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: **241602**
Contact Name: **Thomas Long**	Contact Telephone: **505-599-2286**
Contact email:**tjlong@eprod.com**	Incident # *(assigned by OCD)* **nAPP2329746361**
Contact mailing address: **614 Reilly Ave, Farmington, NM 87401**	

Location of Release Source

Latitude **36.49037** Longitude **-107.894467** *(NAD 83 in decimal degrees to 5 decimal places)*

Site Name **Trunk 2C**	Site Type **Natural Gas Gathering Pipeline**
Date Release Discovered: **10/24/2023**	Serial Number *(if applicable)*: **N/A**

Unit Letter	Section	Township	Range	County
H	**16**	**26N**	**10W**	**San Juan**

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

Nature and Volume of Release

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

☐ Crude Oil	Volume Released (bbls)	Volume Recovered (bbls)
☐ Produced Water	Volume Released (bbls)	Volume Recovered (bbls)
	Is the concentration of dissolved chloride in the produced water >10,000 mg/l?	☐ Yes ☐ No
☒ Condensate	Volume Released (bbls): **Estimated 5-10 BBLs**	Volume Recovered (bbls): **None**
☒ Natural Gas	Volume Released (Mcf): **23.1 MCF**	Volume Recovered (Mcf): **None**
☐ Other (describe)	Volume/Weight Released (provide units):	Volume/Weight Recovered (provide units)

Cause of Release : On October 19, 2023, Enterprise had a release of natural gas and natural gas liquids from the Trunk 2C pipeline. The pipeline was isolated, depressurized, locked and tagged out. No fire nor injuries occurred. Minimal liquids were observed on the ground surface. Enterprise began the repairs and remediation on October 24, 2023, at which time Enterprise determined the release reportable per NMODC regulation due the volume of impacted subsurface soil. Remediation was completed on October 25, 2023. The final excavation dimensions measured approximately 32.5 feet long by 17 feet wide by 7 feet deep. Approximately 108 cubic yards of hydrocarbon impacted soil was excavated and transported to a New Mexico Oil Conservation Division (NMOCD) approved land farm. A third party closure report is included with this “Final” C-141.

Incident ID	
District RP	
Facility ID	
Application ID	

Closure

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

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

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

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

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

☒ Description of remediation activities

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

Printed Name: Thomas Long Title: Senior Environmental Scientist

Signature: Thomas Long Date: 11-30-2023

email: tjlong@eprod.com Telephone: (505) 599-2286

OCD Only

Received by: _____ Date: _____

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

Closure Approved by: Nelson Velez Date: 03/12/2024

Printed Name: Nelson Velez Title: Environmental Specialist – Adv

ENSOLUM

CLOSURE REPORT

Property:

Trunk 2C (10/24/23)
Unit Letter H, S16 T26N R10W
San Juan County, New Mexico

New Mexico EMNRD OCD Incident ID No. NAPP2329746361

November 29, 2023

Ensolum Project No. 05A1226289

Prepared for:

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

Prepared by:

Ranee Deechilly
Project Manager

Kyle Summers
Senior Managing Geologist

TABLE OF CONTENTS

LIST OF APPENDICES

1.0 INTRODUCTION

1.1 Site Description & Background

Operator:	Enterprise Field Services, LLC / Enterprise Products Operating LLC (Enterprise)
Site Name:	Trunk 2C (10/24/23) (Site)
NM EMNRD OCD Incident ID No.	NAPP2329746361
Location:	36.49037° North, 107.894467° West Unit Letter H, Section 16, Township 26 North, Range 10 West San Juan County, New Mexico
Property:	New Mexico State Land Office
Regulatory:	New Mexico (NM) Energy, Minerals and Natural Resources Department (EMNRD) Oil Conservation Division (OCD)

On October 19, 2023, Enterprise personnel identified a release of natural gas and associated pipeline liquids from the Trunk 2C pipeline. Enterprise subsequently isolated and locked the pipeline out of service. On October 24, 2023, Enterprise initiated activities to repair the pipeline and remediate petroleum hydrocarbon impact. In addition, Enterprise determined the release was "reportable" due to the potential volume of impacted soil. The NM EMNRD OCD was subsequently notified.

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 NM EMNRD OCD closure criteria.

2.0 CLOSURE CRITERIA

The Site is subject to regulatory oversight by the NM EMNRD OCD. During the evaluation and remediation of the Site, Ensolum, LLC (Ensolum) referenced 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. The appropriate closure criteria for sites are determined using the siting requirements outlined in Paragraph (4) of Subsection C of 19.15.29.12 NMAC. Ensolum utilized the general site characteristics and information available from NM state agency databases and federal agency geospatial databases to determine the appropriate closure criteria for the Site. Supporting figures and documentation associated with the following Siting bullets are provided in **Appendix B**.

- The NM Office of the State Engineer (OSE) tracks the usage and assignment of water rights and water well installations and records this information in the Water Rights Reporting System (WRRS) database. Water wells and other points of diversion (PODs) are each assigned POD numbers in the database (which is searchable and includes an interactive map). No PODs with recorded depths to water were identified in the same Public Land Survey System (PLSS) section as the Site, and no PODs were identified in the adjacent PLSS sections (**Figure A**, **Appendix B**).

- Numerous cathodic protection wells (CPWs) were identified in the NM EMNRD OCD imaging database in the same PLSS section as the Site and in the adjacent PLSS sections. These CPWs are depicted on **Figure B** (**Appendix B**). Two of the closest CPWs are located less than 0.5 miles from the Site. Documentation for the cathodic protection well located near the Huerfano Unit #119 well location indicates a depth to water of 460 feet below grade surface (bgs). This cathodic protection well is located approximately 0.30 miles east of the Site and is approximately 10 feet higher in elevation than the Site. Documentation for the cathodic protection well located near the Huerfano Unit #117 well location indicates a depth to water of approximately 170 feet bgs. This cathodic protection well is located approximately 0.46 miles south of the Site and is approximately 89 feet lower in elevation than the Site.

- The Site is not located within 300 feet of a NM EMNRD OCD-defined continuously flowing watercourse or significant watercourse (**Figure C**, **Appendix B**).

- 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 (**Figure D**, **Appendix B**).

- No springs, or private domestic freshwater wells used by less than five households for domestic or stock watering purposes were identified within 500 feet of the Site (**Figure E**, **Appendix B**).

- No freshwater wells or springs were identified within 1,000 feet of the Site (**Figure E**, **Appendix B**).

- 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 New Mexico Statutes Annotated (NMSA) 1978, Section 3-27-3.

- Based on information identified in the U.S. Fish & Wildlife Service National Wetlands Inventory Wetlands Mapper, the Site is not within 300 feet of a wetland (**Figure F**, **Appendix B**).

- Based on information identified in the NM Mining and Minerals Division's Geographic Information System (GIS) Maps and Mine Data database, the Site is not within an area overlying a subsurface mine (**Figure G**, **Appendix B**).

- The Site is not located within an unstable area per Paragraph (6) of Subsection U of 19.15.2.7 NMAC.

- Based on information provided by the Federal Emergency Management Agency (FEMA) National Flood Hazard Layer (NFHL) geospatial database, the Site is not within a 100-year floodplain (**Figure H**, **Appendix B**).

Based on available information Enterprise estimates the depth to water at the Site to be greater than 50 feet bgs, resulting in a Tier II ranking. However, the soil requirements of NMAC 19.15.29.13(D)(1) indicate that a minimum of the upper four feet must contain "uncontaminated" soil and that the soils meet Tier I closure criteria listed in Table 1 of NMAC 19.15.29.12. None of the samples collected below four feet bgs exceeded the Tier I closure criteria, so Tier II closure criteria were not included in this report. The closure criteria for Tier I soils remaining in place at the Site include:

Tier I Closure Criteria for Soils Impacted by a Release		
Constituent[1]	**Method**	**Limit**
Chloride	EPA 300.0 or SM4500 Cl B	600 mg/kg
TPH	EPA SW-846 Method 8015	100 mg/kg
BTEX[3]	EPA SW-846 Method 8021 or 8260	50 mg/kg
Benzene	EPA SW-846 Method 8021 or 8260	10 mg/kg

[1] – Constituent concentrations are in milligrams per kilogram (mg/kg).
[2] – Total Petroleum Hydrocarbons (TPH). Gasoline Range Organics (GRO). Diesel Range Organics (DRO). Motor Oil/Lube Oil Range Organics (MRO).
[3] – Benzene, Toluene, Ethylbenzene, and Total Xylenes (BTEX).

3.0 SOIL REMEDIATION ACTIVITIES

On October 24, 2023, Enterprise initiated activities to repair the pipeline and remediate petroleum hydrocarbon impact resulting from the release. During the remediation and corrective action activities, West States Energy Contractors, Inc. provided heavy equipment and labor support, while Ensolum provided environmental consulting support.

The final excavation measured approximately 32.5 feet long and 17.5 feet wide at the maximum extents. The maximum depth of the excavation measured approximately 7 feet bgs. The lithology encountered during the completion of remediation activities consisted primarily of silty sand.

Approximately 108 cubic yards (yd^3) of petroleum hydrocarbon-affected soils and one barrel (bbl) of hydro-excavation soil cuttings and water were transported to the Envirotech, Inc., (Envirotech) landfarm in San Juan County, NM for disposal/remediation. The executed C-138 solid waste acceptance form is provided in **Appendix C**. The excavation was backfilled with imported fill and then contoured to the surrounding topography.

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

4.0 SOIL SAMPLING PROGRAM

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

Ensolum's soil sampling program included the collection of five composite soil samples (S-1 through S-5) from the excavation for laboratory analysis. In addition, one composite soil sample (SP-1) was collected from segregated, apparently unaffected stockpiled overburden soils to determine if the material was suitable to use as backfill. The composite samples were comprised of five aliquots each and represent an estimated 200 square foot (ft^2) or less sample area per guidelines outlined in Section D of 19.15.29.12 NMAC. The hand tools were utilized to obtain fresh aliquots from each area of the excavation. Regulatory correspondence is provided in **Appendix E**.

Sampling Event

On October 25, 2023, sampling was performed at the Site. The NM EMNRD OCD was notified of the sampling event although no representative was present during sampling activities. Composite soil sample S-1 (7') was collected from the floor of the excavation. Composite soil

samples S-2 (0' to 7'), S-3 (0' to 7'), S-4 (0' to 7'), and S-5 (0' to 7') were collected from the walls of the excavation. Composite soil sample SP-1 was collected from the segregated stockpiled soil to verify that the soil did not exhibit COC impact and that it was suitable for use as backfill. Subsequent soil analytical results identified TPH concentrations that exceeded the NM EMNRD OCD closure criteria for composite soil sample SP-1, which was subsequently removed and transported to the landfarm for disposal/remediation.

All soil samples were collected and placed in laboratory-prepared glassware. The containers were labeled and sealed using the laboratory-supplied labels and custody seals and were stored on ice in a cooler. The samples were relinquished to the courier for Eurofins Environment Testing South Central LLC (Eurofins) of Albuquerque, NM, under proper chain-of-custody procedures.

5.0 SOIL LABORATORY ANALYTICAL METHODS

The composite soil samples were analyzed for BTEX using Environmental Protection Agency (EPA) SW-846 Method 8021; TPH GRO/DRO/MRO using EPA SW-846 Method 8015; and chlorides using EPA Method 300.0.

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

6.0 SOIL DATA EVALUATION

Ensolum compared the benzene, BTEX, TPH, and chloride laboratory analytical results or laboratory practical quantitation limits (PQLs) / reporting limits (RLs) associated with the composite soil samples (S-1 through S-5) to the applicable NM EMNRD OCD closure criteria. The soil associated with composite soil sample SP-1 was removed from the Site, and therefore, is not included in the following discussion. The laboratory analytical results are summarized in **Table 1** (**Appendix F**).

- The laboratory analytical results for the composite soil samples indicate benzene is not present at concentrations greater than the laboratory PQLs/RLs, which are less than the NM EMNRD OCD closure criteria of 10 mg/kg.

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

- The laboratory analytical results for composite soil sample S-3 indicate a total combined TPH GRO/DRO/MRO concentration of 97 mg/kg, which is less than the NM EMNRD OCD closure criteria of 100 mg/kg. The laboratory analytical results for the other composite soil samples indicate total combined TPH GRO/DRO/MRO is not present at concentrations greater than the laboratory PQLs/RLs, which are less than the NM EMNRD OCD closure criteria of 100 mg/kg.

- The laboratory analytical results for the composite soil samples indicate chloride is not present at concentrations greater than the laboratory PQLs/RLs, which is less than the NM EMNRD OCD closure criteria of 600 mg/kg.

7.0 RECLAMATION

The excavation was backfilled with imported fill and then contoured to the surrounding topography.

8.0 FINDINGS AND RECOMMENDATION

- Five composite soil samples were collected from the excavation. Based on laboratory analytical results, no benzene, BTEX, chloride, or total combined TPH GRO/DRO/MRO exceedances were identified in the soils remaining at the Site.

- Approximately 108 yd^3 of petroleum hydrocarbon-affected soils and one bbl of hydro-excavation soil cuttings and water were transported to the Envirotech landfarm for disposal/remediation.

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

9.0 STANDARDS OF CARE, LIMITATIONS, AND RELIANCE

9.1 Standard of Care

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

9.2 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.

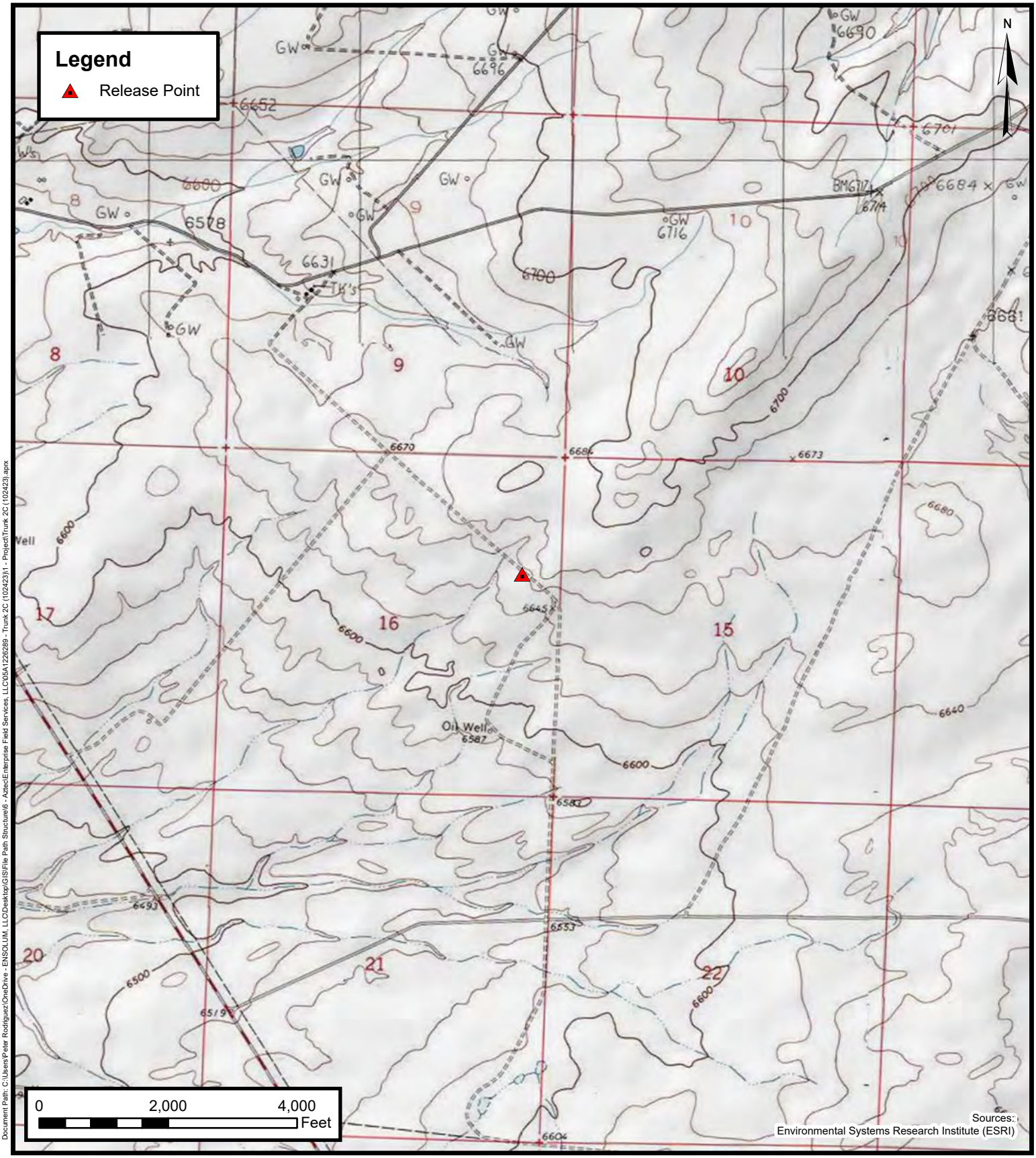
9.3 Reliance

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 Closure Report and Ensolum's Master Services Agreement. The limitation of liability defined in the agreement is the aggregate limit of Ensolum's liability to the client.

ENSOLUM

APPENDIX A

Figures



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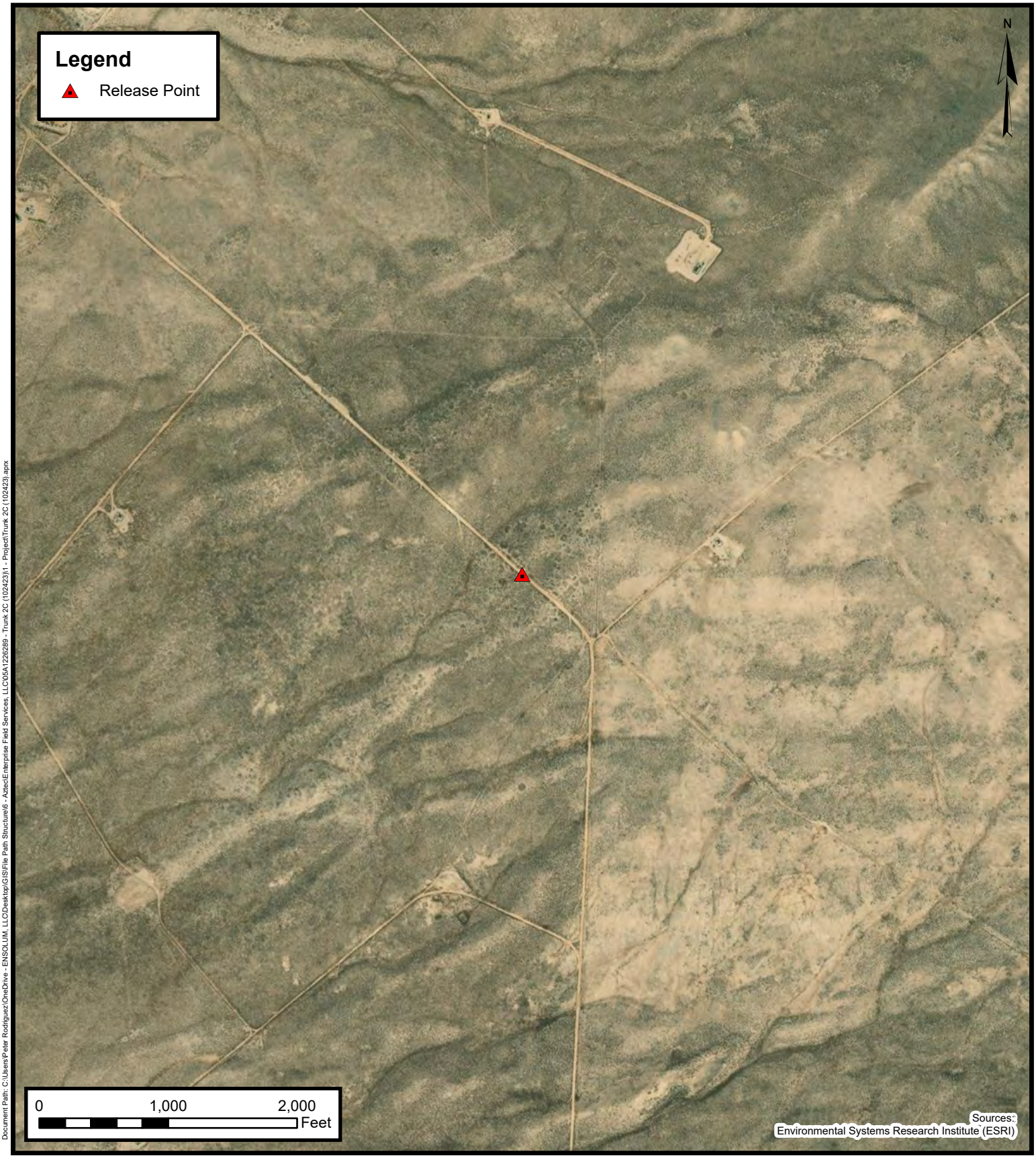
ENSOLUM
Environmental, Engineering and Hydrogeologic Consultants

Topographic Map

Enterprise Field Services, LLC
Name: Trunk 2C (10/24/23)
Project Number: 05A1226289
Unit H, Sec 16, T26N, R10W, San Juan County, New Mexico
36.49037,-107.894467

FIGURE
1



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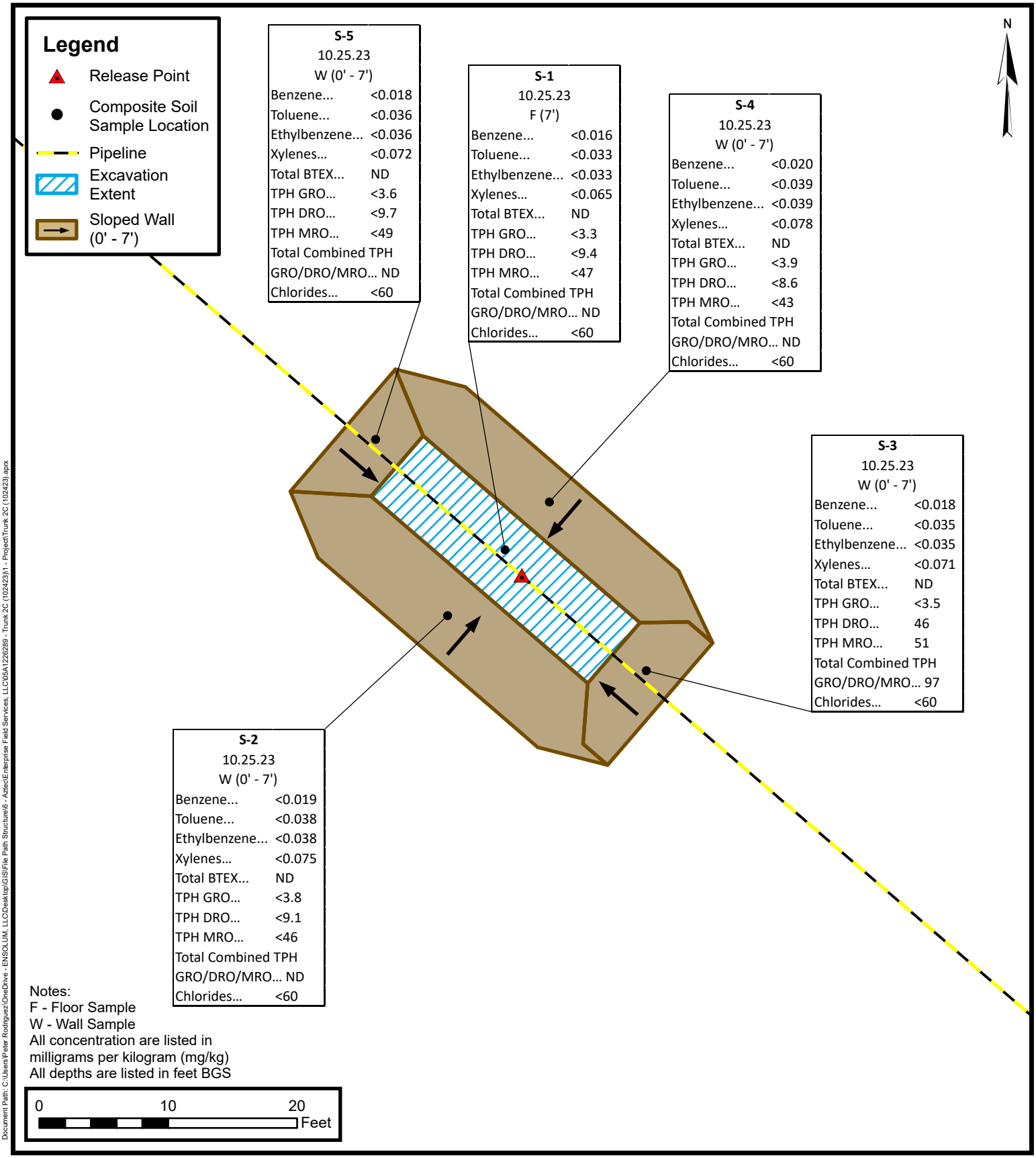
ENSOLUM
Environmental, Engineering and Hydrogeologic Consultants

Site Vicinity Map

Enterprise Field Services, LLC
Name: Trunk 2C (10/24/23)
Project Number: 05A1226289

Unit H, Sec 16, T26N, R10W, San Juan County, New Mexico
36.49037,-107.894467

FIGURE
2



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Environmental, Engineering and Hydrogeologic Consultants

Site Map with Soil Analytical Results

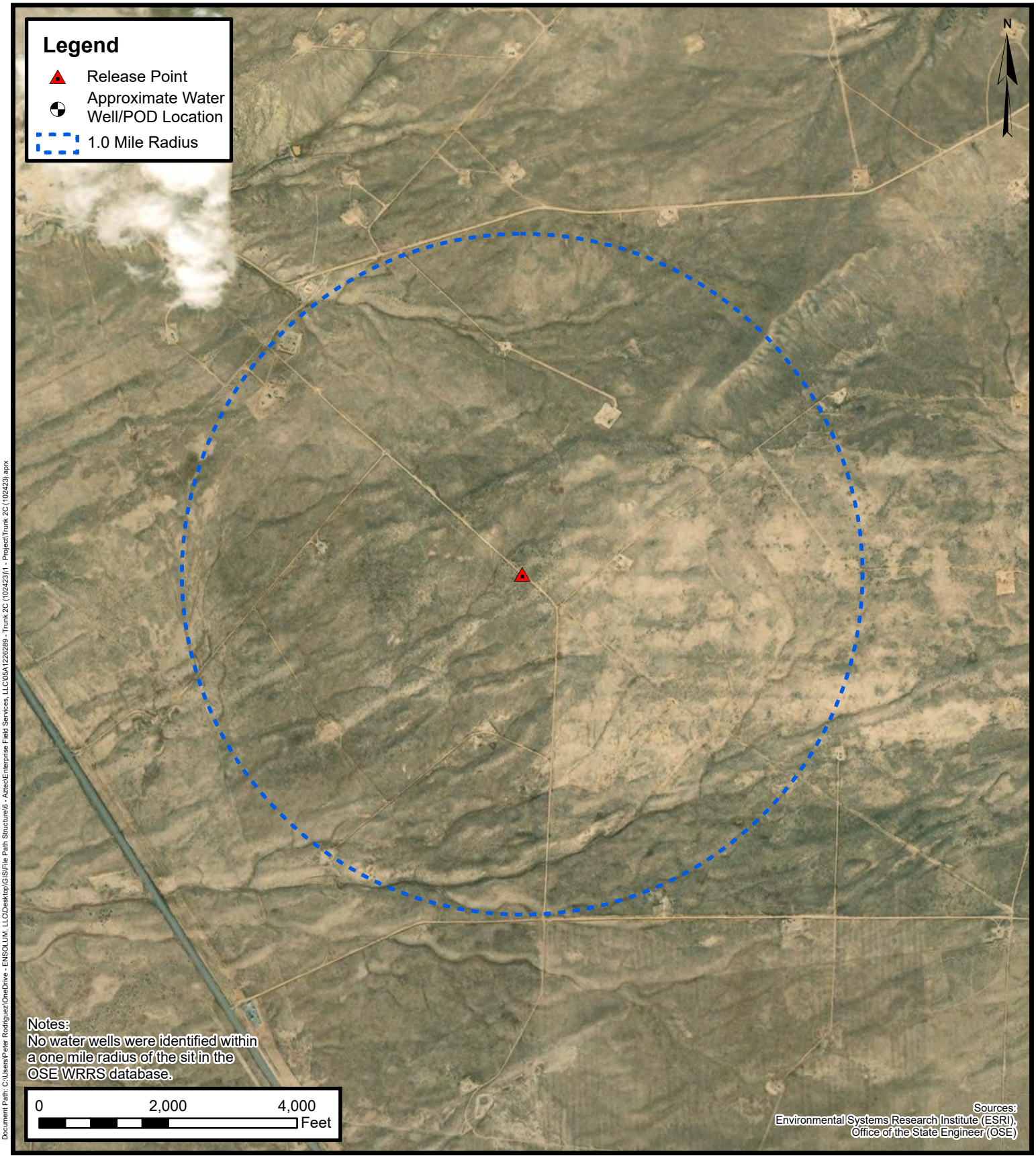
Enterprise Field Services, LLC
Name: Trunk 2C (10/24/23)
Project Number: 05A1226289
Unit H, Sec 16, T26N, R10W, San Juan County, New Mexico
36.49037,-107.894467

