District I
1625 N. French Dr., Hobbs, NM 88240
District II
811 S. First St., Artesia, NM 88210
District III
1000 Rio Brazos Road, Aztec, NM 87410
District IV
1220 S. St. Francis Dr., Santa Fe, NM 87505

State of New Mexico
Energy Minerals and Natural Resources Department

Oil Conservation Division
1220 South St. Francis Dr.
Santa Fe, NM 87505

Form C-141
Revised August 24, 2018
Submit to appropriate OCD District office

Incident ID	
District RP	
Facility ID	
Application ID	

Release Notification

Responsible Party

Responsible Party: **Enterprise Field Services, LLC**	OGRID: **151618**
Contact Name: **Thomas Long**	Contact Telephone: **505-599-2286**
Contact email:**tjlong@eprod.com**	Incident # *(assigned by OCD)*: **NRM2004430562**
Contact mailing address: **614 Reilly Ave, Farmington, NM 87401**	

Location of Release Source

Latitude **36.886029** Longitude **-107.701832** *(NAD 83 in decimal degrees to 5 decimal places)*

Site Name **Lateral MB-18 Pipeline**	Site Type **Natural Gas Gathering Pipeline**
Date Release Discovered: **01/14/2020**	Serial Number *(if applicable)*: **N/A**

Unit Letter	Section	Township	Range	County
F	**20**	**31N**	**8W**	**San Juan**

Surface Owner: ☒ State ☐ Federal ☐ Tribal ☐ Private (*Name*: **Nick Jaramillo**)

Nature and Volume of Release

Material(s) Released (Select all that apply and attach calculations or specific justification for the volumes provided below)

☐ Crude Oil	Volume Released (bbls)	Volume Recovered (bbls)
☐ Produced Water	Volume Released (bbls)	Volume Recovered (bbls)
	Is the concentration of dissolved chloride in the produced water >10,000 mg/l?	☐ Yes ☐ No
☒ Condensate	Volume Released (bbls): **5-10 BBLs**	Volume Recovered (bbls): **None**
☒ Natural Gas	Volume Released (Mcf): **12 MCF**	Volume Recovered (Mcf): **None**
☐ Other (describe)	Volume/Weight Released (provide units):	Volume/Weight Recovered (provide units)

Cause of Release On January 14, 2020, Enterprise discovered a natural gas release on the Lateral MB-18 pipeline. No fluids were released to the ground surface. The pipeline was blown down, depressurized, locked out and tagged out. Repairs and remediation were in initiated on January 27, 2020 and Enterprise determined this release reportable per NMOCD regulation on January 28, 2020, due the volume of impacted subsurface soil. Remediation was completed on February 5, 2020. The final excavation dimensions measured approximately 31 feet long by 16 feet wide by approximately 14 feet deep. Approximately 80 cubic yards of hydrocarbon impacted soil was excavated and transported to a New Mexico Oil Conservation Division approved land farm facility. A third party closure report is included with this "Final." C-141.

State of New Mexico
Oil Conservation Division

Incident ID	
District RP	
Facility ID	
Application ID	

Closure

The responsible party must attach information demonstrating they have complied with all applicable closure requirements and any conditions or directives of the OCD. This demonstration should be in the form of a comprehensive report (electronic submittals in .pdf format are preferred) including a scaled site map, sampling diagrams, relevant field notes, photographs of any excavation prior to backfilling, laboratory data including chain of custody documents of final sampling, and a narrative of the remedial activities. Refer to 19.15.29.12 NMAC.

Closure Report Attachment Checklist: ***Each of the following items must be included in the closure report.***

☒ A scaled site and sampling diagram as described in 19.15.29.11 NMAC

☒ Photographs of the remediated site prior to backfill or photos of the liner integrity if applicable (Note: appropriate OCD District office must be notified 2 days prior to liner inspection)

☒ Laboratory analyses of final sampling (Note: appropriate ODC District office must be notified 2 days prior to final sampling)

☒ Description of remediation activities

I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to OCD rules and regulations all operators are required to report and/or file certain release notifications and perform corrective actions for releases which may endanger public health or the environment. The acceptance of a C-141 report by the OCD does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to groundwater, surface water, human health or the environment. In addition, OCD acceptance of a C-141 report does not relieve the operator of responsibility for compliance with any other federal, state, or local laws and/or regulations. The responsible party acknowledges they must substantially restore, reclaim, and re-vegetate the impacted surface area to the conditions that existed prior to the release or their final land use in accordance with 19.15.29.13 NMAC including notification to the OCD when reclamation and re-vegetation are complete.

Printed Name: Jon E. Fields Title: Director, Environmental

Signature: Jon E. Fields Date: 8/20/2020

email: jefields@eprod.com Telephone: (713) 381-6684

OCD Only

Received by: Date:

Closure approval by the OCD does not relieve the responsible party of liability should their operations have failed to adequately investigate and remediate contamination that poses a threat to groundwater, surface water, human health, or the environment nor does not relieve the responsible party of compliance with any other federal, state, or local laws and/or regulations.

Closure Approved by: Nelson Velez Date: 04/04/2022

Printed Name: Nelson Velez Title: Environmental Specialist – Adv

ENSOLUM

CLOSURE REPORT

Property:

Lateral MB-18 Pipeline Release
NW ¼, S20 T31N R8W
San Juan County, New Mexico

June 12, 2020
Ensolum Project No. 05A1226088

Prepared for:

Enterprise Field Services, LLC
614 Reilly Avenue
Farmington, NM 87401
Attn: Mr. Thomas Long

Prepared by:

Ranee Deechilly
Environmental Scientist

Kyle Summers, CPG
Sr. Project Manager

Table of Contents

LIST OF APPENDICES

ENSOLUM

CLOSURE REPORT

Lateral MB-18 Pipeline Release
NW ¼, S20 T31N R8W
San Juan County, New Mexico

Ensolum Project No. 05A1226088

1.0 INTRODUCTION

1.1 Site Description & Background

Operator:	Enterprise Field Services, LLC / Enterprise Products Operating LLC (Enterprise)
Site Name:	Lateral MB-18 Pipeline Release (Site)
Location:	36.886029° North, 107.701832° West Northwest (NW) ¼ of Section 20, Township 31 North, Range 8 West San Juan County, New Mexico
Property:	Private Land
Regulatory:	New Mexico Energy, Minerals and Natural Resources Department (EMNRD) Oil Conservation Division (OCD)

On January 14, 2020, Enterprise personnel identified a release of natural gas on the Lateral MB-18 pipeline. Enterprise subsequently isolated and locked the pipeline out of service. On January 24, 2020, Enterprise initiated activities to remediate potential petroleum hydrocarbon impact resulting from the release.

A **Topographic Map** depicting the location of the Site is included as **Figure 1**, and a **Site Vicinity Map** is included as **Figure 2** in **Appendix A**.

1.2 Project Objective

The primary objective of the closure activities was to reduce constituent of concern (COC) concentrations in the on-site soils to below the applicable New Mexico EMNRD OCD closure criteria.

2.0 CLOSURE CRITERIA

The Site is subject to regulatory oversight by the New Mexico EMNRD OCD. To address activities related to exempt oil and gas releases, the New Mexico EMNRD OCD references New Mexico Administrative Code (NMAC) 19.15.29 *Releases,* which establishes investigation and abatement action requirements for oil and gas release sites subject to reporting and/or corrective action. Ensolum, LLC (Ensolum) utilized information provided by Enterprise, the general site characteristics, and information available from the New Mexico Office of the State Engineer (OSE) and the New Mexico EMNRD OCD imaging database to determine the appropriate closure criteria for the Site.

- The OSE tracks the usage and assignment of water rights and water well installations and records this information in the Water Rights Reporting System (WRRS) database. Water wells and other points of diversion (PODs) are each assigned POD numbers in the database (which is searchable and includes an interactive map). No water wells were identified within a one-mile radius of the Site in the OSE WRRS database. One water well (SJ 00012) is located approximately 1.1 miles southwest of the Site and at a higher elevation (6,547 feet) than the Site (6,466 feet) with an

approximate depth to water of 475 feet below grade surface (bgs). Supporting documentation is provided in **Appendix B**.

- Four (4) cathodic protection well records were found in the New Mexico EMNRD imaging database within the approximate one-mile search radius. The record for the closest cathodic protection well (Quinn #1, #339 (Unit L, Sec 20 T31N R8W), located approximately 0.3 miles southwest of the Site, indicates a depth to water of 270 feet bgs. The record for the cathodic protection well located near the Quinn #340 oil/gas production well (Unit A, Sec 20 T31N R8W) (located approximately 0.5 miles northeast of the Site) indicates a depth to water of 400 feet bgs. The record for the cathodic protection well located near the Quinn #4A oil/gas production well (Unit I, Sec 19 T31N R8W) (located approximately 0.6 miles southwest of the Site) indicates a depth to water of 140 feet bgs. The record for the cathodic protection located near the Quinn #6A, #9 oil/gas production wells (Unit P, Sec 21 T31 R8W) (located approximately 0.7 miles southeast of the Site) indicates a depth to water of 160 feet bgs. Supporting documentation is provided in **Appendix B**.

- The Site is located within 300 feet of a New Mexico EMNRD OCD-defined continuously flowing watercourse or significant watercourse. An unnamed ephemeral wash is located approximately 130 feet west of the excavation.

- The Site is not located within 200 feet of a lakebed, sinkhole or playa lake.

- The Site is not located within 300 feet of a permanent residence, school, hospital, institution or church.

- No springs, or private domestic fresh water wells used by less than five (5) households for domestic or stock watering purposes were identified within 500 feet of the Site.

- No fresh water wells or springs were identified within 1,000 feet of the Site.

- The Site is not located within incorporated municipal boundaries or within a defined municipal fresh water well field covered under a municipal ordinance adopted pursuant to NMSA 1978, Section 3-27-3.

- The Site is not located within 300 feet of a wetland.

- Based on information identified on the New Mexico Mining and Minerals Division's GIS, Maps and Mine Data database, the Site is not located within an area overlying a subsurface mine.

- The Site is not located within an unstable area.

- The Site is not located within a 100-year floodplain.

Based on the identified siting criteria, cleanup goals for soils remaining in place at the Site include:

Closure Criteria for Soils Impacted by a Release		
Constituent	Method	Limit
Chloride	EPA 300.0 or SM4500 Cl B	600 mg/kg
TPH (GRO+DRO+MRO)	EPA SW-846 Method 8015	100 mg/kg
BTEX	EPA SW-846 Method 8021 or 8260	50 mg/kg
Benzene	EPA SW-846 Method 8021 or 8260	10 mg/kg

3.0 SOIL REMEDIATION ACTIVITIES

On January 24, 2020, Enterprise initiated activities to remediate petroleum hydrocarbon impact resulting from the release. During the remediation and corrective action activities West States Energy Contactors, Inc. provided heavy equipment and labor support, while Ensolum provided environmental consulting support.

The final excavation measured approximately 31 feet long and 16 feet wide at the maximum extents. The maximum depth of the excavation measured approximately 14 feet bgs.

The lithology encountered during the completion of remediation activities consisted primarily of unconsolidated silty sand and weathered sandstone.

A total of approximately 80 cubic yards of petroleum hydrocarbon affected soils and 45 barrels (bbls) of hydro-excavation soil cuttings and water related to the excavation were transported to the Envirotech, Inc. (Envirotech) landfarm near Hilltop, New Mexico for disposal/remediation. The executed C-138 solid waste acceptance form is provided in **Appendix C**. The excavation was backfilled with a combination of imported fill and segregated, laboratory-confirmed, unaffected stockpiled soils and was then contoured to the surrounding grade.

Figure 3 is a map that identifies approximate soil sample locations and depicts the approximate dimensions of the excavation with respect to the pipeline (**Appendix A**). Photographic documentation of the field activities is included in **Appendix D**.

4.0 SOIL SAMPLING PROGRAM

Ensolum field screened the soil samples from the excavation utilizing a calibrated Dexsil PetroFLAG® hydrocarbon analyzer system and a photoionization detector (PID) fitted with a 10.6 eV lamp to guide excavation extents.

Ensolum's soil sampling program included the collection of 17 composite soil samples (S-1 through S-17) comprised of five (5) aliquots each, from the excavation for laboratory analysis. In addition, three (3) composite soil samples (SP-1 through SP-3) were collected from the soils that were segregated for potential reuse, to confirm the material was suitable to remain on Site. A clean shovel was utilized to obtain fresh aliquots from each area of the excavation. The New Mexico EMNRD OCD provided verbal approval to proceed with the sampling events, although a New Mexico EMNRD OCD representative was not on Site during the sampling event.

First Sampling Event
On January 27, 2020, the first sampling event was performed at the site to evaluate petroleum impact. Composite soil samples S-1 (11') and S-2 (11') were collected from the floor of the excavation. Composite soil samples S-3 (0'-11'), S-4 (0'-11'), S-5 (0'-11'), S-6 (0'-11'), S-7 (0'-11'), and S-8 (0'-11') were collected from the sidewalls of the excavation. Subsequent analytical results identified data exceedances above the New Mexico EMNRD OCD closure criteria for composite soil samples S-1 and S-2. In response to the data exceedance, the excavation was deepened. Soils associated with composite soil samples S-1, S-2, and SP-2 were removed from the Site.

Second Sampling Event
After the deepening of the excavation, a second sampling event was performed on February 3, 2020. Composite soil samples S-9 (13') and S-10 (13') were collected from the floor of the excavation. Composite soil samples S-11 (11-13'), S-12 (11'-13'), S-13 (11'-13'), S-14 (11'-13'), S-15 (11'-13'), and S-16 (11'-13') were collected from the lower portion of the sidewalls of the excavation. Subsequent analytical results identified soils associated with composite soil sample S-9 exhibited TPH concentrations above the

applicable New Mexico EMNRD OCD closure criteria. The excavation was subsequently deepened in the vicinity of sample S-9.

Third Sampling Event
On February 5, 2020, composite soil sample S-17 (14') was collected from the floor of the excavation for laboratory analysis.

The soil samples were collected and placed in laboratory prepared glassware, labeled and sealed using the laboratory supplied labels and custody seals, and stored on ice in a cooler. The samples were relinquished to the courier for Hall Environmental Analysis Laboratory of Albuquerque, New Mexico, under proper chain-of-custody procedures.

5.0 SOIL LABORATORY ANALYTICAL METHODS

The composite soil samples were analyzed for benzene, toluene, ethylbenzene and total xylenes (BTEX) using Environmental Protection Agency (EPA) SW-846 Method #8021, total petroleum hydrocarbon (TPH) gasoline range organics (GRO), diesel range organics (DRO), and motor oil/lube oil range organics (MRO) using EPA SW-846 Method #8015, and chlorides using EPA Method #300.0.

The laboratory analytical results are summarized in **Table 1** in **Appendix E**. The laboratory data sheets and executed chain-of-custody forms are provided in **Appendix F**.

6.0 DATA EVALUATION

Ensolum compared the BTEX, TPH, and chloride laboratory analytical results or laboratory supplied practical quantitation limits (PQLs) / reporting limits (RLs) associated with the composite soil samples (S-3 through S-8, S-10 through S-17, SP-1, and SP-3) to the applicable New Mexico EMNRD OCD closure criteria. Soil associated with composite soil samples S-1, S-2, S-9, and SP-2 were transported to Envirotech landfarm for disposal/remediation and are not included in the following discussion.

- The laboratory analytical results for the composite soil samples collected from soils remaining at the Site indicate benzene is not present at concentrations greater than the laboratory PQLs/RLs, which are less than the New Mexico EMNRD OCD closure criteria of 10 milligrams per kilogram (mg/kg).

- The laboratory analytical results for the composite soil samples collected from soils remaining at the Site indicate total BTEX is not present at concentrations greater than the laboratory PQLs/RLs, which are less than the New Mexico EMNRD OCD closure criteria of 50 mg/kg.

- The laboratory analytical results for composite soil samples S-10, S-11, and S-16 indicate combined TPH GRO/DRO/MRO concentrations of 15 mg/kg, 11 mg/kg, and 11 mg/kg, respectively, which do not exceed the New Mexico EMNRD OCD closure criteria of 100 mg/kg. The laboratory analytical results for the remaining composite soil samples collected from soils remaining at the Site indicate combined TPH GRO/DRO/MRO is not present at concentrations greater than the laboratory PQLs/RLs, which are less than the New Mexico EMNRD OCD closure criteria of 100 mg/kg.

- The laboratory analytical result for composite soil sample S-4 indicates a chloride concentration of 80 mg/kg, which is less than the New Mexico EMNRD OCD closure criteria of 600 mg/kg for chlorides. The laboratory analytical results for the remaining composite soil samples collected from soils remaining at the Site indicate chloride is not present at concentrations greater than laboratory

PQLs/RLs, which are less than the New Mexico EMNRD OCD closure criteria of 600 mg/kg for chlorides.

The laboratory analytical results are summarized in **Table 1** (**Appendix E**).

7.0 RECLAMATION AND REVEGETATION

The excavation was backfilled with a combination of imported fill and segregated, laboratory-confirmed, unaffected stockpiled soils, and was then contoured to the surrounding grade. Enterprise will re-seed the Site with an approved seeding mixture during the next favorable growing season.
.

8.0 FINDINGS AND RECOMMENDATION

- A total of 17 composite soil samples were collected from the excavation for laboratory analyses, and three (3) composite soil samples were collected from stockpiled soils for laboratory analyses. Based on laboratory analytical results, the soils remaining in place do not exhibit COC concentrations above the applicable New Mexico EMNRD OCD closure criteria.

- A total of approximately 80 cubic yards of petroleum hydrocarbon affected soils and 45 bbls of hydro-excavation soil cuttings and water related to the excavation were transported to the Envirotech landfarm near Hilltop, New Mexico for disposal/remediation. The excavation was backfilled a combination of imported fill and segregated, laboratory-confirmed, unaffected stockpiled soils, and was then contoured to the surrounding grade.

Based on field observations and laboratory analytical results, no additional investigation or corrective action appears warranted at this time.

9.0 STANDARDS OF CARE, LIMITATIONS, AND RELIANCE

9.1 Standard of Care

Ensolum's services were performed in accordance with standards customarily provided by a firm rendering the same or similar services in the area during the same time period. Ensolum makes no warranties, express or implied, as to the services performed hereunder. Additionally, Ensolum does not warrant the work of third parties supplying information used in the report (e.g. laboratories, regulatory agencies, or other third parties).

9.2 Additional Limitations

Findings, conclusions, and recommendations resulting from these services are based upon information derived from the on-site activities and other services performed under this scope of work and it should be noted that this information is subject to change over time. Certain indicators of the presence of hazardous substances, petroleum products, or other constituents may have been latent, inaccessible, unobservable, or not present during these services, and Ensolum cannot represent that the Site contains no hazardous substances, toxic materials, petroleum products, or other latent conditions beyond those identified during the investigation. Environmental conditions at other areas or portions of the Site may vary from those encountered at actual sample locations. Ensolum's findings and recommendation are based solely upon data available to Ensolum at the time of these services.

