



October 12, 2016

Mr. Ken Raymond
Senior Environmental Health and Safety Specialist
SandRidge Exploration and Production, LLC
123 Robert S. Kerr Avenue
Oklahoma City, Oklahoma 73102

RE: **Supplemental Environmental Site Investigation**
Former EE3 Production Facility – Mutual 4-30H (API # 05-057-06488)
Jackson County, Colorado

Dear Mr. Raymond:

LT Environmental, Inc. (LTE), under the direction of SandRidge Exploration and Production, LLC (SandRidge), conducted a subsurface environmental site investigation (ESI) at the Mutual 4-30H location (Site), API # 05-057-06488. This report includes a summary of previous work conducted at the Site, a discussion of the ESI's field activities, hydrogeological records, laboratory analytical results, and cost estimates for source removal remediation.

The Site is located approximately 0.7 miles west of State Highway 14 and 0.9 miles south of County Road 26 east-southeast of Coalmont, Colorado. The legal site description is the southwest quarter of the southeast quarter of Section 30, Township 7 North, Range 80 West, 6th Principal Meridian. The Site Location Map is provided as Figure 1 and the Site Map is provided as Figure 2.

Site History

In May 2016, Fremont Environmental, Inc. (Fremont) on behalf of the Colorado Oil and Gas Conservation Commission (COGCC), conducted an ESI at the site. Fremont advanced a total of eight soil borings (A through H) and soil samples were collected from four of the borings (B, C, D, and F). The laboratory analytical results indicated that total petroleum hydrocarbons (TPH) exceeded the COGCC Table 910-1 allowable concentrations in all four soil samples, ranging from 972 milligram per kilogram (mg/kg) (F) to 59,000 mg/kg (C). Benzene, toluene, and total xylenes concentrations in the sample collected from soil boring C exceeded the COGCC Table 910-1 applicable limits. Additionally, elevated concentrations of volatile organic compounds (VOCs) were detected in the field using a photo ionizing detector (PID) at soil borings A and E. Electric Conductivity (EC) in the soil sample collected from soil boring C exceeded the COGCC Table 910-1 allowable limit at 4.26 millimhos per centimeter (mmhos/cm). Finally, arsenic exceeded the COGCC Table 910-1 allowable concentration in all four soil samples, ranging from 2.38 mg/kg (F) to 3.75 mg/kg (B). A complete summary of the ESI is discussed in the COGCC report titled *Soil Sampling Report, Former EE3/SandRidge LLC Locations* and dated June 8, 2016.

At the request of SandRidge, LTE reviewed the ESI data and determined that developing an appropriate remediation strategy would require additional subsurface investigation to adequately delineate the vertical and lateral extent of hydrocarbon impact at the Site.



Subsequent Environmental Site Investigation

On September 6 and 7, 2016, LTE, under the direction of SandRidge, conducted a supplemental ESI to further delineate the hydrocarbon impact at the Site. Twenty soil borings were advanced with a truck mounted Geoprobe® using direct push drilling technology by Elite Drilling Services, LLC. (Elite) of Denver, Colorado. LTE observed the continuous soil samples for evidence of environmental impacts and measured the concentration of VOCs in the soil with a PID. The soil borings were advanced to a minimum of 5 feet below any evidence of environmental impacts including soil staining, odor, and elevated PID readings, or until refusal. LTE collected one soil sample from each of the soil borings for laboratory analysis from the interval with the highest PID reading, or demonstrated evidence of hydrocarbon impacts including staining or odor.

Six soil borings were advanced at the approximate locations where elevated soil hydrocarbon concentrations were observed during the initial ESI (SBA-R, SBB-R, SBC-R, SBD-R, SBE-R, and SBF-R), to delineate the vertical extent of impact. Fourteen soil borings were advanced at the proposed step-out locations (SB01 through SB14) to delineate the lateral extent of impact. The soil boring locations are provided on Figure 2. The soil boring lithologic logs are included as an Attachment 1.

LTE collected the soil samples in laboratory provided sample containers, placed them on ice, and delivered them, with a completed chain of custody form, to Summit Scientific (Summit), of Golden, Colorado, for analysis. Summit analyzed the soil samples for benzene, toluene, ethylbenzene, and total xylenes (BTEX) and TPH – gasoline range organics (GRO) under United States Environmental Protection Agency (EPA) method 8260, and TPH – diesel range organics (DRO) under EPA method 8015.

Field Summary

Field observations indicated hydrocarbon staining, odor, and/or elevated PID readings at soil borings S02, SB03, SB08, SB09, SB11, SB12, SBA-R, SBB-R, SBC-R, SBD-R, SBE-R, and SBF-R. No evidence of hydrocarbon impact was observed at the remaining soil borings. Evidence of hydrocarbon impacts ranged in depth from approximately 0 to 5 feet bgs except at soil boring SBF-R, where evidence of hydrocarbon impact was observed to 12 feet bgs and soil boring SB12 where evidence of hydrocarbon impact was observed to 9.5 feet bgs. Where hydrocarbon staining was observed, the maximum PID reading ranged from 2.5 parts per million (ppm) at 3 feet bgs at SBC-R to 252.9 ppm at 3 feet bgs at SBB-R. The lithology of the impacted interval observed at soil borings consisted of clayey sand with traces of fibrous woody fragments throughout. Drilling refusal was encountered between 11 and 20 feet bgs. Groundwater was encountered at 15 feet bgs in soil boring SBB-R and 15.5 feet bgs in soil borings SBA-R and SBF-R. No groundwater was encountered at the remaining soil borings. LTE did not collect groundwater samples from these soil borings because groundwater was encountered at depths greater than 5 feet below observed environmental impacts.



Soil Analytical Results

The COGCC Table 910-1 allowable concentrations for BTEX and TPH in soil are 0.17 mg/kg, 85 mg/kg, 100 mg/kg, 175 mg/kg, and 500 mg/kg, respectively. Soil samples SBD-R@3', SBE-R@3', SBF-R@3', SB02@3', SB03@3', SB09@3', and SB11@4' exceeded the COGCC Table 910-1 allowable concentration for TPH ranging from 534 mg/kg in soil sample SB11@4' to 1,580 mg/kg in soil sample SBF-R@3'. All remaining soil sample analytical results were below the applicable COGCC Table 910-1 allowable concentrations. The soil sample analytical results are presented on Figure 3 and summarized in Table 1. The laboratory analytical report is attached.

Discussion

The laboratory analytical results of the soil samples collected from soil borings B, C, D, and F by Freemont during the initial ESI had arsenic concentrations of 3.75 mg/kg, 3.12 mg/kg, 2.57 mg/kg, and 2.38 mg/kg respectively. SandRidge collected background soil samples from seven sites within the region. The highest background arsenic concentrations observed at each of these sites ranged from 0.677 mg/kg to 6.09 mg/kg, and averaged 3.46 mg/kg. The COGCC has reviewed the background arsenic concentrations, and based on frequently asked question #31 of the COGCC 2008 Rule Making, has determined that the maximum allowable arsenic concentration of the samples collected during the initial ESI is not to exceed 3.80 mg/kg or 10% above of the average of the highest background arsenic concentrations observed at each location. The highest arsenic concentration of the samples collected during the initial ESI was 3.75 mg/kg which is below the COGCC determined maximum allowable concentration of 3.80 mg/kg. Based on these data, LTE recommends that SandRidge request a decision of No Further Action for arsenic impact with the COGCC. A map of the regional arsenic data collected by SandRidge is presented on Figure 4.

The laboratory analytical results of the soil sample collected from soil boring C by Freemont during the initial ESI had an EC measurement of 4.26 mmhos/cm which exceeded the COGCC Table 910-1 applicable standard of 4 mmhos/cm. Although this EC measurement is in exceedance, it is only 6% higher than the 910-1 standard. Additionally, the soil adsorption ratio (SAR) of this sample was 6.81 which is significantly less than the COGCC Table 910-1 applicable standard of 12. This data indicates soil impact is likely related to chlorides, instead of sodium, yielding a much easier anion to mitigate through natural processes. Finally, the inorganic constituents of the COGCC Table 910-1 are typically addressed during reclamation activities associated with plug and abandonment (P&A) activities. Based on this information, LTE recommends that SandRidge request a decision of No Further Action with the COGCC on the elevated EC measurement, and state that inorganics will be monitored during P&A activities where affected topsoil will require compliance with state regulations to provide revegetation and site closure.

LTE observed elevated TPH concentrations in seven of the soil borings advanced as part of this supplemental ESI. The extent of impacts were relatively similar to those observed during the original ESI. However, point of compliance was not achieved in the northern limits or southeastern limits of the investigation. Soil sample SB09@3', which is representative of the northern limits, indicates a TPH concentration of 1,334 mg/kg and soil sample SB03@ 3', which is representative of the southeastern limits, indicates a TPH concentration of 670 mg/kg. These concentrations exceed the COGCC Table 910-1 allowable TPH concentration of 500 mg/kg. Typically, LTE will determine



whether additional soil boring step-outs are necessary based on field observations of environmental impacts including significant soil staining and/or odor as well as elevated VOCs concentrations measured with a PID. Both of these soil borings demonstrated limited staining and odor as well as VOCs concentrations of less than 100 ppm. All other step-out soil borings indicated compliance with the applicable COGCC Table 910-1 allowable concentrations. The vertical extent of impact was delineated to extend at a maximum between 2 and 12 feet bgs, however, field observations indicate that the majority of impact exists between 2 and 4 feet bgs.

Although point of compliance was not achieved in the northern and southeastern locations of the Site, the distance between the soil borings compliant to COGCC Table 910-1 allowable concentrations and the soil borings with elevated TPH concentrations suggests that the impacts likely to do not extend beyond 50 feet east or north of soil borings that did not achieve compliance (SB03 and SB09) which would represent the limits within the bermed areas of the drill cuttings pit. The approximate lateral extent of hydrocarbon impact is 325 feet in a general north-south direction and 90 feet in a general east-west direction. Based on this assumption and the analytical results and field observations of the initial ESI, LTE estimates the volume of hydrocarbon impacted soil existing at the site to be approximately 3,000 cubic yards. TPH concentrations existing at the Site in exceedance of the COGCC Table 910-1 allowable concentrations ranged between 972 mg/kg (F@3.5') to 59,000 mg/kg (C@4.5') during the initial ESI.

Source Removal Excavation

SandRidge will secure an earthworks contractor to excavate the delineated impact and transport it to a properly permitted landfill facility for final disposal. LTE will oversee the source removal excavation to observe for hydrocarbon impacts, including soil staining and/or odor, and screen the excavated soils for VOCs using a PID and a PetroFlag® kit (field test for heavy organics). LTE will determine the extent of impacts and direct the earthworks contractor to segregate the impacted soils from the clean soils based on these observations.

Upon completion of the source removal activities, LTE will collect confirmation soil samples from the sidewalls and floor of each excavation. These confirmation soil samples will be representative of the excavation and, in general, spaced at 30 foot centers. The confirmation soil samples will be collected in laboratory provided sample containers, placed on ice, and submitted to Summit, under chain of custody protocol, for BTEX and TPH-GRO analysis using EPA method 8260B, and TPH-DRO analysis using EPA method 8015. The soil samples will be completed under 24 hour turnaround times in order to expedite source removal activities. The source removal excavation will be backfilled with clean fill upon verification that the confirmation soil samples are within the COGCC Table 910-1 allowable concentrations.