FIGURE
3

ENSOLUM

APPENDIX B

Siting Figures and Documentation



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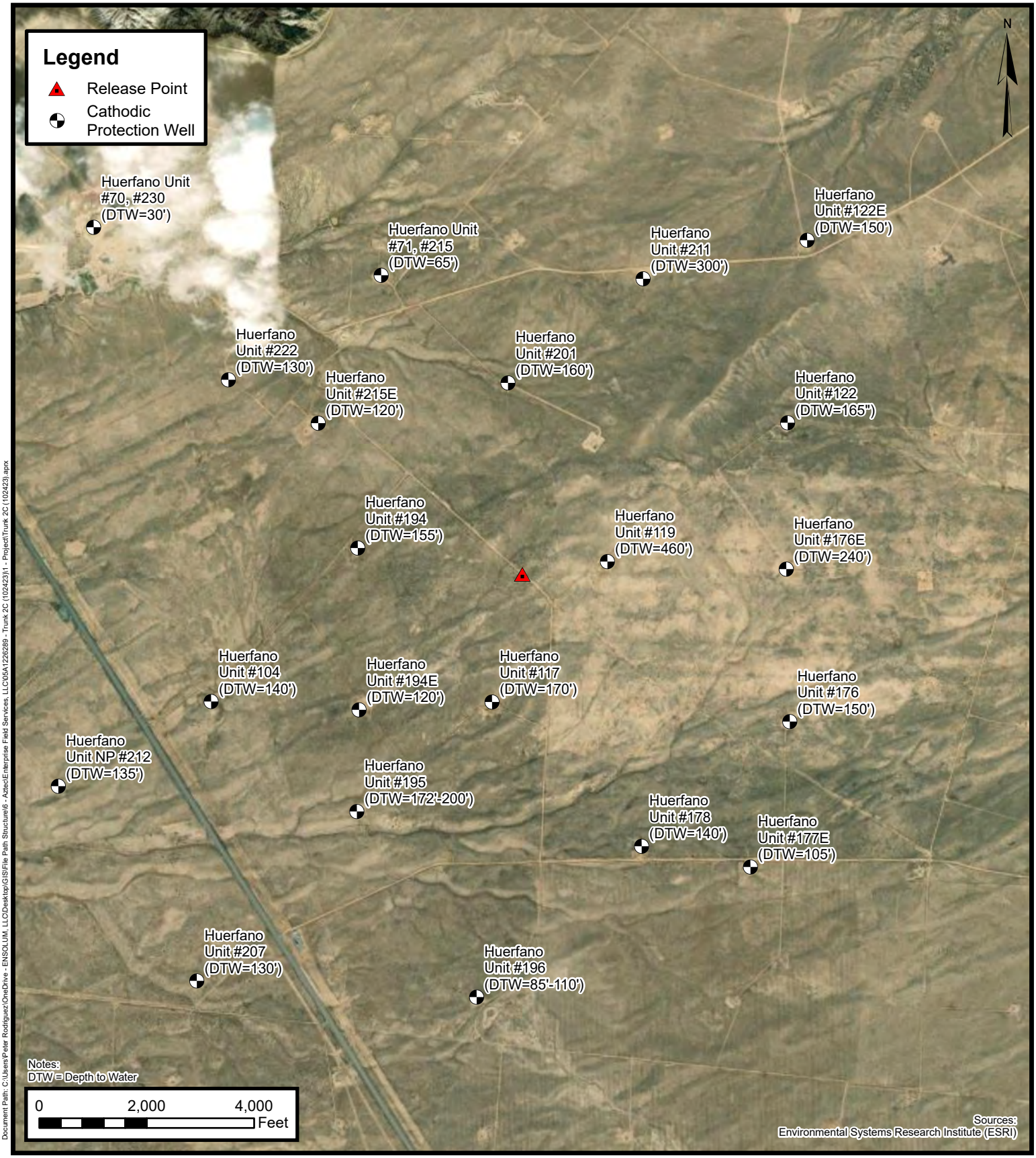
Environmental, Engineering and Hydrogeologic Consultants

1.0 Mile Radius Water Well/POD Location Map

Enterprise Field Services, LLC
Name: Trunk 2C (10/24/23)
Project Number: 05A1226289
Unit H, Sec 16, T26N, R10W, San Juan County, New Mexico
36.49037,-107.894467

FIGURE
A



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Environmental, Engineering and Hydrogeologic Consultants

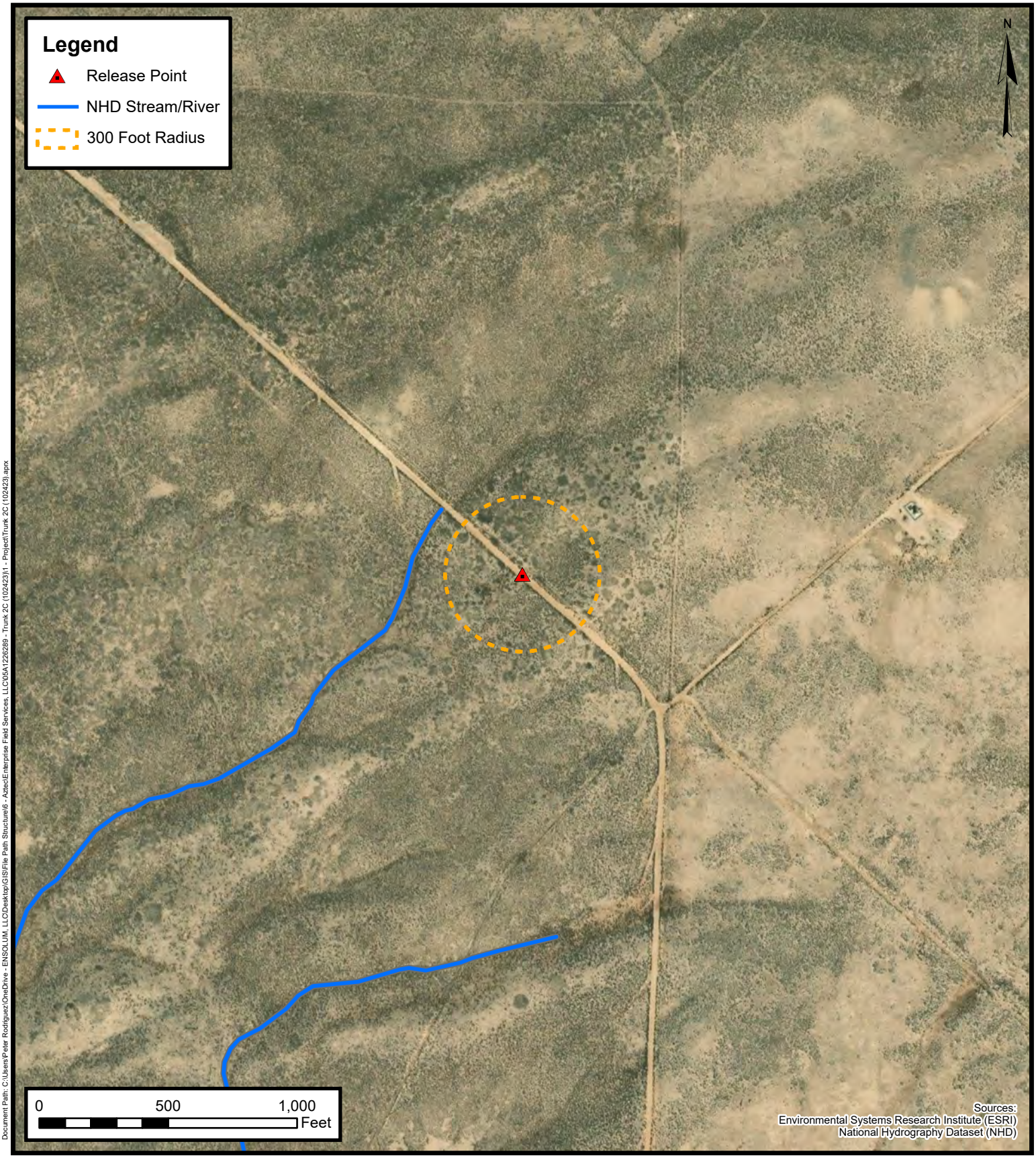
Cathodic Protection Well Recorded Depth to Water

Enterprise Field Services, LLC
Name: Trunk 2C (10/24/23)
Project Number: 05A1226289

Unit H, Sec 16, T26N, R10W, San Juan County, New Mexico
36.49037,-107.894467

FIGURE

B



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Environmental, Engineering and Hydrogeologic Consultants

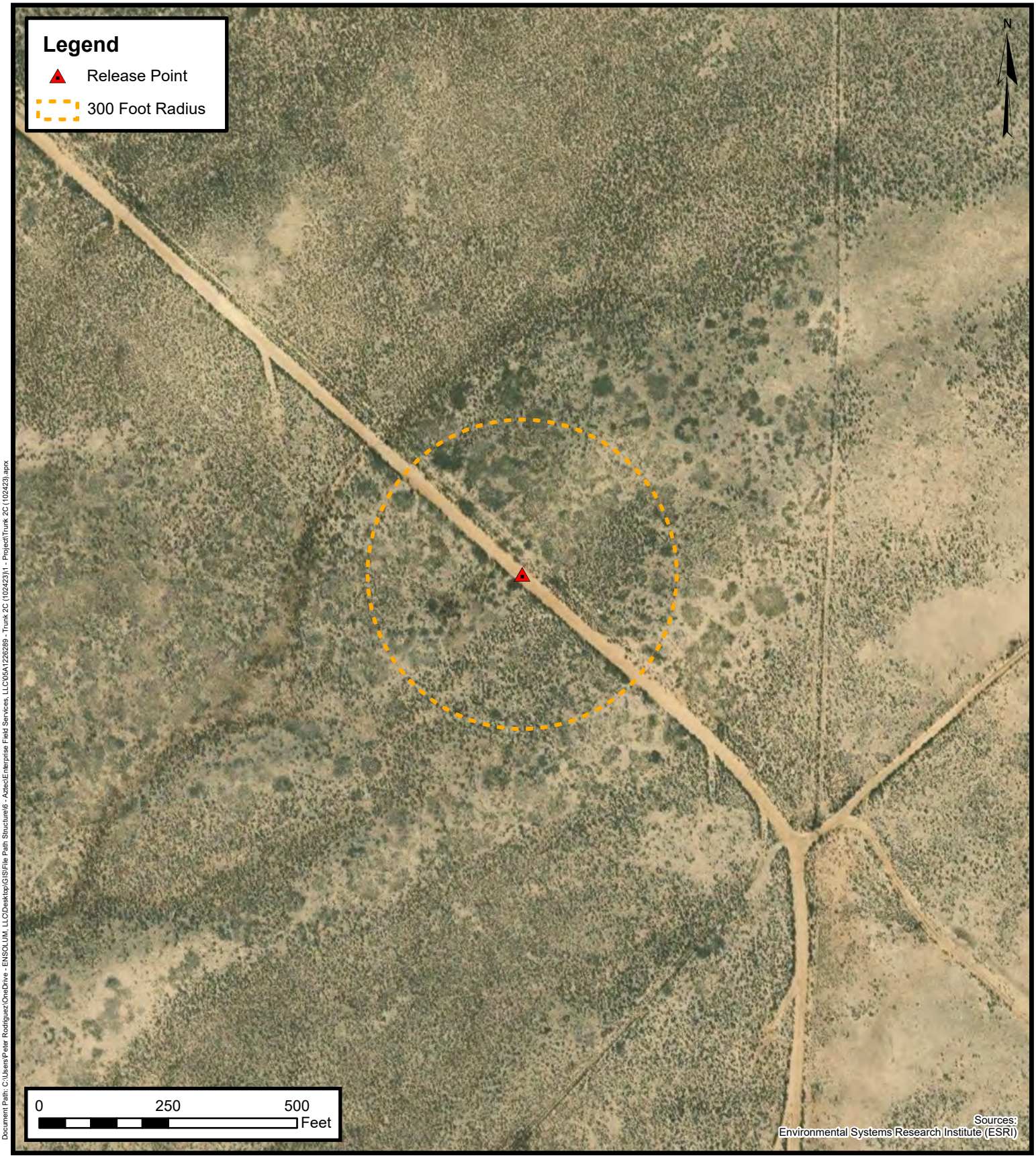
300 Foot Radius Watercourse and Drainage Identification

Enterprise Field Services, LLC
Name: Trunk 2C (10/24/23)
Project Number: 05A1226289

Unit H, Sec 16, T26N, R10W, San Juan County, New Mexico
36.49037,-107.894467

FIGURE

C



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ENSOLUM
Environmental, Engineering and Hydrogeologic Consultants

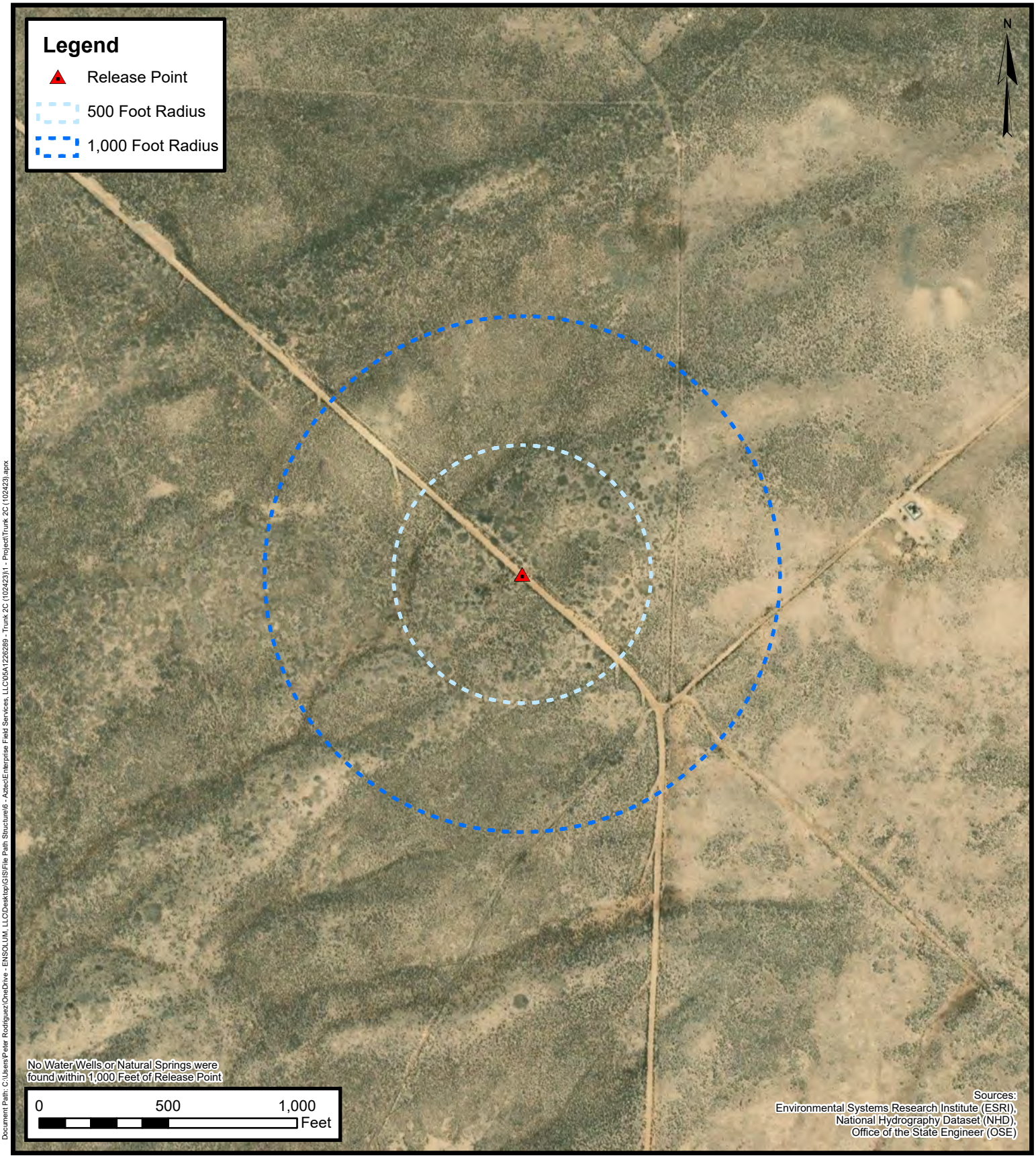
300 Foot Radius Occupied Structure Identification

Enterprise Field Services, LLC
Name: Trunk 2C (10/24/23)
Project Number: 05A1226289

Unit H, Sec 16, T26N, R10W, San Juan County, New Mexico
36.49037,-107.894467

FIGURE

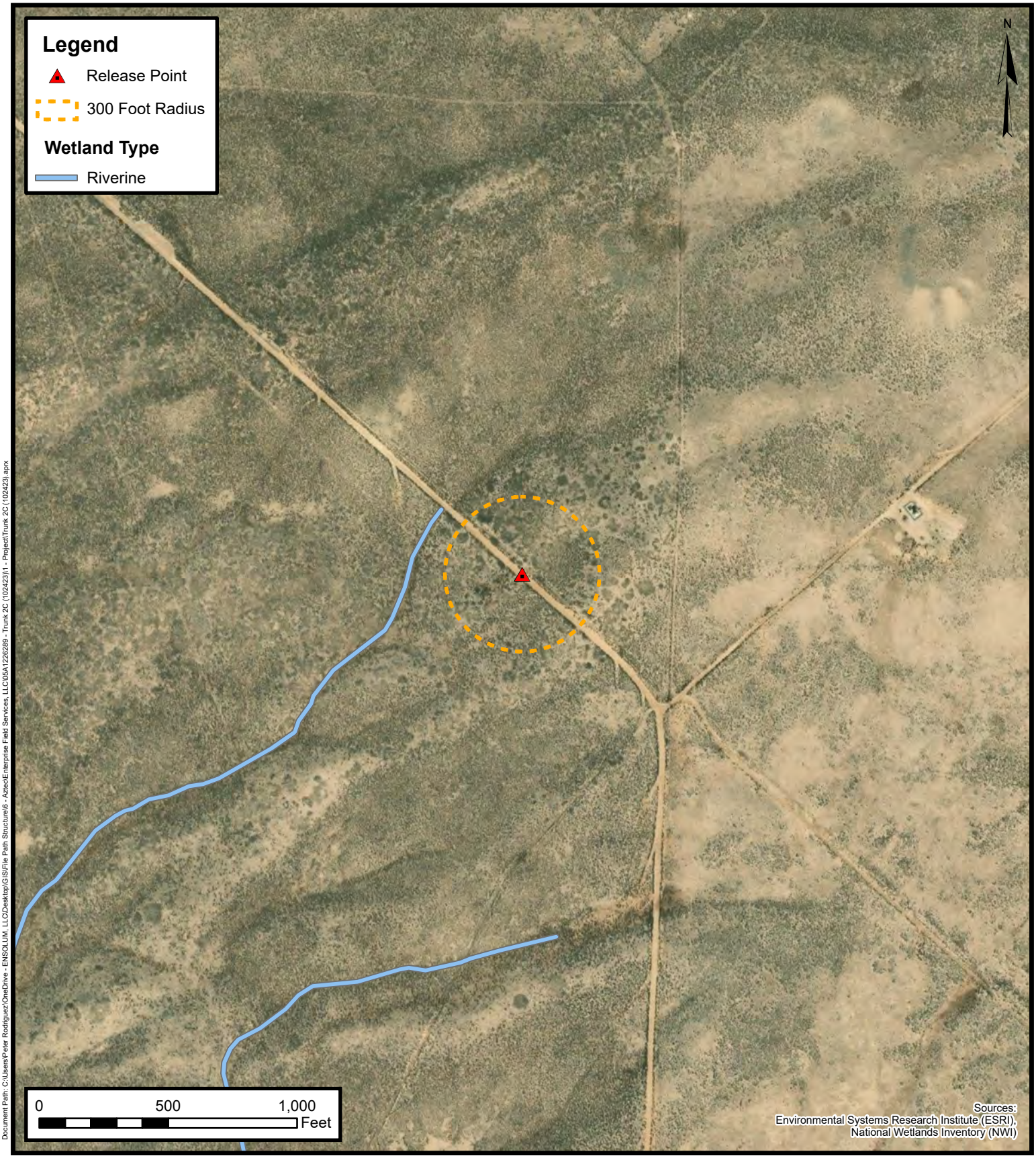
D



ENSOLUM
Environmental, Engineering and Hydrogeologic Consultants

Water Well and Natural Spring Location
Enterprise Field Services, LLC
Name: Trunk 2C (10/24/23)
Project Number: 05A1226289
Unit H, Sec 16, T26N, R10W, San Juan County, New Mexico
36.49037,-107.894467

FIGURE
E



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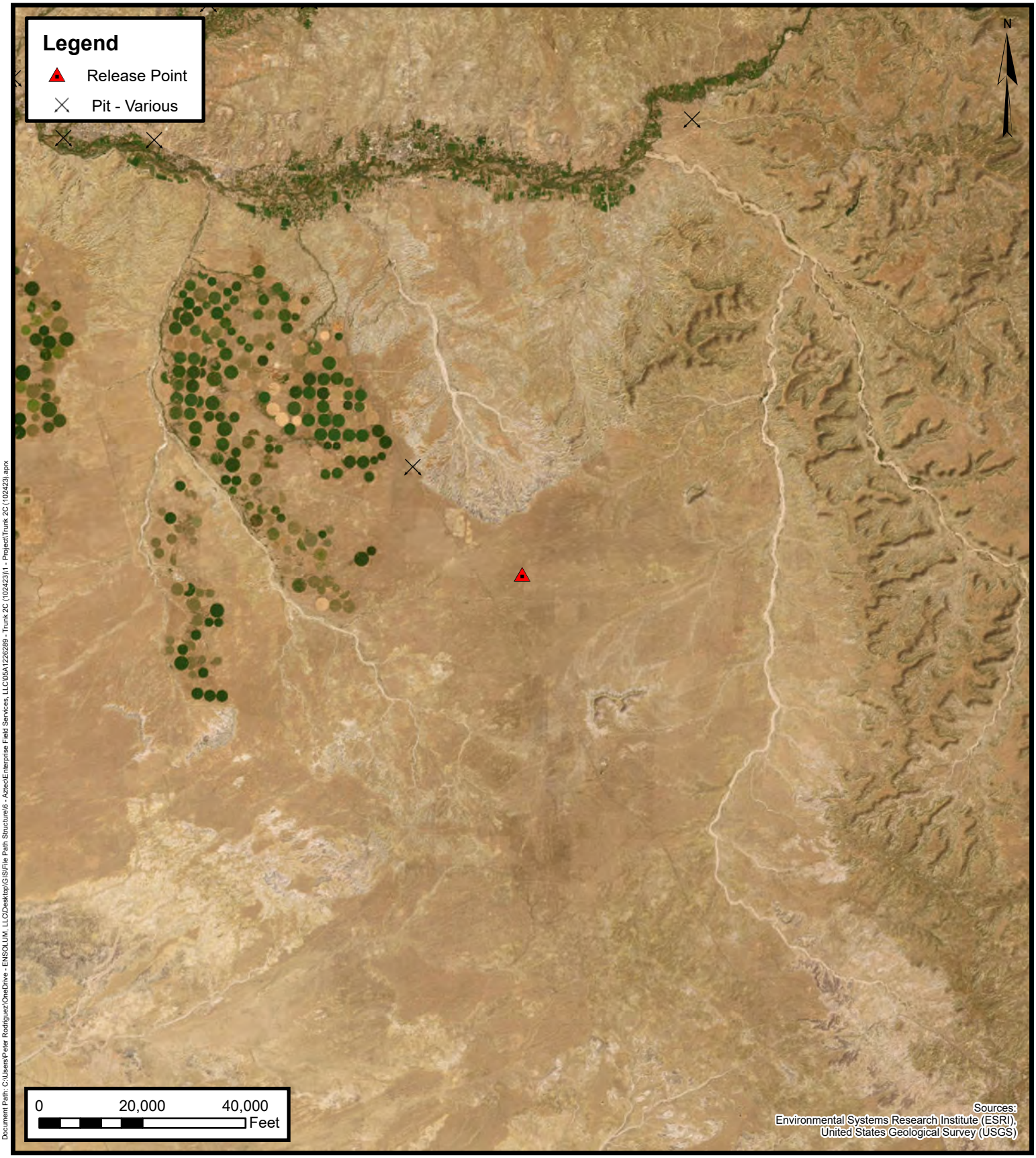
ENSOLUM
Environmental, Engineering and Hydrogeologic Consultants

Wetlands

Enterprise Field Services, LLC
Name: Trunk 2C (10/24/23)
Project Number: 05A1226289
Unit H, Sec 16, T26N, R10W, San Juan County, New Mexico
36.49037,-107.894467

FIGURE
F



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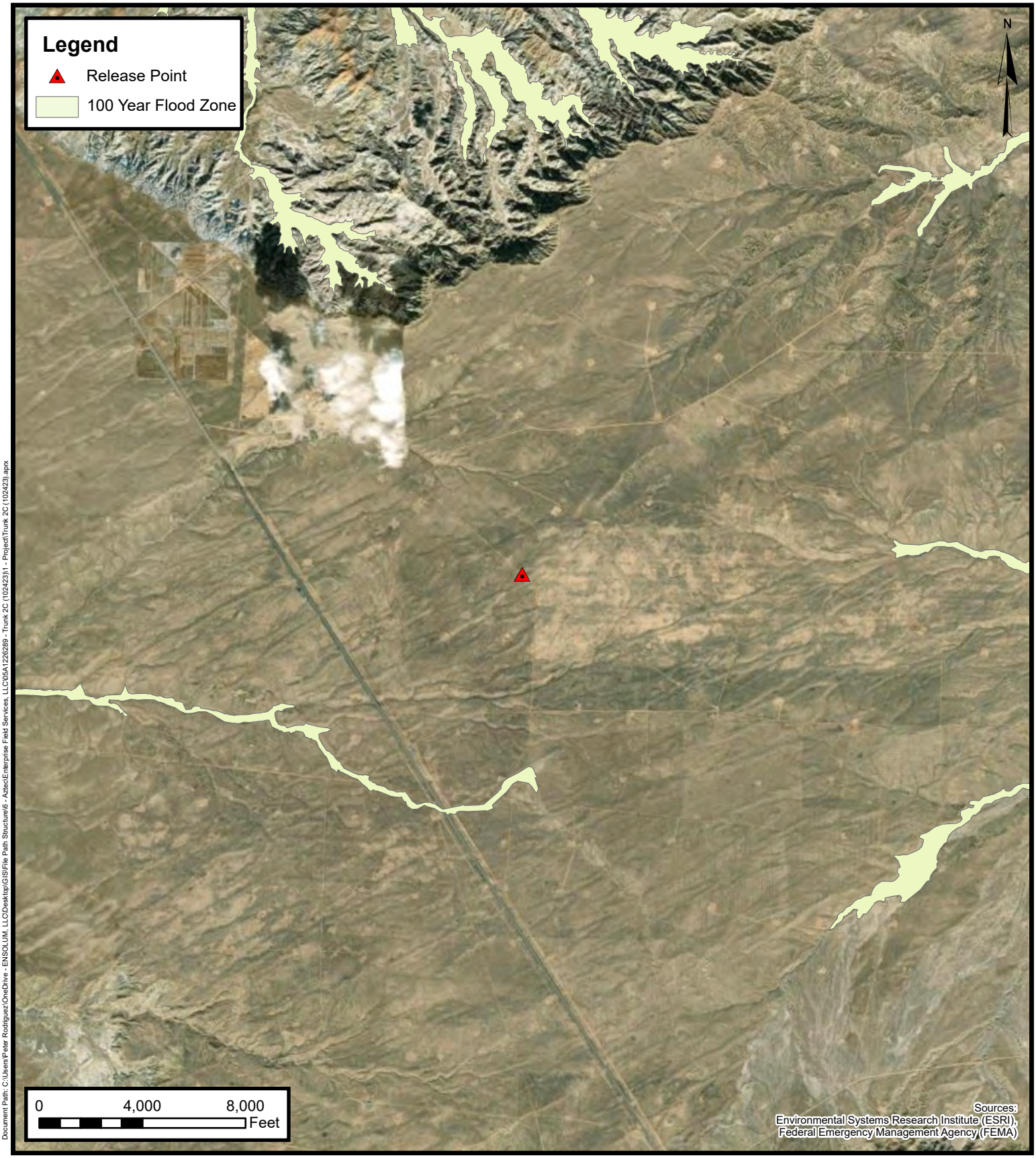
ENSOLUM
Environmental, Engineering and Hydrogeologic Consultants

Mines, Mills, and Quarries

Enterprise Field Services, LLC
Name: Trunk 2C (10/24/23)
Project Number: 05A1226289
Unit H, Sec 16, T26N, R10W, San Juan County, New Mexico
36.49037,-107.894467

FIGURE
G



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ENSOLUM
Environmental, Engineering and Hydrogeologic Consultants

100-Year Flood Plain Map

Enterprise Field Services, LLC
Name: Trunk 2C (10/24/23)
Project Number: 05A1226289
Unit H, Sec 16, T26N, R10W, San Juan County, New Mexico
36.49037,-107.894467

FIGURE
H

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

No records found.

