

Noble Energy, Inc.

**Land Application of Water-Based Bentonitic
Drilling Fluids & Associated Drill Cuttings
Sandau East Spreadfield Management Plan**

This document outlines the operational requirements to be used when applying water-based bentonitic drilling fluids and associated drill cuttings to spread fields to maintain compliance with the Colorado Oil and Gas Conservation Commission (COGCC) Rule 907.d.(3). These materials are applied as a beneficial soil amendment.

The spreadfield covered under this Waste Management Plan are detailed in Table 1. Only water-based bentonitic drilling fluids and drill cuttings generated by Noble Energy, Inc. (Noble) will be applied at these sites. No other E&P waste shall be deposited at these sites.

Sandau East SpreadField Information

I. Disposal Location Information

1. Latitude and Longitude of Physical Address: 40.2829/-104.7273 (See attachment 1 ;Spreadfield Overview Map)
2. The site is near hydrologic features: (See attachment 2; Site Figure 2 Hydrological Figure)
3. Land use: Cropland
4. Area is in a Sensitive Area: (See attachment 3; Table 1 for Sensitivity Determination)
5. Area is not within a Sensitive Wildlife or Restricted Surface Occupancy Area
6. See attachment 4 background analytical/Sample Locations: Background samples were collected for Full Table 910-1
7. See attachment 5 (surface owner agreement)
8. Noble Energy, Inc. shall provide a means of access to the Sandau East spreadfield when requested by the COGCC
9. The area that will be utilized as the spreadfield is consistent with local zoning policies
10. The location will be signed appropriately to ensure contactors are dumping in the approved area and to deter unauthorized disposal
11. The application of bentonitic drilling fluids and associated drill cuttings will be applied as a beneficial reuse to the soil to maintain moisture and decrease soil erosion.
12. Post 3 years of application the area will be discontinued as a spreadfield and returned to the landowner to plant crops.

II. Material Volume

1. The estimated drilling fluids/cuttings in a given year is 1500 cubic yards.

III. Material Handling

1. The drilling fluids/cuttings will be solidified prior to leaving the pad area
2. Haul tickets and a tracking sheet will be utilized to indicate how much volume is being applied to the spreadfield
3. Best Management Practices:
 - Drilling fluids and associated cuttings will be stockpiled in a designated location and spread/tilled within 10 days
 - A 3-inch maximum lift, per application, of water-based bentonitic drilling fluids and associated drill cuttings will be applied. The landowner will utilize a manure spreader and tiller to spread and incorporate the material.
 - Noble shall obtain written authorization from the surface owner (if non-Noble land) prior to land application of water-based bentonitic drilling fluids and associated drill cuttings. The signed agreement shall state that incorporation of the material into the native soil will occur within 10 days of application.
 - Daily tracking tickets will be used and will include the following information:
 1. Name of each well where material was generated;
 2. Date of transfer of the material from each well to the spread field;
 3. Volume of material taken to the spread field;
 4. Name of transporter; and
 5. Area where drilling fluid and associated drill cuttings were applied
 - The contingency for frozen or muddy conditions will consist of storage of drill fluids and cuttings mixture being stored within earthen bermed secondary containment and will be spread and incorporated when conditions allow
4. The facility will receive drill fluids/cuttings for less than 3 years consecutively from the date of first land application.

IV. Post Application Sampling and Closure Requirements



1. Soil sampling will be conducted, following incorporation, on a quarterly basis, and for closure of the facility.
2. During operations and closeout, A 20 point composite soil sample will be collected every 10 acres based on a grid pattern of the spreadfield. Composite samples will be collected on a quarterly basis from a depth of 0-8 inches bgs. All soil samples will be analyzed for total petroleum hydrocarbons (TPH), including gasoline range organics (GRO) and diesel range organics (DRO). Soil samples will also be analyzed

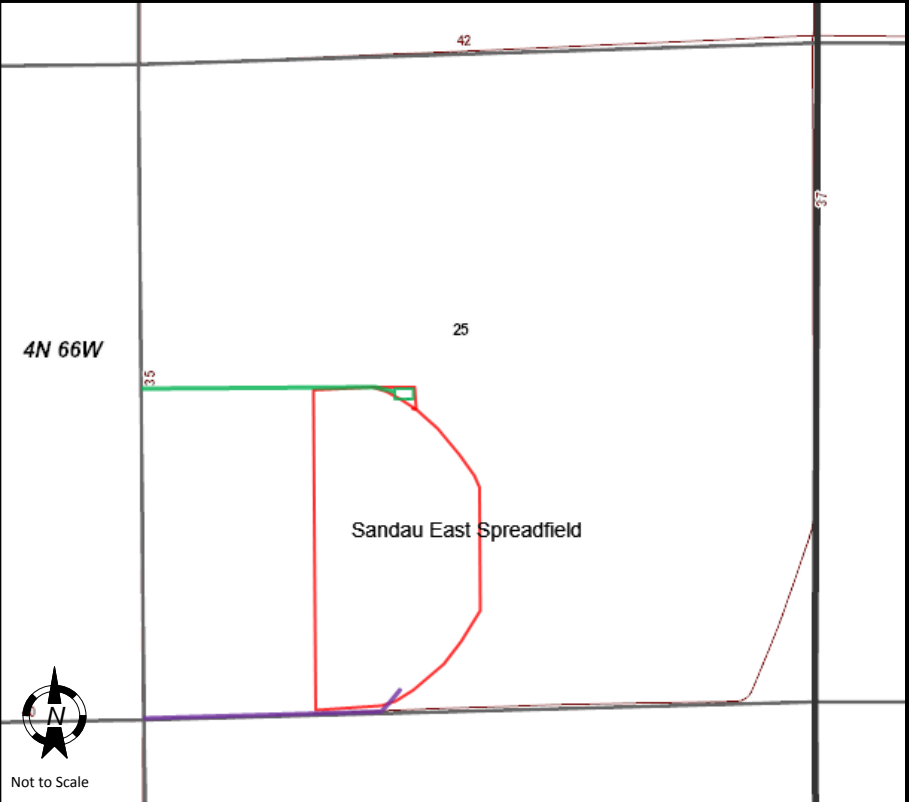
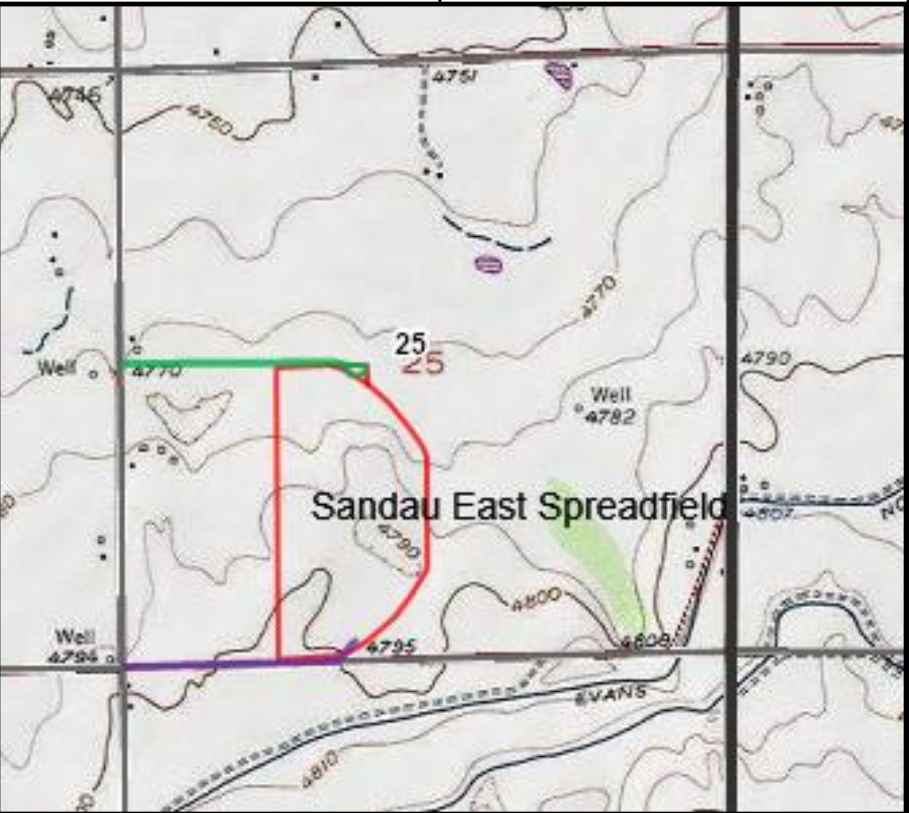
- for benzene, toluene, ethylbenzene, xylenes (BTEX), electrical conductivity (EC), sodium adsorption ratio (SAR), pH, and arsenic.
3. Noble will utilize the attached PDF figure of the United States Geological Survey arsenic soil study in Colorado, overlaid with the National Resource Conservation Service (NRCS) soil classifications. Noble Energy will utilize this data to compare arsenic values collected at each spread field within the NRCS soil classification of each spread field. (See attachment 6)
 4. One composite soil sample per spread field will be taken during each sampling event. The sample will be analyzed for petroleum aromatic hydrocarbons (PAHs).

Attachments 1-5

1. **Spreadfield Overview Map**
2. **Sensitive Area Determination Table**
3. **Surface Owner Agreement**
4. **Background Analytical Report**
5. **USGS/Operators Arsenic Figure DJ Basin**



Proposed Spreadfield Name: Sandau East		Land Use: Circle one	
Lat/Long: Solids drop point 40.2829/-104.7273 Liquids entry point: 40.2762-104.7281		<input checked="" type="radio"/> Crop land	Dry Land
Sec/Twn/Rng: 25 4N 66W		<input type="radio"/> Agricultural	Irrigated
Road Directions: WCR 40 & 35 Solids: N .5, E .4 to drop point Liquids: E .3 to entrance, spread liquids north & south		<input type="radio"/> Non-crop land	Rangeland
		<input type="radio"/> Industrial	Commercial
		<input type="radio"/> Residential	Improved Pasture
		 Solids Route	
		 Liquids Route	



Water Resources *(Sensitive Area Determination)*

Note: All measurements made during the sensitive area determination are taken from the edge of disturbance.

Reference Well Name: NA

Site Name: Sandau East Spreadfield

DP:

Determination Question	Yes/No	Comment
1. Is the location underlain by an unconfined aquifer or recharge zone?	No	No, according to the COGCC layer Reg42.
2. Is the location within a specified Rule 317B: Public Water System Surface Water Supply?	No	No, according to the COGCC layer 317B.
3. Is the depth to ground water less than 25'? (Use static water level in nearby wells). Provide direction of distance for reference.	Yes	Well (permit #8522-R), is on location and has a static water level of 15'.
4. Is the location edge within 500 feet of a down gradient stream, lake, wetland? (List up to 1 mi away). Provide direction and distance of reference.	No	No down gradient surface water within 1 mile of location.
5. Is the location edge within 500 feet of a down gradient canal, ditch, or other manmade surface water conveyance? Provide direction and distance of reference.	No	No visible manmade surface water features observed on COGCC GIS.
6. Is the location in a mapped floodplain?	No	No, according to the COGCC lay floodplain.
7. Is the location in a riparian/wetland area?	No	No, according to the COGCC GIS.
8. Was an Army Corps of Engineers Section 404 permit filed for? (If answer to 7 is YES)	NA	
9. Is the location edge within 660' (1/8 mi.) of a domestic water well? (List up to 1 mi away w/ permit #), provide direction and distance of reference.	No	No, closest Domestic water well, permit #223902 is 1,100' SE from location.
10. Is the location edge within 1320' (1/4 mi.) of a public water supply?	No	
11. Closest Water Well (Any)? Include permit #, direction and distance from location.		Irrigation Well, Permit #8522-R, on location.

Is this a sensitive area: ☐ No ☒ Yes

Nearest Down-gradient surface water: No down gradient surface water within 1-mile.

Nearest Domestic Water Well (permit number and distance from location): Closest Domestic water well, permit #223902 is 1,100' SE from location.

Estimated depth to ground water at Oil and Gas Location (provide explanation): Estimated static water level is 15'.

Is the location in a riparian area: ☒ No ☐ Yes

Was an Army Corps of Engineers Section 404 permit filed ☒ No ☐ Yes (if yes, permit attached)

Is the location within a Rule 317B Surface Water Supply Area buffer ☒ No ☐ Yes

If the location is within a Rule 317B Surface Water Supply Area buffer have all public water supply systems within 15 miles been notified: ☐ No ☐ Yes ☒ NA

**AUTHORIZATION AND CONSENT FORM
FOR LAND TREATMENT
OF
WATER-BASED BENTONITIC DRILLING FLUID & CUTTINGS**

Pursuant to Rule 907.d.(3) A, of "Rules and Regulations" as established,
April 1, 2009, by the Colorado Oil and Gas Conservation Commission.

OPERATING COMPANY: NOBLE ENERGY PRODUCTION, INC.

ADDRESS: 117th Avenue Greeley CO 80634

PHONE: 970.304.5000

SIGNATURE : 

Well Site Name		Application Site/Surface property		
Moser H34-769				
Moser H22-776				
Moser H34-778				
Moser State H22-785				
Moser H34-748				
Moser H22-748				
Moser H22-745				
Moser H22-735				
Moser H34-735				
Moser H34-725				
Moser H22-725				
Moser H34-717				
Moser H22-715				
Moser H22-711				

SURFACE OWNER DECLARATION AND AUTHORIZATION

I hereby declare that I am the legal owner and or legal representative of surface property.

By signing this document I give afore noted operator
and E & P waste transportation company authorization to apply E & P wastes from
listed well sites, on surface property.

Furthermore I agree in accordance with Ruling 907, Section A, Part 3,
"to encourage and promote the waste minimization through beneficial use, reuse, and recycling."