LTE, on behalf of SandRidge, will draft a Remediation Summary Report to provide the details of the remediation activities and confirmation sampling analytical results. The report will include a text summary, data tables, figures, and laboratory reports. SandRidge will submit the Remediation Summary Report with a Form 4 Sundry Notice to the COGCC to request closure with LTE's support.

LTE anticipates that excavation activities will begin within two weeks upon receiving notice to proceed from SandRidge, and require five 10-hour days to complete the field tasks listed above. The



cost for source removal excavation based on a time and materials structure, is estimated to be \$280,882 (Table 2) and includes the following assumptions:

- A lump sum cost of \$5,000 for the excavation subcontractor to conduct source removal was assumed;
- A cost of \$57 per ton for transportation and disposal of the impacted materials was assumed;
- A lump sum cost of \$45,000 for imported fill material was assumed;
- Source removal excavation can be completed in five days;
- Twelve confirmation soil samples will be required; and
- The source removal area has been completely delineated and no additional impacts will be discovered during excavation.

Soil Shredding

LTE will secure an earthworks contractor to excavate the delineated impact and treat the impacted material utilizing soil shredding and chemical oxidation remediation technology. LTE will oversee the source removal excavation to observe for hydrocarbon impacts, including soil staining and/or odor, and screen the excavated soils for VOCs using a PID and a PetroFlag® kit (field test for heavy organics). LTE will determine the extent of impacts and direct the earthworks contractor to segregate the impacted soils from the clean soils based on these observations.

Upon completion of the source removal activities, LTE will collect confirmation soil samples from the sidewalls and floor of each excavation. These confirmation soil samples will be representative of the excavation and, in general, spaced at 30 foot centers. The confirmation soil samples will be collected in laboratory provided sample containers, placed on ice, and submitted to Summit, under chain of custody protocol, for BTEX and TPH-GRO analysis using EPA method 8260B, and TPH-DRO analysis using EPA method 8015. The soil samples will be completed under 24-hour turnaround times in order to expedite source removal activities.

Soil treatment of the impacted material will be initiated as soon as possible, and conducted to efficiently treat all soil impacts. It is expected that soil treatment will be completed in approximately six working days. Soil will be treated by mechanical agitation, shredding, and ex-situ chemical oxidation. Shortly after impacted soils are mechanically shredded, soils are treated with concentrated hydrogen peroxide (3-7% typically), and windrowed onsite.

Following treatment, the soil will need to be allowed to sit for a minimum of 24 hours prior to confirmation soil sampling to ensure that chemical reactions were complete and equilibrium in soil is established. LTE, under the direction of SandRidge, will collect one 20-point composite confirmation soil sample representative of each approximately 100 cubic yard interval up to 500 cubic yards and one representative sample of each approximately 500 cubic yard interval thereafter. Each composite sample will be field screened using a PID to verify the reduction in VOCs prior to laboratory analysis. Following receipt of confirmation sampling results indicating compliance with cleanup goals, the treated soil will be backfilled in the excavation. Stockpiled topsoil or import topsoil will be utilized in the upper three feet.



LTE, on behalf of SandRidge, will draft a Remediation Summary Report to provide the details of the remediation activities and confirmation sampling analytical results. The report will include a text summary, data tables, figures, and laboratory reports. SandRidge will submit the Remediation Summary Report with a Form 4 Sundry Notice to the COGCC to request closure with LTE support.

LTE anticipates that excavation activities will begin within two weeks upon receiving notice to proceed from SandRidge, and require seven 10-hour days to complete the field tasks listed above. The cost for source removal excavation, soil shredding, and chemical oxidation treatment based on a unit rate price structure, is estimated to be \$57 per cubic yard totaling \$165,134 and includes the following assumptions:

- 22 confirmation soil samples will be required;
- Soil shredding remediation activities will take seven days;
- Soil shredding will be conducted in line with the remediation of the other sites, thereby reducing mobilization costs;
- Unlimited construction services will provide unit rate costs for remediation based on the cumulative amount of impacted materials observed at all four sites; and
- The source removal area has been completely delineated and no additional impacts will be discovered during excavation.

LTE appreciates the opportunity to provide environmental services to SandRidge. Please feel free to contact the undersigned at 303-433-9788 if you have any questions or comments regarding the proposed remediation activities program.

Sincerely,

LT ENVIRONMENTAL, INC.

A handwritten signature in blue ink that reads 'Jess Alexander'.

Jess Alexander
Project Environmental Scientist

A handwritten signature in blue ink that appears to read 'B Forkner'.

Brett Forkner
Project Environmental Scientist

Attachments

Figure 1	Site Location Map
Figure 2	Site Map
Figure 3	Soil Sample Analytical Results
Figure 4	Regional Background Arsenic Concentration Map
Table 1	Soil Sample Analytical Results
Table 2	Source Removal Excavation Cost Estimate
Attachment 1	Soil Lithologic Boring Logs
Attachment 2	Laboratory Analytical Report

FIGURES

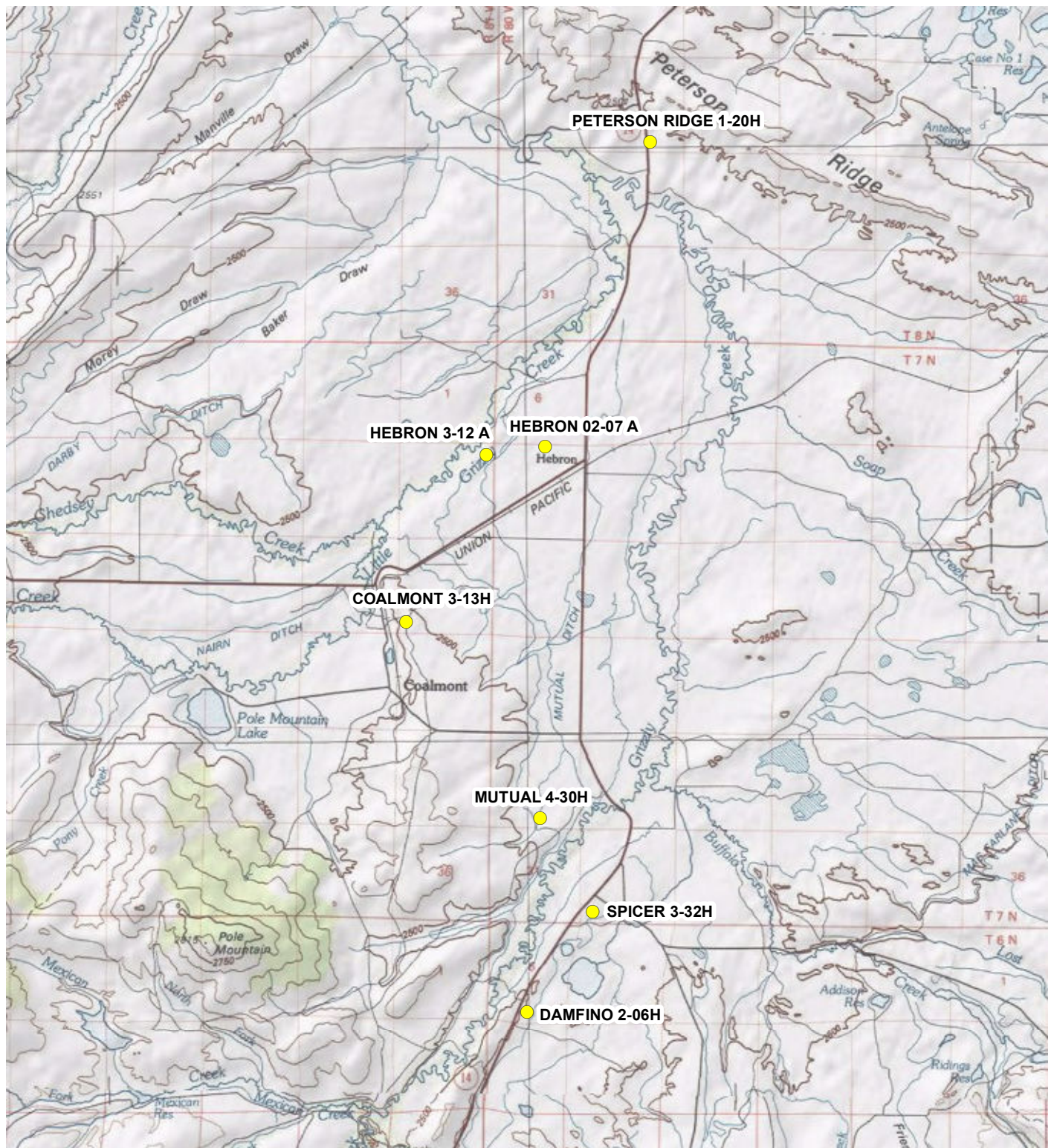
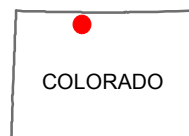