PLSS Search:

Section(s): 16, 8, 9, 10, 15, 17, 20, 21, 22 **Township:** 26N **Range:** 10W

30-045-05829

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

Operator MERIDIAN OIL Location: Unit SE Sec. 16 Twp 26 Rng 10

Name of Well/Wells or Pipeline Serviced HUERFANO UNIT #117

cps 971w

Elevation 6582 Completion Date 9/5/75 Total Depth 350' 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. 170'

Depths gas encountered: N/A

Type & amount of coke breeze used: 3400 lbs.

Depths anodes placed: 310',300',290', 280', 270',240', 230', 220',210', 200

Depths vent pipes placed: N/A

Vent pipe perforations: 200'

Remarks: cgb #1

RECEIVED
MAY 21 1991
OIL

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 9-5-75

Well Name	Location	CPS No.
Huerfano # 117	SE 16 - 26N - 10W	971 W

Type & Size Bit Used	Work Order No.
6 3/4"	53950.19-50-2

Anode Hole Depth	Total Drilling Rig Time	Total Lbs. Coke Used	Lost Circulation Mat'l Used	No. Sacks Mud Used
350'		3,400		

	#1	#2	#3	#4	#5	#6	#7	#8	#9	#10
Anode Depth	310	300	290	280	270	240	230	220	210	200
Anode Output (Amps)	4.0	4.2	4.0	4.0	3.4	3.6	4.0	4.8	4.8	5.2

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

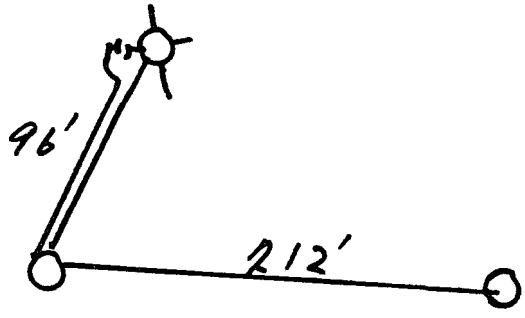
Total Circuit Resistance			No. 8 C.P. Cable Used	No. 2 C.P. Cable Used
Volts 11.8	Amps 15.0	Ohms 0.79	2850	

Remarks: Drill With Air. Driller said water at 170'. Vent Perforated 200'
Logging Anode stopped at 334'

All Construction Completed

Edward R. Pawlik
(Signature)

GROUND BED LAYOUT SKETCH



MORGAN DRILLING COMPANY

P.O. Box 326 • Broken Bow, Oklahoma 74728

Ph. Office 405/584-6000
Mobile 584-6860
Night 420-3248

DATE 9-5-75

Work Order No. 53452-19-52-2

Wasfaniunit 117

CUSTOMER		SERVICE ADDRESS		CITY
Elfanie Yazza		Box 940 [illegible] Farmington N.M.		Farmington N.M.
TEL. NO. [illegible]	REQ. NO.	SERVICEMAN Morgan Drilling	VEHICLE NO. T4	DATE COMPLETED

LITHOLOGIC LOG

Material	From	To	Water Strata	Time
[illegible] Tone	170	180	170	
	180	310		
[illegible] Tone	310	320		
Blue Shale	320	334		

Date started ______________________, 19___
Date completed ______________________, 19___

INSTRUCTIONS:

SERVICE PERFORMED:
TOTAL DEPTH 334'
RIG TIME
WATER TRUCK

DRILLERS CERTIFICATION

This well was drilled under my supervision and the report is true to the b[est]
of my knowledge.
Name [signature]
Address
Well driller's license number
Signed
Date

1002

Customer's Signature
By C. W. Hines

971 W HUER[illegible]ING UNIT #117 SE 1 [illegible]-26-10 53950

150	1.2
	1.0
160	1.6
	1.6
70	1.7
	1.7
80	1.7
	1.7
90	1.6
	1.8
200	1.8
	1.8
10	1.8
	1.7
20	1.7
	1.6
30	1.6
	1.6
40	1.6
	1.4
50	1.0
	0.9
60	0.8
	1.0
70	1.4
	1.6
80	1.6
	1.8
90	1.7
	1.7
300	1.7
	1.6
10	1.6
	1.5
20	1.3
	1.3
~~330~~	1.2 ~~T.D.~~
334	TD

DRILLER SAID WET AT 170' STARTED INJECTION

1.	310	2.0	4.0
2.	300	2.0	4.2
3.	290	2.2	4.0
4.	280	2.0	4.0
5.	270	1.7	3.4
6.	240	2.0	3.6
7.	230	2.0	4.0
8.	220	2.2	4.8
9.	210	2.2	4.8
10	200	2.4	5.2
	2550	11.8	15.0 0.7
	300		
	2850		

30-045-20407

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

Operator MERIDIAN OIL Location: Unit NW Sec. 16 Twp 26 Rng 10

Name of Well/Wells or Pipeline Serviced HUERFANO UNIT #194

cps 970w

Elevation 6629' Completion Date 9/3/75 Total Depth 350' Land Type* N/A

Casing, Sizes, Types & Depths 24' OF STEEL CASING

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. 155'

Depths gas encountered: N/A

Type & amount of coke breeze used: 3200 lbs.

Depths anodes placed: 305',295',265', 255', 245',235', 225',215', 205', 195'

Depths vent pipes placed: N/A

Vent pipe perforations: 250'

Remarks: gb #1

RECEIVED
MAY 31 1991
OIL CON. DIV.
DIST.

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.

...s (Rev. 1-69)

WELL CASING
CATHODIC PROTECTION CONSTRUCTION REPORT
DAILY LOG

Logged

Drilling Log (Attach Hereto). ☐

Completion Date 9-3-75

Well Name: Huerfano II 194	Location: NW 16 - 26N - 10W	CPS No. 970 W
Type & Size Bit Used: 6 3/4"		Work Order No. 54650.19-50-:

Total Hole Depth	Total Drilling Rig Time	Total Lbs. Coke Used	Lost Circulation Mat'l Used	No. Sacks Mud Used.
350'		3,200		

	#1	#2	#3	#4	#5	#6	#7	#8	#9	#10
Anode Depth	305	295	265	255	245	235	225	215	205	19
Anode Output (Amps)	3.2	3.6	3.6	4.2	4.0	4.2	4.0	4.2	4.6	4.

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

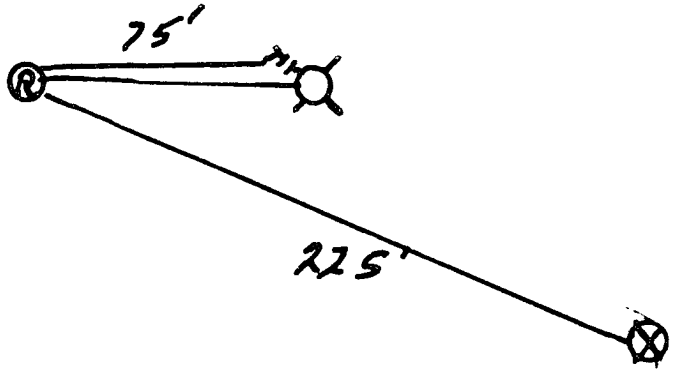
Total Circuit Resistance				No. 8 C.P. Cable Used	No. 2 C.P. Cable Used
Volts 11.8	Amps 16.0	Ohms 0.73		1740	

Remarks: Drill with Air. set 24' steel casing, 3x2 Driller said water AT 155'. Vent Hose Perforated 250'. Logging Anode stopped AT 324'

All Construction Completed

Edward R. Parker
(Signature)

GROUND BED LAYOUT SKETCH



MORGAN DRILLING COMPANY

P.O. Box 326 • Broken Bow, Oklahoma 74728

Ph. Office 405/584-6000
Mobile 584-6860
Night 420-3248

DATE 9-3-75

Work Order No. 54650-19502
[illegible]

CUSTOMER		SERVICE ADDRESS [illegible]	CITY
El Paso Gas Co		Farmington N.M.	Farmington N.M.
TEL. NO.	REQ. NO.	SERVICEMAN	VEHICLE NO.	DATE COMPLETED
[illegible]		Morgan Drilling	T4	

LITHOLOGIC LOG

Material	From	To	Water Strata	Time
[illegible]	160	180	155	
[illegible]	180	310		
[illegible]	310	320		
[illegible]	320	350		

Date started ______________ , 19 ___
Date completed ______________ , 19 ___

INSTRUCTIONS:

SERVICE PERFORMED:

TOTAL DEPTH 324'

RIG TIME

WATER TRUCK

DRILLERS CERTIFICATION

This well was drilled under my supervision and the report is true to the of my knowledge.

Name [signature]

Address

Well driller's license number

Signed

Date

972

Customer's Signature

By Edward R. Paulik

EL PASO NATURAL GAS COMPANY
ENGINEERING DEPARTMENT

Form 9-2 (Rev. 11-57)

Sheet _____ of _____
Date: _____
By: _____

970W

MW		gals/mol
16	C_1	6 4
30	C_2	10 12
44	C_3	10 42
58	IC_4	12 38
"	NC_4	11 93
72	IC_5	13 85
"	NC_5	13 71
86	IC_6	15 50
"	C_6	15 57
100	IC_7	17 2
"	C_7	17 46
114	C_8	19 39
28	$C_2^=$	9 64
42	$C_3^=$	9 67

MISC		
MW		gals/mol
44	CO_2	6 35
34	H_2S	5 12
28	N_2	4 16
2	H_2	3 38

	1.8	
160	1.8	40
	1.8	
70	1.8	50
	2.0	
80	2.0	
	2.1	
90	2.2	
10	2.2	
200	2.2	
	2.2	
10	2.0	
	2.0	
20	2.1	
	2.2	
30	2.1	
	2.0	
40	2.0	
	2.0	
50	2.0	
	2.0	
60	2.0	
	2.0	
70	1.8	
	1.6	
80	1.6	
	1.4	
90	1.6	
	2.0	
300	2.0	
	2.0	
10	2.0	
	2.0	
20	2.2	
		324 BOTTOM
30		

Driller said water 165
Vent Perforated 250

	H S			
1	305	2.4	3.2	
2	295	2.2	3.6	
3	265	2.2	3.6	
4	255	2.4	4.2	
5	245	2.4	4.0	
6	235	2.4	4.2	
7	225	2.6	4.0	
8	215	2.4	4.2	
9	205	2.6	4.6	
10	195	2.2	4.4	
	2440	11.8	16.0	0.73
	300			
	2740			

#194E 30-045- 26232

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

Operator MERIDIAN OIL INC. Location: Unit N Sec. 16 Twp 26 Rng 10

Name of Well/Wells or Pipeline Serviced HUERFANO UNIT #194E

cps 1854w

Elevation 6564' Completion Date 9/16/87 Total Depth 420' Land Type* N/A

Casing, Sizes, Types & Depths 20' OF CASING

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. 120' SAMPLE TAKEN

Depths gas encountered: N/A

Type & amount of coke breeze used: N/A

Depths anodes placed: 375', 365', 355', 345', 335', 325', 315', 305', 295', 280'

Depths vent pipes placed: N/A

Vent pipe perforations: 320'

Remarks: gb #1

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

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

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

FM-07-0238 (Rev. 10-82)

WELL CASING

CATHODIC PROTECTION CONSTRUCTION REPORT

DAILY LOG

Drilling Log (Attach Hereto) ☐ 315-2940 Completion Date 9-16-87

CPS #	Well Name, Line or Plant:	Work Order #	Static:	Ins. Union Check
18540	Huerfano 194E		-.83 V	☑ Good ☐ Bad

Location:	Anode Size:	Anode Type:	Size Bit:
Sec 16-26-10	21" x 60"	Duriron	6 3/4"

Depth Drilled	Depth Logged	Drilling Rig Time	Total Lbs. Coke Used	Lost Circulation Mat'l Used	No. Sacks Mud Used
420	412	6 hrs			Flow 6564

Anode Depth	#1	#2	#3	#4	#5	#6	#7	#8	#9	#10
	375	365	355	345	335	325	315	305	295	280
Anode Output (Amps)	5.6	6.4	6.6	5.5	6.3	6.3	5.7	6.5	6.2	5.7

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 11.6	Amps 21.2	Ohms .55			

Remarks: Driller said water was at 120'. Vent pipe is perforated up to 100'. Set 20' of casing due to blow sand. A total of 15 minutes casing time

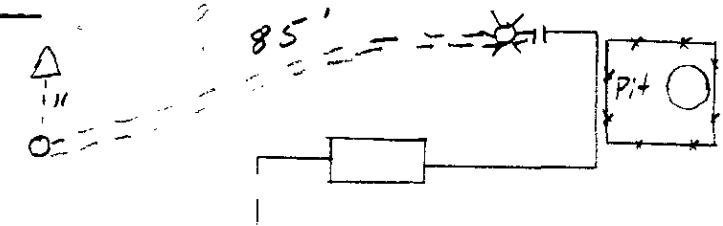
Rectifier Size: 40 V 16 A

Addn'l Depth		
Depth Credit:	88	✓
Extra Cable:	30'	✓
Ditch & 1 Cable:	11'	✓
Ditch & 2 Cable:	85'	
25' Meter Pole:		
20' Meter Pole:		
10' Stub Pole:	150.00	
Junction Box:	40.00	
20' Lg Pkg @ $22.00	440.00	
	4633.19	
	231.70	
	4865.69	

4300
-352 ✓
3948
7.50 ✓
4.29 ✓
44 20 ✓

All Construction Completed

Randy Smith
(Signature)



N

6964

MERIDIAN OIL
P. O. BOX 4289-Phone 327-0251
FARMINGTON, NM

Date 9-16-87

DEEP WELL GROUNDBED LOG

Company: Burge Corrosion

Well No. 194E Location Huerfano Volts Applied 11.6 Amperes 21.[illegible]

Depth	Reading	Depth	Reading	Depth	Reading	Depth	Reading
0							
5		230	1.6	455	(1) 375 3.1	680	5.6
10		235	1.9	460	(2) 365 3.2	685	6.4
15		240	2.5	465	(3) 355 3.0	690	6.6
20		245	2.7	470	(4) 345 2.9	695	5.5
25		250	2.6	475	(5) 335 3.2	700	6.3
30		255	2.7 ✓	480	(6) 325 3.0	705	6.3
35		260	2.6	485	(7) 315 2.9	710	5.7
40		265	2.5 ✓	490	(8) 305 3.0	715	6.5
45		270	2.6	495	(9) 295 2.8	720	6.2
50		275	2.7 ✓	500	(10) 280 2.9	725	5.7
55		280	2.6 ([illegible])	505		730	
60		285	2.4	510		735	
65		290	2.5	515		740	
70		295	2.5 (9)	520		745	
75		300	2.4	525		750	
80		305	2.7 (8)	530		755	
85		310	2.7 ✓	535		760	
90		315	2.5 (7)	540		765	
95		320	2.5 ✓	545		770	
100	1.5	325	2.5 (6)	550		775	
105	1.4	330	2.6 ✓	555		780	
110	2.1	335	2.7 (5)	560		785	
115	2.7	340	2.5 ✓	565		790	
120	2.7	345	2.5 (4)	570		795	
125	2.7	350	2.2	575		800	
130	2.9	355	2.5 (3)	580		805	
135	3.0	360	2.9	585		810	
140	2.8	365	2.8 (2)	590		815	
145	2.8	370	2.7	595		820	
150	2.6	375	2.6 (1)	600		825	
155	2.4	380	2.5	605		830	
160	1.7	385	2.3	610		835	
165	1.9	390	1.7	615		840	
170	2.0	395	1.2	620		845	
175	2.6	400	1.2	625		850	
180	2.7	405	1.7	630		855	
185	2.6	410	TD 412	635		860	
190	2.7	415		640		865	
195	2.5	420		645		870	
200	1.9	425		650		875	
205	1.8	430		655		880	
210	1.8	435		660		885	
215	1.8	440		665		890	
220	1.4	445		670		895	
[illegible]	[illegible]	450		675		900	

TECH Inc
333 East Main
Farmington
New Mexico

CPS 18540

API WATER ANALYSIS REPORT FORM

Company		Sample No.	Date Sampled
MERIDIAN OIL. Co.		1	9/16/97
Field	**Legal Description**	**County or Parish**	**State**
Ballard		San Juan	NM
Lease or Unit	**Well**	**Depth**	**Formation** / **Water, B/D**
Huerfano	194E	120	Ground Bed
Type of Water (Produced, Supply, etc.)	**Sampling Point**	**Sampled By**	
Produced	Ground Bed	R.S	

DISSOLVED SOLIDS

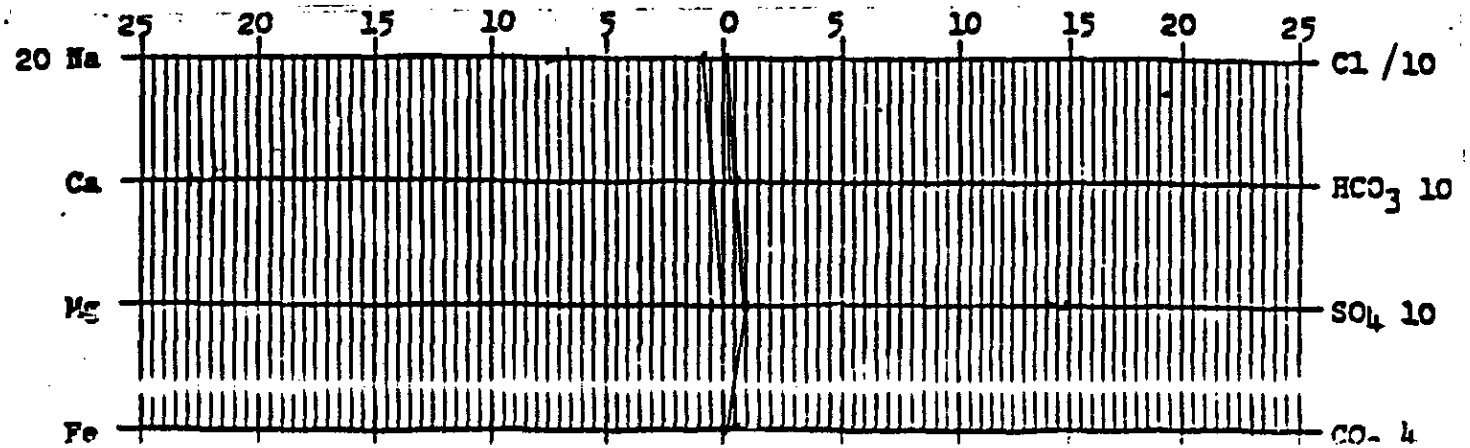
CATIONS	mg/l	me/l
Sodium, Na (calc.)	374	16.3
Calcium, Ca	10.7	0.5
Magnesium, Mg	0.5	0.0
Barium, Ba		

ANIONS	mg/l	me/l
Chloride, Cl	25.5	0.7
Sulfate, SO_4	461	9.6
Carbonate, CO_3	19.2	0.6
Bicarbonate, HCO_3	357	5.9

OTHER PROPERTIES

pH	9.11
Specific Gravity, 60/60 F.	1.0036
Resistivity (ohm-meters) 72 F.	730
Conductivity	1400
Total Dissolved Solids (calc.)	1250
Iron, Fe (total)	
Sulfide, as H_2S	

REMARKS & RECOMMENDATIONS:



8

BURGE CORROSION SYSTEMS, INC.

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

CPS 1854W

COMPANY Meridian DAILY DRILLING REPORT 9-16 19 87

WELL NAME:	WELL NUMBER:	SECTION:	TOWNSHIP:	RANGE:
Huerfano ~~1850 ft~~	194 E	16	26 N	10 W

WATER AT: 100 ft FEET: HOLE MADE: 6 3/4 420 ft

DESCRIPTION OF FORMATION

FROM	TO	FORMATION IS	COLOR
0	15	Sand	tan
15	60	Sand Stone	tan-Grey
60	80	Shale	Grey
80	115	Water Sand	Grey
115	160	Sandy shale & Shale	Grey, Purple
160	180	Sandstone	Grey
180	210	Shale	Grey
210	260	Sand Stone	Grey
260	400	Shale	Purple
400	420	Sand Stone	Grey
		T.D. 420 ft	
		SET 20 ft. PVC Casing	

REMARKS: Water Sample at 120 ft Set 20 ft. of Casing.

Grant Sumner Driller Tool Dresser

70 - 30-045-05975

230 - 30-045-20910

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

Operator MERIDIAN OIL Location: Unit NW Sec. 8 Twp 26 Rng 10

Name of Well/Wells or Pipeline Serviced HUERFANO UNIT #70, #230

cps 954w

Elevation 6563' Completion Date 8/11/83 Total Depth 520' 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' SAMPLE TAKEN

Depths gas encountered: N/A

Type & amount of coke breeze used: 4100 lbs.

Depths anodes placed: 455', 445', 435', 425', 395', 385', 345', 335', 325', 295'

Depths vent pipes placed: 480' OF 1" PVC VENT PIPE

Vent pipe perforations: 480'

Remarks: cgb #2

RECEIVED
MAY 31 1991
OIL CON. D.
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.

FM-07-0238 (Rev. 10-82)

WELL CASING

CATHODIC PROTECTION CONSTRUCTION REPORT

DAILY LOG

Drilling Log (Attach Hereto) ☐ Completion Date 8-11-83

CPS #	Well Name, Line or Plant	Work Order #	Static:	Ins Union Check
954-W	HUERFANO #70	184-53075-19		☒ Good ☐ Bad
	HUERFANO #230	184-55230-19		

Location	Anode Size	Anode Type	Size Bit
NW 8-26-10	2"	DURIRON	6 3/4

Depth Drilled	Depth Logged	Drilling Rig Time	Total Lbs Coke Used	Lost Circulation Mat'l Used	No. Sacks Mud Used
520'	480'		4100		

	#1	#2	#3	#4	#5	#6	#7	#8	#9	#10
Anode Depth	455	445	435	425	395	385	345	335	325	295
Anode Output (Amps)	4.2	4.7	5.1	3.7	6.3	4.4	5.0	5.6	4.0	6.0
Anode Depth	#11	#12	#13	#14	#15	#16	#17	#18	#19	#20
Anode Output (Amps)	#11	#12	#13	#14	#15	#16	#17	#18	#19	#20

Total Circuit Resistance			No. 8 C.P. Cable Used	No. 2 C.P. Cable Used
Volts 12.3	Amps 21.6	Ohms .57		

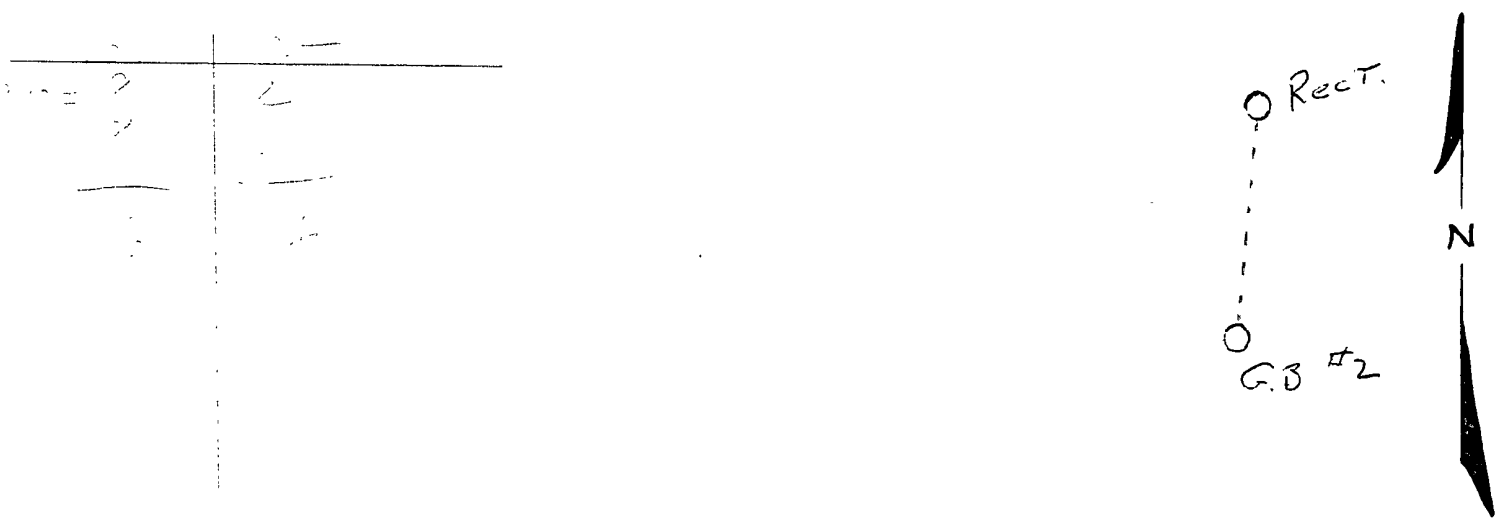
Remarks: DRILLER SAID HIT WATER AT 30'. HAD APPROX. 10' OF WATER STANDING IN HOLE NEXT A.M. GOT WATER SAMPLE. INSTALLED 480' OF 1" VENT PIPE. PERFORATED 480' OF VENT PIPE. SLURRIED 4100 lbs. of COKE BREEZE

Rectifier Size: _____ V _____ A
Addn'l Depth _____
Depth Credit: 20'
Extra Cable: 5'
Ditch & 1 Cable: 42'
25' Meter Pole: _____
20' Meter Pole: _____
10' Stub Pole: _____

All Construction Completed

Killen Knight Jr.
(Signature)

GROUND BED LAYOUT SKETCH



Form 22-2 (Rev. 1-61)

EL PASO NATURAL GAS COMPANY

DRILLING DEPARTMENT

DAILY DRILLING REPORT

LEASE GPS 954W WELL NO. Huerfano 70-230 CONTRACTOR Loft's CC RIG NO. IR1 REPORT NO. DATE 8-11 1983

MORNING

Driller Total Men In Crew

FROM	TO	FORMATION	WT-BIT	R.P.M.
0-40	40	SANDSTONE		
40-80	80	Blue Shale		
80	120	SAND + SAND STONE		
120	215	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 –

WATER 25' + 230
1 GPM

DAYLIGHT

Driller Total Men In Crew

FROM	TO	FORMATION	WT-BIT	R.P.M.
215	242	SAND STREAK of Shale		
242	294	grey Shale		
310	328	SAND		
328	520	grey Shale STREAKS of SAND		

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 –

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 Roger Snell

El Paso Natural Gas Company
ENGINEERING CALCULATION SHEET
Form 7-371 (11-77)

CPS 954-W
Huerfano #70
Huerfano #230
NW 8-26-10

W/O
184-53075-19.50-20-63
184-55230-19.50-20-63

30	1.1	30	1.8	30	2.2				
35	2.1	35	1.5	35	2.2 (1)				
40	2.2	40	1.3	40	2.2				
45	2.3	45	1.1	45	2.2 (2)				
50	2.3	50	1.2	50	2.1				
55	2.3	55	1.8	55	2.0 (1)				
60	2.4	60	1.9	60	1.9				
65	2.4	65	2.2	65	1.8				
70	2.4	70	2.2	70	1.5				
75	2.1	75	2.2	75	1.5				
80	2.0	80	2.3	80		T.D			
85	1.9	85	2.3	85					
90	1.2	90	2.2	90					
95	.90	95	2.0 (10)	95					
100	.70	300	1.9	500					
05	.60	05	1.2	05					
10	.80	10	1.3	10					
15	1.5	15	1.8	15					
26	1.4	20	1.9	20					
25	1.2	25	2.1 (9)						
30	1.3	30	2.2						
35	1.7	35	2.2 (8)						
40	2.2	40	2.2						
45	2.2	45	2.0 (7)						
50	2.0	50	1.9						
55	1.8	55	1.2						
60	1.7	60	1.0			(1)	455	2.5	4.2
65	1.6	65	1.0			(2)	445	2.8	4.7
70	2.0	70	1.0			(3)	435	2.7	5.1
75	2.1	75	1.1			(4)	425	2.4	3.7
80	2.3	80	1.9			(5)	395	3.5	6.3
85	2.2	85	2.4 (1)			(6)	385	2.7	4.4
90	2.2	90	2.4			(7)	345	2.9	5.0
95	2.3	95	2.4 (5)			(8)	335	2.9	5.6
200	2.3	400	1.7			(9)	325	2.7	4.0
05	2.2	05	1.3			(10)	295	3.2	6.0
10	2.3	10	1.1						
15	2.3	15	1.3						
20	2.3	20	1.4			12.3 V	21.6 A	.57 Ω	
25	2.1	25	1.9 (4)						

Driller said hit water at 30'. Had approx 10' of water standing in hole next A.M. Got water sample. Drilled to 520'. Installed 480' of 1" vent pipe. Perforated 480' of vent pipe. Slurried 4100 lbs. of coke breeze.