Surface Owner;

By: 

Signature: Bruce Sandau

Date: 10-5-15



July 6, 2012

Mr. Owen Williams
EHS Specialist
Noble Energy, Inc.
2115 117th Avenue
Greeley, Colorado 80634

Mr. Ryan Bruner
Environmental and Regulatory Supervisor
Noble Energy, Inc.
1625 Broadway, Suite 2000
Denver, Colorado 80202

**RE: 2012 Background Monitoring Results
Sandau #1 Spread Field
Weld County, Colorado**

Dear Mr. Williams and Mr. Bruner:

LT Environmental, Inc. (LTE), under the direction of Noble Energy, Inc. (Noble), conducted background soil and groundwater monitoring at the newly constructed Noble Sandau #1 Spread Field (Figure 1). The Sandau #1 Spread Field is located at the intersection of County Road (CR) 35 and CR 40. The Sandau #1 Spread Field is the western half of the crop circle, while the Sandau #2 Spread Field is the eastern half. Work completed, as discussed in this report, includes an investigation into the Sandau #1 Spread Field facility. The Sandau #2 Spread Field facility is currently not scheduled for use and data will be presented in future reports. This correspondence is provided as the *2012 Background Monitoring Results* and summarizes activities conducted at the Sandau #1 Spread Field on June 15, 2012.

Spread Field Description

The spread field is located on agricultural land, where Noble and the landowner have agreed to begin applying bentonite-rich drilling fluids and borehole cuttings as a beneficial soil amendment. Drilling mud will be applied at the spread field per Colorado Oil and Gas Conservation Commission (COGCC) Regulation 2 CCR 907 (d) (3). The bentonite-rich drilling fluid has a high water adsorption capacity, which when tilled into the existing soil, creates more fertile agricultural land. Trucks will transport the material to the spread field and a spreader will distribute the drilling fluids/cuttings evenly over the surface. Each application will be distributed in a thin layer, less than three inches in depth. After distribution, a tractor will till the drilling fluids/cuttings into the native soil every two to three days. LTE, at the direction of Noble, conducted the soil and groundwater sampling described in this correspondence to document background conditions at the spread field prior to the application of drilling mud.

Soil Sampling Procedures

On June 15, 2012, LTE, under the direction of Noble, collected a total of eight 4-point composite soil samples and one 32-point composite sample from depths of 0.0 to 12 inches below ground surface (bgs). The soil was inspected for the presence/absence of petroleum hydrocarbon odor and/or staining by visually inspecting the soil samples collected. Soil samples did not exhibit any field identified impact.

The 4-point composite soil samples were submitted to Summit Scientific (Summit) of Golden, Colorado, for analysis of total petroleum hydrocarbons (TPH)-diesel range organics (DRO) by United States Environmental Protection Agency (EPA) Method 8015, benzene, toluene, ethylbenzene, and total xylenes (BTEX), and TPH-gasoline range organics (GRO) by EPA Method 8260B, pH by EPA 9045B, sodium adsorption ratio (SAR) by calculation, electrical conductivity (EC) by SM2510B, and COGCC Table 910-1 metals, except boron, by Methods EPA 6020A, EPA7471B, Method 3060A/7196A, and USDA 60 6 (20b). The 32-point composite soil sample was submitted for analysis of polycyclic aromatic hydrocarbons (PAHs) by EPA 8270D SIM.

Groundwater Monitoring Well Installation

On June 15, 2012, LTE and High Plains Drilling, Inc., under the direction of Noble, installed six monitoring wells (SB01 through SB06) with a direct-push drill rig. During drilling activities, depth to water was observed at approximately 4.5 feet bgs. The monitoring wells were constructed of 1-inch diameter polyvinyl chloride (PVC) casing extending from the surface stickups to a depth of 8 feet to 12 feet bgs. The lower section of each well consists of 5 feet to 10 feet of 0.010-inch factory slotted PVC well screen. Silica sand (size 10-20) was placed from the bottom of each well to one foot above the screen to act as filter pack for the monitoring well. Bentonite chips were placed from the top of the silica sand to the ground surface and hydrated at each soil boring to provide a seal against surface contamination and precipitation infiltration.

Well completion diagrams are provided as Attachment 1.

Groundwater Sampling Procedures

LTE, under the direction of Noble, collected five groundwater samples on June 15, 2012. Monitoring well SB02 was not sampled because it did not recharge. Depth to groundwater, which ranged from 5.58 feet below top of casing (btoc) in SB05 to 9.72 feet btoc in SB02, was used to calculate well-specific purge volumes. Depth to groundwater from the surface ranged from approximately 3.55 feet bgs in SB05 to 7.72 feet bgs in SB02, with an average of 5.28 feet bgs. Following purging, samples were collected and then submitted to Summit for analysis of BTEX by EPA Method 8260B.

Soil Sampling Results

Eight composite soil samples were collected at the Sandau #1 Spread Field on June 15, 2012, (SS01 through SS08) and submitted for laboratory analysis. Laboratory analytical results indicate that all arsenic concentrations exceed the COGCC soil standard of 0.39 mg/kg. All other Table 910-1 metals and organic compounds are in compliance with COGCC standards. The 32-point composite soil sample (composite) was in compliance with COGCC PAH standards. Laboratory analytical results are presented in Table 1 and Table 2, and the laboratory analytical report is included as Attachment 2.

Groundwater Sampling Results

Five groundwater samples were collected at the Sandau #1 Spread Field on June 15, 2012, (SB01 and SB03 through SB06) and submitted for laboratory analysis. Laboratory analytical results indicate groundwater BTEX concentrations are in compliance with Colorado Department of Public Health and Environment-Water Quality Control Commission Regulation 41-The Basic Standards for Ground Water (WQCC Reg 41). Laboratory analytical results are presented in Table 3, and the laboratory analytical report is included as Attachment 3.

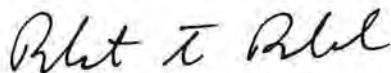
Summary and Conclusions

LTE, under the direction of Noble, collected a total of eight 4-point composite soil samples, one 32-point composite soil sample, and five groundwater samples which were submitted for laboratory analysis. No Table 910-1 metals other than arsenic were detected in exceedance of COGCC standards in soil samples collected from the spread field. All samples exceed the COGCC standard for arsenic, but are within the range of naturally occurring levels in the region. TPH, BTEX, pH, SAR, EC, and PAH were in compliance with Table 910-1 concentration levels in all samples. All groundwater samples collected are in compliance with WQCC Reg 41.

LTE appreciates the opportunity to provide environmental services to Noble. Please call us at 303-433-9788 if you have any questions or comments regarding this report.

Sincerely,

LT ENVIRONMENTAL, INC.



Robert Rebel, P.E.
Project Manager



Steve Kahn, P.E.
Principal

Attachments:

Figure 1	Site Map
Table 1	Soil Analytical Results
Table 2	Soil PAH Analytical Results
Table 3	Groundwater Analytical Results
Attachment 1	Well Completion Diagrams
Attachment 2	Soil Laboratory Analytical Reports
Attachment 3	Groundwater Laboratory Analytical Report

FIGURE

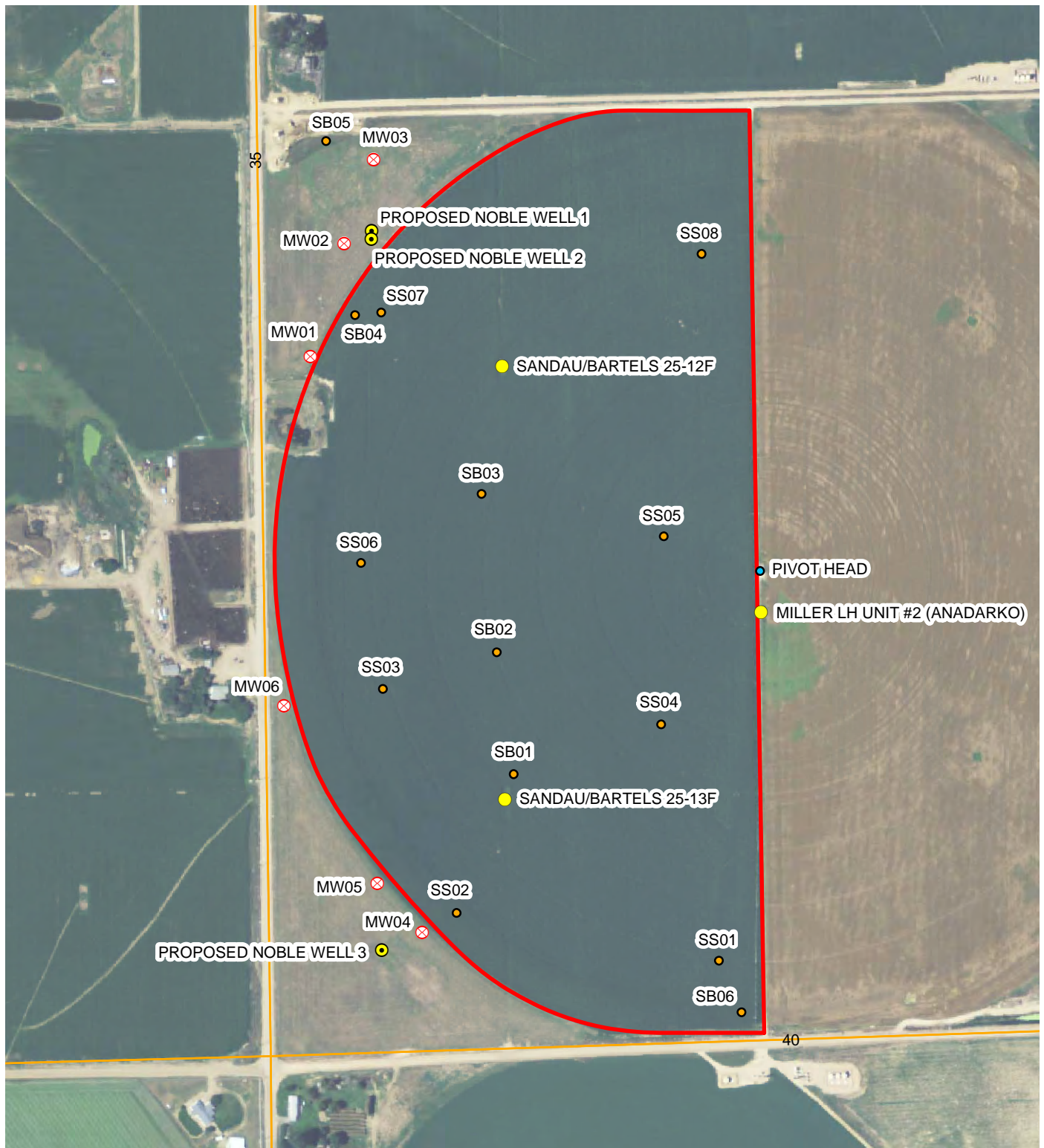


IMAGE COURTESY OF USDA/NRCS, 2011

LEGEND

- ⊗ MONITORING WELL (PREVIOUSLY INSTALLED BY LANDOWNER)
- SOIL BORING/MONITORING WELL
- WELLHEAD
- PROPOSED PRODUCTION WELL
- PIVOT HEAD
- ▭ SITE BOUNDARY
- ▭ SECTION LINE

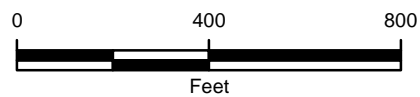


FIGURE 1
SITE MAP
SANDAU #1 SPREAD FIELD
WELD COUNTY, COLORADO

NOBLE ENERGY, INC.



TABLES

TABLE 1

**SOIL ANALYTICAL RESULTS
SANDAU #1 SPREAD FIELD
WELD COUNTY, COLORADO
NOBLE ENERGY, INC.**

Location	Standard	Units	SS01	SS02	SS03	SS04	SS05	SS06	SS07	SS08
Depth (feet)			0-1	0-1	0-1	0-1	0-1	0-1	0-1	0-1
Sample Date			6/15/2012	6/15/2012	6/15/2012	6/15/2012	6/15/2012	6/15/2012	6/15/2012	6/15/2012
Arsenic	0.39	mg/kg	1.72	1.49	1.46	1.50	1.73	1.61	1.54	1.81
Barium	15,000	mg/kg	57.6	70.6	51.1	50.3	62.9	59.5	46.4	46.8
Cadmium	70	mg/kg	0.209	0.129	0.148	0.155	0.152	0.148	0.170	0.193
Chromium (III)	120,000	mg/kg	4.79	4.49	4.31	4.24	5.16	4.72	3.72	3.90
Chromium (VI)	23	mg/kg	<1	<1	<1	<1	<1	<1	<1	<1
Copper	3,100	mg/kg	6.15	4.96	5.10	4.97	5.22	5.83	5.02	4.70
Lead	400	mg/kg	8.13	5.63	6.44	6.31	6.58	6.47	8.35	7.84
Mercury	23	mg/kg	<0.0500	<0.0500	<0.0500	<0.0500	<0.0500	<0.0500	<0.0500	<0.0500
Nickel	1,600	mg/kg	5.09	4.36	3.93	3.82	4.95	4.60	3.53	3.59
Selenium	390	mg/kg	0.189	0.158	0.164	0.160	0.178	0.205	0.156	0.145
Silver	390	mg/kg	<0.100	<0.100	<0.100	<0.100	<0.100	<0.100	<0.100	<0.100
Zinc	23,000	mg/kg	34.6	30.4	28.4	29.2	32.6	33.7	26.0	25.8
EC	4	mmhos/cm	0.452	0.359	0.422	0.450	0.359	0.458	0.233	0.169
pH	9	SU	7.1	7.2	7.4	6.5	6.8	6.7	7.0	7.2
SAR	12		1.08	2.39	1.66	0.950	1.42	2.33	1.65	1.47
TPH-GRO	--	mg/kg	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
TPH-DRO	--	mg/kg	<50	<50	<50	<50	<50	<50	<50	<50
TPH Total	500	mg/kg	<50.50	<50.50	<50.50	<50.50	<50.50	<50.50	<50.50	<50.50
Benzene	0.17	mg/kg	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
Toluene	85	mg/kg	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
Ethylbenzene	100	mg/kg	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
Total Xylenes	175	mg/kg	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050

NOTES:

mg/kg - milligrams per kilogram

mmhos/cm - millimhos per centimeter

EC - electrical conductivity

SU - standard unit

SAR - sodium adsorption ratio

TPH-GRO - total petroleum hydrocarbons - gasoline range organics analyzed by EPA Method 8260B