IMAGE COURTESY OF ESRI/USGS

LEGEND

● SITE LOCATION



COLORADO

FIGURE 1
SITE LOCATION MAP
SANDRIDGE WELLSITES
JACKSON COUNTY, COLORADO

SANDRIDGE EXPLORATION AND PRODUCTION, LLC





LEGEND

● SOIL BORING

IMAGE COURTESY OF ESRI

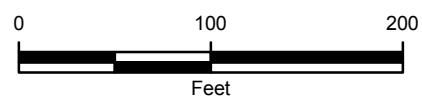
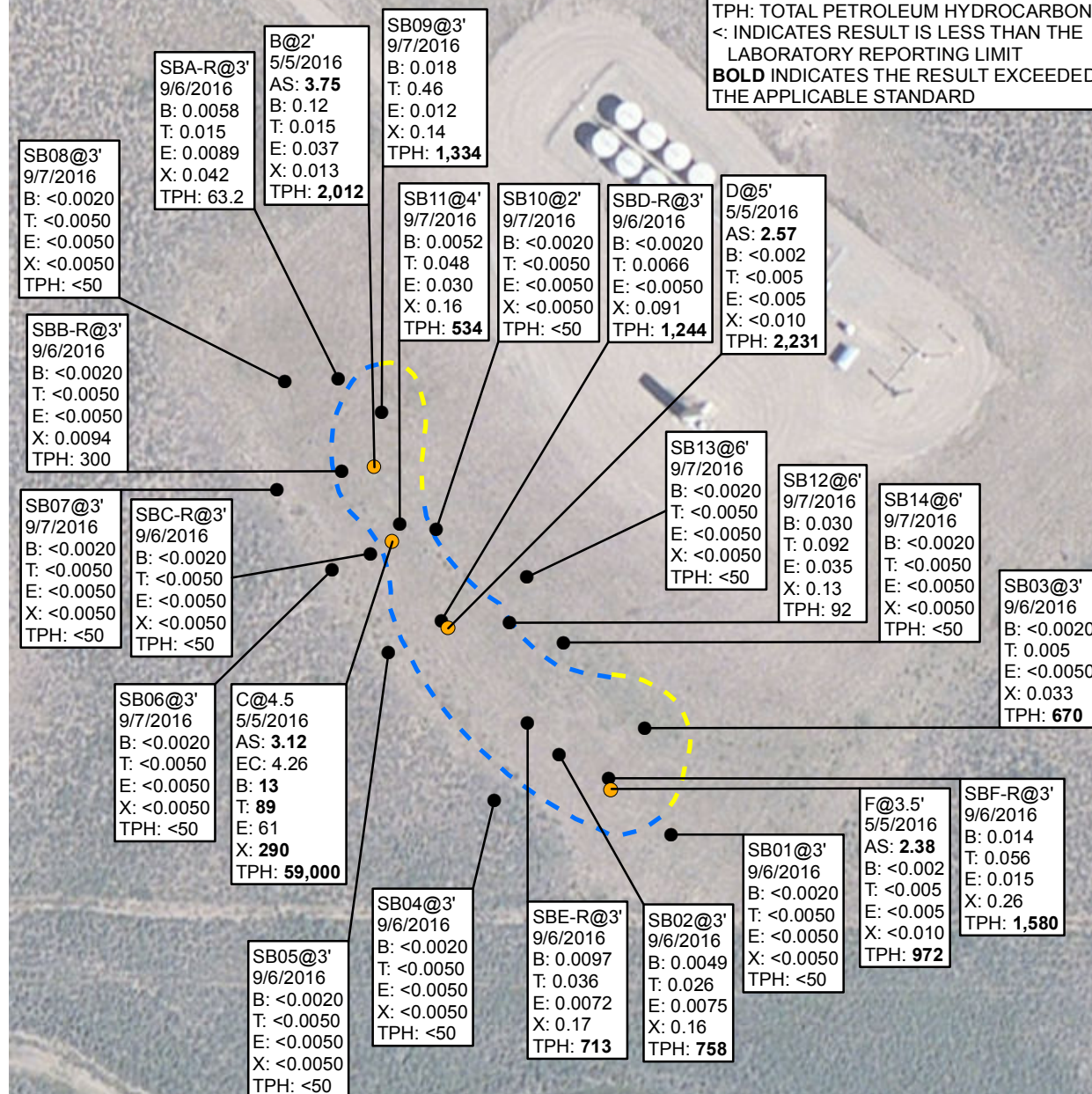


FIGURE 2
SITE MAP
MUTUAL 4-30H
JACKSON COUNTY, COLORADO

SANDRIDGE EXPLORATION AND PRODUCTION, LLC



SAMPLE ID@DEPTH BELOW GROUND SURFACE IN FEET
 SAMPLE DATE
 AS: ARSENIC IN MILLIGRAMS PER KILOGRAM (mg/kg)
 EC: ELECTRICAL CONDUCTIVITY (mmhos/cm)
 B: BENZENE (mg/kg)
 T: TOLUENE (mg/kg)
 E: ETHYLBENZENE (mg/kg)
 X: TOTAL XYLENES (mg/kg)
 TPH: TOTAL PETROLEUM HYDROCARBONS (mg/kg)
 <: INDICATES RESULT IS LESS THAN THE
 LABORATORY REPORTING LIMIT
BOLD INDICATES THE RESULT EXCEEDED
 THE APPLICABLE STANDARD



LEGEND

- PREVIOUS COGCC SOIL SAMPLE
- SOIL BORING
- EXTENT OF IMPACT
- ESTIMATED EXTENT OF IMPACT

IMAGE COURTESY OF ESRI

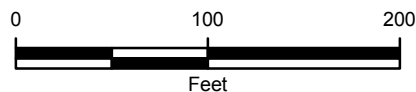
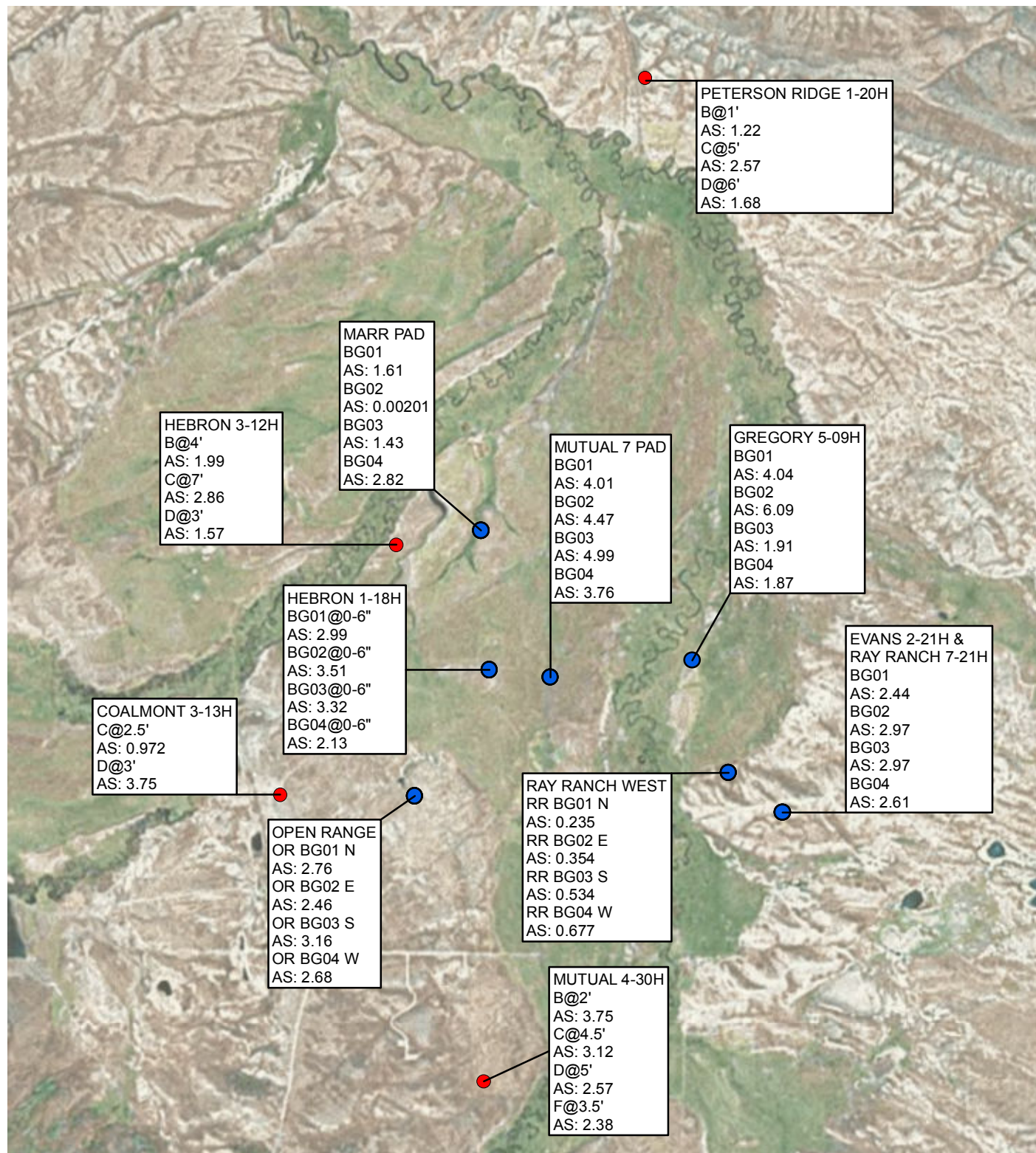


FIGURE 3
 SOIL ANALYTICAL RESULTS
 MUTUAL 4-30H
 JACKSON COUNTY, COLORADO

SANDRIDGE EXPLORATION AND PRODUCTION, LLC





LEGEND

- BACKGROUND ARSENIC SAMPLE (mg/kg)
- SANDRIDGE REMEDIATION SITE LOCATION



IMAGE COURTESY OF ESRI



FIGURE 4
ARSENIC SITE MAP
JACKSON COUNTY, COLORADO

SANDRIDGE EXPLORATION AND PRODUCTION, LLC



TABLES

TABLE 1
SOIL ANALYTICAL RESULTS

MUTUAL 4-30H
JACKSON COUNTY, COLORADO
SANDRIDGE EXPLORATION AND PRODUCTION, LLC

Sample ID	Date Sampled	Benzene (mg/kg)	Toluene (mg/kg)	Ethylbenzene (mg/kg)	Total Xylenes (mg/kg)	GRO (mg/kg)	DRO (mg/kg)	TPH (mg/kg)
B@2'	5/5/2016	0.12	0.015	0.037	0.013	12	2,000	2,012
C@4.5'	5/5/2016	13	89	61	290	16,000	43,000	59,000
D@5'	5/5/2016	<0.002	<0.005	<0.005	<0.010	31	2200	2231
F@3.5'	5/5/2016	<0.002	<0.005	<0.005	<0.010	12	960	972
SBA-R@3'	9/6/2016	0.0058	0.015	0.0089	0.042	9.2	54	63.2
SBB-R@3'	9/6/2016	<0.0020	<0.0050	<0.0050	0.0094	30	270	300
SBC-R@3'	9/6/2016	<0.0020	<0.0050	<0.0050	<0.0050	<0.50	<50	<50
SBD-R@3'	9/6/2016	<0.0020	0.0066	<0.0050	0.091	44	1,200	1,244
SBE-R@3'	9/6/2016	0.0097	0.036	0.0072	0.17	43	670	713
SBF-R@3'	9/6/2016	0.014	0.056	0.015	0.26	280	1300	1,580
SB01@3'	9/6/2016	<0.0020	<0.0050	<0.0050	<0.0050	<0.50	<50	<50
SB02@3'	9/6/2016	0.0049	0.026	0.0075	0.16	38	720	758
SB03@3'	9/6/2016	<0.0020	0.0050	<0.0050	0.033	20	650	670
SB04@3'	9/6/2016	<0.0020	<0.0050	<0.0050	<0.0050	<0.50	<50	<50
SB05@3'	9/6/2016	<0.0020	<0.0050	<0.0050	<0.0050	<0.50	<50	<50
SB06@3'	9/7/2016	<0.0020	<0.0050	<0.0050	<0.0050	<0.50	<50	<50
SB07@3'	9/7/2016	<0.0020	<0.0050	<0.0050	<0.0050	<0.50	<50	<50
SB08@3'	9/7/2016	<0.0020	<0.0050	<0.0050	<0.0050	<0.50	<50	<50
COGCC Table 910-1 Allowable Concentration		0.17	85	100	175	--	--	500