Page
Date 8-11-83
By WK

EL PASO NATURAL GAS COMPANY
SAN JUAN DIVISION
FARMINGTON, NEW MEXICO
PRODUCTION DEPARTMENT WATER ANALYSIS

Analysis No. 1-10835 **Date** September 14, 1983

Operator El Paso Natural Gas **Well Name** Huerfano #230 CPS 954W

Location NW 8-26-10 **County** San Juan **State** New Mexico

Field Ballard **Formation**

Sampled From 30 feet

Date Sampled August 11, 1983 **By** Willis Knight

Tbg. Press. **Csg.** **Surface Csg. Press.**

	ppm	epm		ppm	epm
Sodium	301	13.1	Chloride	292	8.2
Calcium	19	1.0	Bicarbonate	183	3.0
Magnesium	4	0.3	Sulfate	150	3.1
Iron			Carbonate	0	0
H_2S			Hydroxide	0	0

cc: R. A. Ullrich
E. R. Paulek
J. W. McCarthy
J. D. Evans
W. B. Shropshire
D. C. Adams
File

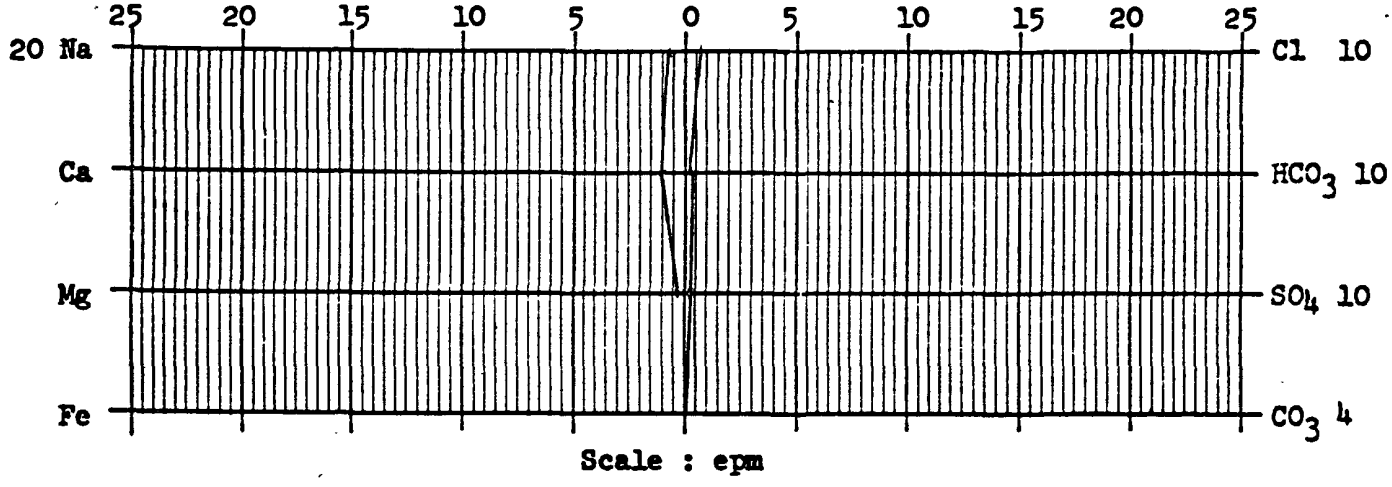
Total Solids Dissolved 922

pH 8.2

Sp. Gr. 0.9994 **At** 60°F

Resistivity 500 **ohm-cm at** 74°F

Dennis P. Bird GCK
Chemist



30-045-20839

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

Operator MERIDIAN OIL Location: Unit SE Sec. 8 Twp 26 Rng 10

Name of Well/Wells or Pipeline Serviced HUERFANO UNIT #222

cps 955w

Elevation 6617' Completion Date 8/26/75 Total Depth 350' 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. 130'

Depths gas encountered: N/A

Type & amount of coke breeze used: 4000 lbs.

Depths anodes placed: 295', 285', 235', 225', 215', 205', 195', 185', 175'

Depths vent pipes placed: N/A

Vent pipe perforations: 200'

Remarks: gb #1.

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

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

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

Form C-128 (Rev. 1-69)

WELL CASING
CATHODIC PROTECTION CONSTRUCTION REPORT
DAILY LOG

Drilling Log (Attach Hereto). ☐

Completion Date 8-26-75

Well Name: Huerfano # 222	Location: SE 8-26N-10W			CPS No.: 955W
Type & Size Bit Used: 6 3/4"				Work Order No.: 54918.19-50-20
Anode Hole Depth: 350	Total Drilling Rig Time:	Total Lbs. Coke Used: 4,000	Lost Circulation Mat'l Used:	No. Sacks Mud Used:

	# 1	# 2	# 3	# 4	# 5	# 6	# 7	# 8	# 9	# 10
Anode Depth	295	285	245	235	225	215	205	195	185	175
Anode Output (Amps)	4.2	4.0	4.4	4.2	4.4	4.4	4.4	4.4	4.2	4.6

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

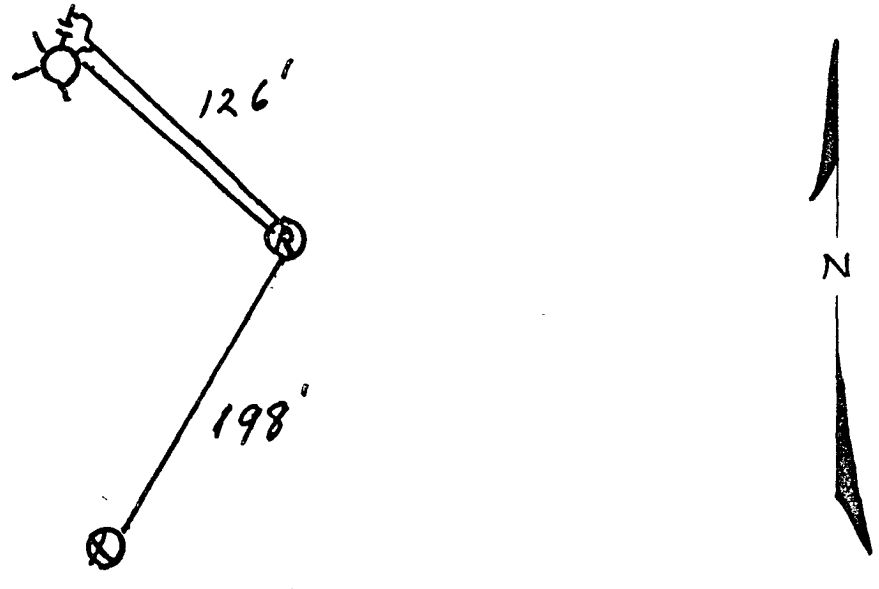
Total Circuit Resistance			No. 8 C.P. Cable Used	No. 2 C.P. Cable Used
Volts 11.8	Amps 18.0	Ohms 0.65	2560	

Remarks: Drill with Air. Driller said water @ 130
Vent Hose Perforated 200'
Logging Anode stopped AT 322'

All Construction Completed

Edward R. Paulek
(Signature)

GROUND BED LAYOUT SKETCH



964

MORGAN DRILLING COMPANY

P.O. Box 326 • Broken Bow, Oklahoma 74728

Ph. Office 405/584-6000
Mobile 584-6860
Night 420-3248

DATE 8-27-75

Work Order No. 54918-19-50-2

Huerfanito #222

CUSTOMER		SERVICE ADDRESS		CITY
El Paso Gas Co.		Box 990 · 2028740 Farmington New Mexico		Farmington N.M.
TEL. NO.	REQ. NO.	SERVICEMAN	VEHICLE NO.	DATE COMPLETED
sec 9 5 5 W		Morgan Drilling	T4	

LITHOLOGIC LOG

Material	From	To	Water Strata	Time
Blue shale	170	285		
Fernando shale	285	310		
Blue shale	310	350		

Date started ______________________, 19__
Date completed ______________________, 19__

INSTRUCTIONS: ______________________

SERVICE PERFORMED: ______________________

TOTAL DEPTH 322'

RIG TIME

WATER TRUCK

DRILLERS CERTIFICATION

This well was drilled under my supervision and the report is true to the be[st] of my knowledge.

Name [signature]

Address ______________________

Well driller's license number ______________________

Signed ______________________

Date ______________________

Customer's Signature

By Edward R. Pauli [signature]

EL PASO NATURAL GAS COMPANY
ENGINEERING DEPARTMENT

Date:
By:

955W

170	2.0	Driller said water
(10)	2.0	AT 170'
80	2.0	Vent Port. 200'
(9)	2.0	
90	2.0	
(8)	2.0	
200	2.0	
(7)	2.0	
10	2.0	
(6)	2.0	
20	2.1	
(5)	2.1	
30	2.0	
(4)	2.0	
40	2.0	
(3)	2.0	
50	1.9	
	1.8	
60	1.6	
	1.4	
70	1.2	
	1.8	
80	1.9	
(2)	2.0	
90	2.0	
(1)	2.0	
300	2.0	
	2.0	
10	1.8	
	1.8	Bottom 322
20	~~1.8~~	

	SS	Water	Coke	
1	295	2.9	4.2	
2	285	2.4	4.0	
3	245	2.4	4.4	
4	235	2.5	4.2	
5	225	2.6	4.2	
6	215	2.6	4.4	
7	205	2.6	4.4	
8	195	2.6	4.4	
9	185	2.6	4.2	
10	175	2.6	4.6	
	2260	11.8	18.0	0.65
	300			
	1560			

71 - 30-045-05955

215 - 30-045-20800

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

Operator MERIDIAN OIL Location: Unit NW Sec. 9 Twp 26 Rng 10

Name of Well/Wells or Pipeline Serviced HUERFANO UNIT #71, #215

cps 956w

Elevation 6649' Completion Date 9/4/84 Total Depth 500' Land Type* N/A

Casing, Sizes, Types & Depths 30' OF 8" PVC CASING

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. 65', 135'-150', 260'-275'

Depths gas encountered: N/A

Type & amount of coke breeze used: 4750 lbs.

Depths anodes placed: 450', 435', 420', 405', 390', 375', 360', 345', 330', 315'

Depths vent pipes placed: N/A

Vent pipe perforations: N/A

Remarks: gb #2

RECEIVED
MAY 31 1991
OIL CON. DIV.

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.

FM-07-0238 (Rev. 10-82)

WELL CASING
CATHODIC PROTECTION CONSTRUCTION REPORT
DAILY LOG

REDRILL

Drilling Log (Attach Hereto) ☒

Completion Date 9-4-84 / 9-5-84

CPS # 956 | Well Name, Line or Plant: Huerfano 71 / 215 | Work Order # 53076 / 54867 | Static: | Ins. Union Check ☐ Good ☐ Bad

Location	Anode Size	Anode Type	Size Bit
NW9-26-10	2" x 60"	Duriron	6 3/4

Depth Drilled	Depth Logged	Drilling Rig Time	Total Lbs. Coke Used	Lost Circulation Mat'l Used	No. Sacks Mud Used
500	475		4750		

	#1	#2	#3	#4	#5	#6	#7	#8	#9	#10
Anode Depth	450	435	420	405	390	375	360	345	330	315
Anode Output (Amps)	4.00	3.55	3.90	4.00	4.67	4.60	5.60	5.60	5.00	4.50

	#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 12.5	Amps 15.00	Ohms .83		

Remarks: Drilled to 100' 8-31 Set untill 9-4 blow about 15 gal water from hole to much cond. for sample. More water from 260'-275'. Reamed & set 30' 8" PVC casing. 1 Hr. rig time

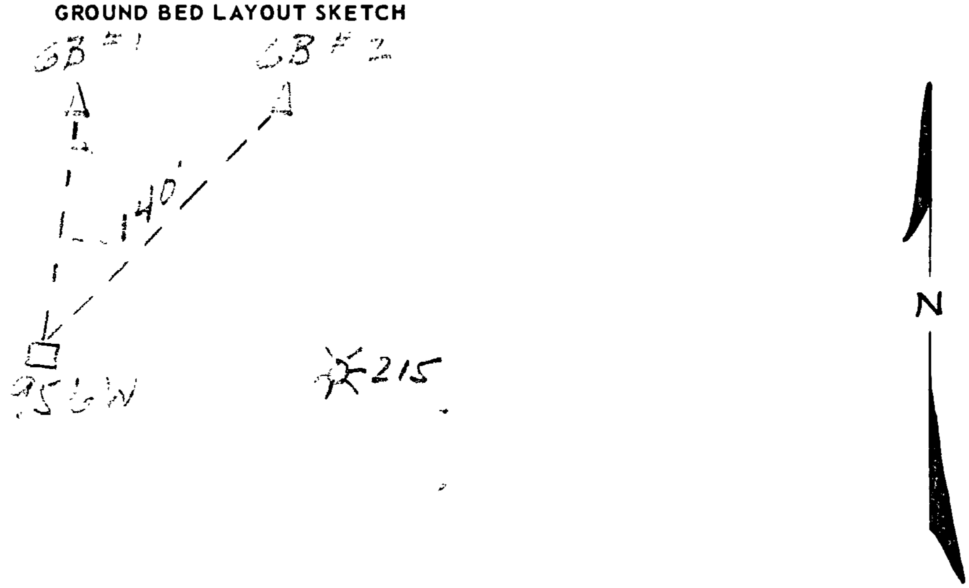
Rectifier Size: 1-Junction Box V ___ A
Addn'l Depth: ___
Depth Credit: 25'
Extra Cable: ___
Ditch & 1 Cable: 140'
25' Meter Pole: ___
20' Meter Pole: ___
10' Stub Pole: ___

9-4-84 10 Hrs. B.T.
9-5-84 10 Hrs. B.T.
1 Hr. rig time

All Construction Completed

B.T.
(Signature)

GROUND BED LAYOUT SKETCH



71

EL PASO NATURAL GAS COMPANY

DRILLING DEPARTMENT

DAILY DRILLING REPORT

LEASE WELL NO. Huertano 71 #251 CONTRACTOR Beeman Bros Drilling RIG NO. 1 REPORT NO. 456W DATE 8/5/84 19

MORNING

Driller Total Men In Crew

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

BIT NO. 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 –

DAYLIGHT

Driller: Dan Hogan Total Men In Crew 2

FROM	TO	FORMATION	WT-BIT	R.P.M.
0	20	Sand & Gravel	8 3/4	
20	85	Sand	6 3/4	
85	135	Shale	"	
135	260	Sand	"	

BIT NO. 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 – Water @ 65' 135-150' 260'
1 hr Rig Time

EVENING

Driller Total Men In Crew

FROM	TO	FORMATION	WT-BIT	R.P.M.
360	390	Shale	6 3/4	
390	445	Sand	"	
445	470	Shale	"	
470	515	Sand	"	
+75	515	fill		

BIT NO. 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 _____

EL PASO NATURAL GAS COMPANY

CONSTRUCTION LOGGING READINGS

CPS #: 956W WELL NAME: [illegible] 215 LOCATION: NW 7-26-10 DATE: 9-4-84 9-5-84

TOTAL VOLTS: 12.5 TOTAL AMPS: 15.00 OHMS RESISTANCE: .83

DEEP	LOG ANODE	ANODE NO.	DEEP	LOG ANODE	ANODE NO.	DEEP	LOG ANODE	ANODE No.	DEEP	LOG ANODE	ANODE No.	ANODE READINGS NO.	DEPTH	NO COKE	WITH COKE
5			185			365	210		545			1	450	248	400
10			190			370	230		550			2	435	232	355
15			195			375	228	6	555			3	420	240	390
20			200	145		380	231		560			4	405	235	400
25			205	128		385	229		565			5	390	250	467
30			210	148		390	224	5	570			6	375	260	460
35			215	180		395	238		575			7	360	247	560
40			220	197		400	232		580			8	345	275	560
45			225	198		405	220	4	585			9	330	256	500
50			230	219		410	234		590			10	315	260	450
55			235	197		415	230		595						
60			240	213		420	212	3	600						
65			245	233		425	216		605						
70	W		250	230		430	208		610						
75	A T		255	262		435	208	2	615						
80	E		260	260 W		440	227		620						
85	R		265	260 A		445	234		625						
90			270	259 T		450	224	1	630						
95			275	258 E R		455	228		635						
100			280	261		460	197		640						
105			285	260		465	228		645						
110			290	225		470	[illegible]		650						
115			295	253		475	TD		655						
120			300	244		480			660						
125			305	[illegible]		485			665						
130			310	[illegible]		490			670						
135			315	[illegible]		495			675						
140			320	[illegible]		500			680						
145			325	[illegible]		505			685						
150			330	240		510			690						
155			335	228		515			695						
160			340	250		520			700						
165			345	[illegible]		525			705						
170			350	[illegible]		530			710						
175			355	[illegible]		535			715						
180			360	[illegible]		540			720						

REMARKS: [illegible] 9-4

[illegible]

[illegible] More water at 260' - 275'

Ream & set 30' 8" PVC plastic pipe 1 Hr rig time.

30-045-20608

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

Operator MERIDIAN OIL Location: Unit SE Sec. 9 Twp 26 Rng 10

Name of Well/Wells or Pipeline Serviced HUERFANO UNIT #201

cps 957w

Elevation 6665' Completion Date 8/25/75 Total Depth 350' Land Type* N/A

Casing, Sizes, Types & Depths N/A

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

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

N/A

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

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

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

Depths gas encountered: N/A

Type & amount of coke breeze used: 3000 lbs.

Depths anodes placed: 305', 295', 285', 275', 250', 240', 205', 195', 185'

Depths vent pipes placed: N/A

Vent pipe perforations: 200'

Remarks: cgb #1

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.

Form 7-238 (Rev. 1-69)

WELL CASING

CATHODIC PROTECTION CONSTRUCTION REPORT

DAILY LOG

Drilling Log (Attach Hereto). ☐ Completion Date 8-25-

Well Name	Location	CPS No.
Huerfano 201	SE 9-26N-10W	957W

Type & Size Bit Used	Work Order No.
6 3/4"	54740.19-50-

Anode Hole Depth	Total Drilling Rig Time	Total Lbs. Coke Used	Lost Circulation Mat'l Used	No. Sacks Mud Used
350'		3,000		

	#1	#2	#3	#4	#5	#6	#7	#8	#9	#10
Anode Depth	305	295	285	275	250	240	215	205	195	1.
Anode Output (Amps)	4.4	4.4	4.4	3.2	3.4	3.8	4.2	4.6	3.2	3.

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

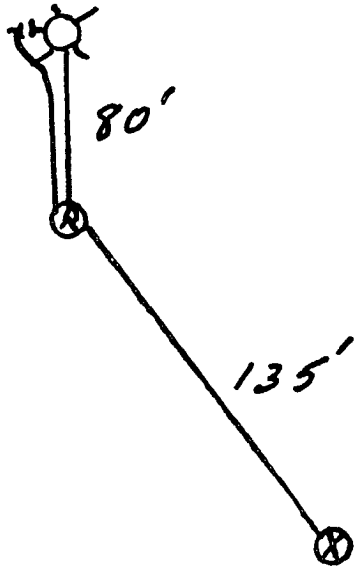
Total Circuit Resistance			No. 8 C.P. Cable Used	No. 2 C.P. Cable Used
Volts 11.8	Amps 16.5	Ohms 0.70	2735	

Remarks: Drill With Air Driller said water. 160' Vent Hose Perforated 200' Logging Anode Stopped AT 323'

All Construction Completed

Edward R. Paulos
(Signature)

GROUND BED LAYOUT SKETCH



969

MORGAN DRILLING COMPANY

P.O. Box 326 • Broken Bow, Oklahoma 74728

Ph. Office 405/584-6000
Mobile 584-6860
Night 420-3248

DATE 8-25-75

Work Order No. 54 740 -19-50 -26

[illegible] (201)

CUSTOMER	SERVICE ADDRESS	CITY
El Paso Gas Co	Box 990 Zip 87431 Farmington New Mexico	Farmington N.M.

TEL. NO.	REQ. NO.	SERVICEMAN	VEHICLE NO.	DATE COMPLETED
CS 9570		Morgan Drilling	[illegible]	

LITHOLOGIC LOG

Material	From	To	Water Strata	Time
[illegible]	150	160	160	
Grey sand stone	160	3?0		
Blue shale	?00	350		

Date started ________________, 19___
Date completed ________________, 19___

INSTRUCTIONS:

SERVICE PERFORMED:

TOTAL DEPTH 323

RIG TIME

WATER TRUCK

DRILLERS CERTIFICATION

This well was drilled under my supervision and the report is true to the of my knowledge.

Name [illegible signature]

Address

Well driller's license number

Signed

Date

Customer's Signature

By Edward R. [illegible signature]

EL PASO NATURAL GAS COMPANY
ENGINEERING DEPARTMENT

Date:
By:

957W

MW		gals/mol
16	C_1	6 4
30	C_2	10 15
44	C_3	10 42
58	IC_4	12 38
"	NC_4	11 93
72	IC_5	13 45
"	NC_5	13 71
86	IC_6	15 50
"	C_6	15 57
100	IC_7	17 2
"	C_7	17 46
114	C_8	19 31
28	$C_2^=$	9 64
42	$C_3^=$	9 67

MW		gals/mol
44	CO_2	5 38
34	H_2S	5 17
28	N_2	4 16
2	H_2	3 38

160	.8	Driller said water @ 160
	1.2	Vent Perforated 200'
(10) 70	1.7	
	1.6	
80	1.3	
	1.2	
90	1.2	
(9)	1.6	
200	1.8	
(8)	2.0	
10	1.2	
(7)	2.2	
20	1.8	
	1.4	
30	1.2	
	1.4	
(6) 40	2.0	
	1.8	
(5) 50	1.8	
	1.6	
60	1.2	
	1.0	
70	1.0	
(4)	1.8	
80	2.0	
(3)	2.2	
90	2.2	
(2)	2.2	
300	2.0	
(1)	2.2	
10	2.2	
	2.2	
20	2. Bottom 323	
30		

	53			
1	305	2.4	4.4	
2	295	2.6	4.4	
3	285	2.6	4.4	
4	275	1.8	3.2	
5	250	2.0	3.4	
6	240	2.2	3.8	
7	215	2.6	4.2	
8	205	2.4	4.6	
9	195	1.8	3.2	
10	170	2.0	3.2	
	2435	11.8	16.5	0.70
	300			
	2735			

#215E 3941

30-045-26243

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

Operator MERIDIAN OIL INC. Location: Unit M Sec. 9 Twp 26 Rng 10

Name of Well/Wells or Pipeline Serviced HUERFANO UNIT #215E

cps 1859w

Elevation 6664' Completion Date 9/18/87 Total Depth 400' Land Type* N/A

Casing, Sizes, Types & Depths 80' OF PVC CASING

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. 120' NO SAMPLE

Depths gas encountered: N/A

Type & amount of coke breeze used: N/A

Depths anodes placed: 340', 330', 320', 310', 300', 290', 280', 270', 260', 250'

Depths vent pipes placed: N/A

Vent pipe perforations: 290'

Remarks: gb #1

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

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

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

EM-07-0238 (Rev. 10-82)

WELL CASING

CATHODIC PROTECTION CONSTRUCTION REPORT

DAILY LOG

Drilling Log (Attach Hereto) ☐ Completion Date 9-18-87

CPS #	Well Name, Line or Plant:	Work Order #	Static:	Ins. Union Check
1859W	Hurricane 215 E		-81 MV	☑ Good ☐ Bad

Location:	Anode Size:	Anode Type:	Size Bit:
SW-26-10	7" X 60"	Duriron	6 3/4

Depth Drilled	Depth Logged	Drilling Rig Time	Total Lbs. Coke Used	Lost Circulation Mat'l Used	No. Sacks Mud Used
400	371	6 hrs			

	#1	#2	#3	#4	#5	#6	#7	#8	#9	#10
Anode Depth	340	330	320	310	300	290	280	270	260	250
Anode Output (Amps)	5.9	6.8	6.7	6.5	5.5	6.4	6.5	6.0	5.7	6.6
Anode Depth	#11	#12	#13	#14	#15	#16	#17	#18	#19	#20
Anode Output (Amps)	#11	#12	#13	#14	#15	#16	#17	#18	#19	#20

Total Circuit Resistance				No. 8 C.P. Cable Used	No. 2 C.P. Cable Used
Volts 11.7	Amps 22.3	Ohms .5.3			

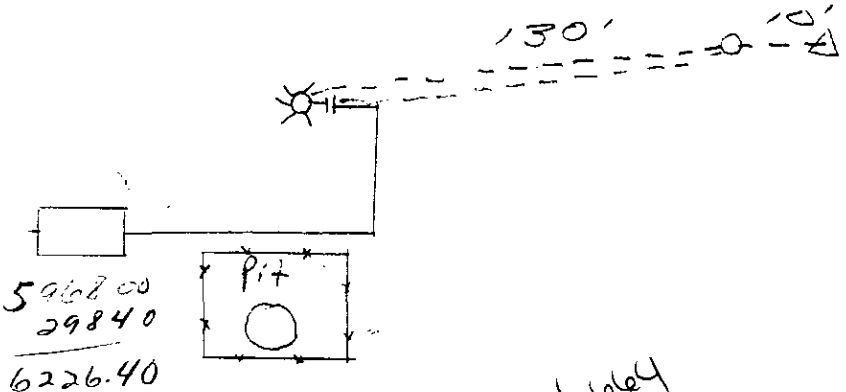
Remarks: Water is at 130'. Vent pipe is perforated up to 110'. Had to set 80' of casing (P.V.C.) Approx. 1½ hrs to drill and set the casing. No water sample was taken.

Rectifier Size: 60 V 28 A
Addn'l Depth
Depth Credit: 129' ✓
Extra Cable: 30'
Ditch & 1 Cable: 10 ✓
Ditch & 2 Cable: 130'
25' Meter Pole: 305.00
20' Meter Pole:
10' Stub Pole:
Junction Box: 40.00

All Construction Completed

Randy Smith
(Signature)

Cas...



5968.00
29840
6226.40

BURGE CORROSION SYSTEMS, INC.

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

DEEP WELL GROUNDBED LOG

Date 9-18-87

Company Meridian Oil

Well No. 215 E Location Huerfano Volts Applied 11.7 Amperes 22.3

Depth	Reading	Depth	Reading	Depth	Reading	Depth	Reading
5		230	1.5	455	(1) 340 3.1	680	FINALS
10		235	1.7	460	(2) 330 3.6	685	(1) 5.9
15		240	2.3	465	(3) 320 3.3	690	(2) 6.8
20		245	2.2	470	(4) 310 3.2	695	(3) 6.7
25		250	2.4	475	(5) 300 3.2	700	(4) 6.5
30		255	2.1	480	(6) 290 3.3	705	(5) 5.5
35		260	2.1	485	(7) 280 3.3	710	(6) 6.4
40		265	2.4	490	(8) 270 3.1	715	(7) 6.5
45		270	2.1	495	(9) 260 3.0	720	(8) 6.0
50		275	2.4	500	(10) 250 3.3	725	(9) 5.7
55		280	2.2	505		730	(10) 6.6
60		285	2.3	510		735	
65		290	2.3	515		740	
70		295	2.1	520		745	
75		300	2.2	525		750	
80		305	2.2	530		755	
85		310	2.2	535		760	
90		315	2.2	540		765	
95		320	2.2	545		770	
100		325	2.2	550		775	
105		330	2.2	555		780	
110		335	2.3	560		785	
115		340	2.1	565		790	
120	2.1	345	2.1	570		795	
125	2.3	350	2.2	575		800	
130	2.2	355	2.0	580		805	
135	2.2	360	2.2	585		810	
140	2.3	365	2.2	590		815	
145	2.4	370	TD 371	595		820	
150	2.5	375		600		825	
155	2.4	380		605		830	
160	2.3	385		610		835	
165	2.1	390		615		840	
170	2.1	395		620		845	
175	2.2	400		625		850	
180	2.0	405		630		855	
185	1.9	410		635		860	
190	2.1	415		640		865	
195	2.2	420		645		870	
200	2.3	425		650		875	
205	2.3	430		655		880	
210	2.3	435		660		885	
215	2.2	440		665		890	
220	2.1	445		670		895	
225	2.0	450		675		900	

BURGE CORROSION SYSTEMS, INC.

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

CPS 1859W

COMPANY Meridian DAILY DRILLING REPORT 9-19 19 87

WELL NAME:	WELL NUMBER:	SECTION:	TOWNSHIP:	RANGE:
Huerfano	215 E	9	26 N	10 W

WATER AT:	FEET:	HOLE MADE:
120 ft		6 3/4 400 ft

DESCRIPTION OF FORMATION

FROM	TO	FORMATION IS	COLOR
0	70	Sand	Tan
70	100	Shale	Grey
~~12~~ 100	120	Water Sand	Grey
120	~~230~~ 230	Shale	~~B~~ Purple
~~160~~ 230	270	Sandstone	Grey
270	~~300~~ 400	Shale	Purple
		T.D 400 ft	
		SET 80 ft PVC Casing	

REMARKS: Water sample at 120 ft. Set 80 ft Casing

D Rant Burn
Driller

Tool Dresser

30-045-20613

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

Operator MERIDIAN OIL Location: Unit P Sec. 10 Twp 26 Rng 10

Name of Well/Wells or Pipeline Serviced HUERFANO UNIT #122

cps 959w

Elevation 6673' Completion Date 7/28/88 Total Depth 380' Land Type* N/A

Casing, Sizes, Types & Depths 35' OF 8" PVC CASING

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. 165'

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OIL CON.

Depths gas encountered: N/A

Type & amount of coke breeze used: N/A

Depths anodes placed: 350', 340', 330', 320', 310', 300', 280', 270', 215', 205'

Depths vent pipes placed: 385' OF 1" PVC VENT PIPE

Vent pipe perforations: BOTTOM 280'

Remarks: Ggb #2

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.