TPH-DRO - total petroleum hydrocarbons - diesel range organics analyzed by EPA Modified Method 8015M

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

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

BOLD - indicates result exceeds the applicable standard

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

-- No standard

TABLE 2

**SOIL PAH ANALYTICAL RESULTS
SANDAU #1 SPREAD FIELD
WELD COUNTY, COLORADO
NOBLE ENERGY, INC.**

Analyte	Standard	Units	Composite Sample
Sample Date			6/15/2012
Acenaphthene	1,000	mg/kg	<0.00500
Anthracene	1,000	mg/kg	<0.00500
Benzo (a) anthracene	0.22	mg/kg	<0.00500
Benzo (b) fluoranthene	0.22	mg/kg	<0.00500
Benzo (k) fluoranthene	2.2	mg/kg	<0.00500
Benzo (a) pyrene	0.022	mg/kg	<0.00500
Chrysene	22	mg/kg	<0.00500
Dibenz (a,h) anthracene	0.022	mg/kg	<0.01000
Fluoranthene	1,000	mg/kg	<0.00500
Fluorene	1,000	mg/kg	<0.00500
Indeno (1,2,3-cd) pyrene	0.22	mg/kg	<0.01000
Napthalene	23	mg/kg	<0.00500
Pyrene	1000	mg/kg	<0.00500

NOTES:

PAH - polycyclic aromatic hydrocarbon

mg/kg - milligrams per kilogram

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

Analyzed by EPA Method 8270D SIM

TABLE 3

**GROUNDWATER ANALYTICAL RESULTS
SANDAU #1 SPREAD FIELD
WELD COUNTY, COLORADO
NOBLE ENERGY, INC.**

Monitoring Well	Date	Benzene (µg/L)	Toluene (µg/L)	Ethylbenzene (µg/L)	Total Xylenes (µg/L)
SB01	6/15/2012	<1.0	<1.0	<1.0	<1.0
SB03	6/15/2012	<1.0	<1.0	<1.0	<1.0
SB04	6/15/2012	<1.0	<1.0	<1.0	<1.0
SB05	6/15/2012	<1.0	<1.0	<1.0	<1.0
SB06	6/15/2012	<1.0	<1.0	<1.0	<1.0
CDPHE WQCC Reg 41		5	560	700	1,400

NOTES:

µg/L - micrograms per liter

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

CDPHE WQCC Reg 41 - Colorado Department of Public Health and Environment-Water Quality Control

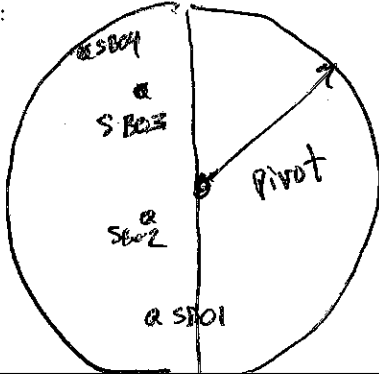
Commission Regulation 41 covering The Basic Standards for Ground Water

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

ATTACHMENT 1
WELL COMPLETION DIAGRAMS

Location Map:

↑ N



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

BORING LOG/MONITORING WELL COMPLETION DIAGRAM

Boring/Well Number:	SB01		Project:	Sandau Mudfarm	
Date:	6/15/2012		Project Number:	NEP0901	
Logged By:	D. Burns		Drilled By:	High Plains	
Drilling Method:	Direct Push		Sampling Method:	Continuous	
Gravel Pack:	10-20 Silica Sand 8'-2'		Seal:	Bentonite chips 2'-0'	
Casing Type:	Sch 40 PVC		Diameter:	1"	Length: 5'
Screen Type:	Sch 40 PVC		Diameter:	1"	Length: 5'
Slot:	0.010"		Hole Diameter:	2.25"	Depth to Liquid:
Total Depth:	8'		Depth to Water:	4.5'	

Penetration Resistance	Moisture Content	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Run	Soil/Rock Type	Lithology/Remarks	Well Completion
	dry	0.0	No		0			Topsoil	
					2			Brown fn.-med. sand, no s/o	
	moist	0.0	No		4			Brown med.-sand, no s/o little fines	
	moist				6			" "	
	wet		No		8			Brown clayey sand no s/o	
					10			Brown fn.-med sand, no s/o	
					12				
					14				
					16				
					18				
					20				
					22				
					24				
					26				
					28				
					30				

Location Map:

See previous
Map

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

BORING LOG/MONITORING WELL COMPLETION DIAGRAM

Boring/Well Number:	SBOZ			Project:	Sandau Mudfarm		
Date:	6/15/2012			Project Number:	NEP0901		
Logged By:	D. Burns			Drilled By:	High Plains		
Elevation:				Drilling Method:	Direct Push		
Detector:	PID			Sampling Method:	Continuous		
Gravel Pack:	10-20 Silica Sand			Seal:	Bentonite chips		
Casing Type:	Sch 40 PVC			Diameter:	1"		
Screen Type:	Sch 40 PVC			Length:	5'		
	Slot:				0.010"		
				Diameter:	1"		
				Length:	5'		
				Total Depth:	8'		
				Depth to Liquid:			
				Depth to Water:	4.5'		

Penetration Resistance	Moisture Content	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Run	Soil/Rock Type	Lithology/Remarks	Well Completion
	dry		No		0			Topsoil	
	moist	0.0	No		2			Brown fir-med sand no s/o	
	wet		No		4			Dark brown clayey fir-med sand no s/o	
					6			" "	
					8			Brown med sand no s/o	
					10				
					12				
					14				
					16				
					18				
					20				
					22				
					24				
					26				
					28				
					30				

Location Map:



See previous
Map



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LT Environmental, Inc.
4600 W. 60th Avenue
Arvada, Colorado 80003

BORING LOG/MONITORING WELL COMPLETION DIAGRAM

Boring/Well Number:	SBO3	Project:	Sandau Mudfarm
Date:	6/15/2012	Project Number:	NEP0901
Logged By:	D. Burns	Drilled By:	High Plains
Drilling Method:	Direct Push	Sampling Method:	Continuous
Gravel Pack:	10-20 Silica Sand 8'-2'	Seal:	Bentonite chips 2'-0'
Casing Type:	Sch 40 PVC	Diameter:	1"
Screen Type:	Sch 40 PVC	Slot:	0.010"
		Length:	
		Hole Diameter:	2.25"
		Depth to Liquid:	
		Total Depth:	8'
		Depth to Water:	4.5'

Penetration Resistance	Moisture Content	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Run	Soil/Rock Type	Lithology/Remarks	Well Completion
	dry	0.0	No		0			Topsoil	
					2			Brown fn-med sand, no s/o	
	moist				4			" " no s/o	
	wet		No		6			Brown med-med coarse sand	
	wet				8			no s/o	
					10				
					12				
					14				
					16				
					18				
					20				
					22				
					24				
					26				
					28				
					30				

Location Map:

See Previous
Map

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

BORING LOG/MONITORING WELL COMPLETION DIAGRAM

Boring/Well Number:	SB04		Project:	Sandau Mudfarm	
Date:	6/15/2012		Project Number:	NEP0901	
Logged By:	D. Burns		Drilled By:	High Plains	
Elevation:	Detector: PID		Drilling Method:	Direct Push	
Gravel Pack:	10-20 Silica Sand 8'-2'		Seal:	Bentonite chips 2'-0'	
Casing Type:	Sch 40 PVC		Diameter:	1"	Length: 5'
Screen Type:	Sch 40 PVC		Diameter:	1"	Length: 5'
	Slot: 0.010"		Total Depth:	8'	Depth to Water: 4.5'
			Hole Diameter:	2.25"	Depth to Liquid:

Penetration Resistance	Moisture Content	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Run	Soil/Rock Type	Lithology/Remarks	Well Completion
	dry	0.0	No		0			Topsoil	
	moist		No		2			Brown fn.-med sand no slo	
	wet		No		4			Brown clayey fn.-med sand no slo	
	wet		No		6			Brown med-sand no slo	
					8				
					10				
					12				
					14				
					16				
					18				
					20				
					22				
					24				
					26				
					28				
					30				

Location Map:



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

BORING LOG/MONITORING WELL COMPLETION DIAGRAM

Boring/Well Number:	SB05	Project:	Sandau Mudfarm
Date:	6/15/2012	Project Number:	NEP0901
Logged By:	D. Burns	Drilled By:	High Plains
Drilling Method:	Direct Push	Sampling Method:	Continuous
Gravel Pack:	10-20 Silica Sand	Seal:	Bentonite chips
Casing Type:	Sch 40 PVC	Diameter:	1"
Screen Type:	Sch 40 PVC	Length:	5'
Slot:	0.010"	Hole Diameter:	2.25"
Diameter:	1"	Depth to Liquid:	
Length:	5'	Total Depth:	8'
		Depth to Water:	4.5'

Penetration Resistance	Moisture Content	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Run	Soil/Rock Type	Lithology/Remarks	Well Completion
	dry	0.0	No		0			Topsoil	
	moist		No		2			Brown fn-med clayey sand	
					4			Brown med sand, fn sand	
	wet		No		6			" " no s/o	
	wet				8			Brown coarse sand, some gravel	
					10			Brown med coarse sand no s/o	
					12				
					14				
					16				
					18				
					20				
					22				
					24				
					26				
					28				
					30				

Location Map:



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

BORING LOG/MONITORING WELL COMPLETION DIAGRAM

Boring/Well Number:	SB06	Project:	Sandau Mudfarm
Date:	6/15/2012	Project Number:	NEP0901
Logged By:	D. Burns	Drilled By:	High Plains
Drilling Method:	Direct Push	Sampling Method:	Continuous
Gravel Pack:	10-20 Silica Sand	Seal:	Bentonite chips
Casing Type:	Sch 40 PVC	Diameter:	1"
Screen Type:	Sch 40 PVC	Length:	5'
Slot:	0.010"	Hole Diameter:	2.25"
Diameter:	1"	Depth to Liquid:	
Length:	10'	Total Depth:	12'
		Depth to Water:	

Penetration Resistance	Moisture Content	Vapor (ppm)	Staining	Sample #	Depth (ft. bgs.)	Sample Run	Soil/Rock Type	Lithology/Remarks	Well Completion
	dry				0			Topsoil	
	moist	0.0	No		2			- Brown med.-fn. sand no s/o	
					4			- Tan clayey fn. sand no s/o	
	moist	0.0	No		6			- Tan/light brown sandy clay	
	moist				8			" " no s/o	
	wet		No		10			" " no s/o	
	moist				12			- brown med.-course sand	
	wet				14				
					16				
					18				
					20				
					22				
					24				
					26				
					28				
					30				

ATTACHMENT 2
SOIL LABORATORY ANALYTICAL REPORT

Summit Scientific

741 Corporate Circle – Suite I ♦ Golden, Colorado 80401

303.277.9310 - laboratory ♦ 303.277.9531 - fax

June 29, 2012

Rob Rebel
LT Environmental, Inc.
4600 West 60th Avenue
Arvada, CO 80003
RE: NEP - Sandau Mudfarm

Enclosed are the results of analyses for samples received by Summit Scientific on 06/19/12 16:47. 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', is written over a light gray circular background.

Paul Shrewsbury For Ben Shrewsbury
President / Laboratory Director



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

Project: NEP - Sandau Mudfarm

Project Number: NEP 0901
Project Manager: Rob Rebel

Reported:
06/29/12 15:43

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
SS01	R206145-01	Soil	06/15/12 13:50	06/19/12 16:47
SS02	R206145-02	Soil	06/15/12 14:00	06/19/12 16:47
SS03	R206145-03	Soil	06/15/12 14:10	06/19/12 16:47
SS04	R206145-04	Soil	06/15/12 14:30	06/19/12 16:47
SS05	R206145-05	Soil	06/15/12 14:35	06/19/12 16:47
SS06	R206145-06	Soil	06/15/12 14:40	06/19/12 16:47
SS07	R206145-07	Soil	06/15/12 15:15	06/19/12 16:47
SS08	R206145-08	Soil	06/15/12 15:30	06/19/12 16:47
Composite SS	R206145-09	Soil	06/15/12 15:35	06/19/12 16:47

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: NEP - Sandau Mudfarm

Project Number: NEP 0901
Project Manager: Rob Rebel

Reported:
06/29/12 15:43

Page 1 of 1

Summit Scientific

5.
741 Corporate Circle Suite 1 • Golden, Colorado 80401
303-277-9310 • 303-277-9531 Fax

Client: LT Environmental, Inc.
Address: 4600 West 60th Avenue
City/State/Zip: Arvada, CO 80003
Phone: (303) 433-9788
Fax: (303) 433-1432
Project Name: Sandau Mudfarm
Project Number: NEP 0901
Project Manager: Rob Rebel
E-Mail: rob@summit-sc.com
Tel: (303) 433-9788

Sample Description	Date Sampled	Time Sampled	Number of Containers	Preservative	Matrix	Analyze For:	Special Instructions
SS01	6/18/12	1350	1	HCl	Air - Canister Serial #	PH, SAR, EC, BTX, CRD/DEO, Total Metals, PAHs - 5m	PAHs P.S.
SS02		1400		None	Soil		
SS03		1410		None	Groundwater		
SS04		1430		None	Other (Specify)		
SS05		1435		None	Other (Specify)		
SS06		1440		None	Other (Specify)		
SS07		1515		None	Other (Specify)		
SS08		1530		None	Other (Specify)		
Composite SS		1535		None	Other (Specify)		
Relinquished by:	Date/Time: 6/19/12 16:00	Received by:	Date/Time: 6/19/12 4:47	Turn Around Time (Check):	Notes:		
Relinquished by:		Received by:		Same Day			
Relinquished by:		Received by:		24 Hours			
Relinquished by:		Received by:		48 Hours			
Relinquished by:		Received by:		72 Hours			
Relinquished by:		Received by:		Standard			
Relinquished by:		Received by:		Sample Integrity:			
Relinquished by:		Received by:		Temperature Upon Receipt:			
Relinquished by:		Received by:		Inadequate			

www.summit-sc.com



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

Project: NEP - Sandau Mudfarm
Project Number: NEP 0901
Project Manager: Rob Rebel

