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

State of New Mexico
Energy Minerals and Natural Resources Department

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

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

Incident ID	
District RP	
Facility ID	
Application ID	

Release Notification

Responsible Party

Responsible Party: **Enterprise Field Services, LLC**	OGRID: **151618**
Contact Name: **Thomas Long**	Contact Telephone: **505-599-2286**
Contact email:**tjlong@eprod.com**	**Incident #** *(assigned by OCD)*: **NAPP2100420454**
Contact mailing address: **614 Reilly Ave, Farmington, NM 87401**	

Location of Release Source

Latitude **36.638245** Longitude **-107.773088** *(NAD 83 in decimal degrees to 5 decimal places)*

Site Name **Storey C LS #7**	Site Type **Natural Gas Gathering Pipeline**
Date Release Discovered: **12/18/2020**	Serial Number *(if applicable)*: **NM 001162**

Unit Letter	Section	Township	Range	County
A	**27**	**28N**	**9W**	**San Juan**

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

Nature and Volume of Release

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

☐ Crude Oil	Volume Released (bbls)	Volume Recovered (bbls)
☐ Produced Water	Volume Released (bbls)	Volume Recovered (bbls)
	Is the concentration of dissolved chloride in the produced water >10,000 mg/l?	☐ Yes ☐ No
☒ Condensate	Volume Released (bbls): **5-10 Barrels**	Volume Recovered (bbls): **None**
☒ Natural Gas	Volume Released (Mcf): **< 1 MCF**	Volume Recovered (Mcf): **None**
☐ Other (describe)	Volume/Weight Released (provide units):	Volume/Weight Recovered (provide units)

Cause of Release: On December 18, 2020, Enterprise had a release of natural gas and natural gas liquids from the Storey C LS #7 meter tube. An area of approximately 20 feet long and 10 feet wide was impacted by the released fluids. No washes/waterways were affected. The meter tube was isolated, depressurized, locked and tagged out. Enterprise began remediation on December 23, 2020 and determined the release reportable per NMOCD regulation on December 28, 2020 due to the volume of impacted soil. Remediation was completed on December 30, 20202. The final excavation dimensions measured approximately 30 feet long by 19 feet wide by 5 feet deep. Approximately 70 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: Jon E. Fields Title: Director, Environmental

Signature: Jon E. Fields Date: 3/11/2021

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

OCD Only

Received by: Date:

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

Closure Approved by: Nelson Velez Date: 06/10/2022

Printed Name: Nelson Velez Title: Environmental Specialist – Adv

ENSOLUM

CLOSURE REPORT

Property:

Storey C LS #7 (12/18/20)
NE ¼, S27 T28N R9W
San Juan County, New Mexico

March 4, 2021
Ensolum Project No. 05A1226129

Prepared for:

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

Prepared by:

Chad D'Aponti
Field Environmental Scientist

Ranee Deechilly
Environmental Scientist

Kyle Summers, CPG
Sr. Project Manager

Table of Contents

1.0 INTRODUCTION 1
1.1 Site Description & Background 1
1.2 Project Objective 1

2.0 CLOSURE CRITERIA 1

3.0 SOIL REMEDIATION ACTIVITIES 3

4.0 SOIL SAMPLING PROGRAM 3

5.0 SOIL LABORATORY ANALYTICAL METHODS 4

6.0 DATA EVALUATION 4

7.0 RECLAMATION AND REVEGETATION 4

8.0 FINDINGS AND RECOMMENDATION 5

9.0 STANDARDS OF CARE, LIMITATIONS, AND RELIANCE 5
9.1 Standard of Care 5
9.2 Limitations 5
9.3 Reliance 5

LIST OF APPENDICES

Appendix A: Figures
Figure 1 Topographic Map
Figure 2 Site Vicinity Map
Figure 3 Site Map

Appendix B: Siting Figures and Documentation
Figure A 1.0 Mile Radius Water Well Map
Figure B Cathodic Protection Well Recorded Depth to Water
Figure C 300 Foot Radius Watercourse and Drainage Identification
Figure D 300 Foot Radius Occupied Structure Identification
Figure E Water Well and Natural Spring Location
Figure F Wetlands
Figure G Mines, Mills, and Quarries
Figure H 100-Year Flood Plain Map

Appendix C: Executed C-138 Solid Waste Acceptance Form

Appendix D: Photographic Documentation

Appendix E: Regulatory Correspondence

Appendix F: Table 1 - Soil Analytical Summary

Appendix G: Laboratory Data Sheets & Chain of Custody Documentation

ENSOLUM

CLOSURE REPORT

Storey C LS #7 (12/18/20)
NE ¼, S27 T28N R9W
San Juan County, New Mexico

Ensolum Project No. 05A1226129

1.0 INTRODUCTION

1.1 Site Description & Background

Operator:	Enterprise Field Services, LLC / Enterprise Products Operating LLC (Enterprise)
Site Name:	Storey C LS #7 (12/18/20) (Site)
Incident ID	NAPP2100420454
Location:	36.638245 ° North, 107.773088 ° West Northeast (NE) ¼ of Section 27, Township 28 North, Range 9 West San Juan County, New Mexico
Property:	United States Bureau of Land Management (BLM)
Regulatory:	New Mexico Energy, Minerals and Natural Resources Department (EMNRD) Oil Conservation Division (OCD)

On December 18, 2020, Enterprise personnel discovered a release of condensate from a pipeline valve at the Storey C LS #7 well pad. Enterprise subsequently isolated, locked the pipeline out of service, and repaired the valve. On December 23, 2020, Enterprise initiated activities to remediate potential petroleum hydrocarbon impact resulting from the release.

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

1.2 Project Objective

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

2.0 CLOSURE CRITERIA

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

- The OSE tracks the usage and assignment of water rights and water well installations and records this information in the Water Rights Reporting System (WRRS) database. Water wells and other points of diversion (PODs) are each assigned POD numbers in the database (which is searchable

and includes an interactive map). No PODs were identified within a one (1) mile radius of the Site in the OSE WRRS database. In addition, no PODs were identified in the adjacent Public Land Survey System (PLSS) sections (**Figure A**, **Appendix B**).