FM-07-0238 (Rev. 10-82)

WELL CASING
CATHODIC PROTECTION CONSTRUCTION REPORT
DAILY LOG

Redrill

COMP 8-1-88

Drilling Log (Attach Hereto) ☒ Completion Date 7-28-88

CPS #	Well Name, Line or Plant	Work Order #	Static:	Ins. Union Check
959W	Huerfano U 122	523407		☒ Good ☐ Bad

Location:	Anode Size:	Anode Type:	Size Bit:
P 10-26-10	2" x 60"	Duriron	6 3/4"

Depth Drilled	Depth Logged	Drilling Rig Time	Total Lbs. Coke Used	Lost Circulation Mat'l Used	No. Sacks Mud Used
380'	375'				

	# 1	# 2	# 3	# 4	# 5	# 6	# 7	# 8	# 9	# 10
Anode Depth	330	340	330	320	310	300	280	270	215	205
Anode Output (Amps)	5.1	7.6	7.3	6.9	5.4	5.5	5.1	5.6	5.6	6.1
Anode Depth	# 11	# 12	# 13	# 14	# 15	# 16	# 17	# 18	# 19	# 20
Anode Output (Amps)	# 11	# 12	# 13	# 14	# 15	# 16	# 17	# 18	# 19	# 20

Total Circuit Resistance			No. 8 C.P. Cable Used	No. 2 C.P. Cable Used
Volts 12.03	Amps 26.1	Ohms .46		

Remarks: Driller said water to be at 165'. Installed 35' of 8" PVC surface casing, Installed 385' of 1" PVC vent pipe, bottom 280' perforated

GB 407400

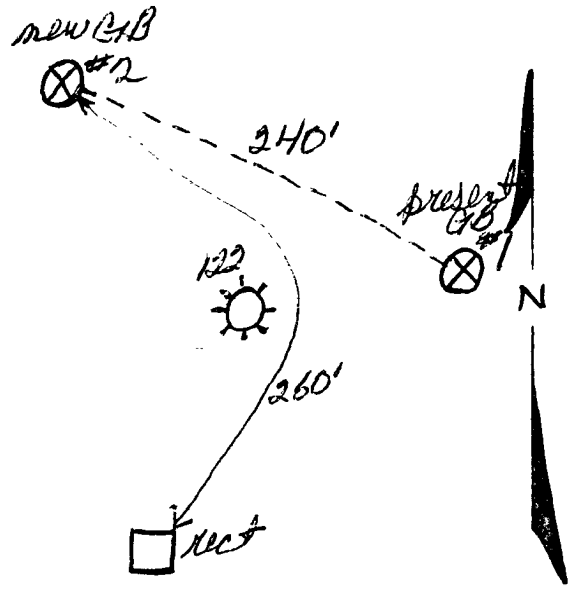
Rectifier Size: 40 V 16 A

Addn'l Depth	
Depth Credit: 125'@3.50	- 437.50
	2.40
Extra Cable: 10'@.24	
Ditch & 1 Cable: 240@.70	168.00
25' Meter Pole:	
20' Meter Pole:	
10' Stub Pole:	
1 junction box	225.00
35' surface casing	192.50
1 hr. rig time	138.00
	4362.40
tax	218.12
	4580.52 OK JT

All Construction Completed

CR
(Signature)

GROUND BED LAYOUT SKETCH



D. CRASS DRILLING CO.

9590

Drill No. 3

DRILLER'S WELL LOG

S. P. No. HUERFANO #122 Date 7-28-88

Client Meridian Oil Co. Prospect

County SAN JUAN State New Mex.

If hole is a redrill or if moved from original staked position show distance and direction moved:

FROM	TO	FORMATION — COLOR — HARDNESS
0	30	SAND
30	50	SANDSTONE
50	85	SHALE
85	120	SAND
120	145	SHALE
145	190	SANDY SHALE
190	240	SHALE
240	270	SANDY SHALE
270	285	SANDSTONE
285	300	SANDY SHALE
300	380	SHALE

Mud Bran Lime

Rock Bit Number Make

Remarks: WATER @ 165'

Set 35' CASING 1 HR.

Driller Ronnie Brown

30-045-20778

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

Operator MERIDIAN OIL Location: Unit NW Sec. 10 Twp 26 Rng 10

Name of Well/Wells or Pipeline Serviced HUERFANO UNIT #211

cps 958w

Elevation 6721' Completion Date 8/19/75 Total Depth 480' 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. 300'

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MAY 31 1991
OIL CON. DIV.
DIST. 3

Depths gas encountered: N/A

Type & amount of coke breeze used: 4400 lbs.

Depths anodes placed: 430', 420', 410', 400', 390', 380', 370', 360', 350', 335'

Depths vent pipes placed: N/A

Vent pipe perforations: 215'

Remarks: cgb #1

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

Logged

Drilling Log (Attach Hereto). ☐

Completion Date 8-19-75

Well Name	Location	CPS No.
Huerfano Unit #211	NW 10-26-10	958w
Type & Size Bit Used: 6 3/4		Work Order No.: 54862

Anode Hole Depth	Total Drilling Rig Time	Total Lbs. Coke Used	Lost Circulation Mat'l Used	No. Sacks Mud Used
480		4400		

Anode Depth	# 1	# 2	# 3	# 4	# 5	# 6	# 7	# 8	# 9	# 10
	430	420	410	400	390	380	370	360	350	335
Anode Output (Amps)	4.9	5.0	5.0	5.4	4.6	5.2	5.2	5.3	5.3	3.9

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

Total Circuit Resistance	Volts 10.6	Amps 19.5	Ohms 0.54	No. 8 C.P. Cable Used 4150	No. 2 C.P. Cable Used

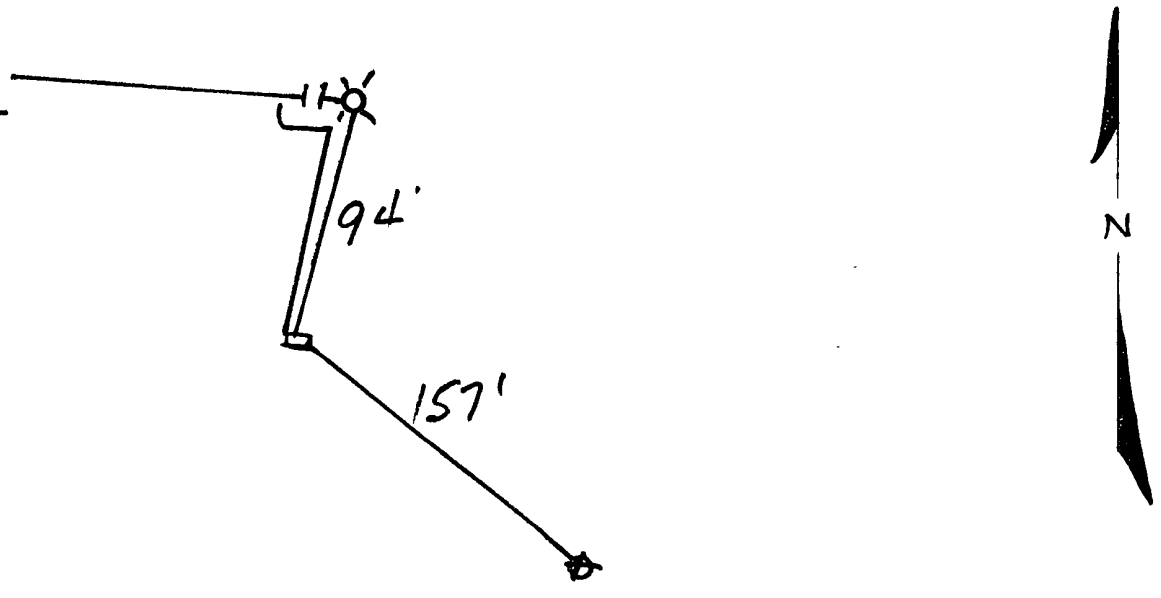
Remarks: Drilled to 320 with Air - Muddy Next A.M. - Start water injection
Vent Perforated 215'

Drilled 933.10
mats 437.84
Wire 385.95
Cable 264.—
Anodes 264.60
J Box 84.—
Vent 23.—
Rat 19.50
Misc. 5.—
2638.99

All Construction Completed

Darrels
(Signature)

GROUND BED LAYOUT SKETCH



Original & 1 Copy All Reports

Form 22-2 (Rev. 1-61)

EL PASO NATURAL GAS COMPANY

DRILLING DEPARTMENT

8-18-& 19-'15 DAILY DRILLING REPORT

LEASE WELL NO. [illegible] CONTRACTOR RIG NO. 3791 REPORT NO. DATE 19

MORNING

Driller Total Men In Crew

FROM	TO	FORMATION	WT-BIT	R.P.M.
00	2'	Sand		
2'	10'	Sandstone		
10'	16'	Sandstone		
16'	26'	Shale		

NO. DC ____ SIZE ____ LENG. ____

BIT NO.

NO. DC ____ SIZE ____ LENG. ____

SERIAL NO.

STANDS

SIZE 6 3/4

SINGLES

TYPE

DOWN ON KELLY

MAKE

TOTAL DEPTH

MUD RECORD

Time	Wt.	Vis.

MUD, ADDITIVES USED AND RECEIVED

FROM	TO	TIME BREAKDOWN
270'	330'	Sandstone
330'	335'	Shale
335'	345'	Sandstone
345'	358'	Shale
355'	363'	Sandstone
363'	386'	Shale

REMARKS –

Pumps 80 to 160
" 135 " 164
" 180 " 144
Left at 300' to 320
Inject at 300' to 480'

DAYLIGHT

Driller Total Men In Crew

FROM	TO	FORMATION	WT-BIT	R.P.M.
26'	40'	Sandstone		
40'	54'	Shale		
54'	200'	Sandstone		
200'	314'	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
386'	397'	Sandstone
397'	407'	Shale
407'	419'	Sandstone
419'	435'	Shale
435'	460'	Sandstone
460'	—	TD

REMARKS –

EVENING

Driller Total Men In Crew

FROM	TO	FORMATION	WT-BIT	R.P.M.
314'	222'	Sandstone		
222'	255'	Shale		
255'	257'	Sandstone		
257'	270'	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 –

SIGNED: Toolpusher Jimmy Jones Company Supervisor

EL PASO NATURAL GAS COMPANY
ENGINEERING DEPARTMENT

Sheet
Date:
By:

MW		gals/mol
16	C_1	6 4
30	C_2	10 12
44	C_3	10 42
58	IC_4	12 38
"	NC_4	11 93
72	IC_5	13 85
"	NC_5	13 71
86	IC_6	15 50
	C_6	15 57
100	IC_7	17 2
"	C_7	17 46
114	C_8	[illegible]
28	$C_2^=$	9 64
42	$C_3^=$	9 67

MISC

MW		gals/mol
44	CO_2	6 38
34	H_2S	5 17
28	N_2	4 16
2	H_2	3 38

958w - 8-19-75

320	.6
	.8
30	1.1
	1.1
40	1.0
	1.1
50	1.2
	1.2
60	1.2
	1.2
70	1.3
	1.3
80	1.3
	1.3
90	1.3
	1.3
400	1.5
	1.5
10	1.6
	1.8
20	1.8
	1.9
30	1.9
	1.9
40	1.9
	2.0
50	451' = TD
60	
70	

Drill 320 with air
Next A.M. Muddy
Start inj -

VENT PERF 215'

44 Coke

1	430	1.9	4.9
2	420	2.2	5.0
3	410	1.7	5.0
4	400	2.0	5.4
5	390	1.5	4.6
6	380	1.5	5.2
7	370	1.4	5.2
8	360	1.6	5.3
9	350	1.7	5.3
10	335	1.4	3.9

[illegible] 45

10.6V 19.5 A 0.54 Ω

3949

30-045-26244

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

Operator MERIDIAN OIL INC. Location: Unit A Sec. 10 Twp 26 Rng 10

Name of Well/Wells or Pipeline Serviced HUERFANO UNIT #122E

cps 1831w

Elevation 6716' Completion Date 9/17/87 Total Depth 500' Land Type* N/A

Casing, Sizes, Types & Depths N/A

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

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

N/A

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

Fresh, Clear, Salty, Sulphur, Etc. 150' NO SAMPLE

Depths gas encountered: N/A

Type & amount of coke breeze used: N/A

Depths anodes placed: 405', 375', 330', 320', 310', 300', 290', 280', 270', 260'

Depths vent pipes placed: N/A

Vent pipe perforations: N/A

Remarks: gb #1 HOLE CAVED WHILE LOADING.

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.

M-87-0238 (Rev. 10-82)

WELL CASING

CATHODIC PROTECTION CONSTRUCTION REPORT

DAILY LOG

Drilling Log (Attach Hereto) ☐ Completion Date 9-17-87

CPS #	Well Name, Line or Plant	Work Order #	State:	Ins. Union Check
831 W	Huerfano 122E		-74 NE	☑ Good ☐ Bad

Location	Anode Size	Anode Type:	Size Bit:
NE 10-26-10	2" x 60"	Duriron	6 3/4"

Depth Drilled	Depth Logged	Drilling Rig Time	Total Lbs Coke Used	Lost Circulation Mat'l Used	No. Sacks Mud Used
500	435	8 hrs			

	#1	#2	#3	#4	#5	#6	#7	#8	#9	#10
Anode Depth	405	375	330	320	310	300	290	280	270	260
Anode Output (Amps)	6.2	4.3	3.8	5.0	5.2	5.6	5.8	4.7	5.0	4.4
Anode Depth	330	320								
Anode Output (Amps)	2.7	3.0								

Total Circuit Resistance	No. 8 C.P. Cable Used	No. 2 C.P. Cable Used
Volts 11.5 Amps 20.2 Ohms .57		

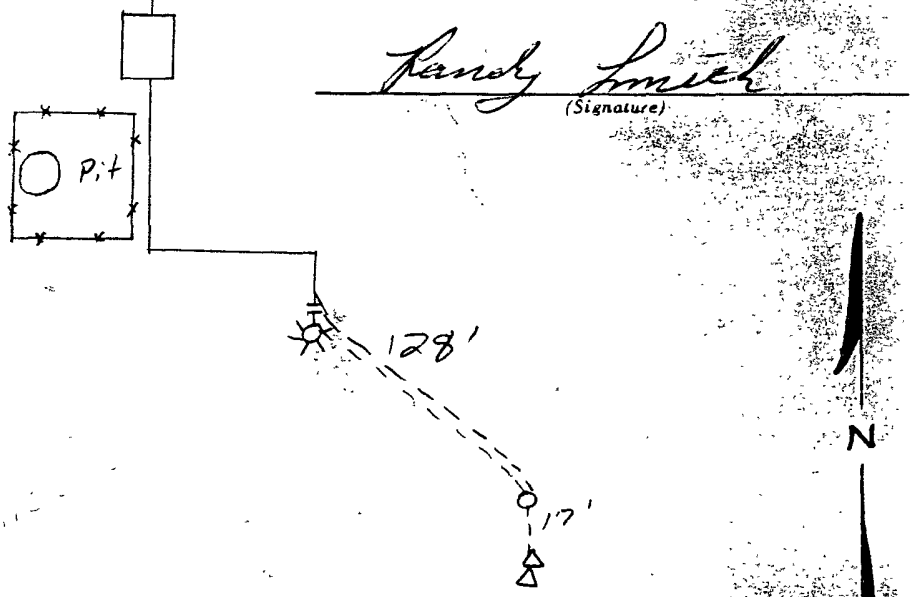
Remarks: Driller said water was at 150'. Vent pipe is perforated up to 135'. No water sample was taken. Hole caved in while loading. Drilled second hole to 360 and put 3-10 anodes in it.

Rectifier Size: 40 V 16 A
Addn'l Depth
Depth Credit: 65 ✓
Extra Cable: 30 ✓
Ditch & 1 Cable: 17
Ditch & 2 Cable: 128
25' Meter Pole:
20' Meter Pole:
10' Stub Pole: 150.00 ✓
Junction Box: 40.00 ✓

4300
-260 ✓
4040
7.50 ✓
6.63 ✓
62.51 ✓
150.00
40.00 ✓
4310.64
215.54
4526.23

All Construction Completed

Randy Smith
(Signature)



6714

BURGE CORROSION SYSTEMS, INC.

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

432

DEEP WELL GROUNDBED LOG

Date

Company

Well No. Location Volts Applied Amperes

Depth	Reading	Depth	Reading	Note	Depth	Anode	Volts	Amperes	Depth	Reading	Reading
0											
5		230	.8		455	①	405	3.1	680		6.2
10		235	.8		460	②	375	2.4	685		4.3
15		240	1.2		465	③	330	3.2	690	2.5	3.8
20		245	2.2		470	④	320	2.8	695	2.9	5.0
25		250	2.5		475	⑤	310	2.5	700	3.6	5.2
30		255	2.9		480	⑥	300	2.7	705	3.2	5.6
35		260	2.8	⑩	485	⑦	290	2.6	710	3.2	5.8
40		265	2.8		490	⑧	280	3.2	715	2.7	4.7
45		270	2.9	⑨	495	⑨	270	[illegible]	720	2.9	5.0
50		275	2.6		500	⑩	260		725	2.9	4.4
55		280	2.7	⑧	505				730		
60		285	2.7		510				735		
65		290	2.9	⑦	515				740		
70		295	2.8		520				745		
75		300	2.8	⑥	525				750		
80		305	2.8		530				755		
85		310	2.9	⑤	535				760		
90		315	2.9		540				765		
95		320	2.6	④	545				770		
100		325	2.8		550				775		
105		330	2.8	③	555				780		
110		335	2.1		560				785		
115		340	1.5		565				790		
120		345	1.2		570				795		
125		350	1.3		575				800		
130		355	1.6		580				805		
135		360	2.0		585				810		
140		365	1.8		590				815		
145		370	1.9		595				820		
150	1.9	375	2.2	②	600				825		
155	1.5	380	2.1		605				830		
160	1.5	385	2.0		610				835		
165	1.0	390	2.1		615				840		
170	.7	395	1.9		620				845		
175	.6	400	2.2		625				850		
180	.7	405	2.9	①	630				855		
185	.8	410	2.9		635				860		
190	1.1	415	2.7		640				865		
195	1.0	420	2.3		645				870		
200	.9	425	1.7		650				875		
205	.7	430	1.7		655				880		
210	.7	435	1.7	TD	660				885		
215	1.1	440			665				890		
220	1.2	445			670				895		
225	1.0	450			675				900		

BURGE CORROSION SYSTEMS, INC.

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

CPS 1831CO

COMPANY Meridian DAILY DRILLING REPORT 9-17 19 87

WELL NAME:	WELL NUMBER:	SECTION:	TOWNSHIP:	RANGE:
Huerfano	122 E	~~E~~ 10	26 N	10 W

WATER AT: 140 & 260 FEET: HOLE MADE: 6 3/4 500 FT.

DESCRIPTION OF FORMATION

FROM	TO	FORMATION IS	COLOR
0	40	Sand	tan
40	100	Shale	dk Grey
100	~~120~~ 130	Sand Stone	lt Grey
130	140	Water Sand	lt Grey
140	150	Shale	dk Grey
150	~~260~~ 240	Sand Stone	lt Grey
240	260	Water Sand	lt Grey
260	340	Shale	Purple
340	360	Water Sand	lt Grey
360	380	Sand Stone	lt Grey
380	500	Sandy Shale & Shale	Grey

REMARKS: Set Set overnight at 160 FT. W/O water. Drilled to 360 ft. & Started injection. NO water Sample.

Brent Burns Driller Tool Dresser

30-045-20265

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

Operator MERIDIAN OIL Location: Unit SE Sec. 15 Twp 26 Rng 10

Name of Well/Wells or Pipeline Serviced HUERFANO UNIT #176

cps 969w

Elevation 6631 Completion Date 9/5/75 Total Depth 325' 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. 150'

Depths gas encountered: N/A

Type & amount of coke breeze used: 3000 lbs.

Depths anodes placed: 285',275', 250',240', 230',220', 190', 180', 170', 16

Depths vent pipes placed: N/A

Vent pipe perforations: 200'

Remarks: (gb #1

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

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

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

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 9-5-75

Well Name	Location	CPS No.
Huerfano #176	SE 15-26N-10W	969 W

Type & Size Bit Used	Work Order No.
6 3/4"	54569.19-50-20

Anode Hole Depth	Total Drilling Rig Time	Total Lbs. Coke Used	Lost Circulation Mat'l Used	No. Sacks Mud Used
325'		3,000		

	#1	#2	#3	#4	#5	#6	#7	#8	#9	#10
Anode Depth	285	275	250	240	230	220	190	180	170	160
Anode Output (Amps)	4.8	3.8	4.4	4.4	4.4	4.2	4.0	5.0	5.0	4.4
Anode Depth	#11	#12	#13	#14	#15	#16	#17	#18	#19	#20
Anode Output (Amps)	#11	#12	#13	#14	#15	#16	#17	#18	#19	#20

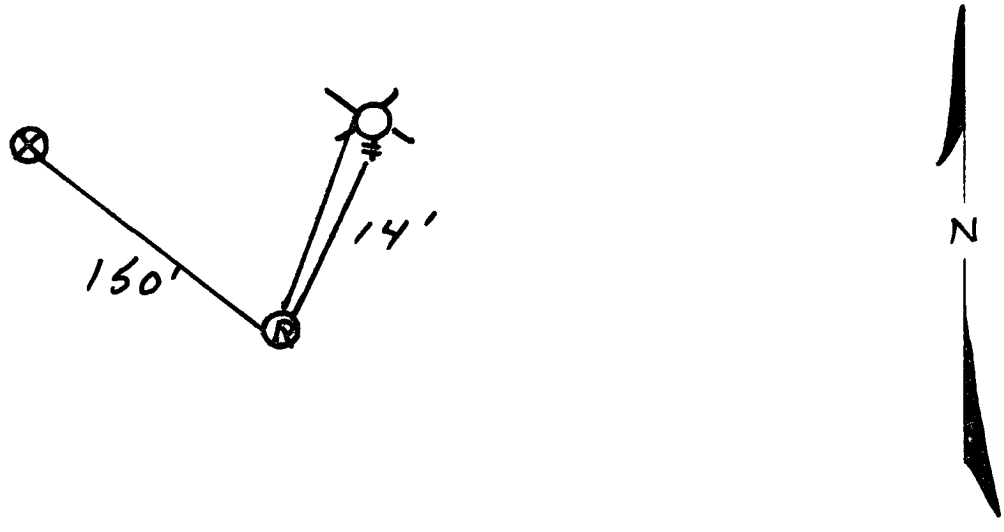
Total Circuit Resistance			No. 8 C.P. Cable Used	No. 2 C.P. Cable Used
Volts 11.8	Amps 16.0	Ohms 0.73	2500'	

Remarks: Drill with Air Driller said water at 150
Vent Hose Perforated 200'
Logging Anode stopped at 302'

All Construction Completed

Edward R. Pouloh
(Signature)

GROUND BED LAYOUT SKETCH



MORGAN DRILLING COMPANY

P.O. Box 326 • Broken Bow, Oklahoma 74728

DATE 9-5-75

Ph. Office 405/584-6000
Mobile 584-6860
Night 420-3248

Work Order No. 5435 [illegible]
[illegible] 17C

CUSTOMER		SERVICE ADDRESS		CITY
El Paso [illegible]		Box 990 [illegible] 87401 Farmington N M		Farmington [illegible]
TEL. NO	REQ. NO.	SERVICEMAN	VEHICLE NO.	DATE COMPLETED
[illegible]		Morgan Drilling	T4	

LITHOLOGIC LOG

Material	From	To	Water Strata	Time
Black [illegible]	150	210	150	
[illegible]	210	240		
[illegible]	240	325		

Date started ______________________, 19___
Date completed ______________________, 19___

INSTRUCTIONS: ____________________

SERVICE PERFORMED: ____________________

TOTAL DEPTH 302'

RIG TIME

WATER TRUCK

DRILLERS CERTIFICATION

This well was drilled under my supervision and the report is true to the of my knowledge.

Name [signature]

Address ____________________

Well driller's license number ____________________

Signed ____________________

Date ____________________

906

Customer's Signature

By Edward R. Paulik

EL PASO NATURAL GAS COMPANY
ENGINEERING DEPARTMENT

Sheet
Date:
By:

969 W

150	2.2	Oxiflex said water
	2.2	AT 150'
(10) 60	2.0	Vent Hose Perforated
	2.0	
(4) 70	2.0	
	2.2	
(8) 80	2.2	
	2.0	
(7) 90	2.0	
	1.4	
200	1.0	
	1.0	
10	1.0	
	1.8	
(9) 20	2.0	
	2.0	
(5) 30	2.0	
	2.0	
(3) 40	2.1	
	2.0	
(6) 50	2.0	
	1.8	
60	1.8	
	1.6	
70	1.8	
(2)	2.0	
80	2.0	
(1)	2.1	
90	2.0	
	2.1	
300		302 Bottom
10		
20		

MW		gals/mcf
16	C_1	6 4
30	C_2	11 12
44	C_3	10 42
58	IC_4	12 38
"	NC_4	11 93
72	IC_5	13 85
"	NC_5	13 71
86	IC_6	15 50
"	C_6	15 57
100	IC_7	17 2
"	C_7	17 46
114	C_8	19 39
28	C_2	9 64
42	C_3	9 67

MISC		
MW		gals/mcf
44	CO_2	5 57
34	H_2S	5 17
28	N_2	4 16
2	H_2	3 38

	Q			
1	285	2.4	4.8	
2	275	2.2	3.8	
3	250	2.4	4.4	
4	240	2.4	4.4	
5	230	2.4	4.4	
6	220	2.2	4.2	
7	190	2.0	4.0	
9	180	2.6	5.0	
9	170	2.4	5.0	
10	160	2.4	4.4	
	2200	11.8	16.0	0.73
	300			
	2500			

30-045-20401

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

Operator MERIDIAN OIL Location: Unit NW Sec. 15 Twp 26 Rng 10

Name of Well/Wells or Pipeline Serviced HUERFANO UNIT #119

cps 968w

Elevation 6681' Completion Date 8/25/75 Total Depth 600' 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. 460'

Depths gas encountered: N/A

Type & amount of coke breeze used: 5500 lbs.

Depths anodes placed: 540', 530', 520', 510', 485', 475', 465', 440', 430', 420

Depths vent pipes placed: N/A

Vent pipe perforations: 200'

Remarks: cgb-#1

RECEIVED
MAY 31 1991
OIL CON. DIV.

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.

Form [illegible] (Rev. 1-69)

WELL CASING

CATHODIC PROTECTION CONSTRUCTION REPORT

DAILY LOG

Log

Drilling Log (Attach Hereto). ☐

Completion Date 8-25-7[illegible]

Well Name	Location	CPS No.
Huerfano #119	NW 15-26-10	968W
Type & Size Bit Used: 6 3/4		Work Order No.: 54637

Anode Hole Depth	Total Drilling Rig Time	Total Lbs. Coke Used	Lost Circulation Mat'l Used	No. Sacks Mud Used
600		5500		

	#1	#2	#3	#4	#5	#6	#7	#8	#9	#10
Anode Depth	540	530	520	510	485	475	465	440	430	42[illegible]
Anode Output (Amps)	3.7	4.0	4.0	3.2	3.4	3.5	3.2	4.2	4.9	4.0

	#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 10.0	Amps 16.0	Ohms 0.62	5300	

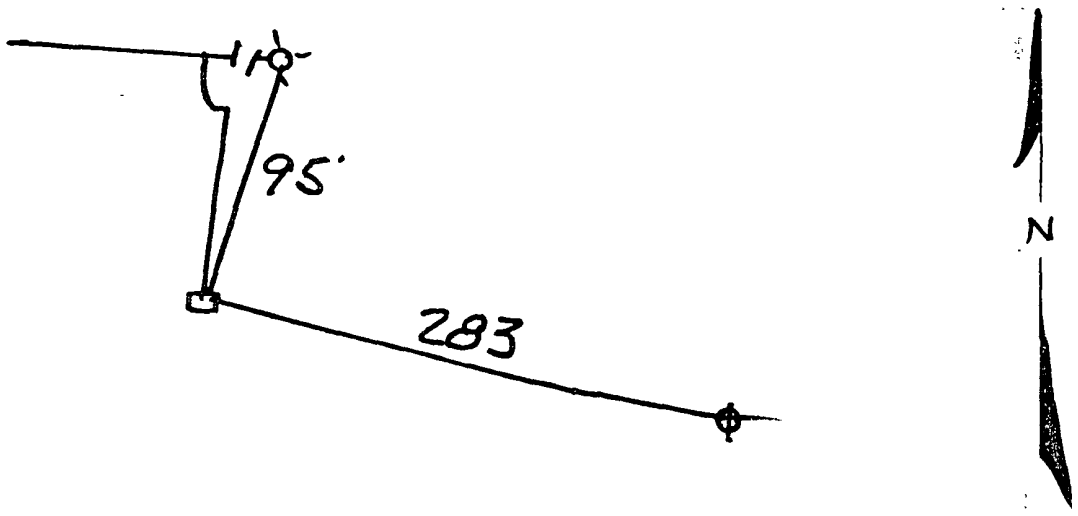
Remarks: Drilled 100' - Dry Next A.M. - Damp at 130 & 165 Wet at 460 to 480 - Pulled 3 Joints Pipe & went after Pipe Trailer - Down Approx 1 Hour - Blew water out of Hole at 420 - Coming From 460 to 48 Vent Perforated 200'
Slurry 55 Coke

11 hrs

All Construction Completed

Daniels
(Signature)

GROUND BED LAYOUT SKETCH



Original & 1 Copy All Reports

8-21-to 8-25-75 DAILY DRILLING REPORT

LEASE WELL NO. 968-W CONTRACTOR RIG NO. 3991 REPORT NO. DATE 19

MORNING

Driller Total Men In Crew

FROM	TO	FORMATION	WT-BIT	R.P.M.
0.0	2'	Sand		
2'	18'	Mud stone		
18'	33'	Sandstone		
33'	36'	Shale		

NO. DC ____ SIZE ____ LENG. ____
BIT NO.
NO. DC ____ SIZE ____ LENG. ____
SERIAL NO. STANDS
SIZE 3/4 SINGLES
TYPE DOWN ON KELLY
MAKE TOTAL DEPTH

MUD RECORD

Time	Wt.	Vis.