TABLE 1 (CONTINUED)
SOIL ANALYTICAL RESULTS

MUTUAL 4-30H
JACKSON COUNTY, COLORADO
SANDRIDGE EXPLORATION AND PRODUCTION, LLC

Sample ID	Date Sampled	Benzene (mg/kg)	Toluene (mg/kg)	Ethylbenzene (mg/kg)	Total Xylenes (mg/kg)	GRO (mg/kg)	DRO (mg/kg)	TPH (mg/kg)
SB09@3'	9/7/2016	0.018	0.46	0.012	0.14	34	1,300	1,334
SB10@2'	9/7/2016	<0.0020	<0.0050	<0.0050	<0.0050	<0.50	<50	<50
SB11@4'	9/7/2016	0.0052	0.048	0.030	0.16	34	500	534
SB12@6'	9/7/2016	0.030	0.092	0.035	0.13	11	81	92
SB13@6'	9/7/2016	<0.0020	<0.0050	<0.0050	<0.0050	<0.50	<50	<50
SB14@6'	9/7/2016	<0.0020	<0.0050	<0.0050	<0.0050	<0.50	<50	<50
COGCC Table 910-1 Allowable Concentration		0.17	85	100	175	--	--	500

Notes:

COGCC - Colorado Oil and Gas Conservation Commission

DRO - diesel range organics analyzed by EPA Method 8015

GRO - gasoline range organics analyzed by EPA Method 8260

mg/kg - milligrams per kilogram

TPH - total petroleum hydrocarbons is the sum of GRO and DRO

-- - not applicable

< indicates result is less than the stated laboratory method reporting limit

Benzene, toluene, ethylbenzene, and total xylenes analyzed by EPA Method 8260

Bold indicates the result exceeds the applicable standard

TABLE 2

COST ESTIMATE

SOURCE REMOVAL EXCAVATION

MUTUAL 4-30H

JACKSON COUNTY, COLORADO

SANDRIDGE EXPLORATION AND PRODUCTION, LLC

LABOR	Principal	Project Scientist I	Staff II Geologist/Eng.	GIS Specialist	Admin/ Clerical
TASK 1: Project Management	2	8			0.5
TASK 2: Excavation		5	58		
TASK 3: Reporting	2	10	4	2	0.5
TOTAL HOURS	4	23	62	2	1
RATE (\$)	\$140	\$110	\$83	\$72	\$55
LABOR COST	\$560	\$2,530	\$5,146	\$144	\$55

LABOR SUBTOTAL

\$8,435

SUBCONTRACTOR	QTY.	COST/UNIT	UNIT TOTAL
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SandRidge Excavation Contractor

TASK 2: Excavation

Transportaion and Disposal	3,786 Tons	\$57.00 /ton	\$215,802
Contractor	1 Lump Sum	\$5,000.00 /each	\$5,000
Import Backfill Material	1 Lump Sum	\$45,000.00 /each	\$45,000

Summit Scientific

TASK 2: Confirmation Soil Samples (Rush Turnaround)	BTEX/GRO	12	\$140.00 /sample	\$1,680
	DRO	12	\$160.00 /sample	\$1,920

SUBCONTRACTOR SUBTOTAL

\$269,762

OTHER DIRECT COSTS (ODCs)	QTY.	COST/UNIT	UNIT TOTAL
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TASK 2: Excavation Oversight ODC	Truck	6	\$110.00 /day	\$660
	Organic Vapor Meter	5	\$50.00 /day	\$250
	Trimble GPS	5	\$60.00 /day	\$300
	LTE Per Diem	6	\$160.00 /day	\$960
	Misc. Field Supplies	5	\$23.00 /day	\$115
	PetroFlag	20	\$20.00 /each	\$400

ODC SUBTOTAL

\$2,685

PROJECT TOTAL

\$280,882

TABLE 3
COST ESTIMATE
EXCAVATION, SOIL SHREDDING, BACKFILL
MUTUAL 4-30H
JACKSON COUNTY, COLORADO
SANDRIDGE EXPLORATION AND PRODUCTION, LLC

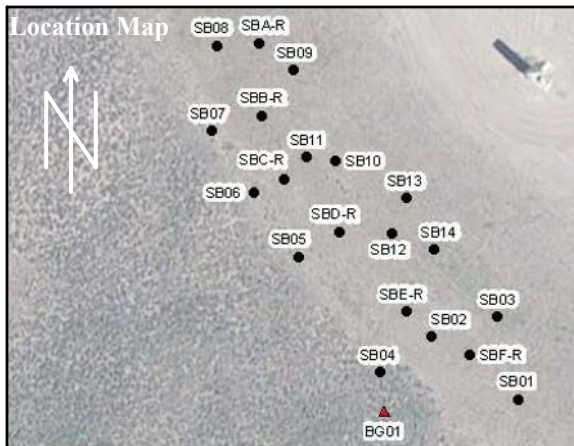
LABOR				Principal	Project Scientist I	Staff II Geologist/Eng.	GIS Specialist	Admin/ Clerical
TASK 1: Project Management				2	8		2	0.5
TASK 2: Excavation, Soil Shredding, Backfill					5	78		
TASK 3: Reporting				2	10	4	2	0.5
TOTAL HOURS				4	23	82	4	1
RATE (\$)				\$140	\$110	\$83	\$72	\$55
LABOR COST				\$560	\$2,530	\$6,806	\$288	\$55
LABOR SUBTOTAL								\$10,239

SUBCONTRACTOR		QTY.	COST/UNIT		UNIT TOTAL	
Unlimited Construction						
TASK 2: Excavation, Soil Shredding, Backfill		Soil Shredding	2,912	Yards	\$45.00 /yard	\$131,040
Summit Scientific						
TASK 2: Excavation Confirmation Soil Samples (Rush		BTEX/GRO	12		\$140.00 /sample	\$1,680
		DRO	12		\$160.00 /sample	\$1,920
TASK 2: Soil Shredding Confirmation Soil Samples (Rush		BTEX/GRO	10		\$140.00 /sample	\$1,400
		DRO	10		\$160.00 /sample	\$1,600
SUBCONTRACTOR SUBTOTAL					\$151,404	

OTHER DIRECT COSTS (ODCs)		QTY.	COST/UNIT		UNIT TOTAL
TASK 2: Soil Shredding		Truck	8	\$110.00 /day	\$880
		Organic Vapor Meter	7	\$50.00 /day	\$350
		Trimble GPS	7	\$60.00 /day	\$420
		LTE Per Diem	8	\$160.00 /day	\$1,280
		Misc. Field Supplies	7	\$23.00 /day	\$161
		PetroFlag	20	\$20.00 /each	\$400
ODC SUBTOTAL					\$3,491
PROJECT TOTAL					\$165,134
PROJECT TOTAL PER YARD					\$57

ATTACHMENT 1
SOIL LITHOLOGIC BORING LOGS





Compliance • Engineering • Remediation
LT Environmental, Inc.
4600 W. 60th Avenue
Arvada, Colorado 80003

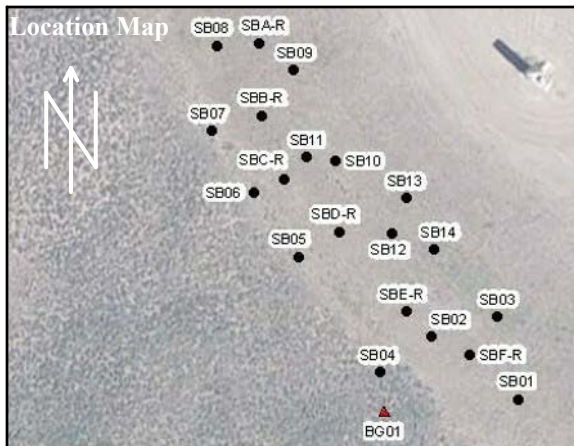
BORING LOG/MONITORING WELL COMPLETION DIAGRAM

HOLE DIAMETER: 2.25"
WELL DIAMETER: NA
CASING TYPE: NA
SCREEN TYPE: NA

PROJECT NAME: Mutual 4-30H
PROJECT NO: 065816005
BORING/WELL ID: SBA-R
COMPLETION DATE: 09/06/2016
TD (ft bgs): 16'
DTW (ft bgs): 15.5'
SCREEN SLOT: NA
CASING LENGTH: NA
SCREEN LENGTH: NA

LOGGED BY: Jeremy Pike
SAMPLE METHOD: Continuous
DRILL METHOD: Direct Push
DRILLED BY: Elite Drilling
DETECTOR: MiniRAE 3000
FILTER PACK: NA
ANNULUS SEAL: NA
SURFACE SEAL: NA

PID (ppm)	Staining	Moisture Content	Sample ID	Recovery (ft/ft)	Depth (ft)	USCS	USCS Graphic	Lithology Description	Well Construction
1.80		Moist			0	CL		SILTY CLAY - 0.0' - 4.5' - gray, trace ecosponge, trace fine gravel, moist, no odor, hydrocarbon staining	
15.30			SBA-R @3'						
8.00									
8.00		Dry			5	SC		CLAYEY SAND - 4.5' - 8.0' - brown, fine grained, trace fine gravel, dry, no odor, no staining	
2.00									
1.40									
1.50		Dry			10	SW		SAND 8.0' - 16.0' - orangish brown, medium grained, little fine gravel, dry to wet at 15.5' bgs, no odor, no staining	
1.50									
7.00									
1.50									
0.50					15				
		Wet							



Compliance • Engineering • Remediation
LT Environmental, Inc.
4600 W. 60th Avenue
Arvada, Colorado 80003

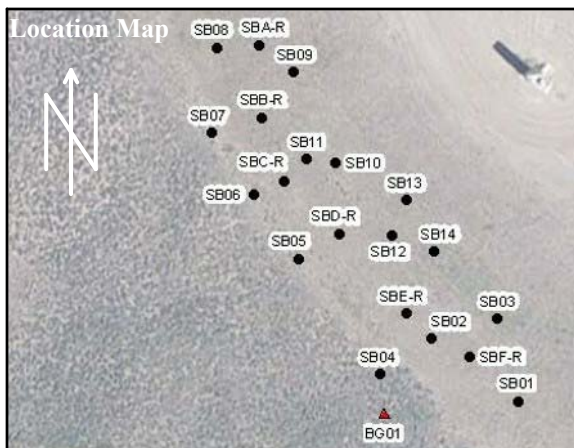
BORING LOG/MONITORING WELL COMPLETION DIAGRAM

HOLE DIAMETER: 2.25"
WELL DIAMETER: NA
CASING TYPE: NA
SCREEN TYPE: NA

PROJECT NAME: Mutual 4-30H
PROJECT NO: 065816005
BORING/WELL ID: SBB-R
COMPLETION DATE: 09/06/2016
TD (ft bgs): 20'
DTW (ft bgs): 15'
SCREEN SLOT: NA
CASING LENGTH: NA
SCREEN LENGTH: NA

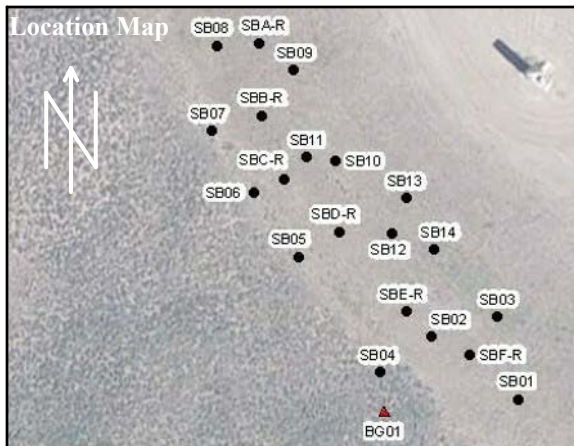
LOGGED BY: Jeremy Pike
SAMPLE METHOD: Continuous
DRILL METHOD: Direct Push
DRILLED BY: Elite Drilling
DETECTOR: MiniRAE 3000
FILTER PACK: NA
ANNULUS SEAL: NA
SURFACE SEAL: NA

