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)*: **NCS1933737748**
Contact mailing address: **614 Reilly Ave, Farmington, NM 87401**	

Location of Release Source

Latitude **36.794997** Longitude **-107.733385** *(NAD 83 in decimal degrees to 5 decimal places)*

Site Name **Pump Canyon Compressor Station**	Site Type **Natural Compressor Station**
Date Release Discovered: **8/28/2019**	Serial Number *(if applicable)*: **NM 080782**

Unit Letter	Section	Township	Range	County
K	**24**	**30N**	**9W**	**San Juan**

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

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) **10-15 BBLS**	Volume Recovered (bbls) **None**
	Is the concentration of dissolved chloride in the produced water >10,000 mg/l?	☐ Yes ☐ No
☐ Condensate	Volume Released (bbls):	Volume Recovered (bbls):
☐ Natural Gas	Volume Released (Mcf):	Volume Recovered (Mcf):
☐ Other (describe)	Volume/Weight Released (provide units):	Volume/Weight Recovered (provide units)

Cause of Release: On August 28, 2019, Enterprise technicians observed a small area of staining around the valve of the produced water tank. Upon further investigation the technician discovered that the valve on the tank had been left partially open causing produced water and condensate to drip inside the unlined secondary containment structure. No standing liquids were observed inside the secondary containment structure. The release was not determined reportable until remediation was initiated on September 4, 2019, when the gravel in the unlined secondary containment was removed and a significant amount of impacted soil was observed. The final excavation dimensions measured approximately 40 feet long by 22 feet wide and two (2) feet deep. Approximately 104 cubic yards of hydrocarbon impacted soil were excavated and transported to a New Mexico Oil Conservation Division approved land farm facility. Additional remediation by excavating was not possible due to the presence of permanent structures. On November 1, 2019, at the request of NMOCD, soil borings were installed utilizing a hand auger to demonstrate vertical delineation of soil impacts in the soil horizon and areas where permanent structures exist. Enterprise requests a deferment of additional remediation activities until facility decommissioning. A third party site characterization report and remediation plan is included with this "Final C-141."

Incident ID	
District RP	
Facility ID	
Application ID	

Site Assessment/Characterization

This information must be provided to the appropriate district office no later than 90 days after the release discovery date.

What is the shallowest depth to groundwater beneath the area affected by the release?	>50 (ft bgs)
Did this release impact groundwater or surface water?	☐ Yes ☒ No
Are the lateral extents of the release within 300 feet of a continuously flowing watercourse or any other significant watercourse?	☐ Yes ☒ No
Are the lateral extents of the release within 200 feet of any lakebed, sinkhole, or playa lake (measured from the ordinary high-water mark)?	☐ Yes ☒ No
Are the lateral extents of the release within 300 feet of an occupied permanent residence, school, hospital, institution, or church?	☐ Yes ☒ No
Are the lateral extents of the release within 500 horizontal feet of a spring or a private domestic fresh water well used by less than five households for domestic or stock watering purposes?	☐ Yes ☒ No
Are the lateral extents of the release within 1000 feet of any other fresh water well or spring?	☐ Yes ☒ No
Are the lateral extents of the release within incorporated municipal boundaries or within a defined municipal fresh water well field?	☐ Yes ☒ No
Are the lateral extents of the release within 300 feet of a wetland?	☐ Yes ☒ No
Are the lateral extents of the release overlying a subsurface mine?	☐ Yes ☒ No
Are the lateral extents of the release overlying an unstable area such as karst geology?	☐ Yes ☒ No
Are the lateral extents of the release within a 100-year floodplain?	☐ Yes ☒ No
Did the release impact areas **not** on an exploration, development, production, or storage site?	☐ Yes ☒ No

Attach a comprehensive report (electronic submittals in .pdf format are preferred) demonstrating the lateral and vertical extents of soil contamination associated with the release have been determined. Refer to 19.15.29.11 NMAC for specifics.

Characterization Report Checklist: ***Each of the following items must be included in the report.***

- ☒ Scaled site map showing impacted area, surface features, subsurface features, delineation points, and monitoring wells.
- ☒ Field data
- ☒ Data table of soil contaminant concentration data
- ☒ Depth to water determination
- ☒ Determination of water sources and significant watercourses within ½-mile of the lateral extents of the release
- ☐ Boring or excavation logs
- ☒ Photographs including date and GIS information
- ☒ Topographic/Aerial maps
- ☒ Laboratory data including chain of custody

If the site characterization report does not include completed efforts at remediation of the release, the report must include a proposed remediation plan. That plan must include the estimated volume of material to be remediated, the proposed remediation technique, proposed sampling plan

Form C-141 State of New Mexico
Oil Conservation Division

Incident ID	
District RP	
Facility ID	
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and methods, anticipated timelines for beginning and completing the remediation. The closure criteria for a release are contained in Table 1 of 19.15.29.12 NMAC, however, use of the table is modified by site- and release-specific parameters.

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.

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

Signature: Jon E. Fields Date: 10/30/2020

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

OCD Only

Received by: Date:

Page 4

State of New Mexico
Oil Conservation Division

Incident ID	
District RP	
Facility ID	
Application ID	

Remediation Plan

Remediation Plan Checklist: ***Each of the following items must be included in the plan.***

- ☐ Detailed description of proposed remediation technique
- ☐ Scaled sitemap with GPS coordinates showing delineation points
- ☐ Estimated volume of material to be remediated
- ☐ Closure criteria is to Table 1 specifications subject to 19.15.29.12(C)(4) NMAC
- ☐ Proposed schedule for remediation (note if remediation plan timeline is more than 90 days OCD approval is required)

Deferral Requests Only: ***Each of the following items must be confirmed as part of any request for deferral of remediation.***

- ☒ Contamination must be in areas immediately under or around production equipment where remediation could cause a major facility deconstruction.
- ☒ Extents of contamination must be fully delineated.
- ☒ Contamination does not cause an imminent risk to human health, the environment, or groundwater.

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.

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

Signature: Jon E. Fields Date: 10/30/2020

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

OCD Only

Received by: Date:

☐ Approved ☐ Approved with Attached Conditions of Approval ☐ Denied ☐ Deferral Approved

Signature: Nelson Velez Date: 05/18/2022

ENSOLUM

SITE CHARACTERIZATION REPORT AND REMEDIATION PLAN

Property:

Pump Canyon Compressor Station (8/28/2019)
SW ¼, S24 T30N R9W
San Juan County, New Mexico

February 21, 2020 (Updated June 15, 2020)
Ensolum Project No. 05A1226070

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

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LIST OF APPENDICES

ENSOLUM

SITE CHARACTERIZATION REPORT AND REMEDIATION PLAN

Pump Canyon Compressor Station (8/28/2019)
SW ¼, S24 T30N R9W
San Juan County, New Mexico

Ensolum Project No. 05A1226070

1.0 INTRODUCTION

1.1 Site Description & Background

Operator:	Enterprise Field Services, LLC / Enterprise Products Operating LLC (Enterprise)
Site Name:	Pump Canyon Compressor Station (8/28/2019) (Site)
Location:	36.794997° North, 107.733385° West Southwest (SW) ¼ of Section 24, Township 30 North, Range 9 West San Juan County, New Mexico
Property:	United States Bureau of Land Management (BLM)
Regulatory:	New Mexico Energy, Minerals and Natural Resources Department (EMNRD) Oil Conservation Division (OCD)

On August 28, 2019, a release of produced water and condensate at the Pump Canyon Compressor Station resulted from a partially closed valve on a tank. On August 30, 2019, 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. In order 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 that are 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. Correspondence from the New Mexico EMNRD OCD, indicating approval to characterize the Site as Tier II (Groundwater greater than 50 feet below grade surface (bgs)), is included in **Appendix G**. Supporting documentation and figures associated with the following bullets are provided in **Appendix B**.

- 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). Four (4) PODs (SJ-00140, SJ-02744, SD-01675, and SP-03480-1) were identified within a one mile radius of the Site on the OSE WRRS database. The recorded depth to water for SJ-02744 is 10 feet bgs, but at an elevation approximately 111 feet lower than the Site. The record for SJ-00140 indicates no depth to water. The records for SD-01675 and SP-03480-1 indicate that the PODs are associated with surface declarations and surface permits and indicate no depth to water. The average depth to water for additional PODs located over one (1) mile from the Site but in adjacent Sections is 13 feet bgs, but at elevations lower than the Site and typically adjacent to the San Juan River, with the exception of one POD (SJ-04066 POD1) which indicates a depth to water of 200 feet bgs and is located at a higher elevation than the Site.

- Cathodic protection wells were identified within one half mile of the Site. Depth to water records for the cathodic protection ground beds associated with the Riddle A Com #260, Riddle A Com #3, and Riddle A Com #9 well sites (located approximately 0.28 miles south of the Site) indicate depths to water ranging from 30 to 40 feet bgs. However, these sites are at a lower elevation (approximately 35 to 50 feet lower) than the release Site. Depth to water records for the cathodic protection ground beds associated with the Riddle A #3A (located approximately 0.28 miles north of the Site), indicate a depth to water of 130 feet bgs. The Riddle A #3A well site is approximately 18 feet lower in elevation than the release Site.

- The Site is not located within 300 feet of a New Mexico EMNRD OCD-defined continuously flowing watercourse or significant watercourse.

- 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.

During a previous remediation at the Site in 2019, the New Mexico EMNRD OCD approved the following cleanup goals for soils remaining in place at the Site:

Closure Criteria for Soils Impacted by a Release		
Constituent	Method	Limit
Chloride	EPA 300.0 or SM4500 Cl B	10,000 mg/kg
TPH (GRO+DRO+MRO)	EPA SW-846 Method 8015	2,500 mg/kg
TPH (GRO+DRO)	EPA SW-846 Method 8015	1,000 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 August 30, 2019, Enterprise initiated activities to remediate petroleum hydrocarbon impact resulting from the release. During the remediation and corrective action activities Sierra Oilfield Services, Inc. provided heavy equipment and labor support, while Ensolum provided environmental consulting support.

The final excavation measured approximately 40 feet long and 22 feet wide at the maximum extents. The maximum depth of the excavation measured approximately two (2) feet bgs. It is believed that deeper excavation in the area at this time would risk undermining the integrity of the storage tank foundations.

The lithology encountered during the completion of remediation activities consisted primarily of gravel and silty sandy clay.

A total of approximately 104 cubic yards of petroleum hydrocarbon affected soils were transported to the Envirotech, Inc. (Envirotech) landfarm near Hilltop, New Mexico for disposal/remediation. The executed C-138 solid waste acceptance forms are provided in **Appendix C**. The excavation was backfilled with imported fill, and the secondary containment was repaired.

Figure 3 is a map that identifies approximate soil sample locations and depicts the approximate dimensions of the excavation with respect to the storage tank (**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 five (5) composite soil samples (S-1 through S-5) from the excavation for laboratory analysis. The composite samples were comprised of five (5) aliquots each and represent an estimated 200 square foot sample area per the guidelines outlined in NMAC 19.15.29.12 Section D. Additionally, two (2) soil samples (HA-1@4' and HA-2@4'), were collected from beneath the floor of the excavation utilizing a hand auger. 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 activities.

First Sampling Event
On October 17, 2019, composite soil sample aliquots for soil samples S-1 (0'-1.5'), S-2 (0'-1.5'), S-3 (0'-1.5'), S-4 (0'-1.5'), were collected from the base and sidewalls of the shallow excavation. Subsequent analytical results from composite soil sample S-1 indicated TPH exceedances above the applicable New Mexico EMNRD OCD closure criteria. In response to the exceedances the excavation was deepened in the area north of the tank. Composite soil samples S-1 and S-2 were removed and transported to the landfarm for disposal/remediation.

Second Sampling Event
On October 30, 2019, subsequent to the deepening of the excavation a second sampling event was performed. Composite soil sample S-5 (0'-2') was collected from the base and sidewalls of the remediation excavation to replace composite soil sample S-1.

Third Sampling Event
On November 1, 2019, at the request of the New Mexico OCD, soil samples HA-1@4' and HA-2@4' were collected from hand auger soil borings beneath the floor of the remediation excavation to demonstrate vertical delineation near the base of the soil horizon.

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 executed chain-of-custody forms and laboratory data sheets are provided in **Appendix F**.

6.0 DATA EVALUATION

Ensolum compared the BTEX, TPH, and chloride laboratory analytical results or laboratory practical quantitation limits (PQLs) / reporting limits (RLs) associated with the composite soil samples (S-3 through S-5, HA-1@4' and HA-2@4') to the applicable New Mexico EMNRD OCD closure criteria. Soils associated with composite soil samples S-1 and S-2 were removed from the Site and transported to the landfarm 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 applicable 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 applicable New Mexico EMNRD OCD closure criteria of 50 mg/kg.

- The laboratory analytical results for the composite soil samples collected from soils remaining at the Site indicate combined TPH GRO/DRO concentrations ranging from below the laboratory

PQLs/RLs to 860 mg/kg (S-3), which are less than the applicable New Mexico EMNRD OCD closure criteria of 1,000 mg/kg.

- The laboratory analytical results for the composite soil samples collected from soils remaining at the Site indicate combined TPH GRO/DRO/MRO concentrations ranging from below the laboratory PQLs/RLs to 1,400 mg/kg (S-3), which are less than the applicable New Mexico EMNRD OCD closure criteria of 2,500 mg/kg.

- The laboratory analytical results for composite soil sample S-5 indicates a combined chloride concentration of 81 mg/kg, which is less than the applicable New Mexico EMNRD OCD closure criteria of 10,000 mg/kg. 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 applicable New Mexico EMNRD OCD closure criteria of 10,000 mg/kg for chlorides.

- The laboratory analytical results for composite soil samples S-3 and S-4 indicate combined TPH GRO/DRO/MRO concentrations of 1,400 mg/kg and 680 mg/kg, respectively. While these samples meet the Tier II closure criteria, the samples do not meet the soil requirements of NMAC 19.15.29.13(D)(1) which indicate that a minimum of the upper four (4) feet must contain "uncontaminated" soil and that the soils meet Tier I closure criteria listed in Table 1 of NMAC 19.15.29.12.

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

7.0 REMEDIATION, RECLAMATION, AND REVEGETATION

To return the facility to operational status and secure the storage tank foundation before additional settling occurred, the excavation was backfilled with imported fill, and the secondary containment was repaired. With the vertical delineation of petroleum hydrocarbon impact completed, Enterprise requests the deferment of final remediation, reclamation, and revegetation at the Site until after the facility is decommissioned, to avoid damaging existing structures/appurtenances. At that time, Enterprise proposes to resume excavation and removal activities to address the soil requirements of NMAC 19.15.29.13(D)(1) as enforced by the New Mexico EMNRD OCD which requires that the upper four (4) feet of soil be remediated to Tier I closure criteria: 10 mg/kg for benzene, 50 mg/kg for total BTEX, 100 mg/kg for combined TPH GRO/DRO/GRO, and 600 mg/kg for chloride.

8.0 FINDINGS AND RECOMMENDATION

On October 10, 2019, Enterprise initiated activities to remediate potential 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 seven (7) composite soil samples were collected from the floor/walls and beneath the floor of the final excavation for laboratory analyses. Based on laboratory analytical results, soils remaining in place do not exhibit COC concentrations above the applicable New Mexico EMNRD OCD closure criteria.