- Nine (9) cathodic protection wells were identified within one (1) mile of the Site as well as in adjacent PLSS sections. The closest cathodic protection well (associated with the Hancock #9, Lackey #1A, #2, and #7 productions wells) is located approximately 0.7 miles southeast of the Site and at a lower elevation (6,160 feet, based on the well record) than the Site (6,824 feet). The record for this cathodic well indicates a depth to water of approximately 160 feet below grade surface (bgs). The record for the cathodic protection well associated with the Hancock #3A oil/gas well location (located approximately 0.95 miles northwest of the Site and at a lower elevation (6,165 feet, based on the well record) than the Site) indicates a depth to water of approximately 40 feet bgs. The record for the cathodic protection well associated with the Lackey H #709, #1, and #5 oil/gas wells (located approximately 0.9 miles southeast of the Site and at a lower elevation (5,994 feet) than the Site) indicates a depth to water of approximately 110 feet bgs. The remaining cathodic well records for wells located over one (1) mile of the Site but in adjacent PLSS sections indicate water depths ranging from 40 feet bgs to 360 feet bgs (**Figure B**, **Appendix B**).

- The Site is not located within 300 feet of a New Mexico 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 fresh water wells used by less than five (5) households for domestic or stock watering purposes were identified within 500 feet of the Site (**Figure E**, **Appendix B**).

- No fresh water 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 located within 300 feet of a wetland (**Figure F**, **Appendix B**).

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

- The Site is not located within an unstable area.

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

Based on the identified siting criteria the estimated depth to water is greater than 100 feet. However, the soil requirements of NMAC 19.15.29.13(D)(1) indicate that a minimum of the upper four (4) feet must contain "uncontaminated" soil and that the soils meet Tier I closure criteria listed in Table 1 of NMAC

19.15.29.12. Petroleum hydrocarbon impact was not encountered below five (5) feet bgs, resulting in the following closure criteria:

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

3.0 SOIL REMEDIATION ACTIVITIES

On December 23, 2020, Enterprise initiated activities to remediate petroleum hydrocarbon impact. During the remediation and corrective action activities, OFT Construction Inc., provided heavy equipment and labor support, while Ensolum provided environmental consulting support.

The final excavation measured approximately 30 feet long and 19 feet wide at the maximum extents. The maximum depth of the excavation measured approximately five (5) feet bgs.

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

Approximately 70 cubic yards of petroleum hydrocarbon affected soils was transported to the Envirotech, Inc., (Envirotech) landfarm near Hilltop, New Mexico for disposal/remediation. The executed C-138 solid waste acceptance form is provided in **Appendix C**. The excavation was backfilled with imported fill and then contoured to the surrounding grade.

The map in **Figure 3** (**Appendix A**) 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 eight (8) composite soil samples (S-1 through S-8) from the excavation for laboratory analysis. The composite samples were comprised of five (5) aliquots each and represent an estimated 200 square foot sample area per guidelines outlined in 19.15.29.12 Section D NMAC. A clean shovel was utilized to obtain fresh aliquots from each area of the excavation.

On December 30, 2020, sampling was performed at the Site. Regulatory correspondence is provided in **Appendix E**.

Composite soil samples S-1 (0'-4'), S-2 (4'-5'), S-3 (0'-4'), S-4 (4'-5'), and S-5 (0'-3') were collected from the walls of the excavation. Composite soil samples S-6 (5'), S-7 (3'), and S-8 (0'-1') were collected from the floor of excavation.

The soil samples were 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 Hall Environmental Analysis Laboratory of Albuquerque, New Mexico, under proper chain-of-custody procedures.

5.0 SOIL LABORATORY ANALYTICAL METHODS

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

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

6.0 DATA EVALUATION

Ensolum compared the BTEX, TPH, and chloride laboratory analytical results or laboratory practical quantitation limits (PQLs) / reporting limits (RLs) associated with the composite soil samples (S-1 through S-8) to the applicable New Mexico EMNRD OCD closure criteria.

- 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 applicable New Mexico EMNRD OCD closure criteria of 10 milligrams per kilogram (mg/kg).

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

- The laboratory analytical result for composite soil sample S-5 indicates a combined TPH GRO/DRO/MRO concentration of 37 mg/kg, which does not exceed the applicable New Mexico EMNRD OCD closure criteria of 100 mg/kg. The laboratory analytical results for the remaining composite soil samples indicate combined TPH GRO/DRO/MRO is not present at concentrations greater than the laboratory PQLs/RLs, which are less than the applicable New Mexico 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 are less than the applicable New Mexico EMNRD OCD closure criteria of 600 mg/kg for chlorides.

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

7.0 RECLAMATION AND REVEGETATION

The excavation was backfilled with imported soil and then contoured to surrounding grade. The area near the meter run is a driving area.

8.0 FINDINGS AND RECOMMENDATION

- Eight (8) composite soil samples were collected from the excavation. Based on laboratory analytical results, no benzene, BTEX, chloride, or combined TPH GRO/DRO/MRO exceedances were identified in the soils remaining at the Site.

- Approximately 70 cubic yards of petroleum hydrocarbon impacted soil was transported to the Envirotech landfarm for disposal/remediation. The excavation was backfilled with imported fill and then contoured to the surrounding grade.