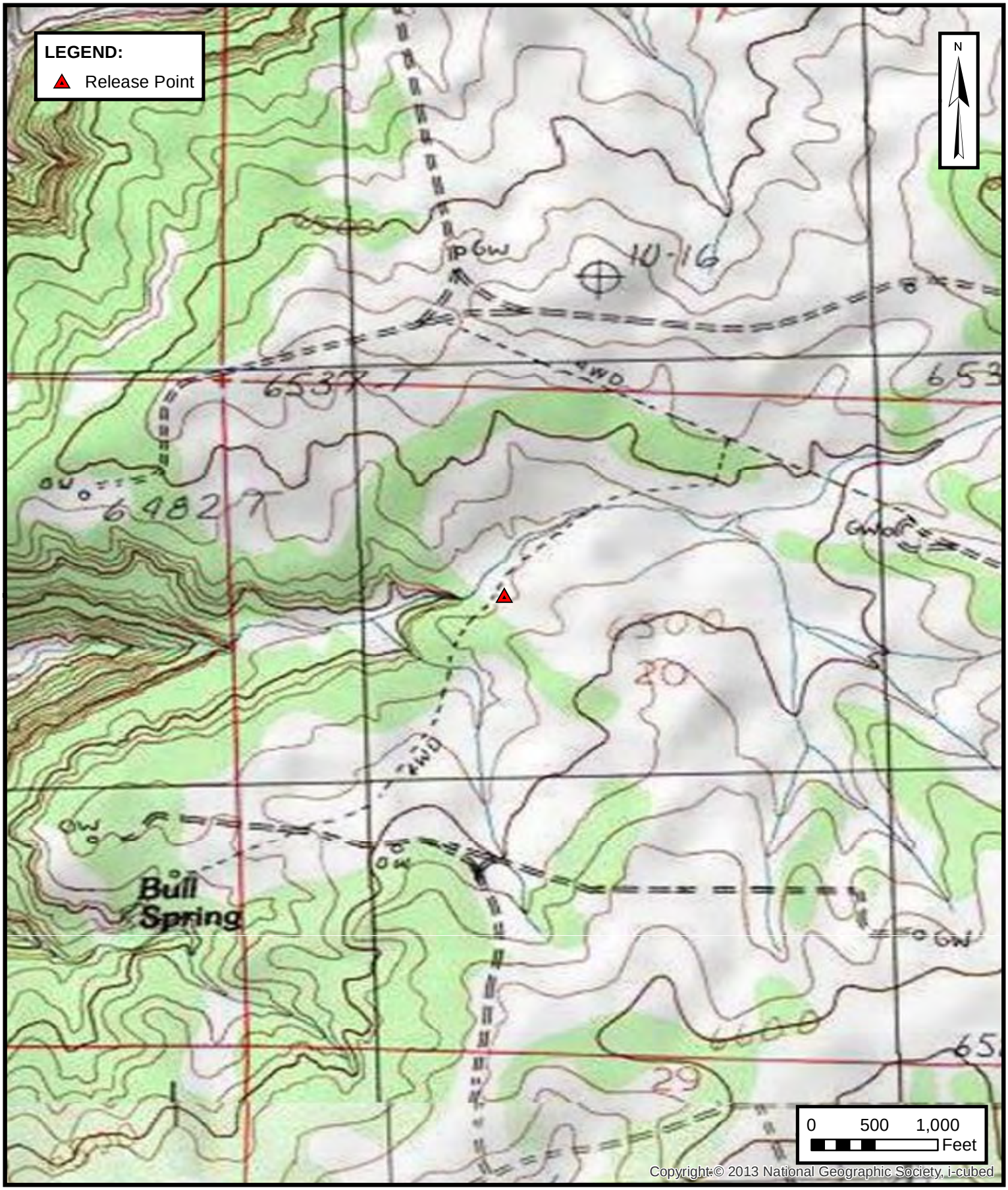
9.3 Reliance

This report has been prepared for the exclusive use of Enterprise, and any authorization for use or reliance by any other party (except a governmental entity having jurisdiction over the Site) is prohibited without the express written authorization of Enterprise and Ensolum. Any unauthorized distribution or reuse is at the client's sole risk. Notwithstanding the foregoing, reliance by authorized parties will be subject to the terms, conditions and limitations stated in the report, and Ensolum's Master Services Agreement. The limitation of liability defined in the agreement is the aggregate limit of Ensolum's liability to the client.

ENSOLUM

APPENDIX A

Figures



ENSOLUM

Environmental & Hydrogeologic Consultants

TOPOGRAPHIC MAP

ENTERPRISE FIELD SERVICES, LLC
LATERAL MB-18 PIPELINE RELEASE
NW ¼, S20 T31N R8W, San Juan County, New Mexico
36.886029° N, 107.701832° W
Ensolum Project No.: 05A1226088

FIGURE
1

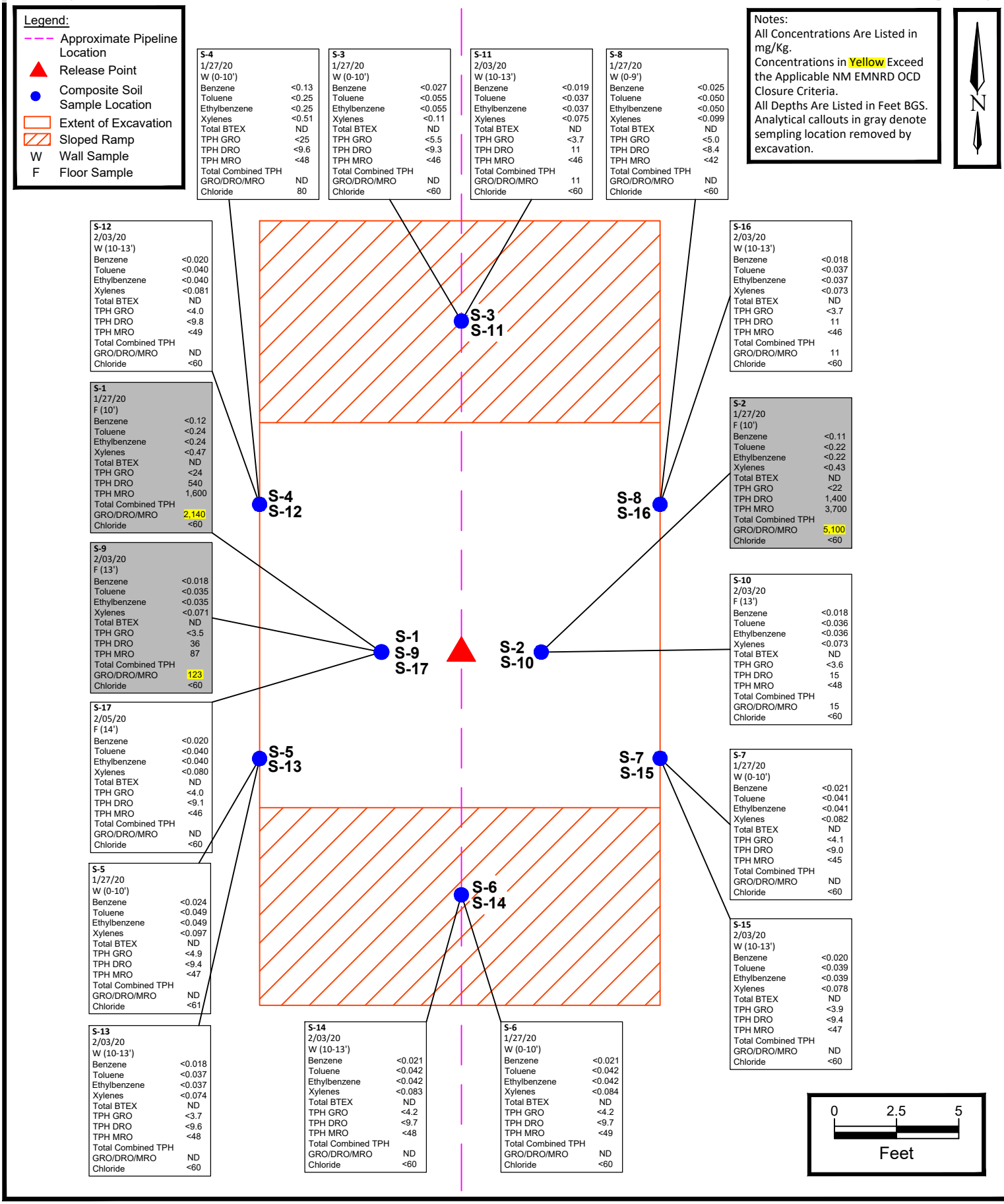
ENSOLUM

Environmental & Hydrogeologic Consultants

SITE VICINITY MAP

ENTERPRISE FIELD SERVICES, LLC
LATERAL MB-18 PIPELINE RELEASE
NW ¼, S20 T31N R8W, San Juan County, New Mexico
36.886029° N, 107.701832° W
Ensolum Project No.: 05A1226088

FIGURE
2



ENSOLUM
Environmental & Hydrogeologic Consultants

SITE MAP WITH SOIL ANALYTICAL RESULTS

ENTERPRISE FIELD SERVICES, LLC.
LATERAL MB-18 PIPELINE RELEASE
NW ¼, S20 T31N R8W, San Juan County, New Mexico
36.886029° N, 107.701832°W

Ensolum Project No.: 05A1226088

FIGURE
3

ENSOLUM

APPENDIX B

Siting Documentation

New Mexico Office of the State Engineer
Water Column/Average Depth to Water

(A CLW##### in the POD suffix indicates the POD has been replaced & no longer serves a water right file.)

(R=POD has been replaced, O=orphaned, C=the file is closed)

(quarters are 1=NW 2=NE 3=SW 4=SE)
(quarters are smallest to largest) (NAD83 UTM in meters) (In feet)

POD Number	POD Sub-basin Code	County	Q 64	Q 16	Q 4	Sec	Tws	Rng	X	Y	Depth Well	Depth Water	Water Column
SJ 00012	SJ	SJ			2	30	31N	08W	258218	4084189*	1021	475	546

Average Depth to Water: **475 feet**

Minimum Depth: **475 feet**

Maximum Depth: **475 feet**

Record Count: 1

PLSS Search:

Section(s): 20, 16, 17, 18, 19, 30, 29, 28, 21 **Township:** 31N **Range:** 08W

***UTM location was derived from PLSS - see Help**

1400

#1 30-045-10848 B

#339 30-045-28094

DATA SHEET FOR DEEP GROUND BED CATHODIC PROTECTION WELLS
NORTHWESTERN NEW MEXICO
(Submit 3 copies to OCD Aztec Office)

Operator MERIDIAN OIL INC. Location: Unit L Sec. 20 Twp 31 Rng 8

Name of Well/Wells or Pipeline Serviced QUINN #1, #339

cps 6232w

Elevation N/A Completion Date 12/4/90 Total Depth 500' Land Type* P

Casing, Sizes, Types & Depths 20' OF 8" PVC CASING

If Casing is cemented, show amounts & types used 5 BAGS SACKRETE

If Cement or Bentonite Plugs have been placed, show depths & amounts used

N/A

Depths & thickness of water zones with description of water when possible:

Fresh, Clear, Salty, Sulphur, Etc. 270'

Depths gas encountered: N/A

Type & amount of coke breeze used: 2000 lbs CARBON COKE

Depths anodes placed: 415', 410', 405', 400', 395', 390', 385', 380', 375', 370'

Depths vent pipes placed: 500'

Vent pipe perforations: 300'

Remarks: gb #1

RECEIVED
MAY 31 1991
OIL CON. DIV.
DIST. 3

If any of the above data is unavailable, please indicate so. Copies of all logs, including Drillers Log, Water Analyses & Well Bore Schematics should be submitted when available. Unplugged abandoned wells are to be included.

*Land Type may be shown: F-Federal; I-Indian; S-State; P-Fee.
If Federal or Indian, add Lease Number.

Exhibit A

WELL CASING
CATHODIC PROTECTION CONSTRUCTION REPORT
DAILY LOG

Drilling Log (Attach Hereto) ☒ **Completion Date** 12-4-9

CPS #	Well Name, Line or Plant:	Work Order #	Static:	Ins. Union Check
6232 W	QUINN 339			☒ Good ☐ Bad WELLHEAD UNION

Location:	Anode Size:	Anode Type:	Size Bit:
SEC. 20, T-31N, R-8W	2" X 60"	ANOTEC	6 3/4"

Depth Drilled	Depth Logged	Drilling Rig Time	Total Lbs. Coke Used	Lost Circulation Mat'l Used	No. Sacks Mud Used
500'	495		2900#		

	#1	#2	#3	#4	#5	#6	#7	#8	#9	#10
Anode Depth	415	410	405	400	395	390	385	380	375	370
Anode Output (Amps)	3.3	3.4	3.8	4.1	3.9	3.8	3.3	3.4	3.2	2.6
Anode Depth	#11	#12	#13	#14	#15	#16	#17	#18	#19	#20
Anode Output (Amps)	#11	#12	#13	#14	#15	#16	#17	#18	#19	#20

Total Circuit Resistance			No. 8 C.P. Cable Used	No. 2 C.P. Cable Used
Volts 12	Amps 7.1	Ohms 1.7		

Remarks: SET 20' 8" PVC CASING. HOLE WET AT ± 270', NOT ENOUGH WATER IN HOLE NEXT MORNING FOR WATER SAMPLE. INSTALLED 500' 1" PVC, PERFORATED BOTTOM 300'. PVC JOINTS GLUED AND RIVETED. RAN COKE TO 330'

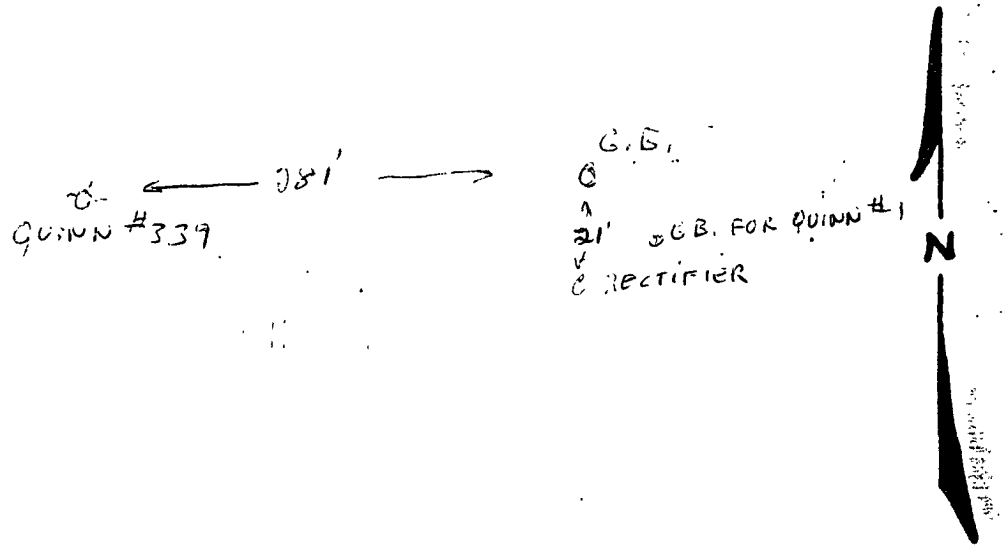
NOTE! QUINN #1 RECTIFIER DISCONNECTED, USED QUINN #1 WELLHEAD TO LOG NEW GROUNDBED

Rectifier Size: _____ V _____ A
Addn'l Depth _____
Depth Credit: _____
Extra Cable: _____
Ditch & 1 Cable: _____
25' Meter Pole: _____
20' Meter Pole: _____
10' Stub Pole: _____
Junction Box: _____

All Construction Completed

Edward Lemmons
(Signature)

GROUND BED LAYOUT SKETCH



334

MO-TE DRILLING, INC.

Exhibit B

DAY Tuesday

DRILLER	[illegible]	LEFT TOWN	ARRIVED FIELD
HELPER	[illegible]	LEFT FIELD	ARRIVED TOWN
HELPER	[illegible]	TOTAL FOOTAGE TODAY	

RIG NO. 206 DATE 12-4-90 CLIENT [illegible]

BEGIN WORK ON HOLE NO. Queen #337 AT ______ FEET

BEGIN WORK ON HOLE NO. ______ AT ______ FEET

TIME FROM	TIME TO	ACTIVITY
0	40	Brown sand & clay
40	190	Brown sandstone, w/ some clay
190	350	Grey sandstone.
		~~water~~ Moisture @ 270' set all night
		couldn't get any sample.
350	420	Grey shale
420	500	Grey shiny sandstone

BIT RECORD

SIZE & MAKE	SERIAL NO.	FOOTAGE
1 - 6¾	Rotary	Rock Bit

CIRCULATION MATERIAL

QUAN.	UNIT	MATERIAL

NO. OF LOADS OF WATER 1 SOURCE [illegible]

san juan repr farm,nm Form 219-6

CONSTRUCTION LOGGING HEADINGS

Exhibit C

Meridion Oil

CPS #: WELL NAME: QUINN 339 LOCATION: 2031-8 DATE: 12-4-90

TOTAL VOLTS: 12 TOTAL AMPS: 7.1 OHMS RESISTANCE: 1.7

DEEP	LOG ANODE	ANODE NO.	DEEP	LOG ANODE	ANODE NO.	DEEP	LOG ANODE	ANODE No.	DEEP	LOG ANODE	ANODE No.
5			185			365	.60		545		
10			190			370	1.1	10	550		
15			195			375	1.4	9	555		
20			200	.50		380	1.4	8	560		
25			205	.80		385	1.2	7	565		
30			210	.60		390	1.1	6	570		
35			215	.30		395	1.0	5	575		
40			220	.20		400	1.1	4	580		
45			225	.20		405	1.2	3	585		
50			230	.10		410	1.1	2	590		
55			235	.20		415	.80	1	595		
60			240	.40		420	.50		600		
65			245	.30		425	.50		605		
70			250	.30		430	.50		610		
75			255	.30		435	.70		615		
80			260	.20		440	.30		620		
85			265	.20		445	.20		625		
90			270	.10		450	.30		630		
95			275	.20		455	.40		635		
100			280	.20		460	.70		640		
105			285	.30		465	.30		645		
110			290	.30		470	.30		650		
115			295	.30		475	.30		655		
120			300	.30		480	.40		660		
125			305	.10		485	.70		665		
130			310	.10		490	.30		670		
135			315	.10		495	.30		675		
140			320	.10		500			680		
145			325	.20		505			685		
150			330	.20		510			690		
155			335	.40		515			695		
160			340	.50		520			700		
165			345	.50		525			705		
170			350	.40		530			710		
175			355	.30		535			715		
180			360	.50		540			720		

ANODE READINGS

NO.	DEPTH	NO COKE	WITH COKE
1	415	1.1	3.3
2	410	1.4	3.4
3	405	1.4	3.8
4	400	1.5	4.1
5	395	1.5	3.9
6	390	1.3	3.8
7	385	1.4	3.3
8	380	1.8	3.4
9	375	1.5	3.2
10	370	1.6	2.6

REMARKS: SET 20' 8" PVC CASING. HOLE WET AT 270'. NOT ENOUGH WATER IN HOLE NEXT MORNING FOR WATER SAMPLE RAN COKE TO 330'. 2900#

711 30-045-28353 E

DATA SHEET FOR DEEP GROUND BED CATHODIC PROTECTION WELLS NORTHWESTERN NEW MEXICO

62400

Operator Meridian Oil Location: Unit A Sec. 20 Twp 31 Rng 8

Name of Well/Wells or Pipeline Serviced Quinn # 340

Elevation 6539 Completion Date 3-2-91 Total Depth 480' Land Type F

Casing Strings, Sizes, Types & Depths 100' sch. 40 8" PVC

If Casing Strings are cemented, show amounts & types used

20 sacks of Cement

If Cement or Bentonite Plugs have been placed, show depths & amounts used

NO

Depths & thickness of water zones with description of water, Fresh, Clear, Salty, Sulphur, Etc. Fresh, approx 400'

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DIST. 3

Depths gas encountered: NO

Ground bed depth with type & amount of coke breeze used:

480' Asbury 72 sacks

Depths anodes placed: 464' 454' 445' 436' 427' 418' 409' 400' 391' 382' 345' 3

Depths vent pipes placed: 480'

Vent pipe perforations: 1" spast, perforated bottom 400'

Remarks:

If any of the above data is unavailable, please indicate so. Copies of all logs, including Drillers Log, Water Analyses & Well Bore Schematics should be submitted when available. Unplugged abandoned wells are to be included.