Reported:
06/29/12 15:43

SS01
R206145-01 (Soil)

Summit Scientific

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **06/15/12 13:50**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	2062510	06/25/12	06/25/12	8015 Full Carbon Chain	

Date Sampled: **06/15/12 13:50**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		124 %	80-124		"	"	"	"	

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **06/15/12 13:50**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0050	mg/kg	1	2062508	06/25/12	06/26/12	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.0050	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **06/15/12 13:50**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		110 %	67.4-143		"	"	"	"	
Surrogate: Toluene-d8		81.8 %	77.3-114		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		95.2 %	78.4-125		"	"	"	"	

Calculated Analytes

Date Sampled: **06/15/12 13:50**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium+3 Calculated	4.79	1.00	mg/kg	1	2062906	06/25/12	06/29/12	Calculation	

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: NEP - Sandau Mudfarm

Project Number: NEP 0901
Project Manager: Rob Rebel

Reported:
06/29/12 15:43

SS01
R206145-01 (Soil)

Summit Scientific

Calculated Analytes

Total Metals by EPA Method 6020 - Dry Weight Basis

Date Sampled: **06/15/12 13:50**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	1.72	0.100	mg/kg	1	2062002	06/20/12	06/21/12	EPA 6020A	
Barium	57.6	0.100	"	"	"	"	"	"	
Cadmium	0.209	0.100	"	"	"	"	"	"	
Chromium	5.79	0.100	"	"	"	"	"	"	
Copper	6.15	0.500	"	"	"	"	"	"	
Lead	8.13	0.100	"	"	"	"	"	"	
Nickel	5.09	0.100	"	"	"	"	"	"	
Selenium	0.189	0.100	"	"	"	"	"	"	
Silver	ND	0.100	"	"	"	"	"	"	
Zinc	34.6	5.00	"	"	"	"	"	"	

Total Mercury by EPA Method 7471/7470

Date Sampled: **06/15/12 13:50**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Mercury	ND	0.0500	mg/kg	1	2062003	06/20/12	06/20/12	EPA 7471B	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **06/15/12 13:50**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.452	0.00100	mmhos/cm	1	2062506	06/25/12	06/25/12	SM 2510B	

Date Sampled: **06/15/12 13:50**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	7.1		pH Units	"	2062104	06/21/12	06/22/12	EPA 9045B	

Soluble Nutrients by EPA 6020/Mod. USDA60 6(2, 3A) - Dry Weight Basis

Summit Scientific

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

Project: NEP - Sandau Mudfarm

Project Number: NEP 0901
Project Manager: Rob Rebel

Reported:
06/29/12 15:43

SS01
R206145-01 (Soil)

Summit Scientific

Soluble Nutrients by EPA 6020/Mod. USDA60 6(2, 3A) - Dry Weight Basis

Date Sampled: **06/15/12 13:50**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	150	2.50	mg/kg	1	2062004	06/20/12	06/21/12	EPA 6020/Mod. USDA60 6(2, 3A)	
Magnesium	86.5	1.00	"	"	"	"	"	"	
Sodium	66.8	5.00	"	"	"	"	"	"	

Date Sampled: **06/15/12 13:50**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	1.08		units	"	2062105	06/21/12	06/22/12	"	

Accutest Laboratories - 6010 Hexavalent Chromium, Soil (3060A Mod Digest)

Date Sampled: **06/15/12 13:50**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	1	mg/kg	1	2062906	06/25/12	06/29/12	3060A/7196 A	

Summit Scientific

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

Project: NEP - Sandau Mudfarm
Project Number: NEP 0901
Project Manager: Rob Rebel

Reported:
06/29/12 15:43

SS02
R206145-02 (Soil)

Summit Scientific

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **06/15/12 14:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	2062510	06/25/12	06/25/12	8015 Full Carbon Chain	

Date Sampled: **06/15/12 14:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		111 %	26.6-171		"	"	"	"	

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **06/15/12 14:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0050	mg/kg	1	2062508	06/25/12	06/26/12	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.0050	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **06/15/12 14:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		113 %	-85.3-300		"	"	"	"	
Surrogate: Toluene-d8		100 %	-84.7-291		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		93.8 %	-106-311		"	"	"	"	

Calculated Analytes

Date Sampled: **06/15/12 14:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium+3 Calculated	4.49	1.00	mg/kg	1	2062906	06/25/12	06/29/12	Calculation	

Summit Scientific

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

Project: NEP - Sandau Mudfarm

Project Number: NEP 0901
Project Manager: Rob Rebel

Reported:
06/29/12 15:43

SS02
R206145-02 (Soil)

Summit Scientific

Calculated Analytes

Total Metals by EPA Method 6020 - Dry Weight Basis

Date Sampled: **06/15/12 14:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	1.49	0.100	mg/kg	1	2062002	06/20/12	06/21/12	EPA 6020A	
Barium	70.6	0.100	"	"	"	"	"	"	
Cadmium	0.129	0.100	"	"	"	"	"	"	
Chromium	4.99	0.100	"	"	"	"	"	"	
Copper	4.96	0.500	"	"	"	"	"	"	
Lead	5.63	0.100	"	"	"	"	"	"	
Nickel	4.36	0.100	"	"	"	"	"	"	
Selenium	0.158	0.100	"	"	"	"	"	"	
Silver	ND	0.100	"	"	"	"	"	"	
Zinc	30.4	5.00	"	"	"	"	"	"	

Total Mercury by EPA Method 7471/7470

Date Sampled: **06/15/12 14:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Mercury	ND	0.0500	mg/kg	1	2062003	06/20/12	06/20/12	EPA 7471B	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **06/15/12 14:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.359	0.00100	mmhos/cm	1	2062506	06/25/12	06/25/12	SM 2510B	

Date Sampled: **06/15/12 14:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	7.2		pH Units	"	2062104	06/21/12	06/22/12	EPA 9045B	

Soluble Nutrients by EPA 6020/Mod. USDA60 6(2, 3A) - Dry Weight Basis

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

Project: NEP - Sandau Mudfarm

Project Number: NEP 0901
Project Manager: Rob Rebel

Reported:
06/29/12 15:43

SS02
R206145-02 (Soil)

Summit Scientific

Soluble Nutrients by EPA 6020/Mod. USDA60 6(2, 3A) - Dry Weight Basis

Date Sampled: **06/15/12 14:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	23.2	2.50	mg/kg	1	2062004	06/20/12	06/21/12	EPA 6020/Mod. USDA60 6(2, 3A)	
Magnesium	15.7	1.00	"	"	"	"	"	"	
Sodium	60.8	5.00	"	"	"	"	"	"	

Date Sampled: **06/15/12 14:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	2.39		units	"	2062105	06/21/12	06/22/12	"	

Accutest Laboratories - 6010 Hexavalent Chromium, Soil (3060A Mod Digest)

Date Sampled: **06/15/12 14:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	1	mg/kg	1	2062906	06/25/12	06/29/12	3060A/7196 A	

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

Project: NEP - Sandau Mudfarm
Project Number: NEP 0901
Project Manager: Rob Rebel

Reported:
06/29/12 15:43

SS03
R206145-03 (Soil)

Summit Scientific

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **06/15/12 14:10**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	2062510	06/25/12	06/25/12	8015 Full Carbon Chain	

Date Sampled: **06/15/12 14:10**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		106 %	26.6-171		"	"	"	"	

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **06/15/12 14:10**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0050	mg/kg	1	2062508	06/25/12	06/26/12	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.0050	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **06/15/12 14:10**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		111 %	-85.3-300		"	"	"	"	
Surrogate: Toluene-d8		99.8 %	-84.7-291		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		94.0 %	-106-311		"	"	"	"	

Calculated Analytes

Date Sampled: **06/15/12 14:10**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium+3 Calculated	4.31	1.00	mg/kg	1	2062906	06/25/12	06/29/12	Calculation	

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: NEP - Sandau Mudfarm

Project Number: NEP 0901
Project Manager: Rob Rebel

Reported:
06/29/12 15:43

SS03
R206145-03 (Soil)

Summit Scientific

Calculated Analytes

Total Metals by EPA Method 6020 - Dry Weight Basis

Date Sampled: **06/15/12 14:10**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	1.46	0.100	mg/kg	1	2062002	06/20/12	06/21/12	EPA 6020A	
Barium	51.1	0.100	"	"	"	"	"	"	
Cadmium	0.148	0.100	"	"	"	"	"	"	
Chromium	5.31	0.100	"	"	"	"	"	"	
Copper	5.10	0.500	"	"	"	"	"	"	
Lead	6.44	0.100	"	"	"	"	"	"	
Nickel	3.93	0.100	"	"	"	"	"	"	
Selenium	0.164	0.100	"	"	"	"	"	"	
Silver	ND	0.100	"	"	"	"	"	"	
Zinc	28.4	5.00	"	"	"	"	"	"	

Total Mercury by EPA Method 7471/7470

Date Sampled: **06/15/12 14:10**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Mercury	ND	0.0500	mg/kg	1	2062003	06/20/12	06/20/12	EPA 7471B	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **06/15/12 14:10**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.422	0.00100	mmhos/cm	1	2062506	06/25/12	06/25/12	SM 2510B	

Date Sampled: **06/15/12 14:10**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	7.4		pH Units	"	2062104	06/21/12	06/22/12	EPA 9045B	

Soluble Nutrients by EPA 6020/Mod. USDA60 6(2, 3A) - Dry Weight Basis

Summit Scientific

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

Project: NEP - Sandau Mudfarm
Project Number: NEP 0901
Project Manager: Rob Rebel

Reported:
06/29/12 15:43

SS03
R206145-03 (Soil)

Summit Scientific

Soluble Nutrients by EPA 6020/Mod. USDA60 6(2, 3A) - Dry Weight Basis

Date Sampled: **06/15/12 14:10**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	91.0	2.50	mg/kg	1	2062004	06/20/12	06/21/12	EPA 6020/Mod. USDA60 6(2, 3A)	
Magnesium	69.1	1.00	"	"	"	"	"	"	
Sodium	86.1	5.00	"	"	"	"	"	"	

Date Sampled: **06/15/12 14:10**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	1.66		units	"	2062105	06/21/12	06/22/12	"	

Accutest Laboratories - 6010 Hexavalent Chromium, Soil (3060A Mod Digest)

Date Sampled: **06/15/12 14:10**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	1	mg/kg	1	2062906	06/25/12	06/29/12	3060A/7196 A	

Summit Scientific

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

Project: NEP - Sandau Mudfarm

Project Number: NEP 0901
Project Manager: Rob Rebel

Reported:
06/29/12 15:43

SS04
R206145-04 (Soil)

Summit Scientific

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **06/15/12 14:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	2062510	06/25/12	06/26/12	8015 Full Carbon Chain	

Date Sampled: **06/15/12 14:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		111 %	26.6-171		"	"	"	"	

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **06/15/12 14:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0050	mg/kg	1	2062508	06/25/12	06/26/12	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.0050	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **06/15/12 14:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		113 %	-85.3-300		"	"	"	"	
Surrogate: Toluene-d8		99.3 %	-84.7-291		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		95.7 %	-106-311		"	"	"	"	

Calculated Analytes

Date Sampled: **06/15/12 14:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium+3 Calculated	4.24	1.00	mg/kg	1	2062906	06/25/12	06/29/12	Calculation	

Summit Scientific

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

Project: NEP - Sandau Mudfarm

Project Number: NEP 0901
Project Manager: Rob Rebel

Reported:
06/29/12 15:43

SS04
R206145-04 (Soil)

Summit Scientific

Calculated Analytes

Total Metals by EPA Method 6020 - Dry Weight Basis

Date Sampled: **06/15/12 14:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	1.50	0.100	mg/kg	1	2062002	06/20/12	06/21/12	EPA 6020A	
Barium	50.3	0.100	"	"	"	"	"	"	
Cadmium	0.155	0.100	"	"	"	"	"	"	
Chromium	5.24	0.100	"	"	"	"	"	"	
Copper	4.97	0.500	"	"	"	"	"	"	
Lead	6.31	0.100	"	"	"	"	"	"	
Nickel	3.82	0.100	"	"	"	"	"	"	
Selenium	0.160	0.100	"	"	"	"	"	"	
Silver	ND	0.100	"	"	"	"	"	"	
Zinc	29.2	5.00	"	"	"	"	"	"	

Total Mercury by EPA Method 7471/7470

Date Sampled: **06/15/12 14:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Mercury	ND	0.0500	mg/kg	1	2062003	06/20/12	06/20/12	EPA 7471B	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **06/15/12 14:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.450	0.00100	mmhos/cm	1	2062506	06/25/12	06/25/12	SM 2510B	

Date Sampled: **06/15/12 14:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	6.5		pH Units	"	2062104	06/21/12	06/22/12	EPA 9045B	

Soluble Nutrients by EPA 6020/Mod. USDA60 6(2, 3A) - Dry Weight Basis

Summit Scientific

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

Project: NEP - Sandau Mudfarm

Project Number: NEP 0901
Project Manager: Rob Rebel

Reported:
06/29/12 15:43

SS04
R206145-04 (Soil)

Summit Scientific

Soluble Nutrients by EPA 6020/Mod. USDA60 6(2, 3A) - Dry Weight Basis

Date Sampled: **06/15/12 14:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	74.6	2.50	mg/kg	1	2062004	06/20/12	06/21/12	EPA 6020/Mod. USDA60 6(2, 3A)	
Magnesium	52.6	1.00	"	"	"	"	"	"	
Sodium	43.7	5.00	"	"	"	"	"	"	

Date Sampled: **06/15/12 14:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.950		units	"	2062105	06/21/12	06/22/12	"	

Accutest Laboratories - 6010 Hexavalent Chromium, Soil (3060A Mod Digest)

Date Sampled: **06/15/12 14:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	1	mg/kg	1	2062906	06/25/12	06/29/12	3060A/7196 A	

Summit Scientific

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

Project: NEP - Sandau Mudfarm
Project Number: NEP 0901
Project Manager: Rob Rebel

Reported:
06/29/12 15:43

SS05
R206145-05 (Soil)