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

9.0 STANDARDS OF CARE, LIMITATIONS, AND RELIANCE

9.1 Standard of Care

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

9.2 Limitations

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

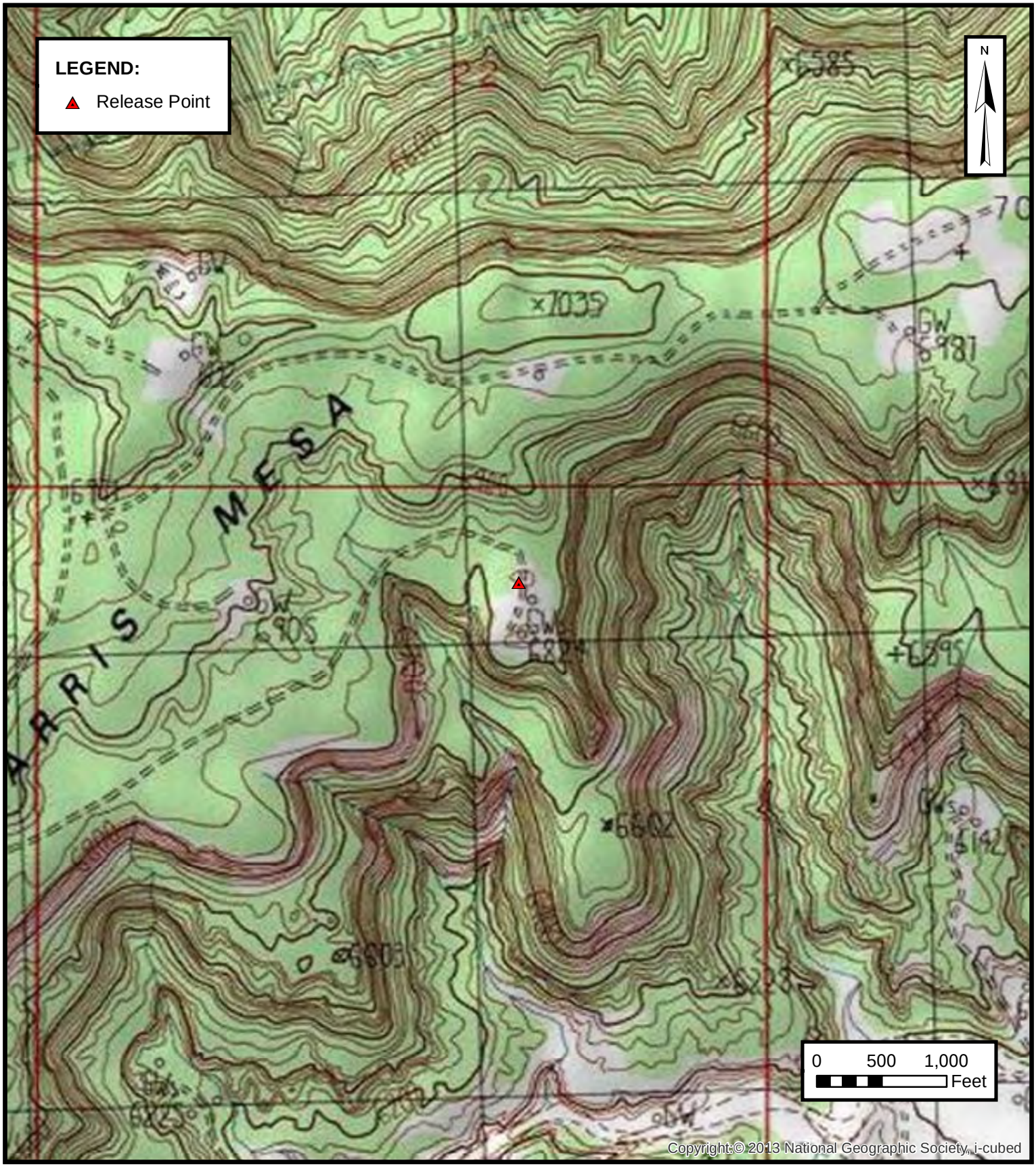
9.3 Reliance

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

ENSOLUM

APPENDIX A

Figures



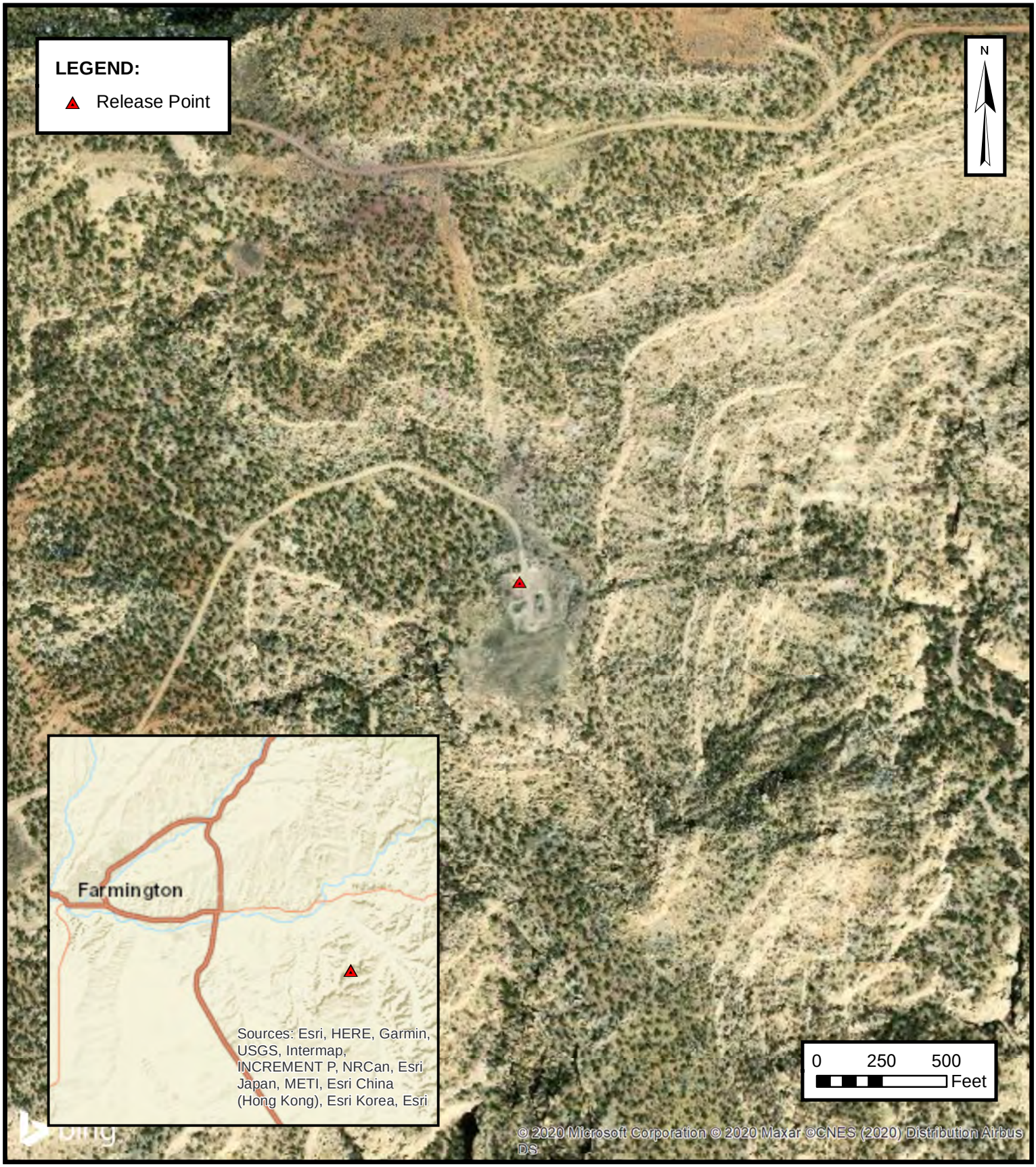
ENSOLUM
Environmental & Hydrogeologic Consultants