PID (ppm)	Staining	Moisture Content	Sample ID	Recovery (ft/ft)	Depth (ft)	USCS	USCS Graphic	Lithology Description	Well Construction
		Dry			0	SM		SILTY SAND - 0.0' - 2.0' - brown, medium grained, trace fine gravel, dry, no odor, no staining	
2.40		Dry		3/4		CL		SILTY CLAY - 2.0' - 4.0' - gray, fine grained, some ecosponge, trace fine gravel, moist, hydrocarbon odor, hydrocarbon staining	
252.90									
18.00		Moist	SBB-R @3'			SC		CLAYEY SAND - 4.0' - 10.0' - yellowish brown, medium grained, little fine gravel, moist, no odor, no staining	
6.10					5				
9.10				2.5/4					
2.00									
4.80									
39.00									
8.10		Moist		2.5/4	10	SP		SAND - 10.0' - 18.0' - brown, medium grained, some fine gravel, moist to wet at 15' bgs, no odor, no staining	
3.00									
1.90									
1.10									
0.20				2/4					
0.20		Wet			15				
0.50									
0.40		Wet		2/4		SC		CLAYEY SAND - 18.0' - 20.0' - light brown, fine grained, wet, no odor, no staining	
0.50					20				



BORING LOG/MONITORING WELL COMPLETION DIAGRAM

[illegible]



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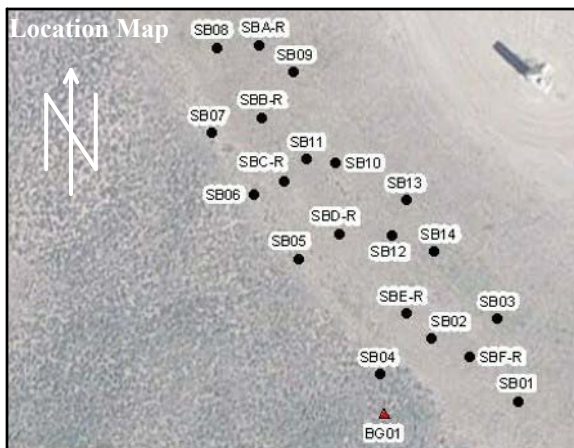
BORING LOG/MONITORING WELL COMPLETION DIAGRAM

HOLE DIAMETER: 2.25"
WELL DIAMETER: NA
CASING TYPE: NA
SCREEN TYPE: NA

PROJECT NAME: Mutual 4-30H
PROJECT NO: 065816005
BORING/WELL ID: SBF-R
COMPLETION DATE: 09/06/2016
TD (ft bgs): 16'
DTW (ft bgs): 15.5'
SCREEN SLOT: NA
CASING LENGTH: NA
SCREEN LENGTH: NA

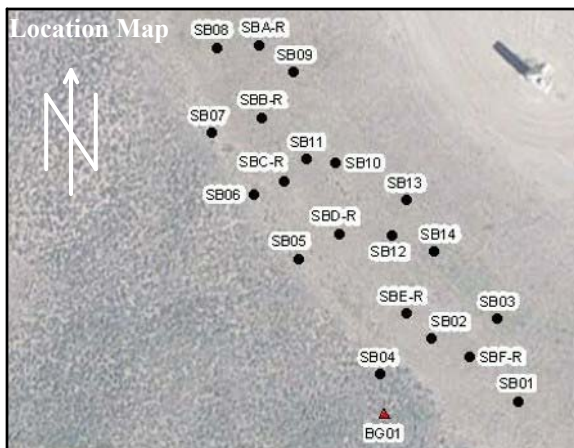
LOGGED BY: Jeremy Pike
SAMPLE METHOD: Continuous
DRILL METHOD: Direct Push
DRILLED BY: Elite Drilling
DETECTOR: MiniRAE 3000
FILTER PACK: NA
ANNULUS SEAL: NA
SURFACE SEAL: NA

PID (ppm)	Staining	Moisture Content	Sample ID	Recovery (ft/ft)	Depth (ft)	USCS	USCS Graphic	Lithology Description	Well Construction
1.10		Dry	SBF-R @3'		0	SM		SILTY SAND - 0.0' - 2.0' - yellowish brown, fine grained, trace fine gravel, dry, no odor, no staining	
17.00		Dry		3/4		CL		SILTY CLAY - 2.0' - 4.5' - gray, some ecosponge, some fine grained sand, trace fine gravel, dry, hydrocarbon odor, hydrocarbon staining	
207.70						SC		CLAYEY SAND - 4.5' - 9.0' - gray, fine grained, little fine gravel, moist, slight hydrocarbon odor, hydrocarbon staining	
85.20		Moist				SC		CLAYEY SAND - 9.0' - 12.0' - yellowish brown, medium grained, trace fine gravel, moist, no odor, slight gray hydrocarbon staining	
18.00						SW		SAND - 12.0' - 16.0' - light brown, medium grained, little fine gravel, moist to wet at 15.5' bgs, no odor, no staining	
2.00				3/4	5				
20.00									
14.20									
5.00		Moist		4/4	10				
1.30									
5.00									
0.70		Moist							
0.20				3/4	15				
0.20									
1.00		Wet							



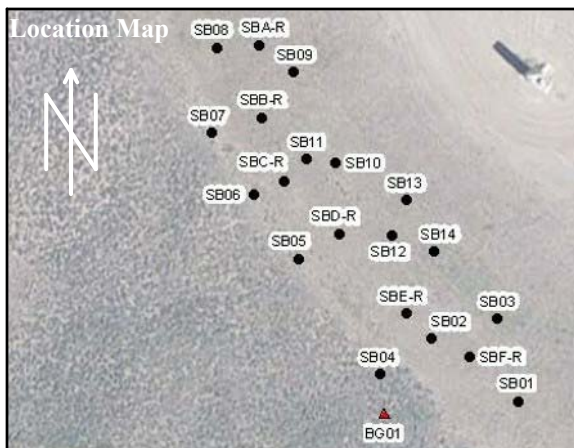
BORING LOG/MONITORING WELL COMPLETION DIAGRAM

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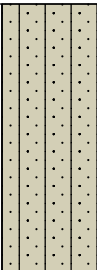

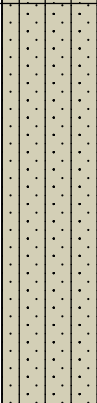


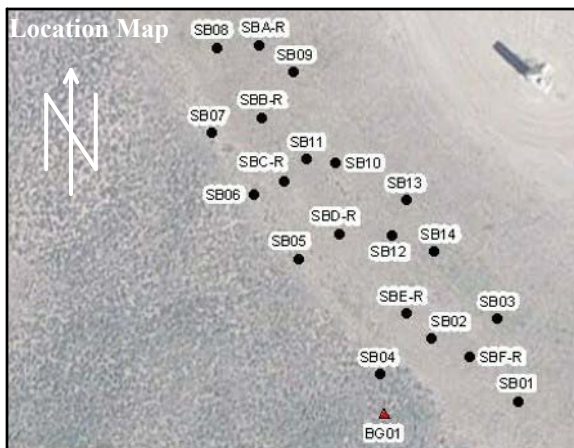
BORING LOG/MONITORING WELL COMPLETION DIAGRAM

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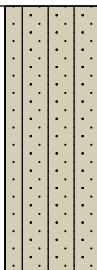

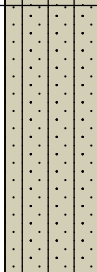


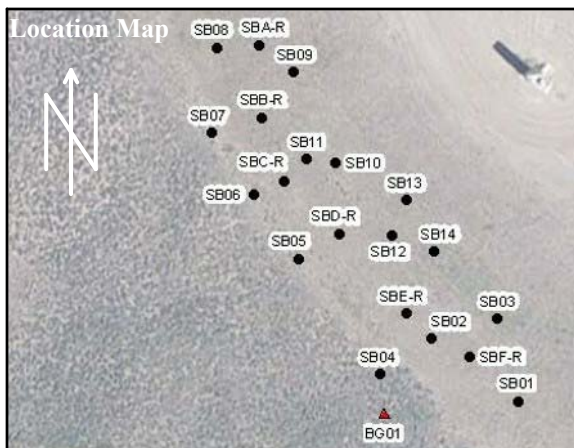
BORING LOG/MONITORING WELL COMPLETION DIAGRAM

PID (ppm)	Staining	Moisture Content	Sample ID	Recovery (ft/ft)	Depth (ft)	USCS	USCS Graphic	Lithology Description	Well Construction
0.10		Dry	SB06 @3'	4/4	0	SM		SILTY SAND - 0.0' - 2.0' - yellowish brown, fine grained, trace fine gravel, dry, no odor, no staining	
0.10		Dry			4/4	SM		SILTY SAND - 2.0' - 8.0' - yellowish brown, fine grained, some fine gravel, some clay, dry, no odor, no staining	
0.10									
0.10									
0.10									
0.10					2.5/4				
0.10									
0.10									

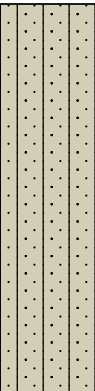

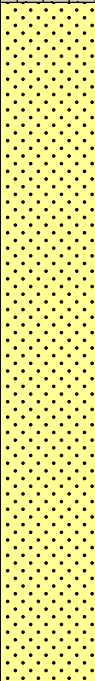


BORING LOG/MONITORING WELL COMPLETION DIAGRAM

PID (ppm)	Staining	Moisture Content	Sample ID	Recovery (ft/ft)	Depth (ft)	USCS	USCS Graphic	Lithology Description	Well Construction
0.10		Dry	SB07 @3'	3/4	0	SM		SILTY SAND - 0.0' - 2.0' - yellowish brown, fine grained, trace fine gravel, dry, no odor, no staining	
0.20		Dry			3/4	SM		SILTY SAND - 2.0' - 8.0' - yellowish brown, fine grained, some fine gravel, some clay, dry, no odor, no staining	
0.20									
0.20									
0.10					5				
0.20					3/4				
0.20									
0.20									



BORING LOG/MONITORING WELL COMPLETION DIAGRAM

PID (ppm)	Staining	Moisture Content	Sample ID	Recovery (ft/ft)	Depth (ft)	USCS	USCS Graphic	Lithology Description	Well Construction
0.50		Moist			0	SM		SILTY SAND - 0.0' - 4.0' - yellowish brown, fine grained, some fine gravel, some clay, moist, no odor, no staining	
0.90				4/4					
1.20									
0.70		Moist				SW		SAND - 4.0' - 11.0' - orangish brown, fine to medium grained, moist, no odor, no staining, refusal at 11' bgs	
0.20					5				
0.30			SB13 @6'	3/4					
0.50									
0.50									
9.00									
2.70				2/3					
1.50					10				

ATTACHMENT 2
LABORATORY ANALYTICAL REPORT



Summit Scientific

741 Corporate Circle – Suite I ♦ Golden, Colorado 80401

303.277.9310 - laboratory ♦ 303.277.9531 - fax

October 07, 2016

Jess Alexander
LT Environmental, Inc.
4600 West 60th Avenue
Arvada, CO 80003
RE: Mutual 4-30H

Enclosed are the results of analyses for samples received by Summit Scientific on 09/09/16 16:40. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

A handwritten signature in black ink, appearing to read 'P. Shrewsbury', with a stylized, cursive script.

