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)*: **NCS1932353377**
Contact mailing address: **614 Reilly Ave, Farmington, NM 87401**	

Location of Release Source

Latitude **36.329902** Longitude **-107.326563** *(NAD 83 in decimal degrees to 5 decimal places)*

Site Name **Lateral 2C-24**	Site Type **Natural Gas Gathering Pipeline**
Date Release Discovered: **10/25/2019**	Serial Number *(if applicable)*: **NA**

Unit Letter	Section	Township	Range	County
A	**11**	**24N**	**5W**	**Rio Arriba**

Surface Owner: ☐ State ☐ Federal ☒ Tribal ☐ Private (*Name*: **Jicarilla Apache Tribe**)

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): **5-7 bbls**	Volume Recovered (bbls): **None**
☒ Natural Gas	Volume Released (Mcf): **6.2 MCF**	Volume Recovered (Mcf): **None**
☐ Other (describe)	Volume/Weight Released (provide units):	Volume/Weight Recovered (provide units)

Cause of Release: On October 25, 2019, Enterprise discovered a release of natural gas and condensate on the Lateral 2C-24 pipeline. The release was located in an ephemeral wash (blue line on a USGS Topo). An area of approximately 2 feet be 2 feet was impacted by the release fluids. The pipeline was isolated, depressurized, locked out and tagged out. On November 7, 2019, Enterprise completed the repairs and remediation. The final excavation dimensions measured approximately 30 feet long by 12 feet wide by approximately 12 feet deep. Approximately 184 cubic yards of hydrocarbon impacted soil were 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.

Form C-141
Page 2

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: 7/8/2020

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

OCD Only

Received by: OCD Date: 7/8/2020

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: Cory Rinehart Date: 1/26/2021

Printed Name: Cory Title: Environmental Specialist

ENSOLUM

CLOSURE REPORT

Property:

Lateral 2C-24 Pipeline Release
NE ¼, S11 T24N R5W
Rio Arriba County, New Mexico

February 21, 2020
Ensolum Project No. 05A1226078

Prepared for:

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

Prepared by:

Chad D'Aponti
Field Environmental Scientist

Ranee Deechilly
Environmental Scientist

Kyle Summers, CPG
Sr. Project Manager

Table of Contents

LIST OF APPENDICES

ENSOLUM

CLOSURE REPORT

Lateral 2C-24 Pipeline Release
NE ¼, S11 T24N R5W
Rio Arriba County, New Mexico

Ensolum Project No. 05A1226078

1.0 INTRODUCTION

1.1 Site Description & Background

Operator:	Enterprise Field Services, LLC / Enterprise Products Operating LLC (Enterprise)
Site Name:	Lateral 2C-24 Pipeline Release (Site)
Location:	36.329902° North, 107.326563° West Northeast (NE) ¼ of Section 11, Township 24 North, Range 5 West Rio Arriba County, New Mexico
Property:	Jicarilla Apache Nation
Regulatory:	Jicarilla Apache Nation Environmental Protection Office (JANEPO) and New Mexico Energy, Minerals and Natural Resources Department (EMNRD) Oil Conservation Division (OCD)

On October 25, 2019, a release of natural gas was identified on the Lateral 2C-24 pipeline by Enterprise personnel. Enterprise subsequently isolated and locked the pipeline out of service. On November 4, 2019, Enterprise initiated response activities to facilitate pipeline repairs and remediate 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 Jicarilla Apache Nation Environmental Protection Office (JANEPO) and New Mexico EMNRD OCD. In absence of published JANEPO regulatory guidance, Ensolum, LLC (Ensolum) deferred to the New Mexico Administrative Code (NMAC) 19.15.29 *Releases,* as guidance, which establishes investigation and abatement action requirements for oil and gas release sites subject to reporting and/or corrective action. 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.

- No water wells were identified within a one-half mile radius of the Site on the OSE Water Rights Reporting System (WRRS) database.

- No cathodic-protection wells were identified within one-half mile of the Site.
- The Site is located within 300 feet of a New Mexico ENMRD OCD-defined continuously flowing watercourse or significant watercourse. An unnamed ephemeral wash is located adjacent to the excavation and a stock pond is located approximately 43 feet north of the Site excavation.
- The Site is not located within 200 feet of a lakebed, sinkhole or playa lake. However.
- 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 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 November 4, 2019, Enterprise initiated response activities to facilitate pipeline repairs and remediate petroleum hydrocarbon impact resulting from the release. During the remediation and corrective action activities, Sierra Oilfield Services, Inc. (Sierra) provided heavy equipment and labor support, while Ensolum provided environmental consulting support.

The final excavation measured approximately 30 feet long and 12 feet wide at the maximum extents. The floor of the excavation measured approximately 12 feet below ground surface (bgs) at the maximum extent.

The lithology encountered during the completion of remediation activities consisted primarily of dry unconsolidated silty sandy clay.

A total of approximately 184 cubic yards (yd^3) of petroleum hydrocarbon affected soils were transported to Envirotech landfarm near Hilltop, New Mexico for disposal/remediation. The executed C-138 solid waste acceptance form is provided in **Appendix B**. The excavation was backfilled with imported fill and 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 C**.

4.0 SOIL SAMPLING PROGRAM

Ensolum field screened 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 eight (8) composite soil samples (S-1 through S-8), comprised of five (5) aliquots each, from the remediation area for laboratory analysis. Hand tools and an excavator, operated by Sierra, was utilized to obtain fresh aliquots from the excavation. A JANEPO representative was on site to witness the sampling event.

First Sampling Event
Aliquots for composite soil samples S-1 (0'-12'), S-3 (0 to 12'), S-4 (0 to 12'), S-6 (0 to 8'), S-7 (0 to 8'), and S-8 (0 to 8') were collected from the walls of the excavation. Aliquots for composite soil samples S-2 (12') and S-5 (8') were collected from the floor of the excavation.