TOPOGRAPHIC MAP

ENTERPRISE FIELD SERVICES, LLC
STOREY C LS #7 (12/18/20)
NE ¼, S27 T28N R9W, San Juan County, New Mexico
36.638245° N, 107.773088° W

PROJECT NUMBER: 05A1226129

FIGURE
1



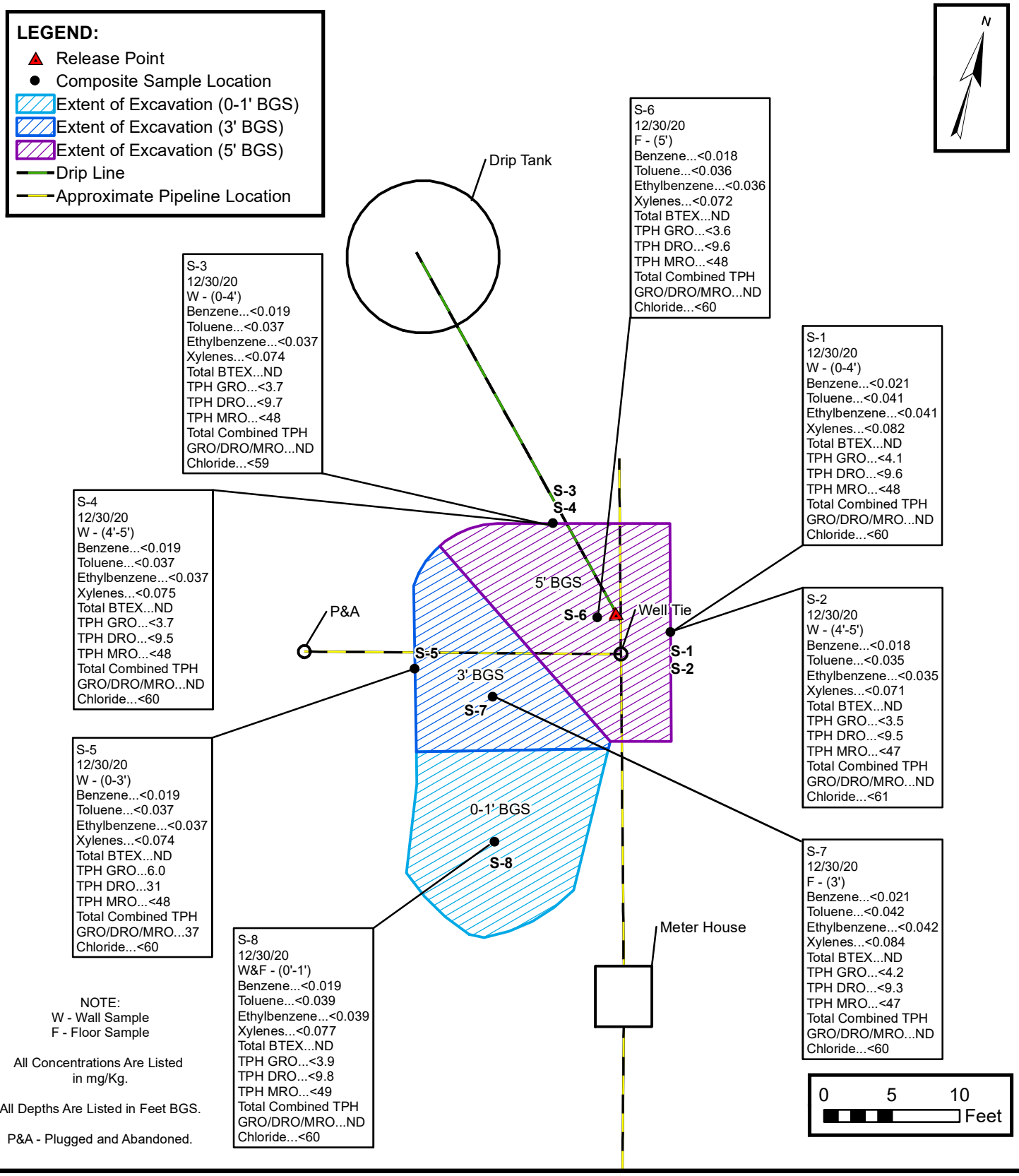
ENSOLUM
Environmental & Hydrogeologic Consultants

SITE VICINITY MAP

ENTERPRISE FIELD SERVICES, LLC
STOREY C LS #7 (12/18/20)
NE ¼, S27 T28N R9W, San Juan County, New Mexico
36.638245° N, 107.773088° W

PROJECT NUMBER: 05A1226129

FIGURE
2



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SITE MAP

ENTERPRISE FIELD SERVICES, LLC
STOREY C LS #7 (12/18/20)
NE ¼, S27 T28N R9W, San Juan County, New Mexico
36.638245° N, 107.773088° W