Paul Shrewsbury
President



LT Environmental, Inc.
4600 West 60th Avenue
Arvada CO, 80003

Project: Mutual 4-30H
Project Number: 065816005
Project Manager: Jess Alexander

Reported:
10/07/16 18:13

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
SBA-R@3'	1609060-01	Soil	09/06/16 09:20	09/09/16 16:40
SBB-R@3'	1609060-02	Soil	09/06/16 10:10	09/09/16 16:40
SBC-R@3'	1609060-03	Soil	09/06/16 12:25	09/09/16 16:40
SBD-R@3'	1609060-04	Soil	09/06/16 12:50	09/09/16 16:40
SBE-R@3'	1609060-05	Soil	09/06/16 13:20	09/09/16 16:40
SBF-R@3'	1609060-06	Soil	09/06/16 14:00	09/09/16 16:40
SB01@3'	1609060-07	Soil	09/06/16 14:25	09/09/16 16:40
SB02@3'	1609060-08	Soil	09/06/16 14:50	09/09/16 16:40
SB03@3'	1609060-09	Soil	09/06/16 15:30	09/09/16 16:40
SB04@3'	1609060-10	Soil	09/06/16 16:05	09/09/16 16:40
SB05@3'	1609060-11	Soil	09/06/16 16:30	09/09/16 16:40
SB06@3'	1609060-12	Soil	09/07/16 08:15	09/09/16 16:40
SB07@3'	1609060-13	Soil	09/07/16 08:30	09/09/16 16:40
SB08@3'	1609060-14	Soil	09/07/16 08:55	09/09/16 16:40
SB09@3'	1609060-15	Soil	09/07/16 09:10	09/09/16 16:40
SB10@2'	1609060-16	Soil	09/07/16 09:40	09/09/16 16:40
SB11@4'	1609060-17	Soil	09/07/16 10:00	09/09/16 16:40
SB12@6'	1609060-18	Soil	09/07/16 10:56	09/09/16 16:40
SB13@6'	1609060-19	Soil	09/07/16 11:25	09/09/16 16:40
SB14@6'	1609060-20	Soil	09/07/16 11:40	09/09/16 16:40

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



LT Environmental, Inc.
4600 West 60th Avenue
Arvada CO, 80003

Project: Mutual 4-30H

Project Number: 065816005
Project Manager: Jess Alexander

Reported:
10/07/16 18:13

Summit Scientific

1609060.1

741 Corporate Circle Suite 1 • Golden, Colorado 80401
303-277-9310 • 303-374-5933 Fax

Page 1 of 3

Client: LT ENVIRONMENTAL

Address: 6400 W 60th Ave

City/State/Zip: Arvada CO 80003

Phone: 303-374-5933 Fax: 303-374-5933

Sampler Name: JESSY P. HITE

Project Manager: JESS ALEXANDER / BRETT FORKNER

E-Mail: JALEXANDER@LTENV.COM / BFORNER@LTENV.COM

Project Name: MUTUAL 4-30H

Project Number: 065816005

Sample Description	Date Sampled	Time Sampled	Number of Containers	Preservative			Matrix			Analyze For:				Special Instructions
				HCl	HNO ₃	None	Other (Specify)	Groundwater	Soil	Air - Container Serial #	Other (Specify)	687EX 8240	687EX 8240	
SBA-R @ 3'	9/6/16	0920	1			X		X			X	X		
SBB-R @ 3'	9/6/16	1010	1			X		X			X	X		
SBC-R @ 3'	9/6/16	1225	1			X		X			X	X		
SBD-R @ 3'	9/6/16	1250	1			X		X			X	X		
SBE-R @ 3'	9/6/16	1320	1			X		X			X	X		
SBF-R @ 3'	9/6/16	1400	1			X		X			X	X		
SBO1-R @ 3'	9/6/16	1425	1			X		X			X	X		
SBO2-R @ 3'	9/6/16	1450	1			X		X			X	X		
SBO3-R @ 3'	9/6/16	1530	1			X		X			X	X		
SBO4-R @ 3'	9/6/16	1605	1			X		X			X	X		
Relinquished by:	Date/Time:	Received by:	Date/Time:	Turn Around Time (Check)				Notes:						
Jessy P. Hite	9/6/16 1640	Brett Forkner	9/9/16 1640	Same Day <input type="checkbox"/> 72 Hours <input type="checkbox"/>				Standard <input checked="" type="checkbox"/>						
Relinquished by:	Date/Time:	Received by:	Date/Time:	48 Hours <input type="checkbox"/>										
Relinquished by:	Date/Time:	Received in Lab by:	Date/Time:	Sample Integrity:										
				Temperature Upon Receipt: 53°C										
				Intact: Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>								once		

www.s2scientific.com

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



LT Environmental, Inc.
4600 West 60th Avenue
Arvada CO, 80003

Project: Mutual 4-30H

Project Number: 065816005
Project Manager: Jess Alexander

Reported:
10/07/16 18:13

Summit Scientific

1609060.2

741 Corporate Circle Suite 1 • Golden, Colorado 80401
303-277-9310 • 303-374-3933 Fax

Page 2 of 3

Client:

Address:

City/State/Zip:

Phone:

Fax:

Sampler Name: TERRON RISE

Project Manager:

E-Mail:

Project Name: MUTUAL 4-30H

Project Number: 065816005

Sample Description	Date Sampled	Time Sampled	Number of Containers	Preservative				Matrix		Analyze For:				Special Instructions	
				HCl	HNO ₃	None	Other (Specify)	Groundwater	Soil	Air - Canister Serial #	Other (Specify)	6BTEX 8260	TPH-DIO 8265		
SB05 @ 3'	9/6/16	1420	1			X			X		X	X			
SB06 @ 3'	9/7/16	0815	1			X			X		X	X			
SB07 @ 3'	9/7/16	0830	1			X			X		X	X			
SB08 @ 3'	9/7/16	0855	1			X			X		X	X			
SB09 @ 3'	9/7/16	0910	1			X			X		X	X			
SB10 @ 2'	9/7/16	0940	1			X			X		X	X			
SB11 @ 4'	9/7/16	1000	1			X			X		X	X			
SB12 @ 6'	9/7/16	1056	1			X			X		X	X			
SB13 @ 6'	9/7/16	1125	1			X			X		X	X			
SB14 @ 6'	9/7/16	1140	1			X			X		X	X			
Relinquished by: <u>[Signature]</u> Date/Time: <u>9/7/16 1640</u>				Received by: <u>[Signature]</u> Date/Time: <u>9/9/16 1640</u>				Turn Around Time (Check)				Notes:			
Relinquished by:				Received by:				Same Day <input type="checkbox"/> 72 Hours <input type="checkbox"/>				Intact: Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>			
Relinquished by:				Received by:				24 Hours <input type="checkbox"/> 48 Hours <input type="checkbox"/>							
Relinquished by:				Received in Lab by:				Sample Integrity: Temperature Upon Receipt: <u>5.3</u>				100			
Relinquished by:				Received in Lab by:				Intact: Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>							

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Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



LT Environmental, Inc.
4600 West 60th Avenue
Arvada CO, 80003

Project: Mutual 4-30H
Project Number: 065816005
Project Manager: Jess Alexander

Reported:
10/07/16 18:13

Sample Receipt Checklist

S2 Work Order: 609060

Client: LTE

Client Project ID: Mutual 4-30H

Shipped Via: HD
(UPS, FedEx, Hand Delivered, Pick-up, etc.)

Airbill #: _____

Matrix (check all that apply): ☐ Air ☒ Soil/Solid ☐ Water ☐ Other: _____
(Describe)

Cooler ID					
Temp (°C)	<u>5.3°C</u>				

Thermometer ID: 61857155-K

	Yes	No	N/A	Comments (if any)
If samples require cooling, was the temperature just above 0°C to ≤ 6°C ⁽¹⁾ ?	<input checked="" type="checkbox"/>			
NOTE: If samples are delivered the same day of sampling, this requirement is waived provided that there is evidence that cooling has begun.				
Were all samples received intact ⁽¹⁾ ?	<input checked="" type="checkbox"/>			
Was adequate sample volume provided ⁽¹⁾ ?	<input checked="" type="checkbox"/>			
If custody seals are present, are they intact ⁽¹⁾ ?			<input checked="" type="checkbox"/>	
Are short holding time analytes or samples with HTs due within 48 hours present?		<input checked="" type="checkbox"/>		
Is a chain-of-custody (COC) form present and filled out completely ⁽¹⁾ ?	<input checked="" type="checkbox"/>			
Does the COC agree with the number and type of sample bottles received ⁽¹⁾ ?	<input checked="" type="checkbox"/>			
Do the sample IDs on the bottle labels match the COC ⁽¹⁾ ?	<input checked="" type="checkbox"/>			
Is the COC properly relinquished by the client w/ date and time recorded ⁽¹⁾ ?	<input checked="" type="checkbox"/>			
For volatiles in water – is there headspace present? If yes, contact client and note in narrative.			<input checked="" type="checkbox"/>	
Are samples preserved that require preservation (excluding cooling) ⁽¹⁾ ?			<input checked="" type="checkbox"/>	
Note the type of preservative in the Comments column – HCl, H2SO4, NaOH, HNO3, ect				
If samples are acid preserved for metals, is the pH ≤ 2 ⁽¹⁾ ?			<input checked="" type="checkbox"/>	
Record the pH in Comments.				
If dissolved metals are requested, were samples field filtered?			<input checked="" type="checkbox"/>	
Additional Comments (if any):				

⁽¹⁾ If NO, then contact the client before proceeding with analysis and note in case narrative.

