzene (mg/kg)	Toluene (mg/kg)	Ethylbenzene (mg/kg)	Total Xylenes (mg/kg)	Total BTEX (mg/kg)	GRO (mg/kg)	DRO (mg/kg)	MRO (mg/kg)	TPH (mg/kg)
North Wall	9/17/2012	< 0.050	< 0.050	< 0.050	< 0.10	0 - < 0.25	< 5.0	< 9.6	< 48	0 - < 62.6
South Wall	9/17/2012	< 0.050	< 0.050	< 0.050	< 0.10	0 - < 0.25	< 5.0	< 9.9	< 50	0 - < 64.9
East Wall	9/17/2012	< 0.050	< 0.050	< 0.050	< 0.10	0 - < 0.25	< 5.0	< 9.7	< 49	0 - < 63.7
West Wall	9/17/2012	< 0.050	< 0.050	< 0.050	< 0.10	0 - < 0.25	< 5.0	< 10.0	< 50	0 - < 65.0
NMOCD Standard		**10**				**50**				**100**

Notes:
BTEX - benzene, toluene, ethylbenzene, and total xylenes
DRO - diesel range organics
GRO - gasoline range organics
mg/kg - milligrams per kilogram
MRO - motor oil range organics
NMOCD - New Mexico Oil Conservation Commission
TPH - total petroleum hydrocarbons
< - indicates result is less than the stated laboratory method detection limit

TABLE 2

EXCAVATION GROUNDWATER ANALYTICAL RESULTS
FORMER J-VENT
WILLIAMS FOUR CORNERS, LLC

Sample ID	Date Sampled	Benzene (µg/l)	Toluene (µg/l)	Ethylbenzene (µg/l)	Total Xylenes (µg/l)
GW-1	9/17/2012	**630**	**2,800**	190	**2,000**
NMWQCC Standard		**10**	**750**	**750**	**620**

Notes:

NMWQCC - New Mexico Water Quality Control Commission

µg/l - micrograms per liter

< - indicates result is less than the stated laboratory method detection limit

Bold - indicates sample exceeds NMWQCC standard

TABLE 3

ESTIMATED SITE-SPECIFIC CONCENTRATIONS OF BOS 200® INGREDIENTS
FORMER J-VENT
WILLIAMS FOUR CORNERS, LLC

Constituent	BOS 200® Application (ppm)
Nitrate:Nitrogen	6.6
Chloride	1.15
Sulfate	210
Iron	0.8
Potassium	1.26
Phosphate	ND

Notes:
ND - Not Detectable
ppm - parts per million
Activated carbon, gypsum, and microbes are the primary constituents of BOS 200®
Concentrations listed above are estimated based on the following assumptions:
- The excavation area is approximately 4,800 square feet
- The open excavation contains approximately 1 foot of standing groundwater
- The default porosity value of the silty sand is 0.3
- Application of 1,000 pounds of BOS 200®

TABLE 4

COMPOSITION OF BOS 200® AMENDMENT COMPARED TO NMWQCC STANDARDS AND BACKGROUND WATER QUALITY FORMER J-VENT WILLIAMS FOUR CORNERS, LLC

Subsection A & B of 20.6.2.3103 Constituent	NMWQCC Standard (mg/l)	BOS 200® Application (ppm)	Background Sample (MW-1) September 17, 1997
Arsenic (As)	0.1	NA	NT
Barium (Ba)	1.0	NA	NT
Cadmium (Cd)	0.01	NA	NT
Chromium (Cr)	0.05	NA	NT
Cyanide (CN)	0.2	NA	NT
Fluoride (F)	1.6	NA	NT
Lead (Pb)	0.05	NA	NT
Total Mercury (Hg)	0.002	NA	NT
Nitrate (NO3 as N)	10	6.6	NT
Selenium (Se	0.05	NA	NT
Silver (Ag)	0.05	NA	NT
Uranium (U)	0.03	NA	NT
Benzene	0.01	NA	<0.0002
Polychlorinated biphenyls (PCB's)	0.001	NA	NT
Toluene	0.75	NA	<0.0002
Carbon Tetrachloride	0.01	NA	NT
1,2-dichloroethane (EDC)	0.01	NA	NT
1,1-dichloroethylene (1,1-DCE)	0.005	NA	NT
1,1,2,2-tetrachloroethylene (PCE)	0.02	NA	NT
1,1,2-trichloroethylene (TCE)	0.1	NA	NT
ethylbenzene	0.75	NA	<0.0002
total xylenes	0.62	NA	<0.0004
methylene chloride	0.1	NA	NT
chloroform	0.1	NA	NT
1,1-dichloroethane	0.025	NA	NT
ethylene dibromide (EDB)	0.0001	NA	NT
1,1,1-trichloroethane	0.06	NA	NT
1,1,2-tetrachloroethane	0.01	NA	NT
1,1,2,2-tetrachloroethane	0.01	NA	NT
vinyl chloride	0.001	NA	NT
PAHs: total naphthalene plus monomethylnaphthalenes	0.03	NA	NT
benzo-a-pyrene	0.0007	NA	NT
Chloride (Cl)	250	1.15	13.6
Copper (Cu)	1.0	NA	NT
Iron (Fe)	1.0	0.4	NT
Manganese (Mn)	0.2	NA	NT
Phenols	0.005	NA	NT
Sulfate (SO4)	600	210	**889**
Total Dissolved Solids (TDS)	1,000	<1,000	**1,983**
Zinc (Zn)	10	NA	NT
pH	between 6 and 9	NA	7.66

Notes:
NA - Not Applicable
NMWQCC - New Mexico Water Quality Control Commission
NT - Not Tested
mg/l - milligrams per liter
ppm - parts per million
< - indicates result is less than the stated laboratory method detection limit
Bold - indicates sample exceeds NMWQCC standard
Concentrations for BOS 200® listed above are estimated based on the following assumptions:
- The excavation area is approximately 4,800 square feet
- The open excavation contains approximately 1 foot of standing groundwater
- The default porosity value of the silty sand is 0.3
- Application of 1,000 pounds of BOS 200®

ATTACHMENT A

LABORATORY ANALYTICAL REPORTS

Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com

September 19, 2012

Ashley Ager

LTE
2243 Main Ave Suite 3
Durango, CO 81301
TEL: (970) 946-1093
FAX

RE: J Vent OrderNo.: 1209694

Dear Ashley Ager:

Hall Environmental Analysis Laboratory received 4 sample(s) on 9/18/2012 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent. To access our accredited tests please go to www.hallenvironmental.com or the state specific web sites. See the sample checklist and/or the Chain of Custody for information regarding the sample receipt temperature and preservation. Data qualifiers or a narrative will be provided if the sample analysis or analytical quality control parameters require a flag. All samples are reported as received unless otherwise indicated. Lab measurement of analytes considered field parameters that require analysis within 15 minutes of sampling such as pH and residual chlorine are qualified as being analyzed outside of the recommended holding time.

Please don't hesitate to contact HEAL for any additional information or clarifications.

Sincerely,

Andy Freeman

Laboratory Manager

4901 Hawkins NE
Albuquerque, NM 87109

Analytical Report
Lab Order **1209694**
Date Reported: **9/19/2012**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: LTE
Client Sample ID: North Walll
Project: J Vent
Collection Date: 9/17/2012 10:27:00 AM
Lab ID: 1209694-001
Matrix: MEOH (SOIL)
Received Date: 9/18/2012 10:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015B: DIESEL RANGE ORGANICS						Analyst: **JMP**
Diesel Range Organics (DRO)	ND	9.6		mg/Kg	1	9/19/2012 7:30:09 AM
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	9/19/2012 7:30:09 AM
Surr: DNOP	111	77.6-140		%REC	1	9/19/2012 7:30:09 AM
EPA METHOD 8015B: GASOLINE RANGE						Analyst: **NSB**
Gasoline Range Organics (GRO)	ND	5.0		mg/Kg	1	9/18/2012 2:01:25 PM
Surr: BFB	100	84-116		%REC	1	9/18/2012 2:01:25 PM
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**
Benzene	ND	0.050		mg/Kg	1	9/18/2012 2:01:25 PM
Toluene	ND	0.050		mg/Kg	1	9/18/2012 2:01:25 PM
Ethylbenzene	ND	0.050		mg/Kg	1	9/18/2012 2:01:25 PM
Xylenes, Total	ND	0.10		mg/Kg	1	9/18/2012 2:01:25 PM
Surr: 4-Bromofluorobenzene	99.1	80-120		%REC	1	9/18/2012 2:01:25 PM

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
P	Sample pH greater than 2	R	RPD outside accepted recovery limits
RL	Reporting Detection Limit	S	Spike Recovery outside accepted recovery limits

Hall Environmental Analysis Laboratory, Inc.

CLIENT: LTE
Client Sample ID: South Wall
Project: J Vent
Collection Date: 9/17/2012 10:33:00 AM
Lab ID: 1209694-002
Matrix: MEOH (SOIL)
Received Date: 9/18/2012 10:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015B: DIESEL RANGE ORGANICS						Analyst: **JMP**
Diesel Range Organics (DRO)	ND	9.9		mg/Kg	1	9/19/2012 7:51:37 AM
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	9/19/2012 7:51:37 AM
Surr: DNOP	104	77.6-140		%REC	1	9/19/2012 7:51:37 AM
EPA METHOD 8015B: GASOLINE RANGE						Analyst: **NSB**
Gasoline Range Organics (GRO)	ND	5.0		mg/Kg	1	9/18/2012 2:30:11 PM
Surr: BFB	100	84-116		%REC	1	9/18/2012 2:30:11 PM
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**
Benzene	ND	0.050		mg/Kg	1	9/18/2012 2:30:11 PM
Toluene	ND	0.050		mg/Kg	1	9/18/2012 2:30:11 PM
Ethylbenzene	ND	0.050		mg/Kg	1	9/18/2012 2:30:11 PM
Xylenes, Total	ND	0.10		mg/Kg	1	9/18/2012 2:30:11 PM
Surr: 4-Bromofluorobenzene	102	80-120		%REC	1	9/18/2012 2:30:11 PM

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
P	Sample pH greater than 2	R	RPD outside accepted recovery limits
RL	Reporting Detection Limit	S	Spike Recovery outside accepted recovery limits

Hall Environmental Analysis Laboratory, Inc.

CLIENT: LTE
Client Sample ID: East Wall
Project: J Vent
Collection Date: 9/17/2012 9:40:00 AM
Lab ID: 1209694-003
Matrix: MEOH (SOIL)
Received Date: 9/18/2012 10:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015B: DIESEL RANGE ORGANICS						Analyst: **JMP**
Diesel Range Organics (DRO)	ND	9.7		mg/Kg	1	9/19/2012 8:13:18 AM
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	9/19/2012 8:13:18 AM
Surr: DNOP	109	77.6-140		%REC	1	9/19/2012 8:13:18 AM
EPA METHOD 8015B: GASOLINE RANGE						Analyst: **NSB**
Gasoline Range Organics (GRO)	ND	5.0		mg/Kg	1	9/18/2012 2:59:02 PM
Surr: BFB	101	84-116		%REC	1	9/18/2012 2:59:02 PM
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**
Benzene	ND	0.050		mg/Kg	1	9/18/2012 2:59:02 PM
Toluene	ND	0.050		mg/Kg	1	9/18/2012 2:59:02 PM
Ethylbenzene	ND	0.050		mg/Kg	1	9/18/2012 2:59:02 PM
Xylenes, Total	ND	0.10		mg/Kg	1	9/18/2012 2:59:02 PM
Surr: 4-Bromofluorobenzene	102	80-120		%REC	1	9/18/2012 2:59:02 PM

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
P	Sample pH greater than 2	R	RPD outside accepted recovery limits
RL	Reporting Detection Limit	S	Spike Recovery outside accepted recovery limits

Hall Environmental Analysis Laboratory, Inc.

CLIENT: LTE
Client Sample ID: West Wall
Project: J Vent
Collection Date: 9/17/2012 10:30:00 AM
Lab ID: 1209694-004
Matrix: MEOH (SOIL)
Received Date: 9/18/2012 10:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015B: DIESEL RANGE ORGANICS						Analyst: **JMP**
Diesel Range Organics (DRO)	ND	10		mg/Kg	1	9/19/2012 8:34:50 AM
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	9/19/2012 8:34:50 AM
Surr: DNOP	111	77.6-140		%REC	1	9/19/2012 8:34:50 AM
EPA METHOD 8015B: GASOLINE RANGE						Analyst: **NSB**
Gasoline Range Organics (GRO)	ND	5.0		mg/Kg	1	9/18/2012 3:27:52 PM
Surr: BFB	101	84-116		%REC	1	9/18/2012 3:27:52 PM
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**
Benzene	ND	0.050		mg/Kg	1	9/18/2012 3:27:52 PM
Toluene	ND	0.050		mg/Kg	1	9/18/2012 3:27:52 PM
Ethylbenzene	ND	0.050		mg/Kg	1	9/18/2012 3:27:52 PM
Xylenes, Total	ND	0.10		mg/Kg	1	9/18/2012 3:27:52 PM
Surr: 4-Bromofluorobenzene	103	80-120		%REC	1	9/18/2012 3:27:52 PM

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
P	Sample pH greater than 2	R	RPD outside accepted recovery limits
RL	Reporting Detection Limit	S	Spike Recovery outside accepted recovery limits

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1209694**

19-Sep-12

Client: LTE

Project: J Vent

Sample ID	**MB-3802**	SampType:	**MBLK**		TestCode:	**EPA Method 8015B: Diesel Range Organics**				
Client ID:	**PBS**	Batch ID:	**3802**		RunNo:	**5617**				
Prep Date:	**9/18/2012**	Analysis Date:	**9/19/2012**		SeqNo:	**161020**	Units:	**mg/Kg**		

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	ND	10								
Motor Oil Range Organics (MRO)	ND	50								
Surr: DNOP	10		10.00		103	77.6	140			

Sample ID	**LCS-3802**	SampType:	**LCS**		TestCode:	**EPA Method 8015B: Diesel Range Organics**				
Client ID:	**LCSS**	Batch ID:	**3802**		RunNo:	**5617**				
Prep Date:	**9/18/2012**	Analysis Date:	**9/19/2012**		SeqNo:	**161021**	Units:	**mg/Kg**		

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	29	10	50.00	0	58.5	52.6	130			
Surr: DNOP	4.2		5.000		84.2	77.6	140			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
P	Sample pH greater than 2	R	RPD outside accepted recovery limits

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1209694**

19-Sep-12

Client: LTE

Project: J Vent

Sample ID	**MB-3765**	SampType:	**MBLK**	TestCode:	**EPA Method 8015B: Gasoline Range**					
Client ID:	**PBS**	Batch ID:	**3765**	RunNo:	**5612**					
Prep Date:	**9/14/2012**	Analysis Date:	**9/18/2012**	SeqNo:	**160814**	Units:	**mg/Kg**			

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	ND	5.0								
Surr: BFB	990		1000		99.3	84	116			

Sample ID	**LCS-3765**	SampType:	**LCS**	TestCode:	**EPA Method 8015B: Gasoline Range**					
Client ID:	**LCSS**	Batch ID:	**3765**	RunNo:	**5612**					
Prep Date:	**9/14/2012**	Analysis Date:	**9/18/2012**	SeqNo:	**160815**	Units:	**mg/Kg**			

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	25	5.0	25.00	0	101	74	117			
Surr: BFB	1000		1000		103	84	116			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
P	Sample pH greater than 2	R	RPD outside accepted recovery limits

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1209694**

19-Sep-12

Client: LTE

Project: J Vent

Sample ID	**MB-3765**	SampType:	**MBLK**	TestCode:	**EPA Method 8021B: Volatiles**					
Client ID:	**PBS**	Batch ID:	**3765**	RunNo:	**5612**					
Prep Date:	**9/14/2012**	Analysis Date:	**9/18/2012**	SeqNo:	**160837**	Units:	**mg/Kg**			

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	0.050								
Toluene	ND	0.050								
Ethylbenzene	ND	0.050								
Xylenes, Total	ND	0.10								
Surr: 4-Bromofluorobenzene	1.0		1.000		102	80	120			

Sample ID	**LCS-3765**	SampType:	**LCS**	TestCode:	**EPA Method 8021B: Volatiles**					
Client ID:	**LCSS**	Batch ID:	**3765**	RunNo:	**5612**					
Prep Date:	**9/14/2012**	Analysis Date:	**9/18/2012**	SeqNo:	**160838**	Units:	**mg/Kg**			

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	1.0	0.050	1.000	0	100	76.3	117			
Toluene	1.0	0.050	1.000	0	101	80	120			
Ethylbenzene	1.0	0.050	1.000	0	103	77	116			
Xylenes, Total	3.1	0.10	3.000	0	104	76.7	117			
Surr: 4-Bromofluorobenzene	1.1		1.000		109	80	120			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
P	Sample pH greater than 2	R	RPD outside accepted recovery limits

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1209694**

19-Sep-12

Client: LTE

Project: J Vent

Sample ID **mb-3765**	SampType: **MBLK**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **PBS**	Batch ID: **3765**	RunNo: **5580**
Prep Date: **9/14/2012**	Analysis Date: **9/17/2012**	SeqNo: **160199** Units: **%REC**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: 1,2-Dichloroethane-d4	0.43		0.5000		85.0	70	130			
Surr: 4-Bromofluorobenzene	0.42		0.5000		83.7	70	130			
Surr: Dibromofluoromethane	0.43		0.5000		85.9	70	130			
Surr: Toluene-d8	0.38		0.5000		75.9	70	130			

Sample ID **lcs-3765**	SampType: **LCS**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **LCSS**	Batch ID: **3765**	RunNo: **5580**
Prep Date: **9/14/2012**	Analysis Date: **9/17/2012**	SeqNo: **160219** Units: **%REC**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: 1,2-Dichloroethane-d4	0.42		0.5000		83.5	70	130			
Surr: 4-Bromofluorobenzene	0.42		0.5000		83.5	70	130			
Surr: Dibromofluoromethane	0.43		0.5000		86.8	70	130			
Surr: Toluene-d8	0.36		0.5000		72.6	70	130			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
P	Sample pH greater than 2	R	RPD outside accepted recovery limits