Land Type may be shown: F-Federal; I-Indian; S-State; P-Fee.
If Federal or Indian, add Lease Number.

CPS GROUND BED CONSTRUCTION WORKSHEET

CPS #	P/L NAME(s), NUMBER(s)					
6240-W	Quinn # 2 # 341					
W. #	TOTAL	VOLTS	AMPS	- OHMS	DATE	NAME
M317		11.92	10.0	1.19	8-2-71	L.S.E.

REMARKS (notes for construction log)

Water at 400'

Perforated bottom 400' of Vent pipe

DEPTH	LOG ANODE	ANODE #	DEPTH	LOG ANODE	ANODE #	DEPTH	LOG ANODE	ANODE #	DEPTH	LOG ANODE	ANODE #	
100			295	.3		490			685			
105			300	.3		495			690			
110			305	.1		500			695			
115			310	.4		505			700			
120			315	.4		510			ANODE #	DEPTH	NO COKE	FULLY COK'D
125			320	-		515						
130			325	.5		520			1	464	1.0	2.6
135			330	.6		525			2	454	1.6	3.8
140			335	1.2	2	530			3	445	1.9	4.0
145			340	1.7		535			4	436	2.1	4.2
150			345	1.5	11	540			5	427	2.0	3.7
155			350	.7		545			6	418	1.6	3.3
160			355	.7		550			7	409	1.2	2.9
165			360	.7		555			8	400	1.4	3.1
170			365	.7		560			9	391	1.6	3.2
175			370	.7		565			10	382	1.2	2.7
180			375	?	0	570			11	345	1.5	2.8
185			380	?		575			12	339	1.5	2.9
190			385	1.2	?	580			13			
195			390	1.6		585			14			
200			395	1.2		590			15			
205			400	-		595			16			
210			405	1.2	1	600			17			
215			410	1.2		605			18			
220			415	1.5	6	610			19			
225			420	1.9		615			20			
230			425	1.9	5	620			21			
235			430	2.0		625			22			
240			435	2.1	4	630			23			
245			440	1.9		635			24			
250			445	1.8	2	640			25			
255			450	1.7		645			26			
260			455	1.3	2	650			27			
265			460	1.0		655			28			
270			465	1.1	1	660			29			
275	.3		470	.9		665			30			
280	.3		475	.9		670						
285	.3		480	T.D.	480	675						
290	.3		485			680						

DISTRIBUTION — original — permanent CPS FILE
copy: — Division Corrosion Supervisor
copy — Region Corrosion Specialist

API WATER ANALYSIS REPORT FORM

Laboratory No. 25910808-1F 6240W

Company	Sample No.	Date Sampled
MERIDIAN OIL		8-2-91

Field	Legal Description	County or Parish	State
	A-20-31-8	SAN JUAN	N.M.

Lease or Unit	Well	Depth	Formation	Water, B/D
	QUINN 6, 340		WATER TABLE	

Type of Water (Produced, Supply, etc.)	Sampling Point	Sampled By
GR. BED		LSE

TECH, Inc.
333 East Main
Farmington
New Mexico
87401
505/327-3311

DISSOLVED SOLIDS

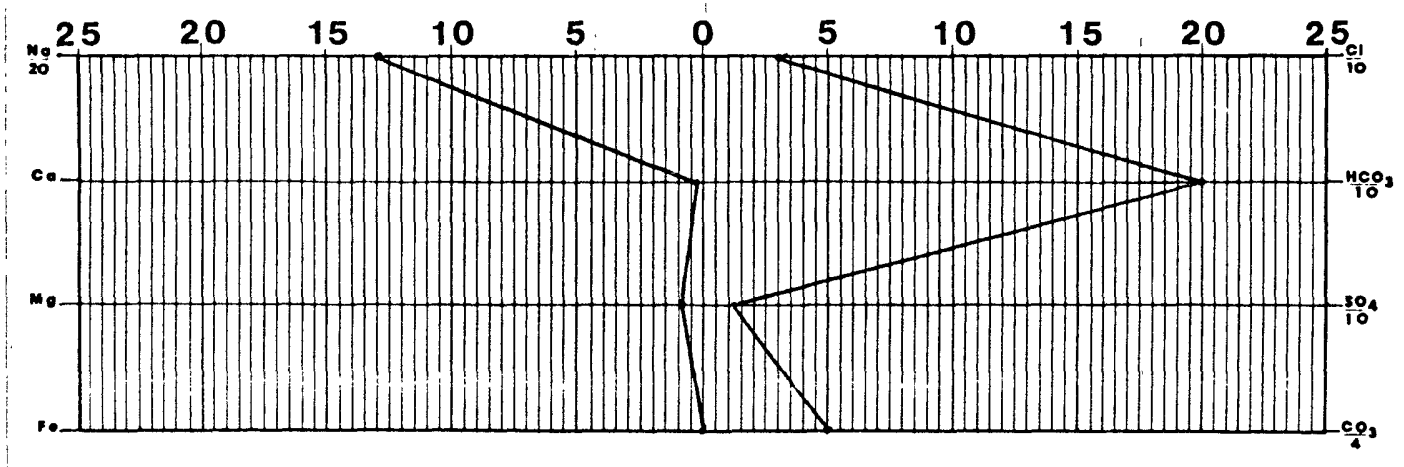
CATIONS	mg/l	me/l
Sodium, Na (calc.)	6000	260
Calcium, Ca	6.0	0.3
Magnesium, Mg	11	0.9
Barium, Ba		

ANIONS	mg/l	me/l
Chloride, Cl	1100	30
Sulfate, So_4	570	12
Carbonate, CO_3	600	20
Bicarbonate, HCO_3	12000	200

OTHER PROPERTIES

pH	8.8
Specific Gravity, 60/60 F.	1.0136
Resistivity (ohm-meters) 69° F.	0.60
Total Dissolved Solids (calc.)	20,000
Iron, Fe (total)	
Sulfide, as H_2S	

REMARKS & RECOMMENDATIONS:



Date Received	Preserved	Date Analyze	Analyzed By
8-8-91	NO	8-16-91	

1465

2

30-045-24347

DATA SHEET FOR DEEP GROUND BED CATHODIC PROTECTION WELLS
NORTHWESTERN NEW MEXICO
(Submit 3 copies to OCD Aztec Office)

Operator MERIDIAN OIL INC. Location: Unit I Sec. 19 Twp 31 Rng 8

Name of Well/Wells or Pipeline Serviced QUINN #4A

cps 6237w

Elevation N/A Completion Date 10/30/86 Total Depth 500' Land Type* N/A

Casing, Sizes, Types & Depths N/A

If Casing is cemented, show amounts & types used N/A

If Cement or Bentonite Plugs have been placed, show depths & amounts used

N/A

Depths & thickness of water zones with description of water when possible:

Fresh, Clear, Salty, Sulphur, Etc. 140'

Depths gas encountered: N/A

Type & amount of coke breeze used: 3500 lbs.

Depths anodes placed: 480', 455', 445', 420', 410', 400', 350', 275', 195', 185'

Depths vent pipes placed: 490'

Vent pipe perforations: 350'

Remarks: cgb #1

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If any of the above data is unavailable, please indicate so. Copies of all logs, including Drillers Log, Water Analyses & Well Bore Schematics should be submitted when available. Unplugged abandoned wells are to be included.

*Land Type may be shown: F-Federal; I-Indian; S-State; P-Fee.
If Federal or Indian, add Lease Number.

Burge Corrosion Systems
P.O. Drawer G
Aztec, New Mexico 87410

Drilling Log (Attach Hereto). ☒ (237W)

Completion Date October 30, 1986

Well Name	Location	
Quinn #4-A	Union Texas Petroleum	

Type & Size Bit Used	Work Order No.
6 3/4 inch	

Anode Hole Depth	Total Drilling Rig Time	Total Lbs. Coke Used	Lost Circulation Mat'l Used	No. Sacks Mud Used
500 feet	10 hours	3500#		

	#1	#2	#3	#4	#5	#6	#7	#8	#9	#10
Anode Depth	480	455	445	420	410	400	350	275	195	185
Anode Output (Amps)	1.5	2.1	2.1	2.5	2.6	2.4	1.9	2.6	2.4	2.6
Anode Depth	#11	#12	#13	#14	#15	#16	#17	#18	#19	#20
Anode Output (Amps)	#11	#12	#13	#14	#15	#16	#17	#18	#19	#20

Total Circuit Resistance			No. 8 C.P. Cable Used	No. 2 C.P. Cable Used
Volts 11.8	Amps 13.3	Ohms .89	4100 feet	

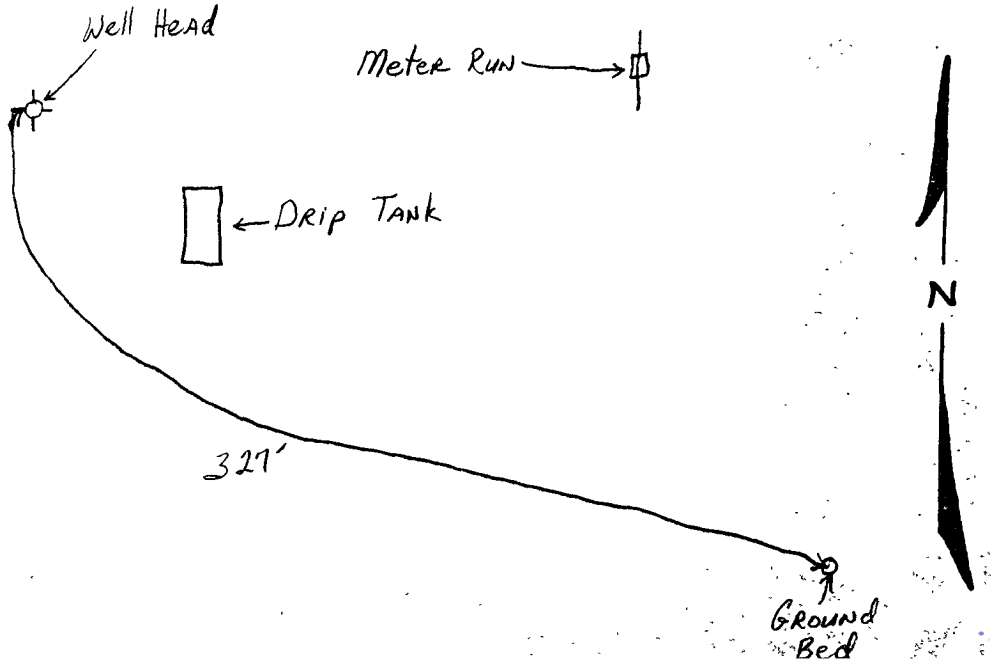
Remarks: Had water standing in the hole at 140 feet when the hole was logged.

Used 490 feet of 1 inch vent pipe with 350 feet of perforations.

All Construction Completed

Cody Mumbrues
(Signature)

GROUND BED LAYOUT SKETCH



 CONTROL CO. — 301 Ash — Aztec, New Mexico

COMPANY UNION TEXAS PETROLEUM DAILY DRILLING REPORT OCT. 30 19 86

WELL NAME:	WELL NUMBER:	SECTION:	TOWNSHIP:	RANGE:
Quinn	4 - A	19	31	8

WATER AT	FEET	HOLE MADE:
140'		500'

DESCRIPTION OF FORMATION

FROM	TO	FORMATION IS	COLOR
0	40	clay / sandstone	brown
40	60	sandstone	yellow
60	80	shale	blue
80	140	sandstone / water	yellow
140	160	sandstone / shale	yellow/blu
160	180	shale	blue
180	200	shale	blue
200	260	sandstone / sand	green/ blue
260	280	sandy shale	blue
280	340	sand / sandstone /bentonite	white/blue
340	360	sandy shale	blue
360	380	sandstone	green
380	395	bentonite	white
395	450	shale	blue/red
450	470	bentonite / sand	white
470	490	sandy shale streamers	blue
490	500	sand	white

REMARKS: Had to go to injection at 140'. Drilled hole to 500'.

Brian E. Burge Driller Tool Dresser

1463 #6A 30-045-23077
#9 30-045-23711

DATA SHEET FOR DEEP GROUND BED CATHODIC PROTECTION WELLS
NORTHWESTERN NEW MEXICO
(Submit 3 copies to OCD Aztec Office)

Operator MERIDIAN OIL INC. Location: Unit P Sec. 21 Twp 30 Rng 8

Name of Well/Wells or Pipeline Serviced QUINN #6A, #9

cps 6241w

Elevation N/A Completion Date 10/27/86 Total Depth 500' Land Type* N/A

Casing, Sizes, Types & Depths N/A

If Casing is cemented, show amounts & types used N/A

If Cement or Bentonite Plugs have been placed, show depths & amounts used

N/A

Depths & thickness of water zones with description of water when possible:

Fresh, Clear, Salty, Sulphur, Etc. 160'

Depths gas encountered: N/A

Type & amount of coke breeze used: 2360 lbs.

Depths anodes placed: 460', 450', 440', 430', 420', 405', 340', 330', 320', 310'

Depths vent pipes placed: 470'

Vent pipe perforations: 180'

Remarks: gb #1

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OIL CON. DIV.
DIST. 3

If any of the above data is unavailable, please indicate so. Copies of all logs, including Drillers Log, Water Analyses & Well Bore Schematics should be submitted when available. Unplugged abandoned wells are to be included.

*Land Type may be shown: F-Federal; I-Indian; S-State; P-Fee.
If Federal or Indian, add Lease Number.

Burge Corrosion Systems
P.O. Drawer G
Aztec, New Mexico 87410

Drilling Log (Attach Hereto). ☒ 6241W **Completion Date** October 27,1986

Well Name	Location	
Quinn #6-A & #9	Union Texas Petroleum	
Type & Size Bit Used 6 3/4 inch		**Work Order No.**

Anode Hole Depth	Total Drilling Rig Time	Total Lbs. Coke Used	Lost Circulation Mat'l Used	No. Sacks Mud Used
500 feet	6 hours	2300 #		

	#1	#2	#3	#4	#5	#6	#7	#8	#9	#10
Anode Depth	460	450	440	430	420	405	340	330	320	310
Anode Output (Amps)	1.8	2.4	3.7	3.8	4.0	4.7	4.4	4.6	4.8	4.3
Anode Depth	#11	#12	#13	#14	#15	#16	#17	#18	#19	#20
Anode Output (Amps)	#11	#12	#13	#14	#15	#16	#17	#18	#19	#20

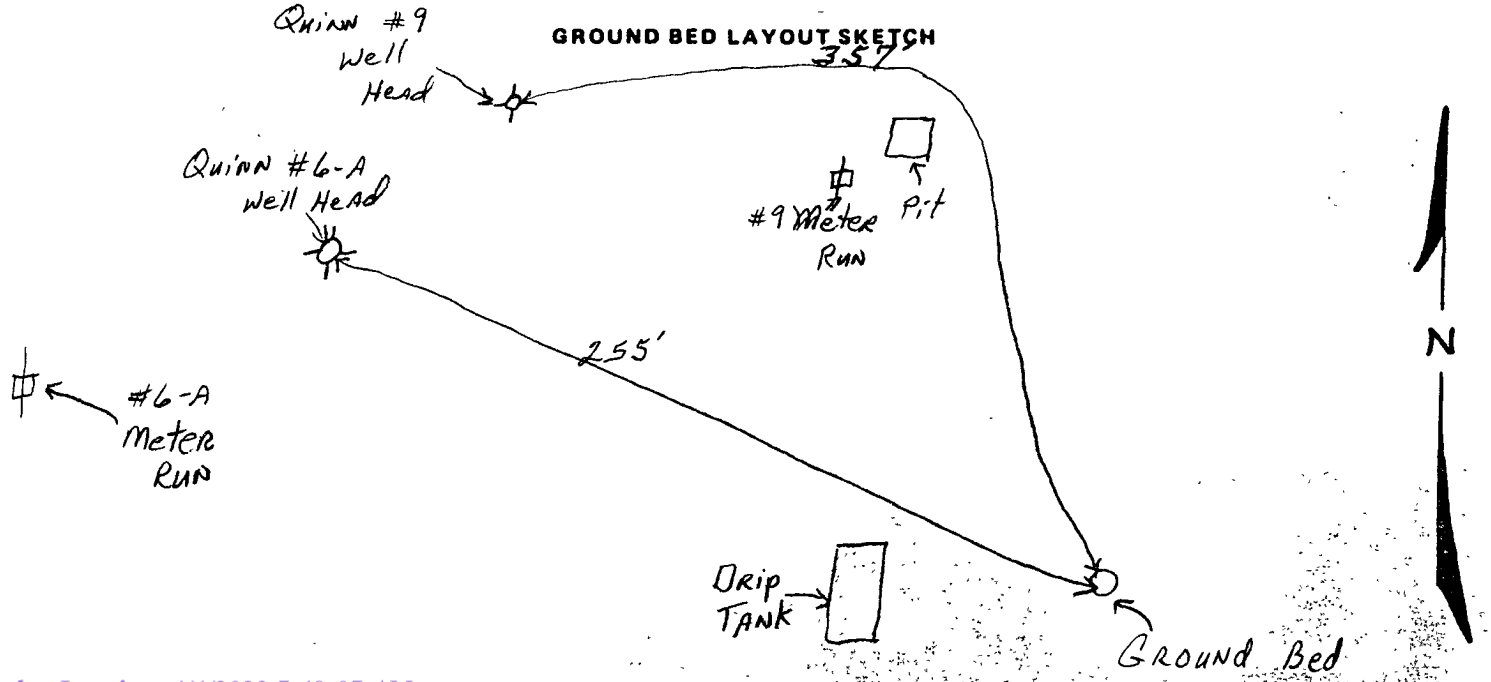
Total Circuit Resistance			No. 8 C.P. Cable Used	No. 2 C.P. Cable Used
Volts 12.1	Amps 16.3	Ohms .72	4667 feet	

Remarks: Hole was not making enough water to fill hole so the hole had to be filled from the top in order to log. Used 470 feet of 1 inch vent pipe with 180 feet of perforations.