- A total of approximately 104 cubic yards of petroleum hydrocarbon affected soils were transported to the Envirotech landfarm near Hilltop, New Mexico for disposal/remediation. The excavation was backfilled with imported fill, and the secondary containment was replaced.

Enterprise requests the deferment of final reclamation, including remediation of the upper four (4) feet of soil to comply with the requirements of NMAC 19.15.29.13(D)(1), until after the facility is decommissioned, to avoid damaging existing structures/appurtenances at the facility.

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.

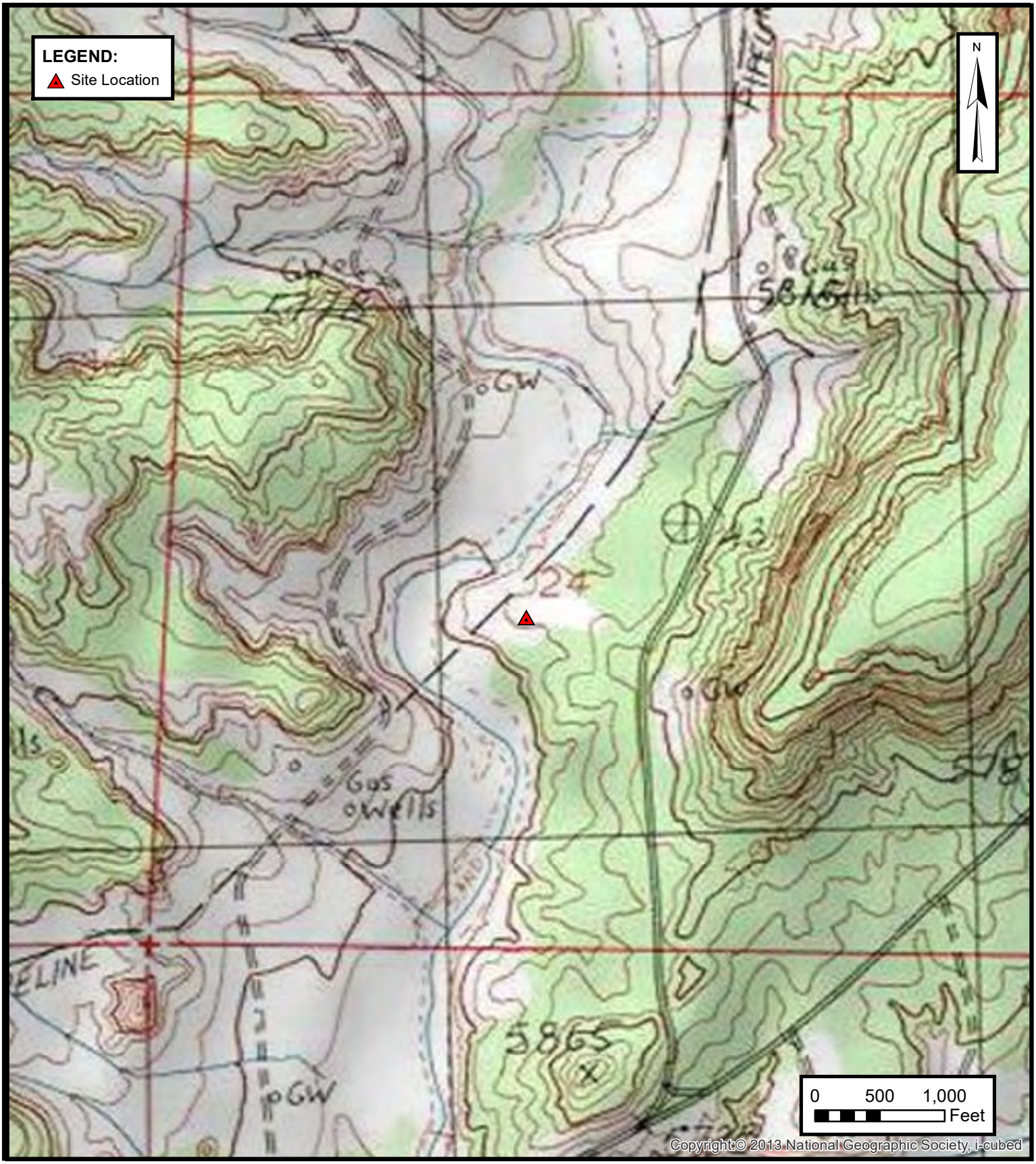
9.3 Reliance

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



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Environmental & Hydrogeologic Consultants

TOPOGRAPHIC MAP

ENTERPRISE FIELD SERVICES, LLC
PUMP CANYON COMPRESSOR STATION (8/28/2019)
SW ¼, S24 T30N R9W, San Juan County, New Mexico
36.794997° N, 107.733385° W

PROJECT NUMBER: 05A1226070

FIGURE
1

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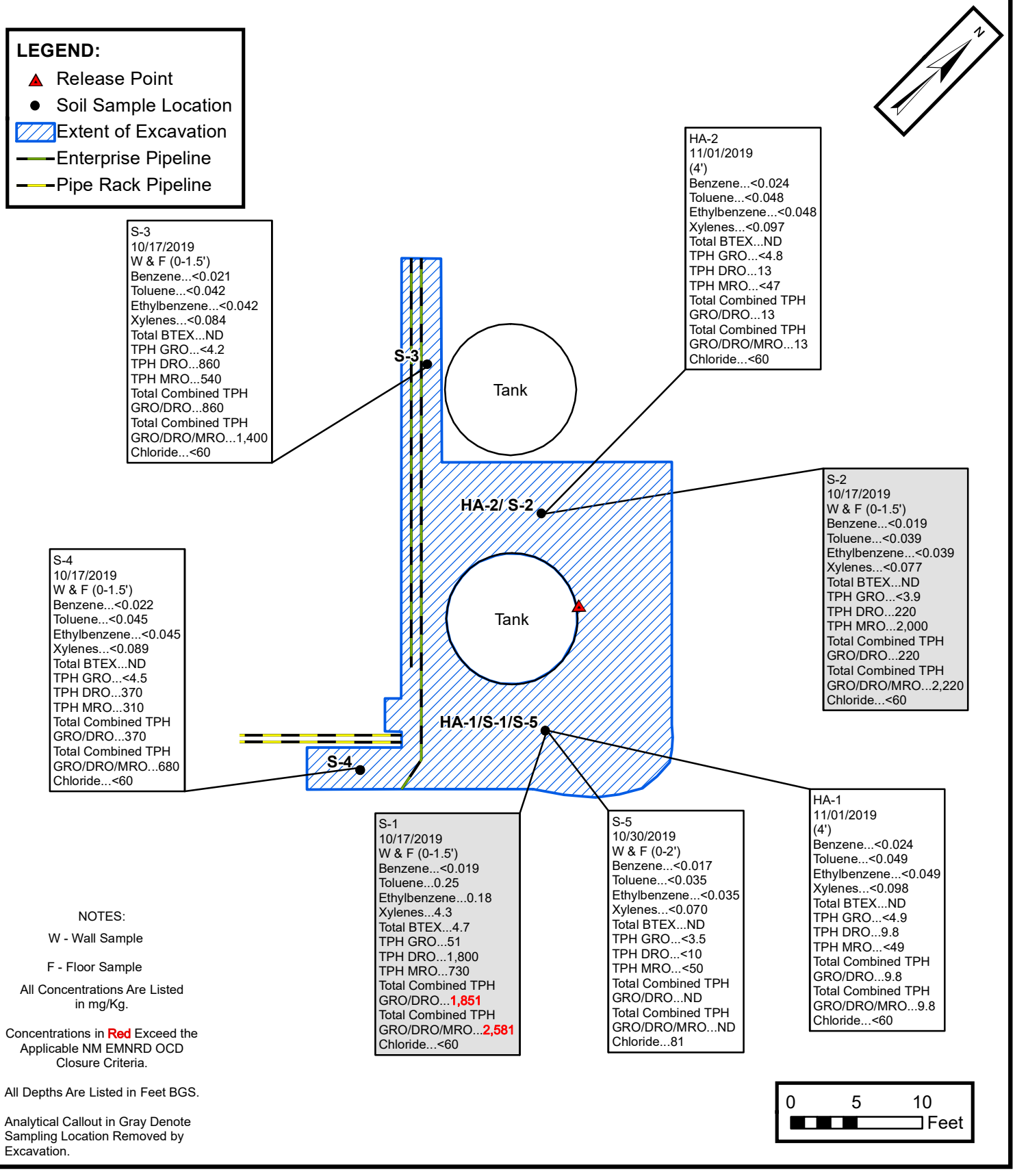
SITE VICINITY MAP

ENTERPRISE FIELD SERVICES, LLC
PUMP CANYON COMPRESSOR STATION (8/28/2019)
SW ¼, S24 T30N R9W, San Juan County, New Mexico
36.794997° N, 107.733385° W

PROJECT NUMBER: 05A1226070

FIGURE
2



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SITE MAP

ENTERPRISE FIELD SERVICES, LLC
PUMP CANYON COMPRESSOR STATION (8/28/2019)
SW ¼, S24 T30N R9W, San Juan County, New Mexico
36.794997° N, 107.733385° W

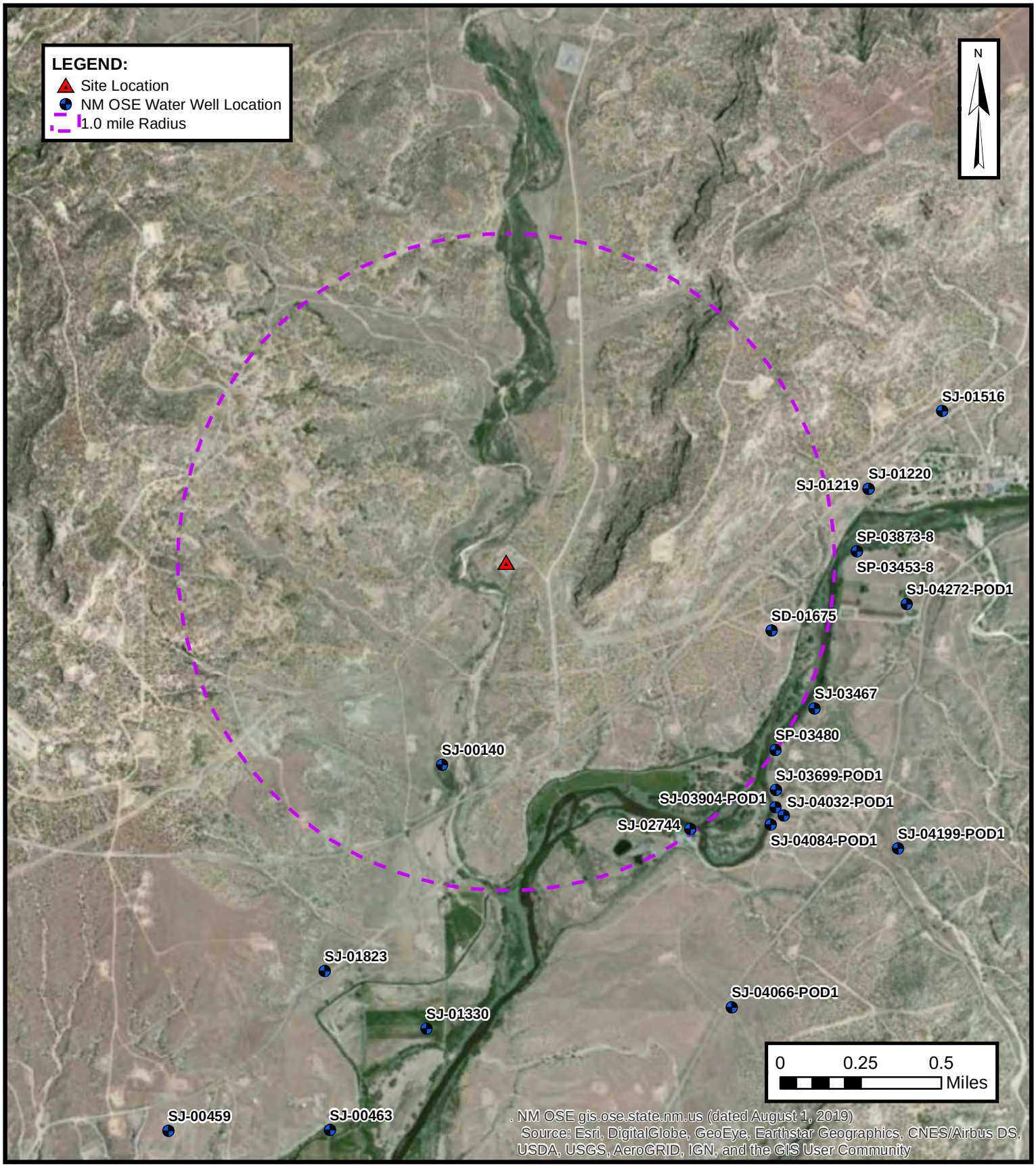
PROJECT NUMBER: 05A122607F

FIGURE
3

ENSOLUM

APPENDIX B

Siting Figures and Documentation



ENSOLUM
Environmental & Hydrogeologic Consultants

ONE MILE RADIUS WATER WELLS

ENTERPRISE FIELD SERVICES, LLC
PUMP CANYON COMPRESSOR STATION (8/28/2019)
SW ¼, S24 T30N R9W, San Juan County, New Mexico
36.794997° N, 107.733385° W