Mindy Mach
Custodian Printed Name

[Signature]
Signature or Initials of Custodian

9/9/16 16:54
Date/Time

[Signature]



LT Environmental, Inc.
4600 West 60th Avenue
Arvada CO, 80003

Project: Mutual 4-30H
Project Number: 065816005
Project Manager: Jess Alexander

Reported:
10/07/16 18:13

SBA-R@3'
1609060-01 (Soil)

Summit Scientific

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **09/06/16 09:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	54	50	mg/kg	1	1609080	09/12/16	09/12/16	8015M	

Date Sampled: **09/06/16 09:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<i>Surrogate: o-Terphenyl</i>		95.9 %	30-150		"	"	"	"	

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **09/06/16 09:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	0.0058	0.0020	mg/kg	1	1609079	09/12/16	09/13/16	EPA 8260B	
Toluene	0.015	0.0050	"	"	"	"	"	"	
Ethylbenzene	0.0089	0.0050	"	"	"	"	"	"	
Xylenes (total)	0.042	0.0050	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	9.2	0.50	"	"	"	"	"	"	

Date Sampled: **09/06/16 09:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<i>Surrogate: 1,2-Dichloroethane-d4</i>		108 %	23-173		"	"	"	"	
<i>Surrogate: Toluene-d8</i>		99.8 %	20-170		"	"	"	"	
<i>Surrogate: 4-Bromofluorobenzene</i>		96.6 %	21-167		"	"	"	"	

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



LT Environmental, Inc.
4600 West 60th Avenue
Arvada CO, 80003

Project: Mutal 4-30H
Project Number: 065816005
Project Manager: Jess Alexander

Reported:
10/07/16 18:13

SBB-R@3'
1609060-02 (Soil)

Summit Scientific

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **09/06/16 10:10**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	270	50	mg/kg	1	1609080	09/12/16	09/12/16	8015M	

Date Sampled: **09/06/16 10:10**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		104 %	30-150		"	"	"	"	

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **09/06/16 10:10**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020	mg/kg	1	1609079	09/12/16	09/14/16	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	0.0094	0.0050	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	30	0.50	"	"	"	"	"	"	

Date Sampled: **09/06/16 10:10**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		105 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		96.8 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		96.8 %	21-167		"	"	"	"	

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



LT Environmental, Inc.
4600 West 60th Avenue
Arvada CO, 80003

Project: Mutal 4-30H
Project Number: 065816005
Project Manager: Jess Alexander

Reported:
10/07/16 18:13

SBC-R@3'
1609060-03 (Soil)

Summit Scientific

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **09/06/16 12:25**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	1609080	09/12/16	09/12/16	8015M	

Date Sampled: **09/06/16 12:25**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		94.9 %	30-150		"	"	"	"	

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **09/06/16 12:25**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020	mg/kg	1	1609079	09/12/16	09/13/16	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.0050	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **09/06/16 12:25**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		110 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		102 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		101 %	21-167		"	"	"	"	

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



LT Environmental, Inc.
4600 West 60th Avenue
Arvada CO, 80003

Project: Mutual 4-30H
Project Number: 065816005
Project Manager: Jess Alexander

Reported:
10/07/16 18:13

SBD-R@3'
1609060-04 (Soil)

Summit Scientific

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **09/06/16 12:50**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	1200	50	mg/kg	1	1609080	09/12/16	09/13/16	8015M	

Date Sampled: **09/06/16 12:50**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		114 %	30-150		"	"	"	"	

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **09/06/16 12:50**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020	mg/kg	1	1609079	09/12/16	09/13/16	EPA 8260B	
Toluene	0.0066	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	0.091	0.0050	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	44	0.50	"	"	"	"	"	"	

Date Sampled: **09/06/16 12:50**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		111 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		107 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		99.2 %	21-167		"	"	"	"	

Summit Scientific

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LT Environmental, Inc.
4600 West 60th Avenue
Arvada CO, 80003

Project: Mutual 4-30H
Project Number: 065816005
Project Manager: Jess Alexander

Reported:
10/07/16 18:13

SBE-R@3'
1609060-05 (Soil)

Summit Scientific

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **09/06/16 13:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	670	50	mg/kg	1	1609080	09/12/16	09/13/16	8015M	

Date Sampled: **09/06/16 13:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		104 %	30-150		"	"	"	"	

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **09/06/16 13:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	0.0097	0.0020	mg/kg	1	1609079	09/12/16	09/13/16	EPA 8260B	
Toluene	0.036	0.0050	"	"	"	"	"	"	
Ethylbenzene	0.0072	0.0050	"	"	"	"	"	"	
Xylenes (total)	0.17	0.0050	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	43	0.50	"	"	"	"	"	"	

Date Sampled: **09/06/16 13:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		114 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		110 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		99.5 %	21-167		"	"	"	"	

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



LT Environmental, Inc.
4600 West 60th Avenue
Arvada CO, 80003

Project: Mutal 4-30H
Project Number: 065816005
Project Manager: Jess Alexander

Reported:
10/07/16 18:13

SBF-R@3'
1609060-06 (Soil)

Summit Scientific

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **09/06/16 14:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	1300	50	mg/kg	1	1609080	09/12/16	09/13/16	8015M	

Date Sampled: **09/06/16 14:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		123 %	30-150		"	"	"	"	

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **09/06/16 14:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	0.014	0.0020	mg/kg	1	1609079	09/12/16	09/14/16	EPA 8260B	
Toluene	0.056	0.0050	"	"	"	"	"	"	
Ethylbenzene	0.015	0.0050	"	"	"	"	"	"	
Xylenes (total)	0.26	0.0050	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	280	5.0	"	10	"	"	09/13/16	"	

Date Sampled: **09/06/16 14:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		105 %	23-173		"	"	09/14/16	"	
Surrogate: Toluene-d8		111 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		100 %	21-167		"	"	"	"	

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



LT Environmental, Inc.
4600 West 60th Avenue
Arvada CO, 80003

Project: Mutal 4-30H
Project Number: 065816005
Project Manager: Jess Alexander

Reported:
10/07/16 18:13

SB01@3'
1609060-07 (Soil)

Summit Scientific

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **09/06/16 14:25**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	1609080	09/12/16	09/13/16	8015M	

Date Sampled: **09/06/16 14:25**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		95.4 %	30-150		"	"	"	"	

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **09/06/16 14:25**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020	mg/kg	1	1609079	09/12/16	09/13/16	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.0050	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **09/06/16 14:25**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		114 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		100 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		100 %	21-167		"	"	"	"	

Summit Scientific

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LT Environmental, Inc.
4600 West 60th Avenue
Arvada CO, 80003

Project: Mutal 4-30H
Project Number: 065816005
Project Manager: Jess Alexander

Reported:
10/07/16 18:13

SB02@3'
1609060-08 (Soil)

Summit Scientific

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **09/06/16 14:50**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	720	50	mg/kg	1	1609080	09/12/16	09/13/16	8015M	

Date Sampled: **09/06/16 14:50**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<i>Surrogate: o-Terphenyl</i>		107 %	30-150		"	"	"	"	

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **09/06/16 14:50**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	0.0049	0.0020	mg/kg	1	1609079	09/12/16	09/13/16	EPA 8260B	
Toluene	0.026	0.0050	"	"	"	"	"	"	
Ethylbenzene	0.0075	0.0050	"	"	"	"	"	"	
Xylenes (total)	0.16	0.0050	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	38	0.50	"	"	"	"	"	"	

Date Sampled: **09/06/16 14:50**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<i>Surrogate: 1,2-Dichloroethane-d4</i>		108 %	23-173		"	"	"	"	
<i>Surrogate: Toluene-d8</i>		106 %	20-170		"	"	"	"	
<i>Surrogate: 4-Bromofluorobenzene</i>		101 %	21-167		"	"	"	"	

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



LT Environmental, Inc.
4600 West 60th Avenue
Arvada CO, 80003

Project: Mutual 4-30H
Project Number: 065816005
Project Manager: Jess Alexander

Reported:
10/07/16 18:13

SB03@3'
1609060-09 (Soil)

Summit Scientific

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **09/06/16 15:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	650	50	mg/kg	1	1609080	09/12/16	09/13/16	8015M	

Date Sampled: **09/06/16 15:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		103 %	30-150		"	"	"	"	

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **09/06/16 15:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020	mg/kg	1	1609079	09/12/16	09/14/16	EPA 8260B	
Toluene	0.0050	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	0.033	0.0050	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	20	0.50	"	"	"	"	"	"	

Date Sampled: **09/06/16 15:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		103 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		99.4 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		93.2 %	21-167		"	"	"	"	

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



LT Environmental, Inc.
4600 West 60th Avenue
Arvada CO, 80003

Project: Mutal 4-30H
Project Number: 065816005
Project Manager: Jess Alexander

Reported:
10/07/16 18:13

SB04@3'
1609060-10 (Soil)

Summit Scientific

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **09/06/16 16:05**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	1609080	09/12/16	09/13/16	8015M	

Date Sampled: **09/06/16 16:05**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		94.9 %	30-150		"	"	"	"	

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **09/06/16 16:05**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020	mg/kg	1	1609079	09/12/16	09/13/16	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.0050	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **09/06/16 16:05**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		114 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		103 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		101 %	21-167		"	"	"	"	

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



LT Environmental, Inc.
4600 West 60th Avenue
Arvada CO, 80003

Project: Mutal 4-30H
Project Number: 065816005
Project Manager: Jess Alexander

Reported:
10/07/16 18:13

SB05@3'
1609060-11 (Soil)

Summit Scientific

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **09/06/16 16:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	1609080	09/12/16	09/13/16	8015M	

Date Sampled: **09/06/16 16:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		95.9 %	30-150		"	"	"	"	

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **09/06/16 16:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020	mg/kg	1	1609079	09/12/16	09/14/16	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.0050	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **09/06/16 16:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		116 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		101 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		101 %	21-167		"	"	"	"	

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



LT Environmental, Inc.
4600 West 60th Avenue
Arvada CO, 80003

Project: Mutal 4-30H
Project Number: 065816005
Project Manager: Jess Alexander

Reported:
10/07/16 18:13

SB06@3'
1609060-12 (Soil)

Summit Scientific

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **09/07/16 08:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	1609080	09/12/16	09/13/16	8015M	

Date Sampled: **09/07/16 08:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		93.5 %	30-150		"	"	"	"	

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **09/07/16 08:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020	mg/kg	1	1609079	09/12/16	09/14/16	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.0050	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **09/07/16 08:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		118 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		102 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		104 %	21-167		"	"	"	"	

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



LT Environmental, Inc.
4600 West 60th Avenue
Arvada CO, 80003

Project: Mutal 4-30H
Project Number: 065816005
Project Manager: Jess Alexander

Reported:
10/07/16 18:13

SB07@3'
1609060-13 (Soil)

Summit Scientific

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **09/07/16 08:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	1609080	09/12/16	09/13/16	8015M	

Date Sampled: **09/07/16 08:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		92.6 %	30-150		"	"	"	"	

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **09/07/16 08:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020	mg/kg	1	1609079	09/12/16	09/14/16	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.0050	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **09/07/16 08:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		118 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		102 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		98.4 %	21-167		"	"	"	"	

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



LT Environmental, Inc.
4600 West 60th Avenue
Arvada CO, 80003

Project: Mutal 4-30H
Project Number: 065816005
Project Manager: Jess Alexander

Reported:
10/07/16 18:13

SB08@3'
1609060-14 (Soil)

Summit Scientific

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **09/07/16 08:55**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	1609080	09/12/16	09/13/16	8015M	

Date Sampled: **09/07/16 08:55**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		96.3 %	30-150		"	"	"	"	

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **09/07/16 08:55**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020	mg/kg	1	1609079	09/12/16	09/14/16	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.0050	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **09/07/16 08:55**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		110 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		102 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		103 %	21-167		"	"	"	"	

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



LT Environmental, Inc.
4600 West 60th Avenue
Arvada CO, 80003

Project: Mutual 4-30H
Project Number: 065816005
Project Manager: Jess Alexander

Reported:
10/07/16 18:13

SB09@3'
1609060-15 (Soil)