Summit Scientific

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **06/15/12 14:35**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	2062510	06/25/12	06/26/12	8015 Full Carbon Chain	

Date Sampled: **06/15/12 14:35**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		109 %	26.6-171		"	"	"	"	

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **06/15/12 14:35**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0050	mg/kg	1	2062508	06/25/12	06/26/12	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.0050	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **06/15/12 14:35**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		113 %	-85.3-300		"	"	"	"	
Surrogate: Toluene-d8		99.7 %	-84.7-291		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		94.4 %	-106-311		"	"	"	"	

Calculated Analytes

Date Sampled: **06/15/12 14:35**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium+3 Calculated	5.16	1.00	mg/kg	1	2062906	06/25/12	06/29/12	Calculation	

Summit Scientific

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

Project: NEP - Sandau Mudfarm

Project Number: NEP 0901
Project Manager: Rob Rebel

Reported:
06/29/12 15:43

SS05
R206145-05 (Soil)

Summit Scientific

Calculated Analytes

Total Metals by EPA Method 6020 - Dry Weight Basis

Date Sampled: **06/15/12 14:35**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	1.73	0.100	mg/kg	1	2062002	06/20/12	06/21/12	EPA 6020A	
Barium	62.9	0.100	"	"	"	"	"	"	
Cadmium	0.152	0.100	"	"	"	"	"	"	
Chromium	6.16	0.100	"	"	"	"	"	"	
Copper	5.22	0.500	"	"	"	"	"	"	
Lead	6.58	0.100	"	"	"	"	"	"	
Nickel	4.95	0.100	"	"	"	"	"	"	
Selenium	0.178	0.100	"	"	"	"	"	"	
Silver	ND	0.100	"	"	"	"	"	"	
Zinc	32.6	5.00	"	"	"	"	"	"	

Total Mercury by EPA Method 7471/7470

Date Sampled: **06/15/12 14:35**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Mercury	ND	0.0500	mg/kg	1	2062003	06/20/12	06/20/12	EPA 7471B	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **06/15/12 14:35**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.359	0.00100	mmhos/cm	1	2062506	06/25/12	06/25/12	SM 2510B	

Date Sampled: **06/15/12 14:35**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	6.8		pH Units	"	2062104	06/21/12	06/22/12	EPA 9045B	

Soluble Nutrients by EPA 6020/Mod. USDA60 6(2, 3A) - Dry Weight Basis

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

Project: NEP - Sandau Mudfarm

Project Number: NEP 0901
Project Manager: Rob Rebel

Reported:
06/29/12 15:43

SS05
R206145-05 (Soil)

Summit Scientific

Soluble Nutrients by EPA 6020/Mod. USDA60 6(2, 3A) - Dry Weight Basis

Date Sampled: **06/15/12 14:35**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	72.2	2.50	mg/kg	1	2062004	06/20/12	06/21/12	EPA 6020/Mod. USDA60 6(2, 3A)	
Magnesium	40.9	1.00	"	"	"	"	"	"	
Sodium	60.9	5.00	"	"	"	"	"	"	

Date Sampled: **06/15/12 14:35**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	1.42		units	"	2062105	06/21/12	06/22/12	"	

Accutest Laboratories - 6010 Hexavalent Chromium, Soil (3060A Mod Digest)

Date Sampled: **06/15/12 14:35**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	1	mg/kg	1	2062906	06/25/12	06/29/12	3060A/7196 A	

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

Project: NEP - Sandau Mudfarm
Project Number: NEP 0901
Project Manager: Rob Rebel

Reported:
06/29/12 15:43

SS06
R206145-06 (Soil)

Summit Scientific

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **06/15/12 14:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	2062510	06/25/12	06/26/12	8015 Full Carbon Chain	

Date Sampled: **06/15/12 14:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		118 %	26.6-171		"	"	"	"	

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **06/15/12 14:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0050	mg/kg	1	2062508	06/25/12	06/26/12	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.0050	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **06/15/12 14:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		112 %	-85.3-300		"	"	"	"	
Surrogate: Toluene-d8		99.8 %	-84.7-291		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		93.9 %	-106-311		"	"	"	"	

Calculated Analytes

Date Sampled: **06/15/12 14:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium+3 Calculated	4.72	1.00	mg/kg	1	2062906	06/25/12	06/29/12	Calculation	

Summit Scientific

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

Project: NEP - Sandau Mudfarm

Project Number: NEP 0901
Project Manager: Rob Rebel

Reported:
06/29/12 15:43

SS06
R206145-06 (Soil)

Summit Scientific

Calculated Analytes

Total Metals by EPA Method 6020 - Dry Weight Basis

Date Sampled: **06/15/12 14:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	1.61	0.100	mg/kg	1	2062002	06/20/12	06/21/12	EPA 6020A	
Barium	59.5	0.100	"	"	"	"	"	"	
Cadmium	0.148	0.100	"	"	"	"	"	"	
Chromium	5.72	0.100	"	"	"	"	"	"	
Copper	5.83	0.500	"	"	"	"	"	"	
Lead	6.47	0.100	"	"	"	"	"	"	
Nickel	4.60	0.100	"	"	"	"	"	"	
Selenium	0.205	0.100	"	"	"	"	"	"	
Silver	ND	0.100	"	"	"	"	"	"	
Zinc	33.7	5.00	"	"	"	"	"	"	

Total Mercury by EPA Method 7471/7470

Date Sampled: **06/15/12 14:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Mercury	ND	0.0500	mg/kg	1	2062003	06/20/12	06/20/12	EPA 7471B	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **06/15/12 14:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.458	0.00100	mmhos/cm	1	2062506	06/25/12	06/25/12	SM 2510B	

Date Sampled: **06/15/12 14:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	6.7		pH Units	"	2062104	06/21/12	06/22/12	EPA 9045B	

Soluble Nutrients by EPA 6020/Mod. USDA60 6(2, 3A) - Dry Weight Basis

Summit Scientific

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

Project: NEP - Sandau Mudfarm

Project Number: NEP 0901
Project Manager: Rob Rebel

Reported:
06/29/12 15:43

SS06
R206145-06 (Soil)

Summit Scientific

Soluble Nutrients by EPA 6020/Mod. USDA60 6(2, 3A) - Dry Weight Basis

Date Sampled: **06/15/12 14:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	30.0	2.50	mg/kg	1	2062004	06/20/12	06/21/12	EPA 6020/Mod. USDA60 6(2, 3A)	
Magnesium	10.4	1.00	"	"	"	"	"	"	
Sodium	58.0	5.00	"	"	"	"	"	"	

Date Sampled: **06/15/12 14:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	2.33		units	"	2062105	06/21/12	06/22/12	"	

Accutest Laboratories - 6010 Hexavalent Chromium, Soil (3060A Mod Digest)

Date Sampled: **06/15/12 14:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	1	mg/kg	1	2062906	06/25/12	06/29/12	3060A/7196 A	

Summit Scientific

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

Project: NEP - Sandau Mudfarm
Project Number: NEP 0901
Project Manager: Rob Rebel

Reported:
06/29/12 15:43

SS07
R206145-07 (Soil)

Summit Scientific

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **06/15/12 15:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	2062510	06/25/12	06/26/12	8015 Full Carbon Chain	

Date Sampled: **06/15/12 15:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		100 %	26.6-171		"	"	"	"	

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **06/15/12 15:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0050	mg/kg	1	2062508	06/25/12	06/26/12	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.0050	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **06/15/12 15:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		114 %	-85.3-300		"	"	"	"	
Surrogate: Toluene-d8		99.3 %	-84.7-291		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		95.5 %	-106-311		"	"	"	"	

Calculated Analytes

Date Sampled: **06/15/12 15:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium+3 Calculated	3.72	1.00	mg/kg	1	2062906	06/25/12	06/29/12	Calculation	

Summit Scientific

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

Project: NEP - Sandau Mudfarm

Project Number: NEP 0901
Project Manager: Rob Rebel

Reported:
06/29/12 15:43

SS07
R206145-07 (Soil)

Summit Scientific

Calculated Analytes

Total Metals by EPA Method 6020 - Dry Weight Basis

Date Sampled: **06/15/12 15:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	1.54	0.100	mg/kg	1	2062002	06/20/12	06/21/12	EPA 6020A	
Barium	46.4	0.100	"	"	"	"	"	"	
Cadmium	0.170	0.100	"	"	"	"	"	"	
Chromium	4.72	0.100	"	"	"	"	"	"	
Copper	5.02	0.500	"	"	"	"	"	"	
Lead	8.35	0.100	"	"	"	"	"	"	
Nickel	3.53	0.100	"	"	"	"	"	"	
Selenium	0.156	0.100	"	"	"	"	"	"	
Silver	ND	0.100	"	"	"	"	"	"	
Zinc	26.0	5.00	"	"	"	"	"	"	

Total Mercury by EPA Method 7471/7470

Date Sampled: **06/15/12 15:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Mercury	ND	0.0500	mg/kg	1	2062003	06/20/12	06/20/12	EPA 7471B	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **06/15/12 15:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.233	0.00100	mmhos/cm	1	2062506	06/25/12	06/25/12	SM 2510B	

Date Sampled: **06/15/12 15:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	7.0		pH Units	"	2062104	06/21/12	06/22/12	EPA 9045B	

Soluble Nutrients by EPA 6020/Mod. USDA60 6(2, 3A) - Dry Weight Basis

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4600 West 60th Avenue
Arvada CO, 80003

Project: NEP - Sandau Mudfarm

Project Number: NEP 0901
Project Manager: Rob Rebel

Reported:
06/29/12 15:43

SS07
R206145-07 (Soil)

Summit Scientific

Soluble Nutrients by EPA 6020/Mod. USDA60 6(2, 3A) - Dry Weight Basis

Date Sampled: **06/15/12 15:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	33.5	2.50	mg/kg	1	2062004	06/20/12	06/21/12	EPA 6020/Mod. USDA60 6(2, 3A)	
Magnesium	25.9	1.00	"	"	"	"	"	"	
Sodium	52.4	5.00	"	"	"	"	"	"	

Date Sampled: **06/15/12 15:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	1.65		units	"	2062105	06/21/12	06/22/12	"	

Accutest Laboratories - 6010 Hexavalent Chromium, Soil (3060A Mod Digest)

Date Sampled: **06/15/12 15:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	1	mg/kg	1	2062906	06/25/12	06/29/12	3060A/7196 A	

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Arvada CO, 80003

Project: NEP - Sandau Mudfarm

Project Number: NEP 0901
Project Manager: Rob Rebel

Reported:
06/29/12 15:43

SS08
R206145-08 (Soil)

Summit Scientific

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **06/15/12 15:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	2062510	06/25/12	06/26/12	8015 Full Carbon Chain	

Date Sampled: **06/15/12 15:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		102 %	26.6-171		"	"	"	"	

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **06/15/12 15:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0050	mg/kg	1	2062508	06/25/12	06/26/12	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.0050	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **06/15/12 15:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		111 %	-85.3-300		"	"	"	"	
Surrogate: Toluene-d8		101 %	-84.7-291		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		93.8 %	-106-311		"	"	"	"	

Calculated Analytes

Date Sampled: **06/15/12 15:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium+3 Calculated	3.90	1.00	mg/kg	1	2062906	06/25/12	06/29/12	Calculation	

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4600 West 60th Avenue
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Project: NEP - Sandau Mudfarm

Project Number: NEP 0901
Project Manager: Rob Rebel

Reported:
06/29/12 15:43

SS08
R206145-08 (Soil)

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Calculated Analytes

Total Metals by EPA Method 6020 - Dry Weight Basis

Date Sampled: **06/15/12 15:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	1.81	0.100	mg/kg	1	2062002	06/20/12	06/21/12	EPA 6020A	
Barium	46.8	0.100	"	"	"	"	"	"	
Cadmium	0.193	0.100	"	"	"	"	"	"	
Chromium	4.90	0.100	"	"	"	"	"	"	
Copper	4.70	0.500	"	"	"	"	"	"	
Lead	7.84	0.100	"	"	"	"	"	"	
Nickel	3.59	0.100	"	"	"	"	"	"	
Selenium	0.145	0.100	"	"	"	"	"	"	
Silver	ND	0.100	"	"	"	"	"	"	
Zinc	25.8	5.00	"	"	"	"	"	"	

Total Mercury by EPA Method 7471/7470

Date Sampled: **06/15/12 15:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Mercury	ND	0.0500	mg/kg	1	2062003	06/20/12	06/20/12	EPA 7471B	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **06/15/12 15:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.169	0.00100	mmhos/cm	1	2062506	06/25/12	06/25/12	SM 2510B	

Date Sampled: **06/15/12 15:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	7.2		pH Units	"	2062104	06/21/12	06/22/12	EPA 9045B	

Soluble Nutrients by EPA 6020/Mod. USDA60 6(2, 3A) - Dry Weight Basis

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LT Environmental, Inc.
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Project: NEP - Sandau Mudfarm

Project Number: NEP 0901
Project Manager: Rob Rebel

Reported:
06/29/12 15:43

SS08
R206145-08 (Soil)

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Soluble Nutrients by EPA 6020/Mod. USDA60 6(2, 3A) - Dry Weight Basis

Date Sampled: **06/15/12 15:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	77.3	2.50	mg/kg	1	2062004	06/20/12	06/21/12	EPA 6020/Mod. USDA60 6(2, 3A)	
Magnesium	37.1	1.00	"	"	"	"	"	"	
Sodium	62.8	5.00	"	"	"	"	"	"	

Date Sampled: **06/15/12 15:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	1.47		units	"	2062105	06/21/12	06/22/12	"	

Accutest Laboratories - 6010 Hexavalent Chromium, Soil (3060A Mod Digest)

Date Sampled: **06/15/12 15:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	1	mg/kg	1	2062906	06/25/12	06/29/12	3060A/7196 A	