HALL ENVIRONMENTAL ANALYSIS LABORATORY

Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com

Sample Log-In Check List

Client Name: LTE Work Order Number: 1209694

Received by/date: LM 09/18/12

Logged By: **Michelle Garcia** 9/18/2012 10:00:00 AM Michelle Garcia

Completed By: **Michelle Garcia** 9/18/2012 10:25:57 AM Michelle Garcia

Reviewed By: 09/18/12

Chain of Custody

1. Were seals intact? Yes ☐ No ☐ Not Present ☑
2. Is Chain of Custody complete? Yes ☑ No ☐ Not Present ☐
3. How was the sample delivered? Courier

Log In

4. Coolers are present? (see 19. for cooler specific information) Yes ☑ No ☐ NA ☐
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. VOA vials have zero headspace? Yes ☐ No ☐ No VOA Vials ☑
12. Were any sample containers received broken? Yes ☐ No ☑
13. Does paperwork match bottle labels? (Note discrepancies on chain of custody) Yes ☑ No ☐
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? (If no, notify customer for authorization.) Yes ☑ No ☐

# of preserved bottles checked for pH: _____ (<2 or >12 unless noted)

Adjusted? _____

Checked by: _____

Special Handling (if applicable)

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

Person Notified: _____ Date: _____

By Whom: _____ Via: ☐ eMail ☐ Phone ☐ Fax ☐ In Person

Regarding: _____

Client Instructions: _____

18. Additional remarks:

19. **Cooler Information**

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	1.8	Good	Yes			

Chain-of-Custody Record

Client: LTE

Mailing Address: 2243 Main Ave #3
Durango, CO 81301

Phone #: 970 385 1096

email or Fax#:

QA/QC Package:
☒ Standard ☐ Level 4 (Full Validation)

Accreditation
☐ NELAP ☐ Other _____

☐ EDD (Type) _____

Turn-Around Time:
☐ Standard ☒ Rush 24 hrs

Project Name:
J Vent

Project #:

Project Manager:
Ashley Ager

Sampler: Ashley Ager
On Ice: ☒ Yes ☐ No
Sample Temperature: 1.8

HALL ENVIRONMENTAL ANALYSIS LABORATORY
www.hallenvironmental.com
4901 Hawkins NE - Albuquerque, NM 87109
Tel. 505-345-3975 Fax 505-345-4107

Date	Time	Matrix	Sample Request ID	Container Type and #	Preservative Type	HEAL No 1209094	BTEX + ~~MTBE + TMB's~~ (8021)	BTEX + MTBE + TPH (Gas only)	TPH Method 8015B (Gas/Diesel) + MRO	TPH (Method 418.1)	EDB (Method 504.1)	8310 (PNA or PAH)	RCRA 8 Metals	Anions (F,Cl,NO_3,NO_2,PO_4,SO_4)	8081 Pesticides / 8082 PCB's	8260B (VOA)	8270 (Semi-VOA)					Air Bubbles (Y or N)
9-17-12	10:27	soil	North Wall	4oz/1	cool	-001	✓		✓													
9-17-12	10:33	soil	South Wall	4oz/1	cool	-002	✓		✓													
9-17-12	9:40	soil	East Wall	4oz/1	cool	-003	✓		✓													
9-17-12	10:30	soil	West Wall	4oz/1	cool	-004	✓		✓													
~~9-17-12~~		soil		4oz/1	cool	nd																

Date:	Time:	Relinquished by:	Received by:	Date	Time
9-17-12	13:50	Ashley L Ager	Christie Walker	9/17/12	1350
9/17/12	1740	Christie Walker		09/18/12	1000

Remarks:

If necessary, samples submitted to Hall Environmental may be subcontracted to other accredited laboratories. This serves as notice of this possibility. Any sub-contracted data will be clearly notated on the analytical report.

Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com

September 21, 2012

Ashley Ager

LTE
2243 Main Ave Suite 3
Durango, CO 81301
TEL: (970) 946-1093
FAX

RE: J Vent OrderNo.: 1209693

Dear Ashley Ager:

Hall Environmental Analysis Laboratory received 1 sample(s) on 9/18/2012 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent. To access our accredited tests please go to www.hallenvironmental.com or the state specific web sites. See the sample checklist and/or the Chain of Custody for information regarding the sample receipt temperature and preservation. Data qualifiers or a narrative will be provided if the sample analysis or analytical quality control parameters require a flag. All samples are reported as received unless otherwise indicated. Lab measurement of analytes considered field parameters that require analysis within 15 minutes of sampling such as pH and residual chlorine are qualified as being analyzed outside of the recommended holding time.

Please don't hesitate to contact HEAL for any additional information or clarifications.

Sincerely,

Andy Freeman

Laboratory Manager

4901 Hawkins NE
Albuquerque, NM 87109

Analytical Report
Lab Order **1209693**
Date Reported: **9/21/2012**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: LTE
Client Sample ID: GW-1
Project: J Vent
Collection Date: 9/17/2012 12:11:00 PM
Lab ID: 1209693-001
Matrix: AQUEOUS
Received Date: 9/18/2012 10:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**
Benzene	630	50		µg/L	50	9/18/2012 12:38:57 PM
Toluene	2800	50		µg/L	50	9/18/2012 12:38:57 PM
Ethylbenzene	190	50		µg/L	50	9/18/2012 12:38:57 PM
Xylenes, Total	2000	100		µg/L	50	9/18/2012 12:38:57 PM
Surr: 4-Bromofluorobenzene	102	69.7-152		%REC	50	9/18/2012 12:38:57 PM

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
P	Sample pH greater than 2	R	RPD outside accepted recovery limits
RL	Reporting Detection Limit	S	Spike Recovery outside accepted recovery limits

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1209693**

21-Sep-12

Client: LTE

Project: J Vent

Sample ID	**5ML RB**	SampType:	**MBLK**	TestCode:	**EPA Method 8015B: Gasoline Range**					
Client ID:	**PBW**	Batch ID:	**R5614**	RunNo:	**5614**					
Prep Date:		Analysis Date:	**9/18/2012**	SeqNo:	**160860**	Units:	**%REC**			
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: BFB		19		20.00		93.2	69.8	119			

Sample ID	**2.5UG GRO LCS**	SampType:	**LCS**	TestCode:	**EPA Method 8015B: Gasoline Range**					
Client ID:	**LCSW**	Batch ID:	**R5614**	RunNo:	**5614**					
Prep Date:		Analysis Date:	**9/18/2012**	SeqNo:	**160861**	Units:	**%REC**			
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: BFB		21		20.00		104	69.8	119			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
P	Sample pH greater than 2	R	RPD outside accepted recovery limits

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1209693**

21-Sep-12

Client: LTE

Project: J Vent

Sample ID	**5ML RB**	SampType:	**MBLK**	TestCode:	**EPA Method 8021B: Volatiles**					
Client ID:	**PBW**	Batch ID:	**R5614**	RunNo:	**5614**					
Prep Date:		Analysis Date:	**9/18/2012**	SeqNo:	**160875**	Units:	**µg/L**			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	1.0								
Toluene	ND	1.0								
Ethylbenzene	ND	1.0								
Xylenes, Total	ND	2.0								
Surr: 4-Bromofluorobenzene	19		20.00		94.2	69.7	152			

Sample ID	**100NG BTEX LCS**	SampType:	**LCS**	TestCode:	**EPA Method 8021B: Volatiles**					
Client ID:	**LCSW**	Batch ID:	**R5614**	RunNo:	**5614**					
Prep Date:		Analysis Date:	**9/18/2012**	SeqNo:	**160876**	Units:	**µg/L**			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	20	1.0	20.00	0	98.5	80	120			
Toluene	20	1.0	20.00	0	102	80	120			
Ethylbenzene	21	1.0	20.00	0	105	80	120			
Xylenes, Total	64	2.0	60.00	0	107	80	120			
Surr: 4-Bromofluorobenzene	19		20.00		92.6	69.7	152			

Sample ID	**1209693-001AMS**	SampType:	**MS**	TestCode:	**EPA Method 8021B: Volatiles**					
Client ID:	**GW-1**	Batch ID:	**R5614**	RunNo:	**5614**					
Prep Date:		Analysis Date:	**9/18/2012**	SeqNo:	**160881**	Units:	**µg/L**			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	1700	50	1000	626.5	104	74.1	124			
Toluene	4000	50	1000	2847	112	75.2	124			
Ethylbenzene	1200	50	1000	187.4	105	69	125			
Xylenes, Total	5300	100	3000	1997	109	73.1	126			
Surr: 4-Bromofluorobenzene	930		1000		93.3	69.7	152			

Sample ID	**1209693-001AMSD**	SampType:	**MSD**	TestCode:	**EPA Method 8021B: Volatiles**					
Client ID:	**GW-1**	Batch ID:	**R5614**	RunNo:	**5614**					
Prep Date:		Analysis Date:	**9/18/2012**	SeqNo:	**160882**	Units:	**µg/L**			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	1600	50	1000	626.5	100	74.1	124	2.08	11.2	
Toluene	3900	50	1000	2847	110	75.2	124	0.523	11.9	
Ethylbenzene	1200	50	1000	187.4	103	69	125	1.91	13.5	
Xylenes, Total	5200	100	3000	1997	106	73.1	126	1.63	13	
Surr: 4-Bromofluorobenzene	1000		1000		99.8	69.7	152	0	0	

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
P	Sample pH greater than 2	R	RPD outside accepted recovery limits

HALL ENVIRONMENTAL ANALYSIS LABORATORY

Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com

Sample Log-In Check List

Client Name: LTE

Work Order Number: 1209693

Received by/date: 09/18/12

Logged By: **Lindsay Mangin** 9/18/2012 10:00:00 AM

Completed By: **Lindsay Mangin** 9/18/2012 10:22:24 AM

Reviewed By: 09/18/12

Chain of Custody

1. Were seals intact?	Yes	No	Not Present ✔
2. Is Chain of Custody complete?	Yes ✔	No	Not Present
3. How was the sample delivered?	Courier		

Log In

4. Coolers are present? (see 19. for cooler specific information)	Yes ✔	No	NA
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. VOA vials have zero headspace?	Yes ✔	No	No VOA Vials
12. Were any sample containers received broken?	Yes	No ✔	
13. Does paperwork match bottle labels? (Note discrepancies on chain of custody)	Yes ✔	No	# of preserved bottles checked for pH:
14. Are matrices correctly identified on Chain of Custody?	Yes ✔	No	(<2 or >12 unless noted)
15. Is it clear what analyses were requested?	Yes ✔	No	Adjusted?
16. Were all holding times able to be met? (If no, notify customer for authorization.)	Yes ✔	No	Checked by:

Special Handling (if applicable)

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

Person Notified: _____ Date: _____

By Whom: _____ Via: eMail Phone Fax In Person

Regarding: _____

Client Instructions: _____

18. Additional remarks:

19. **Cooler Information**

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	1.8	Good	Yes			

Chain-of-Custody Record

Client: LTE

Mailing Address: 2243 Main Ave #3
Durango, CO 81301

Phone #: 970 385 1096

email or Fax#:

QA/QC Package:
☒ Standard ☐ Level 4 (Full Validation)

Accreditation
☐ NELAP ☐ Other

☐ EDD (Type)

Turn-Around Time:
☐ Standard ☒ Rush 24 hr

Project Name:
J Vint

Project #:

Project Manager:
Ashley Ager

Sampler: Ashley Ager

On Ice: ☒ Yes ☐ No

Sample Temperature: 1.8

HALL ENVIRONMENTAL ANALYSIS LABORATORY
www.hallenvironmental.com
4901 Hawkins NE - Albuquerque, NM 87109
Tel. 505-345-3975 Fax 505-345-4107

Analysis Request

Date	Time	Matrix	Sample Request ID	Container Type and #	Preservative Type	HEAL No. 1209693	BTEX + MTBE + TMB's (8021)	BTEX + MTBE + TPH (Gas only)	TPH Method 8015B (Gas/Diesel)	TPH (Method 418.1)	EDB (Method 504.1)	8310 (PNA or PAH)	RCRA 8 Metals	Anions (F,Cl,NO_3,NO_2,PO_4,SO_4)	8081 Pesticides / 8082 PCB's	8260B (VOA)	8270 (Semi-VOA)	Air Bubbles (Y or N)
9-17-12	12:11	GW	GW-1	40mL/3	HCl	-001	✓											

Date:	Time:	Relinquished by:	Received by:	Date	Time
9-17-12	1351	Ashley L Ager	Christine Walters	9/17/12	1351
9/17/12	1740	Christine Walters		09/18/12	1000

Remarks:

If necessary, samples submitted to Hall Environmental may be subcontracted to other accredited laboratories. This serves as notice of this possibility. Any sub-contracted data will be clearly notated on the analytical report.

ATTACHMENT B

BOS 200® MATERIAL SAFETY DATA SHEET

Material Safety Data Sheet
Trap & Treat® BOS-200®

Section I

Manufacturer's Name *Remediation Products Inc.*	Emergency Telephone Number *303.487.1000*
Address *(Number, Street, City, State, and ZIP Code)* *6390 Joyce Drive, Suite 150 W, Golden, CO 80403*	Telephone Number for Information *303-487-1000*
Prepared by *B. Elliott*	Date Prepared *11/8/2012*
	Signature of Preparer *(optional)*

Section II - Hazard Ingredients/Identity Information

Non-hazardous components are listed at 3 percent (%) or greater. This is not intended to be a complete compositional disclosure.

Hazardous Components (Specific Chemical Identity; Common Name(s))	OSHA PEL	ACGIH TLV	Other Limits Recommended	%*(optional)*
Carbon	5mg/M^3 (respirable)	10mg/M^3 (Total)	N/A	77
Calcium Sulfate (Gypsum)	"	"	N/A	19
N/A = Not Applicable PELs and TLVs are 8-hour TWAs unless otherwise noted.				

Section III - Physical/Chemical Characteristics

Boiling Point	N/A	Specific Gravity (H_2O = 1)	2.33 g/cc real density
Vapor Pressure (mm Hg.)	N/A	Melting Point	Decomposes at 1450°C
Vapor Density (AIR = 1)	N/A	Evaporation Rate (Butyl Acetate = 1)	N/A
Solubility in Water: Negligible			
Appearance and Odor: Black powder. No odor.			

Section IV - Fire and Explosion Hazard Data

Flash Point (Method Used) Not combustible	Flammable Limits	LEL N/A	UEL N/A
Extinguishing Media Flood with plenty of water			
Special Fire Fighting Procedures None			
Unusual Fire and Explosion Hazards			

Contact with strong oxidizer, such as ozone, liquid oxygen, chlorine, permanganate, etc., may result in fire.
NFPA Rating: Health=0; Reactivity=0; Flammability=1

Section V - Reactivity Data

Stability	Unstable		Conditions to Avoid
	Stable	X	None
Incompatibility *(Materials to Avoid)*			
Strong oxidizers, such as ozone, liquid oxygen, chlorine, permanganate, etc., and acids.			
Hazardous Decomposition	May Occur	X	Conditions to Avoid Above 1450° - SO_2 & CaO
	Will Not Occur		

Section VI - Health Hazard Data

Route(s) of Entry:	Inhalation? Yes	Skin? Yes	Ingestion? Yes
Health Hazards *(Acute and Chronic)*			
The effects of long-term, low-level exposures to carbon have not been determined. Safe handling of this material on a long-term basis should emphasize the avoidance of all effects from repetitive acute exposures. Persons subjected to excessive dust will be forced to leave area because of nuisance; i.e., coughing, sneezing and nasal irritation. **CAUTION!!!** This material, when wet, removes oxygen from air causing a severe hazard to workers inside carbon vessels and enclosed or confined spaces. Before entering such an area, sampling and work procedures for low oxygen levels should be taken to ensure ample oxygen availability, observing all local, state, and federal regulations.			
Carcinogenicity:	NTP?	IARC Monographs?	OSHA Regulated?
	N/A	N/A	No
Signs and Symptoms of Exposure			
Effects and Hazards of Eye Contact: The physical nature of this product may produce eye irritation, if exposed to dusting conditions without protective eye equipment. **Effects and Hazards of Skin Contact:** The product is not a primary skin irritant. The primary skin irritation (Rabbit) is 0. **Effects and Hazards of Inhalation Breathing):** This product is practically non-toxic through inhalation. The acute inhalation LD_{50} (Rat) is >6.4 mg/l (nominal concentration). Could cause irritation to respiratory passages, if exposed to dusting conditions without protective respiratory equipment. **Effects and Hazards of Ingestion (Swallowing):** Material is non-toxic through ingestion. The acute oral LD_{50} (Rat) is >10g/kg.			
Medical Conditions Generally Aggravated by Exposure			
N/A			
Emergency and First Aid Procedures			
Eyes: Flush with plenty of water for at least 15 minutes. Call physician if irritation continues. Skin: Wash with soap and water. Inhalation: Move to fresh air.			

Ingestion: N/A

Section VII - Precautions for Safe Handling and Use

Steps to Be Taken in Case Material is Released or Spilled
Sweep or vacuum material from spillages into a waste container for disposal or repackage. Avoid dusting conditions.
Waste Disposal Method
Dispose of unused product in waste container. Dispose of in accordance with local, state, and federal or national regulations.
Precautions to Be Taken in Handling and Storing
CAUTION!!! This product, when wet, removes oxygen from air causing a severe hazard to workers inside carbon vessels and enclosed or confined spaces. Before entering such an area, sampling and work procedures for low oxygen levels should be taken to ensure ample oxygen availability, observing all local, state, and federal or national regulations. Be sure proper ventilation and respiratory and eye protection are used under dusting conditions.
Other Precautions
Wash thoroughly after handling. Exercise caution in the storage and handling of all chemical substances.