All Construction Completed

Cody Munkres
(Signature)

GROUND BED LAYOUT SKETCH



CONTROL CO. — 301 Ash — Aztec, New Mexico

COMPANY UNION TEXAS TROLEUM DAILY DRILLING REPORT OCT. 26 19 86

WELL NAME:	WELL NUMBER:	SECTION:	TOWNSHIP:	RANGE:
QUINN 6-A & 9	6-A & 9	20	31	8

WATER AT	FEET	HOLE MADE:
Moisture 160'		500'

DESCRIPTION OF FORMATION

FROM	TO	FORMATION IS	COLOR
0	40	clay	brown
40	140	shale	red/blue
140	160	moisture- sand	blue
160	180	bentonite	white
180	300	sandy bentonite	white
300	340	shale- bentonite	blue/white
340	400	sandy bentonite	white
400	500	shale sand streamers	blue

REMARKS: Went to injection at 360' due to the powder conditions.

Brian E. Burge Driller Tool Dresser

ENSOLUM

APPENDIX C

Executed C-138 Solid Waste Acceptance Form

District I
1625 N. French Dr., Hobbs, NM 88240
District II
1301 W. Grand Avenue, Artesia, NM 88210
District III
1000 Rio Brazos Road, Aztec, NM 87410
District IV
1220 S. St. Francis Dr., Santa Fe, NM 87505

State of New Mexico
Energy Minerals and Natural Resources
Oil Conservation Division
1220 South St. Francis Dr.
Santa Fe, NM 87505

97057-1061

Form C-138
Revised 08/01/11

*Surface Waste Management Facility Operator and Generator shall maintain and make this documentation available for Division inspection.

REQUEST FOR APPROVAL TO ACCEPT SOLID WASTE

1. Generator Name and Address:
Enterprise Field Services, LLC, 614 Reilly Ave, Farmington NM 87401

AFE: Pending
PayKey: RB21200
PM: ME Eddleman

2. Originating Site:
Lateral MB-18

3. Location of Material (Street Address, City, State or ULSTR):
UL F Section 20 T31N R8W; 36.886029, -107.701832 Jan 2020

4. Source and Description of Waste:
Source: Remediation activities associated with a natural gas pipeline leak.
Description: Hydrocarbon/Condensate impacted soil associated natural gas pipeline release.
Estimated Volume 50 (yd³) / bbls Known Volume (to be entered by the operator at the end of the haul) 80/45 (yd³ / bbls)

5. GENERATOR CERTIFICATION STATEMENT OF WASTE STATUS

I, Thomas Long (Thomas Long) , representative or authorized agent for Enterprise Products Operating do hereby
Generator Signature
certify that according to the Resource Conservation and Recovery Act (RCRA) and the US Environmental Protection Agency's July 1988 regulatory determination, the above described waste is: (Check the appropriate classification)

☒ RCRA Exempt: Oil field wastes generated from oil and gas exploration and production operations and are not mixed with non-exempt waste. *Operator Use Only: Waste Acceptance Frequency ☐ Monthly ☐ Weekly ☐ Per Load*

☐ RCRA Non-Exempt: Oil field waste which is non-hazardous that does not exceed the minimum standards for waste hazardous by characteristics established in RCRA regulations, 40 CFR 261.21-261.24, or listed hazardous waste as defined in 40 CFR, part 261, subpart D, as amended. The following documentation is attached to demonstrate the above-described waste is non-hazardous. (Check the appropriate items)

☐ MSDS Information ☐ RCRA Hazardous Waste Analysis ☐ Process Knowledge ☐ Other (Provide description in Box 4)

GENERATOR 19.15.36.15 WASTE TESTING CERTIFICATION STATEMENT FOR LANDFARMS

I, Thomas Long (Thomas Long) 1-15-2020, representative for Enterprise Products Operating authorizes Envirotech, Inc. to complete
Generator Signature
the required testing/sign the Generator Waste Testing Certification.

I, Greg Crabtree, representative for Envirotech, Inc. do hereby certify that representative samples of the oil field waste have been subjected to the paint filter test and tested for chloride content and that the samples have been found to conform to the specific requirements applicable to landfarms pursuant to Section 15 of 19.15.36 NMAC. The results of the representative samples are attached to demonstrate the above-described waste conform to the requirements of Section 15 of 19.15.36 NMAC.

5. Transporter: Riley Industrial West States, ACE

OCD Permitted Surface Waste Management Facility

Name and Facility Permit #: **Envirotech Inc. Soil Remediation Facility * Permit #: NM 01-0011**
Address of Facility: **Hilltop, NM**
Method of Treatment and/or Disposal:
☐ Evaporation ☐ Injection ☐ Treating Plant ☒ Landfarm ☐ Landfill ☐ Other

Waste Acceptance Status:
☒ **APPROVED** ☐ **DENIED (Must Be Maintained As Permanent Record)**

PRINT NAME: Greg Crabtree TITLE: Envir. Manager DATE: 1/15/20
SIGNATURE: _____ TELEPHONE NO.: 505-632-0615
Surface Waste Management Facility Authorized Agent

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APPENDIX D

Photographic Documentation

SITE PHOTOGRAPHS

Enterprise Field Services, LLC
Closure Report
Lateral MB-18 Pipeline Release
Ensolum Project No. 05A1226088

ENSOLUM

Photograph 1 Photograph Description: View of the initial excavation.	
Photograph 2 Photograph Description: View of the excavation during the second sampling event.	
Photograph 3 Photograph Description: View of the final excavation (third sampling event).	

SITE PHOTOGRAPHS

Enterprise Field Services, LLC
Closure Report
Lateral MB-18 Pipeline Release
Ensolum Project No. 05A1226088

ENSOLUM

Photograph 4 Photograph Description: View of final excavation after initial restoration.	

ENSOLUM

APPENDIX E

Table 1 – Soil Analytical Summary

ENSOLUM

TABLE 1
Lateral MB-18 Pipeline Release
SOIL ANALYTICAL SUMMARY

Sample I.D.	Date	Sample Type C- Composite G - Grab	Sample Depth (Feet)	Benzene (mg/kg)	Toluene (mg/kg)	Ethylbenzene (mg/kg)	Xylenes (mg/kg)	Total BTEX (mg/kg)	TPH GRO (mg/kg)	TPH DRO (mg/kg)	TPH MRO (mg/kg)	Total Combined TPH (GRO/DRO/MRO) (mg/kg)	Chloride (mg/kg)
New Mexico Energy, Mineral & Natural Resources Department Oil Conservation Division Closure Criteria				10	NE	NE	NE	50				100	600
Composite Soil Samples Removed by Excavation													
S-1	1.27.20	C	10	<0.12	<0.24	<0.24	<0.47	ND	<24	540	1,600	**2,140**	<60
S-2	1.27.20	C	10	<0.11	<0.22	<0.22	<0.43	ND	<22	1,400	3,700	**5,100**	<60
SP-2	1.27.20	C	Stockpile	<0.020	<0.041	<0.041	<0.082	ND	<4.1	30	79	**109**	<60
S-9	2.03.20	C	13	<0.018	<0.035	<0.035	<0.071	ND	<3.5	36	87	**123**	<60
Stockpiled Soil Samples													
SP-1	1.27.20	C	Stockpile	<0.024	<0.048	<0.048	<0.096	ND	<4.8	<9.3	<46	ND	<60
SP-3	1.27.20	C	Stockpile	<0.024	<0.047	<0.047	<0.095	ND	<4.7	<9.2	<46	ND	<60
Excavation Composite Soil Samples													
S-3	1.27.20	C	0 to 10	<0.027	<0.055	<0.055	<0.11	ND	<5.5	<9.3	<46	ND	<60
S-4	1.27.20	C	0 to 10	<0.13	<0.25	<0.25	<0.51	ND	<25	<9.6	<48	ND	80
S-5	1.27.20	C	0 to 10	<0.024	<0.049	<0.049	<0.097	ND	<4.9	<9.4	<47	ND	<61
S-6	1.27.20	C	0 to 10	<0.021	<0.042	<0.042	<0.084	ND	<4.2	<9.7	<49	ND	<60
S-7	1.27.20	C	0 to 10	<0.021	<0.041	<0.041	<0.082	ND	<4.1	<9.0	<45	ND	<60
S-8	1.27.20	C	0 to 10	<0.025	<0.050	<0.050	<0.099	ND	<5.0	<8.4	<42	ND	<60
S-10	2.03.20	C	13	<0.018	<0.036	<0.036	<0.073	ND	<3.6	15	<48	15	<60
S-11	2.03.20	C	10 to 13	<0.019	<0.037	<0.037	<0.075	ND	<3.7	11	<46	11	<60
S-12	2.03.20	C	10 to 13	<0.020	<0.040	<0.040	<0.081	ND	<4.0	<9.8	<49	ND	<60
S-13	2.03.20	C	10 to 13	<0.018	<0.037	<0.037	<0.074	ND	<3.7	<9.6	<48	ND	<60
S-14	2.03.20	C	10 to 13	<0.021	<0.042	<0.042	<0.083	ND	<4.2	<9.7	<48	ND	<60
S-15	2.03.20	C	10 to 13	<0.020	<0.039	<0.039	<0.078	ND	<3.9	<9.4	<47	ND	<60
S-16	2.03.20	C	10 to 13	<0.018	<0.037	<0.037	<0.073	ND	<3.7	11	<46	11	<60
S-17	2.05.20	C	14	<0.020	<0.040	<0.040	<0.080	ND	<4.0	<9.1	<46	ND	<60

Note: Concentrations in **bold** and yellow exceed the applicable NM EMNRD Closure Criteria

ND = Not Detected above the Practical Quantitation Limits or Reporting Limits

NA = Not Analyzed

NE = Not Established

mg/kg = milligram per kilogram

BTEX = Benzene, Toluene, Ethylbenzene, and Xylenes

TPH = Total Petroleum Hydrocarbon

GRO = Gasoline Range Organics

DRO = Diesel Range Organics

MRO = Motor Oil/Lube Oil Range Organics

ENSOLUM

APPENDIX F

Laboratory Data Sheets & Chain of Custody Documentation

HALL ENVIRONMENTAL ANALYSIS LABORATORY

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

January 30, 2020

Kyle Summers
ENSOLUM
606 S. Rio Grande Suite A
Aztec, NM 87410
TEL: (903) 821-5603
FAX

RE: Lateral MB 18 OrderNo.: 2001A44

Dear Kyle Summers:

Hall Environmental Analysis Laboratory received 8 sample(s) on 1/28/2020 for the analyses presented in the following report.

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

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

ADHS Cert #AZ0682 -- NMED-DWB Cert #NM9425 -- NMED-Micro Cert #NM0901

Sincerely,

Andy Freeman
Laboratory Manager
4901 Hawkins NE
Albuquerque, NM 87109

Analytical Report
Lab Order **2001A44**
Date Reported: **1/30/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: ENSOLUM **Client Sample ID:** S-1
Project: Lateral MB 18 **Collection Date:** 1/27/2020 3:00:00 PM
Lab ID: 2001A44-001 **Matrix:** MEOH (SOIL) **Received Date:** 1/28/2020 8:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **CAS**	
Chloride	ND	60		mg/Kg	20	1/28/2020 10:55:03 AM	50094
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **BRM**	
Diesel Range Organics (DRO)	540	95		mg/Kg	10	1/28/2020 11:01:47 AM	50085
Motor Oil Range Organics (MRO)	1600	470		mg/Kg	10	1/28/2020 11:01:47 AM	50085
Surr: DNOP	0	55.1-146	S	%Rec	10	1/28/2020 11:01:47 AM	50085
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	24		mg/Kg	5	1/28/2020 9:35:53 AM	G66126
Surr: BFB	81.6	66.6-105		%Rec	5	1/28/2020 9:35:53 AM	G66126
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**	
Benzene	ND	0.12		mg/Kg	5	1/28/2020 9:35:53 AM	B66126
Toluene	ND	0.24		mg/Kg	5	1/28/2020 9:35:53 AM	B66126
Ethylbenzene	ND	0.24		mg/Kg	5	1/28/2020 9:35:53 AM	B66126
Xylenes, Total	ND	0.47		mg/Kg	5	1/28/2020 9:35:53 AM	B66126
Surr: 4-Bromofluorobenzene	91.6	80-120		%Rec	5	1/28/2020 9:35:53 AM	B66126

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

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order **2001A44**
Date Reported: **1/30/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: ENSOLUM **Client Sample ID:** S-2
Project: Lateral MB 18 **Collection Date:** 1/27/2020 3:05:00 PM
Lab ID: 2001A44-002 **Matrix:** MEOH (SOIL) **Received Date:** 1/28/2020 8:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **CAS**	
Chloride	ND	60		mg/Kg	20	1/28/2020 11:07:24 AM	50094
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **BRM**	
Diesel Range Organics (DRO)	1400	480		mg/Kg	50	1/28/2020 1:16:57 PM	50085
Motor Oil Range Organics (MRO)	3700	2400		mg/Kg	50	1/28/2020 1:16:57 PM	50085
Surr: DNOP	0	55.1-146	S	%Rec	50	1/28/2020 1:16:57 PM	50085
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	22		mg/Kg	5	1/28/2020 9:59:15 AM	G66126
Surr: BFB	80.7	66.6-105		%Rec	5	1/28/2020 9:59:15 AM	G66126
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**	
Benzene	ND	0.11		mg/Kg	5	1/28/2020 9:59:15 AM	B66126
Toluene	ND	0.22		mg/Kg	5	1/28/2020 9:59:15 AM	B66126
Ethylbenzene	ND	0.22		mg/Kg	5	1/28/2020 9:59:15 AM	B66126
Xylenes, Total	ND	0.43		mg/Kg	5	1/28/2020 9:59:15 AM	B66126
Surr: 4-Bromofluorobenzene	91.3	80-120		%Rec	5	1/28/2020 9:59:15 AM	B66126

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

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order **2001A44**
Date Reported: **1/30/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: ENSOLUM **Client Sample ID:** S-3
Project: Lateral MB 18 **Collection Date:** 1/27/2020 3:10:00 PM
Lab ID: 2001A44-003 **Matrix:** MEOH (SOIL) **Received Date:** 1/28/2020 8:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **CAS**	
Chloride	ND	60		mg/Kg	20	1/28/2020 11:19:46 AM	50094
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **BRM**	
Diesel Range Organics (DRO)	ND	9.3		mg/Kg	1	1/28/2020 1:26:08 PM	50085
Motor Oil Range Organics (MRO)	ND	46		mg/Kg	1	1/28/2020 1:26:08 PM	50085
Surr: DNOP	98.8	55.1-146		%Rec	1	1/28/2020 1:26:08 PM	50085
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	5.5		mg/Kg	1	1/28/2020 10:22:37 AM	G66126
Surr: BFB	79.3	66.6-105		%Rec	1	1/28/2020 10:22:37 AM	G66126
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**	
Benzene	ND	0.027		mg/Kg	1	1/28/2020 10:22:37 AM	B66126
Toluene	ND	0.055		mg/Kg	1	1/28/2020 10:22:37 AM	B66126
Ethylbenzene	ND	0.055		mg/Kg	1	1/28/2020 10:22:37 AM	B66126
Xylenes, Total	ND	0.11		mg/Kg	1	1/28/2020 10:22:37 AM	B66126
Surr: 4-Bromofluorobenzene	89.6	80-120		%Rec	1	1/28/2020 10:22:37 AM	B66126

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

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

Analytical Report
Lab Order **2001A44**
Date Reported: **1/30/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: ENSOLUM **Client Sample ID:** S-4
Project: Lateral MB 18 **Collection Date:** 1/27/2020 3:15:00 PM
Lab ID: 2001A44-004 **Matrix:** MEOH (SOIL) **Received Date:** 1/28/2020 8:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **CAS**	
Chloride	80	60		mg/Kg	20	1/28/2020 11:32:06 AM	50094
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **BRM**	
Diesel Range Organics (DRO)	ND	9.6		mg/Kg	1	1/28/2020 1:35:20 PM	50085
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	1/28/2020 1:35:20 PM	50085
Surr: DNOP	96.1	55.1-146		%Rec	1	1/28/2020 1:35:20 PM	50085
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	25		mg/Kg	5	1/28/2020 10:46:03 AM	G66126
Surr: BFB	81.7	66.6-105		%Rec	5	1/28/2020 10:46:03 AM	G66126
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**	
Benzene	ND	0.13		mg/Kg	5	1/28/2020 10:46:03 AM	B66126
Toluene	ND	0.25		mg/Kg	5	1/28/2020 10:46:03 AM	B66126
Ethylbenzene	ND	0.25		mg/Kg	5	1/28/2020 10:46:03 AM	B66126
Xylenes, Total	ND	0.51		mg/Kg	5	1/28/2020 10:46:03 AM	B66126
Surr: 4-Bromofluorobenzene	92.3	80-120		%Rec	5	1/28/2020 10:46:03 AM	B66126

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

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

Analytical Report
Lab Order **2001A44**
Date Reported: **1/30/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: ENSOLUM **Client Sample ID:** S-5
Project: Lateral MB 18 **Collection Date:** 1/27/2020 3:20:00 PM
Lab ID: 2001A44-005 **Matrix:** MEOH (SOIL) **Received Date:** 1/28/2020 8:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **CAS**	
Chloride	ND	61		mg/Kg	20	1/28/2020 11:44:27 AM	50094
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **BRM**	
Diesel Range Organics (DRO)	ND	9.4		mg/Kg	1	1/28/2020 1:44:31 PM	50085
Motor Oil Range Organics (MRO)	ND	47		mg/Kg	1	1/28/2020 1:44:31 PM	50085
Surr: DNOP	93.0	55.1-146		%Rec	1	1/28/2020 1:44:31 PM	50085
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	1/28/2020 11:09:27 AM	G66126
Surr: BFB	85.2	66.6-105		%Rec	1	1/28/2020 11:09:27 AM	G66126
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**	
Benzene	ND	0.024		mg/Kg	1	1/28/2020 11:09:27 AM	B66126
Toluene	ND	0.049		mg/Kg	1	1/28/2020 11:09:27 AM	B66126
Ethylbenzene	ND	0.049		mg/Kg	1	1/28/2020 11:09:27 AM	B66126
Xylenes, Total	ND	0.097		mg/Kg	1	1/28/2020 11:09:27 AM	B66126
Surr: 4-Bromofluorobenzene	96.0	80-120		%Rec	1	1/28/2020 11:09:27 AM	B66126