Soil samples were collected and placed in laboratory prepared glassware, labeled/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.

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

6.0 DATA EVALUATION

Ensolum compared the BTEX, TPH, and chloride laboratory analytical results associated with the composite soil samples (S-1 through S-8) to the applicable New Mexico EMNRD OCD closure criteria. In the event that the laboratory did not quantify a result for BTEX or chloride, Ensolum compared the laboratory supplied practical quantitation limits (PQLs) or reporting limits (RLs) to the New Mexico EMNRD OCD closure criteria. Due to the high PQLs/RLs associated with the TPH MRO range when using EPA SW-846

Method #8015, Ensolum only compared the quantified results to the New Mexico EMNRD OCD closure criteria.

- The laboratory analytical results for the composite soil samples indicate total benzene is not present in 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 indicate total BTEX is not present in 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 result for composite soil sample S-3 indicates a combined TPH GRO/DRO/MRO concentration of 32 mg/kg, which does not exceed the New Mexico EMNRD OCD closure criteria of 100 mg/kg. The laboratory analytical results for the remaining composite soil samples indicate combined TPH GRO/DRO/MRO is not present in 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 results for composite soil samples S-5 and S-7 indicate chloride concentrations of 83 mg/kg and 68 mg/kg, respectively, which do not exceed the New Mexico EMNRD OCD closure criteria of 600 mg/kg for chlorides. The laboratory analytical results for the remaining composite soil samples indicate chloride is not present in concentrations greater than laboratory PQLs/RLs, which are less than the New Mexico EMNRD OCD closure criteria of 600 mg/kg for chlorides.

Laboratory analytical results are summarized in **Table 1** (**Appendix D**).

7.0 RECLAMATION AND REVEGETATION

The excavation was backfilled with native imported fill and then contoured to the surrounding grade. Enterprise will re-seed the Site with a Jicarilla Apache approved seeding mixture at the beginning of the next favorable growing season.

8.0 FINDINGS AND RECOMMENDATION

On October 25, 2019, a release of natural gas was identified at the Lateral 2C-24 pipeline by Enterprise personnel. Enterprise subsequently isolated and locked the pipeline out of service. On November 4, 2019, Enterprise initiated response activities to repair the pipeline and remediate petroleum hydrocarbon impact resulting from the release.

- The primary objective of the closure activities was to reduce COC concentrations in the on-Site soils to below the applicable New Mexico EMNRD OCD closure criteria using the New Mexico EMNRD OCD's NMAC 19.15.29 *Releases* as guidance.
- A total of eight (8) composite soil samples were collected from the walls and floor of the final excavation. Based on soil laboratory analytical results, soils remaining in place do not exhibit COC concentrations above the New Mexico EMNRD OCD closure criteria.
- A total of approximately 184 yd^3 of petroleum hydrocarbon affected soils were transported to Envirotech landfarm near Hilltop, New Mexico for disposal/remediation. The excavation was backfilled with imported fill and 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 recommendations are based solely upon data available to Ensolum at the time of these services.