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

Project: NEP - Sandau Mudfarm

Project Number: NEP 0901
Project Manager: Rob Rebel

Reported:
06/29/12 15:43

**Composite SS
R206145-09 (Soil)**

Summit Scientific

Semivolatile Organic Compounds by EPA Method 8270D SIM

Date Sampled: 06/15/12 15:35

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	5.00	ug/kg	1	2062101	06/21/12	06/21/12	EPA 8270D SIM	
Anthracene	ND	5.00	"	"	"	"	"	"	
Benzo (a) anthracene	ND	5.00	"	"	"	"	"	"	
Benzo (b) fluoranthene	ND	5.00	"	"	"	"	"	"	
Benzo (k) fluoranthene	ND	5.00	"	"	"	"	"	"	
Benzo (a) pyrene	ND	5.00	"	"	"	"	"	"	
Chrysene	ND	5.00	"	"	"	"	"	"	
Dibenz (a,h) anthracene	ND	10.0	"	"	"	"	"	"	
Fluoranthene	ND	5.00	"	"	"	"	"	"	
Fluorene	ND	5.00	"	"	"	"	"	"	
Indeno (1,2,3-cd) pyrene	ND	10.0	"	"	"	"	"	"	
Naphthalene	ND	5.00	"	"	"	"	"	"	
Pyrene	ND	5.00	"	"	"	"	"	"	

Date Sampled: 06/15/12 15:35

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10		56.8 %	50-150		"	"	"	"	
Surrogate: Fluoranthene-d10		70.4 %	50-150		"	"	"	"	

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LT Environmental, Inc.
4600 West 60th Avenue
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Project: NEP - Sandau Mudfarm
Project Number: NEP 0901
Project Manager: Rob Rebel

Reported:
06/29/12 15:43

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 2062510 - EPA 3550A

Blank (2062510-BLK1)

Prepared & Analyzed: 06/25/12

C10-C28 (DRO) ND 50 mg/kg

LCS (2062510-BS1)

Prepared & Analyzed: 06/25/12

C10-C28 (DRO) 577 50 mg/kg 501 115 81.4-129

LCS Dup (2062510-BSD1)

Prepared & Analyzed: 06/25/12

C10-C28 (DRO) 581 50 mg/kg 501 116 81.4-129 0.582 9.26

Matrix Spike (2062510-MS1)

Source: R206145-01

Prepared & Analyzed: 06/25/12

C10-C28 (DRO) 586 50 mg/kg 501 20.3 113 77.8-133

Matrix Spike Dup (2062510-MSD1)

Source: R206145-01

Prepared & Analyzed: 06/25/12

C10-C28 (DRO) 603 50 mg/kg 501 20.3 116 77.8-133 2.71 8.48

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LT Environmental, Inc.
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Project: NEP - Sandau Mudfarm
Project Number: NEP 0901
Project Manager: Rob Rebel

Reported:
06/29/12 15:43

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 2062508 - EPA 5030 Soil MS

Blank (2062508-BLK1)

Prepared & Analyzed: 06/25/12

Benzene	ND	0.0050	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	0.0403		"	0.0397	101	67.4-143				
Surrogate: Toluene-d8	0.0399		"	0.0400	99.7	77.3-114				
Surrogate: 4-Bromofluorobenzene	0.0411		"	0.0400	103	78.4-125				

LCS (2062508-BS1)

Prepared & Analyzed: 06/25/12

Benzene	0.0759	0.0050	mg/kg	0.100	75.9	53-121				
Toluene	0.0829	0.0050	"	0.100	82.9	55-123				
Ethylbenzene	0.105	0.0050	"	0.100	105	60-135				
m,p-Xylene	0.199	0.010	"	0.200	99.6	59-130				
o-Xylene	0.106	0.0050	"	0.100	106	56-135				
Surrogate: 1,2-Dichloroethane-d4	0.0387		"	0.0397	97.4	67.4-143				
Surrogate: Toluene-d8	0.0381		"	0.0400	95.3	77.3-114				
Surrogate: 4-Bromofluorobenzene	0.0404		"	0.0400	101	78.4-125				

LCS Dup (2062508-BSD1)

Prepared: 06/25/12 Analyzed: 06/26/12

Benzene	0.0767	0.0050	mg/kg	0.100	76.7	53-121	0.983	21		
Toluene	0.0852	0.0050	"	0.100	85.2	55-123	2.71	17		
Ethylbenzene	0.105	0.0050	"	0.100	105	60-135	0.258	12		
m,p-Xylene	0.197	0.010	"	0.200	98.6	59-130	0.984	13		
o-Xylene	0.104	0.0050	"	0.100	104	56-135	1.65	12		
Surrogate: 1,2-Dichloroethane-d4	0.0410		"	0.0397	103	67.4-143				
Surrogate: Toluene-d8	0.0392		"	0.0400	98.1	77.3-114				
Surrogate: 4-Bromofluorobenzene	0.0400		"	0.0400	100	78.4-125				

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

Project: NEP - Sandau Mudfarm
Project Number: NEP 0901
Project Manager: Rob Rebel

Reported:
06/29/12 15:43

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 2062508 - EPA 5030 Soil MS

Matrix Spike (2062508-MS1)

Source: R206145-01

Prepared: 06/25/12 Analyzed: 06/26/12

Benzene	0.0768	0.0050	mg/kg	0.100	ND	76.8	39-129
Toluene	0.0866	0.0050	"	0.100	ND	86.6	47-124
Ethylbenzene	0.104	0.0050	"	0.100	ND	104	29-155
m,p-Xylene	0.194	0.010	"	0.200	ND	96.9	34.7-134
o-Xylene	0.105	0.0050	"	0.100	ND	105	1-182
Surrogate: 1,2-Dichloroethane-d4	0.0432		"	0.0397		109	67.4-143
Surrogate: Toluene-d8	0.0393		"	0.0400		98.2	77.3-114
Surrogate: 4-Bromofluorobenzene	0.0409		"	0.0400		102	78.4-125

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Arvada CO, 80003

Project: NEP - Sandau Mudfarm
Project Number: NEP 0901
Project Manager: Rob Rebel

Reported:
06/29/12 15:43

Semivolatile Organic Compounds by EPA Method 8270D SIM - Quality Control
Summit Scientific

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

Batch 2062101 - EPA 3550A

Blank (2062101-BLK1)

Prepared & Analyzed: 06/21/12

Acenaphthene	ND	5.00	ug/kg
Anthracene	ND	5.00	"
Benzo (a) anthracene	ND	5.00	"
Benzo (b) fluoranthene	ND	5.00	"
Benzo (k) fluoranthene	ND	5.00	"
Benzo (a) pyrene	ND	5.00	"
Chrysene	ND	5.00	"
Dibenz (a,h) anthracene	ND	10.0	"
Fluoranthene	ND	5.00	"
Fluorene	ND	5.00	"
Indeno (1,2,3-cd) pyrene	ND	10.0	"
Naphthalene	ND	5.00	"
Pyrene	ND	5.00	"

Surrogate: 2-Methylnaphthalene-d10	26.8	"	31.3	85.7	50-150
Surrogate: Fluoranthene-d10	28.3	"	31.1	91.0	50-150

LCS (2062101-BS1)

Prepared & Analyzed: 06/21/12

Acenaphthene	25.9	5.00	ug/kg	33.3	77.6	31-137
Anthracene	26.2	5.00	"	33.3	78.5	50-150
Benzo (a) anthracene	24.6	5.00	"	33.3	73.7	50-150
Benzo (b) fluoranthene	25.6	5.00	"	33.3	76.8	50-150
Benzo (k) fluoranthene	24.1	5.00	"	33.3	72.4	50-150
Benzo (a) pyrene	25.0	5.00	"	33.3	74.9	50-150
Chrysene	24.8	5.00	"	33.3	74.4	50-150
Dibenz (a,h) anthracene	25.2	10.0	"	33.3	75.5	50-150
Fluoranthene	26.8	5.00	"	33.3	80.5	50-150
Fluorene	26.6	5.00	"	33.3	79.9	50-150
Indeno (1,2,3-cd) pyrene	23.7	10.0	"	33.3	71.1	50-150
Naphthalene	25.2	5.00	"	33.3	75.7	50-150
Pyrene	26.2	5.00	"	33.3	78.6	35-142

Surrogate: 2-Methylnaphthalene-d10	25.6	"	31.3	81.6	50-150
Surrogate: Fluoranthene-d10	27.3	"	31.1	87.8	50-150

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

Project: NEP - Sandau Mudfarm
Project Number: NEP 0901
Project Manager: Rob Rebel

Reported:
06/29/12 15:43

Semivolatile Organic Compounds by EPA Method 8270D SIM - Quality Control
Summit Scientific

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

Batch 2062101 - EPA 3550A

LCS Dup (2062101-BSD1)

Prepared & Analyzed: 06/21/12

Acenaphthene	25.6	5.00	ug/kg	33.3		76.8	31-137	1.09	30	
Anthracene	25.2	5.00	"	33.3		75.5	50-150	3.97	30	
Benzo (a) anthracene	24.6	5.00	"	33.3		73.7	50-150	0.0774	30	
Benzo (b) fluoranthene	24.0	5.00	"	33.3		72.0	50-150	6.50	30	
Benzo (k) fluoranthene	25.8	5.00	"	33.3		77.3	50-150	6.51	30	
Benzo (a) pyrene	24.6	5.00	"	33.3		73.7	50-150	1.57	30	
Chrysene	24.4	5.00	"	33.3		73.3	50-150	1.37	30	
Dibenz (a,h) anthracene	25.0	10.0	"	33.3		75.1	50-150	0.522	30	
Fluoranthene	26.5	5.00	"	33.3		79.5	50-150	1.28	30	
Fluorene	26.5	5.00	"	33.3		79.5	50-150	0.494	30	
Indeno (1,2,3-cd) pyrene	25.5	10.0	"	33.3		76.5	50-150	7.32	30	
Naphthalene	25.4	5.00	"	33.3		76.3	50-150	0.874	30	
Pyrene	25.8	5.00	"	33.3		77.5	35-142	1.39	30	
Surrogate: 2-Methylnaphthalene-d10	26.0		"	31.3		82.9	50-150			
Surrogate: Fluoranthene-d10	27.2		"	31.1		87.6	50-150			

Matrix Spike (2062101-MS1)

Source: R206145-09

Prepared: 06/21/12 Analyzed: 06/22/12

Acenaphthene	19.1	5.00	ug/kg	33.3	ND	57.4	31-137			
Anthracene	18.1	5.00	"	33.3	ND	54.3	50-150			
Benzo (a) anthracene	19.1	5.00	"	33.3	0.844	54.8	50-150			
Benzo (b) fluoranthene	18.8	5.00	"	33.3	1.52	51.8	50-150			
Benzo (k) fluoranthene	22.6	5.00	"	33.3	1.36	63.6	50-150			
Benzo (a) pyrene	19.6	5.00	"	33.3	1.52	54.2	50-150			
Chrysene	20.2	5.00	"	33.3	1.65	55.7	50-150			
Dibenz (a,h) anthracene	19.1	10.0	"	33.3	ND	57.4	50-150			
Fluoranthene	21.7	5.00	"	33.3	1.66	60.2	50-150			
Fluorene	20.6	5.00	"	33.3	ND	61.7	50-150			
Indeno (1,2,3-cd) pyrene	20.4	10.0	"	33.3	ND	61.3	50-150			
Naphthalene	18.8	5.00	"	33.3	ND	56.5	50-150			
Pyrene	19.2	5.00	"	33.3	2.00	51.6	35-142			
Surrogate: 2-Methylnaphthalene-d10	16.7		"	31.3		53.3	50-150			
Surrogate: Fluoranthene-d10	20.8		"	31.1		66.9	50-150			

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

Project: NEP - Sandau Mudfarm
Project Number: NEP 0901
Project Manager: Rob Rebel

Reported:
06/29/12 15:43

Total Metals by EPA Method 6020 - Dry Weight Basis - Quality Control
Summit Scientific

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

Batch 2062002 - EPA 1311

Blank (2062002-BLK1)

Prepared: 06/20/12 Analyzed: 06/21/12

Arsenic	ND	0.100	mg/kg
Barium	ND	0.100	"
Cadmium	ND	0.100	"
Chromium	ND	0.100	"
Copper	ND	0.500	"
Lead	ND	0.100	"
Nickel	ND	0.100	"
Selenium	ND	0.100	"
Silver	ND	0.100	"
Zinc	ND	5.00	"

LCS (2062002-BS1)

Prepared: 06/20/12 Analyzed: 06/21/12

Arsenic	2.54	0.100	mg/kg	2.54	100	80-120
Barium	239	0.100	"	225	106	80-120
Cadmium	1.02	0.100	"	1.02	100	80-120
Chromium	11.2	0.100	"	10.0	111	80-120
Copper	17.9	0.500	"	20.0	89.0	80-120
Lead	69.5	0.100	"	75.0	92.7	80-120
Nickel	14.9	0.100	"	15.1	98.9	80-120
Selenium	1.09	0.100	"	1.15	95.1	80-120
Silver	0.193	0.100	"	0.200	96.5	80-120
Zinc	73.2	5.00	"	75.0	97.6	80-120

LCS Dup (2062002-BS1)

Prepared: 06/20/12 Analyzed: 06/21/12

Arsenic	2.53	0.100	mg/kg	2.54	99.7	80-120	0.402	20
Barium	239	0.100	"	225	106	80-120	0.0591	20
Cadmium	1.02	0.100	"	1.02	100	80-120	0.424	20
Chromium	10.8	0.100	"	10.0	107	80-120	3.59	20
Copper	17.8	0.500	"	20.0	88.6	80-120	0.477	20
Lead	70.1	0.100	"	75.0	93.4	80-120	0.827	20
Nickel	14.8	0.100	"	15.1	97.9	80-120	1.06	20
Selenium	1.08	0.100	"	1.15	94.0	80-120	1.11	20
Silver	0.192	0.100	"	0.200	96.1	80-120	0.413	20
Zinc	71.8	5.00	"	75.0	95.7	80-120	1.91	20

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

Project: NEP - Sandau Mudfarm
Project Number: NEP 0901
Project Manager: Rob Rebel

Reported:
06/29/12 15:43

Total Metals by EPA Method 6020 - Dry Weight Basis - Quality Control
Summit Scientific