MUD, ADDITIVES USED AND RECEIVED

FROM	TO	TIME BREAKDOWN
231'	250'	Sandstone
250'	265'	Shale
265'	270'	Sandstone
270'	280'	Shale
280'	290'	Sandstone
29	300'	Shale

REMARKS –

540'	550	Sandstone
550	553'	Shale
553	565'	Sandstone
565	575'	Shale
575	600'	Sandstone
600'	–	TD

DAYLIGHT

Driller Total Men In Crew

FROM	TO	FORMATION	WT-BIT	R.P.M.
36'	70'	Sandstone		
70'	77'	Shale		
77'	165'	Sandstone		
165'	177'	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
300'	330'	Sandstone
330'	340'	Shale
340'	350'	Sandstone
350'	363'	Shale
363'	382'	Sandstone
382'	390'	Shale

REMARKS –

DAMP @ 90 - 105'
130 - 165'
WET AT 460 - 480

INJECT WATER AT 480

EVENING

Driller Total Men In Crew

FROM	TO	FORMATION	WT-BIT	R.P.M.
677'	180'	Sandstone		
180'	191'	Shale		
191'	214'	Sandstone		
214'	237'	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
390'	420'	Sandstone
420'	440'	Shale
440'	450'	Sandstone
450'	460'	Shale
460'	530'	Sandstone
530'	540'	Shale

REMARKS –

SIGNED: Toolpusher Jimmy Jones Company Supervisor

EL PASO NATURAL GAS COMPANY
ENGINEERING DEPARTMENT

Sheet
Date:
By:

96

968w

21.6
21.2
20.8

MW		gals/mol
16	C_1	6 4
30	C_2	10 12
44	C_3	10 42
58	IC_4	12 38
"	NC_4	11 93
72	IC_5	13 85
"	NC_5	13 71
86	IC_6	15 50
"	C_6	15 57
100	IC_7	17 2
"	C_7	17 46
114	C_8	19 39
28	$C^{=}$	9 64
42	$C_3^{=}$	9 67

MISC		
MW		gals/mol
44	CO_2	6 38
34	H_2S	5 17
28	N_2	4 16
2	H_2	3 38

400		20.4	We at 460 to 480
	1.5	20.0	Down approx 1 Hr.
10	1.5	19.4	Going after Pipe
	1.5	19.0	Water at 420'
		17.6	
20	1.5	17.2	inject at 480 to 600
	1.5	17.0	
		193.8	
30	1.6		
	1.8		
40	1.5	1.6	
	1.0		
50	0.7		
	0.8		
60	0.8		
	1.3		
70	1.3		
	1.6		
80	1.8		
	1.6		
90	1.2		
	0.8		
500	0.6		
	0.6		
10	1.0		
	1.4		
20	1.6		
	2.0		
30	1.9		
	1.9		
40	1.9		
	1.6		
50	1.6		
	1.0		
60	1.0		
543	1.0 T.D.		
10			

4815'
5315'

1.	540	22	3.7
2.	530	24	4.0
3.	520	23	4.0
4.	510	20	3.2
5.	485	20	3.4
6.	475	20	3.5
7.	465	18	3.2
8.	440	20	4.2
9.	430	24	4.9
10.	420	23	4.0

10.0V 16.0A 4815.625

3929

30-045-26279

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

Operator MERIDIAN OIL INC. Location: Unit H Sec. 15 Twp 26 Rng 10

Name of Well/Wells or Pipeline Serviced HUERFANO UNIT #176E

cps 1847w

Elevation 6655' Completion Date 9/14/87 Total Depth 420' 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. 240'

Depths gas encountered: N/A

Type & amount of coke breeze used: N/A

Depths anodes placed: 380', 370', 360', 350', 340', 330', 320', 310', 295', 285'

Depths vent pipes placed: N/A

Vent pipe perforations: 200'

Remarks: gb #1

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

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

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

FM-07-0253 (Rev. 10-82)

comp 9-15-87 ✓

WELL CASING
CATHODIC PROTECTION CONSTRUCTION REPORT
DAILY LOG

Drilling Log (Attach Hereto) ☐ 95-37101 Completion Date 9-14-87

CPS #	Well Name, Line or Plant:	Work Order #	Static:	Ins. Union Check
1847w	Huerfano 176 E		-.86 W	☑ Good ☐ Bad

Location:	Anode Size	Anode Type:	Size Bit:
H 15-26-10	3" x 60"	Duriron	6 3/4"

Depth Drilled	Depth Logged	Drilling Rig Time	Total Lbs. Coke Used	Lost Circulation Mat'l Used	No. Sacks Mud Used
420	409	6 hrs			Elev. 6655

	#1	#2	#3	#4	#5	#6	#7	#8	#9	#10
Anode Depth	380	370	360	350	340	330	320	310	295	285
Anode Output (Amps)	5.1	5.7	6.1	6.5	6.2	5.7	5.4	6.0	5.5	5.2

	#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 11.7	Amps 21.8	Ohms .53		

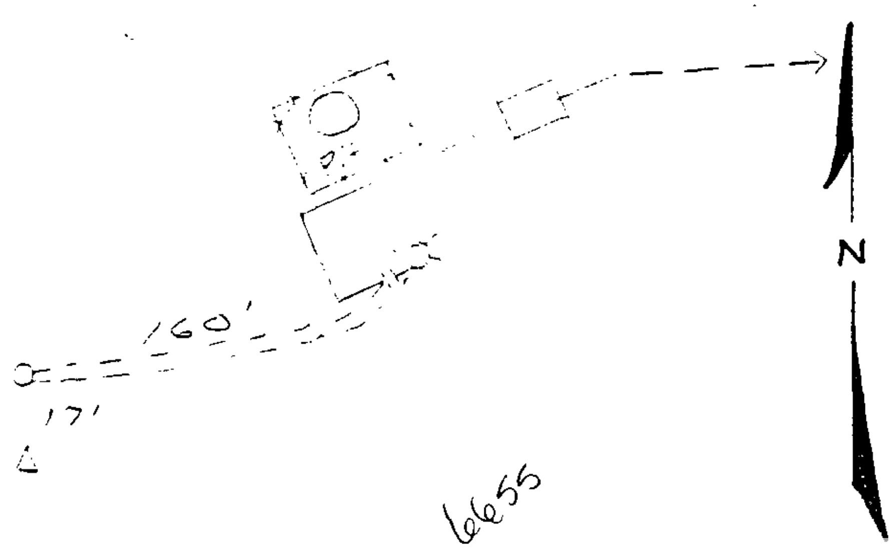
Remarks: Driller said water was at 240'. Water sample was taken. Vent pipe is perforated up to 220'

Rectifier Size: -0 V - A 4300 ✓
Addn'l Depth ______ -364 ✓
Depth Credit: 91 ✓ 3936
Extra Cable: 30 ✓ 7.50 ✓
Ditch & 1 Cable: 17 ✓ 6.63 ✓
Ditch & 2 Cable: 160 ✓ 83.20 ✓
25' Meter Pole: ______ 150.00
20' Meter Pole: ______ 40.20
10' Stub Pole: 150 —
Junction Box: 20 20

4253.33
+ 211.17
4434.50 ✓

All Construction Completed

Randy Smith
(Signature)



6655

BURGE CORROSION SYSTEMS, INC.

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

DEEP WELL GROUNDBED LOG

Date 9-14-87

Company Meridian Oil (Burge Corr.)

Well No. 176E Location Hubbard Volts Applied 11.7 -53 Amperes 21.8

0																			
5																			
10																			
15																			
20																			
25																			
30																			
35																			
40																			
45																			
50																			
55																			
60																			
65																			
70																			
75																			
80																			
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165																			
170																			
175																			
180																			
185																			
190																			
195																			
200																			
205																			
210																			
215																			

230	1.5																		
235	1.4																		
240	1.4																		
245	1.9																		
250	2.0																		
255	2.0																		
260	2.0																		
265	1.9																		
270	1.9																		
275	2.0																		
280	2.1																		
285	2.2	(2)																	
290	2.3																		
295	2.3	-(9)																	
300	2.1																		
305	2.2																		
310	2.3	-(8)																	
315	2.3																		
320	2.2	-(7)																	
325	2.3																		
330	2.3	-(4)																	
335	2.2																		
340	2.3	-(5)																	
345	2.2																		
350	2.3	-(4)																	
355	2.3																		
360	2.3	-(3)																	
365	2.3																		
370	2.4	-(6)																	
375	2.5																		
380	2.2	-(1)																	
385	2.0																		
390	2.2																		
395	2.2																		
400	2.4																		
405	TD 478 9																		
410																			
415																			
420																			
425																			
430																			
435																			
440																			
445																			

455	(1)	3	5	0		2	8												
460	(2)	3	7	0		2	8												
465	(3)	3	6	0		2	9												
470	(4)	3	5	0		2	8												
475	(5)	3	4	0		2	7												
480	(6)	3	3	0		2	7												
485	(7)	3	2	0		2	6												
490	(8)	3	1	0		2	6												
495	(9)	2	9	5		2	3												
500	(9)	2	8	5		2	6												
505																			
510																			
515																			
520																			
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655																			
660																			
665																			
670																			

680	5.1																		
685	5.7																		
690	6.1																		
695	6.5																		
700	6.3																		
705	5.7																		
710	5.6																		
715	6.0																		
720	5.5																		
725	5.2																		
730																			
735																			
740																			
745																			
750																			
755																			
760																			
765																			
770																			
775																			
780																			
785																			
790																			
795																			
800																			
805																			
810																			
815																			
820																			
825																			
830																			
835																			
840																			
845																			
850																			
855																			
860																			
865																			
870																			
875																			
880																			
885																			
890																			
895																			

BURGE CORROSION SYSTEMS, INC.

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

CS 1847W

COMPANY Meridian DAILY DRILLING REPORT 9-14 ,19 87

WELL NAME:	WELL NUMBER:	SECTION:	TOWNSHIP:	RANGE:
Huerfano	176 E	15	26 N	10 W

WATER AT:	FEET:	HOLE MADE:
240 ft		6 3/4 420 ft.

DESCRIPTION OF FORMATION

FROM	TO	FORMATION IS	COLOR
0	30	Sand	tan
30	70	Sand Stone	tan
70	160	Shale	Grey-Purple
160	220	Sandstone	Grey
220	240	Water Sand	Grey
240	260	Sandstone	Grey
260	420	Shale	Purple

REMARKS: Water sample at 240 ft

Brant Seem Driller Tool Dresser

30-045-05830

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

Operator MERIDIAN OIL Location: Unit SE Sec. 17 Twp 26 Rng 10

Name of Well/Wells or Pipeline Serviced HUERFANO UNIT #104

cps 972w

Elevation 6534' Completion Date 8/22/75 Total Depth 400' 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. WET AT 140'

Depths gas encountered: N/A

Type & amount of coke breeze used: 4300 lbs.

Depths anodes placed: 315', 305', 295',285',275', 265', 255', 245',235', 22

Depths vent pipes placed: N/A

Vent pipe perforations: 200'

Remarks: cgb #1

RECEIVED
MAY 31 1991
OIL CON.

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

Logged

Drilling Log (Attach Hereto). ☐

Completion Date 8-22-25

Well Name	Location	CPS No.
HUERFANO #104	SE 17 26-10	972W

Type & Size Bit Used	Work Order No.
6¾	53659

Anode Hole Depth	Total Drilling Rig Time	Total Lbs. Coke Used	Lost Circulation Mat'l Used	No. Sacks Mud Used
400'		4300		

	#1	#2	#3	#4	#5	#6	#7	#8	#9	#10
Anode Depth	315	305	295	285	275	265	255	245	235	225
Anode Output (Amps)	4.4	4.8	4.6	4.9	4.2	4.6	3.2	3.8	3.5	3.9

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

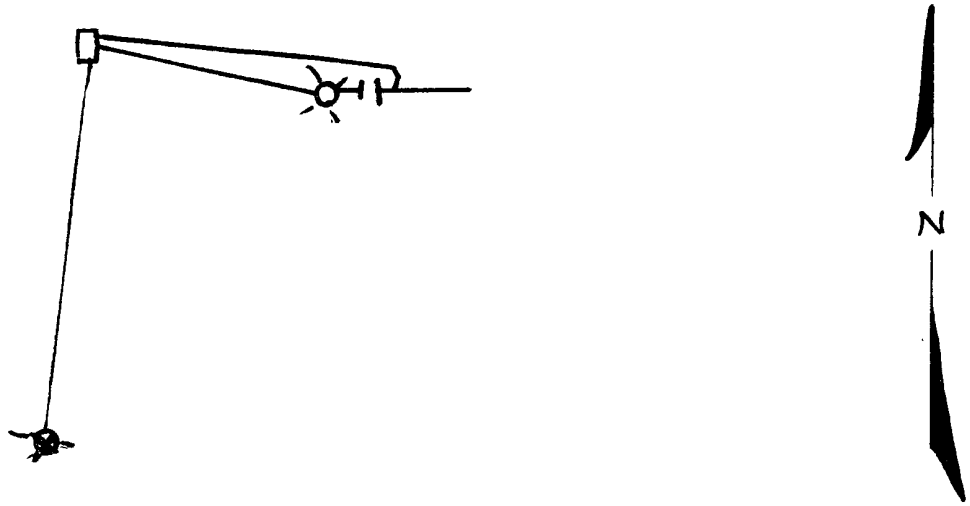
Total Circuit Resistance			No. 8 C.P. Cable Used	No. 2 C.P. Cable Used
Volts 11.0	Amps 18.0	Ohms .61	2900'	

Remarks: WET AT 140'-160'
START INJECTION AT 160'
SLURRY 43 SACKS COKE
VENT PERFORATED 200'

All Construction Completed

W. Hunsaker
(Signature)

GROUND BED LAYOUT SKETCH



Original & 1 Copy All Reports

DRILLING DEPARTMENT

8-21-75 DAILY DRILLING REPORT

LEASE WELL NO. 972-W CONTRACTOR RIG NO. 3991 REPORT NO. DATE 19

MORNING

Driller Total Men In Crew

FROM	TO	FORMATION	WT-BIT	R.P.M.
0'	12'	Sand		
12'	20'	Claystone		
20'	79'	Sandstone		
79'	120'	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
315'	317'	Sandstone
317'	335'	Shale
335'	342'	sandstone
342'	345'	Shale
345'	370'	Sandstone
370'	375'	shale

REMARKS –

Damp @ 75-99'
120-140'

wet at 140-160'

Water at 140-160'

Inject. at 160-400'

DAYLIGHT

Driller Total Men In Crew

FROM	TO	FORMATION	WT-BIT	R.P.M.
120'	180'	Sandstone		
180'	195'	Shale		
195'	270'	Sandstone		
270'	275'	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
375'	377'	Sandstone
377'	380'	Shale
380'	385'	Sandstone
385'	390'	shale
390'	400'	Sandstone
400'	—	TD

REMARKS –

EVENING

Driller Total Men In Crew

FROM	TO	FORMATION	WT-BIT	R.P.M.
275'	285'	Sandstone		
285'	290'	Shale		
290'	305'	Sandstone		
305'	315'	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 –

SIGNED: Toolpusher Jimmy Jones Company Supervisor

EL PASO NATURAL GAS COMPANY
ENGINEERING DEPARTMENT

Sheet
Date:
By:

972 W 536 59

HUERFANO #104

1	40	.8	320	2.0	WET	140' to 160'	
		.8		1.6	IN 30 MIN WATER AT 140		
	50	.6	30	1.3	START INJECTION AT 160'		
		1.0		1.3	LOGGED 370'		
	60	1.0	40	1.6	NEXT AM 347' TD		
		~~1.0~~ .9		2.0			
	70	0.9	50	2.0			
		1.6		2.0			
	80	1.8	60	2.1			
		1.8		2.1			
	90	1.8	70	2.1	TD		
		1.8					
2	00	1.8					
		1.6					
	10	1.4					
		0.9					
	20	0.9					
		1.4					
	30	1.7					
		1.6					
	40	1.6					
		1.6					
	50	1.6					
		1.6			1 315	2.1	4.4
	60	1.6			2 305	2.1	4.8
		1.7			3 295	2.2	4.6
	70	1.8			4 285	2.8	4.9
		1.9			5 275	2.5	4.2
	80	1.8			6 265	2.5	4.6
		1.9			7 255	2.2	3.2
	90	2.0			8 245	2.1	3.8
		2.1			9 235	2.2	3.5
3	00	2.0			10 225	2.2	3.9
		2.0					
	10	2.0	11.0 V		18.0 A = .61 Ω		
		2.1					

MW		gals/mol
16	C_1	6 4
30	C_2	10.12
44	C_3	10 42
58	IC_4	12 36
"	NC_4	11 93
72	IC_5	13 85
"	NC_5	13 71
86	IC_6	15 50
"	C_6	15 57
100	IC_7	17 2
"	C_7	17 46
114	C_8	19 77
28	$C_2^=$	9 64
42	$C_3^=$	9 67

MISC		
MW		gals/mol
44	CO_2	6 35
34	H_2S	5 17
28	N_2	4 16
2	H_2	1 38

30-045-20599

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

Operator MERIDIAN OIL Location: Unit SE Sec. 20 Twp 26 Rng 10

Name of Well/Wells or Pipeline Serviced HUERFANO UNIT #207

cps 977w

Elevation 6516' Completion Date 10/31/78 Total Depth 320' 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. 130'

Depths gas encountered: N/A

Type & amount of coke breeze used: 40 SACKS

Depths anodes placed: 290', 255', 245', 235', 225', 215', 205', 195', 185' 17

Depths vent pipes placed: 300'

Vent pipe perforations: 200'

Remarks: gb #2

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.

El Paso Natural Gas Company
Form 7-238 (Rev. 11-71)

WELL CASING

CATHODIC PROTECTION CONSTRUCTION REPORT

DAILY LOG

Drilling Log (Attach Hereto). ☐ Completion Date 10-31-78

Well Name	Location	CPS No.
Huerfano U. #207	SE 20-26-10	977 W

Type & Size Bit Used	Work Order No.
6 3/4 CONTRACT #2	54746.19

Anode Hole Depth	Total Drilling Rig Time	Total Lbs. Coke Used	Lost Circulation Mat'l Used	No. Sacks Mud Used
320 - 320 TD		40 SACKS		

	#1	#2	#3	#4	#5	#6	#7	#8	#9	#10
Anode Depth	290	255	245	235	225	215	205	195	185	175
Anode Output (Amps)	4.1	4.3	4.7	4.6	5.5	4.7	5.5	5.3	4.0	4.0

	#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. 12 C.P. Cable Used
Volts 11.4	Amps 19.1	Ohms .6		

Remarks: Redrill WATER AT 130' APPROX 1 GPM Installed 300' OF VENT PIPE 200' PERFORATED. SLURRIED 40 SACKS OF coke

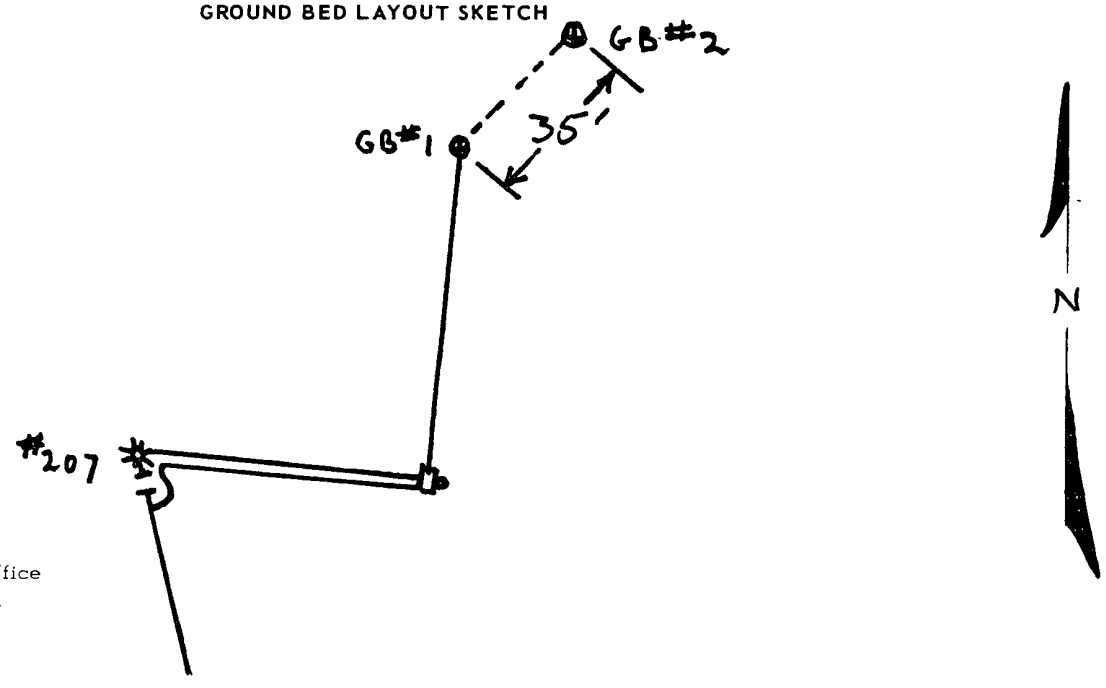
Hole depth = -180
Ditch + cable = 35

2 x 2 x 48" Graphite

All Construction Completed

Robert J Babcock
(Signature)

GROUND BED LAYOUT SKETCH



DISTRIBUTION:
WHITE — Division Corrosion Office
YELLOW — Area Corrosion Office
PINK — Originator File

EL PASO NATURAL GAS COMPANY

DRILLING DEPARTMENT

DAILY DRILLING REPORT

977 W

LEASE WELL NO. 977W CONTRACTOR OBriant RIG NO. 1 REPORT NO. DATE Oct 31 19 78

MORNING

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			MUD, ADDITIVES USED AND RECEIVED
Time	Wt.	Vis.	

FROM	TO	TIME BREAKDOWN
0	47	Sand - Soft
47	105	Shale
105	122	Sandstone damp
122	128	Shale
128	134	Sandstone water
134	245	Shale

REMARKS –

DAYLIGHT

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			MUD, ADDITIVES USED AND RECEIVED
Time	Wt.	Vis.	

FROM	TO	TIME BREAKDOWN
245	273	Sandstone w/ Bentonite
273	320	Shale

REMARKS –

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			MUD, ADDITIVES USED AND RECEIVED
Time	Wt.	Vis.	

FROM	TO	TIME BREAKDOWN

REMARKS –

Drilled To 320 w/ 6 3/4
Logged To 320

Estimate Water @ 1gpm @ 130

SIGNED: Toolpusher Leon OBriant Company Supervisor

Form 7-1 (Rev 9-77)

El Paso Natural Gas Company
ENGINEERING CALCULATION

Sheet: ____ of ____
Date:
By:
File:

977W SE 20-26-10
HUERFANO UNIT # 207 5474G.19 2x2x48 GRAPHITE
Redr. LL

MW		gals/mol
16.04	C_1	6.4
30.07	C_2	10.12
44.10	C_3	10.42
58.12	iC_4	12.38
58.12	nC_4	11.93
72.15	iC_5	13.85
72.15	nC_5	13.71
86.18	iC_6	15.50
86.18	C_6	15.57
100.21	iC_7	17.2
100.21	C_7	17.46
114.23	C_8	19.39
28.05	$C_2^=$	9.64
42.08	$C_3^=$	9.67

MISC. MW		gals/mol
32.00	O_2	3.37
28.01	CO	4 19
44.01	CO_2	6.38
64.06	SO_2	5.50
34 08	H_2S	5 17
28.01	N_2	4.16
2.02	H_2	3 38

110		DRILLED 320' WITH AIR WATER INJECTION LAST 80' BLEW WATER OUT OF HOLE AT 134' 40 SACKS OF COKE
120		
130	1.2	
	1.4	INSTALLED 300' VENT PIPE 200' PERFORATED
140	2.6	
	2.6	
150	2.9	
	3.1	
160	2.8	
	2.8	
170	2.5	
	2.6 – 10	
180	2.6	HOLE DEPTH = ~180'
	2.7 – 9	CABLE DITCH = 35'
190	2.8	
	2.8 – 8	
200	2.8	
	2.8 – 7	
210	2.8	
	3.1 – 6	
220	3.0	
	3.1 – 5	
230	2.8	① 290 – 2.3 – 4.1
	3.0 – 4	② 255 – 2.6 – 4.3
240	3.0	③ 245 – 2.8 – 4.7
	2.7 – 3	④ 235 – 3.0 – 4.6
250	2.8	⑤ 225 – 3.3 – 5.5
	2.8 – 2	⑥ 215 – 2.8 – 4.7
260	1.2	⑦ 205 – 3.0 – 5.5
	1.3	⑧ 195 – 2.8 – 5.3
270	1.3	⑨ 185 – 2.4 – 4.0
	1.6	⑩ 175 – 2.6 – 4.0
280	1.4	
	1.8	11.4 V 19.1 A = .6 ohms
290	2.6 – 1	
	2.6	
300	2.5	
	2.2	
310	2.0	
	2.0	
320	2.0 TD	

30-045-20737

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

Operator MERIDIAN OIL Location: Unit NW Sec. 20 Twp 26 Rng 10

Name of Well/Wells or Pipeline Serviced HUERFANO UNIT NP #212

cps 975w

Elevation 6487 Completion Date 9/18/75 Total Depth 375' Land Type* N/A

Casing, Sizes, Types & Depths 18' SURFACE CASING

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. 135'

Depths gas encountered: N/A

Type & amount of coke breeze used: 4100 lbs.

Depths anodes placed: 280', 270', 260', 250', 200', 190', 180', 170', 155', 14

Depths vent pipes placed: N/A

Vent pipe perforations: 250'

Remarks: gb #1

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

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

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

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

WELL CASING
CATHODIC PROTECTION CONSTRUCTION REPORT
DAILY LOG

Logged

Drilling Log (Attach Hereto). ☐

Completion Date 9-18-75

Well Name	Location	CPS No.
Huey Pan #212	NW 10-26N-10W	9754

Type & Size Bit Used	Work Order No.
6 3/4"	54863.19-50-2

Anode Hole Depth	Total Drilling Rig Time	Total Lbs. Coke Used	Lost Circulation Mat'l Used	No. Sacks Mud Used
375		4,100		

	#1	#2	#3	#4	#5	#6	#7	#8	#9	#10
Anode Depth	280	270	260	250	200	190	180	170	155	145
Anode Output (Amps)	4.0	4.8	4.8	3.6	4.2	4.5	4.2	4.2	4.8	4.6

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

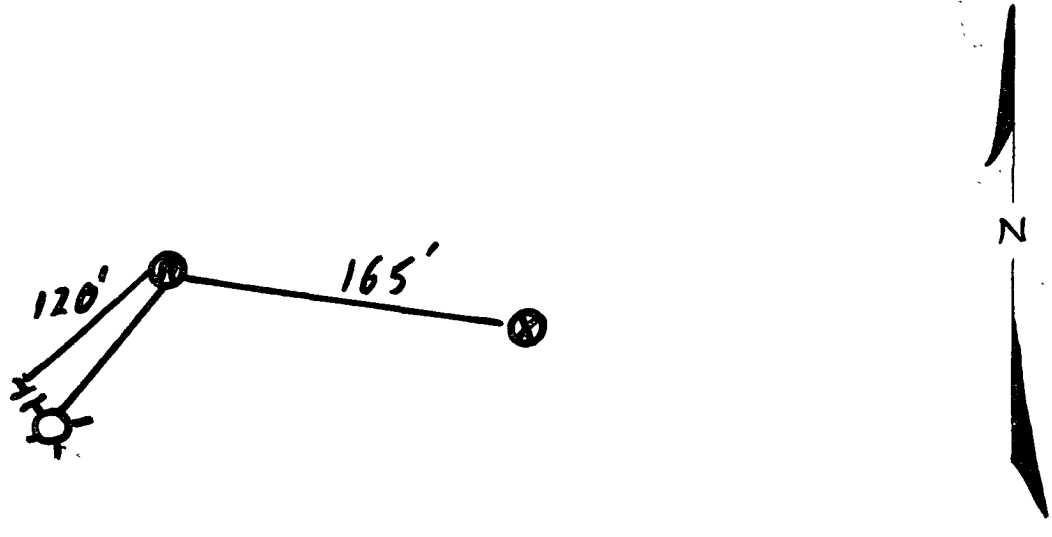
Total Circuit Resistance			No. 8 C.P. Cable Used	No. 2 C.P. Cable Used
Volts 11.3	Amps 15.5	Ohms 0.73	2400'	

Remarks: Drill with Air. Driller said water at 135' Drill. To 300' Logged Hole To 240' not Enough Hole Drill To 375 Logging Anode stopped at 250' set 18' surface casing. Logging Anode stopped at 301' Vent Hose perfwd. Perforated 250'

All Construction Completed

Edward R. Parks
(Signature)

GROUND BED LAYOUT SKETCH



MORGAN DRILLING COMPANY

P.O. Box 326 • Broken Bow, Oklahoma 74728

Ph. Office 405/584-6000
Mobile 584-6860
Night 420-3248

DATE 9-17-75

Work Order No. 54563-19-30-21
Huerfano Unit #212

CUSTOMER		SERVICE ADDRESS		CITY
El Paso Nat. Gas Co.		Box 990		Farmington, N.M.
TEL. NO.	REQ. NO.	SERVICEMAN	VEHICLE NO.	DATE COMPLETED
325-2841		Morgan Drilling	T 4	

LITHOLOGIC LOG

Material	From	To	Water Strata	Time
Blue Shale	135'	235'	135'	
Gray Sandstone	235'	275'		
Gray Sandstone	275'	350'		

Date started ______________, 19__
Date Completed ______________, 19__

INSTRUCTIONS:

SERVICE PERFORMED:

TOTAL DEPTH 301'

RIG TIME

WATER TRUCK

DRILLERS CERTIFICATION

This well was drilled under my supervision and the report is true to the best of my knowledge.