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

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

Analytical Report
Lab Order **2001A44**
Date Reported: **1/30/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: ENSOLUM **Client Sample ID:** S-6
Project: Lateral MB 18 **Collection Date:** 1/27/2020 3:25:00 PM
Lab ID: 2001A44-006 **Matrix:** MEOH (SOIL) **Received Date:** 1/28/2020 8:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **CAS**	
Chloride	ND	60		mg/Kg	20	1/28/2020 11:56:48 AM	50094
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **BRM**	
Diesel Range Organics (DRO)	ND	9.7		mg/Kg	1	1/28/2020 1:53:42 PM	50085
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	1/28/2020 1:53:42 PM	50085
Surr: DNOP	86.4	55.1-146		%Rec	1	1/28/2020 1:53:42 PM	50085
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	4.2		mg/Kg	1	1/28/2020 11:32:52 AM	G66126
Surr: BFB	88.3	66.6-105		%Rec	1	1/28/2020 11:32:52 AM	G66126
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**	
Benzene	ND	0.021		mg/Kg	1	1/28/2020 11:32:52 AM	B66126
Toluene	ND	0.042		mg/Kg	1	1/28/2020 11:32:52 AM	B66126
Ethylbenzene	ND	0.042		mg/Kg	1	1/28/2020 11:32:52 AM	B66126
Xylenes, Total	ND	0.084		mg/Kg	1	1/28/2020 11:32:52 AM	B66126
Surr: 4-Bromofluorobenzene	100	80-120		%Rec	1	1/28/2020 11:32:52 AM	B66126

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

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order **2001A44**
Date Reported: **1/30/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: ENSOLUM **Client Sample ID:** S-7
Project: Lateral MB 18 **Collection Date:** 1/27/2020 3:30:00 PM
Lab ID: 2001A44-007 **Matrix:** MEOH (SOIL) **Received Date:** 1/28/2020 8:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **CAS**	
Chloride	ND	60		mg/Kg	20	1/28/2020 12:09:09 PM	50094
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **BRM**	
Diesel Range Organics (DRO)	ND	9.0		mg/Kg	1	1/28/2020 2:02:52 PM	50085
Motor Oil Range Organics (MRO)	ND	45		mg/Kg	1	1/28/2020 2:02:52 PM	50085
Surr: DNOP	88.4	55.1-146		%Rec	1	1/28/2020 2:02:52 PM	50085
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	4.1		mg/Kg	1	1/28/2020 11:56:19 AM	G66126
Surr: BFB	89.8	66.6-105		%Rec	1	1/28/2020 11:56:19 AM	G66126
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**	
Benzene	ND	0.021		mg/Kg	1	1/28/2020 11:56:19 AM	B66126
Toluene	ND	0.041		mg/Kg	1	1/28/2020 11:56:19 AM	B66126
Ethylbenzene	ND	0.041		mg/Kg	1	1/28/2020 11:56:19 AM	B66126
Xylenes, Total	ND	0.082		mg/Kg	1	1/28/2020 11:56:19 AM	B66126
Surr: 4-Bromofluorobenzene	101	80-120		%Rec	1	1/28/2020 11:56:19 AM	B66126

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

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

Analytical Report
Lab Order **2001A44**
Date Reported: **1/30/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: ENSOLUM **Client Sample ID:** S-8
Project: Lateral MB 18 **Collection Date:** 1/27/2020 3:35:00 PM
Lab ID: 2001A44-008 **Matrix:** MEOH (SOIL) **Received Date:** 1/28/2020 8:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **CAS**	
Chloride	ND	60		mg/Kg	20	1/28/2020 12:21:29 PM	50094
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **BRM**	
Diesel Range Organics (DRO)	ND	8.4		mg/Kg	1	1/28/2020 2:12:04 PM	50085
Motor Oil Range Organics (MRO)	ND	42		mg/Kg	1	1/28/2020 2:12:04 PM	50085
Surr: DNOP	83.0	55.1-146		%Rec	1	1/28/2020 2:12:04 PM	50085
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	5.0		mg/Kg	1	1/28/2020 12:19:47 PM	G66126
Surr: BFB	84.1	66.6-105		%Rec	1	1/28/2020 12:19:47 PM	G66126
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**	
Benzene	ND	0.025		mg/Kg	1	1/28/2020 12:19:47 PM	B66126
Toluene	ND	0.050		mg/Kg	1	1/28/2020 12:19:47 PM	B66126
Ethylbenzene	ND	0.050		mg/Kg	1	1/28/2020 12:19:47 PM	B66126
Xylenes, Total	ND	0.099		mg/Kg	1	1/28/2020 12:19:47 PM	B66126
Surr: 4-Bromofluorobenzene	94.9	80-120		%Rec	1	1/28/2020 12:19:47 PM	B66126

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

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2001A44**
30-Jan-20

Client: ENSOLUM
Project: Lateral MB 18

Sample ID: **MB-50094** SampType: **mblk** TestCode: **EPA Method 300.0: Anions**
Client ID: **PBS** Batch ID: **50094** RunNo: **66125**
Prep Date: **1/28/2020** Analysis Date: **1/28/2020** SeqNo: **2272099** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	ND	1.5								

Sample ID: **LCS-50094** SampType: **lcs** TestCode: **EPA Method 300.0: Anions**
Client ID: **LCSS** Batch ID: **50094** RunNo: **66125**
Prep Date: **1/28/2020** Analysis Date: **1/28/2020** SeqNo: **2272100** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	14	1.5	15.00	0	92.2	90	110			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2001A44**

30-Jan-20

Client: ENSOLUM

Project: Lateral MB 18

Sample ID: **LCS-50085** SampType: **LCS** TestCode: **EPA Method 8015M/D: Diesel Range Organics**

Client ID: **LCSS** Batch ID: **50085** RunNo: **66119**

Prep Date: **1/28/2020** Analysis Date: **1/28/2020** SeqNo: **2271413** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	44	10	50.00	0	88.6	63.9	124			
Surr: DNOP	3.4		5.000		68.9	55.1	146			

Sample ID: **MB-50085** SampType: **MBLK** TestCode: **EPA Method 8015M/D: Diesel Range Organics**

Client ID: **PBS** Batch ID: **50085** RunNo: **66119**

Prep Date: **1/28/2020** Analysis Date: **1/28/2020** SeqNo: **2271415** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	ND	10								
Motor Oil Range Organics (MRO)	ND	50								
Surr: DNOP	8.1		10.00		81.0	55.1	146			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2001A44**
30-Jan-20

Client: ENSOLUM
Project: Lateral MB 18

Sample ID: **mb1** SampType: **MBLK** TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **PBS** Batch ID: **G66126** RunNo: **66126**
Prep Date: Analysis Date: **1/28/2020** SeqNo: **2271700** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	ND	5.0								
Surr: BFB	840		1000		83.7	66.6	105			

Sample ID: **2.5ug gro lcs** SampType: **LCS** TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **LCSS** Batch ID: **G66126** RunNo: **66126**
Prep Date: Analysis Date: **1/28/2020** SeqNo: **2271701** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	24	5.0	25.00	0	95.5	80	120			
Surr: BFB	990		1000		99.0	66.6	105			

Sample ID: **mb-50070** SampType: **MBLK** TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **PBS** Batch ID: **50070** RunNo: **66126**
Prep Date: **1/27/2020** Analysis Date: **1/28/2020** SeqNo: **2271722** Units: **%Rec**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: BFB	860		1000		85.8	66.6	105			

Sample ID: **lcs-50070** SampType: **LCS** TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **LCSS** Batch ID: **50070** RunNo: **66126**
Prep Date: **1/27/2020** Analysis Date: **1/28/2020** SeqNo: **2271723** Units: **%Rec**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: BFB	950		1000		95.4	66.6	105			

Sample ID: **2001a44-001ams** SampType: **MS** TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **S-1** Batch ID: **G66126** RunNo: **66150**
Prep Date: Analysis Date: **1/29/2020** SeqNo: **2272782** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	99	24	118.5	0	83.4	69.1	142			
Surr: BFB	4100		4739		86.0	66.6	105			

Sample ID: **2001a44-001amsd** SampType: **MSD** TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **S-1** Batch ID: **G66126** RunNo: **66150**
Prep Date: Analysis Date: **1/29/2020** SeqNo: **2272805** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	99	24	118.5	0	83.7	69.1	142	0.431	20	
Surr: BFB	4000		4739		83.8	66.6	105	0	0	

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2001A44**
30-Jan-20

Client: ENSOLUM
Project: Lateral MB 18

Sample ID: **mb-50099**	SampType: **MBLK**	TestCode: **EPA Method 8015D: Gasoline Range**							
Client ID: **PBS**	Batch ID: **50099**	RunNo: **66150**							
Prep Date: **1/28/2020**	Analysis Date: **1/29/2020**	SeqNo: **2272828**	Units: **%Rec**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: BFB	720		1000		72.0	66.6	105			

Sample ID: **lcs-50099**	SampType: **LCS**	TestCode: **EPA Method 8015D: Gasoline Range**							
Client ID: **LCSS**	Batch ID: **50099**	RunNo: **66150**							
Prep Date: **1/28/2020**	Analysis Date: **1/29/2020**	SeqNo: **2272829**	Units: **%Rec**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: BFB	850		1000		85.4	66.6	105			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2001A44**
30-Jan-20

Client: ENSOLUM
Project: Lateral MB 18

Sample ID: **mb1**	SampType: **MBLK**	TestCode: **EPA Method 8021B: Volatiles**
Client ID: **PBS**	Batch ID: **B66126**	RunNo: **66126**
Prep Date:	Analysis Date: **1/28/2020**	SeqNo: **2271734** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	0.025								
Toluene	ND	0.050								
Ethylbenzene	ND	0.050								
Xylenes, Total	ND	0.10								
Surr: 4-Bromofluorobenzene	0.94		1.000		93.6	80	120			

Sample ID: **100ng btex lcs**	SampType: **LCS**	TestCode: **EPA Method 8021B: Volatiles**
Client ID: **LCSS**	Batch ID: **B66126**	RunNo: **66126**
Prep Date:	Analysis Date: **1/28/2020**	SeqNo: **2271735** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.99	0.025	1.000	0	98.6	80	120			
Toluene	0.97	0.050	1.000	0	97.5	80	120			
Ethylbenzene	0.97	0.050	1.000	0	96.7	80	120			
Xylenes, Total	2.9	0.10	3.000	0	96.2	80	120			
Surr: 4-Bromofluorobenzene	1.0		1.000		103	80	120			

Sample ID: **mb-50070**	SampType: **MBLK**	TestCode: **EPA Method 8021B: Volatiles**
Client ID: **PBS**	Batch ID: **50070**	RunNo: **66126**
Prep Date: **1/27/2020**	Analysis Date: **1/28/2020**	SeqNo: **2271744** Units: **%Rec**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: 4-Bromofluorobenzene	0.97		1.000		97.4	80	120			

Sample ID: **LCS-50070**	SampType: **LCS**	TestCode: **EPA Method 8021B: Volatiles**
Client ID: **LCSS**	Batch ID: **50070**	RunNo: **66126**
Prep Date: **1/27/2020**	Analysis Date: **1/28/2020**	SeqNo: **2271745** Units: **%Rec**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: 4-Bromofluorobenzene	0.95		1.000		95.1	80	120			

Sample ID: **2001a44-002ams**	SampType: **MS**	TestCode: **EPA Method 8021B: Volatiles**
Client ID: **S-2**	Batch ID: **B66126**	RunNo: **66150**
Prep Date:	Analysis Date: **1/29/2020**	SeqNo: **2272846** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	4.1	0.11	4.348	0	94.8	78.5	119			
Toluene	4.1	0.22	4.348	0.05261	92.1	75.7	123			
Ethylbenzene	4.0	0.22	4.348	0	91.1	74.3	126			
Xylenes, Total	12	0.43	13.04	0.07739	90.9	72.9	130			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2001A44**
30-Jan-20

Client: ENSOLUM
Project: Lateral MB 18

Sample ID: **2001a44-002ams**	SampType: **MS**	TestCode: **EPA Method 8021B: Volatiles**							
Client ID: **S-2**	Batch ID: **B66126**	RunNo: **66150**							
Prep Date:	Analysis Date: **1/29/2020**	SeqNo: **2272846**	Units: **mg/Kg**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: 4-Bromofluorobenzene	3.7		4.348		84.1	80	120			

Sample ID: **2001a44-002amsd**	SampType: **MSD**	TestCode: **EPA Method 8021B: Volatiles**							
Client ID: **S-2**	Batch ID: **B66126**	RunNo: **66150**							
Prep Date:	Analysis Date: **1/29/2020**	SeqNo: **2272847**	Units: **mg/Kg**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	4.1	0.11	4.348	0	95.0	78.5	119	0.253	20	
Toluene	4.1	0.22	4.348	0.05261	93.1	75.7	123	1.10	20	
Ethylbenzene	4.0	0.22	4.348	0	92.3	74.3	126	1.37	20	
Xylenes, Total	12	0.43	13.04	0.07739	92.0	72.9	130	1.24	20	
Surr: 4-Bromofluorobenzene	3.7		4.348		85.0	80	120	0	0	

Sample ID: **MB-50099**	SampType: **MBLK**	TestCode: **EPA Method 8021B: Volatiles**							
Client ID: **PBS**	Batch ID: **50099**	RunNo: **66150**							
Prep Date: **1/28/2020**	Analysis Date: **1/29/2020**	SeqNo: **2272873**	Units: **%Rec**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: 4-Bromofluorobenzene	0.82		1.000		82.0	80	120			

Sample ID: **LCS-50099**	SampType: **LCS**	TestCode: **EPA Method 8021B: Volatiles**							
Client ID: **LCSS**	Batch ID: **50099**	RunNo: **66150**							
Prep Date: **1/28/2020**	Analysis Date: **1/29/2020**	SeqNo: **2272874**	Units: **%Rec**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: 4-Bromofluorobenzene	0.87		1.000		87.0	80	120			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

HALL ENVIRONMENTAL ANALYSIS LABORATORY

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

Sample Log-In Check List

Client Name: **ENSOLUM AZTEC** Work Order Number: **2001A44** RcptNo: **1**

Received By: **Leah Baca** **1/28/2020 8:00:00 AM** Leah SBaca

Completed By: **Isaiah Ortiz** **1/28/2020 8:16:05 AM** I. Ortiz

Reviewed By: DAD 1/28/20

Chain of Custody

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

Log In

3. Was an attempt made to cool the samples? Yes ☑ No ☐ NA ☐
4. Were all samples received at a temperature of >0° C to 6.0°C Yes ☑ No ☐ NA ☐
5. Sample(s) in proper container(s)? Yes ☑ No ☐
6. Sufficient sample volume for indicated test(s)? Yes ☑ No ☐
7. Are samples (except VOA and ONG) properly preserved? Yes ☑ No ☐
8. Was preservative added to bottles? Yes ☐ No ☑ NA ☐
9. Received at least 1 vial with headspace <1/4" for AQ VOA? Yes ☐ No ☐ NA ☑
10. Were any sample containers received broken? Yes ☐ No ☑
11. Does paperwork match bottle labels? (Note discrepancies on chain of custody) Yes ☑ No ☐
12. Are matrices correctly identified on Chain of Custody? Yes ☑ No ☐
13. Is it clear what analyses were requested? Yes ☑ No ☐
14. Were all holding times able to be met? (If no, notify customer for authorization.) Yes ☑ No ☐

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

Adjusted? _____

Checked by: JR 1/28/20

Special Handling (if applicable)

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

Person Notified: _____ Date: _____

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

Regarding: _____

Client Instructions: _____

16. Additional remarks:

17. **Cooler Information**

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	1.9	Good	Yes			

Chain-of-Custody Record

Client: Ensolum, LLC

Mailing Address: 6016 S. Rio Grande Suite A
Aztec, NM 87410

Phone #:

email or Fax#: ksummers@ensolum.com

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

Accreditation: ☐ Az Compliance
☐ NELAC ☐ Other
☐ EDD (Type)

Turn-Around Time: Same Day
☐ Standard ☒ Rush 100%60

Project Name: Lateral MB-18

Project #: See notes

Project Manager: KSummers

Sampler: RDeechilly/Landon Daniell
On Ice: ☒ Yes ☐ No
# of Coolers: 1
Cooler Temp (including CF): 1.9-0=1.9

HEAL No. 2001444

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

Analysis Request

Date	Time	Matrix	Sample Name	Container Type and #	Preservative Type	HEAL No.	BTEX / ~~MTBE~~ / TMB's (8021)	TPH:8015D(GRO / DRO / MRO)	8081 Pesticides/8082 PCB's	EDB (Method 504.1)	PAHs by 8310 or 8270SIMS	RCRA 8 Metals	Cl, F, Br, NO_3, NO_2, PO_4, SO_4	8260 (VOA)	8270 (Semi-VOA)	Total Coliform (Present/Absent)	Chlorides
1/27/20	1500	~~Soil~~ S	S-1	1x4oz Jar	cool	-001	X	X									X
1/27/20	1505	S	S-2	1x4oz Jar	cool	-002	X	X									X
1/27/20	1510	S	S-3	1x4oz Jar	cool	-003	X	X									X
1/27/20	1515	S	S-4	1x4oz Jar	cool	-004	X	X									X
1/27/20	1520	S	S-5	1x4oz Jar	cool	-005	X	X									X
1/27/20	1525	S	S-6	1x4oz Jar	cool	-006	X	X									X
1/27/20	1530	S	S-7	1x4oz Jar	cool	-007	X	X									X
1/27/20	1535	S	S-8	1x4oz Jar	cool	-008	X	X									X
~~1/28~~																	

Date:	Time:	Relinquished by:	Received by:	Via:	Date	Time
1/27/20	1804				1/27/20	1804
1/27/20	1940			courier	1/28/20	8:00

Remarks: SAME DAY
PM - Tom Long (EPROD)
Pay Key - RB21200

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

HALL ENVIRONMENTAL ANALYSIS LABORATORY

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

January 30, 2020

Kyle Summers
ENSOLUM
606 S. Rio Grande Suite A
Aztec, NM 87410
TEL: (903) 821-5603
FAX

RE: Lateral MB 18 OrderNo.: 2001A46

Dear Kyle Summers:

Hall Environmental Analysis Laboratory received 3 sample(s) on 1/28/2020 for the analyses presented in the following report.