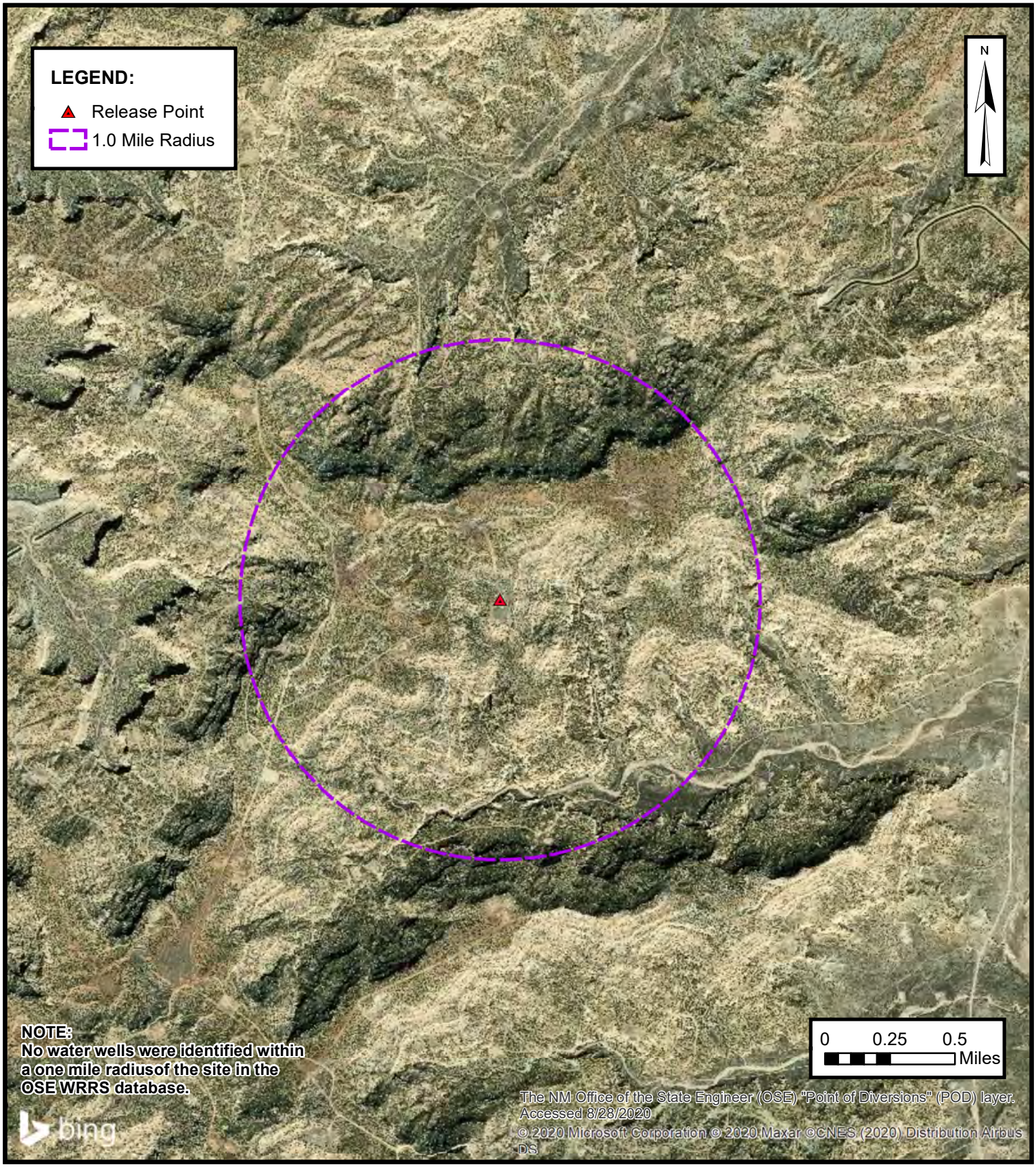
PROJECT NUMBER: 05A1226129

FIGURE
3

ENSOLUM

APPENDIX B

Siting Figures and Documentation



ENSOLUM
Environmental & Hydrogeologic Consultants

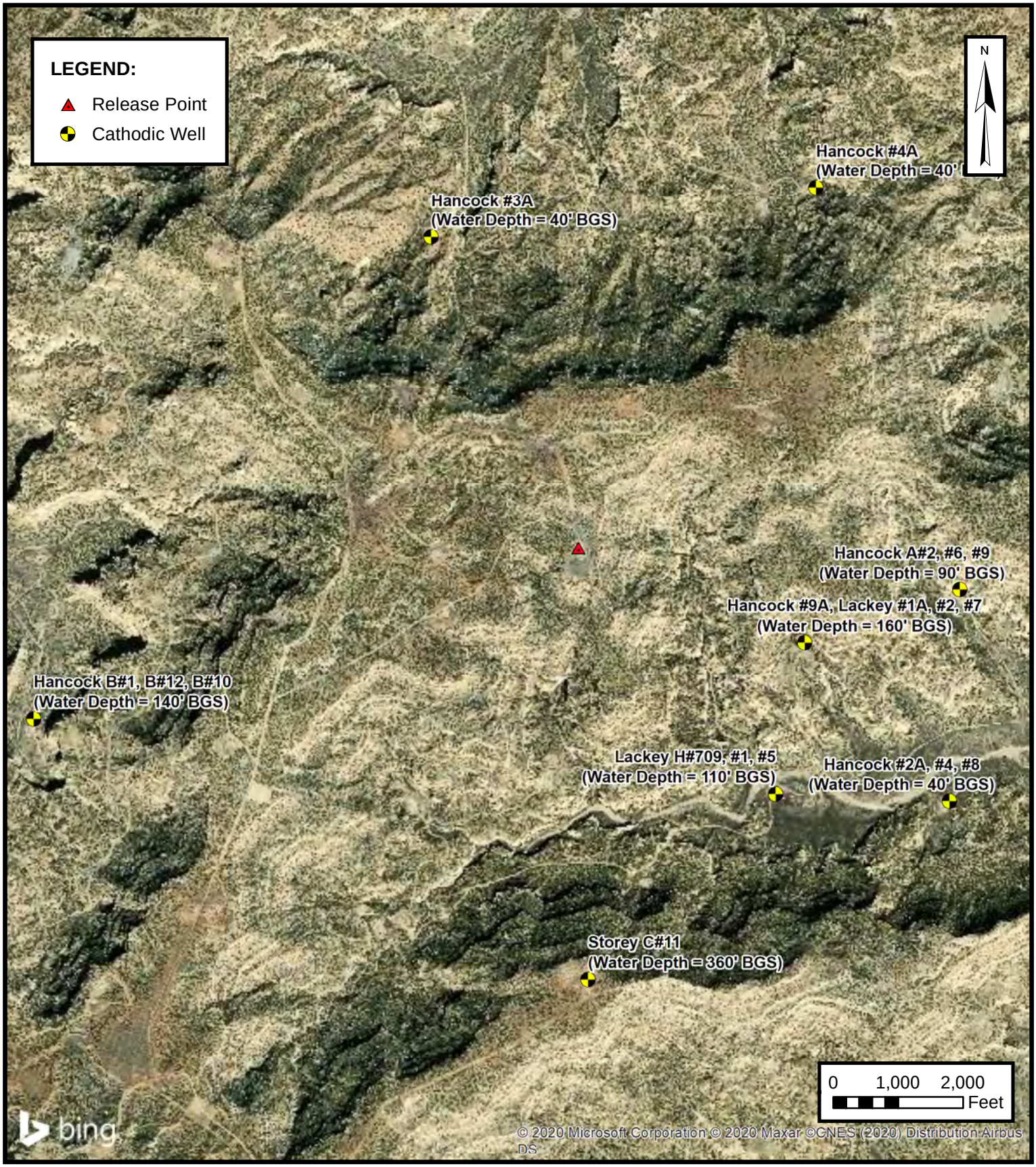
1.0 MILE RADIUS WATER WELL MAP

ENTERPRISE FIELD SERVICES, LLC
STOREY C LS #7 (12/18/20)