Section VIII - Control Measures

Respiratory Protection *(Specify Type)* Carbon-A NIOSH-approved particulate filter respirator is recommended, if excessive dust is generated.		
Ventilation	Local Exhaust Recommended, when used indoors or in confined spaces	Special Not Required
	Mechanical *(General)* Recommended, when used indoors or in confined spaces	Other Not required
Protective Gloves Recommended	Eye Protection Safety glasses or goggles recommended	
Other Protective Clothing or Equipment Not required		
Work/Hygienic Practices Use of Tyvek® or Nomex® suits is suggested to protect skin from becoming excessively dirty and clothing from being ruined by contact with product.		

APPENDIX B

LETTER OF APPROVAL FROM NMOCD

State of New Mexico
Energy, Minerals and Natural Resources Department

Susana Martinez
Governor

David Martin
Cabinet Secretary-Designate

Brett F. Woods, Ph.D.
Deputy Cabinet Secretary

Jami Bailey, Division Director
Oil Conservation Division

MAY 31, 2013

Mr. Matt Webre
Williams Four Corners, LLC
188 CR 4900
Bloomfield, NM 87413

Re: Revised Work Plan for BOS 200® Amendment
Dogie Compressor Station J Vent Condensate Release
UL "D", Section 4, Township 25 North, Range 6 West NMPM
Rio Arriba County, New Mexico
3R-444

Dear Mr. Webre:

The Oil Conservation Division (OCD) has reviewed Williams Four Corners (Williams) revised remediation plan of April 23, 2013, submitted by LT Environmental Inc. to address ground water contamination at the Dogie Compressor Station J Vent condensate release site, located at UL "D", Section 4, Township 25 North, Range 6 West NMPM. OCD has determined that Williams has adequately addressed OCD concerns with the previous version. OCD hereby approves Williams remediation plan pursuant to 19.15.29 NMAC and approves Williams request for temporary permission for a discharge pursuant to 20.6.2.3106B NMAC.

Williams may proceed with its remediation program at the J Vent release site at the Dogie Compressor Station. To differentiate between the remediation program at the two pits at the compressor station (3R-312 and 3R-313), OCD has assigned a new case number – **3R-444.** Please use this case number in all future correspondence.

Sincerely,

Glenn von Gonten
Senior Hydrologist

GvG/gvg
CC: Brandon Powell

APPENDIX C

MONITORING WELL COMPLETION DIAGRAMS AND BOREHOLE LOGS

Compliance » Engineering » Remediation
LT Environmental, Inc.
2243 Main Avenue, Suite 3
Durango, Colorado 81301

BORING LOG/MONITORING WELL COMPLETION DIAGRAM

Boring/Well Number: B1				Date: 2/24/12		
Project: Former J Vent				Project Number: 34012002		
Logged By: Devin Hencmann				Drilled By: Earth Worx		
Lat/Long: GPS	Elevation: GPS	Detector: PID	Drilling Method: Geoprobe	Sampling Method: Continuous Core	Hole Diameter: 3"	Total Depth: 12'
Casing Type: NA	Casing Diameter: NA	Casing Length: NA	Slot Size: NA	Slot Length: NA	Depth to Water: ~8-8.5'	
Gravel Pack: NA	Seal: NA	Grout: NA	Comments:			

Penetration Resistance	Moisture Content	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Run	Soil/Rock Type	Lithology/Remarks
None	Damp Silty				0			
					1		NR	
					2			
		3,890		B-1 4' 930	3	2-4'	SM	Silty sand, 60% fine sand w. 35% silt 5% clay 2.5YR 5/6 strong Brown
			Black @ 4'		4			
					5		NR	
None	Damp	5.5 to 7' 3,790	Black to gray	B-1 5.5'	6		SM	Silty sand same as above 2.5Y 2.5/1 to 2.5Y 5/1 stained Black/gray from 5.5 to 7'
					7			
	Wet @ 8'				8			
None							NR	
	Sat. 8.5		None		9		SM	Silty sand - Sat. 65% sand 35% silt 7.5YR 5/6 strong Brown
					10			
		11-12' 0.3		B-1 12'	11			
					12			

B1 GW sample @ 1545

Compliance » Engineering » Remediation
LT Environmental, Inc.
2243 Main Avenue, Suite 3
Durango, Colorado 81301

BORING LOG/MONITORING WELL COMPLETION DIAGRAM

Boring/Well Number: B-2				Date: 2/24/12 2/[illegible]/2012	
Project: Former J Vent				Project Number: 34012002	
Logged By: Devin Hencmann				Drilled By: Earth Worx	
Lat/Long: GPS	Elevation: GPS	Detector: PID	Drilling Method: Geoprobe	Sampling Method: Continuous Core	Hole Diameter: 3" / Total Depth: 8
Casing Type: NA	Casing Diameter: NA	Casing Length: NA	Slot Size: NA	Slot Length: NA	Depth to Water: 7'
Gravel Pack: NA	Seal: NA	Grout: NA	Comments:		

Penetration Resistance	Moisture Content	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Run	Soil/Rock Type	Lithology/Remarks
Ø	Damp surface		None		0 1	X		0-1.9 NR
		0.8		[redacted]	2 3		SM	1.9-4' Silty Sand 55% fine-med sand 40% silt 5% clay 7.5YR 5/6 Strong Brown
					4	X		4-5' NR
Ø	Sat @ 7'	0.3	None	B-2 8'	5 6 7		SM	5-8' 7.5YR 5/2 Brown Silty sand 70% med gr. sand 30% silt
					8 9 10 11 12			

BORELOG_12'.xls

B-2 GW Sampled @ 1035

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BORING LOG/MONITORING WELL COMPLETION DIAGRAM

Boring/Well Number: B-3				Date: 2/24/12 ~~2/6/2012~~	
Project: Former J Vent				Project Number: 34012002	
Logged By: Devin Hencmann				Drilled By: Earth Worx	
Lat/Long: GPS	Elevation: GPS	Detector: PID	Drilling Method: Geoprobe	Sampling Method: Continuous Core	Hole Diameter: 3" / Total Depth: 12'
Casing Type: NA	Casing Diameter: NA	Casing Length: NA	Slot Size: NA	Slot Length: NA	Depth to Water: ~5'
Gravel Pack: NA	Seal: NA	Grout: NA	Comments: Bore hole located in depression		

Penetration Resistance	Moisture Content	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Run	Soil/Rock Type	Lithology/Remarks
Ø					0			0-2' NR
					1			10YR 5/6 Yellow Brown
					2			2-4'
	Wet @ 3.5	3,518 2.75 to 4'	Black 2.75 to 4'	B-3 3-3.5	3		SM	Silty sand, 60% fine sand, 5% med sand, 30% silt, 5% clay Black staining 2.75' to 4'
					4			4-5' NR
					5			7.5YR 5/6 Strong Brown
	Sat @ 5.5		light stain not obvious		6		SM	Silty sand, 50% med sand, 10% fine sand, 40% silt,
		142		B-3 8'	7			
					8			8-8.5' NR
			none		9		SM	8.5-12' 7.5YR 6/3 Light Brown Silty sand 70% med grained sand, 10% fine sand 20% silt
		8.1			10			
				B-3 12'	11			
					12			

BORELOG_12'.xls

B-3 GW sampled @ 1100

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Boring/Well Number:	Date:
B-4	2/24/12
Project:	Project Number:
Former J Vent	34012002
Logged By:	Drilled By:
Devin Hencmann	Earth Worx
Sampling Method:	Hole Diameter: / Total Depth:
Continuous Core	3" / 12'
Slot Length:	Depth to Water:
NA	6'

BORING LOG/MONITORING WELL COMPLETION DIAGRAM

Lat/Long:	Elevation:	Detector:	Drilling Method:
GPS	GPS	PID	Geoprobe
Casing Type:	Casing Diameter:	Casing Length:	Slot Size:
NA	NA	NA	NA
Gravel Pack:	Seal:	Grout:	Comments:
NA	NA	NA	

Penetration Resistance	Moisture Content	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Run	Soil/Rock Type	Lithology/Remarks
Ø					0			0-1' NR
	Damp surface	2.8	none	B-4 @ 2.5 to 3	1		SM	1'-4' 7.5 YR 5/6 Strong Brown silty sand, 10% med grained Sand 50% fine sand 20% silt 10% clay Roots
					2			
					3			
	Wet @ 4'				4			4'-6' NR
					5			
	Sat @ 6'				6			6'-8'
Ø		19.9 6'-8'	Black to Dark gray	B-4 6'-8'	7		SM	silty sand, 50% med sand 15% fine sand 35% silt Stained Black 2.5Y 2.5/1, heavey HC odor
					8			8'-9' NR.
					9			9'-12'
Ø	Sat	1.0 @ 12'			10		SM	silty sand, 70% med grained Sand 5% fine sand, 25% silt gray color 2.5Y 5/1
					11			
					12			

B-4 GW Sampled @ 1145

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BORING LOG/MONITORING WELL COMPLETION DIAGRAM

Boring/Well Number: B-5				Date: 2/24/12	
Project: Former J Vent				Project Number: 34012002	
Logged By: Devin Hencmann				Drilled By: Earth Worx	
Lat/Long: GPS	Elevation: GPS	Detector: PID	Drilling Method: Geoprobe	Sampling Method: Continuous Core	Hole Diameter: 3" / Total Depth: 8'
Casing Type: NA	Casing Diameter: NA	Casing Length: NA	Slot Size: NA	Slot Length: NA	Depth to Water: ~6'
Gravel Pack: NA	Seal: NA	Grout: NA	Comments:		

Penetration Resistance	Moisture Content	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Run	Soil/Rock Type	Lithology/Remarks
Ø					0			0-1.75 NR
					1		NR	
					2			1.75-4' silty Sand, 60% fine Sand 5% clay, 35% silt 7.5YR 5/6 Strong Brown
					3		SM	
	Wet	19.3 @ 3.75' 3.75 to 4'	Dark gray 3.75' to 4'	B-5 3.75' to 4'	4			4-6' NR
					5			
	Sat @ 6'	2,740 @ 6' to 7.5'	Black 6' to 7.5'	B-5 6' to 7.5'	6			6-8' soil stained Black silty sand, 70% med sand, 5% fine sand, 25% silt minor clay
Ø			7.5' to 8'		7		SM	
		21 @ 8'	gray	B-5 8'	8		sm	
					9			
					10			
					11			
					12			

B-5 GW sampled @ 1215

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Boring/Well Number:	Date:
B-6	2/24/12 ~~2/16/2012~~
Project: Former J Vent	Project Number: 34012002
Logged By: Devin Hencmann	Drilled By: Earth Worx
Lat/Long: GPS	Elevation: GPS
Detector: PID	Drilling Method: Geoprobe
Sampling Method: Continuous Core	Hole Diameter: 3"
Total Depth: 8'	Casing Type: NA
Casing Diameter: NA	Casing Length: NA
Slot Size: NA	Slot Length: NA
Depth to Water: 4'	Gravel Pack: NA
Seal: NA	Grout: NA
Comments:	

BORING LOG/MONITORING WELL COMPLETION DIAGRAM

Penetration Resistance	Moisture Content	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Run	Soil/Rock Type	Lithology/Remarks
Ø					0			0-1.5 NR
					1			1.5-4' 10YR 6/3 Pale Brown
	Wet	0.0			2		SM	Silty sand 60% fine sand 10% med sand 30% silt minor clay
					3			
	Sat @ 3.75'	1.2	3.75 to 4' gray	B-7 5.5'	4			4-5' NR
					5			5-8' Stained grat to Dark grat
Ø			5 to 6.5' grat	B-7 6.5'	6		SM	silty sand 60% fine sand 30% silt
	Sat @ 6.5'	10.8	6.5 to 8' Dark gray		7			
					8			
					9			
					10			
					11			
					12			

BG GW Sample @ 1252

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BORING LOG/MONITORING WELL COMPLETION DIAGRAM

Boring/Well Number: B-7				Date: 2/24/12 ~~2/16/2012~~	
Project: Former J Vent				Project Number: 34012002	
Logged By: Devin Hencmann				Drilled By: Earth Worx	
Lat/Long: GPS	Elevation: GPS	Detector: PID	Drilling Method: Geoprobe	Sampling Method: Continuous Core	Hole Diameter: 3" / Total Depth: 8'
Casing Type: NA	Casing Diameter: NA	Casing Length: NA	Slot Size: NA	Slot Length: NA	Depth to Water: 6'
Gravel Pack: NA	Seal: NA	Grout: NA	Comments:		

Penetration Resistance	Moisture Content	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Run	Soil/Rock Type	Lithology/Remarks
					0			NR
					1			1'-4' 7.5 YR 5/6 Strong Brown
					2		SM	Silty Sand 50% fine sand 40% silt 10% clay
Ø			NO staining		3			
	Damp @ 4'	0.0			4			4-5.5' NR
					5			
		509 @ 5.5'	Black 5.5 to 8'	B7 5.5	6			5.5-8' Stained Black
Ø	Sat @ 6'	1540 @ 6'-6.5'		B7 6-6.5'	7		SM	Silty sand 70% med sand grain 10% fine sand 20% silt Sat @ 6'
					8			
					9			
					10			
					11			
					12			

B7 GW sampled @ 1323

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BORING LOG/MONITORING WELL COMPLETION DIAGRAM

Boring/Well Number: B8				Date: ~~2/16/2012~~ 2/24/12	
Project: Former J Vent				Project Number: 34012002	
Logged By: Devin Hencmann				Drilled By: Earth Worx	
Lat/Long: GPS	Elevation: GPS	Detector: PID	Drilling Method: Geoprobe	Sampling Method: Continuous Core	Hole Diameter: 3" / Total Depth: 8'
Casing Type: NA	Casing Diameter: NA	Casing Length: NA	Slot Size: NA	Slot Length: NA	Depth to Water: 4
Gravel Pack: NA	Seal: NA	Grout: NA	Comments:		

Penetration Resistance	Moisture Content	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Run	Soil/Rock Type	Lithology/Remarks
					0			NR
					1			1-4'
					2		SM	silt + Sand 10YR 5/6 Yellow Brown
Ø		0.0 @ 3.5		B8 3.5	3			50% fine sand 10% med Sand 40% silt minor clay
			Black grey 3.8' to 4.0'		4			4-5'
	Sat @ 4'				5			NR
		504 @ 3.5 to 6.5		B8 5.5 to 6.5	6		SM	5-8' silty sand 70% med sand 30% silt Stained soil has minor odor
Ø			Black		7			
	Sat				8			
					9			
					10			
					11			
					12			

[redacted] PH stained Black

B8 GW Sample @ 1400

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BORING LOG/MONITORING WELL COMPLETION DIAGRAM

Boring/Well Number: B-9				Date: 2/24/12 (2/16/2012)	
Project: Former J Vent				Project Number: 34012002	
Logged By: Devin Hencmann				Drilled By: Earth Worx	
Lat/Long: GPS	Elevation: GPS	Detector: PID	Drilling Method: Geoprobe	Sampling Method: Continuous Core	Hole Diameter: 3" / Total Depth: 8'
Casing Type: NA	Casing Diameter: NA	Casing Length: NA	Slot Size: NA	Slot Length: NA	Depth to Water: 4'
Gravel Pack: NA	Seal: NA	Grout: NA	Comments:		

Penetration Resistance	Moisture Content	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Run	Soil/Rock Type	Lithology/Remarks
					0			0 to 1.5' NR
0	Dry				1			1.5' to 4' 10YR 5/6 Yellow Brown
					2		SM	silty sand stained Black @ 3.5'
					3			60% fine sand, 5% med sand, 35% silt minor clay
	Sat @ 3.5'	2.2 PPM 3.5 to 4'	Black @ 3.5'	B-9 3.5 to 4'	4			4' to 5' NR
					5			5 to 8'
			Black 5' to 6'		6		SM	silty sand 70% med sand, 10% fine grained sand, 20% silt stained Black to gray
9	Sat	38 @ 5 to 7'	Slight 6 to 8'	B-9 5-7'	7			
					8			
					9			
					10			
					11			
					12			

B9 water sample @ 1445

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BORING LOG/MONITORING WELL COMPLETION DIAGRAM

Boring/Well Number: B10				Date: 2/24/12	
Project: Former J Vent				Project Number: 34012002	
Logged By: Devin Hencmann				Drilled By: Earth Worx	
Lat/Long: GPS	Elevation: GPS	Detector: PID	Drilling Method: Geoprobe	Sampling Method: Continuous Core	Hole Diameter: 3" / Total Depth: 8
Casing Type: NA	Casing Diameter: NA	Casing Length: NA	Slot Size: NA	Slot Length: NA	Depth to Water: 6'
Gravel Pack: NA	Seal: NA	Grout: NA	Comments:		

Penetration Resistance	Moisture Content	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Run	Soil/Rock Type	Lithology/Remarks
					0			0-1' NR
Ø	Damp surface		none		1		SM	1-4' 10YR 4/4 Brown silty sand, 50% fine sand, 10% med sand, 40% silt, minor clay
		0.1		B-10 @ 3.5	2			
					3			
					4			4-5' NR
	Sat @ 6'		Black 5' to 6.5'	B-10 5' to 6.5'	5			5-8'
Ø		1.8 @ 5' to 6.5'			6		SM	70% med Sand, 5% fine sand 25% silt stained Black @ 5' no odor
	Sat				7			
					8			
					9			
					10			
					11			
					12			

B-10 GW Sampled @ 1520

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BORING LOG/MONITORING WELL COMPLETION DIAGRAM

Boring/Well Number: [redacted] MW-13					Date: 10/22/13	
Project: J-vent					Project Number:	
Logged By: DH					Drilled By: Earthworx	
Lat/Long:	Elevation:	Detector: PID	Drilling Method: Push	Sampling Method: Continuous	Hole Diameter: 2"	Total Depth: 18'
Casing Type: PVC	Casing Diameter: 2"	Casing Length: 18	Slot Size: 0.01	Slot Length: 15'	Depth to Water: ~7'	
Gravel Pack: 18-2	Seal: Bentonite	Grout: Cement	Comments:			