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

Batch 2062002 - EPA 1311

Matrix Spike (2062002-MS1)				Source: R206145-01		Prepared: 06/20/12		Analyzed: 06/21/12		
Arsenic	4.15	0.100	mg/kg	2.82	1.72	86.2	75-125			
Barium	323	0.100	"	249	57.6	107	75-125			
Cadmium	1.33	0.100	"	1.13	0.209	99.6	75-125			
Chromium	17.2	0.100	"	11.1	5.79	102	75-125			
Copper	24.5	0.500	"	22.2	6.15	82.6	75-125			
Lead	82.6	0.100	"	83.1	8.13	89.6	75-125			
Nickel	19.9	0.100	"	16.7	5.09	88.7	75-125			
Selenium	1.33	0.100	"	1.27	0.189	89.2	75-125			
Silver	0.267	0.100	"	0.222	0.0725	87.9	75-125			
Zinc	103	5.00	"	83.1	34.6	81.8	75-125			

Matrix Spike Dup (2062002-MSD1)				Source: R206145-01		Prepared: 06/20/12		Analyzed: 06/21/12		
Arsenic	4.24	0.100	mg/kg	2.72	1.72	92.9	75-125	2.27	25	
Barium	316	0.100	"	241	57.6	108	75-125	2.19	25	
Cadmium	1.31	0.100	"	1.09	0.209	101	75-125	1.43	25	
Chromium	16.7	0.100	"	10.7	5.79	101	75-125	2.79	25	
Copper	25.3	0.500	"	21.4	6.15	89.2	75-125	3.05	25	
Lead	81.9	0.100	"	80.2	8.13	92.0	75-125	0.891	25	
Nickel	20.4	0.100	"	16.2	5.09	94.8	75-125	2.32	25	
Selenium	1.30	0.100	"	1.23	0.189	90.5	75-125	1.85	25	
Silver	0.263	0.100	"	0.214	0.0725	89.2	75-125	1.53	25	
Zinc	105	5.00	"	80.2	34.6	88.2	75-125	2.61	25	

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

Project: NEP - Sandau Mudfarm
Project Number: NEP 0901
Project Manager: Rob Rebel

Reported:
06/29/12 15:43

Total Mercury by EPA Method 7471/7470 - Quality Control
Summit Scientific

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

Batch 2062003 - EPA 7471A

Blank (2062003-BLK1)

Prepared & Analyzed: 06/20/12

Mercury ND 0.0500 mg/kg

LCS (2062003-BS1)

Prepared & Analyzed: 06/20/12

Mercury 0.405 0.0500 mg/kg 0.400 101 80-120

LCS Dup (2062003-BSD1)

Prepared & Analyzed: 06/20/12

Mercury 0.410 0.0500 mg/kg 0.400 102 80-120 1.18 20

Matrix Spike (2062003-MS1)

Source: R206145-01

Prepared & Analyzed: 06/20/12

Mercury 0.367 0.0500 mg/kg 0.351 0.0108 102 75-125

Matrix Spike Dup (2062003-MSD1)

Source: R206145-01

Prepared & Analyzed: 06/20/12

Mercury 0.430 0.0500 mg/kg 0.416 0.0108 101 75-125 15.9 20

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

Project: NEP - Sandau Mudfarm

Project Number: NEP 0901
Project Manager: Rob Rebel

Reported:
06/29/12 15:43

Physical Parameters by APHA/ASTM/EPA Methods - Quality Control
Summit Scientific

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

Batch 2062104 - General Preparation

Duplicate (2062104-DUP1) **Source: R206145-01** Prepared: 06/21/12 Analyzed: 06/22/12

pH	7.0		pH Units	7.1		0.425	20
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Batch 2062506 - General Preparation

Duplicate (2062506-DUP1) **Source: R206145-01** Prepared & Analyzed: 06/25/12

Specific Conductance (EC)	0.450	0.00100	mmhos/cm	0.452		0.610	20
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LT Environmental, Inc.
4600 West 60th Avenue
Arvada CO, 80003

Project: NEP - Sandau Mudfarm
Project Number: NEP 0901
Project Manager: Rob Rebel

Reported:
06/29/12 15:43

Soluble Nutrients by EPA 6020/Mod. USDA60 6(2, 3A) - Dry Weight Basis - Quality Control
Summit Scientific

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

Batch 2062004 - General Preparation

Blank (2062004-BLK1)

Prepared: 06/20/12 Analyzed: 06/21/12

Calcium	ND	2.50	mg/kg
Magnesium	ND	1.00	"
Sodium	ND	5.00	"

LCS (2062004-BS1)

Prepared: 06/20/12 Analyzed: 06/21/12

Calcium	398	2.50	mg/kg	400	99.6	70-130
Magnesium	205	1.00	"	200	103	70-130
Sodium	806	5.00	"	800	101	70-130

LCS Dup (2062004-BSD1)

Prepared: 06/20/12 Analyzed: 06/21/12

Calcium	395	2.50	mg/kg	400	98.6	70-130	0.982	25
Magnesium	201	1.00	"	200	100	70-130	2.05	25
Sodium	790	5.00	"	800	98.8	70-130	1.98	25

Matrix Spike (2062004-MS1)

Source: R206145-01

Prepared: 06/20/12 Analyzed: 06/21/12

Calcium	536	2.50	mg/kg	456	150	84.7	70-130
Magnesium	285	1.00	"	228	86.5	87.1	70-130
Sodium	866	5.00	"	912	66.8	87.6	70-130

Matrix Spike Dup (2062004-MSD1)

Source: R206145-01

Prepared: 06/20/12 Analyzed: 06/21/12

Calcium	579	2.50	mg/kg	460	150	93.3	70-130	7.62	25
Magnesium	319	1.00	"	230	86.5	101	70-130	11.3	25
Sodium	954	5.00	"	920	66.8	96.4	70-130	9.66	25

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

Project: NEP - Sandau Mudfarm

Project Number: NEP 0901
Project Manager: Rob Rebel

Reported:
06/29/12 15:43

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

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.

A handwritten signature in black ink, appearing to be 'MSM'.

ATTACHMENT 3
GROUNDWATER LABORATORY ANALYTICAL REPORT

Summit Scientific

741 Corporate Circle – Suite I ♦ Golden, Colorado 80401

303.277.9310 - laboratory ♦ 303.277.9531 - fax

June 25, 2012

Rob Rebel
LT Environmental, Inc.
4600 West 60th Avenue
Arvada, CO 80003
RE: NEP - Sandau Mudfarm

Enclosed are the results of analyses for samples received by Summit Scientific on 06/19/12 16:47. 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', is written over a light gray circular background.

Paul Shrewsbury For Ben Shrewsbury
President / Laboratory Director



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

Project: NEP - Sandau Mudfarm

Project Number: NEP 0901
Project Manager: Rob Rebel

Reported:
06/25/12 16:28

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
SB01	R206146-01	Water	06/15/12 14:25	06/19/12 16:47
SB03	R206146-02	Water	06/15/12 15:00	06/19/12 16:47
SB04	R206146-03	Water	06/15/12 15:20	06/19/12 16:47
SB05	R206146-04	Water	06/15/12 15:25	06/19/12 16:47
SB06	R206146-05	Water	06/15/12 15:40	06/19/12 16:47

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: NEP - Sandau Mudfarm

Project Number: NEP 0901
Project Manager: Rob Rebel

Reported:
06/25/12 16:28

R006146

Summit Scientific

741 Corporate Circle Suite 14 Golden, Colorado 80401
303-277-9310 • 303-277-9531 Fax

Client: LT Environmental, Inc.
Address: 4600 West 60th Avenue
City/State/Zip: Arvada, CO 80003
Phone: (303) 433-9788 Fax: (303) 433-1432
Project Manager: ~~Summit Scientific~~ Rob Rebel
E-Mail: ~~summit@summit.com~~ rebel@ltenv.com
Project Name: Sandau Mudfarm
Project Number: NEP 0901
Sampler Name: J. B. Davis

Sample Description	Date Sampled	Time Sampled	Number of Containers	Preservative				Matrix	Analyze For:	Special Instructions
				HCl	HNO ₃	None	Other (Specify)			
5801	6/15/12	1425	3	X				Air - Canister Serial #		
5803	6/15/12	1500	1	X				Soil		
5804	6/15/12	1520	1	X				Groundwater		
5805	6/15/12	1525	1	X				Other (Specify)		
5806	6/15/12	1540	1	X				Other (Specify)		
Turn Around Time (Check)										
Same Day <input type="checkbox"/> 24 Hours <input type="checkbox"/> 48 Hours <input checked="" type="checkbox"/> 72 Hours <input type="checkbox"/> Standard <input type="checkbox"/>										
Sample Integrity: Temperature Upon Receipt: 51										
Intact: <input checked="" type="checkbox"/> No <input type="checkbox"/>										

Retrieved by: *[Signature]* Date/Time: 6/19/12 4:47
Received by: *[Signature]* Date/Time: 6/19/12 16:00
Retrieved by: *[Signature]* Date/Time: 6/19/12 16:00
Received by: *[Signature]* Date/Time: 6/19/12 16:00

www.summit-sc.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.

[Signature]



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

Project: NEP - Sandau Mudfarm
Project Number: NEP 0901
Project Manager: Rob Rebel

Reported:
06/25/12 16:28

SB01
R206146-01 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **06/15/12 14:25**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	1.0	ug/l	1	2062109	06/21/12	06/24/12	EPA 8260B	
Toluene	ND	1.0	"	"	"	"	"	"	
Ethylbenzene	ND	1.0	"	"	"	"	"	"	
Xylenes (total)	ND	1.0	"	"	"	"	"	"	

Date Sampled: **06/15/12 14:25**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		99.3 %	57.9-139		"	"	"	"	
Surrogate: Toluene-d8		83.0 %	83.1-115		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		94.9 %	80.8-120		"	"	"	"	

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: NEP - Sandau Mudfarm
Project Number: NEP 0901
Project Manager: Rob Rebel

Reported:
06/25/12 16:28

SB03
R206146-02 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **06/15/12 15:00**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Benzene	ND	1.0	ug/l	1	2062109	06/21/12	06/24/12	EPA 8260B	
Toluene	ND	1.0	"	"	"	"	"	"	
Ethylbenzene	ND	1.0	"	"	"	"	"	"	
Xylenes (total)	ND	1.0	"	"	"	"	"	"	

Date Sampled: **06/15/12 15:00**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Surrogate: 1,2-Dichloroethane-d4		100 %	57.9-139		"	"	"	"	
Surrogate: Toluene-d8		84.9 %	83.1-115		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		92.7 %	80.8-120		"	"	"	"	

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: NEP - Sandau Mudfarm
Project Number: NEP 0901
Project Manager: Rob Rebel

Reported:
06/25/12 16:28

SB04
R206146-03 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **06/15/12 15:20**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Benzene	ND	1.0	ug/l	1	2062109	06/21/12	06/24/12	EPA 8260B	
Toluene	ND	1.0	"	"	"	"	"	"	
Ethylbenzene	ND	1.0	"	"	"	"	"	"	
Xylenes (total)	ND	1.0	"	"	"	"	"	"	

Date Sampled: **06/15/12 15:20**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Surrogate: 1,2-Dichloroethane-d4		102 %	57.9-139		"	"	"	"	
Surrogate: Toluene-d8		85.4 %	83.1-115		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		93.4 %	80.8-120		"	"	"	"	

Summit Scientific

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

Project: NEP - Sandau Mudfarm
Project Number: NEP 0901
Project Manager: Rob Rebel

Reported:
06/25/12 16:28

SB05
R206146-04 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **06/15/12 15:25**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Benzene	ND	1.0	ug/l	1	2062109	06/21/12	06/24/12	EPA 8260B	
Toluene	ND	1.0	"	"	"	"	"	"	
Ethylbenzene	ND	1.0	"	"	"	"	"	"	
Xylenes (total)	ND	1.0	"	"	"	"	"	"	

Date Sampled: **06/15/12 15:25**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Surrogate: 1,2-Dichloroethane-d4		97.8 %	57.9-139		"	"	"	"	
Surrogate: Toluene-d8		85.7 %	83.1-115		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		92.8 %	80.8-120		"	"	"	"	

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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: NEP - Sandau Mudfarm
Project Number: NEP 0901
Project Manager: Rob Rebel

Reported:
06/25/12 16:28

SB06
R206146-05 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **06/15/12 15:40**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Benzene	ND	1.0		ug/l	1	2062109	06/21/12	06/24/12	EPA 8260B	
Toluene	ND	1.0		"	"	"	"	"	"	
Ethylbenzene	ND	1.0		"	"	"	"	"	"	
Xylenes (total)	ND	1.0		"	"	"	"	"	"	

Date Sampled: **06/15/12 15:40**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: 1,2-Dichloroethane-d4		96.3 %		57.9-139		"	"	"	"	
Surrogate: Toluene-d8		84.4 %		83.1-115		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		93.4 %		80.8-120		"	"	"	"	

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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: NEP - Sandau Mudfarm
Project Number: NEP 0901
Project Manager: Rob Rebel

Reported:
06/25/12 16:28

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 2062109 - EPA 5030 Water MS

Blank (2062109-BLK1)

Prepared: 06/21/12 Analyzed: 06/24/12

Benzene	ND	1.0	ug/l							
Toluene	ND	1.0	"							
Ethylbenzene	ND	1.0	"							
Xylenes (total)	ND	1.0	"							
Surrogate: 1,2-Dichloroethane-d4	11.4		"	13.2		86.0	57.9-139			
Surrogate: Toluene-d8	10.4		"	13.3		77.7	83.1-115			
Surrogate: 4-Bromofluorobenzene	12.8		"	13.3		95.7	80.8-120			

LCS (2062109-BS1)

Prepared: 06/21/12 Analyzed: 06/24/12

Benzene	23.6	1.0	ug/l	26.7		88.3	58-115			
Toluene	21.5	1.0	"	26.7		80.8	54-127			
Ethylbenzene	28.4	1.0	"	26.7		107	49-139			
m,p-Xylene	59.2	2.0	"	53.3		111	56-133			
o-Xylene	28.4	1.0	"	26.7		106	58-129			
Surrogate: 1,2-Dichloroethane-d4	12.7		"	13.2		96.0	57.9-139			
Surrogate: Toluene-d8	11.3		"	13.3		84.5	83.1-115			
Surrogate: 4-Bromofluorobenzene	12.8		"	13.3		96.2	80.8-120			