Name Don Gibson

Address

Well driller's license number

Signed

Date

403

Customer's Signature

By Edward R. Pauli

EL PASO NATURAL GAS COMPANY
ENGINEERING DEPARTMENT

Date:

By:

975W

1.8

140	1.8		20	Driller said water at
(10)	1.8			135'
50	1.8		30	
(9)	1.8			
60	1.6		40	
	1.8			
70	2.0		50	
(8)	1.8			
(7) 80	1.8		60	
	1.8			
(6) 90	2.0		70	
	2.0			
(5) 200	1.8			
	1.6			
10	1.0			
	.8			
20	.6			
	.6			
30	.8			
	.8			
40	1.4			
	1.4			
(4) 50	1.8			
	1.8			
(3) 60	2.0			
	2.0			
(2) 70	2.0			
	2.0			
(1) 80	1.8			
	1.8			
90	1.9			
	1.9			
300	301 TD			
10				

MW		gals/mol
16	C_1	6 4
30	C_2	10 74
44	C_3	10 42
58	IC_4	12 38
	NC_4	11 93
72	IC_5	13 85
"	NC_5	13 71
86	IC_6	15 50
"	C_6	15 57
100	IC_7	17 2
"	C_7	17 46
114	C_8	19 33
28	$C_2^=$	9 64
42	$C_3^=$	9 67

MISC		
MW		gals/mol
44	CO_2	6 38
34	H_2S	5 17
28	N_2	4 16
2	H_2	3 38

	1	280	2.0	4.0
	2	270	2.2	4.8
	3	260	2.0	4.8
	4	250	1.8	3.6
	5	200	2.0	4.2
	6	190	2.2	4.5
	7	180	2.1	4.2
	8	170	2.2	4.2
	9	155	2.0	4.8
	10	145	2.0	4.6
		2100		
		30400		
11.3 V		15.5 A		0.73 Ω

30-045-20408

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

Operator MERIDIAN OIL Location: Unit NW Sec 21 Twp 26 Rng 10

Name of Well/Wells or Pipeline Serviced HUERFANO UNIT #195

cps 978w

Elevation 6534' Completion Date 9/2/75 Total Depth 360' Land Type* N/A

Casing, Sizes, Types & Depths 39' OF 8" PLASTIC CASING

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. 172'-200'

Depths gas encountered: N/A

Type & amount of coke breeze used: 3500 lbs.

Depths anodes placed: 320', 310', 300', 260', 250', 240', 230', 220', 210', 20

Depths vent pipes placed: N/A

Vent pipe perforations: 200'

Remarks: gb #1

RECEIVED
MAY 31 1991
OIL CON. DIV
DIST. 3

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

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

El Paso Natural Gas Company

WELL CASING

CATHODIC PROTECTION CONSTRUCTION REPORT

DAILY LOG

Drilling Log (Attach Hereto). ☐

Completion Date 9-2-75

Well No.	Location	CPS No.
Huerfano #195	NW 21-26-10	978w
Type & Size Bit Used: 6 3/4		Work Order No. 54651

Anode Hole Depth	Total Drilling Rig Time	Total Lbs. Coke Used	Lost Circulation Mat'l Used	No. Sacks Mud Used
360		3500		

	#1	#2	#3	#4	#5	#6	#7	#8	#9	#10
Anode Depth	320	310	300	260	250	240	230	220	210	20
Anode Output (Amps)	4.5	4.8	4.3	2.7	4.6	4.5	4.2	2.8	2.6	3.4

	#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 11.2	Amps 18.0	Ohms 0.62	2850	

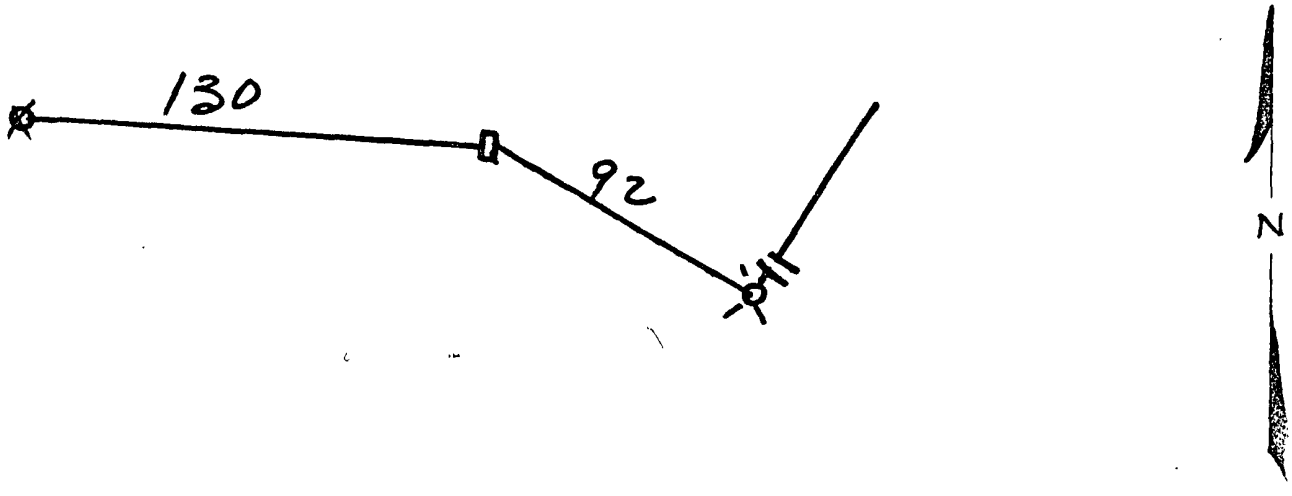
Remarks: Loose Sand For 40'- Dug Pits Clean out with Mud- Set 39' of 8" Plastic Casing- Let Set over Week-End- Blew Mud out & Drilled with Air Start water injection of 200' Vent Perforated 200

16 hrs 10

All Construction Completed

Darrels-Hin
(Signature)

GROUND BED LAYOUT SKETCH



Original & 1 Copy All Reports

DRILLING DEPARTMENT

8-29&9-2-75 DAILY DRILLING REPORT

LEASE WELL NO. 98-W CONTRACTOR RIG NO. 3991 REPORT NO. DATE 19

MORNING

Driller Total Men In Crew

FROM	TO	FORMATION	WT-BIT	R.P.M.
0.0	40'	Sand		
40'	64'	Sandstone		
64'	70'	Shale		
70'	80'	Sandstone		

NO. DC ____ SIZE ____ LENG. ____

BIT NO.

NO. DC ____ SIZE ____ LENG. ____

SERIAL NO.

STANDS

SIZE 6 3/4

SINGLES

TYPE

DOWN ON KELLY

MAKE

TOTAL DEPTH

MUD RECORD

Time	Wt.	Vis.

MUD, ADDITIVES USED AND RECEIVED

FROM	TO	TIME BREAKDOWN
238'	242'	Shale
242'	243'	Sandstone
243'	245'	Shale
245'	241'	Sandstone
241'	25	Shale
25	253'	Sandstone

REMARKS –

DAMP AT 105 - 106'
140 - 172
WET AT 172 - 200

INJECT - at 200 ± 360'

DAYLIGHT

Driller Total Men In Crew

FROM	TO	FORMATION	WT-BIT	R.P.M.
80'	95'	Shale		
95'	103'	Sandstone		
103'	105'	Shale		
105'	120'	Sandstone		

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
253'	258'	Shale
258'	262'	Shale Sandstone
262'	267'	Shale
267'	315'	Sandstone
315'	318'	Shale
318'	321'	Sandstone

REMARKS –

EVENING

Driller Total Men In Crew

FROM	TO	FORMATION	WT-BIT	R.P.M.
120'	127'	Shale		
127'	200'	Sandstone		
200'	206'	Shale		
206'	238'	Sandstone		

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
321'	337'	Shale
337'	360'	Sandstone
360'	—	T.D.

REMARKS –

SIGNED: Toolpusher Jimmy Jones Company Supervisor

MW		gals/mol
16	C_1	6.4
30	C_2	10.12
44	C_3	10.42
58	IC_4	12.38
"	NC_4	11.93
72	IC_5	13.85
"	NC_5	13.71
86	IC_6	15.50
"	C_6	15.57
100	IC_7	17.2
"	C_7	17.46
114	C_8	19.39
28	$C_2^=$	9.64
42	$C_3^=$	9.67

MISC

MW		gals/mol
44	CO_2	6.38
34	H_2S	5.17
28	N_2	4.16
2	H_2	3.38

928 w

200	1.2
	1.4
10	1.0
	0.7
20	1.0
	1.6
30	1.6
	1.7
40	2.0
	2.1
50	2.2
	2.0
60	1.5
	0.6
70	0.8
	0.8
80	0.4
	0.4
90	0.5
	0.7
300	2.0
	2.2
10	2.2
	2.3
20	2.0
	1.8
30	1.4
	1.2
40	
50	
60	
70	

TD - 342

1.	320	2.3	4.5
2.	310		4.8
3.	300	2.6	4.3
4.	260	1.6	2.7
5.	250	2.4	4.6
6.	240	2.4	4.5
7.	230	2.4	4.2
8.	220	1.5	2.8
9.	210	1.3	2.6
10.	200	1.6	3.4

.62

18 [11.2 / 10.8

18.0 A

0.62 Ω

30-045-20416

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

Operator MERIDIAN OIL Location: Unit SE Sec. 21 Twp 26 Rng 10

Name of Well/Wells or Pipeline Serviced HUERFANO UNIT #196

cps 979w

Elevation 6590' Completion Date 8/29/75 Total Depth 450' 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. WET AT 85'-110', 215'-242' & 340'-360'

Depths gas encountered: N/A

Type & amount of coke breeze used: 4600 lbs.

Depths anodes placed: 355', 345', 335', 325', 315', 305', 295', 285', 275', 265'

Depths vent pipes placed: N/A

Vent pipe perforations: 250'

Remarks: gb #1

RECEIVED
MAY 31 1991
OIL CON. DIV
DIST. 3

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

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

Natural Gas Company

WELL CASING

CATHODIC PROTECTION CONSTRUCTION REPORT

DAILY LOG

Drilling Log (Attach Hereto). ☐

Completion Date 8-29-75

Well Name: Hucrfano #196	Location: SE21-26-10			CPS No. 979W
Pipe & Size Bit Used: 6 3/4				Work Order No. 5457 + 5465
Anode Hole Depth: 450	Total Drilling Rig Time	Total Lbs. Coke Used: 4600	Lost Circulation Mat'l Used	No. Sacks Mud Used

	#1	#2	#3	#4	#5	#6	#7	#8	#9	#10
Anode Depth	355	345	335	325	315	305	295	285	275	26
Anode Output (Amps)	4.0	4.6	5.2	5.2	6.5	5.1	5.6	4.9	5.0	4.7
Anode Depth	#11	#12	#13	#14	#15	#16	#17	#18	#19	#20
Anode Output (Amps)	#11	#12	#13	#14	#15	#16	#17	#18	#19	#20

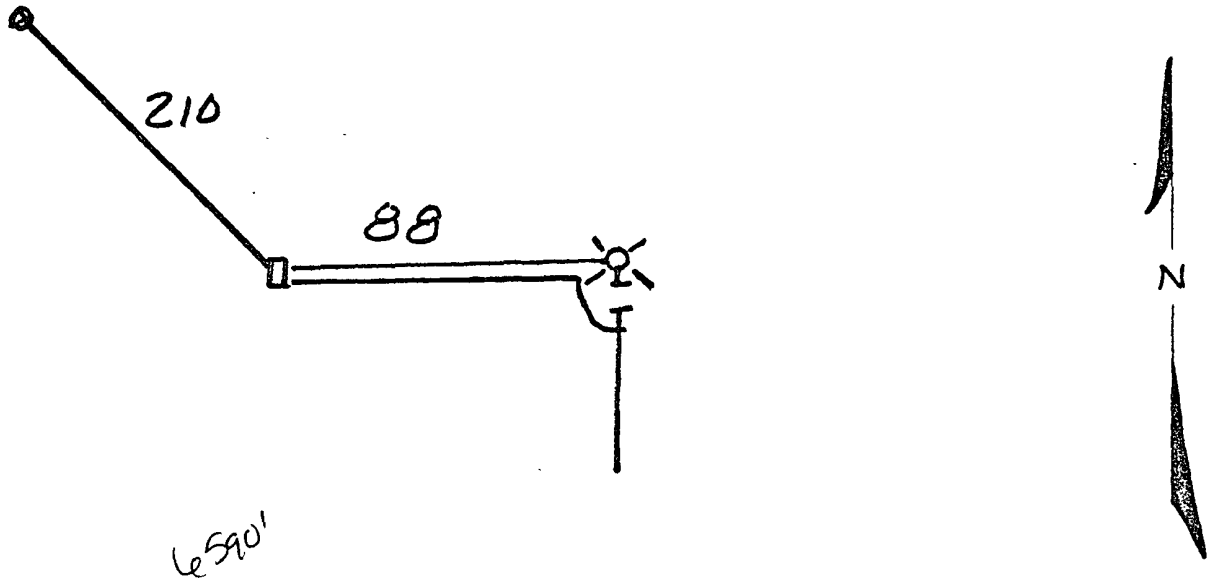
Total Circuit Resistance			No. 8 C.P. Cable Used	No. 2 C.P. Cable Used
Volts 11.0	Amps 19.5	Ohms 0.56	3500	

Remarks: Wet at 85 to 110, 215 To 242 & 340 To 360
Start Water injection at 360' - Drilled to 450' - Broke Cable on Rig - Filled water to 100' & Logged to 435
Next A.M. Water at 100' & T.D. of 406 -
Vent Perforated 250'

All Construction Completed

Darrels
(Signature)

GROUND BED LAYOUT SKETCH



Original & 1 Copy All Reports

DRILLING DEPARTMENT

8-28-&8-29-75 DAILY DRILLING REPORT

LEASE WELL NO. 979-W CONTRACTOR RIG NO. 3991 REPORT NO. DATE 19

MORNING

Driller Total Men In Crew

FROM	TO	FORMATION	WT-BIT	R.P.M.
0.0	22'	Sand		
22'	58'	Sandstone		
58'	75'	Shale gray		
75'	80'	Sandstone		

NO. DC ____ SIZE ____ LENG. ____

BIT NO. NO. DC ____ SIZE ____ LENG. ____

SERIAL NO. STANDS

SIZE 3/4 New SINGLES

TYPE DOWN ON KELLY

MAKE TOTAL DEPTH

MUD RECORD			MUD, ADDITIVES USED AND RECEIVED
Time	Wt.	Vis.	

FROM	TO	TIME BREAKDOWN
200'	216'	Shale
216'	242'	Sandstone
242'	250'	Shale
250'	256'	Sandstone
25 '	275'	Shale
27, '	293'	Sandstone

REMARKS –

DAYLIGHT

Driller Total Men In Crew

FROM	TO	FORMATION	WT-BIT	R.P.M.
80'	85'	Shale gray		
85'	110'	Sandstone		
110'	127'	Shale gray		
127'	142'	Sandstone		

NO. DC ____ SIZE ____ LENG. ____

BIT NO. NO. DC ____ SIZE ____ LENG. ____

SERIAL NO. STANDS

SIZE SINGLES

TYPE DOWN ON KELLY

MAKE TOTAL DEPTH

MUD RECORD			MUD, ADDITIVES USED AND RECEIVED
Time	Wt.	Vis.	

FROM	TO	TIME BREAKDOWN
293'	298'	Shale
298'	305'	Sandstone
305'	311'	Shale
311'	317'	Sandstone
317'	320'	Shale
320'	330'	Sandstone

REMARKS –

EVENING

Driller Total Men In Crew

FROM	TO	FORMATION	WT-BIT	R.P.M.
142'	150'	Shale		
150'	157'	Sandstone		
157'	160'	Shale		
160'	200'	Sandstone		

NO. DC ____ SIZE ____ LENG. ____

BIT NO. NO. DC ____ SIZE ____ LENG. ____

SERIAL NO. STANDS

SIZE SINGLES

TYPE DOWN ON KELLY

MAKE TOTAL DEPTH

MUD RECORD			MUD, ADDITIVES USED AND RECEIVED
Time	Wt.	Vis.	

FROM	TO	TIME BREAKDOWN
330'	345'	Shale
345'	355'	Sandstone
355'	360'	Shale
360'	365'	Sandstone
365'	375'	Shale
375'	455'	Sandstone

REMARKS – 455' T.D.

SIGNED: Toolpusher Jimmy Jones Company Supervisor

EL PASO NATURAL GAS COMPANY
ENGINEERING DEPARTMENT

Sheet
Date: ______
By: ______

MW		gals/mol
16	C_1	6 4
30	C_2	10 12
44	C_3	10 42
58	IC_4	12 38
"	NC_4	11 93
72	IC_5	13 85
"	NC_5	13 71
86	IC_6	15 50
"	C_6	15 57
100	IC_7	17 2
"	C_7	17 46
114	C_8	19 39
28	$C_2^=$	9 64
42	$C_3^=$	9 67

MISC

MW		gals/mol
44	CO_2	6 38
34	H_2S	5 17
28	N_2	4 16
2	H_2	3 38

979W

100	1.5	280	2.4	Wet at 85-100
	2.2		2.4	215 to 242
10	2.6	90	2.3	340 to 360
	2.5		2.5	Start wtr inj at
20	2.4	300	2.4	360' - Drill to 450
	2.5		2.5	Broke Cable -
30	2.6	10	2.4	Fill water to 100
	2.6		2.4	& Log -
40	2.5	20	2.6	Water Next AM at
	2.5		2.6	100' -
50	2.5	30	2.4	Bottom at 406'
	2.6		2.4	
60	2.6	40	2.4	
	2.6		2.4	
70	2.5	50	2.3	
	2.6		2.2	
80	2.6	60	1.8	
	2.6		1.1	
90	2.5	70	1.1	
	2.5		1.2	
200	2.6	80	1.2	
	2.4		1.2	1 355 2.5 4.0
10	2.2	90	1.4	2 345 2.5 4.4
	1.7		2.1	3 335 2.6 5.2
20	1.4	400	1.8	4 325 2.7 5.2
	1.6		1.8	5 315 3.0 6.5
30	1.6	10	1.7	6 305 2.6 5.1
	2.2		1.2	7 295 2.6 5.6
40	2.5	20	1.0	8 285 2.5 4.9
	2.5		1.6	9 275 2.5 5.0
50	2.4	30	1.9	10 265 2.8 4.7
	2.5 TD	435		
60	2.5	40		3100
	2.4			
70	2.4	50	11.0V	19.5A. = 0.56 Ω
	~~2.4~~			

30-045-20282

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

Operator MERIDIAN OIL Location: Unit C Sec. 22 Twp 26 Rng 10

Name of Well/Wells or Pipeline Serviced HUERFANO UNIT #178

cps 980w

Elevation 6627' Completion Date 9/15/87 Total Depth 360' Land Type* N/A

Casing, Sizes, Types & Depths N/A

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

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

N/A

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

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

Depths gas encountered: N/A

Type & amount of coke breeze used: N/A

Depths anodes placed: 320', 305', 295', 285', 275', 265', 255', 245', 235', 225'

Depths vent pipes placed: N/A

Vent pipe perforations: UP TO 130'

Remarks: cgb #2

RECEIVED
MAY 31 1991
OIL

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.

FM-07-0238 (Rev. 10-82)

redrill

WELL CASING
CATHODIC PROTECTION CONSTRUCTION REPORT
DAILY LOG

Drilling Log (Attach Hereto) ☐

Completion Date 9-15-87

CPS #	Well Name, Line or Plant:	Work Order #	State:	Ins. Union Check:
980W	Huerfano 178		.70 W	☑ ~~Good~~ ☐ Bad

Location	Anode Size:	Anode Type:	Size Bit:
NW 22-26-10	2"X60"	Duriron	6 3/4

Depth Drilled	Depth Logged	Drilling Rig Time	Total Lbs. Coke Used	Lost Circulation Mat'l Used	No. Sacks Mud Used
360	353	5hrs			Elev. 6606

	#1	#2	#3	#4	#5	#6	#7	#8	#9	#10
Anode Depth	320	305	295	285	275	265	255	245	235	225
Anode Output (Amps)	5.0	4.9	5.8	5.6	4.8	5.8	6.0	6.1	6.8	6.2

	#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 11.4	Amps 20.8	Ohms .55		

Remarks: Driller said water was at 140'. Vent pipe is perforated up to 130'. No water sample was taken.

Rectifier Size: ______ V ______ A

Addn'l Depth ______

Depth Credit: 147

Extra Cable: ______

Ditch & 1 Cable: 51' 19.89

Ditch & 2 Cable: ______

25' Meter Pole: ______

20' Meter Pole: ______

10' Stub Pole: ______

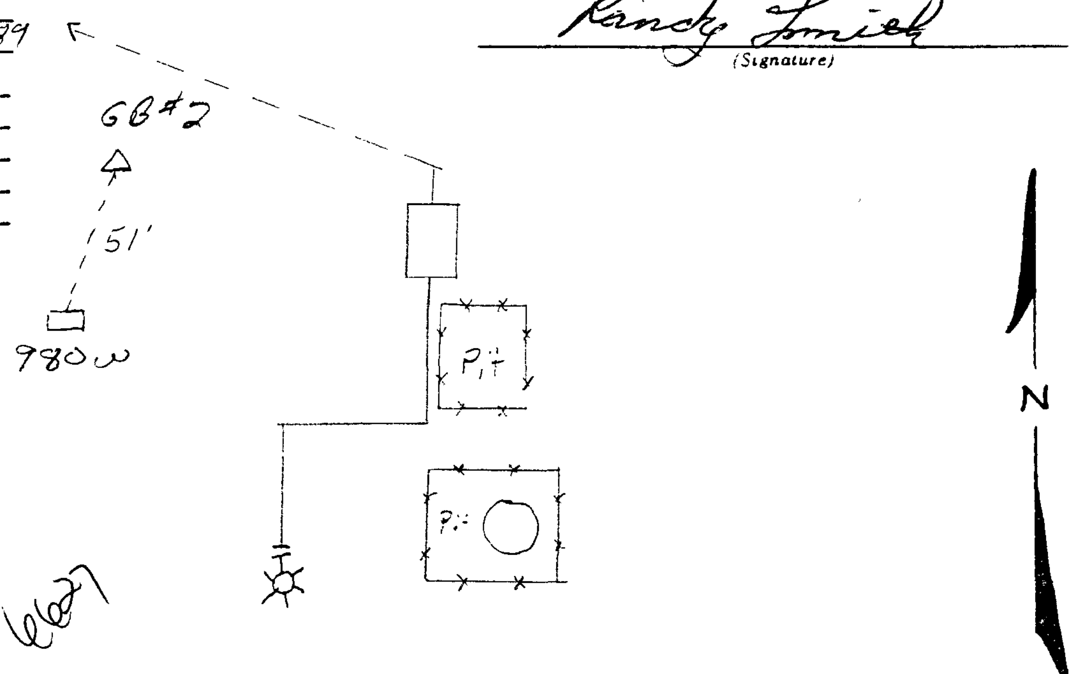
Junction Box: 40.00

4300
-588
3712

3771.89
188.60
3960.49

All Construction Completed

Randy Smith
(Signature)



BURGE CORROSION SYSTEMS, INC.

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

CPS 980cw

COMPANY Meridian DAILY DRILLING REPORT 9-15 19 87

WELL NAME:	WELL NUMBER:	SECTION:	TOWNSHIP:	RANGE:
Huerfano	178	22	26 N	8 W

WATER AT:	FEET:	HOLE MADE:	
160		6 3/4	360 ft

DESCRIPTION OF FORMATION

FROM	TO	FORMATION IS	COLOR
0	30	Sand	tan
30	130	Sandy Shale + Shale	Grey-Purple
130	160	Water Sand	Grey
160	170	Sand Stone	Grey
170	200	Shale	Grey
200	210	Sandstone	Grey
210	330	Shale	Purple
330	360	Sandstone	Grey

REMARKS: water sample at 160 ft.

Grant Burns — Driller — Tool Dresser

MERIDIAN OIL

P. O. BOX 4289-Phone 327-0251
FARMINGTON, NM

Date 9-15-87

DEEP WELL GROUNDBED LOG

Company Meridian Oil (Burge Corr.)

Well No. 178 Location Huerfano. Volts Applied 11.4 Amperes 20.

Depth	Reading	Depth	Reading	Depth	Reading	Depth	Reading
0							
5		230	2.6 ✓	455	① 320 2.9	680	5.0
10		235	2.7 ✓ 9	460	② 305 3.0	685	4.9
15		240	2.7 ✓	465	③ 295 3.0	690	5.8
20		245	2.5 ✓ 8	470	④ 285 2.7	695	5.6
25		250	2.6 ✓	475	⑤ 275 3.0	700	4.8
30		255	2.7 ✓ 7	480	⑥ 265 2.9	705	5.8
35		260	2.6 ✓	485	⑦ 255 3.2	710	6.0
40		265	2.5 ✓ 6	490	⑧ 245 3.0	715	6.1
45		270	2.5 ✓	495	⑨ 235 2.9	720	6.8
50		275	2.5 ✓ 5	500	⑩ 225 3.2	725	6.2
55		280	2.3 ✓	505		730	
60		285	2.5 ✓ 4	510		735	
65		290	2.6 ✓	515		740	
70		295	2.5 ✓ 3	520		745	
75		300	2.5 ✓	525		750	
80		305	2.5 ✓ 2	530		755	
85		310	2.2 ✓	535		760	
90		315	2.2	540		765	
95		320	2.4 ✓ ✓ 1	545		770	
100		325	2.0	550		775	
105		330	1.2	555		780	
110		335	1.2	560		785	
115		340	1.6	565		790	
120		345	2.3	570		795	
125		350	TD 355	575		800	
130		355		580		805	
135		360		585		810	
140	1.0	365		590		815	
145	1.1	370		595		820	
150	1.4	375		600		825	
155	1.3	380		605		830	
160	1.6	385		610		835	
165	2.5	390		615		840	
170	2.7	395		620		845	
175	2.6	400		625		850	
180	2.5	405		630		855	
185	2.5	410		635		860	
190	1.8	415		640		865	
195	1.0	420		645		870	
200	1.2	425		650		875	
205	2.3	430		655		880	
210	2.5	435		660		885	
215	2.9	440		665		890	
220	2.6	445		670		895	
225	2.6 ✓ 10	450		675		900	

3215

30-045-26675

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

Operator MERIDIAN OIL INC. Location: Unit K Sec. 36 Twp 26 Rng 10

Name of Well/Wells or Pipeline Serviced HUERFANO UNIT #177E

cps 1967w

Elevation 6620' Completion Date 6/22/88 Total Depth 250' Land Type* N/A

Casing, Sizes, Types & Depths 20' CASING

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. 105' NO SAMPLE

Depths gas encountered: N/A

Type & amount of coke breeze used: N/A

Depths anodes placed: 230', 220', 210', 200', 180', 170', 160', 150', 140', 130'

Depths vent pipes placed: 250'

Vent pipe perforations: 250'

Remarks: gb #1

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

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

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

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

WELL CASING
CATHODIC PROTECTION CONSTRUCTION REPORT
DAILY LOG

Drilling Log (Attach Hereto) ☒ Comp 6-23-88 Completion Date 6-22-88

CPS #	Well Name, Line or Plant:	Work Order #	Static:	Ins Union Check
1967W	Huerfano 177 E	54531A 2054531 A	6005 = 854	☐ Good ☐ Bad

Location:	Anode Size:	Anode Type:	Size Bit:
K36-26-10	2" x 60"	Duriron	6 3/4

Depth Drilled	Depth Logged	Drilling Rig Time	Total Lbs. Coke Used	Lost Circulation Mat'l Used	No. Sacks Mud Used
250	230				

Anode Depth

# 1	# 2	# 3	# 4	# 5	# 6	# 7	# 8	# 9	# 10
230	220	210	200	180	170	160	150	140	130

Anode Output (Amps)

# 1	# 2	# 3	# 4	# 5	# 6	# 7	# 8	# 9	# 10
8.4	4.6	6.8	5.8	4.0	3.2	5.2	5.6	5.0	5.4

Anode Depth

# 11	# 12	# 13	# 14	# 15	# 16	# 17	# 18	# 19	# 20

Anode Output (Amps)

# 11	# 12	# 13	# 14	# 15	# 16	# 17	# 18	# 19	# 20

Total Circuit Resistance			No. 8 C.P. Cable Used	No. 2 C.P. Cable Used
Volts 12.0	Amps 28.0	Ohms .428		

Remarks: *no static test due to compressor connections at well head. Drilled to 250' logged to 230' Driller said water to be 105' no water sample Installed 250' of 1" PVC perforated vent pipe. Set 20' surface casing, 1 hr. rig time.