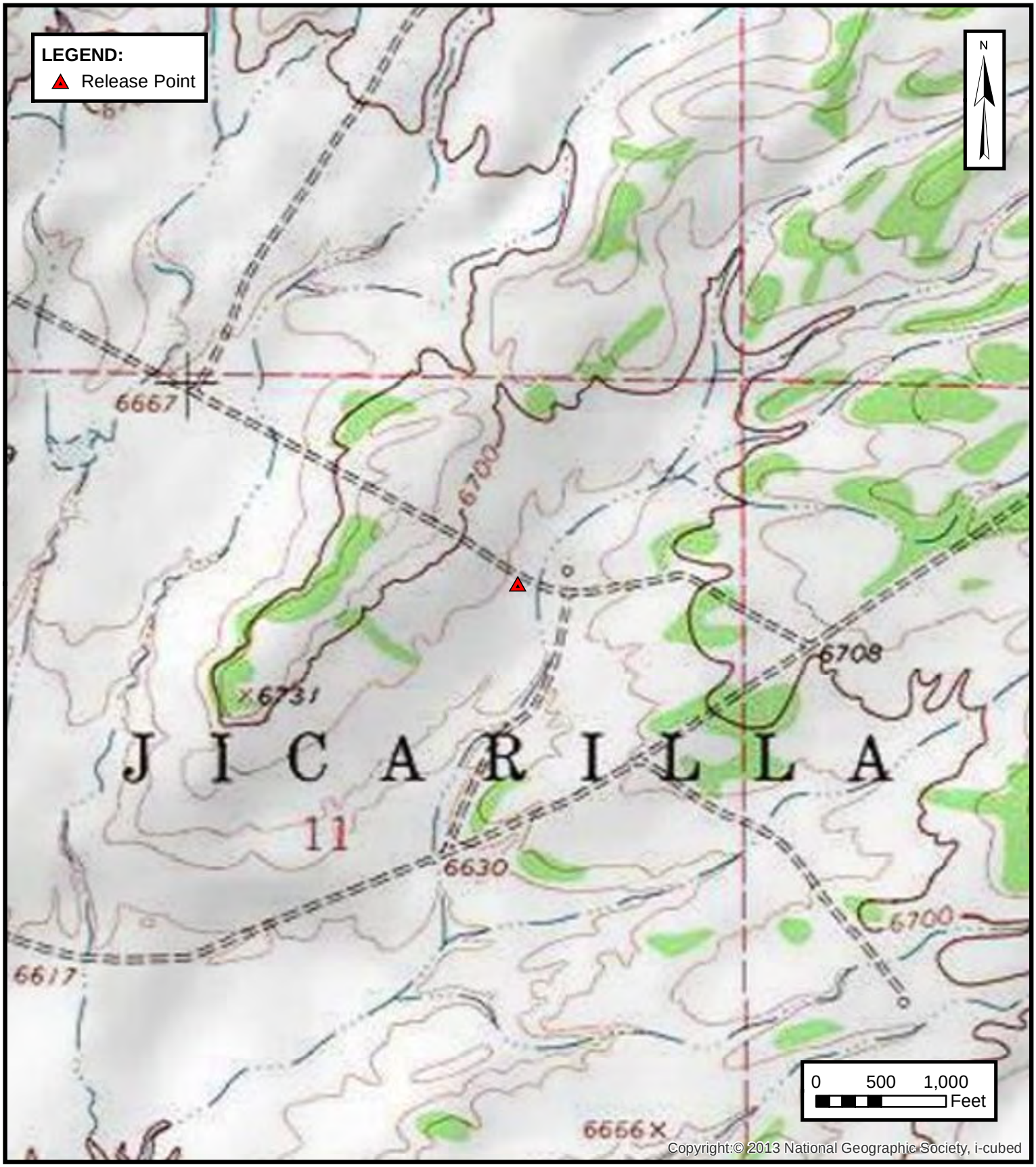
9.3 Reliance

This report has been prepared for the exclusive use of Enterprise Products Operating LLC, 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 Enterprise Products Operating LLC 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 Closure 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



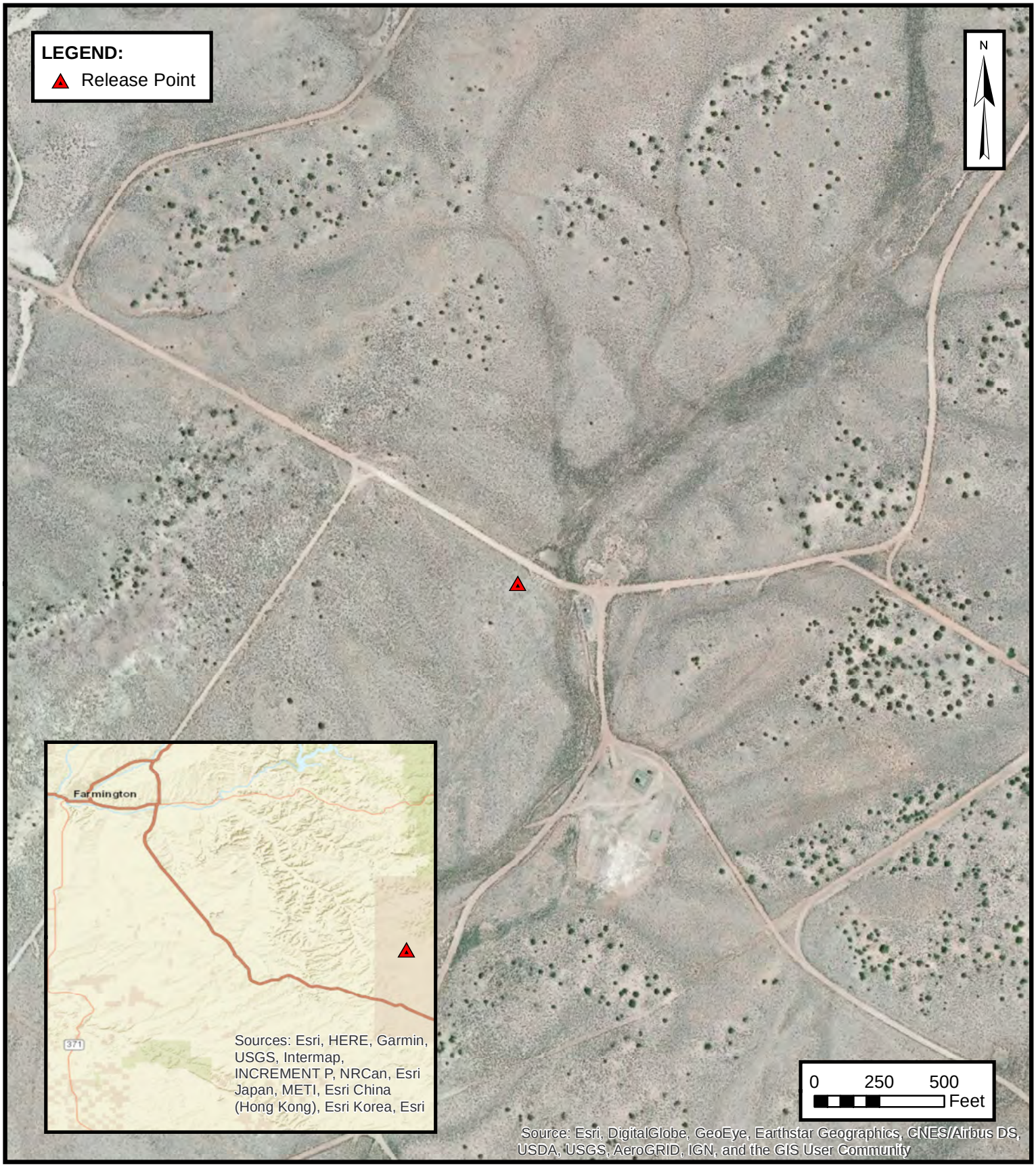
ENSOLUM
Environmental & Hydrogeologic Consultants

TOPOGRPAPHIC MAP

ENTERPRISE FIELD SERVICES, LLC
LATERAL 2C-24 PIPELINE RELEASE
NE ¼, S11 T24N R5W, Rio Arriba County, New Mexico
36.329902° N, 107.326563° W