Summit Scientific

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **09/07/16 09:10**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	1300	50	mg/kg	1	1609080	09/12/16	09/13/16	8015M	

Date Sampled: **09/07/16 09:10**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		114 %	30-150		"	"	"	"	

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **09/07/16 09:10**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	0.018	0.0020	mg/kg	1	1609079	09/12/16	09/14/16	EPA 8260B	
Toluene	0.046	0.0050	"	"	"	"	"	"	
Ethylbenzene	0.012	0.0050	"	"	"	"	"	"	
Xylenes (total)	0.14	0.0050	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	34	0.50	"	"	"	"	"	"	

Date Sampled: **09/07/16 09:10**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		107 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		102 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		102 %	21-167		"	"	"	"	

Summit Scientific

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LT Environmental, Inc.
4600 West 60th Avenue
Arvada CO, 80003

Project: Mutal 4-30H
Project Number: 065816005
Project Manager: Jess Alexander

Reported:
10/07/16 18:13

SB10@2'
1609060-16 (Soil)

Summit Scientific

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **09/07/16 09:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	1609080	09/12/16	09/13/16	8015M	

Date Sampled: **09/07/16 09:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		94.0 %	30-150		"	"	"	"	

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **09/07/16 09:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020	mg/kg	1	1609079	09/12/16	09/14/16	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.0050	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **09/07/16 09:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		114 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		99.8 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		101 %	21-167		"	"	"	"	

Summit Scientific

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LT Environmental, Inc.
4600 West 60th Avenue
Arvada CO, 80003

Project: Mutual 4-30H
Project Number: 065816005
Project Manager: Jess Alexander

Reported:
10/07/16 18:13

SB11@4'
1609060-17 (Soil)

Summit Scientific

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **09/07/16 10:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	500	50	mg/kg	1	1609080	09/12/16	09/13/16	8015M	

Date Sampled: **09/07/16 10:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		100 %	30-150		"	"	"	"	

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **09/07/16 10:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	0.0052	0.0020	mg/kg	1	1609079	09/12/16	09/14/16	EPA 8260B	
Toluene	0.048	0.0050	"	"	"	"	"	"	
Ethylbenzene	0.030	0.0050	"	"	"	"	"	"	
Xylenes (total)	0.16	0.0050	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	34	0.50	"	"	"	"	"	"	

Date Sampled: **09/07/16 10:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		105 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		100 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		99.8 %	21-167		"	"	"	"	

Summit Scientific

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LT Environmental, Inc.
4600 West 60th Avenue
Arvada CO, 80003

Project: Mutal 4-30H
Project Number: 065816005
Project Manager: Jess Alexander

Reported:
10/07/16 18:13

SB12@6'
1609060-18 (Soil)

Summit Scientific

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **09/07/16 10:56**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	81	50	mg/kg	1	1609080	09/12/16	09/13/16	8015M	

Date Sampled: **09/07/16 10:56**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		99.0 %	30-150		"	"	"	"	

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **09/07/16 10:56**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	0.030	0.0020	mg/kg	1	1609079	09/12/16	09/14/16	EPA 8260B	
Toluene	0.092	0.0050	"	"	"	"	"	"	
Ethylbenzene	0.035	0.0050	"	"	"	"	"	"	
Xylenes (total)	0.13	0.0050	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	11	0.50	"	"	"	"	"	"	

Date Sampled: **09/07/16 10:56**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		109 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		104 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		102 %	21-167		"	"	"	"	

Summit Scientific

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LT Environmental, Inc.
4600 West 60th Avenue
Arvada CO, 80003

Project: Mutual 4-30H
Project Number: 065816005
Project Manager: Jess Alexander

Reported:
10/07/16 18:13

SB13@6'
1609060-19 (Soil)

Summit Scientific

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **09/07/16 11:25**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	1609080	09/12/16	09/13/16	8015M	

Date Sampled: **09/07/16 11:25**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		95.1 %	30-150		"	"	"	"	

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **09/07/16 11:25**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020	mg/kg	1	1609079	09/12/16	09/14/16	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.0050	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **09/07/16 11:25**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		111 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		101 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		99.0 %	21-167		"	"	"	"	

Summit Scientific

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LT Environmental, Inc.
4600 West 60th Avenue
Arvada CO, 80003

Project: Mutal 4-30H
Project Number: 065816005
Project Manager: Jess Alexander

Reported:
10/07/16 18:13

SB14@6'
1609060-20 (Soil)

Summit Scientific

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **09/07/16 11:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	1609080	09/12/16	09/13/16	8015M	

Date Sampled: **09/07/16 11:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		100 %	30-150		"	"	"	"	

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **09/07/16 11:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020	mg/kg	1	1609079	09/12/16	09/14/16	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.0050	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **09/07/16 11:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		107 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		100 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		98.0 %	21-167		"	"	"	"	

Summit Scientific

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LT Environmental, Inc.
4600 West 60th Avenue
Arvada CO, 80003

Project: Mutual 4-30H
Project Number: 065816005
Project Manager: Jess Alexander

Reported:
10/07/16 18:13

Extractable Petroleum Hydrocarbons by 8015 - Quality Control
Summit Scientific

Analyte	Reporting			Spike	Source		%REC		RPD	
	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes

Batch 1609080 - EPA 3550A

Blank (1609080-BLK1)

Prepared & Analyzed: 09/12/16

C10-C28 (DRO) ND 50 mg/kg

Surrogate: o-Terphenyl 11.8 " 12.5 94.7 30-150

LCS (1609080-BS1)

Prepared & Analyzed: 09/12/16

C10-C28 (DRO) 465 50 mg/kg 499 93.1 73-134

Surrogate: o-Terphenyl 12.0 " 12.5 95.7 30-150

Matrix Spike (1609080-MS1)

Source: 1609060-01

Prepared & Analyzed: 09/12/16

C10-C28 (DRO) 507 50 mg/kg 494 53.6 91.7 50-148

Surrogate: o-Terphenyl 11.8 " 12.4 95.7 30-150

Matrix Spike Dup (1609080-MSD1)

Source: 1609060-01

Prepared & Analyzed: 09/12/16

C10-C28 (DRO) 507 50 mg/kg 494 53.6 91.8 50-148 0.104 20

Surrogate: o-Terphenyl 12.1 " 12.4 97.8 30-150

Summit Scientific

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LT Environmental, Inc.
4600 West 60th Avenue
Arvada CO, 80003

Project: Mutal 4-30H
Project Number: 065816005
Project Manager: Jess Alexander

Reported:
10/07/16 18:13

Volatile Organic Compounds by EPA Method 8260B - Quality Control
Summit Scientific

Analyte	Reporting			Spike	Source		%REC		RPD	
	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes

Batch 1609079 - EPA 5030 Soil MS

Blank (1609079-BLK1)

Prepared: 09/12/16 Analyzed: 09/13/16

Benzene	ND	0.0020	mg/kg							
Toluene	ND	0.0050	"							
Ethylbenzene	ND	0.0050	"							
Xylenes (total)	ND	0.0050	"							
Gasoline Range Hydrocarbons	ND	0.50	"							
Surrogate: 1,2-Dichloroethane-d4	0.0440		"	0.0400		110	23-173			
Surrogate: Toluene-d8	0.0401		"	0.0400		100	20-170			
Surrogate: 4-Bromofluorobenzene	0.0393		"	0.0400		98.3	21-167			

LCS (1609079-BS1)

Prepared: 09/12/16 Analyzed: 09/13/16

Benzene	0.121	0.0020	mg/kg	0.100		121	58-130			
Toluene	0.119	0.0050	"	0.100		119	61-134			
Ethylbenzene	0.114	0.0050	"	0.0992		115	74-139			
m,p-Xylene	0.219	0.010	"	0.200		110	73-137			
o-Xylene	0.113	0.0050	"	0.0980		115	73-141			
Xylenes (total)	0.332	0.0050	"				30-150			
Gasoline Range Hydrocarbons	2.99	0.50	"				30-150			
Surrogate: 1,2-Dichloroethane-d4	0.0414		"	0.0400		104	23-173			
Surrogate: Toluene-d8	0.0445		"	0.0400		111	20-170			
Surrogate: 4-Bromofluorobenzene	0.0399		"	0.0400		99.7	21-167			

Matrix Spike (1609079-MS1)

Source: 1609060-01

Prepared: 09/12/16 Analyzed: 09/13/16

Benzene	0.132	0.0020	mg/kg	0.100	0.00585	127	30-131			
Toluene	0.137	0.0050	"	0.100	0.0150	122	30-134			
Ethylbenzene	0.112	0.0050	"	0.0992	0.00891	104	22-153			
m,p-Xylene	0.276	0.010	"	0.200	0.0180	129	10-159			
o-Xylene	0.151	0.0050	"	0.0980	0.0244	129	31-151			
Xylenes (total)	0.427	0.0050	"		0.0424		30-150			
Gasoline Range Hydrocarbons	10.8	0.50	"		9.22		30-150			
Surrogate: 1,2-Dichloroethane-d4	0.0423		"	0.0400		106	23-173			
Surrogate: Toluene-d8	0.0415		"	0.0400		104	20-170			
Surrogate: 4-Bromofluorobenzene	0.0394		"	0.0400		98.5	21-167			

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LT Environmental, Inc.
4600 West 60th Avenue
Arvada CO, 80003

Project: Mutal 4-30H
Project Number: 065816005
Project Manager: Jess Alexander

Reported:
10/07/16 18:13

Volatile Organic Compounds by EPA Method 8260B - Quality Control
Summit Scientific

Analyte	Reporting			Spike	Source		%REC		RPD	
	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes

Batch 1609079 - EPA 5030 Soil MS

Matrix Spike Dup (1609079-MSD1)	Source: 1609060-01			Prepared: 09/12/16		Analyzed: 09/13/16				
Benzene	0.136	0.0020	mg/kg	0.100	0.00585	130	30-131	2.70	34	
Toluene	0.140	0.0050	"	0.100	0.0150	125	30-134	2.16	30	
Ethylbenzene	0.134	0.0050	"	0.0992	0.00891	127	22-153	17.8	24	
m,p-Xylene	0.270	0.010	"	0.200	0.0180	126	10-159	2.09	68	
o-Xylene	0.159	0.0050	"	0.0980	0.0244	138	31-151	5.37	38	
Xylenes (total)	0.429	0.0050	"		0.0424		30-150	0.617	20	
Gasoline Range Hydrocarbons	12.5	0.50	"		9.22		30-150	14.8	20	
Surrogate: 1,2-Dichloroethane-d4	0.0440		"	0.0400		110	23-173			
Surrogate: Toluene-d8	0.0406		"	0.0400		102	20-170			
Surrogate: 4-Bromofluorobenzene	0.0394		"	0.0400		98.4	21-167			

Summit Scientific

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LT Environmental, Inc.
4600 West 60th Avenue
Arvada CO, 80003

Project: Mutual 4-30H

Project Number: 065816005
Project Manager: Jess Alexander

Reported:
10/07/16 18:13

Notes and Definitions

DET	Analyte DETECTED
ND	Analyte NOT DETECTED at or above the reporting limit
NR	Not Reported
dry	Sample results reported on a dry weight basis
RPD	Relative Percent Difference