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

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

ADHS Cert #AZ0682 -- NMED-DWB Cert #NM9425 -- NMED-Micro Cert #NM0901

Sincerely,

Andy Freeman
Laboratory Manager
4901 Hawkins NE
Albuquerque, NM 87109

Analytical Report
Lab Order **2001A46**
Date Reported: **1/30/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: ENSOLUM **Client Sample ID:** SP-1
Project: Lateral MB 18 **Collection Date:** 1/27/2020 3:45:00 PM
Lab ID: 2001A46-001 **Matrix:** MEOH (SOIL) **Received Date:** 1/28/2020 8:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **CAS**	
Chloride	ND	60		mg/Kg	20	1/28/2020 12:58:32 PM	50094
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **BRM**	
Diesel Range Organics (DRO)	ND	9.3		mg/Kg	1	1/28/2020 12:49:36 PM	50085
Motor Oil Range Organics (MRO)	ND	46		mg/Kg	1	1/28/2020 12:49:36 PM	50085
Surr: DNOP	110	55.1-146		%Rec	1	1/28/2020 12:49:36 PM	50085
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	1/28/2020 12:43:25 PM	G66126
Surr: BFB	85.2	66.6-105		%Rec	1	1/28/2020 12:43:25 PM	G66126
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**	
Benzene	ND	0.024		mg/Kg	1	1/28/2020 12:43:25 PM	B66126
Toluene	ND	0.048		mg/Kg	1	1/28/2020 12:43:25 PM	B66126
Ethylbenzene	ND	0.048		mg/Kg	1	1/28/2020 12:43:25 PM	B66126
Xylenes, Total	ND	0.096		mg/Kg	1	1/28/2020 12:43:25 PM	B66126
Surr: 4-Bromofluorobenzene	97.2	80-120		%Rec	1	1/28/2020 12:43:25 PM	B66126

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

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order **2001A46**
Date Reported: **1/30/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: ENSOLUM **Client Sample ID:** SP-2
Project: Lateral MB 18 **Collection Date:** 1/27/2020 3:50:00 PM
Lab ID: 2001A46-002 **Matrix:** MEOH (SOIL) **Received Date:** 1/28/2020 8:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **CAS**	
Chloride	ND	60		mg/Kg	20	1/28/2020 1:10:53 PM	50094
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **BRM**	
Diesel Range Organics (DRO)	30	9.7		mg/Kg	1	1/28/2020 12:58:38 PM	50085
Motor Oil Range Organics (MRO)	79	49		mg/Kg	1	1/28/2020 12:58:38 PM	50085
Surr: DNOP	100	55.1-146		%Rec	1	1/28/2020 12:58:38 PM	50085
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	4.1		mg/Kg	1	1/28/2020 1:06:55 PM	G66126
Surr: BFB	85.4	66.6-105		%Rec	1	1/28/2020 1:06:55 PM	G66126
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**	
Benzene	ND	0.020		mg/Kg	1	1/28/2020 1:06:55 PM	B66126
Toluene	ND	0.041		mg/Kg	1	1/28/2020 1:06:55 PM	B66126
Ethylbenzene	ND	0.041		mg/Kg	1	1/28/2020 1:06:55 PM	B66126
Xylenes, Total	ND	0.082		mg/Kg	1	1/28/2020 1:06:55 PM	B66126
Surr: 4-Bromofluorobenzene	95.5	80-120		%Rec	1	1/28/2020 1:06:55 PM	B66126

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

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

Analytical Report
Lab Order **2001A46**
Date Reported: **1/30/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: ENSOLUM **Client Sample ID:** SP-3
Project: Lateral MB 18 **Collection Date:** 1/27/2020 3:55:00 PM
Lab ID: 2001A46-003 **Matrix:** MEOH (SOIL) **Received Date:** 1/28/2020 8:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst:	**CAS**
Chloride	ND	60		mg/Kg	20	1/28/2020 1:23:14 PM	50094
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst:	**BRM**
Diesel Range Organics (DRO)	ND	9.2		mg/Kg	1	1/28/2020 1:07:44 PM	50085
Motor Oil Range Organics (MRO)	ND	46		mg/Kg	1	1/28/2020 1:07:44 PM	50085
Surr: DNOP	86.5	55.1-146		%Rec	1	1/28/2020 1:07:44 PM	50085
EPA METHOD 8015D: GASOLINE RANGE						Analyst:	**NSB**
Gasoline Range Organics (GRO)	ND	4.7		mg/Kg	1	1/28/2020 1:53:52 PM	G66126
Surr: BFB	87.9	66.6-105		%Rec	1	1/28/2020 1:53:52 PM	G66126
EPA METHOD 8021B: VOLATILES						Analyst:	**NSB**
Benzene	ND	0.024		mg/Kg	1	1/28/2020 1:53:52 PM	B66126
Toluene	ND	0.047		mg/Kg	1	1/28/2020 1:53:52 PM	B66126
Ethylbenzene	ND	0.047		mg/Kg	1	1/28/2020 1:53:52 PM	B66126
Xylenes, Total	ND	0.095		mg/Kg	1	1/28/2020 1:53:52 PM	B66126
Surr: 4-Bromofluorobenzene	99.4	80-120		%Rec	1	1/28/2020 1:53:52 PM	B66126

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

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2001A46**
30-Jan-20

Client: ENSOLUM
Project: Lateral MB 18

Sample ID: **MB-50094**	SampType: **mblk**	TestCode: **EPA Method 300.0: Anions**							
Client ID: **PBS**	Batch ID: **50094**	RunNo: **66125**							
Prep Date: **1/28/2020**	Analysis Date: **1/28/2020**	SeqNo: **2272099**	Units: **mg/Kg**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	ND	1.5								

Sample ID: **LCS-50094**	SampType: **lcs**	TestCode: **EPA Method 300.0: Anions**							
Client ID: **LCSS**	Batch ID: **50094**	RunNo: **66125**							
Prep Date: **1/28/2020**	Analysis Date: **1/28/2020**	SeqNo: **2272100**	Units: **mg/Kg**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	14	1.5	15.00	0	92.2	90	110			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2001A46**
30-Jan-20

Client: ENSOLUM
Project: Lateral MB 18

Sample ID: **LCS-50085** SampType: **LCS** TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **LCSS** Batch ID: **50085** RunNo: **66119**
Prep Date: **1/28/2020** Analysis Date: **1/28/2020** SeqNo: **2271413** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	44	10	50.00	0	88.6	63.9	124			
Surr: DNOP	3.4		5.000		68.9	55.1	146			

Sample ID: **MB-50085** SampType: **MBLK** TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **PBS** Batch ID: **50085** RunNo: **66119**
Prep Date: **1/28/2020** Analysis Date: **1/28/2020** SeqNo: **2271415** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	ND	10								
Motor Oil Range Organics (MRO)	ND	50								
Surr: DNOP	8.1		10.00		81.0	55.1	146			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2001A46**
30-Jan-20

Client: ENSOLUM
Project: Lateral MB 18

Sample ID: **mb1** SampType: **MBLK** TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **PBS** Batch ID: **G66126** RunNo: **66126**
Prep Date: Analysis Date: **1/28/2020** SeqNo: **2271700** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	ND	5.0								
Surr: BFB	840		1000		83.7	66.6	105			

Sample ID: **2.5ug gro lcs** SampType: **LCS** TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **LCSS** Batch ID: **G66126** RunNo: **66126**
Prep Date: Analysis Date: **1/28/2020** SeqNo: **2271701** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	24	5.0	25.00	0	95.5	80	120			
Surr: BFB	990		1000		99.0	66.6	105			

Sample ID: **mb-50070** SampType: **MBLK** TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **PBS** Batch ID: **50070** RunNo: **66126**
Prep Date: **1/27/2020** Analysis Date: **1/28/2020** SeqNo: **2271722** Units: **%Rec**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: BFB	860		1000		85.8	66.6	105			

Sample ID: **lcs-50070** SampType: **LCS** TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **LCSS** Batch ID: **50070** RunNo: **66126**
Prep Date: **1/27/2020** Analysis Date: **1/28/2020** SeqNo: **2271723** Units: **%Rec**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: BFB	950		1000		95.4	66.6	105			

Sample ID: **mb-50099** SampType: **MBLK** TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **PBS** Batch ID: **50099** RunNo: **66150**
Prep Date: **1/28/2020** Analysis Date: **1/29/2020** SeqNo: **2272828** Units: **%Rec**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: BFB	720		1000		72.0	66.6	105			

Sample ID: **lcs-50099** SampType: **LCS** TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **LCSS** Batch ID: **50099** RunNo: **66150**
Prep Date: **1/28/2020** Analysis Date: **1/29/2020** SeqNo: **2272829** Units: **%Rec**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: BFB	850		1000		85.4	66.6	105			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2001A46**
30-Jan-20

Client: ENSOLUM
Project: Lateral MB 18

Sample ID: **mb1** SampType: **MBLK** TestCode: **EPA Method 8021B: Volatiles**
Client ID: **PBS** Batch ID: **B66126** RunNo: **66126**
Prep Date: Analysis Date: **1/28/2020** SeqNo: **2271734** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	0.025								
Toluene	ND	0.050								
Ethylbenzene	ND	0.050								
Xylenes, Total	ND	0.10								
Surr: 4-Bromofluorobenzene	0.94		1.000		93.6	80	120			

Sample ID: **100ng btex lcs** SampType: **LCS** TestCode: **EPA Method 8021B: Volatiles**
Client ID: **LCSS** Batch ID: **B66126** RunNo: **66126**
Prep Date: Analysis Date: **1/28/2020** SeqNo: **2271735** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.99	0.025	1.000	0	98.6	80	120			
Toluene	0.97	0.050	1.000	0	97.5	80	120			
Ethylbenzene	0.97	0.050	1.000	0	96.7	80	120			
Xylenes, Total	2.9	0.10	3.000	0	96.2	80	120			
Surr: 4-Bromofluorobenzene	1.0		1.000		103	80	120			

Sample ID: **mb-50070** SampType: **MBLK** TestCode: **EPA Method 8021B: Volatiles**
Client ID: **PBS** Batch ID: **50070** RunNo: **66126**
Prep Date: **1/27/2020** Analysis Date: **1/28/2020** SeqNo: **2271744** Units: **%Rec**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: 4-Bromofluorobenzene	0.97		1.000		97.4	80	120			

Sample ID: **LCS-50070** SampType: **LCS** TestCode: **EPA Method 8021B: Volatiles**
Client ID: **LCSS** Batch ID: **50070** RunNo: **66126**
Prep Date: **1/27/2020** Analysis Date: **1/28/2020** SeqNo: **2271745** Units: **%Rec**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: 4-Bromofluorobenzene	0.95		1.000		95.1	80	120			

Sample ID: **MB-50099** SampType: **MBLK** TestCode: **EPA Method 8021B: Volatiles**
Client ID: **PBS** Batch ID: **50099** RunNo: **66150**
Prep Date: **1/28/2020** Analysis Date: **1/29/2020** SeqNo: **2272873** Units: **%Rec**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: 4-Bromofluorobenzene	0.82		1.000		82.0	80	120			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2001A46**
30-Jan-20

Client: ENSOLUM
Project: Lateral MB 18

Sample ID: **LCS-50099** SampType: **LCS** TestCode: **EPA Method 8021B: Volatiles**
Client ID: **LCSS** Batch ID: **50099** RunNo: **66150**
Prep Date: **1/28/2020** Analysis Date: **1/29/2020** SeqNo: **2272874** Units: **%Rec**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: 4-Bromofluorobenzene	0.87		1.000		87.0	80	120			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

HALL ENVIRONMENTAL ANALYSIS LABORATORY

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

Sample Log-In Check List

Client Name: **ENSOLUM AZTEC** Work Order Number: **2001A46** RcptNo: **1**

Received By: **Leah Baca** **1/28/2020 8:00:00 AM** Leah Baca

Completed By: **Isaiah Ortiz** **1/28/2020 8:31:49 AM** I. Ortiz

Reviewed By: DAD 1/28/20

Chain of Custody

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

Log In

3. Was an attempt made to cool the samples? Yes ☑ No ☐ NA ☐
4. Were all samples received at a temperature of >0° C to 6.0°C Yes ☑ No ☐ NA ☐
5. Sample(s) in proper container(s)? Yes ☑ No ☐
6. Sufficient sample volume for indicated test(s)? Yes ☑ No ☐
7. Are samples (except VOA and ONG) properly preserved? Yes ☑ No ☐
8. Was preservative added to bottles? Yes ☐ No ☑ NA ☐
9. Received at least 1 vial with headspace <1/4" for AQ VOA? Yes ☐ No ☐ NA ☑
10. Were any sample containers received broken? Yes ☐ No ☑
11. Does paperwork match bottle labels? (Note discrepancies on chain of custody) Yes ☑ No ☐
12. Are matrices correctly identified on Chain of Custody? Yes ☑ No ☐
13. Is it clear what analyses were requested? Yes ☑ No ☐
14. Were all holding times able to be met? (If no, notify customer for authorization.) Yes ☑ No ☐

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

Adjusted? _____

Checked by: JR 1/28/20

Special Handling (if applicable)

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

Person Notified: _____ Date: _____

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

Regarding: _____

Client Instructions: _____

16. Additional remarks:

17. **Cooler Information**

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	1.9	Good	Yes			

Chain-of-Custody Record

Client: Ensolum, LLC

Mailing Address: 606 S. Rio Grande Suite A
Aztec, NM 87410

Phone #:

email or Fax#: Ksummers@ensolum.com

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

Accreditation: ☐ Az Compliance
☐ NELAC ☐ Other

☐ EDD (Type)

Turn-Around Time: Same Day
☐ Standard ☒ Rush 100%

Project Name: Lateral MB-18

Project #: see notes

Project Manager: KSummers

Sampler: RDeechilly / Landon Daniell

On Ice: ☒ Yes ☐ No

# of Coolers: 1

Cooler Temp (including CF): 1.9-0=1.9°

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

Analysis Request

Date	Time	Matrix	Sample Name	Container Type and #	Preservative Type	HEAL No. 2001446	BTEX / ~~MTBE~~ / TMB's (8021)	TPH:8015D(GRO / DRO / MRO)	8081 Pesticides/8082 PCB's	EDB (Method 504.1)	PAHs by 8310 or 8270SIMS	RCRA 8 Metals	Cl, F, Br, NO_3, NO_2, PO_4, SO_4	8260 (VOA)	8270 (Semi-VOA)	Total Coliform (Present/Absent)	Chlorides
1/27/20	1545	S	SP-1	1x4oz Jar	cool	-001	X	X									X
1/27/20	1550	S	SP-2	1x4oz Jar	cool	-002	X	X									X
1/27/20	1555	S	SP-3	1x4oz Jar	cool	-003	X	X									X

Date:	Time:	Relinquished by:	Received by:	Via:	Date	Time
1/27/20	1804				1/27/20	1804
1/27/20	1946			courier	1/28/20	8:00

Remarks: SAMEDAY
PM - Tom Long (EPROD)
Pay Key - RB21200

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

HALL ENVIRONMENTAL ANALYSIS LABORATORY

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

February 05, 2020

Kyle Summers
ENSOLUM
606 S. Rio Grande Suite A
Aztec, NM 87410
TEL: (903) 821-5603
FAX

RE: Lateral MB-18 OrderNo.: 2002051

Dear Kyle Summers:

Hall Environmental Analysis Laboratory received 8 sample(s) on 2/4/2020 for the analyses presented in the following report.

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

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

ADHS Cert #AZ0682 -- NMED-DWB Cert #NM9425 -- NMED-Micro Cert #NM0901

Sincerely,

Andy Freeman
Laboratory Manager
4901 Hawkins NE
Albuquerque, NM 87109

Analytical Report
Lab Order **2002051**
Date Reported: **2/5/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: ENSOLUM
Client Sample ID: S-9
Project: Lateral MB-18
Collection Date: 2/3/2020 12:15:00 PM
Lab ID: 2002051-001 **Matrix:** SOIL **Received Date:** 2/4/2020 7:58:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **CAS**	
Chloride	ND	60		mg/Kg	20	2/4/2020 11:02:33 AM	50242
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **CLP**	
Diesel Range Organics (DRO)	36	8.7		mg/Kg	1	2/4/2020 10:30:53 AM	50238
Motor Oil Range Organics (MRO)	87	43		mg/Kg	1	2/4/2020 10:30:53 AM	50238
Surr: DNOP	98.4	55.1-146		%Rec	1	2/4/2020 10:30:53 AM	50238
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **RAA**	
Gasoline Range Organics (GRO)	ND	3.5		mg/Kg	1	2/4/2020 11:30:55 AM	G66278
Surr: BFB	79.3	66.6-105		%Rec	1	2/4/2020 11:30:55 AM	G66278
EPA METHOD 8021B: VOLATILES						Analyst: **RAA**	
Benzene	ND	0.018		mg/Kg	1	2/4/2020 11:30:55 AM	B66278
Toluene	ND	0.035		mg/Kg	1	2/4/2020 11:30:55 AM	B66278
Ethylbenzene	ND	0.035		mg/Kg	1	2/4/2020 11:30:55 AM	B66278
Xylenes, Total	ND	0.071		mg/Kg	1	2/4/2020 11:30:55 AM	B66278
Surr: 4-Bromofluorobenzene	87.4	80-120		%Rec	1	2/4/2020 11:30:55 AM	B66278

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

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

Analytical Report
Lab Order **2002051**
Date Reported: **2/5/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: ENSOLUM
Client Sample ID: S-10
Project: Lateral MB-18
Collection Date: 2/3/2020 12:20:00 PM
Lab ID: 2002051-002 **Matrix:** SOIL **Received Date:** 2/4/2020 7:58:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **CAS**	
Chloride	ND	60		mg/Kg	20	2/4/2020 11:14:53 AM	50242
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **CLP**	
Diesel Range Organics (DRO)	15	9.5		mg/Kg	1	2/4/2020 10:39:56 AM	50238
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	2/4/2020 10:39:56 AM	50238
Surr: DNOP	96.7	55.1-146		%Rec	1	2/4/2020 10:39:56 AM	50238
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **RAA**	
Gasoline Range Organics (GRO)	ND	3.6		mg/Kg	1	2/4/2020 11:54:13 AM	G66278
Surr: BFB	80.6	66.6-105		%Rec	1	2/4/2020 11:54:13 AM	G66278
EPA METHOD 8021B: VOLATILES						Analyst: **RAA**	
Benzene	ND	0.018		mg/Kg	1	2/4/2020 11:54:13 AM	B66278
Toluene	ND	0.036		mg/Kg	1	2/4/2020 11:54:13 AM	B66278
Ethylbenzene	ND	0.036		mg/Kg	1	2/4/2020 11:54:13 AM	B66278
Xylenes, Total	ND	0.073		mg/Kg	1	2/4/2020 11:54:13 AM	B66278
Surr: 4-Bromofluorobenzene	89.8	80-120		%Rec	1	2/4/2020 11:54:13 AM	B66278

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

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

Analytical Report
Lab Order **2002051**
Date Reported: **2/5/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: ENSOLUM **Client Sample ID:** S-11
Project: Lateral MB-18 **Collection Date:** 2/3/2020 12:25:00 PM
Lab ID: 2002051-003 **Matrix:** SOIL **Received Date:** 2/4/2020 7:58:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **CAS**	
Chloride	ND	60		mg/Kg	20	2/4/2020 11:27:13 AM	50242
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **CLP**	
Diesel Range Organics (DRO)	11	9.2		mg/Kg	1	2/4/2020 10:49:01 AM	50238
Motor Oil Range Organics (MRO)	ND	46		mg/Kg	1	2/4/2020 10:49:01 AM	50238
Surr: DNOP	84.4	55.1-146		%Rec	1	2/4/2020 10:49:01 AM	50238
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **RAA**	
Gasoline Range Organics (GRO)	ND	3.7		mg/Kg	1	2/4/2020 12:17:31 PM	G66278
Surr: BFB	79.0	66.6-105		%Rec	1	2/4/2020 12:17:31 PM	G66278
EPA METHOD 8021B: VOLATILES						Analyst: **RAA**	
Benzene	ND	0.019		mg/Kg	1	2/4/2020 12:17:31 PM	B66278
Toluene	ND	0.037		mg/Kg	1	2/4/2020 12:17:31 PM	B66278
Ethylbenzene	ND	0.037		mg/Kg	1	2/4/2020 12:17:31 PM	B66278
Xylenes, Total	ND	0.075		mg/Kg	1	2/4/2020 12:17:31 PM	B66278
Surr: 4-Bromofluorobenzene	87.7	80-120		%Rec	1	2/4/2020 12:17:31 PM	B66278