PROJECT NUMBER: 05A1226078

FIGURE
1



ENSOLUM
Environmental & Hydrogeologic Consultants

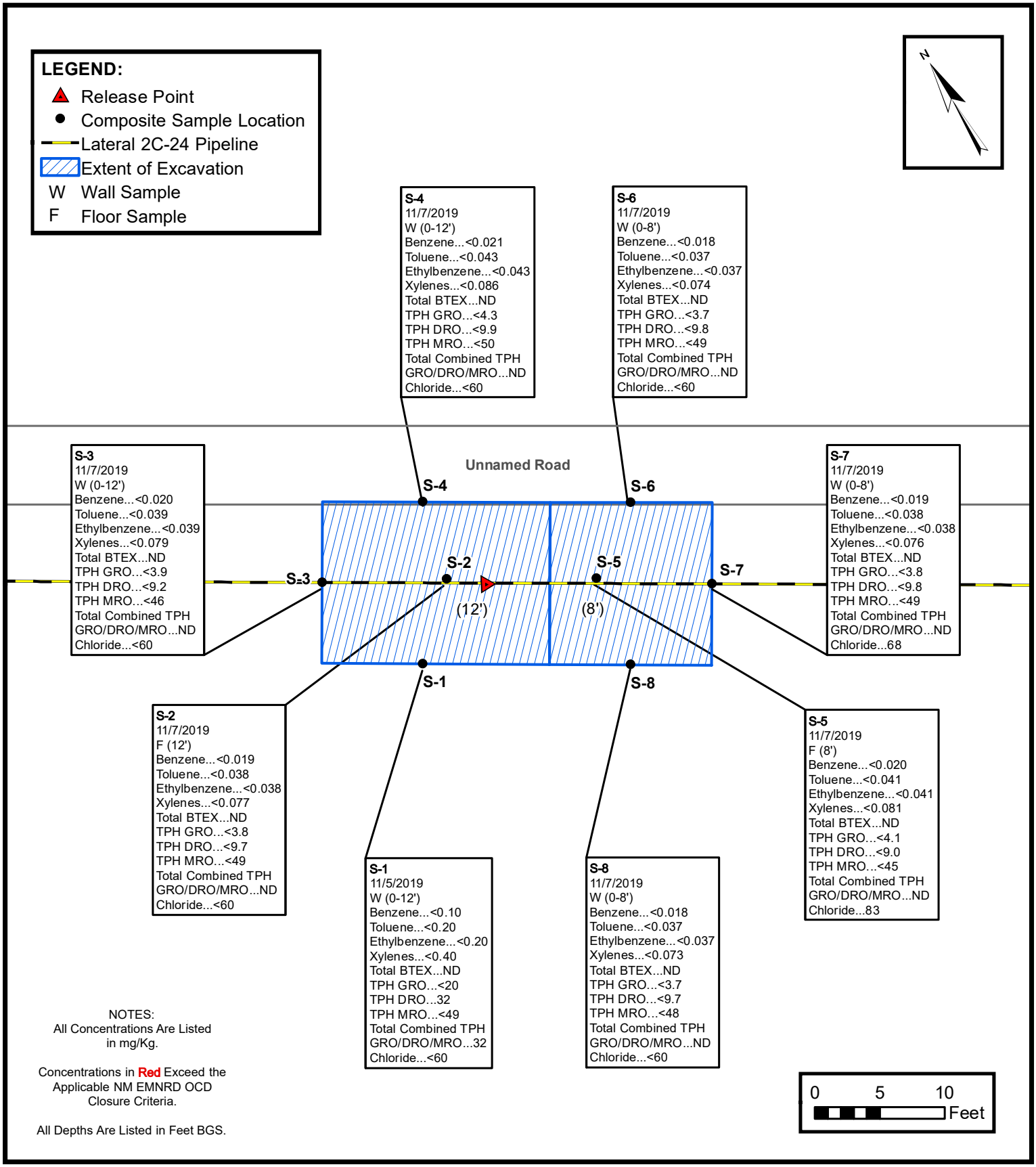
SITE VICINITY MAP

ENTERPRISE FIELD SERVICES, LLC
LATERAL 2C-24 PIPELINE RELEASE
NE ¼, S11 T24N R5W, Rio Arriba County, New Mexico
36.329902° N, 107.326563° W

PROJECT NUMBER: 05A1226078

FIGURE

2



ENSOLUM
Environmental & Hydrogeologic Consultants

SITE MAP

ENTERPRISE FIELD SERVICES, LLC
LATERAL 2C-24 PIPELINE RELEASE
NE ¼, S11 T24N R5W, Rio Arriba County, New Mexico
36.329902° N, 107.326563° W

PROJECT NUMBER: 05A1226078

FIGURE
3

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APPENDIX B

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

97057-1048

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

2. Originating Site:
Lateral 2C-24

AFE: N44241
PM: Dwayne Dixon
Pay Key: RB21200

2. Location of Material (Street Address, City, State or ULSTR):
UL A Section 11 T24N R5W;36.329902, -107.326563

Nov. 2019

4. Source and Description of Waste:
Source: Hydrocarbon contaminated soil associated with remediation activities from a natural gas pipeline release.
Description: Hydrocarbon contaminated soil associated with remediation activities from a natural gas pipeline release.
Estimated Volume 50 (yd³) / bbls Known Volume (to be entered by the operator at the end of the haul) 184 (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) 10-31-19, representative for Enterprise Products Operating authorize 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: TBD Sierra Oilfield

OCD Permitted Surface Waste Management Facility

Name and Facility Permit #: Envirotech, Inc. Soil Remediation Facility * Permit #: NM01-0011
Address of Facility: Hill Top, 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: Enviro Manager DATE: 11/1/19

SIGNATURE: _____ TELEPHONE NO.: 505-632-0615
Surface Waste Management Facility Authorized Agent

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APPENDIX C

Photographic Documentation

SITE PHOTOGRAPHS

Enterprise Field Services, LLC
Closure Report
Lateral 2C-24 Pipeline Release
Ensolum Project No. 05A1226078

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Photograph 1 Photograph Description: View of in-process excavation activities.	
Photograph 2 Photograph Description: View of in-process excavation activities.	
Photograph 3 Photograph Description: View of the final excavation.	