G B 4044.00

Rectifier Size: 40 V 16 A 669.00
Addn'l Depth
Depth Credit: 250' @ 3.50 — 875.00
Extra Cable: 160' @ .24 38.40
Ditch & 1 Cable: 195' @ .70 136.50
25' Meter Pole: 1 307.00
20' Meter Pole:
10' Stub Pole:

1 Junction Box 225.00
20' Surface casing 110.00
1 hr. rig time 138.00

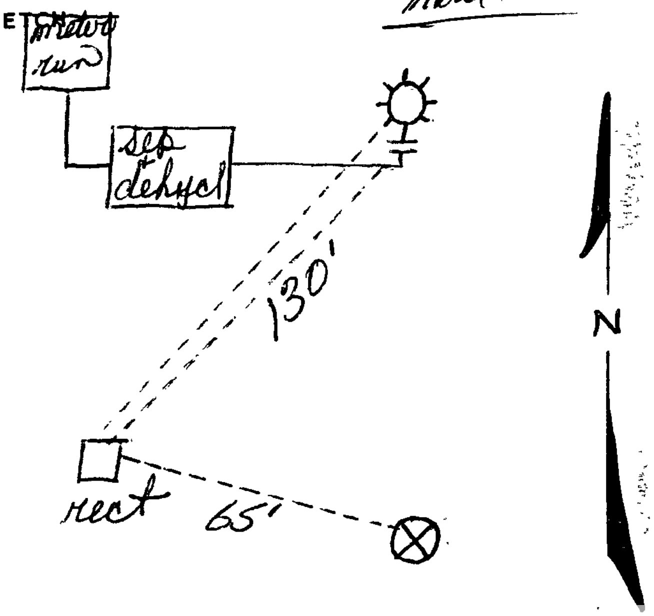
4822.90
tax 241.15
5064.05 (93 OK)

6600

All Construction Completed

Calvin Rodman
(Signature)

GROUND BED LAYOUT SKETCH



DATA SHEET NO. _____

COMPANY _____ JOB No: _____ DATE: 6-22-88

WELL: Duncan 171 E PIPELINE: _____

LOCATION: SEC. 36 TWP. 26 RGE. 10 CO. _____ STATE _____

ELEV. _____ FT: ROTARY 250 FT: CABLE TOOL 0 FT: CASING 20 FT

GROUNDBED: DEPTH 250 FT. DIA. 6 3/4 IN. GAS 4200 LBS. ANODES 10-2"x60" Type D

DEPTH, FT.	DRILLER'S LOG	EXPLORING ANODE TO STRUCTURE E	I	R	NO COKE I	WITH COKE I	ANODE NO.	DEPTH, TOP OF ANODES
50								
55								
60								
65								
70								
75								
80								
85								
90								
95								
100			1.6					
5			1.7					
10			1.7					
15			1.5					
20			1.9					
25			2.2					
30			2.4		2.9	5.4	(10)	130
35			2.4					
40			2.3		2.7	5.0	(9)	140
45			2.4					
50			2.5		2.8	5.6	(8)	160
55			2.4					
60			2.2		2.7	5.2	(7)	160
65			2.1					
70			2.2		2.5	3.2	(6)	170
75			2.1					
80			2.1		2.4	4.0	(5)	180
85			1.9					
90			2.0					
95			2.4					
200			2.0		2.5	5.8	(4)	200
5			2.3					
10			2.3		2.8	6.8	(3)	210
15			2.4					
20			2.5		3.0	7.6	(2)	225
25			2.3					
30			2.5		3.2	8.4	(1)	230
35			2.3					
40			2.0					
45								
50	T. D. 250							
55								

GROUNDBED RESISTANCE: (1) VOLTS 12.0 - AMPS 28.0 = .428 OHMS

(2) VIBROGROUND _____ OHMS

GENERAL CATHODIC PROTECTION SERVICES CO.

A LUKENS COMPANY

D. CRASS DRILLING CO.

1967

Drill No. 3

DRILLER'S WELL LOG

S. P. No. Huerfano 17-E DK 17-E Date 6-22-88

Client Meridian Oil Co. Prospect

County San Juan State New Mex.

If hole is a redrill or if moved from original staked position show distance and direction moved:

FROM	TO	FORMATION — COLOR — HARDNESS
0	20	Sand
20	50	Sandy Shale
50	90	Sandstone
90	105	Sand
105	260	Shale

Mud Bran Lime

Rock Bit Number Make

Remarks: Water @ 105'
Set 20' casing 1 Hr.

Driller Lonnie Brown

ENSOLUM

APPENDIX C

Executed C-138 Solid Waste Acceptance Form

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

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

Form C-138
Revised 08/01/11

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

REQUEST FOR APPROVAL TO ACCEPT SOLID WASTE

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

PayKey:AM14058
PM: ME Eddleman
AFE: Pending

2. Originating Site:
Trunk 2C

3. Location of Material (Street Address, City, State or ULSTR):
UL H Section 16 T26N R10W; 36.490370, -107.894467

October

4. Source and Description of Waste:
Source: Remediation activities associated with a natural gas pipeline leak.
Description: Hydrocarbon/Condensate impacted soil associated natural gas pipeline release.
Estimated Volume 50 (yd³ / bbls) Known Volume (to be entered by the operator at the end of the haul) 108/1 (yd³ / bbls)

5. GENERATOR CERTIFICATION STATEMENT OF WASTE STATUS

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

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

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

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

GENERATOR 19.15.36.15 WASTE TESTING CERTIFICATION STATEMENT FOR LANDFARMS

I, Thomas Long (Thomas Long) 8-10-2023, representative for Enterprise Products Operating authorizes Envirotech, Inc. to complete
Generator Signature
the required testing/sign the Generator Waste Testing Certification.

I, G. 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: Enterprise subcontractors.

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: 10/19/23
SIGNATURE: _____ TELEPHONE NO.: 505-632-0615
Surface Waste Management Facility Authorized Agent

ENSOLUM

APPENDIX D

Photographic Documentation

SITE PHOTOGRAPHS

Closure Report
Enterprise Field Services, LLC
Trunk 2C (10/24/23)
Ensolum Project No. 05A1226289

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Photograph 1 Photograph Description: View of the excavation.	
Photograph 2 Photograph Description: View of the excavation.	
Photograph 3 Photograph Description: View of the site after initial restoration.	

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APPENDIX E

Regulatory Correspondence

From:	Knight, Tami C.
To:	Long, Thomas; SLO Spills
Cc:	Stone, Brian; Kyle Summers
Subject:	[EXTERNAL] RE: Trunk 2C - UL H Section 16 T26N R10W; 36.490370, -107.894467; NMOCD Incident # nAPP2329746361
Date:	Tuesday, October 24, 2023 1:48:45 PM
Attachments:	image002.jpg image003.jpg image004.jpg image005.jpg image006.jpg

[Use caution with links/attachments]

Tom,

I am forwarding this email for you to our spills@slo.state.nm.us email. Please remember to submit all new spill notifications to this email address.

Thank you

PLEASE SUBMIT WORKPLANS AND REPORTS TO ECO@SLO.STATE.NM.US

Tami Knight, CHMM
Environmental Specialist
SRD-Environmental
Compliance Office (ECO)
505.670.1638
New Mexico State Land Office
1300 W. Broadway Avenue, Suite A
Bloomfield, NM 87413
tknight@slo.state.nm.us
nmstatelands.org

……

From: Long, Thomas <tjlong@eprod.com>
Sent: Tuesday, October 24, 2023 1:02 PM
To: 'Velez, Nelson, EMNRD' <Nelson.Velez@state.nm.us>; Knight, Tami C. <tknight@slo.state.nm.us>
Cc: Stone, Brian <bmstone@eprod.com>; Kyle Summers <ksummers@ensolum.com>
Subject: [EXTERNAL] Trunk 2C - UL H Section 16 T26N R10W; 36.490370, -107.894467; NMOCD

Incident # nAPP2329746361

Nelson/Tami,

This email is a notification that Enterprise has a release of natural gas and condensate from the Trunk C pipeline on October 19, 2023. No washes nor waterways were affected. No fire nor injuries occurred. Minimal liquids were observed on the ground surface. Enterprise determined the release reportable per NMOCD regulation today due the volume of impacted subsurface soil.

The email is also a variance request. Enterprise is requesting a variance for required 48-hour notification per 19.15.29.12D (1a) NMAC. Enterprise would like to collect closure samples on Wednesday, October 25, 2023 at 10:00 a.m.

Please acknowledge acceptance of this variance request.

If you have any questions, please call or email.

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

logo

ENSOLUM

APPENDIX F

Table 1 – Soil Analytical Summary

ENSOLUM

TABLE 1
Trunk 2C (10/24/23)
SOIL ANALYTICAL SUMMARY

Sample I.D.	Date	Sample Type C- Composite G - Grab	Sample Depth (feet)	Benzene (mg/kg)	Toluene (mg/kg)	Ethylbenzene (mg/kg)	Xylenes (mg/kg)	Total BTEX[1] (mg/kg)	TPH GRO (mg/kg)	TPH DRO (mg/kg)	TPH MRO (mg/kg)	Total Combined TPH (GRO/DRO/MRO)[1] (mg/kg)	Chloride (mg/kg)
New Mexico Energy, Mineral & Natural Resources Department Oil Conservation Division Closure Criteria (Tier I)				**10**	**NE**	**NE**	**NE**	**50**	**NE**	**NE**	**NE**	**100**	**600**
Composite Soil Samples From Soils Removed by Excavation and Transported to the Landfarm for Disposal/Remediation													
SP-1	10.25.23	C	Stockpile	<0.017	<0.034	<0.034	<0.068	ND	<3.4	57	99	**160**	<60
Excavation Composite Soil Samples													
S-1	10.25.23	C	7	<0.016	<0.033	<0.033	<0.065	ND	<3.3	<9.4	<47	ND	<60
S-2	10.25.23	C	0 to 7	<0.019	<0.038	<0.038	<0.075	ND	<3.8	<9.1	<46	ND	<60
S-3	10.25.23	C	0 to 7	<0.018	<0.035	<0.035	<0.071	ND	<3.5	46	51	97	<60
S-4	10.25.23	C	0 to 7	<0.020	<0.039	<0.039	<0.078	ND	<3.9	<8.6	<43	ND	<60
S-5	10.25.23	C	0 to 7	<0.018	<0.036	<0.036	<0.072	ND	<3.6	<9.7	<49	ND	<60

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

[1] *= Total combined concentrations are rounded to two (2) significant figures to match the laboratory resolution of the individual constituents.*

ND = Not Detected above the Practical Quantitation Limits (PQLs) or Reporting Limits (RLs)

NE = Not established

mg/kg = milligrams per kilogram

BTEX = Benzene, Toluene, Ethylbenzene, and Xylenes

TPH = Total Petroleum Hydrocarbons

GRO = Gasoline Range Organics

DRO = Diesel Range Organics

MRO = Motor Oil/Lube Oil Range Organics

ENSOLUM

APPENDIX G

Laboratory Data Sheets & Chain of Custody Documentation

Eurofins Environment Testing South Central, LLC
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com

November 02, 2023

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

RE: Trunk 2C Oct 2023 OrderNo.: 2310C24

Dear Kyle Summers:

Eurofins Environment Testing South Central, LLC received 6 sample(s) on 10/26/2023 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 do not hesitate to contact Eurofins Albuquerque 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 **2310C24**
Date Reported: **11/2/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: ENSOLUM
Client Sample ID: S-1
Project: Trunk 2C Oct 2023
Collection Date: 10/25/2023 10:00:00 AM
Lab ID: 2310C24-001 **Matrix:** SOIL **Received Date:** 10/26/2023 7:30:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **KCB**	
Chloride	ND	60		mg/Kg	20	10/26/2023 11:46:38 AM	78391
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **DGH**	
Diesel Range Organics (DRO)	ND	9.4		mg/Kg	1	10/26/2023 10:47:30 AM	78384
Motor Oil Range Organics (MRO)	ND	47		mg/Kg	1	10/26/2023 10:47:30 AM	78384
Surr: DNOP	102	69-147		%Rec	1	10/26/2023 10:47:30 AM	78384
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **KMN**	
Gasoline Range Organics (GRO)	ND	3.3		mg/Kg	1	10/26/2023 11:36:00 AM	GS10075
Surr: BFB	106	15-244		%Rec	1	10/26/2023 11:36:00 AM	GS10075
EPA METHOD 8021B: VOLATILES						Analyst: **KMN**	
Benzene	ND	0.016		mg/Kg	1	10/26/2023 11:36:00 AM	BS10075
Toluene	ND	0.033		mg/Kg	1	10/26/2023 11:36:00 AM	BS10075
Ethylbenzene	ND	0.033		mg/Kg	1	10/26/2023 11:36:00 AM	BS10075
Xylenes, Total	ND	0.065		mg/Kg	1	10/26/2023 11:36:00 AM	BS10075
Surr: 4-Bromofluorobenzene	89.0	39.1-146		%Rec	1	10/26/2023 11:36:00 AM	BS10075

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	Above Quantitation Range/Estimated Value
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 standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order **2310C24**
Date Reported: **11/2/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: ENSOLUM
Client Sample ID: S-2
Project: Trunk 2C Oct 2023
Collection Date: 10/25/2023 10:05:00 AM
Lab ID: 2310C24-002 **Matrix:** SOIL **Received Date:** 10/26/2023 7:30:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **KCB**	
Chloride	ND	60		mg/Kg	20	10/26/2023 11:59:03 AM	78391
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **DGH**	
Diesel Range Organics (DRO)	ND	9.1		mg/Kg	1	10/26/2023 10:58:04 AM	78384
Motor Oil Range Organics (MRO)	ND	46		mg/Kg	1	10/26/2023 10:58:04 AM	78384
Surr: DNOP	104	69-147		%Rec	1	10/26/2023 10:58:04 AM	78384
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **KMN**	
Gasoline Range Organics (GRO)	ND	3.8		mg/Kg	1	10/26/2023 11:57:00 AM	GS10075
Surr: BFB	106	15-244		%Rec	1	10/26/2023 11:57:00 AM	GS10075
EPA METHOD 8021B: VOLATILES						Analyst: **KMN**	
Benzene	ND	0.019		mg/Kg	1	10/26/2023 11:57:00 AM	BS10075
Toluene	ND	0.038		mg/Kg	1	10/26/2023 11:57:00 AM	BS10075
Ethylbenzene	ND	0.038		mg/Kg	1	10/26/2023 11:57:00 AM	BS10075
Xylenes, Total	ND	0.075		mg/Kg	1	10/26/2023 11:57:00 AM	BS10075
Surr: 4-Bromofluorobenzene	91.5	39.1-146		%Rec	1	10/26/2023 11:57:00 AM	BS10075

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	Above Quantitation Range/Estimated Value
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 standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order **2310C24**
Date Reported: **11/2/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: ENSOLUM
Client Sample ID: S-3
Project: Trunk 2C Oct 2023
Collection Date: 10/25/2023 10:10:00 AM
Lab ID: 2310C24-003 **Matrix:** SOIL **Received Date:** 10/26/2023 7:30:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **KCB**	
Chloride	ND	60		mg/Kg	20	10/26/2023 12:11:28 PM	78391
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **DGH**	
Diesel Range Organics (DRO)	46	9.7		mg/Kg	1	10/26/2023 12:35:57 PM	78384
Motor Oil Range Organics (MRO)	51	48		mg/Kg	1	10/26/2023 12:35:57 PM	78384
Surr: DNOP	109	69-147		%Rec	1	10/26/2023 12:35:57 PM	78384
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **KMN**	
Gasoline Range Organics (GRO)	ND	3.5		mg/Kg	1	10/26/2023 12:19:00 PM	GS10075
Surr: BFB	101	15-244		%Rec	1	10/26/2023 12:19:00 PM	GS10075
EPA METHOD 8021B: VOLATILES						Analyst: **KMN**	
Benzene	ND	0.018		mg/Kg	1	10/26/2023 12:19:00 PM	BS10075
Toluene	ND	0.035		mg/Kg	1	10/26/2023 12:19:00 PM	BS10075
Ethylbenzene	ND	0.035		mg/Kg	1	10/26/2023 12:19:00 PM	BS10075
Xylenes, Total	ND	0.071		mg/Kg	1	10/26/2023 12:19:00 PM	BS10075
Surr: 4-Bromofluorobenzene	91.4	39.1-146		%Rec	1	10/26/2023 12:19:00 PM	BS10075

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	Above Quantitation Range/Estimated Value
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 standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order **2310C24**
Date Reported: **11/2/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: ENSOLUM
Client Sample ID: S-4
Project: Trunk 2C Oct 2023
Collection Date: 10/25/2023 10:15:00 AM
Lab ID: 2310C24-004 **Matrix:** SOIL **Received Date:** 10/26/2023 7:30:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **KCB**	
Chloride	ND	60		mg/Kg	20	10/26/2023 12:23:53 PM	78391
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **DGH**	
Diesel Range Organics (DRO)	ND	8.6		mg/Kg	1	10/26/2023 11:19:16 AM	78384
Motor Oil Range Organics (MRO)	ND	43		mg/Kg	1	10/26/2023 11:19:16 AM	78384
Surr: DNOP	102	69-147		%Rec	1	10/26/2023 11:19:16 AM	78384
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **KMN**	
Gasoline Range Organics (GRO)	ND	3.9		mg/Kg	1	10/26/2023 12:41:00 PM	GS10075
Surr: BFB	103	15-244		%Rec	1	10/26/2023 12:41:00 PM	GS10075
EPA METHOD 8021B: VOLATILES						Analyst: **KMN**	
Benzene	ND	0.020		mg/Kg	1	10/26/2023 12:41:00 PM	BS10075
Toluene	ND	0.039		mg/Kg	1	10/26/2023 12:41:00 PM	BS10075
Ethylbenzene	ND	0.039		mg/Kg	1	10/26/2023 12:41:00 PM	BS10075
Xylenes, Total	ND	0.078		mg/Kg	1	10/26/2023 12:41:00 PM	BS10075
Surr: 4-Bromofluorobenzene	88.2	39.1-146		%Rec	1	10/26/2023 12:41:00 PM	BS10075

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	Above Quantitation Range/Estimated Value
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 standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order **2310C24**
Date Reported: **11/2/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: ENSOLUM
Client Sample ID: S-5
Project: Trunk 2C Oct 2023
Collection Date: 10/25/2023 10:20:00 AM
Lab ID: 2310C24-005 **Matrix:** SOIL **Received Date:** 10/26/2023 7:30:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **KCB**	
Chloride	ND	60		mg/Kg	20	10/26/2023 12:36:18 PM	78391
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **DGH**	
Diesel Range Organics (DRO)	ND	9.7		mg/Kg	1	10/26/2023 11:29:56 AM	78384
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	10/26/2023 11:29:56 AM	78384
Surr: DNOP	109	69-147		%Rec	1	10/26/2023 11:29:56 AM	78384
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **KMN**	
Gasoline Range Organics (GRO)	ND	3.6		mg/Kg	1	10/26/2023 1:02:00 PM	GS10075
Surr: BFB	102	15-244		%Rec	1	10/26/2023 1:02:00 PM	GS10075
EPA METHOD 8021B: VOLATILES						Analyst: **KMN**	
Benzene	ND	0.018		mg/Kg	1	10/26/2023 1:02:00 PM	BS10075
Toluene	ND	0.036		mg/Kg	1	10/26/2023 1:02:00 PM	BS10075
Ethylbenzene	ND	0.036		mg/Kg	1	10/26/2023 1:02:00 PM	BS10075
Xylenes, Total	ND	0.072		mg/Kg	1	10/26/2023 1:02:00 PM	BS10075
Surr: 4-Bromofluorobenzene	86.5	39.1-146		%Rec	1	10/26/2023 1:02:00 PM	BS10075

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	Above Quantitation Range/Estimated Value
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 standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order **2310C24**
Date Reported: **11/2/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: ENSOLUM
Client Sample ID: SP-1
Project: Trunk 2C Oct 2023
Collection Date: 10/25/2023 10:25:00 AM
Lab ID: 2310C24-006 **Matrix:** SOIL **Received Date:** 10/26/2023 7:30:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **KCB**	
Chloride	ND	60		mg/Kg	20	10/26/2023 12:48:43 PM	78391
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **DGH**	
Diesel Range Organics (DRO)	57	8.9		mg/Kg	1	10/26/2023 11:40:36 AM	78384
Motor Oil Range Organics (MRO)	99	44		mg/Kg	1	10/26/2023 11:40:36 AM	78384
Surr: DNOP	107	69-147		%Rec	1	10/26/2023 11:40:36 AM	78384
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **KMN**	
Gasoline Range Organics (GRO)	ND	3.4		mg/Kg	1	10/26/2023 1:24:00 PM	GS10075
Surr: BFB	110	15-244		%Rec	1	10/26/2023 1:24:00 PM	GS10075
EPA METHOD 8021B: VOLATILES						Analyst: **KMN**	
Benzene	ND	0.017		mg/Kg	1	10/26/2023 1:24:00 PM	BS10075
Toluene	ND	0.034		mg/Kg	1	10/26/2023 1:24:00 PM	BS10075
Ethylbenzene	ND	0.034		mg/Kg	1	10/26/2023 1:24:00 PM	BS10075
Xylenes, Total	ND	0.068		mg/Kg	1	10/26/2023 1:24:00 PM	BS10075
Surr: 4-Bromofluorobenzene	88.5	39.1-146		%Rec	1	10/26/2023 1:24:00 PM	BS10075

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	Above Quantitation Range/Estimated Value
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 standard limits. If undiluted results may be estimated.		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2310C24**

02-Nov-23

Client: ENSOLUM

Project: Trunk 2C Oct 2023

Sample ID: **MB-78391**	SampType: **mblk**	TestCode: **EPA Method 300.0: Anions**
Client ID: **PBS**	Batch ID: **78391**	RunNo: **100758**
Prep Date: **10/26/2023**	Analysis Date: **10/26/2023**	SeqNo: **3696871** Units: **mg/Kg**

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

Sample ID: **LCS-78391**	SampType: **lcs**	TestCode: **EPA Method 300.0: Anions**
Client ID: **LCSS**	Batch ID: **78391**	RunNo: **100758**
Prep Date: **10/26/2023**	Analysis Date: **10/26/2023**	SeqNo: **3696872** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	14	1.5	15.00	0	91.1	90	110			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.
B	Analyte detected in the associated Method Blank
E	Above Quantitation Range/Estimated Value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2310C24**

02-Nov-23

Client: ENSOLUM

Project: Trunk 2C Oct 2023

Sample ID: **LCS-78309**	SampType: **LCS**	TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **LCSS**	Batch ID: **78309**	RunNo: **100752**
Prep Date: **10/23/2023**	Analysis Date: **10/26/2023**	SeqNo: **3695386** Units: **%Rec**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: DNOP	5.6		5.000		111	69	147			

Sample ID: **LCS-78384**	SampType: **LCS**	TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **LCSS**	Batch ID: **78384**	RunNo: **100752**
Prep Date: **10/26/2023**	Analysis Date: **10/26/2023**	SeqNo: **3695387** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	47	10	50.00	0	94.7	61.9	130			
Surr: DNOP	5.5		5.000		111	69	147			

Sample ID: **MB-78384**	SampType: **MBLK**	TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **PBS**	Batch ID: **78384**	RunNo: **100752**
Prep Date: **10/26/2023**	Analysis Date: **10/26/2023**	SeqNo: **3695388** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	ND	10								
Motor Oil Range Organics (MRO)	ND	50								
Surr: DNOP	9.4		10.00		93.9	69	147			

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 standard limits. If undiluted results may be estimated.
B	Analyte detected in the associated Method Blank
E	Above Quantitation Range/Estimated Value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2310C24**

02-Nov-23

Client: ENSOLUM

Project: Trunk 2C Oct 2023

Sample ID: **2.5ug gro lcs**	SampType: **LCS**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **LCSS**	Batch ID: **GS100755**	RunNo: **100755**
Prep Date:	Analysis Date: **10/26/2023**	SeqNo: **3695588** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	24	5.0	25.00	0	97.0	70	130			
Surr: BFB	2300		1000		228	15	244			

Sample ID: **mb**	SampType: **MBLK**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **PBS**	Batch ID: **GS100755**	RunNo: **100755**
Prep Date:	Analysis Date: **10/26/2023**	SeqNo: **3695589** 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	1100		1000		107	15	244			

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 standard limits. If undiluted results may be estimated.
B	Analyte detected in the associated Method Blank
E	Above Quantitation Range/Estimated Value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2310C24**

02-Nov-23

Client: ENSOLUM

Project: Trunk 2C Oct 2023

Sample ID: **100ng btex lcs**	SampType: **LCS**	TestCode: **EPA Method 8021B: Volatiles**
Client ID: **LCSS**	Batch ID: **BS100755**	RunNo: **100755**
Prep Date:	Analysis Date: **10/26/2023**	SeqNo: **3695576** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.90	0.025	1.000	0	89.9	70	130			
Toluene	0.91	0.050	1.000	0	90.7	70	130			
Ethylbenzene	0.93	0.050	1.000	0	92.9	70	130			
Xylenes, Total	2.8	0.10	3.000	0	92.6	70	130			
Surr: 4-Bromofluorobenzene	0.93		1.000		93.4	39.1	146			

Sample ID: **mb**	SampType: **MBLK**	TestCode: **EPA Method 8021B: Volatiles**
Client ID: **PBS**	Batch ID: **BS100755**	RunNo: **100755**
Prep Date:	Analysis Date: **10/26/2023**	SeqNo: **3695577** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	0.025								
Toluene	ND	0.050								
Ethylbenzene	ND	0.050								
Xylenes, Total	ND	0.10								
Surr: 4-Bromofluorobenzene	0.93		1.000		93.2	39.1	146			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.
B	Analyte detected in the associated Method Blank
E	Above Quantitation Range/Estimated Value
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 | Work Order Number: 2310C24 | RcptNo: 1

Received By: Juan Rojas | 10/26/2023 7:30:00 AM

Completed By: Juan Rojas 10/26/23

Reviewed By: SCM 10/26/23

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. Received at least 1 vial with headspace <1/4" for AQ VOA?	Yes ☐	No ☐	NA ☑
10. Were any sample containers received broken?	Yes ☐	No ☑	
11. Does paperwork match bottle labels? (Note discrepancies on chain of custody)	Yes ☑	No ☐	
12. Are matrices correctly identified on Chain of Custody?	Yes ☑	No ☐	
13. Is it clear what analyses were requested?	Yes ☑	No ☐	
14. Were all holding times able to be met? (If no, notify customer for authorization.)	Yes ☑	No ☐	

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

Adjusted? _____

Checked by: JM 10/26/23

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:

Client missing phone number, on COC. JR 10/26/23

17. **Cooler Information**

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	3.0	Good	Yes	Yogi		

Chain-of-Custody Record

Client: Ensolum, LLC

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

Phone #:

email or Fax#: ksummers@ensolum.com

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

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

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

Project Name: Trunk 2C (Oct. 2023)

Project #: SEE NOTES

Project Manager: K. Summers

Sampler: L. Daniell

On Ice: ☒ Yes ☐ No

# of Coolers: 1 Yogi

Cooler Temp(including CF): 3.1+(-0.1)=3.0 (°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. 731024	BTEX / MIBE / 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)
10/25/23	10:00	S	S-1	1 4oz jar	Cool	-001	X	X					X			
	10:05	S	S-2			-002	X	X					X			
	10:10	S	S-3			-003	X	X					X			
	10:15	S	S-4			-004	X	X					X			
	10:20	S	S-5			-005	X	X					X			
↓	10:25	S	SP-1	↓	↓	-006	X	X					X			

Date:	Time:	Relinquished by:	Received by:	Via:	Date	Time
10/25/23	1629		Christen Walker		10/25/23	1629
10/25/23	1748	Christen Walker		courier	10/26/23	7:30

Remarks: PM Tom Long
Pay Key: RB21200
Non AFE# N67904
Same Day

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

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

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

CONDITIONS

Action 289747

CONDITIONS

Operator: Enterprise Field Services, LLC PO Box 4324 Houston, TX 77210	OGRID: 241602
	Action Number: 289747
	Action Type: [C-141] Release Corrective Action (C-141)

CONDITIONS

Created By	Condition	Condition Date
nvelez	None	3/12/2024