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

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

Analytical Report
Lab Order **2002051**
Date Reported: **2/5/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: ENSOLUM
Client Sample ID: S-12
Project: Lateral MB-18
Collection Date: 2/3/2020 12:30:00 PM
Lab ID: 2002051-004 **Matrix:** SOIL **Received Date:** 2/4/2020 7:58:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **CAS**	
Chloride	ND	60		mg/Kg	20	2/4/2020 11:39:34 AM	50242
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **CLP**	
Diesel Range Organics (DRO)	ND	9.8		mg/Kg	1	2/4/2020 10:58:07 AM	50238
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	2/4/2020 10:58:07 AM	50238
Surr: DNOP	89.5	55.1-146		%Rec	1	2/4/2020 10:58:07 AM	50238
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **RAA**	
Gasoline Range Organics (GRO)	ND	4.0		mg/Kg	1	2/4/2020 12:40:51 PM	G66278
Surr: BFB	78.4	66.6-105		%Rec	1	2/4/2020 12:40:51 PM	G66278
EPA METHOD 8021B: VOLATILES						Analyst: **RAA**	
Benzene	ND	0.020		mg/Kg	1	2/4/2020 12:40:51 PM	B66278
Toluene	ND	0.040		mg/Kg	1	2/4/2020 12:40:51 PM	B66278
Ethylbenzene	ND	0.040		mg/Kg	1	2/4/2020 12:40:51 PM	B66278
Xylenes, Total	ND	0.081		mg/Kg	1	2/4/2020 12:40:51 PM	B66278
Surr: 4-Bromofluorobenzene	86.9	80-120		%Rec	1	2/4/2020 12:40:51 PM	B66278

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

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

Analytical Report
Lab Order **2002051**
Date Reported: **2/5/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: ENSOLUM
Client Sample ID: S-13
Project: Lateral MB-18
Collection Date: 2/3/2020 12:35:00 PM
Lab ID: 2002051-005 **Matrix:** SOIL **Received Date:** 2/4/2020 7:58:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **CAS**	
Chloride	ND	60		mg/Kg	20	2/4/2020 11:51:55 AM	50242
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **CLP**	
Diesel Range Organics (DRO)	ND	9.6		mg/Kg	1	2/4/2020 11:07:14 AM	50238
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	2/4/2020 11:07:14 AM	50238
Surr: DNOP	87.3	55.1-146		%Rec	1	2/4/2020 11:07:14 AM	50238
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **RAA**	
Gasoline Range Organics (GRO)	ND	3.7		mg/Kg	1	2/4/2020 1:04:17 PM	G66278
Surr: BFB	77.9	66.6-105		%Rec	1	2/4/2020 1:04:17 PM	G66278
EPA METHOD 8021B: VOLATILES						Analyst: **RAA**	
Benzene	ND	0.018		mg/Kg	1	2/4/2020 1:04:17 PM	B66278
Toluene	ND	0.037		mg/Kg	1	2/4/2020 1:04:17 PM	B66278
Ethylbenzene	ND	0.037		mg/Kg	1	2/4/2020 1:04:17 PM	B66278
Xylenes, Total	ND	0.074		mg/Kg	1	2/4/2020 1:04:17 PM	B66278
Surr: 4-Bromofluorobenzene	86.3	80-120		%Rec	1	2/4/2020 1:04:17 PM	B66278

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

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order **2002051**
Date Reported: **2/5/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: ENSOLUM
Client Sample ID: S-14
Project: Lateral MB-18
Collection Date: 2/3/2020 12:40:00 PM
Lab ID: 2002051-006 **Matrix:** SOIL **Received Date:** 2/4/2020 7:58:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **CAS**	
Chloride	ND	60		mg/Kg	20	2/4/2020 12:04:16 PM	50242
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **CLP**	
Diesel Range Organics (DRO)	ND	9.7		mg/Kg	1	2/4/2020 11:16:23 AM	50238
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	2/4/2020 11:16:23 AM	50238
Surr: DNOP	86.9	55.1-146		%Rec	1	2/4/2020 11:16:23 AM	50238
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **RAA**	
Gasoline Range Organics (GRO)	ND	4.2		mg/Kg	1	2/4/2020 1:27:45 PM	G66278
Surr: BFB	81.3	66.6-105		%Rec	1	2/4/2020 1:27:45 PM	G66278
EPA METHOD 8021B: VOLATILES						Analyst: **RAA**	
Benzene	ND	0.021		mg/Kg	1	2/4/2020 1:27:45 PM	B66278
Toluene	ND	0.042		mg/Kg	1	2/4/2020 1:27:45 PM	B66278
Ethylbenzene	ND	0.042		mg/Kg	1	2/4/2020 1:27:45 PM	B66278
Xylenes, Total	ND	0.083		mg/Kg	1	2/4/2020 1:27:45 PM	B66278
Surr: 4-Bromofluorobenzene	90.2	80-120		%Rec	1	2/4/2020 1:27:45 PM	B66278

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

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order **2002051**
Date Reported: **2/5/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: ENSOLUM **Client Sample ID:** S-15
Project: Lateral MB-18 **Collection Date:** 2/3/2020 12:45:00 PM
Lab ID: 2002051-007 **Matrix:** SOIL **Received Date:** 2/4/2020 7:58:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **CAS**	
Chloride	ND	60		mg/Kg	20	2/4/2020 12:16:37 PM	50242
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **CLP**	
Diesel Range Organics (DRO)	ND	9.4		mg/Kg	1	2/4/2020 11:25:30 AM	50238
Motor Oil Range Organics (MRO)	ND	47		mg/Kg	1	2/4/2020 11:25:30 AM	50238
Surr: DNOP	86.1	55.1-146		%Rec	1	2/4/2020 11:25:30 AM	50238
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **RAA**	
Gasoline Range Organics (GRO)	ND	3.9		mg/Kg	1	2/4/2020 1:51:03 PM	G66278
Surr: BFB	80.8	66.6-105		%Rec	1	2/4/2020 1:51:03 PM	G66278
EPA METHOD 8021B: VOLATILES						Analyst: **RAA**	
Benzene	ND	0.020		mg/Kg	1	2/4/2020 1:51:03 PM	B66278
Toluene	ND	0.039		mg/Kg	1	2/4/2020 1:51:03 PM	B66278
Ethylbenzene	ND	0.039		mg/Kg	1	2/4/2020 1:51:03 PM	B66278
Xylenes, Total	ND	0.078		mg/Kg	1	2/4/2020 1:51:03 PM	B66278
Surr: 4-Bromofluorobenzene	89.5	80-120		%Rec	1	2/4/2020 1:51:03 PM	B66278

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

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order **2002051**
Date Reported: **2/5/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: ENSOLUM
Client Sample ID: S-16
Project: Lateral MB-18
Collection Date: 2/3/2020 12:50:00 PM
Lab ID: 2002051-008 **Matrix:** SOIL **Received Date:** 2/4/2020 7:58:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **CAS**	
Chloride	ND	60		mg/Kg	20	2/4/2020 12:28:58 PM	50242
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **CLP**	
Diesel Range Organics (DRO)	11	9.1		mg/Kg	1	2/4/2020 11:34:39 AM	50238
Motor Oil Range Organics (MRO)	ND	46		mg/Kg	1	2/4/2020 11:34:39 AM	50238
Surr: DNOP	82.6	55.1-146		%Rec	1	2/4/2020 11:34:39 AM	50238
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **RAA**	
Gasoline Range Organics (GRO)	ND	3.7		mg/Kg	1	2/4/2020 2:14:25 PM	G66278
Surr: BFB	80.4	66.6-105		%Rec	1	2/4/2020 2:14:25 PM	G66278
EPA METHOD 8021B: VOLATILES						Analyst: **RAA**	
Benzene	ND	0.018		mg/Kg	1	2/4/2020 2:14:25 PM	B66278
Toluene	ND	0.037		mg/Kg	1	2/4/2020 2:14:25 PM	B66278
Ethylbenzene	ND	0.037		mg/Kg	1	2/4/2020 2:14:25 PM	B66278
Xylenes, Total	ND	0.073		mg/Kg	1	2/4/2020 2:14:25 PM	B66278
Surr: 4-Bromofluorobenzene	88.8	80-120		%Rec	1	2/4/2020 2:14:25 PM	B66278

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

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2002051**
05-Feb-20

Client: ENSOLUM
Project: Lateral MB-18

Sample ID: **MB-50242**	SampType: **mblk**	TestCode: **EPA Method 300.0: Anions**							
Client ID: **PBS**	Batch ID: **50242**	RunNo: **66289**							
Prep Date: **2/4/2020**	Analysis Date: **2/4/2020**	SeqNo: **2277916**	Units: **mg/Kg**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	ND	1.5								

Sample ID: **LCS-50242**	SampType: **lcs**	TestCode: **EPA Method 300.0: Anions**							
Client ID: **LCSS**	Batch ID: **50242**	RunNo: **66289**							
Prep Date: **2/4/2020**	Analysis Date: **2/4/2020**	SeqNo: **2277917**	Units: **mg/Kg**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	14	1.5	15.00	0	92.9	90	110			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2002051**
05-Feb-20

Client: ENSOLUM
Project: Lateral MB-18

Sample ID: **MB-50229** SampType: **MBLK** TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **PBS** Batch ID: **50229** RunNo: **66269**
Prep Date: **2/3/2020** Analysis Date: **2/4/2020** SeqNo: **2276519** Units: **%Rec**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: DNOP	12		10.00		115	55.1	146			

Sample ID: **LCS-50229** SampType: **LCS** TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **LCSS** Batch ID: **50229** RunNo: **66269**
Prep Date: **2/3/2020** Analysis Date: **2/4/2020** SeqNo: **2276520** Units: **%Rec**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: DNOP	5.3		5.000		106	55.1	146			

Sample ID: **MB-50238** SampType: **MBLK** TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **PBS** Batch ID: **50238** RunNo: **66269**
Prep Date: **2/4/2020** Analysis Date: **2/4/2020** SeqNo: **2276619** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	ND	10								
Motor Oil Range Organics (MRO)	ND	50								
Surr: DNOP	9.4		10.00		94.4	55.1	146			

Sample ID: **LCS-50238** SampType: **LCS** TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **LCSS** Batch ID: **50238** RunNo: **66269**
Prep Date: **2/4/2020** Analysis Date: **2/4/2020** SeqNo: **2276620** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	49	10	50.00	0	98.8	75.7	130			
Surr: DNOP	4.2		5.000		84.5	55.1	146			

Sample ID: **2002051-001AMSD** SampType: **MSD** TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **S-9** Batch ID: **50238** RunNo: **66269**
Prep Date: **2/4/2020** Analysis Date: **2/4/2020** SeqNo: **2277041** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	96	9.3	46.73	36.46	128	47.4	136	17.1	43.4	
Surr: DNOP	4.6		4.673		97.5	55.1	146	0	0	

Sample ID: **2002051-001AMS** SampType: **MS** TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **S-9** Batch ID: **50238** RunNo: **66269**
Prep Date: **2/4/2020** Analysis Date: **2/4/2020** SeqNo: **2277180** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	91	8.6	43.18	36.46	127	47.4	136			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2002051**
05-Feb-20

Client: ENSOLUM
Project: Lateral MB-18

Sample ID: **2002051-001AMS** SampType: **MS** TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **S-9** Batch ID: **50238** RunNo: **66269**
Prep Date: **2/4/2020** Analysis Date: **2/4/2020** SeqNo: **2277180** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: DNOP	4.5		4.318		103	55.1	146			

Sample ID: **MB-50216** SampType: **MBLK** TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **PBS** Batch ID: **50216** RunNo: **66269**
Prep Date: **2/3/2020** Analysis Date: **2/4/2020** SeqNo: **2277503** Units: **%Rec**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: DNOP	11		10.00		113	55.1	146			

Sample ID: **LCS-50216** SampType: **LCS** TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **LCSS** Batch ID: **50216** RunNo: **66269**
Prep Date: **2/3/2020** Analysis Date: **2/4/2020** SeqNo: **2277504** Units: **%Rec**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: DNOP	5.2		5.000		104	55.1	146			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2002051**
05-Feb-20

Client: ENSOLUM
Project: Lateral MB-18

Sample ID: **MB**	SampType: **MBLK**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **PBS**	Batch ID: **G66278**	RunNo: **66278**
Prep Date:	Analysis Date: **2/4/2020**	SeqNo: **2277193** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	ND	5.0								
Surr: BFB	880		1000		87.9	66.6	105			

Sample ID: **2.5ug gro lcs**	SampType: **LCS**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **LCSS**	Batch ID: **G66278**	RunNo: **66278**
Prep Date:	Analysis Date: **2/4/2020**	SeqNo: **2277194** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	23	5.0	25.00	0	93.6	80	120			
Surr: BFB	910		1000		91.2	66.6	105			

Sample ID: **2002051-001a ms**	SampType: **MS**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **S-9**	Batch ID: **G66278**	RunNo: **66278**
Prep Date:	Analysis Date: **2/4/2020**	SeqNo: **2277387** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	17	3.5	17.63	0	97.5	69.1	142			
Surr: BFB	710		705.2		100	66.6	105			

Sample ID: **2002051-001a msd**	SampType: **MSD**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **S-9**	Batch ID: **G66278**	RunNo: **66278**
Prep Date:	Analysis Date: **2/4/2020**	SeqNo: **2277388** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	17	3.5	17.63	0	96.5	69.1	142	1.03	20	
Surr: BFB	720		705.2		102	66.6	105	0	0	

Sample ID: **mb-50185**	SampType: **MBLK**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **PBS**	Batch ID: **50185**	RunNo: **66278**
Prep Date: **1/31/2020**	Analysis Date: **2/4/2020**	SeqNo: **2277391** Units: **%Rec**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: BFB	790		1000		79.4	66.6	105			

Sample ID: **lcs-50185**	SampType: **LCS**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **LCSS**	Batch ID: **50185**	RunNo: **66278**
Prep Date: **1/31/2020**	Analysis Date: **2/4/2020**	SeqNo: **2277393** Units: **%Rec**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: BFB	910		1000		91.2	66.6	105			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2002051**
05-Feb-20

Client: ENSOLUM
Project: Lateral MB-18

Sample ID: **mb-50219**	SampType: **MBLK**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **PBS**	Batch ID: **50219**	RunNo: **66278**
Prep Date: **2/3/2020**	Analysis Date: **2/5/2020**	SeqNo: **2277403** Units: **%Rec**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: BFB	750		1000		75.4	66.6	105			

Sample ID: **lcs-50219**	SampType: **LCS**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **LCSS**	Batch ID: **50219**	RunNo: **66278**
Prep Date: **2/3/2020**	Analysis Date: **2/4/2020**	SeqNo: **2277404** Units: **%Rec**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: BFB	850		1000		85.5	66.6	105			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2002051**
05-Feb-20

Client: ENSOLUM
Project: Lateral MB-18

Sample ID: **100ng btex lcs**	SampType: **LCS**	TestCode: **EPA Method 8021B: Volatiles**
Client ID: **LCSS**	Batch ID: **B66278**	RunNo: **66278**
Prep Date:	Analysis Date: **2/4/2020**	SeqNo: **2277195** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.93	0.025	1.000	0	93.3	80	120			
Toluene	0.96	0.050	1.000	0	95.5	80	120			
Ethylbenzene	0.96	0.050	1.000	0	95.6	80	120			
Xylenes, Total	2.9	0.10	3.000	0	96.6	80	120			
Surr: 4-Bromofluorobenzene	0.92		1.000		92.5	80	120			

Sample ID: **mb**	SampType: **MBLK**	TestCode: **EPA Method 8021B: Volatiles**
Client ID: **PBS**	Batch ID: **B66278**	RunNo: **66278**
Prep Date:	Analysis Date: **2/4/2020**	SeqNo: **2277203** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	0.025								
Toluene	ND	0.050								
Ethylbenzene	ND	0.050								
Xylenes, Total	ND	0.10								
Surr: 4-Bromofluorobenzene	0.98		1.000		98.4	80	120			

Sample ID: **2002051-002a ms**	SampType: **MS**	TestCode: **EPA Method 8021B: Volatiles**
Client ID: **S-10**	Batch ID: **B66278**	RunNo: **66278**
Prep Date:	Analysis Date: **2/4/2020**	SeqNo: **2277419** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.63	0.018	0.7278	0.01135	84.3	78.5	119			
Toluene	0.64	0.036	0.7278	0.01026	86.2	75.7	123			
Ethylbenzene	0.64	0.036	0.7278	0	88.6	74.3	126			
Xylenes, Total	2.0	0.073	2.183	0	90.0	72.9	130			
Surr: 4-Bromofluorobenzene	0.67		0.7278		92.6	80	120			

Sample ID: **2002051-002a msd**	SampType: **MSD**	TestCode: **EPA Method 8021B: Volatiles**
Client ID: **S-10**	Batch ID: **B66278**	RunNo: **66278**
Prep Date:	Analysis Date: **2/4/2020**	SeqNo: **2277420** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.64	0.018	0.7278	0.01135	86.1	78.5	119	2.09	20	
Toluene	0.64	0.036	0.7278	0.01026	87.1	75.7	123	1.02	20	
Ethylbenzene	0.65	0.036	0.7278	0	89.6	74.3	126	1.17	20	
Xylenes, Total	2.0	0.073	2.183	0	91.5	72.9	130	1.59	20	
Surr: 4-Bromofluorobenzene	0.70		0.7278		96.3	80	120	0	0	

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2002051**
05-Feb-20

Client: ENSOLUM
Project: Lateral MB-18

Sample ID: **mb-50185** SampType: **MBLK** TestCode: **EPA Method 8021B: Volatiles**
Client ID: **PBS** Batch ID: **50185** RunNo: **66278**
Prep Date: **1/31/2020** Analysis Date: **2/4/2020** SeqNo: **2277424** Units: **%Rec**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: 4-Bromofluorobenzene	0.87		1.000		86.5	80	120			

Sample ID: **lcs-50185** SampType: **LCS** TestCode: **EPA Method 8021B: Volatiles**
Client ID: **LCSS** Batch ID: **50185** RunNo: **66278**
Prep Date: **1/31/2020** Analysis Date: **2/4/2020** SeqNo: **2277425** Units: **%Rec**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: 4-Bromofluorobenzene	0.90		1.000		89.7	80	120			

Sample ID: **mb-50219** SampType: **MBLK** TestCode: **EPA Method 8021B: Volatiles**
Client ID: **PBS** Batch ID: **50219** RunNo: **66278**
Prep Date: **2/3/2020** Analysis Date: **2/5/2020** SeqNo: **2277435** Units: **%Rec**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: 4-Bromofluorobenzene	0.85		1.000		85.3	80	120			