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APPENDIX D

Table 1 – Soil Analytical Summary

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TABLE 1
Lateral 2C-24 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**
Excavation Composite Soil Samples													
S-1	11.05.19	C	0 to 12	<0.10	<0.20	<0.20	<0.40	ND	<20	32	<49	32	<60
S-2	11.07.19	C	12	<0.019	<0.038	<0.038	<0.077	ND	<3.8	<9.7	<49	ND	<60
S-3	11.07.19	C	0 to 12	<0.020	<0.039	<0.039	<0.079	ND	<3.9	<9.2	<46	ND	<60
S-4	11.07.19	C	0 to 12	<0.021	<0.043	<0.043	<0.086	ND	<4.3	<9.9	<50	ND	<60
S-5	11.07.19	C	8	<0.020	<0.041	<0.041	<0.081	ND	<4.1	<9.0	<45	ND	83
S-6	11.07.19	C	0 to 8	<0.018	<0.037	<0.037	<0.074	ND	<3.7	<9.8	<49	ND	<60
S-7	11.07.19	C	0 to 8	<0.019	<0.038	<0.038	<0.076	ND	<3.8	<9.8	<49	ND	68
S-8	11.07.19	C	0 to 8	<0.018	<0.037	<0.037	<0.073	ND	<3.7	<9.7	<48	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 E

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

November 11, 2019

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

RE: Lateral 2C 24 OrderNo.: 1911331

Dear Kyle Summers:

Hall Environmental Analysis Laboratory received 8 sample(s) on 11/8/2019 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

Hall Environmental Analysis Laboratory, Inc.

Analytical Report
Lab Order **1911331**
Date Reported: **11/11/2019**

CLIENT: ENSOLUM
Client Sample ID: S-1
Project: Lateral 2C 24
Collection Date: 11/5/2019 11:00:00 AM
Lab ID: 1911331-001
Matrix: MEOH (SOIL)
Received Date: 11/8/2019 8:20:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **MRA**	
Chloride	ND	60		mg/Kg	20	11/8/2019 10:21:14 AM	48671
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **BRM**	
Diesel Range Organics (DRO)	32	9.8		mg/Kg	1	11/8/2019 10:34:33 AM	48670
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	11/8/2019 10:34:33 AM	48670
Surr: DNOP	103	70-130		%Rec	1	11/8/2019 10:34:33 AM	48670
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	20		mg/Kg	5	11/8/2019 9:36:40 AM	G64338
Surr: BFB	98.0	77.4-118		%Rec	5	11/8/2019 9:36:40 AM	G64338
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**	
Benzene	ND	0.10		mg/Kg	5	11/8/2019 9:36:40 AM	B64338
Toluene	ND	0.20		mg/Kg	5	11/8/2019 9:36:40 AM	B64338
Ethylbenzene	ND	0.20		mg/Kg	5	11/8/2019 9:36:40 AM	B64338
Xylenes, Total	ND	0.40		mg/Kg	5	11/8/2019 9:36:40 AM	B64338
Surr: 4-Bromofluorobenzene	97.4	80-120		%Rec	5	11/8/2019 9:36:40 AM	B64338

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 **1911331**
Date Reported: **11/11/2019**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: ENSOLUM **Client Sample ID:** S-2
Project: Lateral 2C 24 **Collection Date:** 11/7/2019 10:00:00 AM
Lab ID: 1911331-002 **Matrix:** MEOH (SOIL) **Received Date:** 11/8/2019 8:20:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **MRA**	
Chloride	ND	60		mg/Kg	20	11/8/2019 10:33:38 AM	48671
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **BRM**	
Diesel Range Organics (DRO)	ND	9.7		mg/Kg	1	11/8/2019 10:43:34 AM	48670
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	11/8/2019 10:43:34 AM	48670
Surr: DNOP	109	70-130		%Rec	1	11/8/2019 10:43:34 AM	48670
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	3.8		mg/Kg	1	11/8/2019 9:59:31 AM	G64338
Surr: BFB	93.7	77.4-118		%Rec	1	11/8/2019 9:59:31 AM	G64338
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**	
Benzene	ND	0.019		mg/Kg	1	11/8/2019 9:59:31 AM	B64338
Toluene	ND	0.038		mg/Kg	1	11/8/2019 9:59:31 AM	B64338
Ethylbenzene	ND	0.038		mg/Kg	1	11/8/2019 9:59:31 AM	B64338
Xylenes, Total	ND	0.077		mg/Kg	1	11/8/2019 9:59:31 AM	B64338
Surr: 4-Bromofluorobenzene	92.8	80-120		%Rec	1	11/8/2019 9:59:31 AM	B64338

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 **1911331**
Date Reported: **11/11/2019**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: ENSOLUM **Client Sample ID:** S-3
Project: Lateral 2C 24 **Collection Date:** 11/7/2019 10:05:00 AM
Lab ID: 1911331-003 **Matrix:** MEOH (SOIL) **Received Date:** 11/8/2019 8:20:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst:	**MRA**
Chloride	ND	60		mg/Kg	20	11/8/2019 10:46:03 AM	48671
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst:	**BRM**
Diesel Range Organics (DRO)	ND	9.2		mg/Kg	1	11/8/2019 10:52:36 AM	48670
Motor Oil Range Organics (MRO)	ND	46		mg/Kg	1	11/8/2019 10:52:36 AM	48670
Surr: DNOP	103	70-130		%Rec	1	11/8/2019 10:52:36 AM	48670
EPA METHOD 8015D: GASOLINE RANGE						Analyst:	**NSB**
Gasoline Range Organics (GRO)	ND	3.9		mg/Kg	1	11/8/2019 10:22:24 AM	G64338
Surr: BFB	97.5	77.4-118		%Rec	1	11/8/2019 10:22:24 AM	G64338
EPA METHOD 8021B: VOLATILES						Analyst:	**NSB**
Benzene	ND	0.020		mg/Kg	1	11/8/2019 10:22:24 AM	B64338
Toluene	ND	0.039		mg/Kg	1	11/8/2019 10:22:24 AM	B64338
Ethylbenzene	ND	0.039		mg/Kg	1	11/8/2019 10:22:24 AM	B64338
Xylenes, Total	ND	0.079		mg/Kg	1	11/8/2019 10:22:24 AM	B64338
Surr: 4-Bromofluorobenzene	96.4	80-120		%Rec	1	11/8/2019 10:22:24 AM	B64338