NE ¼, S27 T28N R9W, San Juan County, New Mexico
36.638245° N, 107.773088° W

PROJECT NUMBER: 05A1226129

FIGURE

A



ENSOLUM
Environmental & Hydrogeologic Consultants

CATHODIC PROTECTION WELL RECORDED DEPTH TO WATER

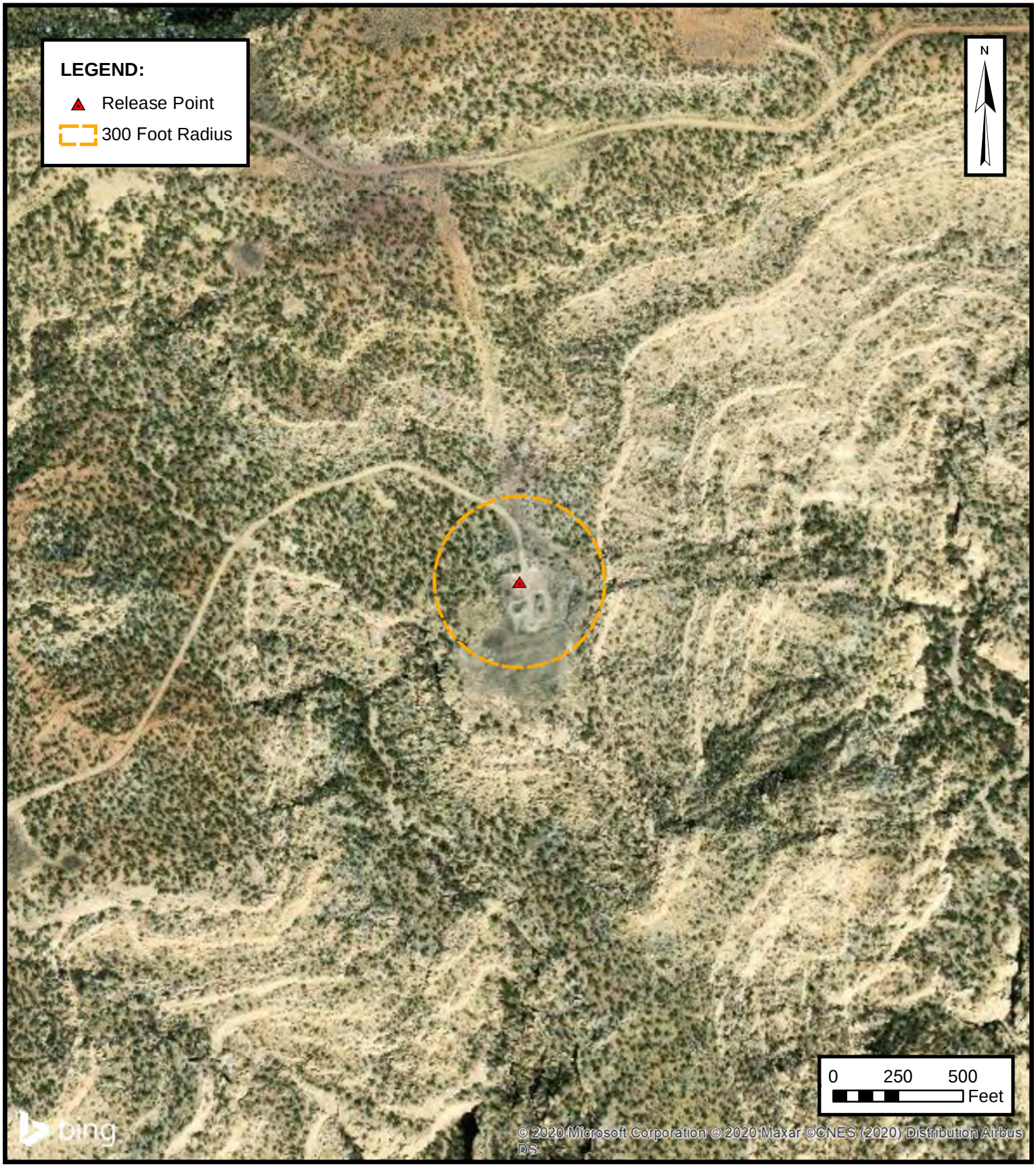
ENTERPRISE FIELD SERVICES, LLC STOREY C LS #7 (12/18/20)