PROJECT NUMBER: 05A1226070

FIGURE

A

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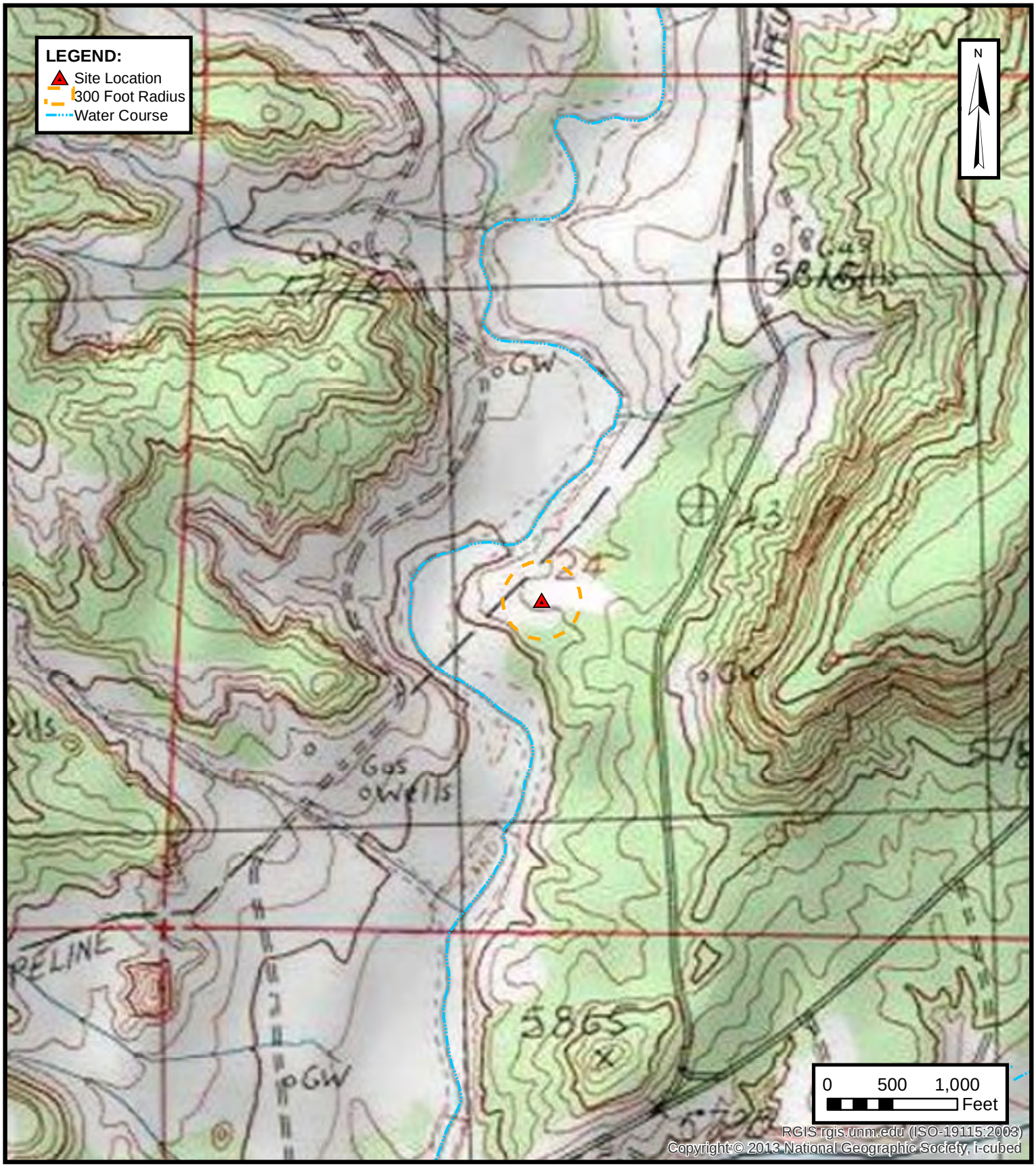
CATHODIC PROTECTION WELL RECORDED DEPTH TO WATER

ENTERPRISE FIELD SERVICES, LLC
PUMP CANYON COMPRESSOR STATION (8/28/2019)
SW ¼, S24 T30N R9W, San Juan County, New Mexico
36.794997° N, 107.733385° W

PROJECT NUMBER: 05A1226070

FIGURE

B



ENSOLUM
Environmental & Hydrogeologic Consultants

300 FOOT RADIUS
WATERCOURSE AND DRAINAGE IDENTICATION
ENTERPRISE FIELD SERVICES, LLC
PUMP CANYON COMPRESSOR STATION (8/28/2019)
SW ¼, S24 T30N R9W, San Juan County, New Mexico
36.794997° N, 107.733385° W

PROJECT NUMBER: 05A1226070

FIGURE
C

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300 FOOT RADIUS
OCCUPIED STRUCTURE IDENTIFICATION
ENTERPRISE FIELD SERVICES, LLC
PUMP CANYON COMPRESSOR STATION (8/28/2019)
SW ¼, S24 T30N R9W, San Juan County, New Mexico
36.794997° N, 107.733385° W

PROJECT NUMBER: 05A1226070

FIGURE
D

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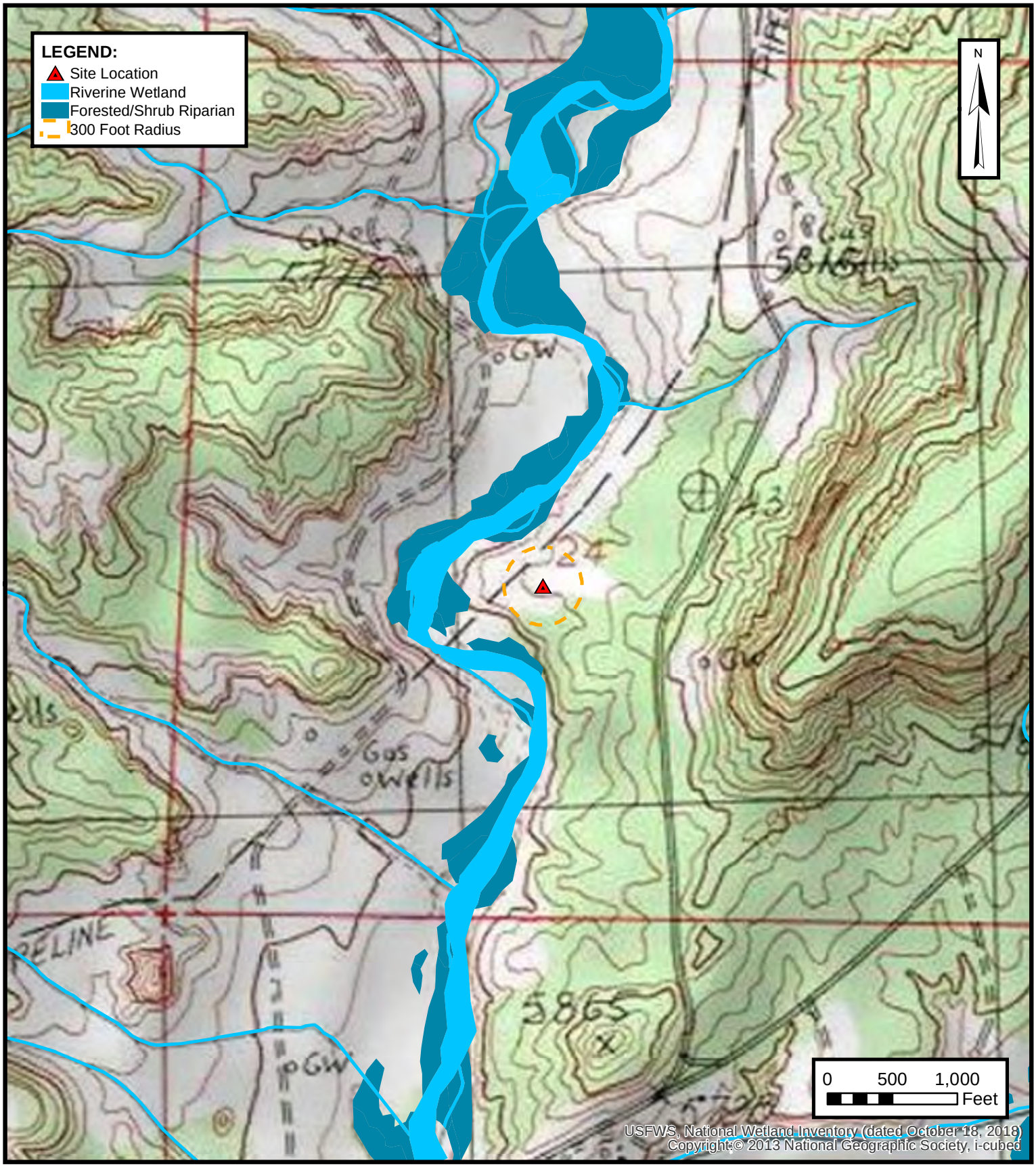
WATER WELL AND NATURAL SPRING LOCATION

ENTERPRISE FIELD SERVICES, LLC
PUMP CANYON COMPRESSOR STATION (8/28/2019)
SW ¼, S24 T30N R9W, San Juan County, New Mexico
36.794997° N, 107.733385° W

PROJECT NUMBER: 05A1226070

FIGURE

E



ENSOLUM
Environmental & Hydrogeologic Consultants

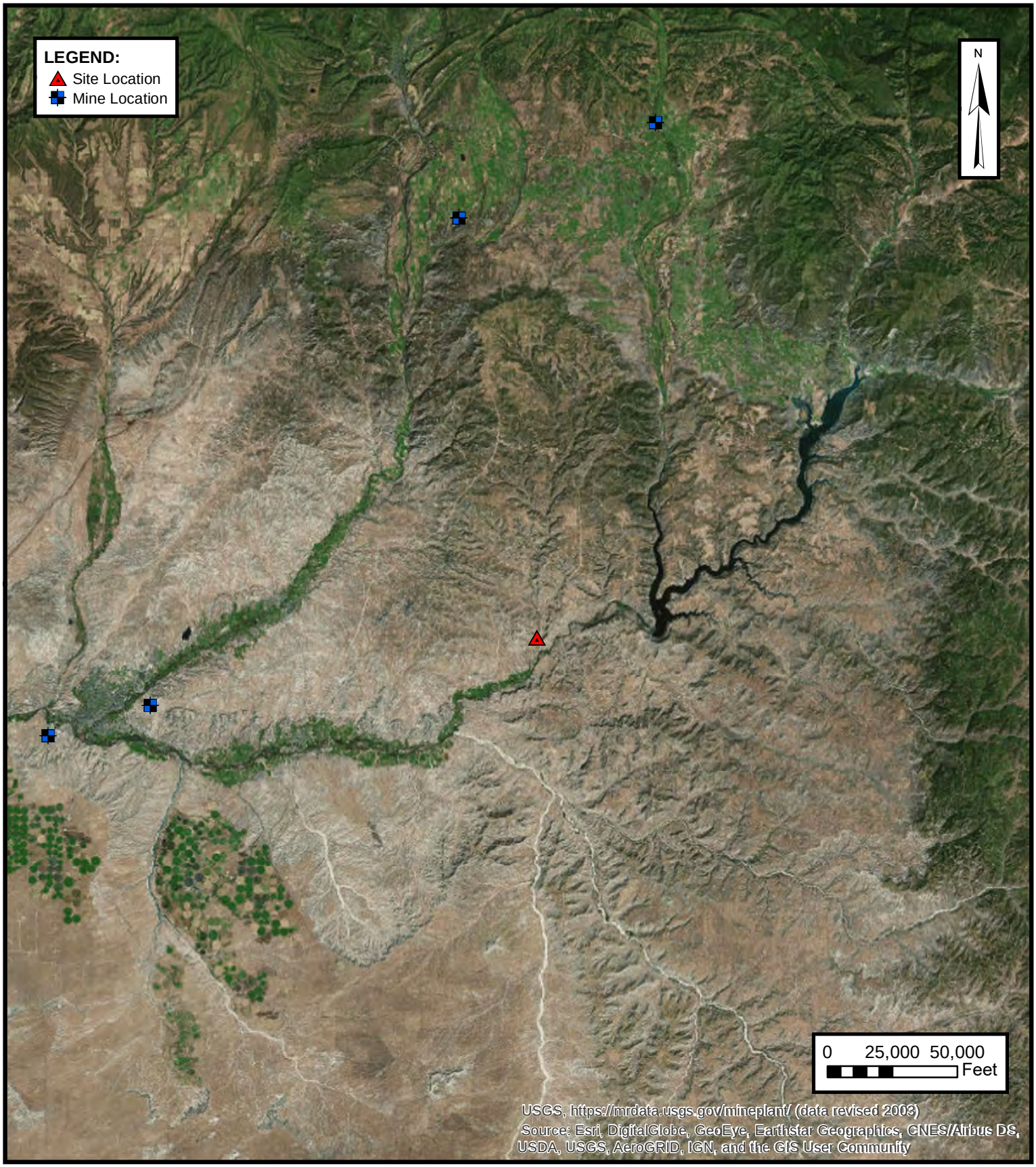
WETLANDS

ENTERPRISE FIELD SERVICES, LLC
PUMP CANYON COMPRESSOR STATION (8/28/2019)
SW ¼, S24 T30N R9W, San Juan County, New Mexico
36.794997° N, 107.733385° W

PROJECT NUMBER: 05A1226070

FIGURE

F



ENSOLUM
Environmental & Hydrogeologic Consultants

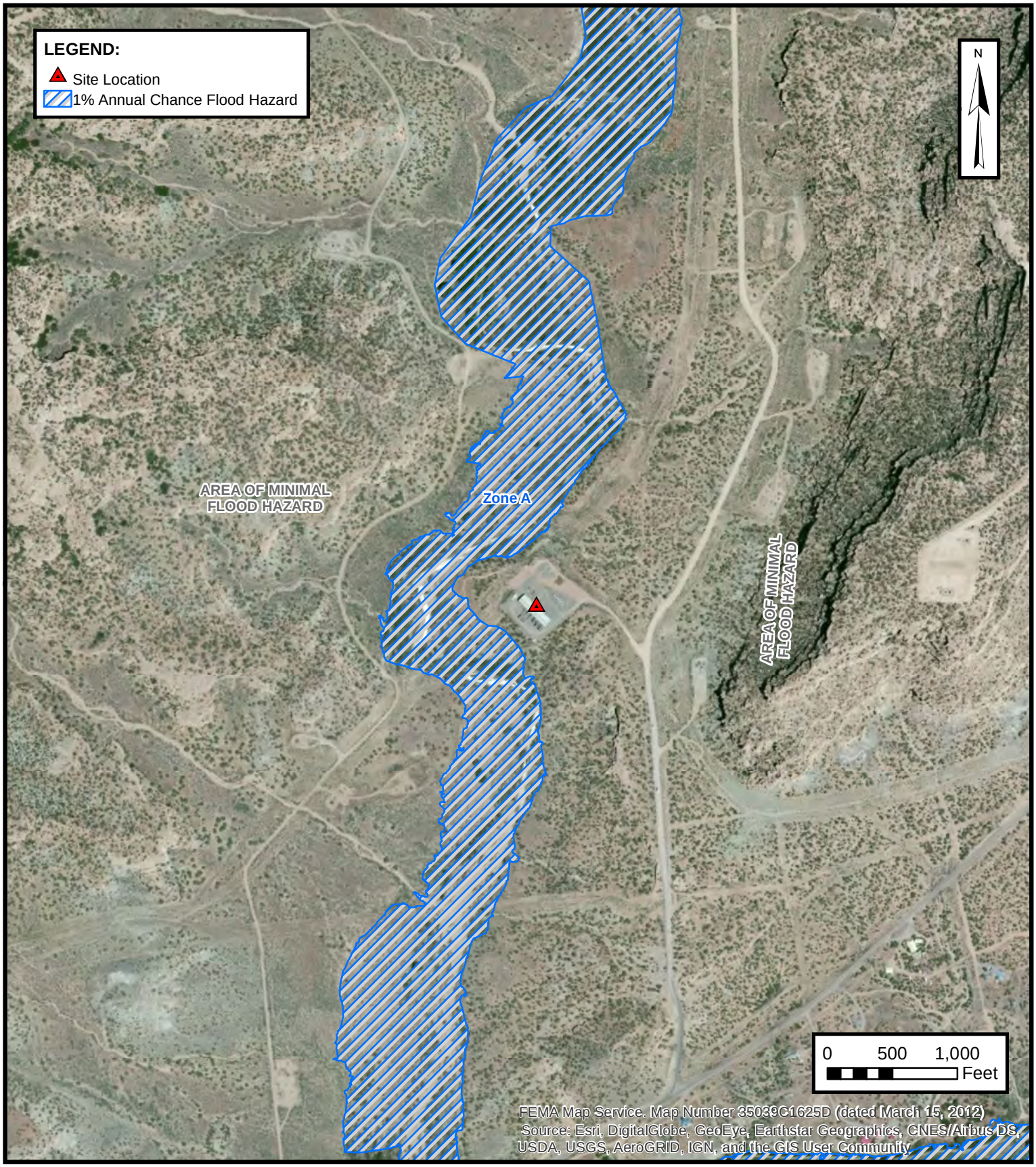
MINES, MILLS AND QUARRIES

ENTERPRISE FIELD SERVICES, LLC
PUMP CANYON COMPRESSOR STATION (8/28/2019)
SW ¼, S24 T30N R9W, San Juan County, New Mexico
36.794997° N, 107.733385° W