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 **1911331**
Date Reported: **11/11/2019**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: ENSOLUM **Client Sample ID:** S-4
Project: Lateral 2C 24 **Collection Date:** 11/7/2019 10:10:00 AM
Lab ID: 1911331-004 **Matrix:** MEOH (SOIL) **Received Date:** 11/8/2019 8:20:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **MRA**	
Chloride	ND	60		mg/Kg	20	11/8/2019 10:58:28 AM	48671
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **BRM**	
Diesel Range Organics (DRO)	ND	9.9		mg/Kg	1	11/8/2019 11:01:39 AM	48670
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	11/8/2019 11:01:39 AM	48670
Surr: DNOP	102	70-130		%Rec	1	11/8/2019 11:01:39 AM	48670
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	4.3		mg/Kg	1	11/8/2019 10:45:13 AM	G64338
Surr: BFB	95.6	77.4-118		%Rec	1	11/8/2019 10:45:13 AM	G64338
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**	
Benzene	ND	0.021		mg/Kg	1	11/8/2019 10:45:13 AM	B64338
Toluene	ND	0.043		mg/Kg	1	11/8/2019 10:45:13 AM	B64338
Ethylbenzene	ND	0.043		mg/Kg	1	11/8/2019 10:45:13 AM	B64338
Xylenes, Total	ND	0.086		mg/Kg	1	11/8/2019 10:45:13 AM	B64338
Surr: 4-Bromofluorobenzene	93.5	80-120		%Rec	1	11/8/2019 10:45:13 AM	B64338

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 **1911331**
Date Reported: **11/11/2019**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: ENSOLUM **Client Sample ID:** S-5
Project: Lateral 2C 24 **Collection Date:** 11/7/2019 10:15:00 AM
Lab ID: 1911331-005 **Matrix:** MEOH (SOIL) **Received Date:** 11/8/2019 8:20:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst:	**MRA**
Chloride	83	60		mg/Kg	20	11/8/2019 11:10:52 AM	48671
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst:	**BRM**
Diesel Range Organics (DRO)	ND	9.0		mg/Kg	1	11/8/2019 11:10:42 AM	48670
Motor Oil Range Organics (MRO)	ND	45		mg/Kg	1	11/8/2019 11:10:42 AM	48670
Surr: DNOP	104	70-130		%Rec	1	11/8/2019 11:10:42 AM	48670
EPA METHOD 8015D: GASOLINE RANGE						Analyst:	**NSB**
Gasoline Range Organics (GRO)	ND	4.1		mg/Kg	1	11/8/2019 11:07:53 AM	G64338
Surr: BFB	95.6	77.4-118		%Rec	1	11/8/2019 11:07:53 AM	G64338
EPA METHOD 8021B: VOLATILES						Analyst:	**NSB**
Benzene	ND	0.020		mg/Kg	1	11/8/2019 11:07:53 AM	B64338
Toluene	ND	0.041		mg/Kg	1	11/8/2019 11:07:53 AM	B64338
Ethylbenzene	ND	0.041		mg/Kg	1	11/8/2019 11:07:53 AM	B64338
Xylenes, Total	ND	0.081		mg/Kg	1	11/8/2019 11:07:53 AM	B64338
Surr: 4-Bromofluorobenzene	94.4	80-120		%Rec	1	11/8/2019 11:07:53 AM	B64338

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 **1911331**
Date Reported: **11/11/2019**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: ENSOLUM **Client Sample ID:** S-6
Project: Lateral 2C 24 **Collection Date:** 11/7/2019 10:20:00 AM
Lab ID: 1911331-006 **Matrix:** MEOH (SOIL) **Received Date:** 11/8/2019 8:20:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **MRA**	
Chloride	ND	60		mg/Kg	20	11/8/2019 11:48:05 AM	48671
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **BRM**	
Diesel Range Organics (DRO)	ND	9.8		mg/Kg	1	11/8/2019 11:19:47 AM	48670
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	11/8/2019 11:19:47 AM	48670
Surr: DNOP	103	70-130		%Rec	1	11/8/2019 11:19:47 AM	48670
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	3.7		mg/Kg	1	11/8/2019 11:30:49 AM	G64338
Surr: BFB	97.4	77.4-118		%Rec	1	11/8/2019 11:30:49 AM	G64338
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**	
Benzene	ND	0.018		mg/Kg	1	11/8/2019 11:30:49 AM	B64338
Toluene	ND	0.037		mg/Kg	1	11/8/2019 11:30:49 AM	B64338
Ethylbenzene	ND	0.037		mg/Kg	1	11/8/2019 11:30:49 AM	B64338
Xylenes, Total	ND	0.074		mg/Kg	1	11/8/2019 11:30:49 AM	B64338
Surr: 4-Bromofluorobenzene	95.4	80-120		%Rec	1	11/8/2019 11:30:49 AM	B64338