Sample ID: **lcs-50219** SampType: **LCS** TestCode: **EPA Method 8021B: Volatiles**
Client ID: **LCSS** Batch ID: **50219** RunNo: **66278**
Prep Date: **2/3/2020** Analysis Date: **2/4/2020** SeqNo: **2277436** Units: **%Rec**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: 4-Bromofluorobenzene	0.92		1.000		91.9	80	120			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

HALL ENVIRONMENTAL ANALYSIS LABORATORY

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

Sample Log-In Check List

Client Name: ENSOLUM AZTEC Work Order Number: 2002051 RcptNo: 1

Received By: Desiree Dominguez 2/4/2020 7:58:00 AM

Completed By: Anne Thorne 2/4/2020 8:08:24 AM

Reviewed By: DAD 2/4/20

Chain of Custody

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

Log In

3. Was an attempt made to cool the samples? Yes ☑ No ☐ NA ☐
4. Were all samples received at a temperature of >0° C to 6.0°C Yes ☑ No ☐ NA ☐
5. Sample(s) in proper container(s)? Yes ☑ No ☐
6. Sufficient sample volume for indicated test(s)? Yes ☑ No ☐
7. Are samples (except VOA and ONG) properly preserved? Yes ☑ No ☐
8. Was preservative added to bottles? Yes ☐ No ☑ NA ☐
9. Received at least 1 vial with headspace <1/4" for AQ VOA? Yes ☐ No ☐ NA ☑
10. Were any sample containers received broken? Yes ☐ No ☑
11. Does paperwork match bottle labels? (Note discrepancies on chain of custody) Yes ☑ No ☐
12. Are matrices correctly identified on Chain of Custody? Yes ☑ No ☐
13. Is it clear what analyses were requested? Yes ☑ No ☐
14. Were all holding times able to be met? (If no, notify customer for authorization.) Yes ☑ No ☐

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

Adjusted? _____

Checked by: JR 2/4/20

Special Handling (if applicable)

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

Person Notified: _____ Date _____

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

Regarding: _____

Client Instructions: _____

16. Additional remarks:

CUSTODY SEALS INTACT ON SOIL JARS/at 2/4/20

17. **Cooler Information**

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	2.2	Good	Yes			

Chain-of-Custody Record

Client: Ensolum, LLC

Mailing Address: 6606 S Rio Grande Suite 4
Aztec, NM 87410

Phone #:

email or Fax#: KSummers@ensolum.com

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

Accreditation: ☐ Az Compliance
☐ NELAC ☐ Other

☐ EDD (Type)

Turn-Around Time: Same Day
☐ Standard ☒ Rush 100%

Project Name: Lateral MB-18

Project #: see notes

Project Manager: KSummers

Sampler: RDeechilly
On Ice: ☒ Yes ☐ No
# of Coolers: 1
Cooler Temp(including CF): 2.5-0.3=2.2 (°C)

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

Analysis Request

Date	Time	Matrix	Sample Name	Container Type and #	Preservative Type	HEAL No. 2002051	BTEX / ~~MTBE~~ / ~~TMB's~~ (8021)	TPH:8015D(GRO / DRO / MRO)	8081 Pesticides/8082 PCB's	EDB (Method 504.1)	PAHs by 8310 or 8270SIMS	RCRA 8 Metals	Cl, F, Br, NO_3, NO_2, PO_4, SO_4	8260 (VOA)	8270 (Semi-VOA)	Total Coliform (Present/Absent)	Chlorides
2/3/20	1215	S	S-9	1x4oz Jar	cool	001	X	X									X
2/3/20	1220	S	S-10	1x4oz Jar	cool	002	X	X									X
2/3/20	1225	S	S-11	1x4oz Jar	cool	003	X	X									X
2/3/20	1230	S	S-12	1x4oz Jar	cool	004	X	X									X
2/3/20	1235	S	S-13	1x4oz Jar	cool	005	X	X									X
2/3/20	1240	S	S-14	1x4oz Jar	cool	006	X	X									X
2/3/20	1245	S	S-15	1x4oz Jar	cool	007	X	X									X
2/3/20	1250	S	S-16	1x4oz Jar	cool	008	X	X									X

Date	Time	Relinquished by:	Received by:	Via:	Date	Time
2/3/20	1740				2/3/20	1740
2/3/20	1840			courier	2/4/20	7:58

Remarks: SAMEDAY
PM - Tom Long (EPROD)
Pay Key - RB21200

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

HALL ENVIRONMENTAL ANALYSIS LABORATORY

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

February 07, 2020

Kyle Summers
ENSOLUM
606 S. Rio Grande Suite A
Aztec, NM 87410
TEL: (903) 821-5603
FAX

RE: Lateral MB-18 OrderNo.: 2002204

Dear Kyle Summers:

Hall Environmental Analysis Laboratory received 1 sample(s) on 2/6/2020 for the analyses presented in the following report.

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

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

ADHS Cert #AZ0682 -- NMED-DWB Cert #NM9425 -- NMED-Micro Cert #NM0901

Sincerely,

Andy Freeman
Laboratory Manager
4901 Hawkins NE
Albuquerque, NM 87109

Analytical Report
Lab Order **2002204**
Date Reported: **2/7/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: ENSOLUM **Client Sample ID:** S-17
Project: Lateral MB-18 **Collection Date:** 2/5/2020 10:40:00 AM
Lab ID: 2002204-001 **Matrix:** MEOH (SOIL) **Received Date:** 2/6/2020 8:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **CJS**	
Chloride	ND	60		mg/Kg	20	2/6/2020 11:43:44 AM	50303
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **CLP**	
Diesel Range Organics (DRO)	ND	9.1		mg/Kg	1	2/6/2020 9:39:40 AM	50298
Motor Oil Range Organics (MRO)	ND	46		mg/Kg	1	2/6/2020 9:39:40 AM	50298
Surr: DNOP	83.8	55.1-146		%Rec	1	2/6/2020 9:39:40 AM	50298
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **RAA**	
Gasoline Range Organics (GRO)	ND	4.0		mg/Kg	1	2/6/2020 12:36:35 PM	50277
Surr: BFB	81.6	66.6-105		%Rec	1	2/6/2020 12:36:35 PM	50277
EPA METHOD 8021B: VOLATILES						Analyst: **RAA**	
Benzene	ND	0.020		mg/Kg	1	2/6/2020 12:36:35 PM	50277
Toluene	ND	0.040		mg/Kg	1	2/6/2020 12:36:35 PM	50277
Ethylbenzene	ND	0.040		mg/Kg	1	2/6/2020 12:36:35 PM	50277
Xylenes, Total	ND	0.080		mg/Kg	1	2/6/2020 12:36:35 PM	50277
Surr: 4-Bromofluorobenzene	89.1	80-120		%Rec	1	2/6/2020 12:36:35 PM	50277

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

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2002204**

07-Feb-20

Client: ENSOLUM

Project: Lateral MB-18

Sample ID: **MB-50303** SampType: **mblk** TestCode: **EPA Method 300.0: Anions**

Client ID: **PBS** Batch ID: **50303** RunNo: **66361**

Prep Date: **2/6/2020** Analysis Date: **2/6/2020** SeqNo: **2280789** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	ND	1.5								

Sample ID: **LCS-50303** SampType: **lcs** TestCode: **EPA Method 300.0: Anions**

Client ID: **LCSS** Batch ID: **50303** RunNo: **66361**

Prep Date: **2/6/2020** Analysis Date: **2/6/2020** SeqNo: **2280790** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	14	1.5	15.00	0	92.2	90	110			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2002204**
07-Feb-20

Client: ENSOLUM
Project: Lateral MB-18

Sample ID: **2002204-001AMS** SampType: **MS** TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **S-17** Batch ID: **50298** RunNo: **66343**
Prep Date: **2/6/2020** Analysis Date: **2/6/2020** SeqNo: **2278820** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	44	9.7	48.45	5.602	79.4	47.4	136			
Surr: DNOP	3.9		4.845		79.7	55.1	146			

Sample ID: **MB-50298** SampType: **MBLK** TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **PBS** Batch ID: **50298** RunNo: **66343**
Prep Date: **2/6/2020** Analysis Date: **2/6/2020** SeqNo: **2278822** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	ND	10								
Motor Oil Range Organics (MRO)	ND	50								
Surr: DNOP	8.6		10.00		86.4	55.1	146			

Sample ID: **LCS-50298** SampType: **LCS** TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **LCSS** Batch ID: **50298** RunNo: **66343**
Prep Date: **2/6/2020** Analysis Date: **2/6/2020** SeqNo: **2278823** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	43	10	50.00	0	85.4	70	130			
Surr: DNOP	3.8		5.000		76.3	55.1	146			

Sample ID: **2002204-001AMSD** SampType: **MSD** TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **S-17** Batch ID: **50298** RunNo: **66343**
Prep Date: **2/6/2020** Analysis Date: **2/6/2020** SeqNo: **2278865** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	44	9.2	45.87	5.602	84.2	47.4	136	0.419	43.4	
Surr: DNOP	4.0		4.587		86.6	55.1	146	0	0	

Sample ID: **MB-50290** SampType: **MBLK** TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **PBS** Batch ID: **50290** RunNo: **66343**
Prep Date: **2/5/2020** Analysis Date: **2/6/2020** SeqNo: **2280226** Units: **%Rec**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: DNOP	9.5		10.00		94.9	55.1	146			

Sample ID: **LCS-50290** SampType: **LCS** TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **LCSS** Batch ID: **50290** RunNo: **66343**
Prep Date: **2/5/2020** Analysis Date: **2/6/2020** SeqNo: **2280227** Units: **%Rec**

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

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2002204**
07-Feb-20

Client: ENSOLUM
Project: Lateral MB-18

Sample ID: **LCS-50290** SampType: **LCS** TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **LCSS** Batch ID: **50290** RunNo: **66343**
Prep Date: **2/5/2020** Analysis Date: **2/6/2020** SeqNo: **2280227** Units: **%Rec**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: DNOP	4.2		5.000		83.5	55.1	146			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2002204**

07-Feb-20

Client: ENSOLUM

Project: Lateral MB-18

Sample ID: **mb-50277** SampType: **MBLK** TestCode: **EPA Method 8015D: Gasoline Range**

Client ID: **PBS** Batch ID: **50277** RunNo: **66356**

Prep Date: **2/5/2020** Analysis Date: **2/6/2020** SeqNo: **2280539** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	ND	5.0								
Surr: BFB	820		1000		82.2	66.6	105			

Sample ID: **lcs-50277** SampType: **LCS** TestCode: **EPA Method 8015D: Gasoline Range**

Client ID: **LCSS** Batch ID: **50277** RunNo: **66356**

Prep Date: **2/5/2020** Analysis Date: **2/6/2020** SeqNo: **2280540** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	22	5.0	25.00	0	87.6	80	120			
Surr: BFB	950		1000		95.3	66.6	105			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2002204**

07-Feb-20

Client: ENSOLUM

Project: Lateral MB-18

Sample ID: **mb-50277** SampType: **MBLK** TestCode: **EPA Method 8021B: Volatiles**

Client ID: **PBS** Batch ID: **50277** RunNo: **66356**

Prep Date: **2/5/2020** Analysis Date: **2/6/2020** SeqNo: **2280572** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	0.025								
Toluene	ND	0.050								
Ethylbenzene	ND	0.050								
Xylenes, Total	ND	0.10								
Surr: 4-Bromofluorobenzene	0.90		1.000		90.4	80	120			

Sample ID: **LCS-50277** SampType: **LCS** TestCode: **EPA Method 8021B: Volatiles**

Client ID: **LCSS** Batch ID: **50277** RunNo: **66356**

Prep Date: **2/5/2020** Analysis Date: **2/6/2020** SeqNo: **2280573** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.90	0.025	1.000	0	90.5	80	120			
Toluene	0.92	0.050	1.000	0	92.2	80	120			
Ethylbenzene	0.94	0.050	1.000	0	93.8	80	120			
Xylenes, Total	2.8	0.10	3.000	0	94.6	80	120			
Surr: 4-Bromofluorobenzene	0.92		1.000		91.7	80	120			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

HALL ENVIRONMENTAL ANALYSIS LABORATORY

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

Sample Log-In Check List

Client Name: **ENSOLUM AZTEC** Work Order Number: **2002204** RcptNo: 1

Received By: **Leah Baca** **2/6/2020 8:00:00 AM** Leah SBaca

Completed By: **Isaiah Ortiz** **2/6/2020 8:18:38 AM** I-Ort

Reviewed By: ENM 2/6/20

Chain of Custody

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

Log In

3. Was an attempt made to cool the samples? Yes ☑ No ☐ NA ☐
4. Were all samples received at a temperature of >0° C to 6.0°C Yes ☑ No ☐ NA ☐
5. Sample(s) in proper container(s)? Yes ☑ No ☐
6. Sufficient sample volume for indicated test(s)? Yes ☑ No ☐
7. Are samples (except VOA and ONG) properly preserved? Yes ☑ No ☐
8. Was preservative added to bottles? Yes ☐ No ☑ NA ☐
9. Received at least 1 vial with headspace <1/4" for AQ VOA? Yes ☐ No ☐ NA ☑
10. Were any sample containers received broken? Yes ☐ No ☑
11. Does paperwork match bottle labels? (Note discrepancies on chain of custody) Yes ☑ No ☐
12. Are matrices correctly identified on Chain of Custody? Yes ☑ No ☐
13. Is it clear what analyses were requested? Yes ☑ No ☐
14. Were all holding times able to be met? (If no, notify customer for authorization.) Yes ☑ No ☐

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

Adjusted? _____

Checked by: JR 2/6/20

Special Handling (if applicable)

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

Person Notified: _____ Date: _____

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

Regarding: _____

Client Instructions: _____

16. Additional remarks:

17. **Cooler Information**

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	0.0	Good	Yes			

Chain-of-Custody Record

Client: Ensolum, LLC

Mailing Address: 6016 S. Rio Grande Suite A
Aztec, NM 87410

Phone #:

email or Fax#: Ksummers@ensolum.com

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

Accreditation: ☐ Az Compliance
☐ NELAC ☐ Other

☐ EDD (Type)

Turn-Around Time: SAME DAY
☐ Standard ☒ Rush 100%

Project Name: Lateral MB-18

Project #: See notes

Project Manager: KSummers

Sampler: RDeChilly
On Ice: ☐ Yes ☑ No
# of Coolers: 1
Cooler Temp(including CF): 0.3-0.3=0.0

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

Date	Time	Matrix	Sample Name	Container Type and #	Preservative Type	HEAL No. 2007204	BTEX / ~~MTBE / TMB's~~ (8021)	TPH:8015D(GRO / DRO / MRO)	8081 Pesticides/8082 PCB's	EDB (Method 504.1)	PAHs by 8310 or 8270SIMS	RCRA 8 Metals	Cl, F, Br, NO_3, NO_2, PO_4, SO_4	8260 (VOA)	8270 (Semi-VOA)	Total Coliform (Present/Absent)	Chlorides
2/5/20	1040	S	S-17	1x4oz Jar	cool	-001	X	X									X

Analysis Request

Date:	Time:	Relinquished by:	Received by:	Via:	Date	Time
2/5/20	1537		Master Waeta		2/5/20	1537
2/5/20	1750	Master Waeta		carrier	2/6/20	8:00

Remarks: SAME DAY
PM - Tom Long (EPROD)
Pay Key - RB21200
Non AFE - N45816

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

ENSOLUM

APPENDIX G

Regulatory Correspondence

From: Long, Thomas
To: "Smith, Cory, EMNRD (Cory.Smith@state.nm.us)"; "njaramillo@slo.state.nm.us"
Cc: Stone, Brian
Subject: FW: Lateral MB-18 UL F Section 20 T31N R8W; 36.886029, -107.701832
Date: Friday, January 31, 2020 9:12:00 AM

Cory/Nick,

This email is to notify you that Enterprise will be collecting soil samples for laboratory at the Latera MB-18 excavation on Monday, February 3, 2020 at 9:00 a.m. If you have any questions, please call or email.

Thomas J. Long
Senior Environmental Scientist
Enterprise Products Company
614 Reilly Ave.
Farmington, New Mexico 87401
505-599-2286 (office)
505-215-4727 (Cell)
tjlong@eprod.com

Enterprise Products

From: Long, Thomas
Sent: Tuesday, January 28, 2020 3:18 PM
To: 'Smith, Cory, EMNRD (Cory.Smith@state.nm.us)' <Cory.Smith@state.nm.us>; 'njaramillo@slo.state.nm.us' <njaramillo@slo.state.nm.us>
Cc: Stone, Brian <bmstone@eprod.com>
Subject: FW: Lateral MB-18 UL F Section 20 T31N R8W; 36.886029, -107.701832

Cory/Nick,

Please find the attached site sketch and lab report for the Lateral MB-18 excavation. Enterprise has determined this release reportable per NMOCD regulation due the volume of impacted subsurface soil. Enterprise will submit C-141 documentation and keep you informed as to when sampling will be scheduled again. If you have any questions, please call or email.

Thomas J. Long
Senior Environmental Scientist
Enterprise Products Company
614 Reilly Ave.
Farmington, New Mexico 87401
505-599-2286 (office)
505-215-4727 (Cell)
tjlong@eprod.com

From: Long, Thomas
Sent: Wednesday, January 15, 2020 7:53 AM
To: 'Smith, Cory, EMNRD (Cory.Smith@state.nm.us)' <Cory.Smith@state.nm.us>; 'njaramillo@slo.state.nm.us' <njaramillo@slo.state.nm.us>
Cc: Stone, Brian <bmstone@eprod.com>
Subject: Lateral MB-18 UL F Section 20 T31N R8W; 36.886029, -107.701832

Cory/Nick,

This email is a courtesy notification that Enterprise had a release of natural gas on the Lateral MB-18 pipeline yesterday. No washes were affected. No liquids observed on the ground surface. The release was discovered during pipeline ROW patrols. Enterprise has not yet determined this release reported per NMOCD regulation. The release is located at UL F Section 20 T31N R8W; 36.886029, -107.701832. I will keep you informed on the reporting status and remediation efforts if any. If you have any questions, please call or email.

Thomas J. Long
Senior Environmental Scientist
Enterprise Products Company
614 Reilly Ave.
Farmington, New Mexico 87401
505-599-2286 (office)
505-215-4727 (Cell)
tjlong@eprod.com

District I
1625 N. French Dr., Hobbs, NM 88240
Phone:(575) 393-6161 Fax:(575) 393-0720
District II
811 S. First St., Artesia, NM 88210
Phone:(575) 748-1283 Fax:(575) 748-9720
District III
1000 Rio Brazos Rd., Aztec, NM 87410
Phone:(505) 334-6178 Fax:(505) 334-6170
District IV
1220 S. St Francis Dr., Santa Fe, NM 87505
Phone:(505) 476-3470 Fax:(505) 476-3462

State of New Mexico
Energy, Minerals and Natural Resources
Oil Conservation Division
1220 S. St Francis Dr.
Santa Fe, NM 87505

CONDITIONS

Action 9816

CONDITIONS

Operator: Enterprise Field Services, LLC PO Box 4324 Houston, TX 77210	OGRID: 241602
	Action Number: 9816
	Action Type: [C-141] Release Corrective Action (C-141)

CONDITIONS

Created By	Condition	Condition Date
nvelez	None	4/4/2022