Penetration Resistance	Moisture Content	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Run	Soil/Rock Type	Lithology/Remarks	Well Completion
					0			0-2.25 No Recovery	
Ø	Damp	0.0			3	2.25-3	SM	2.25-3 Surface gravel/SM silty sand	
	wet				4	3-4	ML	3-4' Clayey Silt 70% silt 20% clay 10% vary fine sand	
Ø					5			4-6' No Recovery	
Ø	Sat	0.0	7-8' Boss		7	6-7'	SM	6-7' Silty Sand, 60% fine Sand 40% silt, Dark Reddish Brown 5YR 3/3 Boss encountered @ 7'	
					8	7-8'	SM	7-8' silty sand 80% fine to Med gr. sand 20% silt	
Ø	Sat		Boss		9	8-12	SM	8-12 silty Sand, 70% Med gr. sand 10% fine sand, 5% coarse sand 15% silt, 10YR 5/2 grayish Brown	
					10				
					11				

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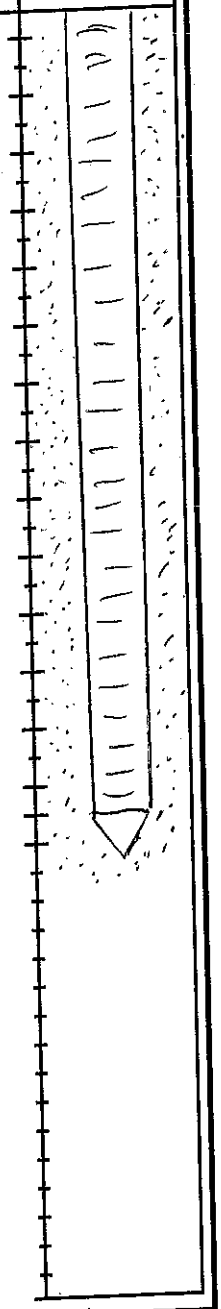
Boring/Well Number:		Date:	
Project:		Project Number:	
Logged By:		Drilled By:	
Sampling Method:		Hole Diameter:	Total Depth:
Slot Length:		Depth to Water:	

BORING LOG/MONITORING WELL COMPLETION DIAGRAM

Lat/Long:	Elevation:	Detector:	Drilling Method:	
Casing Type:	Casing Diameter:	Casing Length:	Slot Size:	
Gravel Pack:	Seal:	Grout:	Comments:	

Penetration Resistance	Moisture Content	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Run	Soil/Rock Type	Lithology/Remarks	Well Completion
Ø	Sat	0.0	none		11				
					12				
					13	12-16'	SM	Same as above	
					14				
					15				
					16				
					17			No Recovery	
					18				
					19				
					20				
					21				
					22				



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BORING LOG/MONITORING WELL COMPLETION DIAGRAM

Boring/Well Number: MW-14				Date: 10/22/13	
Project: J-Vant				Project Number:	
Logged By: DH				Drilled By: Earthworx	
Lat/Long:	Elevation:	Detector: PID	Drilling Method: Push	Sampling Method: Continuous	Hole Diameter: 2" / Total Depth:
Casing Type: PVC	Casing Diameter: 2"	Casing Length: 18'	Slot Size: 0.01	Slot Length: 15'	Depth to Water: @ 6.5'
Gravel Pack: 18-2'	Seal: Bentonite	Grout: cement	Comments:		

Penetration Resistance	Moisture Content	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Run	Soil/Rock Type	Lithology/Remarks	Well Completion
					0			No Recovery	
					1				
Ø	Dry				2			2-4 silty sand	
		0.0			3		SM	70% fine sand 10% med sand 20% silt, 10YR, 4/6, Dark Yellow Brown	
	Wet				4				
Ø					5			NR	
	Sat @ 6'	11.3	Black 5.5 to 6.5		6			5.5-8	
					7		SM	silty sand, 60% fine sand 20% med sand, 20% silt 5YR 4/2, Dark Reddish Grey	
	Sat				8				
Ø					9			NR	
					10		SM	Same as above	
	Sat.	0.0			11				

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BORING LOG/MONITORING WELL COMPLETION DIAGRAM

Boring/Well Number:				Date:	
Project:				Project Number:	
Logged By:				Drilled By:	
Lat/Long:	Elevation:	Detector:	Drilling Method:	Sampling Method:	Hole Diameter: / Total Depth:
Casing Type:	Casing Diameter:	Casing Length:	Slot Size:	Slot Length:	Depth to Water:
Gravel Pack:	Seal:	Grout:	Comments:		

Penetration Resistance	Moisture Content	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Run	Soil/Rock Type	Lithology/Remarks	Well Completion
9	Sat	0.0			11		SM	same as above	
					12				
					13			NR	
					14		SM	13.5-16 Same as above	
9	Sat	0.0			15				
					16				
					17			NR	
					18				
					19				
					20				
					21				
					22				

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BORING LOG/MONITORING WELL COMPLETION DIAGRAM

Boring/Well Number: MW-15				Date: 10/22/13	
Project: J-Vent				Project Number:	
Logged By: DN				Drilled By: Earthworx	
Lat/Long:	Elevation:	Detector: PID	Drilling Method: Push	Sampling Method: Continuous	Hole Diameter: Total Depth: 18'
Casing Type: PVC	Casing Diameter: 2"	Casing Length: 18'	Slot Size: 0.01	Slot Length: 18'	Depth to Water: 5'
Gravel Pack: 18' to 7'	Seal: Bentonite	Grout: Cement	Comments:		

Penetration Resistance	Moisture Content	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Run	Soil/Rock Type	Lithology/Remarks	Well Completion
					0			NR	
					1				
NO	DAMP	0	NO	N/A	2		SM	~~wet~~ DN DAMP 1.5' to 4' Silty Sand 85% Fine sand 10% course sand 5% Clay/silt 5YR 3/4 dark reddish Brown	
					3				
					4			NR	
NO	SAT	0	NO	N/A	5		SM	SAT 5' to 8' Silty Sand 80% course sand 10% Fine sand 5% silt 10YR 4/2 dark gray brown	
					6				
					7				
NO	SAT	0	NO	N/A	8			SAT 8' to 12' SAME AS ABOVE	
					9				
					10				
					11				

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Boring/Well Number:	Date:
Project:	Project Number:
Logged By:	Drilled By:
Sampling Method:	Hole Diameter: / Total Depth:
Slot Length:	Depth to Water:

BORING LOG/MONITORING WELL COMPLETION DIAGRAM

Lat/Long:	Elevation:	Detector:	Drilling Method:
Casing Type:	Casing Diameter:	Casing Length:	Slot Size:
Gravel Pack:	Seal:	Grout:	Comments:

Penetration Resistance	Moisture Content	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Run	Soil/Rock Type	Lithology/Remarks	Well Completion
NU	SAT	0	NO	N/A	11		SM	12"+016" SAT Silty Sand 90% course Sand 5% fine sand 5% silt 10YR 9/2 Dark Gray Brown	
					12				
					13				
					14				
					15				
					16				
					17				
					18				
					19				
					20				
					21				
					22				

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Boring/Well Number: MW-16	Date: 10/22/17
Project: J-vent	Project Number:
Logged By: DN	Drilled By: Earthworx
Sampling Method: Continuous	Hole Diameter: 2" / Total Depth: 18
Slot Length: 15	Depth to Water: 7'

BORING LOG/MONITORING WELL COMPLETION DIAGRAM

Lat/Long:	Elevation:	Detector: PID	Drilling Method: Push	
Casing Type: PVC	Casing Diameter: 2"	Casing Length: 18	Slot Size: 2" DW 0.01	
Gravel Pack: 18 to 2	Seal: Bentonite	Grout: cement	Comments:	

Penetration Resistance	Moisture Content	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Run	Soil/Rock Type	Lithology/Remarks	Well Completion
ND					0			NR	
					1				
	wet	0.0%	ND	N/A	2			2'-4' wet Clayey Sand SC sand Fine 80% Clay 20% 10yR 3/6 dark yellowish Brown	
					3		SC		
					4			NR	
ND					5			5'-8' SAT Silty Sand SM Sand med 80% Sand Fine 10% Clay 10% 5yR 4/1 dark gray	
	SAT	0.0%	ND	N/A	6		SM		
					7				
					8			NR	
ND	SAT	0.0%	ND	N/A	9		SM	SAT 8.5' to 12' Silty Sand SM 85% Med Sand 10% Fine Sand 5% Silt Dark yellowish Brown 10YR 3/4	
					10				
					11				

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Boring/Well Number:		Date:	
Project:		Project Number:	
Logged By:		Drilled By:	
Sampling Method:		Hole Diameter:	Total Depth:
Slot Length:		Depth to Water:	

BORING LOG/MONITORING WELL COMPLETION DIAGRAM

Lat/Long:	Elevation:	Detector:	Drilling Method:
Casing Type:	Casing Diameter:	Casing Length:	Slot Size:
Gravel Pack:	Seal:	Grout:	Comments:

Penetration Resistance	Moisture Content	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Run	Soil/Rock Type	Lithology/Remarks	Well Completion
NO	N/A	N/A	N/A	N/A	11			NO Record	
					12				
					13				
					14				
					15				
					16				
					17				
					18				
					19				
					20				
					21				
					22				

APPENDIX D

WELL DEVELOPMENT FORMS

PROJECT J Vent / Dogie
PROJECT MANAGER Ashley Ager
JOB No. 03401200? / 2403?
LOCATION Largo Canyon, NM

DATE 10/30/13
CONT. No.
BY Chris Brown CHK'D
SHEET No. 1 OF 2

95LTG038 10/1997

J Vent 10/30/13 10:00 Arrive, JHA, Dan walks site identifying locs
11:30 Begin opening MWs & allow to equilibrate
11:45 Begin gauging MWs after opening IP thoroughly

	DTW	TD
MW-16	6.00	20.55 (soft bottom)
MW-14	6.36	20.53 (soft bottom)
MW-15	6.50	20.49 (soft bottom)
MW-13	7.14	20.79 (soft bottom)

12:36 Begin developing MW-13, 15:00 Finish developing MW-13
15:40 Begin developed MW-16, 16:32 Finish developing MW-16
↳ Empty purge water to Williams produced water tank
↳ depart site

10/31/13
10:30 Arrive J-Vent
↳ Check-in w/ Williams personnel
↳ Tailgate H2S/JHA
11:20 Begin developing MW-14, 12:08 Finish developing MW-14
12:44 Begin developing MW-15, 13:32 Finish developing MW-15
14:40 Begin developing MW-10, 15:12 Finish developing MW-10
15:44 Begin developing MW-11, 16:16 Finish developing MW-11
↳ empty purge water to Williams produced water tank & depart site

11/1/13
10:30 Arrive Dogie
↳ JHA
11:15 Gauge MW-6, DTPSH 15.87, DTW: 16.75
11:25 Begin bail-down test MW-6
12:50 Finish post-bail monitoring
13:10 Begin developing MW-12, 13:48 Finish developing MW-12
13:53 Begin developing MW-13, 14:26 Finish developing MW-13
↳ depart to Jco Canyon site
15:18 Begin developing MW-2R, 16:15 Finish developing MW-2R
↳ Empty purge water to Williams produced water tank & depart site

↳ Depart site

PROJECT Williams
PROJECT MANAGER Ashley Ager
JOB No. 34013017
LOCATION J-U6nit

DATE 11/4/13
CONT. No. —
BY Chris Brown CHK'D —
SHEET No. 2 OF 2

95LT0038 10/1997

11/4/13

0830 11:30 Arrive site
↳ check in w/ Steve (Williams)
↳ Tailgate H&S

11:43 Gauge DTPSH in MW-6 @ DTPSH 15.97, DTW 16.31

12:40 Collect Sample J-Unit MW-14

14:20 Collect Sample MW-16

16:20 Collect Sample MW-13

16:40 Collect Sample MW-15

↳ empty purge water into William's produced water tank

↳ depart site

LT Environmental, Inc.
2243 North Main Avenue, Suite #3
Durango, Colorado 81301
(970) 385-1096

Monitoring Well Development Form

Project Name: San Juan Basin Groundwater
Project Number: 34013010

Well Name: MW-13 Sampler: Chris Brown

Start Date: 10/30/13 Start Time: _____

Depth to Water: 7.14 Total Depth of Well: 20.79
Time: 12:30 Depth to Product: —

Casing Volume: 13.65 x 0.1631 = 2.23 (height of water column * 0.1631 for 2" well or 0.6524 for 4" well)
Method of Purging: Dedicated PVC Bailer
Method of Sampling: Dedicated PVC Bailer

Time	Vol. Removed	Total Vol. Removed (gallons)	pH (std. units)	Temp. (F)	Conductivity (us or ms)	Comments
12:36	0.25	0.25	7.64	16.1°C	8.34 mS	Color: brown, cloudy, Begin surging
12:39	0.50	0.50	5.74	16.0	8.42	Very brown, cloudy
12:45	1.00	1.00	4.90	15.8	8.50	SAA
13:30	1.50	1.50	6.89	15.6	8.56	Recal pH, SAA
13:40	2.50	2.50	7.48	15.8	8.76	SAA
13:50	3.50	3.50	7.16	15.7	7.07	SAA
13:55	4.50	4.50	7.07	16.0	8.53	SAA
13:59	5.50	5.50	7.28	16.0	8.51	SAA
14:02	6.50	6.50	6.99	16.0	8.39	SAA
14:08	7.50	7.50	7.40	15.8	8.44	SAA
14:12	8.50	8.50	7.56	15.4	8.43	SAA
14:20	9.50	9.50	8.70	15.6	7.33	SAA
14:31	10.50	10.50	8.37	15.5	8.38	SAA
14:38	11.50	11.50	7.93	15.6	7.63	SAA
14:45	12.50	12.50	8.76	15.8	7.49	SAA
14:55	13.50	13.50	8.83	15.7	7.05	SAA
15:00	14.50	14.50	8.84	15.6	7.44	SAA

Comments:

LT Environmental, Inc.
2243 North Main Avenue, Suite #3
Durango, Colorado 81301
(970) 385-1096

Monitoring Well Development Form

Project Name: J Vent
Project Number: 34013012

Well Name: MW-14 Sampler: Chris Brown

Start Date: 10/31/13 Start Time: _____

Depth to Water: 6.37 Total Depth of Well: 20.53
Time: 10:40 Depth to Product: —

Casing Volume: 14.16 x 0.1631 = 2.31 x 5 = 11.55 gal (height of water column * 0.1631 for 2" well or 0.6524 for 4" well)
Method of Purging: Dedicated PVC Bailer
Method of Sampling: Dedicated PVC Bailer

Time	Vol. Removed	Total Vol. Removed (gallons)	pH (std. units)	Temp. ~~(F)~~ C	Conductivity (us or ms)	Comments
11:20	1.00	1.00	—	13.3	6.84	Brown, turbid
11:24	2.00	2.00	—	13.9	6.75	SAA
11:28	3.00	3.00	—	13.7	6.90	SAA
11:32	4.00	4.00	—	13.6	6.45	SAA
11:36	5.00	5.00	—	14.1	7.17	SAA
11:40	6.00	6.00	—	14.2	5.96	SAA
11:44	7.00	7.00	—	14.1	7.40	SAA
11:48	8.00	8.00	—	14.2	7.54	SAA
11:52	9.00	9.00	—	14.1	7.74	SAA
11:56	10.00	10.00	—	14.1	6.62	SAA
12:00	11.00	11.00	—	14.0	7.22	SAA
12:04	12.00	12.00	—	14.0	7.30	SAA
12:08	13.00	13.00	—	13.9	7.38	SAA

Comments: pH motor not functioning properly. Unable to calibrate

LT Environmental, Inc.
2243 North Main Avenue, Suite #3
Durango, Colorado 81301
(970) 385-1096

Monitoring Well Development Form

Project Name: J Vent
Project Number: 34013012

Well Name: MW-15 Sampler: Chris Brown

Start Date: 10/31/13 Start Time: 12:44

Depth to Water: 6.50 Total Depth of Well: 20.49
Time: 12:40 Depth to Product: —

Casing Volume: 14.44 x 0.1631 = 2.36 x 5 = 11.79 gal
(height of water column * 0.1631 for 2" well or 0.6524 for 4" well)

Method of Purging: Dedicated PVC Bailer
Method of Sampling: Dedicated PVC Bailer

Time	Vol. Removed	Total Vol. Removed (gallons)	pH (std. units)	Temp. (F) C	Conductivity (us or ms)	Comments
12:44	1.00	1.00	—	13.6	5.40	Brown, turbid
12:48	2.00	2.00	—	13.5	5.34	SAA
12:52	3.00	3.00	—	13.5	5.73	SAA
12:56	4.00	4.00	—	13.1	5.87	SAA
13:00	5.00	5.00	—	13.6	5.33	SAA
13:04	6.00	6.00	—	13.4	5.04	SAA
13:08	7.00	7.00	—	13.5	5.34	SAA
13:12	8.00	8.00	—	13.3	5.92	SAA
13:16	9.00	9.00	—	13.4	5.56	SAA
13:20	10.00	10.00	—	13.4	5.83	SAA
13:24	11.00	11.00	—	13.5	5.31	SAA
13:28	12.00	12.00	—	13.4	5.93	SAA
13:32	13.00	13.00	—	13.2	5.66	SAA

Comments:

LT Environmental, Inc.
2243 North Main Avenue, Suite #3
Durango, Colorado 81301
(970) 385-1096

Monitoring Well Development Form

Project Name: San Juan Basin Groundwater
Project Number: 34013010

Well Name: MW-16 Sampler: Chris Brand

Start Date: 10/30/13 Start Time: 15:40

Depth to Water: 6.00 Total Depth of Well: 20.55
Time: 15:30 Depth to Product:

Casing Volume: 14.55 x 0.1631 = 2.37 gal. (height of water column * 0.1631 for 2" well or 0.6524 for 4" well)
Method of Purging: Dedicated PVC Bailer
Method of Sampling: Dedicated PVC Bailer