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 **1911331**
Date Reported: **11/11/2019**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: ENSOLUM **Client Sample ID:** S-7
Project: Lateral 2C 24 **Collection Date:** 11/7/2019 10:25:00 AM
Lab ID: 1911331-007 **Matrix:** MEOH (SOIL) **Received Date:** 11/8/2019 8:20:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst:	**MRA**
Chloride	68	60		mg/Kg	20	11/8/2019 12:00:29 PM	48671
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst:	**BRM**
Diesel Range Organics (DRO)	ND	9.8		mg/Kg	1	11/8/2019 11:29:02 AM	48670
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	11/8/2019 11:29:02 AM	48670
Surr: DNOP	106	70-130		%Rec	1	11/8/2019 11:29:02 AM	48670
EPA METHOD 8015D: GASOLINE RANGE						Analyst:	**NSB**
Gasoline Range Organics (GRO)	ND	3.8		mg/Kg	1	11/8/2019 11:53:47 AM	G64338
Surr: BFB	95.1	77.4-118		%Rec	1	11/8/2019 11:53:47 AM	G64338
EPA METHOD 8021B: VOLATILES						Analyst:	**NSB**
Benzene	ND	0.019		mg/Kg	1	11/8/2019 11:53:47 AM	B64338
Toluene	ND	0.038		mg/Kg	1	11/8/2019 11:53:47 AM	B64338
Ethylbenzene	ND	0.038		mg/Kg	1	11/8/2019 11:53:47 AM	B64338
Xylenes, Total	ND	0.076		mg/Kg	1	11/8/2019 11:53:47 AM	B64338
Surr: 4-Bromofluorobenzene	92.8	80-120		%Rec	1	11/8/2019 11:53:47 AM	B64338

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 **1911331**
Date Reported: **11/11/2019**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: ENSOLUM **Client Sample ID:** S-8
Project: Lateral 2C 24 **Collection Date:** 11/7/2019 10:30:00 AM
Lab ID: 1911331-008 **Matrix:** MEOH (SOIL) **Received Date:** 11/8/2019 8:20:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **MRA**	
Chloride	ND	60		mg/Kg	20	11/8/2019 12:12:53 PM	48671
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **BRM**	
Diesel Range Organics (DRO)	ND	9.7		mg/Kg	1	11/8/2019 11:38:16 AM	48670
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	11/8/2019 11:38:16 AM	48670
Surr: DNOP	96.8	70-130		%Rec	1	11/8/2019 11:38:16 AM	48670
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	3.7		mg/Kg	1	11/8/2019 12:16:41 PM	G64338
Surr: BFB	93.7	77.4-118		%Rec	1	11/8/2019 12:16:41 PM	G64338
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**	
Benzene	ND	0.018		mg/Kg	1	11/8/2019 12:16:41 PM	B64338
Toluene	ND	0.037		mg/Kg	1	11/8/2019 12:16:41 PM	B64338
Ethylbenzene	ND	0.037		mg/Kg	1	11/8/2019 12:16:41 PM	B64338
Xylenes, Total	ND	0.073		mg/Kg	1	11/8/2019 12:16:41 PM	B64338
Surr: 4-Bromofluorobenzene	91.0	80-120		%Rec	1	11/8/2019 12:16:41 PM	B64338

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#: **1911331**

11-Nov-19

Client: ENSOLUM

Project: Lateral 2C 24

Sample ID: **MB-48671**	SampType: **mblk**	TestCode: **EPA Method 300.0: Anions**
Client ID: **PBS**	Batch ID: **48671**	RunNo: **64345**
Prep Date: **11/8/2019**	Analysis Date: **11/8/2019**	SeqNo: **2203186** Units: **mg/Kg**

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

Sample ID: **LCS-48671**	SampType: **lcs**	TestCode: **EPA Method 300.0: Anions**
Client ID: **LCSS**	Batch ID: **48671**	RunNo: **64345**
Prep Date: **11/8/2019**	Analysis Date: **11/8/2019**	SeqNo: **2203187** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	14	1.5	15.00	0	96.6	90	110			

Sample ID: **MB-48671**	SampType: **mblk**	TestCode: **EPA Method 300.0: Anions**
Client ID: **PBS**	Batch ID: **48671**	RunNo: **64346**
Prep Date: **11/8/2019**	Analysis Date: **11/8/2019**	SeqNo: **2203697** Units: **mg/Kg**

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

Sample ID: **LCS-48671**	SampType: **lcs**	TestCode: **EPA Method 300.0: Anions**
Client ID: **LCSS**	Batch ID: **48671**	RunNo: **64346**
Prep Date: **11/8/2019**	Analysis Date: **11/8/2019**	SeqNo: **2203698** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	15	1.5	15.00	0	99.1	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#: **1911331**

11-Nov-19

Client: ENSOLUM

Project: Lateral 2C 24

Sample ID: **1911331-001AMS** SampType: **MS** TestCode: **EPA Method 8015M/D: Diesel Range Organics**

Client ID: **S-1** Batch ID: **48670** RunNo: **64340**

Prep Date: **11/8/2019** Analysis Date: **11/8/2019** SeqNo: **2202272** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	79	9.3	46.47	31.79	101	57	142			
Surr: DNOP	5.1		4.647		109	70	130			

Sample ID: **LCS-48670** SampType: **LCS** TestCode: **EPA Method 8015M/D: Diesel Range Organics**

Client ID: **LCSS** Batch ID: **48670** RunNo: **64340**

Prep Date: **11/8/2019** Analysis Date: **11/8/2019** SeqNo: **2202282** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	45	10	50.00	0	89.3	63.9	124			
Surr: DNOP	5.0		5.000		99.3	70	130			

Sample ID: **MB-48670** SampType: **MBLK** TestCode: **EPA Method 8015M/D: Diesel Range Organics**

Client ID: **PBS** Batch ID: **48670** RunNo: **64340**

Prep Date: **11/8/2019** Analysis Date: **11/8/2019** SeqNo: **2202284** 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	11		10.00		105	70	130			

Sample ID: **1911331-001AMSD** SampType: **MSD** TestCode: **EPA Method 8015M/D: Diesel Range Organics**

Client ID: **S-1** Batch ID: **48670** RunNo: **64340**

Prep Date: **11/8/2019** Analysis Date: **11/8/2019** SeqNo: **2202292** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	81	9.9	49.50	31.79	100	57	142	3.37	20	
Surr: DNOP	4.5		4.950		91.5	70	130	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#: **1911331**

11-Nov-19

Client: ENSOLUM

Project: Lateral 2C 24

Sample ID: **RB**	SampType: **MBLK**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **PBS**	Batch ID: **G64338**	RunNo: **64338**
Prep Date:	Analysis Date: **11/8/2019**	SeqNo: **2202818** 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	980		1000		98.1	77.4	118			