PROJECT NUMBER: 05A1226070

FIGURE

G



ENSOLUM
Environmental & Hydrogeologic Consultants

100-YEAR FLOOD PLAIN MAP

ENTERPRISE FIELD SERVICES, LLC
PUMP CANYON COMPRESSOR STATION (8/28/2019)
SW ¼, S24 T30N R9W, San Juan County, New Mexico
36.794997° N, 107.733385° W

PROJECT NUMBER: 05A1226070

FIGURE

H

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	County	Q 64	Q 16	Q 4	Sec	Tws	Rng	X	Y	Depth Well	Depth Water	Water Column
SJ 00140	SJM2	SJ			1	25	30N	09W	255769	4074625*	10		
SJ 02744	SJM2	SJ	4	4	2	25	30N	09W	256992	4074273*	21	10	11
SJ 04066 POD1	SJM2	SJ		2	4	25	30N	09W	257174	4073384	260	200	60

Average Depth to Water: **105 feet**

Minimum Depth: **10 feet**

Maximum Depth: **200 feet**

Record Count: 3

PLSS Search:

Section(s): 24, 13, 14, 23, 26, 25 **Township:** 30N **Range:** 09W

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

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 Code	Sub-basin	County	Q 64	Q 16	Q 4	Sec	Tws	Rng	X	Y	Depth Well	Depth Water	Water Column
SJ 01516		SJM2	SJ		2	2	19	30N	08W	258304	4076302*	15	10	5
SJ 03467		SJM2	SJ	2	2	1	30	30N	08W	257628	4074851*	40	16	24
SJ 03699	O		SJ	2	4	1	30	30N	08W	257623	4074452*		21	
SJ 03699 POD1		SJM2	SJ	1	4	1	30	30N	08W	257423	4074452*	21	10	11
SJ 03904 POD1		SJM2	SJ	1	4	1	30	30N	08W	257419	4074367	24	12	12
SJ 04032 POD1		SJM2	SJ	3	4	1	30	30N	08W	257459	4074325	22	13	9
SJ 04084 POD1		SJM2	SJ	3	4	1	30	30N	08W	257393	4074282	23	13	10

Average Depth to Water: **13 feet**

Minimum Depth: **10 feet**

Maximum Depth: **21 feet**

Record Count: 7

PLSS Search:

Section(s): 18, 19, 30 **Township:** 30N **Range:** 08W

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

30-045-04216
30-045-20491
30-045-27135

4641

#2

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

Operator MERIDIAN OIL CO. Location: Unit N Sec. 34 Twp 30 Rng 9

Name of Well/Wells or Pipeline Serviced RIDDLE A COM # 260, # 3, # 9

cps 54w

Elevation 5716' Completion Date 8/20/90 Total Depth 65 Land Type N/A

Casing Strings, Sizes, Types & Depths 47ft. 8" PVC Casing

If Casing Strings are 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: Fresh, Clear
Salty, Sulphur, Etc. 30 ft. to 40 ft.

Depths gas encountered: N/A

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

65 ft. with 500 lbs Ashbury Petroleum Coke

Depths anodes placed: 60ft., 53 ft.

Depths vent pipes placed: 65 ft.

Vent pipe perforations: 20'

Remarks: gb #3 Well #2

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

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

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

4642

#3

30-045-20491

30-045-27135

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

Operator MERIDIAN OIL CO. Location: Unit N Sec. 34 Twp 30 Rng

Name of Well/Wells or Pipeline Serviced RIDDLE A COM # 260, #3, #9

cps 54w

Elevation 5716' Completion Date 8/20/90 Total Depth 65ft. Land Type N/A

Casing Strings, Sizes, Types & Depths 47 ft. 8" PVC Casing

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

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

N/A

Depths & thickness of water zones with description of water: Fresh, Cle

Salty, Sulphur, Etc. 30 to 40 ft.

Depths gas encountered: N/A

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

65 ft. with 500 lbs Ashbury Petroleum Coke

Depths anodes placed: 53 ft. 45 ft.

Depths vent pipes placed: 65 ft.

Vent pipe perforations: 20'

Remarks: gb #3 Well #3

RECEIVED
MAY 31 1991
OIL CON. DIV
DIST. 3

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

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

30-045-01870
30-045-20491
30-045-27135

4643

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

Operator MERIDIAN OIL CO. **Location: Unit** N **Sec.** 34 **Twp** 30 **Rng** 9

Name of Well/Wells or Pipeline Serviced RIDDLE A COM # 260, #3, #9

CDS 54W

Elevation 5716 **Completion Date** 8/20/90 **Total Depth** 65 ft. **Land Type** N/A

Casing Strings, Sizes, Types & Depths 47 ft. 8" PVC Casing

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

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

N/A

Depths & thickness of water zones with description of water: Fresh, Clea
Salty, Sulphur, Etc. 30 to 40 ft.

Depths gas encountered: N/A

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

65 ft. with 500 lbs Ashbury Petroleum Coke

Depths anodes placed: 58ft, 50 ft.

Depths vent pipes placed: 65 ft.

Vent pipe perforations: 20'

Remarks: gb #3 Well #4

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

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

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

46404

30-045-20491
30-045-27135

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

Operator MERIDIAN OIL CO. Location: Unit N Sec. 34 Twp 30 Rng 9

Name of Well/Wells or Pipeline Serviced RIDDLE A COM # 260, # 3, # 9

cps 54w

Elevation 5716 Completion Date 8/20/90 Total Depth 65 Land Type N/A

Casing Strings, Sizes, Types & Depths 57 ft. 8" PVC Casing

If Casing Strings are 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: Fresh, Clea

Salty, Sulphur, Etc. 30 to 40 ft.

Depths gas encountered: N/A

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

65 ft. 500 lbs Ashbury Petroleum Coke

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OIL CON. DIV.
DIST. 3

Depths anodes placed: 55 ft. & 48 ft.

Depths vent pipes placed: 65 ft.

Vent pipe perforations: 20'

Remarks: gb #3 Well #5 Well #6 CAVED AT 65' LOST 1 ANODE.

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

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

Riddle A #3 30-045-09276
Riddle A #9 30-045-20491
Riddle A Com #260 30-045-27135

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

Operator MERIDIAN OIL Location: Unit SW Sec. 24 Twp 30 Rng 9

Name of Well/Wells or Pipeline Serviced RIDDLE A #3, RIDDLE A #9, RIDDLE A COM #260 cps 54w

Elevation 5716' Completion Date 11/8/61 Total Depth 100' 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. N/A HOLE MAKING WATER AND GAS

Depths gas encountered: N/A HOLE MAKING WATER AND GAS.

Type & amount of coke breeze used: 1020 lbs.

Depths anodes placed: 80', 72', 66', 60', 54'

Depths vent pipes placed: N/A

Vent pipe perforations: N/A

Remarks: gb #1 THIS HOLE PROBABLY CONTAINED LARGE CAVITY-ALSO WASTED COKE DUE TO WATER FLOW.

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.

SAN JUAN DIVISION
WELL CASING CATHODIC PROTECTION
DAILY CONSTRUCTION
PROGRESS REPORT

DATE 11-8-61

WELL NAME - Riddle # 3-A WORK ORDER NO. 184-52155-50-20

NUMBER AND DEPTH OF HOLES: #1 100', #2____, #3____, #4____, #5____.

DEPTH OF EACH ANODE: #1 80', #2 72', #3 66', #4 60', #5 54', #6____, #7____
#8____, #9____, #10____.

ANODE RESISTANCES: #1 1.5, #2 1.5, #3 2.0, #4 2.1, #5 1.5, #6____, #7____
#8____, #9____, #10____.

TOTAL CIRCUIT RESISTANCE: .78 OHMS.

DRILLING LOG: (ATTACH HERETO)

AMOUNT OF COKE BREEZE PLACED IN EACH HOLE: #1 1020', #2_____, #3_____
#4_____, #5_____.

ANY DIFFICULTIES ENCOUNTERED IN DRILLING:
ROCKS-
LOST CIRCULATION-
CASING INSTALLED-

DATE ALL CONSTRUCTION COMPLETED_____.

REMARKS:

Hole making water and gas had to have drill stay in hole until we could load Anodes
Top of coke at 38' Tried to plug with dirt unable to Drilling Dept. to Handle plug.
215 lbs / Ft — this hole probably contained large cavity — also wasted coke due to water flow

Edward R. Poulsen
SIGNATURE OF INSPECTOR

15
38
47

DRILLING DEPARTMENT

DAILY DRILLING REPORT

LEASE Riddle WELL NO. 3A CONTRACTOR L E Wilson RIG NO. D-2 REPORT NO. DATE Nov 8 1961

MORNING

Driller Total Men In Crew

FROM	TO	FORMATION	WT-BIT	R.P.M.

NO. DC SIZE LENG.

BIT NO.

NO. DC SIZE LENG.

SER NO.

STANDS

SIZE

SINGLES

TYPE

DOWN ON KELLY

MAKE

TOTAL DEPTH

MUD RECORD

Time	Wt.	Vis.

MUD, ADDITIVES USED AND RECEIVED

FROM	TO	TIME BREAKDOWN

REMARKS –

DAYLIGHT

Driller Total Men In Crew

FROM	TO	FORMATION	WT-BIT	R.P.M.
0	18	Sand		
18	52	Sandy Shale		
52	54	Lime		
54	100	Blue Shale		

NO. DC SIZE LENG.

BIT NO.

NO. DC SIZE LENG.

SERIAL NO.

STANDS

SIZE

SINGLES

TYPE

DOWN ON KELLY

MAKE

TOTAL DEPTH

MUD RECORD

Time	Wt.	Vis.

MUD, ADDITIVES USED AND RECEIVED

FROM	TO	TIME BREAKDOWN

REMARKS –

One Hr 9 7/8" Hole

3 Hrs Standby

EVENING

Driller Total Men In Crew

FROM	TO	FORMATION	WT-BIT	R.P.M.

NO. DC SIZE LENG.

BIT NO.

NO. DC SIZE LENG.

SERIAL NO.

STANDS

SIZE

SINGLES

TYPE

DOWN ON KELLY

MAKE

TOTAL DEPTH

MUD RECORD

Time	Wt.	Vis.

MUD, ADDITIVES USED AND RECEIVED

FROM	TO	TIME BREAKDOWN

REMARKS –

SIGNED: Toolpusher _____ Company Supervisor _____

30-045-09276
30-045-20491
30-045-27135

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

Operator MERIDIAN OIL Location: Unit SW Sec. 24 Twp 30 Rng 9

Name of Well/Wells or Pipeline Serviced RIDDLE A #3, RIDDLE A #9, RIDDLE A COM #260 cps 54w

Elevation 5716' Completion Date 6/17/74 Total Depth 260' 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. 30'

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OIL CON. DIV
DIST. 3

Depths gas encountered: N/A

Type & amount of coke breeze used: 3800 lbs.

Depths anodes placed: 170', 160', 150', 140', 130', 90', 80', 70', 60', 50'

Depths vent pipes placed: N/A

Vent pipe perforations: 150'

Remarks: gb #2 3 HOLES DRILLED, FIRST CAVED AT 40', SECOND CAVED AT 160'

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.

El Paso Natural Gas Company
Form 7-238 (Rev. 1-69)

WELL CASING
CATHODIC PROTECTION CONSTRUCTION REPORT
DAILY LOG

Drilling Log (Attach Hereto). ☐ Completion Date 6/17/74

Well Name	Location	CPS No.
Riddle A #3	SW 24-30N-9W	54W

Type & Size Bit Used	Work Order No.
6 3/4"	184-52155.19-50

Anode Hole Depth	Total Drilling Rig Time	Total Lbs. Coke Used	Lost Circulation Mat'l Used	No. Sacks Mud Used
260'		3800 EST		

Anode Depth	#1	#2	#3	#4	#5	#6	#7	#8	#9	#10
	170'	160'	150'	140'	130'	90'	80'	70'	60'	50'
Anode Output (Amps)	4.2	5.5	5.5	4.4	4.3	3.4	4.8	5.5	4.9	5.5

Anode Depth	#11	#12	#13	#14	#15	#16	#17	#18	#19	#20
Anode Output (Amps)										

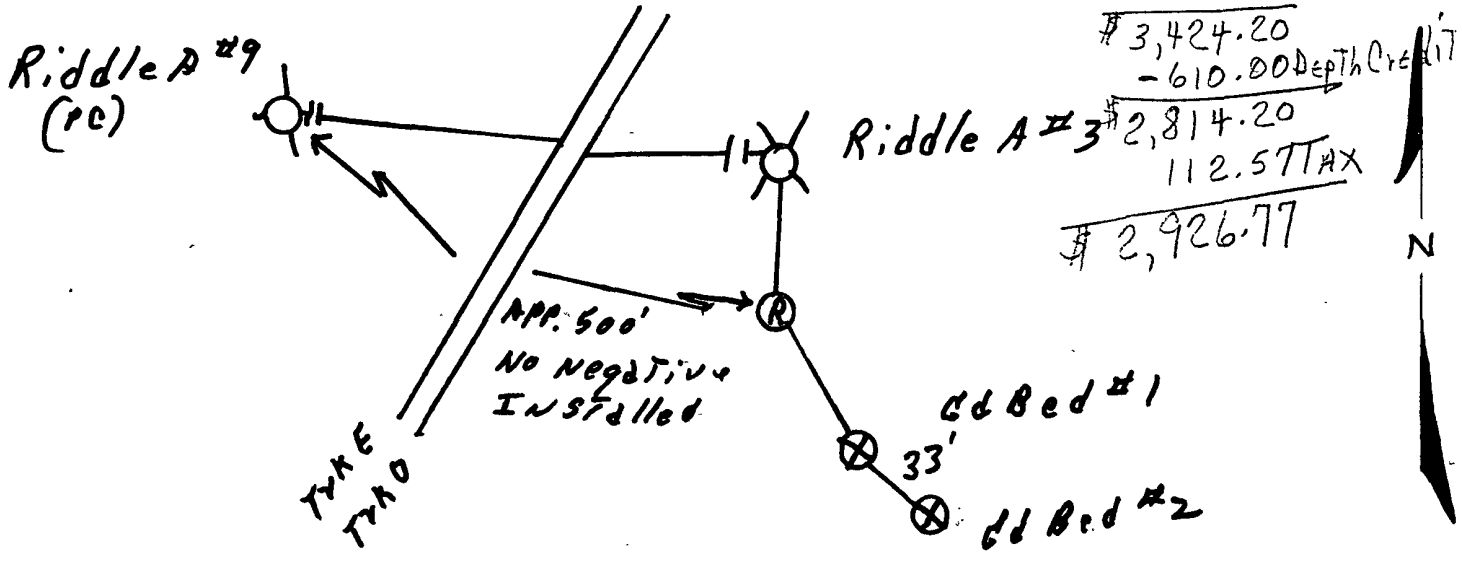
Total Circuit Resistance				No. 8 C.P. Cable Used	No. 2 C.P. Cable Used
Volts 11.2	Amps 18.0	Ohms 0.62		38'	

Remarks: Drilled Hole #1 with Air, Cave in. Drilled Hole #2 with Air, Cave in Drilled Hole #3 with Mud Driller said water @ 30'. Vent Hose Perforated 150' Pumped Coke Breeze To 20' Complete By Slurry

All Construction Completed

Edward R. Pauley
(Signature)

GROUND BED LAYOUT SKETCH



$3,409.00
15.20 Cable
$3,424.20
-610.00 Depth Credit
$2,814.20
112.57 TAX
$2,926.77

Original & 1 Copy All Reports

STORM WATER WELL DRILLING INC.