Time	Vol. Removed	Total Vol. Removed (gallons)	pH (std. units)	Temp. ~~(F)~~ °C	Conductivity (us or ms) ms	Comments
15:40	~~0.50~~ 1.00	1.00	8.40	13.5	9.69	Color: Turbid, dk brown
15:46	2.00	2.00	8.67	13.7	9.37	SAA
15:49	3.00	3.00	8.69	13.6	10.41	SAA
15:52	4.00	4.00	8.68	13.6	11.37	SAA
15:55	5.00	5.00	8.67	13.7	11.41	SAA
15:59	6.00	6.00	8.62	13.5	~~13~~ 11.47	SAA
16:03	7.00	7.00	8.71	13.3	11.58	SAA
16:06	8.00	8.00	8.71	13.4	11.75	SAA
16:10	9.00	9.00	8.71	13.3	11.74	SAA
16:14	10.00	10.00	8.71	13.3	11.84	SAA
16:17	11.00	11.00	8.72	13.3	11.85	SAA
16:20	12.00	12.00	8.72	13.4	11.87	SAA
16:24	13.00	13.00	8.71	13.1	11.80	SAA
16:27	14.00	14.00	8.71	13.1	11.94	SAA
16:32	15.00	15.00	8.71	13.3	11.84	SAA

Comments:

APPENDIX E

NOVEMBER 2013 GROUNDWATER SAMPLING FIELD NOTES

LT Environmental, Inc.
2243 North Main Avenue, Suite #3
Durango, Colorado 81301
(970) 385-1096

Groundwater Sample Collection Form

Project Name: Dogie Compressor Station J Vent
Project Number: 34013012

Sample Location: J Vent
Sampler: Chris Brown

Sample Date: 11/4/2013
Sample Time: 16:20
Sample ID: MW-13
Analyses: BTEX, sulfate, chloride, iron, nitrate, and TDS
Matrix: groundwater

Depth to Water: 7.14
Time: 15:13
Total Depth of Well: 20.79
Depth to Product:

Vol. of Water to Purge: 13.65' x .1631 = 2.23 = 6.68 (height of water column * 0.1631 for 2" well or 0.6524 for 4" well) * 3 well vols
Method of Purging: Dedicated PVC Bailer
Method of Sampling: Dedicated PVC Bailer

Time	Vol. Removed	Total Vol. Removed (gallons)	pH (std. units)	Temp. (F)	Conductivity (us or ms)	Comments
15:15	1.00	1.00	7.83	61.7	4.13 ms	Cloudy brown/grey
15:19	2.00	2.00	7.83	61.3	3.93	SAA
15:22	3.00	3.00	7.73	60.8	4.05	SAA
15:26	4.00	4.00	7.82	61.5	3.84	SAA
15:30	5.00	5.00	7.82	61.5	3.97	SAA
15:34	6.00	6.00	7.82	61.7	3.77	SAA
15:38	7.00	7.00	7.79	61.3	3.94	SAA

Comments:

LT Environmental, Inc.
2243 North Main Avenue, Suite #3
Durango, Colorado 81301
(970) 385-1096

Groundwater Sample Collection Form

Project Name: Dogie Compressor Station J Vent, MW-14
Project Number: 34013012

Sample Location: J Vent
Sampler: Chris Brown

Sample Date: 11/4/2013
Sample Time: 12:40
Sample ID: MW-14
Analyses: BTEX, sulfate, chloride, iron, nitrate, and TDS
Matrix: groundwater

Depth to Water: 6.37
Time: 11:59
Total Depth of Well: 20.53
Depth to Product: —

Vol. of Water to Purge: 14.16' x 0.1631 = 2.31 x 3 = ~7 gal
(height of water column * 0.1631 for 2" well or 0.6524 for 4" well) * 3 well vols
Method of Purging: Dedicated PVC Bailer
Method of Sampling: Dedicated PVC Bailer

Time	Vol. Removed	Total Vol. Removed (gallons)	pH (std. units)	Temp. (F)	Conductivity (us or ms)	Comments
12:15	1.00	1.00	6.85	60.3	1414 us	brown, cloudy
12:19	2.00	2.00	7.18	59.2	3.18 ms	SAA
12:24	3.00	3.00	7.24	54.9	3.40	SAA
12:27	4.00	4.00	7.19	58.6	2.53	SAA
12:30	5.00	5.00	7.41	59.0	3.12	SAA
12:33	6.00	6.00	7.44	58.8	3.12	SAA, clearing up
12:36	7.00	7.00	7.26	58.8	3.17	SAA

Comments:

LT Environmental, Inc.
2243 North Main Avenue, Suite #3
Durango, Colorado 81301
(970) 385-1096

Groundwater Sample Collection Form

Project Name: Dogie Compressor Station J Vent
Project Number: 34013012

Sample Location: J Vent Sampler: Chris Brown

Sample Date: 11/4/2013
Sample Time: 16:40
Sample ID: MW-15
Analyses: BTEX, sulfate, chloride, iron, nitrate, and TDS
Matrix: groundwater

Depth to Water: 6.50 Total Depth of Well: 20.49
Time: 15:42 Depth to Product: —

Vol. of Water to Purge: 13.99 x 0.1631 = 2.28 x3 = 6.85 gal (height of water column * 0.1631 for 2" well or 0.6524 for 4" well) * 3 well vols
Method of Purging: Dedicated PVC Bailer
Method of Sampling: Dedicated PVC Bailer

Time	Vol. Removed	Total Vol. Removed (gallons)	pH (std. units)	Temp. (F)	Conductivity (us or ms)	Comments
15:45	1.00	1.00	7.48	57.2	2.76	Brown, cloudy
15:48	2.00	2.00	7.41	56.8	2.78	SAA
15:51	3.00	3.00	7.37	56.7	2.80	SAA
15:55	4.00	4.00	7.53	56.7	2.84	SAA
15:59	5.00	5.00	7.46	56.7	2.67	SAA
16:03	6.00	6.00	7.56	56.3	2.85	SAA
16:07	7.00	7.00	7.53	56.5	2.85	SAA

Comments:

LT Environmental, Inc.
2243 North Main Avenue, Suite #3
Durango, Colorado 81301
(970) 385-1096

Groundwater Sample Collection Form

Project Name: Dogie Compressor Station J Vent
Project Number: 34013012

Sample Location: J Vent
Sampler: Chris Brown

Sample Date: 11/4/2013
Sample Time: 14:20
Sample ID: MW-16
Analyses: BTEX, sulfate, chloride, iron, nitrate, and TDS
Matrix: groundwater

Depth to Water: ~~15.~~ 6.00
Time: 13:47
Total Depth of Well: 20.55
Depth to Product: —

Vol. of Water to Purge: 14.55 x 0.1631 = 2.37 x 3 = 7.11
(height of water column * 0.1631 for 2" well or 0.6524 for 4" well) * 3 well vols
Method of Purging: Dedicated PVC Bailer
Method of Sampling: Dedicated PVC Bailer

Time	Vol. Removed	Total Vol. Removed (gallons)	pH (std. units)	Temp. (F)	Conductivity (us or ms)	Comments
13:50	1.00	1.00	7.21	56.3	4.96 ms	Brown, cloudy
13:53	2.00	2.00	7.31	57.2	5.14	SAA
13:57	3.00	3.00	7.36	57.0	~~2.60~~ 5.27	SAA
14:00	4.00	4.00	7.44	57.0	5.31	SAA
14:03	5.00	5.00	7.32	57.0	5.33	SAA
14:07	6.00	6.00	7.34	57.7	5.37	SAA
14:11	7.50	7.50	7.42	57.6	5.36	SAA

Comments:

APPENDIX F

2013 ANALYTICAL LABORATORY REPORTS

Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com

September 21, 2012

Ashley Ager

LTE
2243 Main Ave Suite 3
Durango, CO 81301
TEL: (970) 946-1093
FAX

RE: J Vent OrderNo.: 1209693

Dear Ashley Ager:

Hall Environmental Analysis Laboratory received 1 sample(s) on 9/18/2012 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent. To access our accredited tests please go to www.hallenvironmental.com or the state specific web sites. See the sample checklist and/or the Chain of Custody for information regarding the sample receipt temperature and preservation. Data qualifiers or a narrative will be provided if the sample analysis or analytical quality control parameters require a flag. All samples are reported as received unless otherwise indicated. Lab measurement of analytes considered field parameters that require analysis within 15 minutes of sampling such as pH and residual chlorine are qualified as being analyzed outside of the recommended holding time.

Please don't hesitate to contact HEAL for any additional information or clarifications.

Sincerely,

Andy Freeman

Laboratory Manager

4901 Hawkins NE
Albuquerque, NM 87109

Analytical Report
Lab Order **1209693**
Date Reported: **9/21/2012**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: LTE
Client Sample ID: GW-1
Project: J Vent
Collection Date: 9/17/2012 12:11:00 PM
Lab ID: 1209693-001
Matrix: AQUEOUS
Received Date: 9/18/2012 10:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**
Benzene	630	50		µg/L	50	9/18/2012 12:38:57 PM
Toluene	2800	50		µg/L	50	9/18/2012 12:38:57 PM
Ethylbenzene	190	50		µg/L	50	9/18/2012 12:38:57 PM
Xylenes, Total	2000	100		µg/L	50	9/18/2012 12:38:57 PM
Surr: 4-Bromofluorobenzene	102	69.7-152		%REC	50	9/18/2012 12:38:57 PM

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
P	Sample pH greater than 2	R	RPD outside accepted recovery limits
RL	Reporting Detection Limit	S	Spike Recovery outside accepted recovery limits

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1209693**

21-Sep-12

Client: LTE

Project: J Vent

Sample ID	**5ML RB**	SampType:	**MBLK**	TestCode:	**EPA Method 8015B: Gasoline Range**					
Client ID:	**PBW**	Batch ID:	**R5614**	RunNo:	**5614**					
Prep Date:		Analysis Date:	**9/18/2012**	SeqNo:	**160860**	Units:	**%REC**			
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: BFB		19		20.00		93.2	69.8	119			

Sample ID	**2.5UG GRO LCS**	SampType:	**LCS**	TestCode:	**EPA Method 8015B: Gasoline Range**					
Client ID:	**LCSW**	Batch ID:	**R5614**	RunNo:	**5614**					
Prep Date:		Analysis Date:	**9/18/2012**	SeqNo:	**160861**	Units:	**%REC**			
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: BFB		21		20.00		104	69.8	119			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
P	Sample pH greater than 2	R	RPD outside accepted recovery limits

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1209693**

21-Sep-12

Client: LTE

Project: J Vent

Sample ID	**5ML RB**	SampType:	**MBLK**	TestCode:	**EPA Method 8021B: Volatiles**					
Client ID:	**PBW**	Batch ID:	**R5614**	RunNo:	**5614**					
Prep Date:		Analysis Date:	**9/18/2012**	SeqNo:	**160875**	Units:	**µg/L**			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	1.0								
Toluene	ND	1.0								
Ethylbenzene	ND	1.0								
Xylenes, Total	ND	2.0								
Surr: 4-Bromofluorobenzene	19		20.00		94.2	69.7	152			

Sample ID	**100NG BTEX LCS**	SampType:	**LCS**	TestCode:	**EPA Method 8021B: Volatiles**					
Client ID:	**LCSW**	Batch ID:	**R5614**	RunNo:	**5614**					
Prep Date:		Analysis Date:	**9/18/2012**	SeqNo:	**160876**	Units:	**µg/L**			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	20	1.0	20.00	0	98.5	80	120			
Toluene	20	1.0	20.00	0	102	80	120			
Ethylbenzene	21	1.0	20.00	0	105	80	120			
Xylenes, Total	64	2.0	60.00	0	107	80	120			
Surr: 4-Bromofluorobenzene	19		20.00		92.6	69.7	152			

Sample ID	**1209693-001AMS**	SampType:	**MS**	TestCode:	**EPA Method 8021B: Volatiles**					
Client ID:	**GW-1**	Batch ID:	**R5614**	RunNo:	**5614**					
Prep Date:		Analysis Date:	**9/18/2012**	SeqNo:	**160881**	Units:	**µg/L**			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	1700	50	1000	626.5	104	74.1	124			
Toluene	4000	50	1000	2847	112	75.2	124			
Ethylbenzene	1200	50	1000	187.4	105	69	125			
Xylenes, Total	5300	100	3000	1997	109	73.1	126			
Surr: 4-Bromofluorobenzene	930		1000		93.3	69.7	152			

Sample ID	**1209693-001AMSD**	SampType:	**MSD**	TestCode:	**EPA Method 8021B: Volatiles**					
Client ID:	**GW-1**	Batch ID:	**R5614**	RunNo:	**5614**					
Prep Date:		Analysis Date:	**9/18/2012**	SeqNo:	**160882**	Units:	**µg/L**			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	1600	50	1000	626.5	100	74.1	124	2.08	11.2	
Toluene	3900	50	1000	2847	110	75.2	124	0.523	11.9	
Ethylbenzene	1200	50	1000	187.4	103	69	125	1.91	13.5	
Xylenes, Total	5200	100	3000	1997	106	73.1	126	1.63	13	
Surr: 4-Bromofluorobenzene	1000		1000		99.8	69.7	152	0	0	

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
P	Sample pH greater than 2	R	RPD outside accepted recovery limits

HALL ENVIRONMENTAL ANALYSIS LABORATORY

Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com

Sample Log-In Check List

Client Name: LTE

Work Order Number: 1209693

Received by/date: 09/18/12

Logged By: **Lindsay Mangin** 9/18/2012 10:00:00 AM

Completed By: **Lindsay Mangin** 9/18/2012 10:22:24 AM

Reviewed By: 09/18/12

Chain of Custody

1. Were seals intact?	Yes	No	Not Present ✔
2. Is Chain of Custody complete?	Yes ✔	No	Not Present
3. How was the sample delivered?	Courier		

Log In

4. Coolers are present? (see 19. for cooler specific information)	Yes ✔	No	NA
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. VOA vials have zero headspace?	Yes ✔	No	No VOA Vials
12. Were any sample containers received broken?	Yes	No ✔	
13. Does paperwork match bottle labels? (Note discrepancies on chain of custody)	Yes ✔	No	# of preserved bottles checked for pH:
14. Are matrices correctly identified on Chain of Custody?	Yes ✔	No	(<2 or >12 unless noted)
15. Is it clear what analyses were requested?	Yes ✔	No	Adjusted?
16. Were all holding times able to be met? (If no, notify customer for authorization.)	Yes ✔	No	Checked by:

Special Handling (if applicable)

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

Person Notified: _____ Date: _____

By Whom: _____ Via: eMail Phone Fax In Person

Regarding: _____

Client Instructions: _____

18. Additional remarks:

19. **Cooler Information**

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	1.8	Good	Yes			

Chain-of-Custody Record

Client: LTE

Mailing Address: 2243 Main Ave #3
Durango, CO 81301

Phone #: 970 385 1096

email or Fax#:

QA/QC Package:
☒ Standard ☐ Level 4 (Full Validation)

Accreditation
☐ NELAP ☐ Other

☐ EDD (Type)

Turn-Around Time:
☐ Standard ☒ Rush 24 hr

Project Name:
J Vint

Project #:

Project Manager:
Ashley Ager

Sampler: Ashley Ager

On Ice: ☒ Yes ☐ No

Sample Temperature: 1.8

HALL ENVIRONMENTAL ANALYSIS LABORATORY
www.hallenvironmental.com
4901 Hawkins NE - Albuquerque, NM 87109
Tel. 505-345-3975 Fax 505-345-4107

Analysis Request

Date	Time	Matrix	Sample Request ID	Container Type and #	Preservative Type	HEAL No. 1209693	BTEX + MTBE + TMB's (8021)	BTEX + MTBE + TPH (Gas only)	TPH Method 8015B (Gas/Diesel)	TPH (Method 418.1)	EDB (Method 504.1)	8310 (PNA or PAH)	RCRA 8 Metals	Anions (F,Cl,NO_3,NO_2,PO_4,SO_4)	8081 Pesticides / 8082 PCB's	8260B (VOA)	8270 (Semi-VOA)	Air Bubbles (Y or N)
9-17-12	12:11	GW	GW-1	40mL/3	HCl	-001	✓											

Date:	Time:	Relinquished by:	Received by:	Date	Time
9-17-12	1351	Ashley L Ager	Christine Walters	9/17/12	1351
9/17/12	1740	Christine Walters		09/18/12	1000

Remarks:

If necessary, samples submitted to Hall Environmental may be subcontracted to other accredited laboratories. This serves as notice of this possibility. Any sub-contracted data will be clearly notated on the analytical report.

HALL ENVIRONMENTAL ANALYSIS LABORATORY

Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com

October 03, 2013

Ashley Ager
LTE
2243 Main Ave Suite 3
Durango, CO 81301
TEL: (970) 946-1093
FAX

RE: J Vent OrderNo.: 1309862

Dear Ashley Ager:

Hall Environmental Analysis Laboratory received 1 sample(s) on 9/19/2013 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent. To access our accredited tests please go to www.hallenvironmental.com or the state specific web sites. In order to properly interpret your results it is imperative that you review this report in its entirety. See the sample checklist and/or the Chain of Custody for information regarding the sample receipt temperature and preservation. Data qualifiers or a narrative will be provided if the sample analysis or analytical quality control parameters require a flag. When necessary, data qualifers are provided on both the sample analysis report and the QC summary report, both sections should be reviewed. All samples are reported, as received, unless otherwise indicated. Lab measurement of analytes considered field parameters that require analysis within 15 minutes of sampling such as pH and residual chlorine are qualified as being analyzed outside of the recommended holding time.

Please don't hesitate to contact HEAL for any additional information or clarifications.