NE ¼, S27 T28N R9W, San Juan County, New Mexico
36.638245° N, 107.773088° W

PROJECT NUMBER: 05A1226129

FIGURE

B

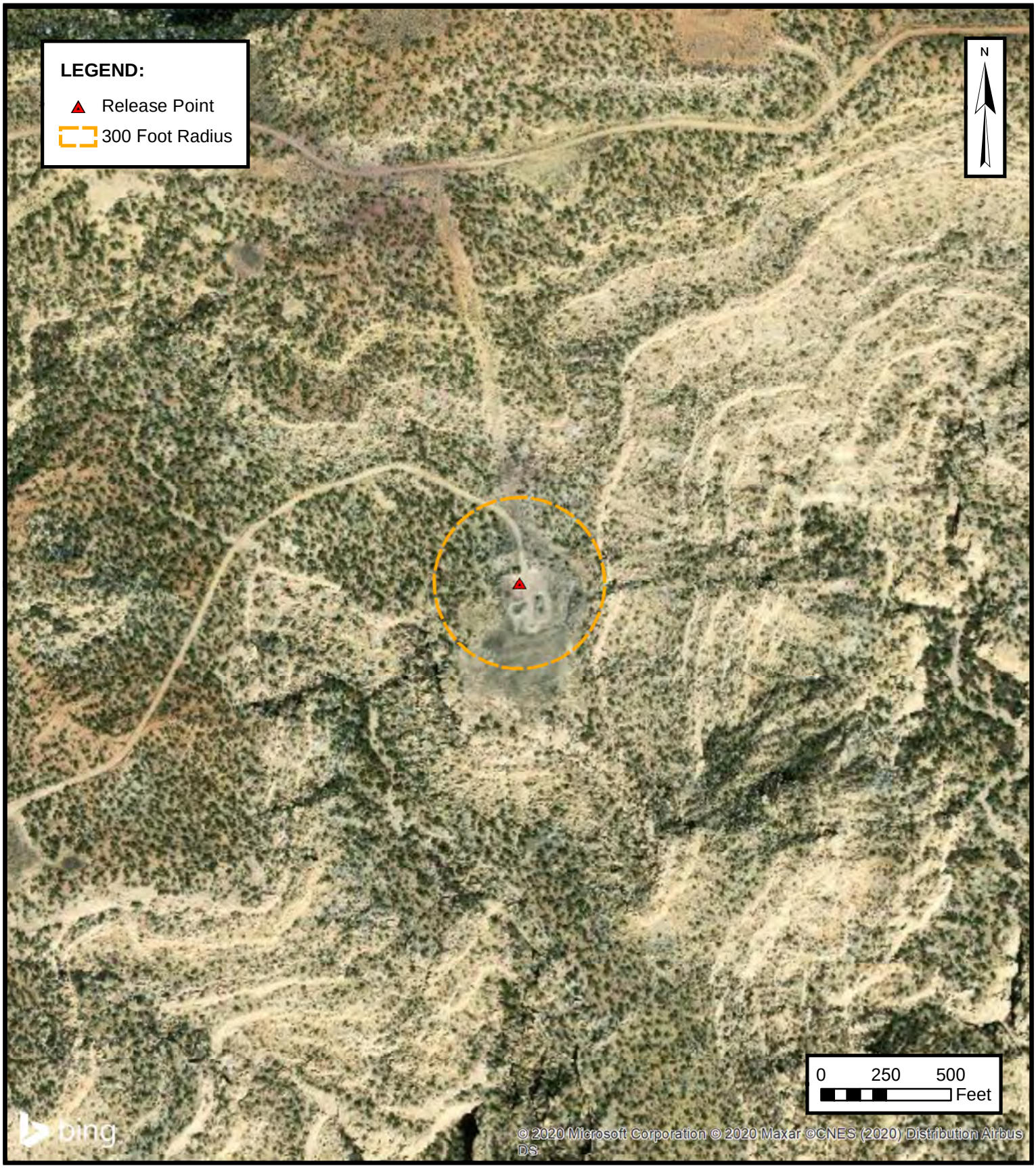


ENSOLUM
Environmental & Hydrogeologic Consultants

300 FOOT RADIUS
WATERCOURSE AND DRAINAGE IDENTIFICATION
ENTERPRISE FIELD SERVICES, LLC
STOREY C LS #7 (12/18/20)
NE ¼, S27 T28N R9W, San Juan County, New Mexico
36.638245° N, 107.773088° W