LCS Dup (2062109-BSD1)

Prepared: 06/21/12 Analyzed: 06/24/12

Benzene	23.6	1.0	ug/l	26.7		88.4	58-115	0.0424	14	
Toluene	21.4	1.0	"	26.7		80.1	54-127	0.839	17	
Ethylbenzene	28.6	1.0	"	26.7		107	49-139	0.561	13	
m,p-Xylene	59.2	2.0	"	53.3		111	56-133	0.135	14	
o-Xylene	28.5	1.0	"	26.7		107	58-129	0.211	15	
Surrogate: 1,2-Dichloroethane-d4	12.6		"	13.2		94.8	57.9-139			
Surrogate: Toluene-d8	11.2		"	13.3		83.9	83.1-115			
Surrogate: 4-Bromofluorobenzene	12.8		"	13.3		96.0	80.8-120			

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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: NEP - Sandau Mudfarm
Project Number: NEP 0901
Project Manager: Rob Rebel

Reported:
06/25/12 16:28

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 2062109 - EPA 5030 Water MS

Matrix Spike (2062109-MS1)				Source: R206140-02		Prepared: 06/21/12		Analyzed: 06/24/12		
Benzene	23.8	1.0	ug/l	26.7	ND	89.4	38-134			
Toluene	21.6	1.0	"	26.7	ND	80.8	28-156			
Ethylbenzene	28.5	1.0	"	26.7	ND	107	20-163			
m,p-Xylene	59.2	2.0	"	53.3	ND	111	33-153			
o-Xylene	28.6	1.0	"	26.7	ND	107	31-155			
Surrogate: 1,2-Dichloroethane-d4	13.0		"	13.2		98.2	57.9-139			
Surrogate: Toluene-d8	11.4		"	13.3		85.6	83.1-115			
Surrogate: 4-Bromofluorobenzene	13.3		"	13.3		100	80.8-120			
Matrix Spike Dup (2062109-MSD1)				Source: R206140-02		Prepared: 06/21/12		Analyzed: 06/24/12		
Benzene	23.6	1.0	ug/l	26.7	ND	88.5	38-134	1.01	25	
Toluene	21.1	1.0	"	26.7	ND	79.0	28-156	2.30	19	
Ethylbenzene	28.4	1.0	"	26.7	ND	106	20-163	0.351	22	
m,p-Xylene	58.8	2.0	"	53.3	ND	110	33-153	0.763	19	
o-Xylene	28.6	1.0	"	26.7	ND	107	31-155	0.315	20	
Surrogate: 1,2-Dichloroethane-d4	12.6		"	13.2		95.2	57.9-139			
Surrogate: Toluene-d8	11.0		"	13.3		82.8	83.1-115			
Surrogate: 4-Bromofluorobenzene	13.2		"	13.3		98.8	80.8-120			

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: NEP - Sandau Mudfarm

Project Number: NEP 0901
Project Manager: Rob Rebel

Reported:
06/25/12 16:28

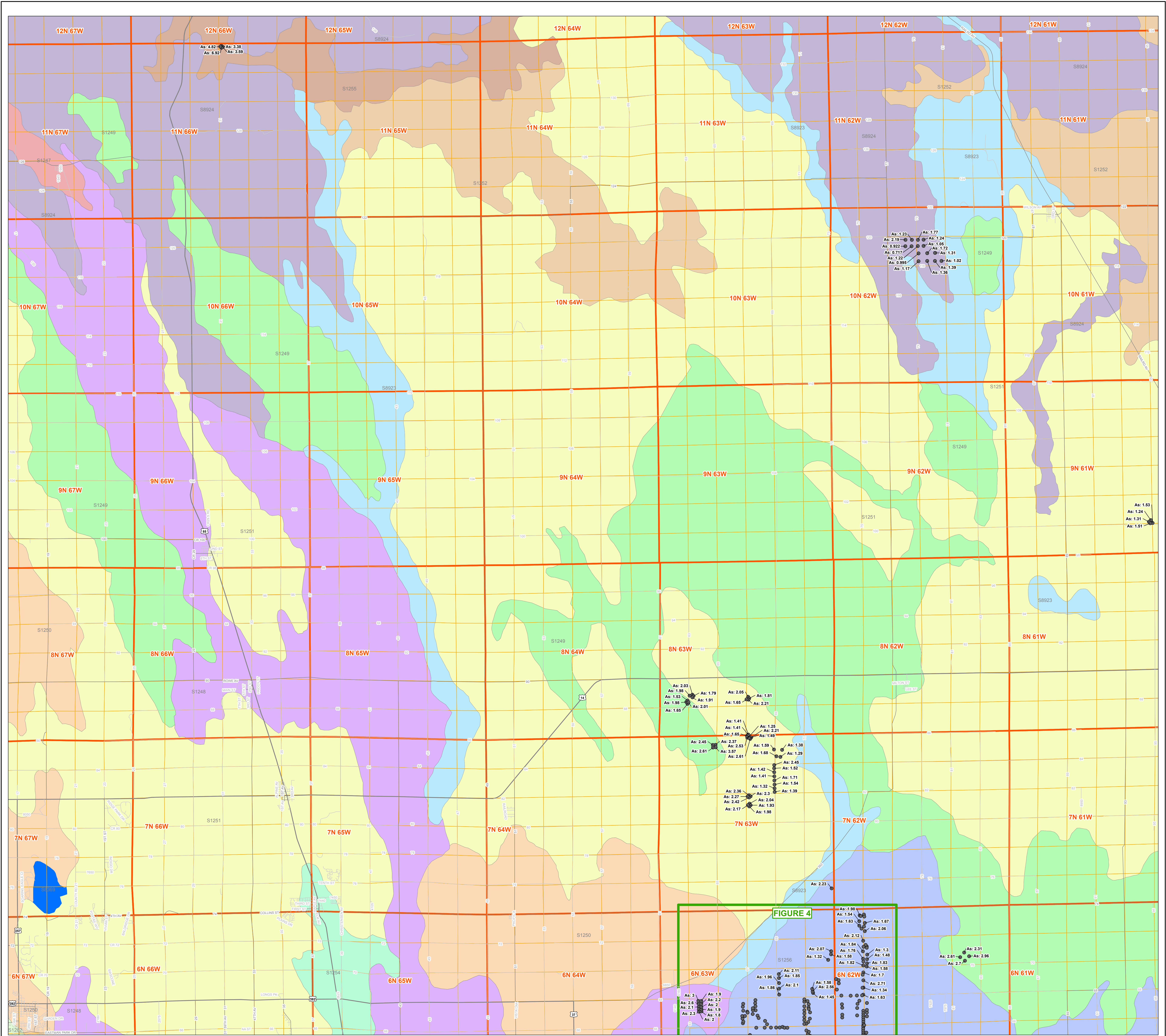
Notes and Definitions

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

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.

A handwritten signature in black ink, appearing to be 'MSM'.



LEGEND

● NOBLE ARSENIC SAMPLE (PPM)
As: ARSENIC
PPM: PARTS PER MILLION

— HIGHWAY
— INTERSTATE
TOWNSHIP
SECTION

ASSOCIATION SOIL TYPE

FLUVAQUENTS-BANKARD-ALDA (S1262)
NUNN-HAVERSON-DACONO-ALTVAN (S1248)
OTERO-HAVERSON-BAYARD-BANKARD-AVAR (S8923)

PEETZ-BUSHMAN-ASCALON-ALTVAN (S8924)
RAZOR-MIDWAY-MANZANOLA-HELDT (S1267)
SIXMILE-PURNER-KIRTLEY-CONNERTON-BARNUM-BALLER (S1245)
SIXMILE-ROCK OUTCROP-RENOHILL-MIDWAY-CARNERO-BALLER (S1246)
STONEHAM-NUCLA-MITCHELL-KIM-EPPING-BAYARD (S1252)
TERRY-TASSEL-SHINGLE-RENOHILL-ASCALON (S1249)
THEDALUND-TERRY-OTERO-OLNEY-KIM-HAVERSON (S1250)
THEDALUND-STONEHAM-LARIMER-ALTVAN (S1247)
TREON-TERRY-ROCK OUTCROP-MITCHELL-ALTVAN-ABERONE (S1255)
ULM-NUNN-ENGLEWOOD (S1253)

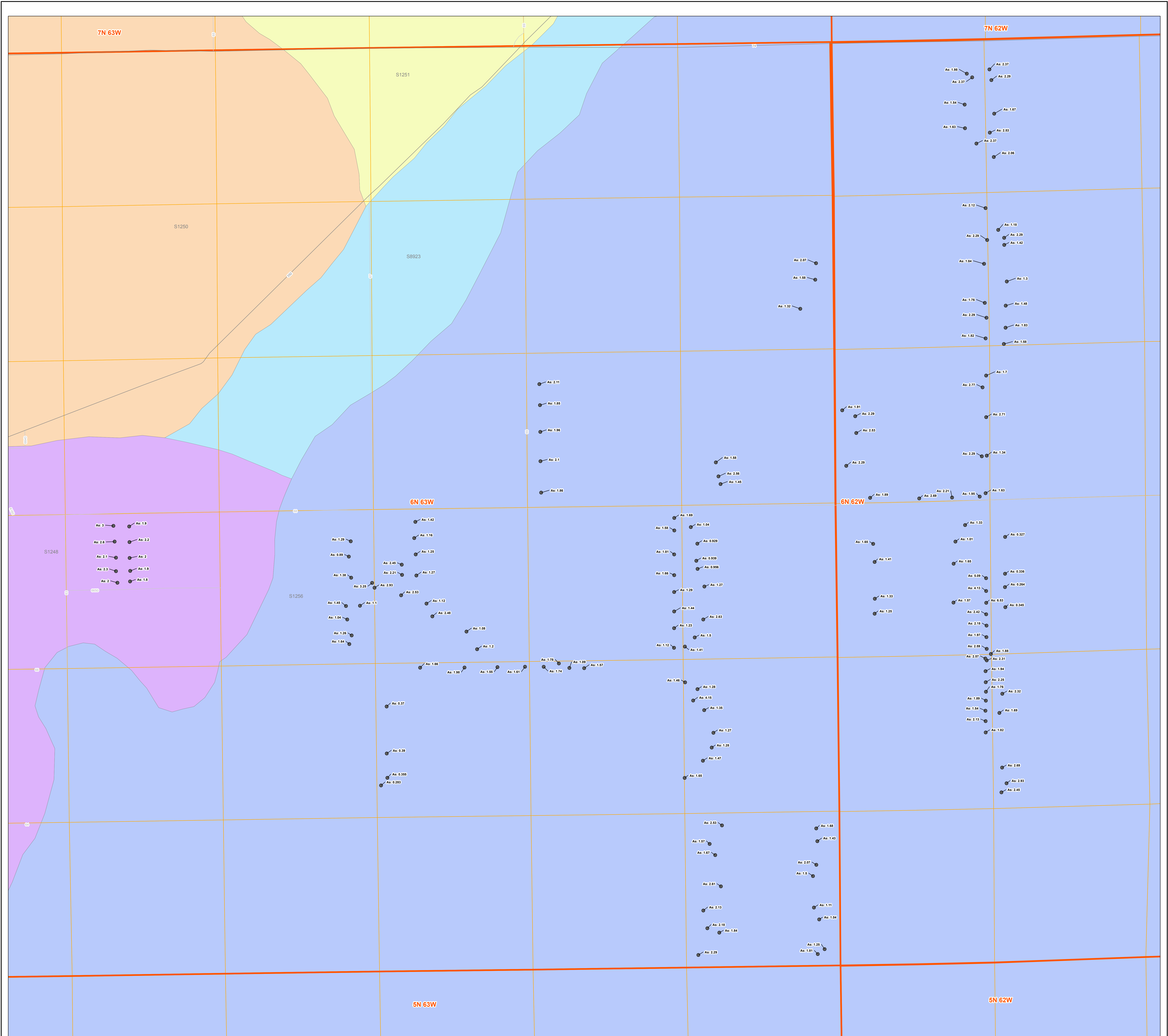
UPSON-ROCK OUTCROP-NEWCOMB-MACFARLANE-LEIGHCAN (S1174)
VALENT-JULESBURG (S1256)
VALMONT-NUNN-NEDERLAND-LEYDEN-KUTCH-DENVER (S1271)
VONA-MANTER-JULESBURG-HAXTUN (S1259)
WELD-STONEHAM-PLATNER-OLNEY-NUNN-ASCALON (S1251)
WETMORE-ROCK OUTCROP-RATAKE-MOEN-BOYLE (S1244)
WETMORE-TRAG-ROCK OUTCROP-LININGER-BREECE-BOYLE-BONJEA-ALLENS PARK (S9004)
WILEY-WELD-NORKA-COLBY-ADENA (S1254)
WATER (S8369)



FIGURE 2
BACKGROUND ARSENIC LEVELS
NORTH DJ BASIN
WELD COUNTY, COLORADO

LT ENVIRONMENTAL, INC.





LEGEND

● NOBLE ARSENIC SAMPLE (PPM)
As: ARSENIC
PPM: PARTS PER MILLION

— HIGHWAY
— INTERSTATE
TOWNSHIP
SECTION

ASSOCIATION SOIL TYPE

FLUVAQUENTS-BANKARD-ALDA (S1262)
NUNN-HAVERSON-DACONO-ALTVAN (S1248)
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TREON-TERRY-ROCK OUTCROP-MITCHELL-ALTVAN-ABERONE (S1255)
ULM-NUNN-ENGLEWOOD (S1253)

UPSON-ROCK OUTCROP-NEWCOMB-MACFARLANE-LEIGHCAN (S1174)
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WETMORE-TRAG-ROCK OUTCROP-LININGER-BREECE-BOYLE-BONJEA-ALLENS PARK (S9004)
WILEY-WELD-NORKA-COLBY-ADENA (S1254)
WATER (S8369)

0 1,000 2,000
Feet



FIGURE 4
BACKGROUND ARSENIC LEVELS
DJ BASIN
WELD COUNTY, COLORADO
LT ENVIRONMENTAL, INC.