ADHS Cert #AZ0682 -- NMED-DWB Cert #NM9425 -- NMED-Micro Cert #NM0190

Sincerely,

Andy Freeman
Laboratory Manager
4901 Hawkins NE
Albuquerque, NM 87109

Analytical Report
Lab Order **1309862**
Date Reported: **10/3/2013**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: LTE
Client Sample ID: GW-1
Project: J Vent
Collection Date: 9/17/2013 10:20:00 AM
Lab ID: 1309862-001
Matrix: AQUEOUS
Received Date: 9/19/2013 10:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**	
Methyl tert-butyl ether (MTBE)	ND	2.5		µg/L	1	9/23/2013 2:08:44 PM	R13553
Benzene	ND	1.0		µg/L	1	9/23/2013 2:08:44 PM	R13553
Toluene	ND	1.0		µg/L	1	9/23/2013 2:08:44 PM	R13553
Ethylbenzene	ND	1.0		µg/L	1	9/23/2013 2:08:44 PM	R13553
Xylenes, Total	ND	2.0		µg/L	1	9/23/2013 2:08:44 PM	R13553
1,2,4-Trimethylbenzene	ND	1.0		µg/L	1	9/23/2013 2:08:44 PM	R13553
1,3,5-Trimethylbenzene	ND	1.0		µg/L	1	9/23/2013 2:08:44 PM	R13553
Surr: 4-Bromofluorobenzene	111	85-136		%REC	1	9/23/2013 2:08:44 PM	R13553
EPA METHOD 300.0: ANIONS						Analyst: **SRM**	
Chloride	34	2.5		mg/L	5	9/19/2013 5:57:36 PM	R13508
Nitrogen, Nitrate (As N)	ND	0.50	H	mg/L	5	9/19/2013 5:57:36 PM	R13508
Sulfate	2200	50	*	mg/L	100	9/25/2013 5:19:06 AM	R13596
EPA METHOD 200.7: METALS						Analyst: **JLF**	
Iron	4.9	0.10	*	mg/L	5	9/25/2013 7:59:46 PM	9483
SM2540C MOD: TOTAL DISSOLVED SOLIDS						Analyst: **KS**	
Total Dissolved Solids	4120	40.0	*	mg/L	1	9/25/2013 12:47:00 PM	9454

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
O	RSD is greater than RSDlimit	P	Sample pH greater than 2 for VOA and TOC only.
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	Spike Recovery outside accepted recovery limits		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1309862**

03-Oct-13

Client: LTE

Project: J Vent

Sample ID	**MB-9483**	SampType:	**MBLK**	TestCode:	**EPA Method 200.7: Metals**					
Client ID:	**PBW**	Batch ID:	**9483**	RunNo:	**13618**					
Prep Date:	**9/25/2013**	Analysis Date:	**9/25/2013**	SeqNo:	**387590**	Units:	**mg/L**			

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Iron	ND	0.020								

Sample ID	**LCS-9483**	SampType:	**LCS**	TestCode:	**EPA Method 200.7: Metals**					
Client ID:	**LCSW**	Batch ID:	**9483**	RunNo:	**13618**					
Prep Date:	**9/25/2013**	Analysis Date:	**9/25/2013**	SeqNo:	**387591**	Units:	**mg/L**			

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Iron	0.49	0.020	0.5000	0	97.7	85	115			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
O	RSD is greater than RSDlimit	P	Sample pH greater than 2 for VOA and TOC only.
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	Spike Recovery outside accepted recovery limits		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1309862**

03-Oct-13

Client: LTE

Project: J Vent

Sample ID **MB**	SampType: **MBLK**	TestCode: **EPA Method 300.0: Anions**
Client ID: **PBW**	Batch ID: **R13508**	RunNo: **13508**
Prep Date:	Analysis Date: **9/19/2013**	SeqNo: **384283** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	ND	0.50								
Nitrogen, Nitrate (As N)	ND	0.10								

Sample ID **LCS**	SampType: **LCS**	TestCode: **EPA Method 300.0: Anions**
Client ID: **LCSW**	Batch ID: **R13508**	RunNo: **13508**
Prep Date:	Analysis Date: **9/19/2013**	SeqNo: **384284** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	4.7	0.50	5.000	0	94.5	90	110			
Nitrogen, Nitrate (As N)	2.5	0.10	2.500	0	99.5	90	110			

Sample ID **A6**	SampType: **CCV_6**	TestCode: **EPA Method 300.0: Anions**
Client ID: **BatchQC**	Batch ID: **R13508**	RunNo: **13508**
Prep Date:	Analysis Date: **9/19/2013**	SeqNo: **384293** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	12	0.50	12.00	0	101	90	110			
Nitrogen, Nitrate (As N)	7.8	0.10	7.200	0	108	90	110			

Sample ID **A4**	SampType: **CCV_4**	TestCode: **EPA Method 300.0: Anions**
Client ID: **BatchQC**	Batch ID: **R13508**	RunNo: **13508**
Prep Date:	Analysis Date: **9/19/2013**	SeqNo: **384305** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	4.7	0.50	5.000	0	93.2	90	110			
Nitrogen, Nitrate (As N)	2.9	0.10	3.000	0	97.8	90	110			

Sample ID **A5**	SampType: **CCV_5**	TestCode: **EPA Method 300.0: Anions**
Client ID: **BatchQC**	Batch ID: **R13508**	RunNo: **13508**
Prep Date:	Analysis Date: **9/19/2013**	SeqNo: **384317** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	7.7	0.50	8.000	0	96.4	90	110			
Nitrogen, Nitrate (As N)	4.9	0.10	4.800	0	102	90	110			

Sample ID **A6**	SampType: **CCV_6**	TestCode: **EPA Method 300.0: Anions**
Client ID: **BatchQC**	Batch ID: **R13508**	RunNo: **13508**
Prep Date:	Analysis Date: **9/19/2013**	SeqNo: **384329** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- E Value above quantitation range
- J Analyte detected below quantitation limits
- O RSD is greater than RSDlimit
- R RPD outside accepted recovery limits
- S Spike Recovery outside accepted recovery limits
- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- P Sample pH greater than 2 for VOA and TOC only.
- RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1309862**

03-Oct-13

Client: LTE

Project: J Vent

Sample ID **A6**	SampType: **CCV_6**	TestCode: **EPA Method 300.0: Anions**
Client ID: **BatchQC**	Batch ID: **R13508**	RunNo: **13508**
Prep Date:	Analysis Date: **9/19/2013**	SeqNo: **384329** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	12	0.50	12.00	0	101	90	110			
Nitrogen, Nitrate (As N)	7.7	0.10	7.200	0	107	90	110			

Sample ID **LCS**	SampType: **LCS**	TestCode: **EPA Method 300.0: Anions**
Client ID: **LCSW**	Batch ID: **R13508**	RunNo: **13508**
Prep Date:	Analysis Date: **9/19/2013**	SeqNo: **384338** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	4.7	0.50	5.000	0	94.4	90	110			
Nitrogen, Nitrate (As N)	2.5	0.10	2.500	0	98.8	90	110			

Sample ID **A4**	SampType: **CCV_4**	TestCode: **EPA Method 300.0: Anions**
Client ID: **BatchQC**	Batch ID: **R13508**	RunNo: **13508**
Prep Date:	Analysis Date: **9/20/2013**	SeqNo: **384341** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	4.7	0.50	5.000	0	93.0	90	110			
Nitrogen, Nitrate (As N)	2.9	0.10	3.000	0	97.4	90	110			

Sample ID **A5**	SampType: **CCV_5**	TestCode: **EPA Method 300.0: Anions**
Client ID: **BatchQC**	Batch ID: **R13508**	RunNo: **13508**
Prep Date:	Analysis Date: **9/20/2013**	SeqNo: **384353** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	8.0	0.50	8.000	0	99.7	90	110			
Nitrogen, Nitrate (As N)	5.0	0.10	4.800	0	105	90	110			

Sample ID **A4**	SampType: **CCV_4**	TestCode: **EPA Method 300.0: Anions**
Client ID: **BatchQC**	Batch ID: **R13508**	RunNo: **13508**
Prep Date:	Analysis Date: **9/20/2013**	SeqNo: **384365** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	4.6	0.50	5.000	0	92.8	90	110			
Nitrogen, Nitrate (As N)	2.9	0.10	3.000	0	97.4	90	110			

Sample ID **A5**	SampType: **CCV_5**	TestCode: **EPA Method 300.0: Anions**
Client ID: **BatchQC**	Batch ID: **R13508**	RunNo: **13508**
Prep Date:	Analysis Date: **9/20/2013**	SeqNo: **384377** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- E Value above quantitation range
- J Analyte detected below quantitation limits
- O RSD is greater than RSDlimit
- R RPD outside accepted recovery limits
- S Spike Recovery outside accepted recovery limits
- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- P Sample pH greater than 2 for VOA and TOC only.
- RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1309862**

03-Oct-13

Client: LTE

Project: J Vent

Sample ID **A5**	SampType: **CCV_5**	TestCode: **EPA Method 300.0: Anions**
Client ID: **BatchQC**	Batch ID: **R13508**	RunNo: **13508**
Prep Date:	Analysis Date: **9/20/2013**	SeqNo: **384377** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	7.7	0.50	8.000	0	96.1	90	110			
Nitrogen, Nitrate (As N)	4.9	0.10	4.800	0	102	90	110			

Sample ID **A6**	SampType: **CCV_6**	TestCode: **EPA Method 300.0: Anions**
Client ID: **BatchQC**	Batch ID: **R13508**	RunNo: **13508**
Prep Date:	Analysis Date: **9/20/2013**	SeqNo: **384383** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	12	0.50	12.00	0	102	90	110			
Nitrogen, Nitrate (As N)	7.7	0.10	7.200	0	108	90	110			

Sample ID **A5**	SampType: **CCV_5**	TestCode: **EPA Method 300.0: Anions**
Client ID: **BatchQC**	Batch ID: **R13596**	RunNo: **13596**
Prep Date:	Analysis Date: **9/24/2013**	SeqNo: **387044** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Sulfate	20	0.50	20.00	0	98.0	90	110			

Sample ID **MB**	SampType: **MBLK**	TestCode: **EPA Method 300.0: Anions**
Client ID: **PBW**	Batch ID: **R13596**	RunNo: **13596**
Prep Date:	Analysis Date: **9/24/2013**	SeqNo: **387046** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Sulfate	ND	0.50								

Sample ID **LCS**	SampType: **LCS**	TestCode: **EPA Method 300.0: Anions**
Client ID: **LCSW**	Batch ID: **R13596**	RunNo: **13596**
Prep Date:	Analysis Date: **9/24/2013**	SeqNo: **387047** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Sulfate	9.4	0.50	10.00	0	93.9	90	110			

Sample ID **A6**	SampType: **CCV_6**	TestCode: **EPA Method 300.0: Anions**
Client ID: **BatchQC**	Batch ID: **R13596**	RunNo: **13596**
Prep Date:	Analysis Date: **9/24/2013**	SeqNo: **387056** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Sulfate	31	0.50	30.00	0	102	90	110			

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- E Value above quantitation range
- J Analyte detected below quantitation limits
- O RSD is greater than RSDlimit
- R RPD outside accepted recovery limits
- S Spike Recovery outside accepted recovery limits
- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- P Sample pH greater than 2 for VOA and TOC only.
- RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1309862**

03-Oct-13

Client: LTE

Project: J Vent

Sample ID	**A4**	SampType:	**CCV_4**	TestCode:	**EPA Method 300.0: Anions**					
Client ID:	**BatchQC**	Batch ID:	**R13596**	RunNo:	**13596**					
Prep Date:		Analysis Date:	**9/24/2013**	SeqNo:	**387068**	Units:	**mg/L**			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Sulfate	12	0.50	12.50	0	97.8	90	110			

Sample ID	**A5**	SampType:	**CCV_5**	TestCode:	**EPA Method 300.0: Anions**					
Client ID:	**BatchQC**	Batch ID:	**R13596**	RunNo:	**13596**					
Prep Date:		Analysis Date:	**9/24/2013**	SeqNo:	**387080**	Units:	**mg/L**			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Sulfate	20	0.50	20.00	0	99.5	90	110			

Sample ID	**A6**	SampType:	**CCV_6**	TestCode:	**EPA Method 300.0: Anions**					
Client ID:	**BatchQC**	Batch ID:	**R13596**	RunNo:	**13596**					
Prep Date:		Analysis Date:	**9/24/2013**	SeqNo:	**387092**	Units:	**mg/L**			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Sulfate	31	0.50	30.00	0	102	90	110			

Sample ID	**MB**	SampType:	**MBLK**	TestCode:	**EPA Method 300.0: Anions**					
Client ID:	**PBW**	Batch ID:	**R13596**	RunNo:	**13596**					
Prep Date:		Analysis Date:	**9/24/2013**	SeqNo:	**387096**	Units:	**mg/L**			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Sulfate	ND	0.50								

Sample ID	**LCS**	SampType:	**LCS**	TestCode:	**EPA Method 300.0: Anions**					
Client ID:	**LCSW**	Batch ID:	**R13596**	RunNo:	**13596**					
Prep Date:		Analysis Date:	**9/24/2013**	SeqNo:	**387097**	Units:	**mg/L**			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Sulfate	9.7	0.50	10.00	0	97.4	90	110			

Sample ID	**A4**	SampType:	**CCV_4**	TestCode:	**EPA Method 300.0: Anions**					
Client ID:	**BatchQC**	Batch ID:	**R13596**	RunNo:	**13596**					
Prep Date:		Analysis Date:	**9/24/2013**	SeqNo:	**387104**	Units:	**mg/L**			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Sulfate	12	0.50	12.50	0	94.5	90	110			

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- E Value above quantitation range
- J Analyte detected below quantitation limits
- O RSD is greater than RSDlimit
- R RPD outside accepted recovery limits
- S Spike Recovery outside accepted recovery limits
- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- P Sample pH greater than 2 for VOA and TOC only.
- RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1309862**

03-Oct-13

Client: LTE

Project: J Vent

Sample ID **A5**	SampType: **CCV_5**	TestCode: **EPA Method 300.0: Anions**
Client ID: **BatchQC**	Batch ID: **R13596**	RunNo: **13596**
Prep Date:	Analysis Date: **9/24/2013**	SeqNo: **387116** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Sulfate	20	0.50	20.00	0	98.1	90	110			

Sample ID **A6**	SampType: **CCV_6**	TestCode: **EPA Method 300.0: Anions**
Client ID: **BatchQC**	Batch ID: **R13596**	RunNo: **13596**
Prep Date:	Analysis Date: **9/25/2013**	SeqNo: **387128** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Sulfate	31	0.50	30.00	0	102	90	110			

Sample ID **A4**	SampType: **CCV_4**	TestCode: **EPA Method 300.0: Anions**
Client ID: **BatchQC**	Batch ID: **R13596**	RunNo: **13596**
Prep Date:	Analysis Date: **9/25/2013**	SeqNo: **387140** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Sulfate	12	0.50	12.50	0	95.1	90	110			

Sample ID **A5**	SampType: **CCV_5**	TestCode: **EPA Method 300.0: Anions**
Client ID: **BatchQC**	Batch ID: **R13596**	RunNo: **13596**
Prep Date:	Analysis Date: **9/25/2013**	SeqNo: **387152** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Sulfate	19	0.50	20.00	0	97.1	90	110			

Sample ID **A6**	SampType: **CCV_6**	TestCode: **EPA Method 300.0: Anions**
Client ID: **BatchQC**	Batch ID: **R13596**	RunNo: **13596**
Prep Date:	Analysis Date: **9/25/2013**	SeqNo: **387161** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Sulfate	30	0.50	30.00	0	101	90	110			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
O	RSD is greater than RSDlimit	P	Sample pH greater than 2 for VOA and TOC only.
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	Spike Recovery outside accepted recovery limits		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1309862**

03-Oct-13

Client: LTE

Project: J Vent

Sample ID	**5ML RB**	SampType: **MBLK**			TestCode: **EPA Method 8021B: Volatiles**					
Client ID:	**PBW**	Batch ID: **R13517**			RunNo: **13517**					
Prep Date:		Analysis Date: **9/20/2013**			SeqNo: **384731**		Units: **%REC**			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: 4-Bromofluorobenzene	22		20.00		111	85	136			

Sample ID	**100NG BTEX LCS**	SampType: **LCS**			TestCode: **EPA Method 8021B: Volatiles**					
Client ID:	**LCSW**	Batch ID: **R13517**			RunNo: **13517**					
Prep Date:		Analysis Date: **9/20/2013**			SeqNo: **384732**		Units: **%REC**			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: 4-Bromofluorobenzene	23		20.00		114	85	136			

Sample ID	**1309862-001AMS**	SampType: **MS**			TestCode: **EPA Method 8021B: Volatiles**					
Client ID:	**GW-1**	Batch ID: **R13517**			RunNo: **13517**					
Prep Date:		Analysis Date: **9/20/2013**			SeqNo: **384734**		Units: **%REC**			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: 4-Bromofluorobenzene	1100		1000		112	85	136			

Sample ID	**1309862-001AMSD**	SampType: **MSD**			TestCode: **EPA Method 8021B: Volatiles**					
Client ID:	**GW-1**	Batch ID: **R13517**			RunNo: **13517**					
Prep Date:		Analysis Date: **9/20/2013**			SeqNo: **384735**		Units: **%REC**			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: 4-Bromofluorobenzene	1100		1000		114	85	136	0	0	

Sample ID	**5ML RB**	SampType: **MBLK**			TestCode: **EPA Method 8021B: Volatiles**					
Client ID:	**PBW**	Batch ID: **R13553**			RunNo: **13553**					
Prep Date:		Analysis Date: **9/23/2013**			SeqNo: **385582**		Units: **µg/L**			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Methyl tert-butyl ether (MTBE)	ND	2.5								
Benzene	ND	1.0								
Toluene	ND	1.0								
Ethylbenzene	ND	1.0								
Xylenes, Total	ND	2.0								
1,2,4-Trimethylbenzene	ND	1.0								
1,3,5-Trimethylbenzene	ND	1.0								
Surr: 4-Bromofluorobenzene	22		20.00		112	85	136			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
O	RSD is greater than RSDlimit	P	Sample pH greater than 2 for VOA and TOC only.
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	Spike Recovery outside accepted recovery limits		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1309862**

03-Oct-13

Client: LTE

Project: J Vent

Sample ID	**100NG BTEX LCS**	SampType:	**LCS**	TestCode:	**EPA Method 8021B: Volatiles**					
Client ID:	**LCSW**	Batch ID:	**R13553**	RunNo:	**13553**					
Prep Date:		Analysis Date:	**9/23/2013**	SeqNo:	**385583**	Units:	**µg/L**			