DIAMOND CORE DRILLING
DIAMOND DRILLING EQUIPMENT
GROUTING
FOUNDATION TESTING
MINING
QUARRYING
SHAFT SINKING
WATER WELL DRILLING

CONTRACTORS
14991 W. 44TH AVENUE
GOLDEN, COLORADO 80401
PHONE (303) 278-9505

GENERAL OFFICE
14991 W. 44TH AVENUE
BAILEY OFFICE
CALL 1-838-4821

Drill GD 15 (W) Date 6-17-74

Owner CPS 54 (W)

Location

City State County

From	To	Formation	Color	Hardness
0	30	SURFACE		SOFT
30	60	SANDY SHALE	BL	SOFT
60	70	SAND	BR	SOFT
70	90	SANDY SHALE	BL	SOFT
90	140	SANDSTONE	BR	MED
140	200	SANDY SHALE	BL	SOFT
		INJECTION AT 25'		
		WATER AT 30'		

Total Hours

Equipment Down Time

Hours Drilling

Driller Art Ladwell

Helper

Helper

C.P.S. Time

S.W.W.D.I. Time

Total Footage

Approval of
C.P.S. Engineer

Form 7-1 (Rev. 5-67)

EL PASO NATURAL GAS COMPANY
ENGINEERING DEPARTMENT

Sheet ____ of ____
Date: ____
By: ____

Hole #1

54W   ~~Hole~~   x = 8.4

40	3.0	20	2.8			Water Standing @
	3.3		2.6			40'
50	3.6	30	BOT 231			6/12/74 Attempted To
	3.7					Relog Hole. Caving
60	3.2	40				@ 40' 10:30 AM Worked
	2.7					on Hole Till 12:30 P.
70	2.1	50				Moved Rig Drilled #2
	2.4					Hole Rig @ 160 @ 2:3
80	3.4	60				Told Contractor we wo
	3.5			1	180	Not Load T That Da
90	2.8			2	170	
	2.4			3	160	
100	2.0			4	150	
	2.0			5	140	
10	1.9			6	90	
	1.9			7	80	
20	1.9			8	65	
	1.9			9	55	
30	1.9			10	45	
	2.2					
40	3.3					
	3.4					
50	3.5					
	3.8					
60	3.6					
	3.9					
70	3.7					
	3.4					
80	2.5					
	1.6					
90	1.4					
	1.4					
200	1.8					
	2.7					
10	2.7					
	2.5					

Form 7-1 (Rev. 5-67)

EL PASO NATURAL GAS COMPANY

ENGINEERING DEPARTMENT

Sheet ____ of ____
Date: ____
By: ____

33

Hole # 3

54 W   X = 9.4

Water standing 30'
Drilled with Mud
Driller said water @ 30'
Vent Hose Perforated 120

	40	3.0	
		3.0	
⑩	50	2.9	
		3.2	
⑨	60	3.0	
		2.8	
⑧	70	2.7	
		3.2	
⑦	80	3.4	
		3.0	
⑥	90	2.5	
		1.9	
	100	1.7	
		1.7	
	10	1.8	
		1.7	
	20	1.6	
		1.6	
⑤	30	2.4	
		2.9	
④	40	2.8	
		3.2	
③	50	3.1	
		3.3	
②	60	3.0	
		2.8	
①	70	1.6	
		1.4	
	80	1.0	
		1.0	
	90	1.1	
		1.6	
	200	1.7	
		1.4	
	10	1.8	
	216	2.1	DOT

		Water	Coke
1	170	3.1	4.2
2	160	3.6	5.5
3	160	3.8	5.5
4	140	3.2	4.4
5	130	2.2	4.3
6	90	1.6	3.4
7	80	3.6	4.8
8	70	3.0	5.9
9	60	3.9	4.4
10	50	3.5	5.5

11.2 V 18 Ω 0.62 Ω

FA-07-1238 (Rev. 10-82)

#15

WELL CASING
CATHODIC PROTECTION CONSTRUCTION REPORT
DAILY LOG

Drilling Log (Attach Hereto) ☐ Completion Date 8-20-90

CPS #	Well Name, Line or Plant:	Work Order #	Static:	Ins. Union Check
54-W	Riddle A Com #260 Riddle A Com #3 Riddle A Com #9			☑ Good ☐ Bad

Location:	Anode Size:	Anode Type:	Size Bit:
N34-30-9	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
#1	#2		#3	#4	#5

	#1	#2	#3	#4	#5	#6	#7	#8	#9	#10
Anode Depth	60	53	60	53	53	45	58	50	55	48
Anode Output (Amps)	5.9	7.0	6.8	6.8	6.0	8.2	5.2	6.8	5.3	6.4

	#11	#12	#13	#14	#15	#16	#17	#18	#19	#20
Anode Depth										
Anode Output (Amps)										

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

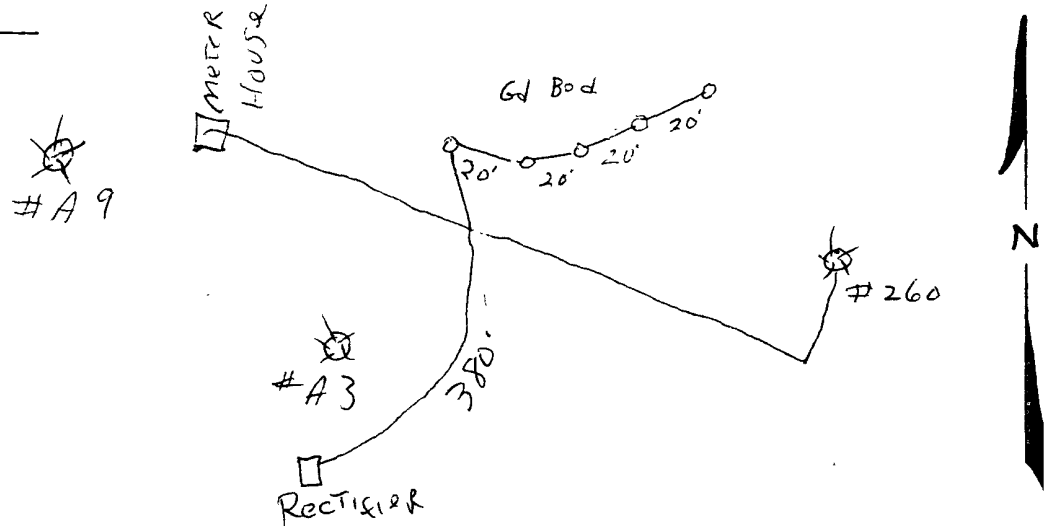
Remarks: Drilled 5 holes and loaded 2 ANODE PER hole. INSTALLED 1" PVC VEN PIPE IN EACH hole. AVERAGE hole depth APPROXIMATELY 65'. APPROXIMAT 500 lbs. COKE PER hole. WATER STANDING AT APPROXIMATELY 40' IN hole. PERFORATED 20' ON each VENT PIPE.

Rectifier Size: _____ V _____ A
Addn'l Depth: _____
Depth Credit: _____
Extra Cable: 20'
Ditch & 1 Cable: 460'
25' Meter Pole: _____
20' Meter Pole: _____
10' Stub Pole: _____
Junction Box: 1

All Construction Completed

Willis Knight Jr
(Signature)

GROUND BED LAYOUT SKETCH



BURGE CORROSION SYSTEMS, INC.

P.O. BOX 1359 - PHONE 334-6141
AZTEC, NEW MEXICO 87410

COMPANY Meridian Oil DAILY DRILLING REPORT 8-20 19 90

WELL NAME:	WELL NUMBER:	SECTION:	TOWNSHIP:	RANGE:
Riddle A-Com	260	N 24	30	9

WATER AT:	FEET:	HOLE MADE:

DESCRIPTION OF FORMATION

FROM	TO	FORMATION IS	COLOR
Well #1			
0	50'	8" PVC CASING (SAND-GRAVEL)	
50'	70'	shale	
70'	100'	SAND-GAS-ATTEMPTED TO CEMENT	
HAD TO DRILL CEMENT BACK TO 80' -B.J. HUGHES BACK TO		SURFACE	
Well #2			
0	47'	8" PVC CASING (SAND-GRAVEL	
47'	70'	shale	
Well #3			
0	47'	8" PVC CASING (SAND-GRAVEL)	
47'	65'	shale	
Well #4			
0	47'	8" PVC CASING (SAND-GRAVEL)	
47'	65'	shale	
Well #5			
0	47'	8" PVC CASING (SAND-GRAVEL)	
47'	65'	shale	
Well #6		- LOST DUE TO CASING split due to gravel	
(Well #7) 0	45'	8" PVC CASING (SAND-GRAVEL)	
45'	65'	shale	

REMARKS: Well #1 (ABANDONED-CEMENTED/REDRILLED/CEMENTED) DRILLED WITH MUD
Well #5 (LOST-DRILLED up 1 ANODE & WIRE, DUE TO GRAVEL & SAND RUNNING)
REPLACED/RECOMPLETED) Well #6 (LOST DUE TO GRAVEL)

Driller Brian E. Burge Tool Dresser

SET TWO ANODES IN 5 holes

TOTAL DAYS TO complete 7 days

BURGE CORROSION SYSTEMS, INC.

P.O. BOX 1359 - PHONE 334-6141
AZTEC, NEW MEXICO 87410

COMPANY Meridian Oil DAILY DRILLING REPORT 7/30-31-1 19 90

WELL NAME:	WELL NUMBER:	SECTION:	TOWNSHIP:	RANGE:
Riddle A - Com. No. 260	~~#~~ 260	24	30	9

WATER AT:	FEET:	HOLE MADE:
35'		102' #1

DESCRIPTION OF FORMATION

FROM	TO	FORMATION IS	COLOR
0	18'	Sand / clay streamer	
18'	22'	gravel / Sand	
22'	30'	sand, clay streamers	
30'	40'	Sand water, lost circulation	
40'	50'	Shale	
50'	97'	Shale / Bentonite mix	
97'	102'	water / ~~Gas~~ / artesian	

REMARKS: Tried to drill with air, lost returns altogether. Set 50' 8" plastic casing in 12 1/4" Borehole. Drilled with mud with 6 3/4 Drill Bit until water and gas were encountered.

Driller Brian E. Burge Tool Dresser

CONSTRUCTION LOGGING READINGS

Meridan Oil

CPS #: 54 W WELL NAME: Riddle A Com #260 LOCATION: N24-30-9 DATE: 8-20-90

TOTAL VOLTS: 12.5 TOTAL AMPS: 7.0 OHMS RESISTANCE: - 1.8

Hole #5 of 5

DEEP	LOG ANODE	ANODE NO.	DEEP	LOG ANODE	ANODE NO.	DEEP	LOG ANODE	ANODE No.	DEEP	LOG ANODE	ANODE No.
5			185			365			545		
10			190			370			550		
15			195			375			555		
20			200			380			560		
25			205			385			565		
30			210			390			570		
35			215			395			575		
40			220			400			580		
45	1.2		225			405			585		
50	3.2		230			410			590		
55	2.6		235			415			595		
60	2.5		240			420			600		
65	62'	TD	245			425			605		
70			250			430			610		
75			255			435			615		
80			260			440			620		
85			265			445			625		
90			270			450			630		
95			275			455			635		
100			280			460			640		
105			285			465			645		
110			290			470			650		
115			295			475			655		
120			300			480			660		
125			305			485			665		
130			310			490			670		
135			315			495			675		
140			320			500			680		
145			325			505			685		
150			330			510			690		
155			335			515			695		
160			340			520			700		
165			345			525			705		
170			350			530			710		
175			355			535			715		
180			360			540			720		

ANODE READINGS

NO.	DEPTH	NO COKE	WITH COKE
1	55	3.5	5.3
2	48	4.5	6.4

REMARKS: Set 45' of 8" PVC Casing

CONSTRUCTION LOGGING READINGS

CPS #: 54-W WELL NAME: Riddle A com #260 LOCATION: N24-30-9 DATE: 8-17-90

TOTAL VOLTS: 12.46 TOTAL AMPS: 8.3 OHMS RESISTANCE: 1.5

Hole #4 of 5

DEEP	LOG ANODE	ANODE NO.	DEEP	LOG ANODE	ANODE NO.	DEEP	LOG ANODE	ANODE No.	DEEP	LOG ANODE	ANODE No.
5			185			365			545		
10			190			370			550		
15			195			375			555		
20			200			380			560		
25			205			385			565		
30			210			390			570		
35			215			395			575		
40			220			400			580		
45	1.6		225			405			585		
50	2.9	2	230			410			590		
55	2.5		235			415			595		
60	2.0	1	240			420			600		
65	2.0		245			425			605		
70	66	TD	250			430			610		
75			255			435			615		
80			260			440			620		
85			265			445			625		
90			270			450			630		
95			275			455			635		
100			280			460			640		
105			285			465			645		
110			290			470			650		
115			295			475			655		
120			300			480			660		
125			305			485			665		
130			310			490			670		
135			315			495			675		
140			320			500			680		
145			325			505			685		
150			330			510			690		
155			335			515			695		
160			340			520			700		
165			345			525			705		
170			350			530			710		
175			355			535			715		
180			360			540			720		

ANODE READINGS

NO.	DEPTH	NO COKE	WITH COKE
1	58	2.8	5.2
2	50	3.8	6.8

REMARKS: Set 45' of 8" PVC Casing

CONSTRUCTION LOGGING READINGS

Meridan Oil

CPS #: 54-W WELL NAME: Riddle A Com #260 LOCATION: N24309 DATE: 8-17-90

TOTAL VOLTS: 12.4 TOTAL AMPS: 10.2 OHMS RESISTANCE: 1.2

Hole # 3 of 5

DEEP	LOG ANODE	ANODE NO.	DEEP	LOG ANODE	ANODE NO.	DEEP	LOG ANODE	ANODE No.	DEEP	LOG ANODE	ANODE No.
5			185			365			545		
10			190			370			550		
15			195			375			555		
20			200			380			560		
25			205			385			565		
30			210			390			570		
35			215			395			575		
40	3.5		220			400			580		
45	3.9	2	225			405			585		
50	3.1		230			410			590		
55	2.9	1	235			415			595		
60	2.6		240			420			600		
~~65~~	62'	TD	245			425			605		
70			250			430			610		
75			255			435			615		
80			260			440			620		
85			265			445			625		
90			270			450			630		
95			275			455			635		
100			280			460			640		
105			285			465			645		
110			290			470			650		
115			295			475			655		
120			300			480			660		
125			305			485			665		
130			310			490			670		
135			315			495			675		
140			320			500			680		
145			325			505			685		
150			330			510			690		
155			335			515			695		
160			340			520			700		
165			345			525			705		
170			350			530			710		
175			355			535			715		
180			360			540			720		