Sample ID: **2.5UG GRO LCS**	SampType: **LCS**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **LCSS**	Batch ID: **G64338**	RunNo: **64338**
Prep Date:	Analysis Date: **11/8/2019**	SeqNo: **2202819** 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	93.9	80	120			
Surr: BFB	1100		1000		111	77.4	118			

Sample ID: **1911331-001AMS**	SampType: **MS**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **S-1**	Batch ID: **G64338**	RunNo: **64338**
Prep Date:	Analysis Date: **11/8/2019**	SeqNo: **2202820** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	96	20	100.1	0	96.0	69.1	142			
Surr: BFB	4600		4003		114	77.4	118			

Sample ID: **1911331-001AMSD**	SampType: **MSD**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **S-1**	Batch ID: **G64338**	RunNo: **64338**
Prep Date:	Analysis Date: **11/8/2019**	SeqNo: **2202821** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	94	20	100.1	0	93.6	69.1	142	2.53	20	
Surr: BFB	4600		4003		114	77.4	118	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#: **1911331**

11-Nov-19

Client: ENSOLUM

Project: Lateral 2C 24

Sample ID: **RB**	SampType: **MBLK**	TestCode: **EPA Method 8021B: Volatiles**
Client ID: **PBS**	Batch ID: **B64338**	RunNo: **64338**
Prep Date:	Analysis Date: **11/8/2019**	SeqNo: **2202839** 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		98.0	80	120			

Sample ID: **100NG BTEX LCS**	SampType: **LCS**	TestCode: **EPA Method 8021B: Volatiles**
Client ID: **LCSS**	Batch ID: **B64338**	RunNo: **64338**
Prep Date:	Analysis Date: **11/8/2019**	SeqNo: **2202840** 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	99.0	80	120			
Toluene	0.94	0.050	1.000	0	94.3	80	120			
Ethylbenzene	0.92	0.050	1.000	0	92.4	80	120			
Xylenes, Total	2.8	0.10	3.000	0	93.5	80	120			
Surr: 4-Bromofluorobenzene	1.0		1.000		100	80	120			

Sample ID: **1911331-002AMS**	SampType: **MS**	TestCode: **EPA Method 8021B: Volatiles**
Client ID: **S-2**	Batch ID: **B64338**	RunNo: **64338**
Prep Date:	Analysis Date: **11/8/2019**	SeqNo: **2202845** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.69	0.019	0.7680	0	90.2	76	123			
Toluene	0.70	0.038	0.7680	0.005975	90.6	80.3	127			
Ethylbenzene	0.69	0.038	0.7680	0.008402	89.2	80.2	131			
Xylenes, Total	2.1	0.077	2.304	0.02127	88.5	78	133			
Surr: 4-Bromofluorobenzene	0.74		0.7680		96.8	80	120			

Sample ID: **1911331-002AMSD**	SampType: **MSD**	TestCode: **EPA Method 8021B: Volatiles**
Client ID: **S-2**	Batch ID: **B64338**	RunNo: **64338**
Prep Date:	Analysis Date: **11/8/2019**	SeqNo: **2202850** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.67	0.019	0.7680	0	87.8	76	123	2.60	20	
Toluene	0.68	0.038	0.7680	0.005975	87.5	80.3	127	3.49	20	
Ethylbenzene	0.67	0.038	0.7680	0.008402	86.0	80.2	131	3.55	20	
Xylenes, Total	2.0	0.077	2.304	0.02127	86.2	78	133	2.54	20	
Surr: 4-Bromofluorobenzene	0.75		0.7680		98.2	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

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: **1911331** RcptNo: 1

Received By: **Desiree Dominguez** **11/8/2019 8:20:00 AM** DD

Completed By: **Erin Melendrez** **11/8/2019 8:21:23 AM** EM

Reviewed By: ENM 11/8/19

Chain of Custody

1. Is Chain of Custody 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. VOA vials have zero headspace? Yes ☐ No ☐ No VOA Vials ☑
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: DM 11/8/19

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	4.5	Good	Yes			

Chain-of-Custody Record

Client: Ensdum

Mailing Address: 606 S Rio Grande Suit A 87410

Phone #:

email or Fax#:

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

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

Turn-Around Time: 100%
☐ Standard ☑ Rush 11-8-19

Project Name: Lateral 2C-24

Project #:

Project Manager: K. Summers

Sampler: C DAgostino

On Ice: ☑ Yes ☐ No

# of Coolers: 1

Cooler Temp(including CF): 4.8 -0.3 = 4.5°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. 1911331	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~~, ~~NO3~~, ~~NO2~~, ~~PO4~~, ~~SO4~~	8260 (VOA)	8270 (Semi-VOA)	Total Coliform (Present/Absent)
11/5/19	1100	S	S-1	1 4oz jar	cool	-001	X	X					X			
11/6/19	1000	S	S-2			-002	X	X					X			
11/6/19	1005	S	S-3			-003	X	X					X			
11/6/19	1010	S	S-4			-004	X	X					X			
11/6/19	1015	S	S-5			-005	X	X					X			
11/6/19	1020	S	S-6			-006	X	X					X			
11/6/19	1025	S	S-7			-007	X	X					X			
11/6/19	1030	S	S-8			-008	X	X					X			

Date	Time	Relinquished by:	Received by:	Via:	Date	Time
11/7/19	1411		Christen Waeta		11/7/19	1411
11/7/19	1840	Christen Waeta		courier	11/8/19	8:20

Remarks: PM Tom Long
Pay by RB 21200
AFE # N44241
Same Day

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.

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 9137

CONDITIONS OF APPROVAL

Operator:			OGRID:	Action Number:	Action Type:
ENTERPRISE FIELD SERVICES, LLC	PO Box 4324	Houston, TX77210	241602	9137	C-141

OCD Reviewer	Condition
csmith	None