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Methyl tert-butyl ether (MTBE)	19	2.5	20.00	0	93.8	76.8	124			
Benzene	21	1.0	20.00	0	104	80	120			
Toluene	21	1.0	20.00	0	105	80	120			
Ethylbenzene	21	1.0	20.00	0	105	80	120			
Xylenes, Total	64	2.0	60.00	0	107	80	120			
1,2,4-Trimethylbenzene	21	1.0	20.00	0	107	80	120			
1,3,5-Trimethylbenzene	22	1.0	20.00	0	109	80	120			
Surr: 4-Bromofluorobenzene	23		20.00		115	85	136			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
O	RSD is greater than RSDlimit	P	Sample pH greater than 2 for VOA and TOC only.
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	Spike Recovery outside accepted recovery limits		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1309862**

03-Oct-13

Client: LTE

Project: J Vent

Sample ID	**MB-9454**	SampType:	**MBLK**	TestCode:	**SM2540C MOD: Total Dissolved Solids**					
Client ID:	**PBW**	Batch ID:	**9454**	RunNo:	**13599**					
Prep Date:	**9/24/2013**	Analysis Date:	**9/25/2013**	SeqNo:	**387191**	Units:	**mg/L**			

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Dissolved Solids	ND	20.0								

Sample ID	**LCS-9454**	SampType:	**LCS**	TestCode:	**SM2540C MOD: Total Dissolved Solids**					
Client ID:	**LCSW**	Batch ID:	**9454**	RunNo:	**13599**					
Prep Date:	**9/24/2013**	Analysis Date:	**9/25/2013**	SeqNo:	**387192**	Units:	**mg/L**			

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Dissolved Solids	1010	20.0	1000	0	101	80	120			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
O	RSD is greater than RSDlimit	P	Sample pH greater than 2 for VOA and TOC only.
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	Spike Recovery outside accepted recovery limits		

HALL ENVIRONMENTAL ANALYSIS LABORATORY

Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com

Sample Log-In Check List

Client Name: LTE | Work Order Number: **1309862** | RcptNo: 1

Received by/date: LM 09/19/13

Logged By: **Michelle Garcia** 9/19/2013 10:00:00 AM Michelle Garcia

Completed By: **Michelle Garcia** 9/19/2013 10:48:31 AM Michelle Garcia

Reviewed By: MG 09/19/13 @ 1215

Chain of Custody

1. Custody seals intact on sample bottles?	Yes	No	Not Present ✔
2. Is Chain of Custody complete?	Yes ✔	No	Not Present
3. How was the sample delivered?	Courier		

Log In

4. Was an attempt made to cool the samples?	Yes ✔	No	NA
5. Were all samples received at a temperature of >0° C to 6.0°C	Yes ✔	No	NA
6. Sample(s) in proper container(s)?	Yes ✔	No	
7. Sufficient sample volume for indicated test(s)?	Yes ✔	No	
8. Are samples (except VOA and ONG) properly preserved?	Yes	No ✔	
9. Was preservative added to bottles?	Yes ✔	No	NA
10. VOA vials have zero headspace?	Yes	No	See Section 19. No VOA Vials ✔
11. Were any sample containers received broken?	Yes	No ✔	
12. Does paperwork match bottle labels? (Note discrepancies on chain of custody)	Yes ✔	No	# of preserved bottles checked for pH: 01 (<2 or >12 unless noted)
13. Are matrices correctly identified on Chain of Custody?	Yes ✔	No	Adjusted? YES
14. Is it clear what analyses were requested?	Yes ✔	No	
15. Were all holding times able to be met? (If no, notify customer for authorization.)	Yes ✔	No	Checked by: MG

Special Handling (if applicable)

16. Was client notified of all discrepancies with this order? Yes | No ✔ | NA

Person Notified: _____ Date: _____

By Whom: _____ Via: eMail | Phone | Fax | In Person

Regarding: _____

Client Instructions: _____

17. Additional remarks:

For metals anlaysis: Added 1 mL HNO3 to -001C 09/19/2013 for acceptable pH. AMG 09/19/13. Added 1 mL HNO3 to -001C on 09/20/2013 for acceptable pH.

18. **Cooler Information**

HALL ENVIRONMENTAL ANALYSIS LABORATORY

Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com

Sample Log-In Check List

Client Name: LTE | Work Order Number: **1309862** | RcptNo: 1

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	1.0	Good	Yes			

Chain-of-Custody Record

Client: LT Environmental

Mailing Address: 2243 Main Ave #3
Durango, CO 81301

Phone #: 970 946 1093

email or Fax#: aager@ltenv.com

QA/QC Package:
☒ Standard ☐ Level 4 (Full Validation)

Accreditation
☐ NELAP ☐ Other _____

☐ EDD (Type) _____

Turn-Around Time:
☒ Standard ☐ Rush _____

Project Name: J Vent

Project #:

Project Manager: Ashley Ager

Sampler: Ashley Ager

On Ice: ☒ Yes ☐ No

Sample Temperature: 1.0

HALL ENVIRONMENTAL ANALYSIS LABORATORY

www.hallenvironmental.com

4901 Hawkins NE - Albuquerque, NM 87109

Tel. 505-345-3975 Fax 505-345-4107

Analysis Request

Date	Time	Matrix	Sample Request ID	Container Type and #	Preservative Type	HEAL No. 1309862	BTEX + ~~MTBE + TMB's (8021)~~	BTEX + MTBE + TPH (Gas only)	TPH Method 8015B (Gas/Diesel)	TPH (Method 418.1)	EDB (Method 504.1)	8310 (PNA or PAH)	RCRA 8 Metals	Anions (F,Cl,NO_3,NO_2,PO_4,SO_4)	8081 Pesticides / 8082 PCB's	8260B (VOA)	8270 (Semi-VOA)	Sulfate, Chloride	Nitrate	Iron	TDS	Air Bubbles (Y or N)
9-17-13	1020	GW	GW-1	varies/5	HCl & cool	-001	✓											✓	✓	✓	✓	

Date:	Time:	Relinquished by:	Received by:	Date	Time
9-18-13	1104	Ashley L Ager	Christine Walker	9/18/13	1106
9/18/13	1737	Christine Walker		09/19/13	1000

Remarks:

If necessary, samples submitted to Hall Environmental may be subcontracted to other accredited laboratories. This serves as notice of this possibility. Any sub-contracted data will be clearly notated on the analytical report.

HALL ENVIRONMENTAL ANALYSIS LABORATORY

Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com

November 18, 2013

Ashley Ager
LTE
2243 Main Ave Suite 3
Durango, CO 81301
TEL: (970) 946-1093
FAX

RE: Dogie Compressor Station J-Vent OrderNo.: 1311174

Dear Ashley Ager:

Hall Environmental Analysis Laboratory received 5 sample(s) on 11/6/2013 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent. To access our accredited tests please go to www.hallenvironmental.com or the state specific web sites. In order to properly interpret your results it is imperative that you review this report in its entirety. See the sample checklist and/or the Chain of Custody for information regarding the sample receipt temperature and preservation. Data qualifiers or a narrative will be provided if the sample analysis or analytical quality control parameters require a flag. When necessary, data qualifers are provided on both the sample analysis report and the QC summary report, both sections should be reviewed. All samples are reported, as received, unless otherwise indicated. Lab measurement of analytes considered field parameters that require analysis within 15 minutes of sampling such as pH and residual chlorine are qualified as being analyzed outside of the recommended holding time.

Please don't hesitate to contact HEAL for any additional information or clarifications.

ADHS Cert #AZ0682 -- NMED-DWB Cert #NM9425 -- NMED-Micro Cert #NM0190

Sincerely,

Andy Freeman
Laboratory Manager
4901 Hawkins NE
Albuquerque, NM 87109

Hall Environmental Analysis Laboratory, Inc.

CLIENT: LTE
Client Sample ID: MW-14
Project: Dogie Compressor Station J-Vent
Collection Date: 11/4/2013 12:40:00 PM
Lab ID: 1311174-001
Matrix: AQUEOUS
Received Date: 11/6/2013 10:17:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**	
Benzene	ND	1.0		µg/L	1	11/7/2013 12:23:02 PM	R14637
Toluene	ND	1.0		µg/L	1	11/7/2013 12:23:02 PM	R14637
Ethylbenzene	ND	1.0		µg/L	1	11/7/2013 12:23:02 PM	R14637
Xylenes, Total	ND	2.0		µg/L	1	11/7/2013 12:23:02 PM	R14637
Surr: 4-Bromofluorobenzene	102	85-136		%REC	1	11/7/2013 12:23:02 PM	R14637
EPA METHOD 300.0: ANIONS						Analyst: **JRR**	
Chloride	13	2.5		mg/L	5	11/6/2013 2:45:35 PM	R14636
Sulfate	1000	25	*	mg/L	50	11/7/2013 9:46:40 PM	R14661
Nitrate+Nitrite as N	ND	1.0		mg/L	5	11/6/2013 5:14:31 PM	R14636
EPA METHOD 200.7: TOTAL METALS						Analyst: **ELS**	
Iron	4.6	0.20	*	mg/L	10	11/11/2013 5:02:29 PM	10224
SM2540C MOD: TOTAL DISSOLVED SOLIDS						Analyst: **KS**	
Total Dissolved Solids	2290	200	*	mg/L	1	11/11/2013 11:23:00 AM	10230

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
O	RSD is greater than RSDlimit	P	Sample pH greater than 2 for VOA and TOC only.
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	Spike Recovery outside accepted recovery limits		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: LTE
Client Sample ID: MW-16
Project: Dogie Compressor Station J-Vent
Collection Date: 11/4/2013 2:20:00 PM
Lab ID: 1311174-002
Matrix: AQUEOUS
Received Date: 11/6/2013 10:17:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**	
Benzene	ND	1.0		µg/L	1	11/7/2013 4:18:15 PM	R14637
Toluene	ND	1.0		µg/L	1	11/7/2013 4:18:15 PM	R14637
Ethylbenzene	ND	1.0		µg/L	1	11/7/2013 4:18:15 PM	R14637
Xylenes, Total	ND	2.0		µg/L	1	11/7/2013 4:18:15 PM	R14637
Surr: 4-Bromofluorobenzene	99.9	85-136		%REC	1	11/7/2013 4:18:15 PM	R14637
EPA METHOD 300.0: ANIONS						Analyst: **JRR**	
Chloride	26	2.5		mg/L	5	11/6/2013 1:31:07 PM	R14636
Nitrogen, Nitrate (As N)	ND	0.50		mg/L	5	11/6/2013 1:31:07 PM	R14636
Sulfate	1700	25	*	mg/L	50	11/7/2013 9:59:05 PM	R14661
EPA METHOD 200.7: TOTAL METALS						Analyst: **ELS**	
Iron	14	0.40	*	mg/L	20	11/11/2013 5:04:25 PM	10224
SM2540C MOD: TOTAL DISSOLVED SOLIDS						Analyst: **KS**	
Total Dissolved Solids	3600	200	*	mg/L	1	11/11/2013 11:23:00 AM	10230

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
O	RSD is greater than RSDlimit	P	Sample pH greater than 2 for VOA and TOC only.
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	Spike Recovery outside accepted recovery limits		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: LTE
Client Sample ID: MW-13
Project: Dogie Compressor Station J-Vent
Collection Date: 11/4/2013 4:20:00 PM
Lab ID: 1311174-003
Matrix: AQUEOUS
Received Date: 11/6/2013 10:17:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**	
Benzene	ND	1.0		µg/L	1	11/7/2013 4:48:17 PM	R14637
Toluene	ND	1.0		µg/L	1	11/7/2013 4:48:17 PM	R14637
Ethylbenzene	ND	1.0		µg/L	1	11/7/2013 4:48:17 PM	R14637
Xylenes, Total	ND	2.0		µg/L	1	11/7/2013 4:48:17 PM	R14637
Surr: 4-Bromofluorobenzene	97.6	85-136		%REC	1	11/7/2013 4:48:17 PM	R14637
EPA METHOD 300.0: ANIONS						Analyst: **JRR**	
Chloride	17	2.5		mg/L	5	11/6/2013 1:55:56 PM	R14636
Nitrogen, Nitrate (As N)	ND	0.50		mg/L	5	11/6/2013 1:55:56 PM	R14636
Sulfate	1200	25	*	mg/L	50	11/7/2013 10:11:30 PM	R14661
EPA METHOD 200.7: TOTAL METALS						Analyst: **ELS**	
Iron	12	0.40	*	mg/L	20	11/11/2013 5:06:21 PM	10224
SM2540C MOD: TOTAL DISSOLVED SOLIDS						Analyst: **KS**	
Total Dissolved Solids	2440	200	*	mg/L	1	11/11/2013 11:23:00 AM	10230

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
O	RSD is greater than RSDlimit	P	Sample pH greater than 2 for VOA and TOC only.
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	Spike Recovery outside accepted recovery limits		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: LTE
Client Sample ID: MW-15
Project: Dogie Compressor Station J-Vent
Collection Date: 11/4/2013 4:40:00 PM
Lab ID: 1311174-004
Matrix: AQUEOUS
Received Date: 11/6/2013 10:17:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**	
Benzene	ND	1.0		µg/L	1	11/7/2013 5:18:41 PM	R14637
Toluene	ND	1.0		µg/L	1	11/7/2013 5:18:41 PM	R14637
Ethylbenzene	ND	1.0		µg/L	1	11/7/2013 5:18:41 PM	R14637
Xylenes, Total	ND	2.0		µg/L	1	11/7/2013 5:18:41 PM	R14637
Surr: 4-Bromofluorobenzene	98.4	85-136		%REC	1	11/7/2013 5:18:41 PM	R14637
EPA METHOD 300.0: ANIONS						Analyst: **JRR**	
Chloride	13	2.5		mg/L	5	11/6/2013 2:20:46 PM	R14636
Nitrogen, Nitrate (As N)	ND	0.50		mg/L	5	11/6/2013 2:20:46 PM	R14636
Sulfate	930	10	*	mg/L	20	11/6/2013 2:33:11 PM	R14636
EPA METHOD 200.7: TOTAL METALS						Analyst: **ELS**	
Iron	3.6	0.20	*	mg/L	10	11/11/2013 5:08:17 PM	10224
SM2540C MOD: TOTAL DISSOLVED SOLIDS						Analyst: **KS**	
Total Dissolved Solids	1960	200	*	mg/L	1	11/11/2013 11:23:00 AM	10230

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
O	RSD is greater than RSDlimit	P	Sample pH greater than 2 for VOA and TOC only.
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	Spike Recovery outside accepted recovery limits		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: LTE
Client Sample ID: TRIP BLANK
Project: Dogie Compressor Station J-Vent
Collection Date:
Lab ID: 1311174-005
Matrix: AQUEOUS
Received Date: 11/6/2013 10:17:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**	
Benzene	ND	1.0		µg/L	1	11/6/2013 6:34:53 PM	R14626
Toluene	ND	1.0		µg/L	1	11/6/2013 6:34:53 PM	R14626
Ethylbenzene	ND	1.0		µg/L	1	11/6/2013 6:34:53 PM	R14626
Xylenes, Total	ND	2.0		µg/L	1	11/6/2013 6:34:53 PM	R14626
Surr: 4-Bromofluorobenzene	102	85-136		%REC	1	11/6/2013 6:34:53 PM	R14626

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
O	RSD is greater than RSDlimit	P	Sample pH greater than 2 for VOA and TOC only.
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	Spike Recovery outside accepted recovery limits		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1311174**

18-Nov-13

Client: LTE

Project: Dogie Compressor Station J-Vent

Sample ID	**MB-10224**	SampType:	**MBLK**	TestCode:	**EPA Method 200.7: Total Metals**				
Client ID:	**PBW**	Batch ID:	**10224**	RunNo:	**14635**				
Prep Date:	**11/7/2013**	Analysis Date:	**11/7/2013**	SeqNo:	**420923**	Units:	**mg/L**		

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Iron	ND	0.020								

Sample ID	**LCS-10224**	SampType:	**LCS**	TestCode:	**EPA Method 200.7: Total Metals**				
Client ID:	**LCSW**	Batch ID:	**10224**	RunNo:	**14635**				
Prep Date:	**11/7/2013**	Analysis Date:	**11/7/2013**	SeqNo:	**420924**	Units:	**mg/L**		

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Iron	0.51	0.020	0.5000	0	102	85	115			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
O	RSD is greater than RSDlimit	P	Sample pH greater than 2 for VOA and TOC only.
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	Spike Recovery outside accepted recovery limits		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1311174**

18-Nov-13

Client: LTE

Project: Dogie Compressor Station J-Vent

Sample ID **A5**	SampType: **CCV_5**	TestCode: **EPA Method 300.0: Anions**
Client ID: **BatchQC**	Batch ID: **R14636**	RunNo: **14636**
Prep Date:	Analysis Date: **11/6/2013**	SeqNo: **420929** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	7.8	0.50	8.000	0	97.3	90	110			
Nitrogen, Nitrate (As N)	4.9	0.10	4.800	0	103	90	110			
Sulfate	20	0.50	20.00	0	97.7	90	110			
Nitrate+Nitrite as N	8.0	0.20	8.000	0	101	90	110			

Sample ID **MB**	SampType: **MBLK**	TestCode: **EPA Method 300.0: Anions**
Client ID: **PBW**	Batch ID: **R14636**	RunNo: **14636**
Prep Date:	Analysis Date: **11/6/2013**	SeqNo: **420932** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	ND	0.50								
Nitrogen, Nitrate (As N)	ND	0.10								
Sulfate	ND	0.50								
Nitrate+Nitrite as N	ND	0.20								

Sample ID **LCS**	SampType: **LCS**	TestCode: **EPA Method 300.0: Anions**
Client ID: **LCSW**	Batch ID: **R14636**	RunNo: **14636**
Prep Date:	Analysis Date: **11/6/2013**	SeqNo: **420933** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	4.9	0.50	5.000	0	97.6	90	110			
Nitrogen, Nitrate (As N)	2.5	0.10	2.500	0	101	90	110			
Sulfate	9.8	0.50	10.00	0	97.8	90	110			
Nitrate+Nitrite as N	3.5	0.20	3.500	0	99.8	90	110			