ANODE READINGS

NO.	DEPTH	NO COKE	WITH COKE
1	53	3.7	6.0
2	45	5.4	8.2

REMARKS: Set 40' of 8" PVC Casing

CONSTRUCTION LOGGING READINGS

Meridan Oil

CFS #: 54-W WELL NAME: Riddle Com #260 LOCATION: N24-30-9 DATE: 8-16-90

TOTAL VOLTS: 29 TOTAL AMPS: 8.6 OHMS RESISTANCE: 1.6

Hole #1 of 5

DEEP	LOG ANODE	ANODE NO.	DEEP	LOG ANODE	ANODE NO.	DEEP	LOG ANODE	ANODE No.	DEEP	LOG ANODE	ANODE No.
5			185			365			545		
10			190			370			550		
15			195			375			555		
20			200			380			560		
25			205			385			565		
30			210			390			570		
35			215			395			575		
40			220			400			580		
45			225			405			585		
50	2.3		230			410			590		
55	3.0	2	235			415			595		
60	2.9	1	240			420			600		
65	2.2	TD	245			425			605		
70			250			430			610		
75			255			435			615		
80			260			440			620		
85			265			445			625		
90			270			450			630		
95			275			455			635		
100			280			460			640		
105			285			465			645		
110			290			470			650		
115			295			475			655		
120			300			480			660		
125			305			485			665		
130			310			490			670		
135			315			495			675		
140			320			500			680		
145			325			505			685		
150			330			510			690		
155			335			515			695		
160			340			520			700		
165			345			525			705		
170			350			530			710		
175			355			535			715		
180			360			540			720		

ANODE READINGS

NO.	DEPTH	NO COKE	WITH COKE
1	60	3.5	5.9
2	53	3.8	7.0

REMARKS: Set 48' of 8" PVC Casing

CONSTRUCTION LOGGING READINGS

Meridian Oil

CPS #: 54-W WELL NAME: Riddle A Com 260 LOCATION: DATE: 8-16-90

TOTAL VOLTS: 12.5 TOTAL AMPS: 7.7 OHMS RESISTANCE: 1.62

Hole #2 of 5

DEEP	LOG ANODE	ANODE NO.	DEEP	LOG ANODE	ANODE NO.	DEEP	LOG ANODE	ANODE No.	DEEP	LOG ANODE	ANODE No.
5			185			365			545		
10			190			370			550		
15			195			375			555		
20			200			380			560		
25			205			385			565		
30			210			390			570		
35			215			395			575		
40			220			400			580		
45			225			405			585		
50	3.1	2	230			410			590		
55	2.9		235			415			595		
60	2.7	1	240			420			600		
65	2.0		245			425			605		
70	2.0	TD	250			430			610		
75			255			435			615		
80			260			440			620		
85			265			445			625		
90			270			450			630		
95			275			455			635		
100			280			460			640		
105			285			465			645		
110			290			470			650		
115			295			475			655		
120			300			480			660		
125			305			485			665		
130			310			490			670		
135			315			495			675		
140			320			500			680		
145			325			505			685		
150			330			510			690		
155			335			515			695		
160			340			520			700		
165			345			525			705		
170			350			530			710		
175			355			535			715		
180			360			540			720		

ANODE READINGS

NO.	DEPTH	NO COKE	WITH COKE
1	60	3.4	6.1
2	53	3.7	6.8

REMARKS: Set 47' of 8" PVC Casing

30-045-22926

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

Operator Meridian Oil Inc. Location: Unit F Sec. 24 Twp 30 Rng 09

Name of Well/Wells or Pipeline Serviced Riddle A #3A

Elevation 5732' Completion Date 7/1/94 Total Depth 328' Land Type F

Casing Strings, Sizes, Types & Depths 6/29 Set 99' of 8" PVC Casing. No Gas or Water, But 12'(0'-12') of Boulders Were Encountered During Casing.

If Casing Strings are cemented, show amounts & types used Cemented With 20 Sacks.

If Cement or Bentonite Plugs have been placed, show depths & amounts used Used 5 Sacks of Cement, To Place a 15'(100'-115') Plug, To Stop Artesian Water.

Depths & thickness of water zones with description of water: Fresh, Clear, Salty, Sulphur, Etc. Hit Some Fresh Water at 130', And More Fresh Water at 265'. A Water Sample was Taken.

Depths gas encountered: None

Ground bed depth with type & amount of coke breeze used: 328' Depth. Used 75 Sacks of Asbury 218R (3750#)

Depths anodes placed: 294', 286', 278', 270', 234', 226', 218', 210', 202', 194', 186', 178', 156', 148', & 140'

Depths vent pipes placed: Surface To 328'

Vent pipe perforations: Bottom 210'

Remarks:

RECEIVED
JAN 20 1995
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.

ENSOLUM

APPENDIX C

Executed C-138 Solid Waste Acceptance Forms

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

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

9705 7-1032

Form C-138
Revised August 1, 2011

*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 Avenue, Farmington, NM 87401

Invoice Information: **PM: Matt Garrison**
Non AFE: N43731
Pay Key: EM 20767

2. Originating Site:
Pump Canyon CS

3. Location of Material (Street Address, City, State or ULSTR):
UL K Section 24 T30N R9W; 36.794997, -107.733385

Sep. 2019

4. Source and Description of Waste: Hydrocarbon/Water impacted soils associated with a release from a produced water tank.
Estimated Volume 50 yd³ / bbls Known Volume (to be entered by the operator at the end of the haul) 69 yd³ / bbls

5. GENERATOR CERTIFICATION STATEMENT OF WASTE STATUS

I, Thomas Long, representative or authorized agent for Enterprise Field Services, LLC do hereby
PRINT & SIGN NAME COMPANY NAME
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 9-20-19 representative for Enterprise Field Services, LLC authorize Envirotech, Inc. to complete the required
Generator Signature
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 #: 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: Enviro Manager DATE: 9/13/19

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

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 97057-1032

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

Form C-138
Revised August 1, 2011

*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 Avenue, Farmington, NM 87401

Invoice Information: PM: Matt Garrison
Non AFE: N43731
Pay Key: EM 20767

2. Originating Site:
Pump Canyon CS

3. Location of Material (Street Address, City, State or ULSTR):
UL K Section 24 T30N R9W; 36.794997, -107.733385 Oct. 2019

4. Source and Description of Waste: Hydrocarbon/Water impacted soils associated with a release from a produced water tank.
Estimated Volume 50 (yd³ / bbls) Known Volume (to be entered by the operator at the end of the haul) 36 (yd³ / bbls)

5. GENERATOR CERTIFICATION STATEMENT OF WASTE STATUS

I, Thomas Long, representative or authorized agent for Enterprise Field Services, LLC do hereby
PRINT & SIGN NAME COMPANY NAME
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 10-29-19 representative for Enterprise Field Services, LLC authorize Envirotech, Inc. to complete the required
Generator Signature
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

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: Envtl Manager DATE: 10/29/19

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

ENSOLUM

APPENDIX D

Photographic Documentation

SITE PHOTOGRAPHS

Enterprise Field Services, LLC
Site Characterization Report / Remediation Plan
Pump Canyon Compressor Station
Ensolum Project No. 05A1226070

ENSOLUM

Photograph 1 Photograph Description: View of the initial release area.	
Photograph 2 Photograph Description: View of the initial release area.	
Photograph 3 Photograph Description: View of the excavation.	

SITE PHOTOGRAPHS

Enterprise Field Services, LLC
Site Characterization Report / Remediation Plan
Pump Canyon Compressor Station
Ensolum Project No. 05A1226070

ENSOLUM

Photograph 4 Photograph Description: View of the excavation.	
Photograph 5 Photograph Description: View of the final excavation.	
Photograph 6 Photograph Description: View of the final excavation.	

SITE PHOTOGRAPHS

Enterprise Field Services, LLC
Site Characterization Report / Remediation Plan
Pump Canyon Compressor Station
Ensolum Project No. 05A1226070

ENSOLUM

Photograph 7 Photograph Description: View of the final excavation.	

ENSOLUM

APPENDIX E

Table 1 – Soil Analytical Summary

ENSOLUM

TABLE 1
Pump Canyon Compressor Station
SOIL ANALYTICAL SUMMARY

Sample I.D.	Date	Sample Type C- Composite G - Grab	Sample (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) (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**				**1,000**	**2,500**	**10,000**
Composite Soil Samples Removed by Excavation														
S-1	10.17.19	C	0 to 1.5	<0.019	0.25	0.18	4.3	4.7	51	1,800	730	**1,851**	**2,581**	<60
S-2	10.17.19	C	0 to 1.5	<0.019	<0.039	<0.039	<0.077	ND	<3.9	220	2,000	220	2,220	<60
Excavation Composite Soil Samples														
S-3	10.17.19	C	0 to 1.5	<0.021	<0.042	<0.042	<0.084	ND	<4.2	860	540	860	1,400	<60
S-4	10.17.19	C	0 to 1.5	<0.022	<0.045	<0.045	<0.089	ND	<4.5	370	310	370	680	<60
S-5	10.30.19	C	0 to 2	<0.017	<0.035	<0.035	<0.070	ND	<3.5	<10	<50	ND	ND	81
HA-1@4'	11.01.19	C	4	<0.024	<0.049	<0.049	<0.098	ND	<4.9	9.8	<49	9.8	9.8	<60
HA-2@4'	11.01.19	C	4	<0.024	<0.048	<0.048	<0.097	ND	<4.8	13	<47	13	13	<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

GRO = Gasoline Range Organics

DRO = Diesel Range Organics

MRO = Motor Oil/Lube Oil Range Organics

TPH = Total Petroleum Hydrocarbon

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

October 23, 2019

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

RE: Pump Canyon CS OrderNo.: 1910A19

Dear Kyle Summers:

Hall Environmental Analysis Laboratory received 4 sample(s) on 10/18/2019 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

Analytical Report
Lab Order **1910A19**
Date Reported: **10/23/2019**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: ENSOLUM **Client Sample ID:** S-1
Project: Pump Canyon CS **Collection Date:** 10/17/2019 10:00:00 AM
Lab ID: 1910A19-001 **Matrix:** MEOH (SOIL) **Received Date:** 10/18/2019 8:05:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **CAS**	
Chloride	ND	60		mg/Kg	20	10/18/2019 10:24:52 PM	48258
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **BRM**	
Diesel Range Organics (DRO)	1800	96		mg/Kg	10	10/21/2019 6:18:23 PM	48254
Motor Oil Range Organics (MRO)	730	480		mg/Kg	10	10/21/2019 6:18:23 PM	48254
Surr: DNOP	0	70-130	S	%Rec	10	10/21/2019 6:18:23 PM	48254
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **RAA**	
Gasoline Range Organics (GRO)	51	3.8		mg/Kg	1	10/21/2019 2:19:24 PM	G63849
Surr: BFB	458	77.4-118	S	%Rec	1	10/21/2019 2:19:24 PM	G63849
EPA METHOD 8021B: VOLATILES						Analyst: **RAA**	
Benzene	ND	0.019		mg/Kg	1	10/21/2019 2:19:24 PM	R63849
Toluene	0.25	0.038		mg/Kg	1	10/21/2019 2:19:24 PM	R63849
Ethylbenzene	0.18	0.038		mg/Kg	1	10/21/2019 2:19:24 PM	R63849
Xylenes, Total	4.3	0.076		mg/Kg	1	10/21/2019 2:19:24 PM	R63849
Surr: 4-Bromofluorobenzene	115	80-120		%Rec	1	10/21/2019 2:19:24 PM	R63849

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 **1910A19**
Date Reported: **10/23/2019**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: ENSOLUM **Client Sample ID:** S-2
Project: Pump Canyon CS **Collection Date:** 10/17/2019 10:05:00 AM
Lab ID: 1910A19-002 **Matrix:** MEOH (SOIL) **Received Date:** 10/18/2019 8:05:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **CAS**	
Chloride	ND	60		mg/Kg	20	10/18/2019 10:37:13 PM	48258
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **BRM**	
Diesel Range Organics (DRO)	220	98		mg/Kg	10	10/21/2019 6:42:48 PM	48254
Motor Oil Range Organics (MRO)	2000	490		mg/Kg	10	10/21/2019 6:42:48 PM	48254
Surr: DNOP	0	70-130	S	%Rec	10	10/21/2019 6:42:48 PM	48254
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **RAA**	
Gasoline Range Organics (GRO)	ND	3.9		mg/Kg	1	10/21/2019 2:42:09 PM	G63849
Surr: BFB	94.3	77.4-118		%Rec	1	10/21/2019 2:42:09 PM	G63849
EPA METHOD 8021B: VOLATILES						Analyst: **RAA**	
Benzene	ND	0.019		mg/Kg	1	10/21/2019 2:42:09 PM	R63849
Toluene	ND	0.039		mg/Kg	1	10/21/2019 2:42:09 PM	R63849
Ethylbenzene	ND	0.039		mg/Kg	1	10/21/2019 2:42:09 PM	R63849
Xylenes, Total	ND	0.077		mg/Kg	1	10/21/2019 2:42:09 PM	R63849
Surr: 4-Bromofluorobenzene	99.5	80-120		%Rec	1	10/21/2019 2:42:09 PM	R63849

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 **1910A19**
Date Reported: **10/23/2019**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: ENSOLUM **Client Sample ID:** S-3
Project: Pump Canyon CS **Collection Date:** 10/17/2019 10:10:00 AM
Lab ID: 1910A19-003 **Matrix:** MEOH (SOIL) **Received Date:** 10/18/2019 8:05:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **CAS**	
Chloride	ND	60		mg/Kg	20	10/18/2019 10:49:33 PM	48258
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **BRM**	
Diesel Range Organics (DRO)	860	95		mg/Kg	10	10/21/2019 7:07:04 PM	48254
Motor Oil Range Organics (MRO)	540	480		mg/Kg	10	10/21/2019 7:07:04 PM	48254
Surr: DNOP	0	70-130	S	%Rec	10	10/21/2019 7:07:04 PM	48254
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **RAA**	
Gasoline Range Organics (GRO)	ND	4.2		mg/Kg	1	10/21/2019 3:04:53 PM	G63849
Surr: BFB	94.8	77.4-118		%Rec	1	10/21/2019 3:04:53 PM	G63849
EPA METHOD 8021B: VOLATILES						Analyst: **RAA**	
Benzene	ND	0.021		mg/Kg	1	10/21/2019 3:04:53 PM	R63849
Toluene	ND	0.042		mg/Kg	1	10/21/2019 3:04:53 PM	R63849
Ethylbenzene	ND	0.042		mg/Kg	1	10/21/2019 3:04:53 PM	R63849
Xylenes, Total	ND	0.084		mg/Kg	1	10/21/2019 3:04:53 PM	R63849
Surr: 4-Bromofluorobenzene	100	80-120		%Rec	1	10/21/2019 3:04:53 PM	R63849

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 **1910A19**
Date Reported: **10/23/2019**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: ENSOLUM **Client Sample ID:** S-4
Project: Pump Canyon CS **Collection Date:** 10/17/2019 10:15:00 AM
Lab ID: 1910A19-004 **Matrix:** MEOH (SOIL) **Received Date:** 10/18/2019 8:05:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **CAS**	
Chloride	ND	60		mg/Kg	20	10/18/2019 11:26:33 PM	48258
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **BRM**	
Diesel Range Organics (DRO)	370	9.7		mg/Kg	1	10/21/2019 7:31:23 PM	48254
Motor Oil Range Organics (MRO)	310	49		mg/Kg	1	10/21/2019 7:31:23 PM	48254
Surr: DNOP	95.2	70-130		%Rec	1	10/21/2019 7:31:23 PM	48254
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **RAA**	
Gasoline Range Organics (GRO)	ND	4.5		mg/Kg	1	10/21/2019 3:27:40 PM	G63849
Surr: BFB	92.9	77.4-118		%Rec	1	10/21/2019 3:27:40 PM	G63849
EPA METHOD 8021B: VOLATILES						Analyst: **RAA**	
Benzene	ND	0.022		mg/Kg	1	10/21/2019 3:27:40 PM	R63849
Toluene	ND	0.045		mg/Kg	1	10/21/2019 3:27:40 PM	R63849
Ethylbenzene	ND	0.045		mg/Kg	1	10/21/2019 3:27:40 PM	R63849
Xylenes, Total	ND	0.089		mg/Kg	1	10/21/2019 3:27:40 PM	R63849
Surr: 4-Bromofluorobenzene	99.4	80-120		%Rec	1	10/21/2019 3:27:40 PM	R63849

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#: **1910A19**
23-Oct-19

Client: ENSOLUM
Project: Pump Canyon CS

Sample ID: **MB-48258** SampType: **mblk** TestCode: **EPA Method 300.0: Anions**
Client ID: **PBS** Batch ID: **48258** RunNo: **63831**
Prep Date: **10/18/2019** Analysis Date: **10/18/2019** SeqNo: **2182048** Units: **mg/Kg**

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

Sample ID: **LCS-48258** SampType: **lcs** TestCode: **EPA Method 300.0: Anions**
Client ID: **LCSS** Batch ID: **48258** RunNo: **63831**
Prep Date: **10/18/2019** Analysis Date: **10/18/2019** SeqNo: **2182049** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	14	1.5	15.00	0	93.1	90	110			

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#: **1910A19**
23-Oct-19

Client: ENSOLUM
Project: Pump Canyon CS

Sample ID: **LCS-48254** SampType: **LCS** TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **LCSS** Batch ID: **48254** RunNo: **63833**
Prep Date: **10/18/2019** Analysis Date: **10/21/2019** SeqNo: **2182087** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	51	10	50.00	0	102	63.9	124			
Surr: DNOP	3.9		5.000		78.0	70	130			

Sample ID: **MB-48254** SampType: **MBLK** TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **PBS** Batch ID: **48254** RunNo: **63833**
Prep Date: **10/18/2019** Analysis Date: **10/21/2019** SeqNo: **2182088** 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	8.3		10.00		83.3	70	130			

Sample ID: **MB-48215** SampType: **MBLK** TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **PBS** Batch ID: **48215** RunNo: **63833**
Prep Date: **10/17/2019** Analysis Date: **10/21/2019** SeqNo: **2182089** Units: **%Rec**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: DNOP	8.1		10.00		80.9	70	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#: **1910A19**

23-Oct-19

Client: ENSOLUM

Project: Pump Canyon CS

Sample ID: **1910A19-001A MS** SampType: **MS** TestCode: **EPA Method 8015D: Gasoline Range**

Client ID: **S-1** Batch ID: **G63849** RunNo: **63849**

Prep Date: Analysis Date: **10/21/2019** SeqNo: **2182539** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	69	3.8	19.04	50.57	95.2	69.1	142			
Surr: BFB	3400		761.6		450	77.4	118			S

Sample ID: **1910A19-001A MSD** SampType: **MSD** TestCode: **EPA Method 8015D: Gasoline Range**

Client ID: **S-1** Batch ID: **G63849** RunNo: **63849**

Prep Date: Analysis Date: **10/21/2019** SeqNo: **2182540** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	66	3.8	19.04	50.57	79.2	69.1	142	4.55	20	
Surr: BFB	3400		761.6		452	77.4	118	0	0	S

Sample ID: **2.5UG GRO LCS** SampType: **LCS** TestCode: **EPA Method 8015D: Gasoline Range**

Client ID: **LCSS** Batch ID: **G63849** RunNo: **63849**

Prep Date: Analysis Date: **10/21/2019** SeqNo: **2182544** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	25	5.0	25.00	0	98.9	80	120			
Surr: BFB	1200		1000		117	77.4	118			

Sample ID: **RB** SampType: **MBLK** TestCode: **EPA Method 8015D: Gasoline Range**

Client ID: **PBS** Batch ID: **G63849** RunNo: **63849**

Prep Date: Analysis Date: **10/21/2019** SeqNo: **2182545** 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	1000		1000		102	77.4	118			

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#: **1910A19**

23-Oct-19

Client: ENSOLUM

Project: Pump Canyon CS

Sample ID: **100NG BTEX LCS** SampType: **LCS** TestCode: **EPA Method 8021B: Volatiles**

Client ID: **LCSS** Batch ID: **R63849** RunNo: **63849**

Prep Date: Analysis Date: **10/21/2019** SeqNo: **2182821** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.96	0.025	1.000	0	96.5	80	120			
Toluene	0.94	0.050	1.000	0	94.1	80	120			
Ethylbenzene	0.92	0.050	1.000	0	92.3	80	120			
Xylenes, Total	2.8	0.10	3.000	0	92.9	80	120			
Surr: 4-Bromofluorobenzene	1.1		1.000		107	80	120			

Sample ID: **1910A19-002A MS** SampType: **MS** TestCode: **EPA Method 8021B: Volatiles**

Client ID: **S-2** Batch ID: **R63849** RunNo: **63849**

Prep Date: Analysis Date: **10/21/2019** SeqNo: **2182828** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.69	0.019	0.7716	0.008287	88.6	76	123			
Toluene	0.72	0.039	0.7716	0.007446	92.9	80.3	127			
Ethylbenzene	0.72	0.039	0.7716	0.01192	92.3	80.2	131			
Xylenes, Total	2.1	0.077	2.315	0.02592	90.5	78	133			
Surr: 4-Bromofluorobenzene	0.79		0.7716		102	80	120			

Sample ID: **1910A19-002A MSD** SampType: **MSD** TestCode: **EPA Method 8021B: Volatiles**

Client ID: **S-2** Batch ID: **R63849** RunNo: **63849**

Prep Date: Analysis Date: **10/21/2019** SeqNo: **2182829** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.65	0.019	0.7716	0.008287	83.7	76	123	5.62	20	
Toluene	0.68	0.039	0.7716	0.007446	87.2	80.3	127	6.24	20	
Ethylbenzene	0.68	0.039	0.7716	0.01192	86.6	80.2	131	6.26	20	
Xylenes, Total	2.0	0.077	2.315	0.02592	85.4	78	133	5.73	20	
Surr: 4-Bromofluorobenzene	0.79		0.7716		102	80	120	0	0	

Sample ID: **RB** SampType: **MBLK** TestCode: **EPA Method 8021B: Volatiles**

Client ID: **PBS** Batch ID: **R63849** RunNo: **63849**

Prep Date: Analysis Date: **10/21/2019** SeqNo: **2182832** 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	1.1		1.000		105	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: **1910A19** RcptNo: **1**

Received By: **Erin Melendrez** **10/18/2019 8:05:00 AM**

Completed By: **Erin Melendrez** **10/18/2019 8:26:50 AM**

Reviewed By: DAD 10/18/19

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: DAD 10/18/19

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	2.4	Good	Yes			

Chain-of-Custody Record

Client: Ensolum, LLC

Mailing Address: 6026 S Rio Grande Suite A
Aztec, NM 87410

Phone #:

email or Fax#: KSummers@ensolum.com

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

Accreditation
☐ NELAP ☐ Other _____

☐ EDD (Type) _____

Turn-Around Time:
☐ Standard ☒ Rush 10-22-19

Project Name: Pump Canyon CS

Project #: see notes

Project Manager: KSummers

Sampler: CD'Aponti

On Ice: ☒ Yes ☐ No

Sample Temperature: 2.8-0.4(CF)=2.4°C

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

Date	Time	Matrix	Sample Request ID	Container Type and #	Preservative Type	HEAL No. 1910A19	BTEX + ~~MTBE + TMB's~~ (8021)	BTEX + MTBE + TPH (Gas only)	TPH 8015B (GRO / DRO / MRO)	TPH (Method 418.1)	EDB (Method 504.1)	PAH's (8310 or 8270 SIMS)	RCRA 8 Metals	Anions ($F, Cl, NO_3, NO_2, PO_4, SO_4$)	8081 Pesticides / 8082 PCB's	8260B (VOA)	8270 (Semi-VOA)	Chlorides				Air Bubbles (Y or N)
10/17/19	1000	S	S-1	1x 4oz Jar	cool	-001	X		X									X				
10/17/19	1005	S	S-2	1x 4oz Jar	cool	-002	X		X									X				
10/17/19	1010	S	S-3	1x 4oz Jar	cool	-003	X		X									X				
10/17/19	1015	S	S-4	1x 4oz Jar	cool	-004	X		X									X				

Analysis Request

Date:	Time:	Relinquished by:	Received by:	Date	Time
10/17/19	1116		Mark Wall	10/17/19	1116
10/17/19	1820	Christian Walker		10/18/19	0805

Remarks: PM - Tom Long (EPROD)
Pay Key - GG11580

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

HALL ENVIRONMENTAL ANALYSIS LABORATORY

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

November 04, 2019

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

RE: Pump Canyon CS OrderNo.: 1910F58

Dear Kyle Summers:

Hall Environmental Analysis Laboratory received 1 sample(s) on 10/31/2019 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

Analytical Report
Lab Order **1910F58**
Date Reported: **11/4/2019**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: ENSOLUM **Client Sample ID:** S-5
Project: Pump Canyon CS **Collection Date:** 10/30/2019 9:30:00 AM
Lab ID: 1910F58-001 **Matrix:** MEOH (SOIL) **Received Date:** 10/31/2019 8:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **MRA**	
Chloride	81	60		mg/Kg	20	10/31/2019 11:31:03 AM	48509
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **BRM**	
Diesel Range Organics (DRO)	ND	10		mg/Kg	1	10/31/2019 10:59:26 AM	48508
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	10/31/2019 10:59:26 AM	48508
Surr: DNOP	93.3	70-130		%Rec	1	10/31/2019 10:59:26 AM	48508
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	3.5		mg/Kg	1	10/31/2019 8:23:43 AM	48491
Surr: BFB	94.8	77.4-118		%Rec	1	10/31/2019 8:23:43 AM	48491
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**	
Benzene	ND	0.017		mg/Kg	1	10/31/2019 8:23:43 AM	48491
Toluene	ND	0.035		mg/Kg	1	10/31/2019 8:23:43 AM	48491
Ethylbenzene	ND	0.035		mg/Kg	1	10/31/2019 8:23:43 AM	48491
Xylenes, Total	ND	0.070		mg/Kg	1	10/31/2019 8:23:43 AM	48491
Surr: 4-Bromofluorobenzene	101	80-120		%Rec	1	10/31/2019 8:23:43 AM	48491

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#: **1910F58**

04-Nov-19

Client: ENSOLUM

Project: Pump Canyon CS

Sample ID: **MB-48509** SampType: **mblk** TestCode: **EPA Method 300.0: Anions**

Client ID: **PBS** Batch ID: **48509** RunNo: **64117**

Prep Date: **10/31/2019** Analysis Date: **10/31/2019** SeqNo: **2195081** Units: **mg/Kg**

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

Sample ID: **LCS-48509** SampType: **lcs** TestCode: **EPA Method 300.0: Anions**

Client ID: **LCSS** Batch ID: **48509** RunNo: **64117**

Prep Date: **10/31/2019** Analysis Date: **10/31/2019** SeqNo: **2195082** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	15	1.5	15.00	0	99.7	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#: **1910F58**

04-Nov-19

Client: ENSOLUM

Project: Pump Canyon CS

Sample ID: **LCS-48508** SampType: **LCS** TestCode: **EPA Method 8015M/D: Diesel Range Organics**

Client ID: **LCSS** Batch ID: **48508** RunNo: **64116**

Prep Date: **10/31/2019** Analysis Date: **10/31/2019** SeqNo: **2194222** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	51	10	50.00	0	102	63.9	124			
Surr: DNOP	4.0		5.000		80.6	70	130			

Sample ID: **MB-48508** SampType: **MBLK** TestCode: **EPA Method 8015M/D: Diesel Range Organics**

Client ID: **PBS** Batch ID: **48508** RunNo: **64116**

Prep Date: **10/31/2019** Analysis Date: **10/31/2019** SeqNo: **2194223** 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	8.9		10.00		88.6	70	130			

Sample ID: **1910F58-001AMS** SampType: **MS** TestCode: **EPA Method 8015M/D: Diesel Range Organics**

Client ID: **S-5** Batch ID: **48508** RunNo: **64116**

Prep Date: **10/31/2019** Analysis Date: **10/31/2019** SeqNo: **2195324** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	42	9.0	44.76	5.683	80.4	57	142			
Surr: DNOP	3.8		4.476		84.3	70	130			

Sample ID: **1910F58-001AMSD** SampType: **MSD** TestCode: **EPA Method 8015M/D: Diesel Range Organics**

Client ID: **S-5** Batch ID: **48508** RunNo: **64116**

Prep Date: **10/31/2019** Analysis Date: **10/31/2019** SeqNo: **2195325** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	47	9.4	47.21	5.683	88.0	57	142	12.5	20	
Surr: DNOP	4.0		4.721		85.5	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#: **1910F58**

04-Nov-19

Client: ENSOLUM

Project: Pump Canyon CS

Sample ID: **MB-48491**	SampType: **MBLK**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **PBS**	Batch ID: **48491**	RunNo: **64127**
Prep Date: **10/30/2019**	Analysis Date: **10/31/2019**	SeqNo: **2194628** 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	1000		1000		100	77.4	118			

Sample ID: **LCS-48491**	SampType: **LCS**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **LCSS**	Batch ID: **48491**	RunNo: **64127**
Prep Date: **10/30/2019**	Analysis Date: **10/31/2019**	SeqNo: **2194629** 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	89.4	80	120			
Surr: BFB	1100		1000		112	77.4	118			

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#: **1910F58**
04-Nov-19

Client: ENSOLUM
Project: Pump Canyon CS

Sample ID: **MB-48491** SampType: **MBLK** TestCode: **EPA Method 8021B: Volatiles**
Client ID: **PBS** Batch ID: **48491** RunNo: **64127**
Prep Date: **10/30/2019** Analysis Date: **10/31/2019** SeqNo: **2194655** 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	1.1		1.000		108	80	120			