Sample ID **A6**	SampType: **CCV_6**	TestCode: **EPA Method 300.0: Anions**
Client ID: **BatchQC**	Batch ID: **R14636**	RunNo: **14636**
Prep Date:	Analysis Date: **11/6/2013**	SeqNo: **420942** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	12	0.50	12.00	0	102	90	110			
Nitrogen, Nitrate (As N)	7.8	0.10	7.200	0	109	90	110			
Sulfate	31	0.50	30.00	0	102	90	110			
Nitrate+Nitrite as N	13	0.20	12.00	0	105	90	110			

Sample ID **A4**	SampType: **CCV_4**	TestCode: **EPA Method 300.0: Anions**
Client ID: **BatchQC**	Batch ID: **R14636**	RunNo: **14636**
Prep Date:	Analysis Date: **11/6/2013**	SeqNo: **420954** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- E Value above quantitation range
- J Analyte detected below quantitation limits
- O RSD is greater than RSDlimit
- R RPD outside accepted recovery limits
- S Spike Recovery outside accepted recovery limits
- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- P Sample pH greater than 2 for VOA and TOC only.
- RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1311174**

18-Nov-13

Client: LTE

Project: Dogie Compressor Station J-Vent

Sample ID **A4**	SampType: **CCV_4**	TestCode: **EPA Method 300.0: Anions**
Client ID: **BatchQC**	Batch ID: **R14636**	RunNo: **14636**
Prep Date:	Analysis Date: **11/6/2013**	SeqNo: **420954** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	4.7	0.50	5.000	0	93.5	90	110			
Nitrogen, Nitrate (As N)	2.9	0.10	3.000	0	98.1	90	110			
Sulfate	12	0.50	12.50	0	93.8	90	110			
Nitrate+Nitrite as N	4.9	0.20	5.000	0	97.2	90	110			

Sample ID **A5**	SampType: **CCV_5**	TestCode: **EPA Method 300.0: Anions**
Client ID: **BatchQC**	Batch ID: **R14636**	RunNo: **14636**
Prep Date:	Analysis Date: **11/6/2013**	SeqNo: **420966** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	7.7	0.50	8.000	0	96.9	90	110			
Nitrogen, Nitrate (As N)	4.9	0.10	4.800	0	102	90	110			
Sulfate	19	0.50	20.00	0	97.2	90	110			
Nitrate+Nitrite as N	8.0	0.20	8.000	0	100	90	110			

Sample ID **A6**	SampType: **CCV_6**	TestCode: **EPA Method 300.0: Anions**
Client ID: **BatchQC**	Batch ID: **R14636**	RunNo: **14636**
Prep Date:	Analysis Date: **11/6/2013**	SeqNo: **420978** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	12	0.50	12.00	0	102	90	110			
Nitrogen, Nitrate (As N)	7.8	0.10	7.200	0	108	90	110			
Sulfate	31	0.50	30.00	0	102	90	110			
Nitrate+Nitrite as N	13	0.20	12.00	0	105	90	110			

Sample ID **A5**	SampType: **CCV_5**	TestCode: **EPA Method 300.0: Anions**
Client ID: **BatchQC**	Batch ID: **R14661**	RunNo: **14661**
Prep Date:	Analysis Date: **11/7/2013**	SeqNo: **421828** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Sulfate	20	0.50	20.00	0	99.2	90	110			

Sample ID **MB**	SampType: **MBLK**	TestCode: **EPA Method 300.0: Anions**
Client ID: **PBW**	Batch ID: **R14661**	RunNo: **14661**
Prep Date:	Analysis Date: **11/7/2013**	SeqNo: **421830** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Sulfate	ND	0.50								

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- E Value above quantitation range
- J Analyte detected below quantitation limits
- O RSD is greater than RSDlimit
- R RPD outside accepted recovery limits
- S Spike Recovery outside accepted recovery limits
- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- P Sample pH greater than 2 for VOA and TOC only.
- RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1311174**

18-Nov-13

Client: LTE

Project: Dogie Compressor Station J-Vent

Sample ID	**LCS**	SampType: **LCS**			TestCode: **EPA Method 300.0: Anions**				
Client ID:	**LCSW**	Batch ID: **R14661**			RunNo: **14661**				
Prep Date:		Analysis Date: **11/7/2013**			SeqNo: **421831**		Units: **mg/L**		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Sulfate	9.9	0.50	10.00	0	99.4	90	110			

Sample ID	**A6**	SampType: **CCV_6**			TestCode: **EPA Method 300.0: Anions**				
Client ID:	**BatchQC**	Batch ID: **R14661**			RunNo: **14661**				
Prep Date:		Analysis Date: **11/7/2013**			SeqNo: **421840**		Units: **mg/L**		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Sulfate	31	0.50	30.00	0	103	90	110			

Sample ID	**A4**	SampType: **CCV_4**			TestCode: **EPA Method 300.0: Anions**				
Client ID:	**BatchQC**	Batch ID: **R14661**			RunNo: **14661**				
Prep Date:		Analysis Date: **11/7/2013**			SeqNo: **421852**		Units: **mg/L**		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Sulfate	12	0.50	12.50	0	96.0	90	110			

Sample ID	**A5**	SampType: **CCV_5**			TestCode: **EPA Method 300.0: Anions**				
Client ID:	**BatchQC**	Batch ID: **R14661**			RunNo: **14661**				
Prep Date:		Analysis Date: **11/7/2013**			SeqNo: **421864**		Units: **mg/L**		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Sulfate	20	0.50	20.00	0	99.4	90	110			

Sample ID	**A6**	SampType: **CCV_6**			TestCode: **EPA Method 300.0: Anions**				
Client ID:	**BatchQC**	Batch ID: **R14661**			RunNo: **14661**				
Prep Date:		Analysis Date: **11/7/2013**			SeqNo: **421876**		Units: **mg/L**		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Sulfate	31	0.50	30.00	0	103	90	110			

Sample ID	**A4**	SampType: **CCV_4**			TestCode: **EPA Method 300.0: Anions**				
Client ID:	**BatchQC**	Batch ID: **R14661**			RunNo: **14661**				
Prep Date:		Analysis Date: **11/7/2013**			SeqNo: **421888**		Units: **mg/L**		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Sulfate	12	0.50	12.50	0	96.3	90	110			

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- E Value above quantitation range
- J Analyte detected below quantitation limits
- O RSD is greater than RSDlimit
- R RPD outside accepted recovery limits
- S Spike Recovery outside accepted recovery limits
- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- P Sample pH greater than 2 for VOA and TOC only.
- RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1311174**

18-Nov-13

Client: LTE

Project: Dogie Compressor Station J-Vent

Sample ID **A5**	SampType: **CCV_5**	TestCode: **EPA Method 300.0: Anions**							
Client ID: **BatchQC**	Batch ID: **R14661**	RunNo: **14661**							
Prep Date:	Analysis Date: **11/8/2013**	SeqNo: **421900**	Units: **mg/L**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Sulfate	20	0.50	20.00	0	100	90	110			

Sample ID **MB**	SampType: **MBLK**	TestCode: **EPA Method 300.0: Anions**							
Client ID: **PBW**	Batch ID: **R14661**	RunNo: **14661**							
Prep Date:	Analysis Date: **11/8/2013**	SeqNo: **421906**	Units: **mg/L**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Sulfate	ND	0.50								

Sample ID **LCS**	SampType: **LCS**	TestCode: **EPA Method 300.0: Anions**							
Client ID: **LCSW**	Batch ID: **R14661**	RunNo: **14661**							
Prep Date:	Analysis Date: **11/8/2013**	SeqNo: **421907**	Units: **mg/L**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Sulfate	9.9	0.50	10.00	0	99.2	90	110			

Sample ID **A6**	SampType: **CCV_6**	TestCode: **EPA Method 300.0: Anions**							
Client ID: **BatchQC**	Batch ID: **R14661**	RunNo: **14661**							
Prep Date:	Analysis Date: **11/8/2013**	SeqNo: **421912**	Units: **mg/L**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Sulfate	31	0.50	30.00	0	103	90	110			

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- E Value above quantitation range
- J Analyte detected below quantitation limits
- O RSD is greater than RSDlimit
- R RPD outside accepted recovery limits
- S Spike Recovery outside accepted recovery limits
- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- P Sample pH greater than 2 for VOA and TOC only.
- RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1311174**

18-Nov-13

Client: LTE

Project: Dogie Compressor Station J-Vent

Sample ID **5ML RB**	SampType: **MBLK**	TestCode: **EPA Method 8021B: Volatiles**
Client ID: **PBW**	Batch ID: **R14626**	RunNo: **14626**
Prep Date:	Analysis Date: **11/6/2013**	SeqNo: **420715** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	1.0								
Toluene	ND	1.0								
Ethylbenzene	ND	1.0								
Xylenes, Total	ND	2.0								
Surr: 4-Bromofluorobenzene	21		20.00		105	85	136			

Sample ID **100NG BTEX LCS**	SampType: **LCS**	TestCode: **EPA Method 8021B: Volatiles**
Client ID: **LCSW**	Batch ID: **R14626**	RunNo: **14626**
Prep Date:	Analysis Date: **11/6/2013**	SeqNo: **420716** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	19	1.0	20.00	0	93.1	80	120			
Toluene	19	1.0	20.00	0	94.0	80	120			
Ethylbenzene	19	1.0	20.00	0	94.6	80	120			
Xylenes, Total	58	2.0	60.00	0	96.3	80	120			
Surr: 4-Bromofluorobenzene	21		20.00		106	85	136			

Sample ID **1311174-001AMS**	SampType: **MS**	TestCode: **EPA Method 8021B: Volatiles**
Client ID: **MW-14**	Batch ID: **R14626**	RunNo: **14626**
Prep Date:	Analysis Date: **11/6/2013**	SeqNo: **420718** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	940	50	1000	0	94.0	73.4	119			
Toluene	960	50	1000	0	95.7	80	120			
Ethylbenzene	970	50	1000	0	96.7	80	120			
Xylenes, Total	3000	100	3000	0	100	80	120			
Surr: 4-Bromofluorobenzene	1100		1000		106	85	136			

Sample ID **1311174-001AMSD**	SampType: **MSD**	TestCode: **EPA Method 8021B: Volatiles**
Client ID: **MW-14**	Batch ID: **R14626**	RunNo: **14626**
Prep Date:	Analysis Date: **11/6/2013**	SeqNo: **420719** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	990	50	1000	0	98.9	73.4	119	5.13	20	
Toluene	1000	50	1000	0	100	80	120	4.92	20	
Ethylbenzene	1000	50	1000	0	101	80	120	4.81	20	
Xylenes, Total	3100	100	3000	0	104	80	120	3.72	20	
Surr: 4-Bromofluorobenzene	1100		1000		109	85	136	0	0	

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- E Value above quantitation range
- J Analyte detected below quantitation limits
- O RSD is greater than RSDlimit
- R RPD outside accepted recovery limits
- S Spike Recovery outside accepted recovery limits
- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- P Sample pH greater than 2 for VOA and TOC only.
- RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1311174**

18-Nov-13

Client: LTE

Project: Dogie Compressor Station J-Vent

Sample ID **B16**	SampType: **MBLK**	TestCode: **EPA Method 8021B: Volatiles**
Client ID: **PBW**	Batch ID: **R14637**	RunNo: **14637**
Prep Date:	Analysis Date: **11/7/2013**	SeqNo: **421467** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	1.0								
Toluene	ND	1.0								
Ethylbenzene	ND	1.0								
Xylenes, Total	ND	2.0								
Surr: 4-Bromofluorobenzene	19		20.00		93.5	85	136			

Sample ID **100NG BTEX LCS**	SampType: **LCS**	TestCode: **EPA Method 8021B: Volatiles**
Client ID: **LCSW**	Batch ID: **R14637**	RunNo: **14637**
Prep Date:	Analysis Date: **11/7/2013**	SeqNo: **421468** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	18	1.0	20.00	0	89.5	80	120			
Toluene	18	1.0	20.00	0	91.3	80	120			
Ethylbenzene	18	1.0	20.00	0	91.0	80	120			
Xylenes, Total	56	2.0	60.00	0	94.0	80	120			
Surr: 4-Bromofluorobenzene	21		20.00		107	85	136			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
O	RSD is greater than RSDlimit	P	Sample pH greater than 2 for VOA and TOC only.
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	Spike Recovery outside accepted recovery limits		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1311174**

18-Nov-13

Client: LTE

Project: Dogie Compressor Station J-Vent

Sample ID	**MB-10230**	SampType:	**MBLK**	TestCode:	**SM2540C MOD: Total Dissolved Solids**					
Client ID:	**PBW**	Batch ID:	**10230**	RunNo:	**14708**					
Prep Date:	**11/7/2013**	Analysis Date:	**11/11/2013**	SeqNo:	**423311**	Units:	**mg/L**			

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Dissolved Solids	ND	20.0								

Sample ID	**LCS-10230**	SampType:	**LCS**	TestCode:	**SM2540C MOD: Total Dissolved Solids**					
Client ID:	**LCSW**	Batch ID:	**10230**	RunNo:	**14708**					
Prep Date:	**11/7/2013**	Analysis Date:	**11/11/2013**	SeqNo:	**423312**	Units:	**mg/L**			

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Dissolved Solids	1020	20.0	1000	0	102	80	120			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
O	RSD is greater than RSDlimit	P	Sample pH greater than 2 for VOA and TOC only.
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	Spike Recovery outside accepted recovery limits		

HALL ENVIRONMENTAL ANALYSIS LABORATORY

Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com

Sample Log-In Check List

Client Name: LTE | Work Order Number: 1311174 | RcptNo: 1

Received by/date: AG 11/06/13

Logged By: **Michelle Garcia** 11/6/2013 10:17:00 AM Michelle Garcia

Completed By: **Michelle Garcia** 11/6/2013 10:57:36 AM Michelle Garcia

Reviewed By: ID 11/06/13

Chain of Custody

1. Custody seals intact on sample bottles?	Yes	No	Not Present ✓
2. Is Chain of Custody complete?	Yes ✓	No	Not Present
3. How was the sample delivered?	Courier		

Log In

4. Was an attempt made to cool the samples?	Yes ✓	No	NA
5. Were all samples received at a temperature of >0° C to 6.0°C	Yes ✓	No	NA
6. Sample(s) in proper container(s)?	Yes ✓	No	
7. Sufficient sample volume for indicated test(s)?	Yes ✓	No	
8. Are samples (except VOA and ONG) properly preserved?	Yes ✓	No	
9. Was preservative added to bottles?	Yes	No ✓	NA
10. VOA vials have zero headspace?	Yes ✓	No	No VOA Vials
11. Were any sample containers received broken?	Yes	No ✓	
12. Does paperwork match bottle labels? (Note discrepancies on chain of custody)	Yes ✓	No	# of preserved bottles checked for pH: (<2 or >12 unless noted)
13. Are matrices correctly identified on Chain of Custody?	Yes ✓	No	Adjusted?
14. Is it clear what analyses were requested?	Yes ✓	No	
15. Were all holding times able to be met? (If no, notify customer for authorization.)	Yes ✓	No	Checked by:

Special Handling (if applicable)

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

Person Notified: _____ Date: _____

By Whom: _____ Via: eMail Phone Fax In Person

Regarding: _____

Client Instructions: _____

17. Additional remarks:

18. Cooler Information

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	1.0	Good	Yes			

Chain-of-Custody Record

Client: LT Environmental, Inc.

Mailing Address: 2243 Main Ave, Suite 3
Durango CO 81301

Phone #: 970-385-1096

email or Fax#: cbrown@ltenv.com

QA/QC Package:
☒ Standard ☐ Level 4 (Full Validation)

Accreditation
☐ NELAP ☐ Other _____

☐ EDD (Type) _____

Turn-Around Time:
☒ Standard ☐ Rush _____

Project Name: Dogie Compressor Station J-Vent

Project #: 034013012

Project Manager: Ashley Ager

Sampler: Chris Brown
On Ice: ☒ Yes ☐ No
Sample Temperature: 1.0

HALL ENVIRONMENTAL ANALYSIS LABORATORY
www.hallenvironmental.com
4901 Hawkins NE - Albuquerque, NM 87109
Tel. 505-345-3975 Fax 505-345-4107

Date	Time	Matrix	Sample Request ID	Container Type and #	Preservative Type	HEAL No. 1311174
11/4/13	12:40	Water	MW-14	Glass/Poly - 6	HCl, HNO_3, H_2SO_4	-001
↓	14:20	↓	MW-16	↓	↓	-002
↓	16:20	↓	MW-13	↓	↓	-003
↓	16:40	↓	MW-15	↓	↓	-004
			TRIPBLANK	2-VOA	HCl	-005

11/06/13

Analysis Request

BTEX + MTBE + TMB's (8021)	BTEX + MTBE + TPH (Gas only)	TPH 8015B (GRO / DRO / MRO)	TPH (Method 418.1)	EDB (Method 504.1)	PAH's (8310 or 8270 SIMS)	RCRA 8 Metals	Anions ($F, Cl, NO_3, NO_2, PO_4, SO_4$)	8081 Pesticides / 8082 PCB's	8260B (VOA)	8270 (Semi-VOA)	BTEX (8021)	Cl, SO_4, NO_3	Total Iron	TDS	Air Bubbles (Y or N)
											X	X	X	X	
											X	X	X	X	
											X	X	X	X	
											X	X	X	X	
											X				

Date:	Time:	Relinquished by:	Received by:	Date	Time
11/5/13	11:22		Christin Walter	11/5/13	1122
11/5/13	1729	Christin Walter		11/06/13	1017

Remarks:

If necessary, samples submitted to Hall Environmental may be subcontracted to other accredited laboratories. This serves as notice of this possibility. Any sub-contracted data will be clearly notated on the analytical report.