Sample ID: **LCS-48491** SampType: **LCS** TestCode: **EPA Method 8021B: Volatiles**
Client ID: **LCSS** Batch ID: **48491** RunNo: **64127**
Prep Date: **10/30/2019** Analysis Date: **10/31/2019** SeqNo: **2194656** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.98	0.025	1.000	0	98.2	80	120			
Toluene	0.98	0.050	1.000	0	98.3	80	120			
Ethylbenzene	0.97	0.050	1.000	0	97.4	80	120			
Xylenes, Total	2.9	0.10	3.000	0	97.6	80	120			
Surr: 4-Bromofluorobenzene	1.1		1.000		110	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: **1910F58** RcptNo: **1**

Received By: Juan Rojas **10/31/2019 8:00:00 AM**

Completed By: **Leah Baca** **10/31/2019 8:33:05 AM** Leah Baca

Reviewed By: DM 10/31/19

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: DAD 10/31/19

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	0.2	Good	Yes			
2	0.1	Good	Yes			

Chain-of-Custody Record

Client: Ensolum

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: Same Day
☐ Standard ☑ Rush ~~1-2-4-9w~~

Project Name: Pump Canyon CS

Project #:

Project Manager: K Summers

Sampler: C DiAgnti

On Ice: ~~☑~~ Yes ☐ No

# of Coolers: 2

Cooler Temp(including CF): 0.2-0=0.2
0.1-0=0.1

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)
10/30/19	530	S	S-5	4oz Jar	Cool	1910FS8-001	X	X					X			

Date	Time	Relinquished by:	Received by:	Via:	Date	Time
10/30/19	1022				10/30/19	1022
10/30/19	1811			courier	10/31/19	8:00

Remarks: PM Tom Long
Pay Key QC 11580

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

HALL ENVIRONMENTAL ANALYSIS LABORATORY

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

November 08, 2019

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

RE: Pump Canyon CS OrderNo.: 1911048

Dear Kyle Summers:

Hall Environmental Analysis Laboratory received 2 sample(s) on 11/2/2019 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

Analytical Report
Lab Order **1911048**
Date Reported: **11/8/2019**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: ENSOLUM
Client Sample ID: HA-1 @ 4'
Project: Pump Canyon CS
Collection Date: 11/1/2019 9:30:00 AM
Lab ID: 1911048-001 **Matrix:** SOIL **Received Date:** 11/2/2019 9:50:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst:	**CJS**
Chloride	ND	60		mg/Kg	20	11/5/2019 5:54:11 PM	48597
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst:	**BRM**
Diesel Range Organics (DRO)	9.8	9.8		mg/Kg	1	11/6/2019 12:21:28 PM	48589
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	11/6/2019 12:21:28 PM	48589
Surr: DNOP	100	70-130		%Rec	1	11/6/2019 12:21:28 PM	48589
EPA METHOD 8015D: GASOLINE RANGE						Analyst:	**NSB**
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	11/5/2019 1:32:03 PM	48579
Surr: BFB	89.7	77.4-118		%Rec	1	11/5/2019 1:32:03 PM	48579
EPA METHOD 8021B: VOLATILES						Analyst:	**NSB**
Benzene	ND	0.024		mg/Kg	1	11/5/2019 1:32:03 PM	48579
Toluene	ND	0.049		mg/Kg	1	11/5/2019 1:32:03 PM	48579
Ethylbenzene	ND	0.049		mg/Kg	1	11/5/2019 1:32:03 PM	48579
Xylenes, Total	ND	0.098		mg/Kg	1	11/5/2019 1:32:03 PM	48579
Surr: 4-Bromofluorobenzene	93.7	80-120		%Rec	1	11/5/2019 1:32:03 PM	48579

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 **1911048**
Date Reported: **11/8/2019**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: ENSOLUM
Client Sample ID: HA-2 @ 4'
Project: Pump Canyon CS
Collection Date: 11/1/2019 9:35:00 AM
Lab ID: 1911048-002 **Matrix:** SOIL **Received Date:** 11/2/2019 9:50:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **CJS**	
Chloride	ND	60		mg/Kg	20	11/5/2019 6:55:55 PM	48597
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **BRM**	
Diesel Range Organics (DRO)	13	9.3		mg/Kg	1	11/6/2019 12:43:15 PM	48589
Motor Oil Range Organics (MRO)	ND	47		mg/Kg	1	11/6/2019 12:43:15 PM	48589
Surr: DNOP	98.0	70-130		%Rec	1	11/6/2019 12:43:15 PM	48589
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	11/5/2019 3:05:54 PM	48579
Surr: BFB	93.4	77.4-118		%Rec	1	11/5/2019 3:05:54 PM	48579
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**	
Benzene	ND	0.024		mg/Kg	1	11/5/2019 3:05:54 PM	48579
Toluene	ND	0.048		mg/Kg	1	11/5/2019 3:05:54 PM	48579
Ethylbenzene	ND	0.048		mg/Kg	1	11/5/2019 3:05:54 PM	48579
Xylenes, Total	ND	0.097		mg/Kg	1	11/5/2019 3:05:54 PM	48579
Surr: 4-Bromofluorobenzene	97.2	80-120		%Rec	1	11/5/2019 3:05:54 PM	48579

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#: **1911048**

08-Nov-19

Client: ENSOLUM

Project: Pump Canyon CS

Sample ID: **MB-48597** SampType: **mblk** TestCode: **EPA Method 300.0: Anions**

Client ID: **PBS** Batch ID: **48597** RunNo: **64258**

Prep Date: **11/5/2019** Analysis Date: **11/5/2019** SeqNo: **2199039** Units: **mg/Kg**

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

Sample ID: **LCS-48597** SampType: **lcs** TestCode: **EPA Method 300.0: Anions**

Client ID: **LCSS** Batch ID: **48597** RunNo: **64258**

Prep Date: **11/5/2019** Analysis Date: **11/5/2019** SeqNo: **2199040** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	15	1.5	15.00	0	98.3	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#: **1911048**

08-Nov-19

Client: ENSOLUM

Project: Pump Canyon CS

Sample ID: **LCS-48589** SampType: **LCS** TestCode: **EPA Method 8015M/D: Diesel Range Organics**

Client ID: **LCSS** Batch ID: **48589** RunNo: **64266**

Prep Date: **11/5/2019** Analysis Date: **11/6/2019** SeqNo: **2199440** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	53	10	50.00	0	107	63.9	124			
Surr: DNOP	5.2		5.000		104	70	130			

Sample ID: **MB-48589** SampType: **MBLK** TestCode: **EPA Method 8015M/D: Diesel Range Organics**

Client ID: **PBS** Batch ID: **48589** RunNo: **64266**

Prep Date: **11/5/2019** Analysis Date: **11/6/2019** SeqNo: **2199442** 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		114	70	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#: **1911048**

08-Nov-19

Client: ENSOLUM

Project: Pump Canyon CS

Sample ID: **MB-48579** SampType: **MBLK** TestCode: **EPA Method 8015D: Gasoline Range**

Client ID: **PBS** Batch ID: **48579** RunNo: **64244**

Prep Date: **11/4/2019** Analysis Date: **11/5/2019** SeqNo: **2198527** 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	1000		1000		103	77.4	118			

Sample ID: **LCS-48579** SampType: **LCS** TestCode: **EPA Method 8015D: Gasoline Range**

Client ID: **LCSS** Batch ID: **48579** RunNo: **64244**

Prep Date: **11/4/2019** Analysis Date: **11/5/2019** SeqNo: **2198528** 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	91.9	80	120			
Surr: BFB	1100		1000		106	77.4	118			

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#: **1911048**
08-Nov-19

Client: ENSOLUM
Project: Pump Canyon CS

Sample ID: **MB-48579** SampType: **MBLK** TestCode: **EPA Method 8021B: Volatiles**
Client ID: **PBS** Batch ID: **48579** RunNo: **64244**
Prep Date: **11/4/2019** Analysis Date: **11/5/2019** SeqNo: **2198574** 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	1.1		1.000		106	80	120			

Sample ID: **LCS-48579** SampType: **LCS** TestCode: **EPA Method 8021B: Volatiles**
Client ID: **LCSS** Batch ID: **48579** RunNo: **64244**
Prep Date: **11/4/2019** Analysis Date: **11/5/2019** SeqNo: **2198575** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	1.0	0.025	1.000	0	101	80	120			
Toluene	1.1	0.050	1.000	0	107	80	120			
Ethylbenzene	1.1	0.050	1.000	0	108	80	120			
Xylenes, Total	3.3	0.10	3.000	0	109	80	120			
Surr: 4-Bromofluorobenzene	1.1		1.000		109	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: **1911048** RcptNo: **1**

Received By: **Erin Melendrez** **11/2/2019 9:50:00 AM**

Completed By: **Erin Melendrez** **11/2/2019 10:48:30 AM**

Reviewed By: DAD 11/4/19

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: DAD 11/4/19

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	2.0	Good	Yes			
2	2.2	Good	Yes			

Chain-of-Custody Record

Client: Ensolum

Mailing Address: 606 S Rio Grande Suite A 87420

Phone #:

email or Fax#:

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

Accreditation: ☐ Az Compliance
☐ NELAC ☐ Other

☐ EDD (Type)

Turn-Around Time:
☐ Standard ☒ Rush 11-6-19

Project Name: Pump Canyon CS

Project #:

Project Manager: K Summers

Sampler: C DAgostini

On Ice: ☒ Yes ☐ No

# of Coolers: 2

Cooler Temp(including CF): 2.2-0.2(CF)=2.0°C 2.4-0.2(CF)=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.	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)
11/1/19	930	S	HA-1@4'	1 4oz Jar	Cool	-001	X	X					X			
11/1/19	935	S	HA-2@4'	1 4oz Jar	Cool	-002	X	X					X			

1911048

Date:	Time:	Relinquished by:	Received by:	Via:	Date	Time
11/1/19	1122				11/1/19	1122
11/1/19	1912			Courier	11/2/19	0950

Remarks: PM - Tom Long
Pay Key GG 11580

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: Smith, Cory, EMNRD
To: Long, Thomas; kwchristesen@blm.gov
Cc: Stone, Brian
Subject: RE: Produced Water and Condensate Release - Pump Canyon Compressor Station - UL K Section 24 T30N R9W; 36.794997, -107.733385
Date: Thursday, October 24, 2019 8:19:13 AM
Attachments: image001.jpg

Tom,

I concur with your site characterization. Please keep in mind the Reclamation requirements.

RECLAMATION OF TOP FOUR FEET:
a. 19.15.29.13(D)(1) NMAC says "The reclamation must contain a minimum of four feet of non-waste containing, uncontaminated, earthen material with chloride concentrations less than 600 mg/kg as analyzed by EPA Method 300.0, or other test methods approved by the division."
b. This language mirrors that associated with reclamation under the Pit Rule (19.15.17.13(H)(3) NMAC), for purposes of complying with the Spill Rule (19.15.29 NMAC). The word "uncontaminated" means soils not only with a chloride concentration of less than 600 mg/kg, but also a TPH concentration of no more than 100 mg/kg, a total BTEX concentration of no more than 50 mg/kg, and a benzene concentration of no more than 10 mg/kg. These are the most protective concentrations contained in Table I of 19.15.29.12 NMAC.

If you have any questions let me know.

Cory Smith
Environmental Specialist
Oil Conservation Division
Energy, Minerals, & Natural Resources
1000 Rio Brazos, Aztec, NM 87410
(505)334-6178 ext 115
cory.smith@state.nm.us

From: Long, Thomas <tjlong@eprod.com>
Sent: Tuesday, October 22, 2019 2:46 PM
To: Smith, Cory, EMNRD <Cory.Smith@state.nm.us>; kwchristesen@blm.gov
Cc: Stone, Brian <bmstone@eprod.com>
Subject: [EXT] FW: Produced Water and Condensate Release - Pump Canyon Compressor Station - UL K Section 24 T30N R9W; 36.794997, -107.733385

Cory/Kenneth,

Please find the attached site sketch, lab report and extracted pages from the facility BGT registration package. Enterprise established that this release site is required to be remediated to the NMOCD

Tier II standard. The attached extracted pages from the BGT application package has supporting data for the Tier II standard. With the recent sampling results attached, all sample results except S-1 pass the Tier II remediation standard. Enterprise will removed additional soil from the area where the soil sample S-1 was collected and resample. Please acknowledge that you are in agreement with the Tier II remediation standard. If you have any questions, please call or email.

Sincerely,

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

logo

From: Long, Thomas
Sent: Wednesday, October 16, 2019 2:57 PM
To: 'Smith, Cory, EMNRD (Cory.Smith@state.nm.us)' <Cory.Smith@state.nm.us>; kwchristesen@blm.gov
Cc: Stone, Brian <bmstone@eprod.com>
Subject: FW: Produced Water and Condensate Release - Pump Canyon Compressor Station - UL K Section 24 T30N R9W; 36.794997, -107.733385

Cory/Kenneth,

This email is to notify you that Enterprise has scheduled soils sampling activities at the Pump Canyon Compressor Station excavation for tomorrow, October 17, 2019 at 9:00 a.m. If you have any questions, please call or email.

Sincerely,

Tom Long
505-599-2286 (office)
505-215-4727 (Cell)
tjlong@eprod.com

From: Long, Thomas
Sent: Wednesday, September 4, 2019 2:21 PM
To: 'Smith, Cory, EMNRD (Cory.Smith@state.nm.us)' <Cory.Smith@state.nm.us>; 'kwchristesen@blm.gov' <kwchristesen@blm.gov>

Subject: FW: Produced Water and Condensate Release - Pump Canyon Compressor Station - UL K Section 24 T30N R9W; 36.794997, -107.733385

Correction in Header. The correct facility is Pump Canyon Compressor Station.

Tom Long
505-599-2286 (office)
505-215-4727 (Cell)
tjlong@eprod.com

From: Long, Thomas
Sent: Wednesday, September 4, 2019 2:19 PM
To: 'Smith, Cory, EMNRD (Cory.Smith@state.nm.us)' <Cory.Smith@state.nm.us>; 'kwchristesen@blm.gov' <kwchristesen@blm.gov>
Cc: Stone, Brian <bmstone@eprod.com>
Subject: Produced Water and Condensate Release - Pump Mesa Compressor Station - UL K Section 24 T30N R9W; 36.794997, -107.733385

Cory/Kenneth,

This email is a notification that Enterprise had a release of produced water and condensate at the Pump Canyon Compressor Station. The release occurred on August 28, 2019. There were no standing liquids at the time. The release was a result of a trucker not completely closing the valve on the tank. The release was not determined reportable until today when the gravel in the unlined secondary containment was removed and a significant amount of impacted soil was observed. The facility is located at UL K Section 24 T30N R9W; 36.794997, -107.733385. I will keep you informed as to when remediation and soil sample collection will be conducted. If you have any questions, please call or email.

Sincerely,

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

logo

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

Operator: Enterprise Field Services, LLC PO Box 4324 Houston, TX 77210	OGRID: 241602
	Action Number: 11084
	Action Type: [C-141] Release Corrective Action (C-141)

CONDITIONS

Created By	Condition	Condition Date
nvelez	Deferral approved. Required to remediate & reclaim after decommissioning per 19.15.29.12C (2) & 19.15.29.13D (1).	5/18/2022