PROJECT NUMBER: 05A1226129

FIGURE
C

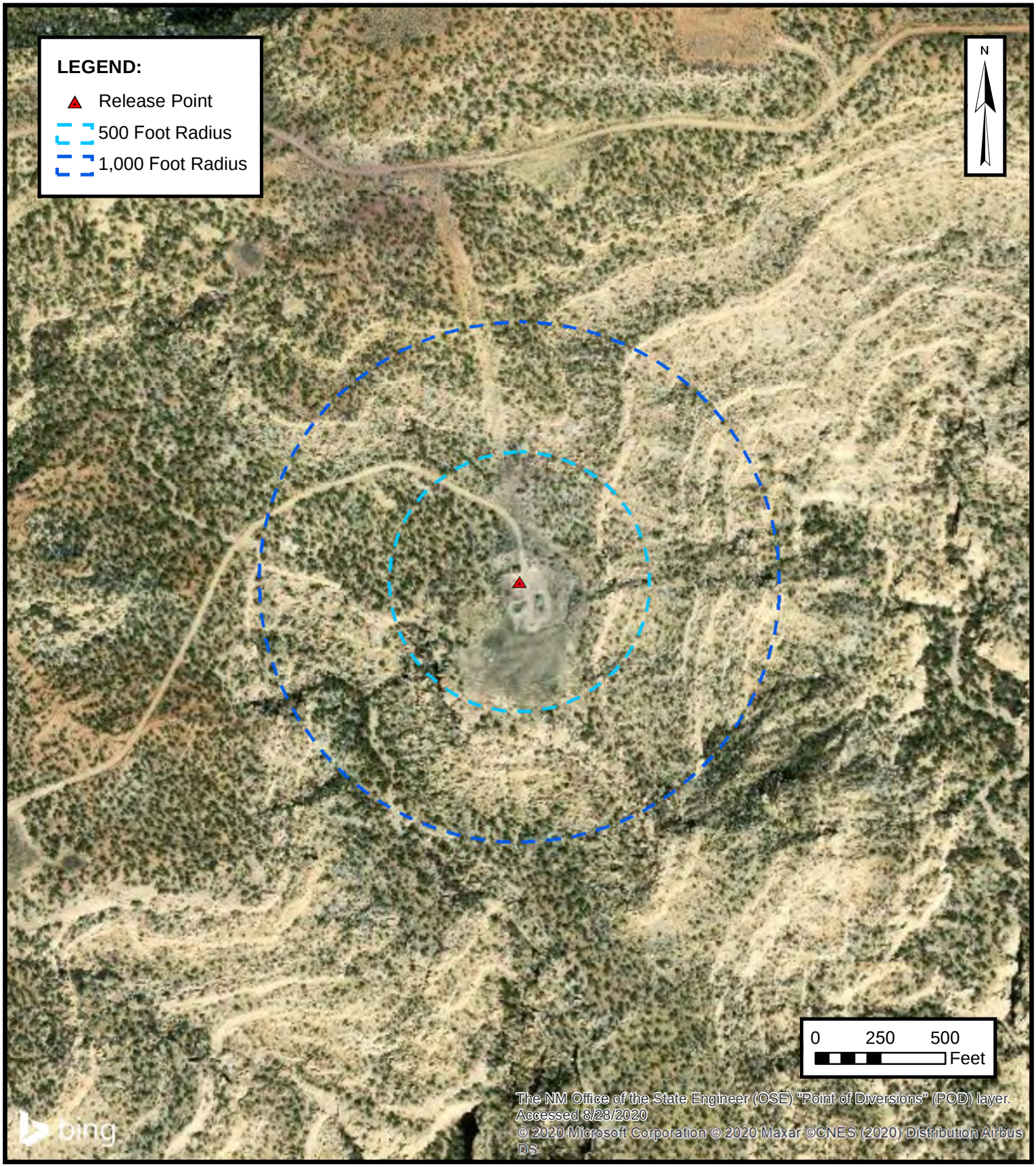


ENSOLUM
Environmental & Hydrogeologic Consultants

300 FOOT RADIUS
OCCUPIED STRUCTURE IDENTIFICATION
ENTERPRISE FIELD SERVICES, LLC
STOREY C LS #7 (12/18/20)
NE ¼, S27 T28N R9W, San Juan County, New Mexico
36.638245° N, 107.773088° W

PROJECT NUMBER: 05A1226129

FIGURE
D



ENSOLUM
Environmental & Hydrogeologic Consultants

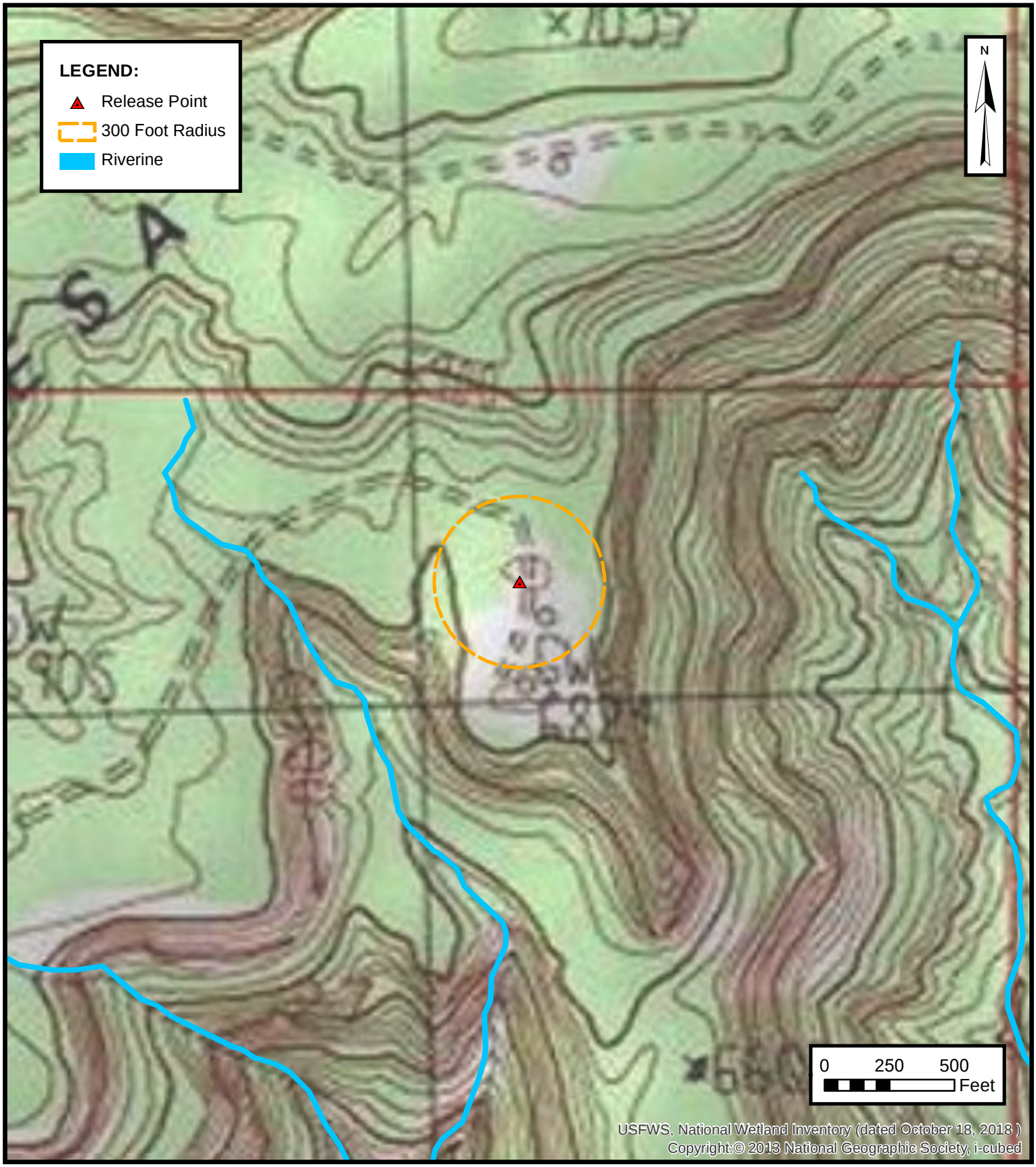
WATER WELL AND NATURAL SPRING LOCATION

ENTERPRISE FIELD SERVICES, LLC
STOREY C LS #7 (12/18/20)
NE ¼, S27 T28N R9W, San Juan County, New Mexico
36.638245° N, 107.773088° W

PROJECT NUMBER: 05A1226129

FIGURE

E



ENSOLUM
Environmental & Hydrogeologic Consultants

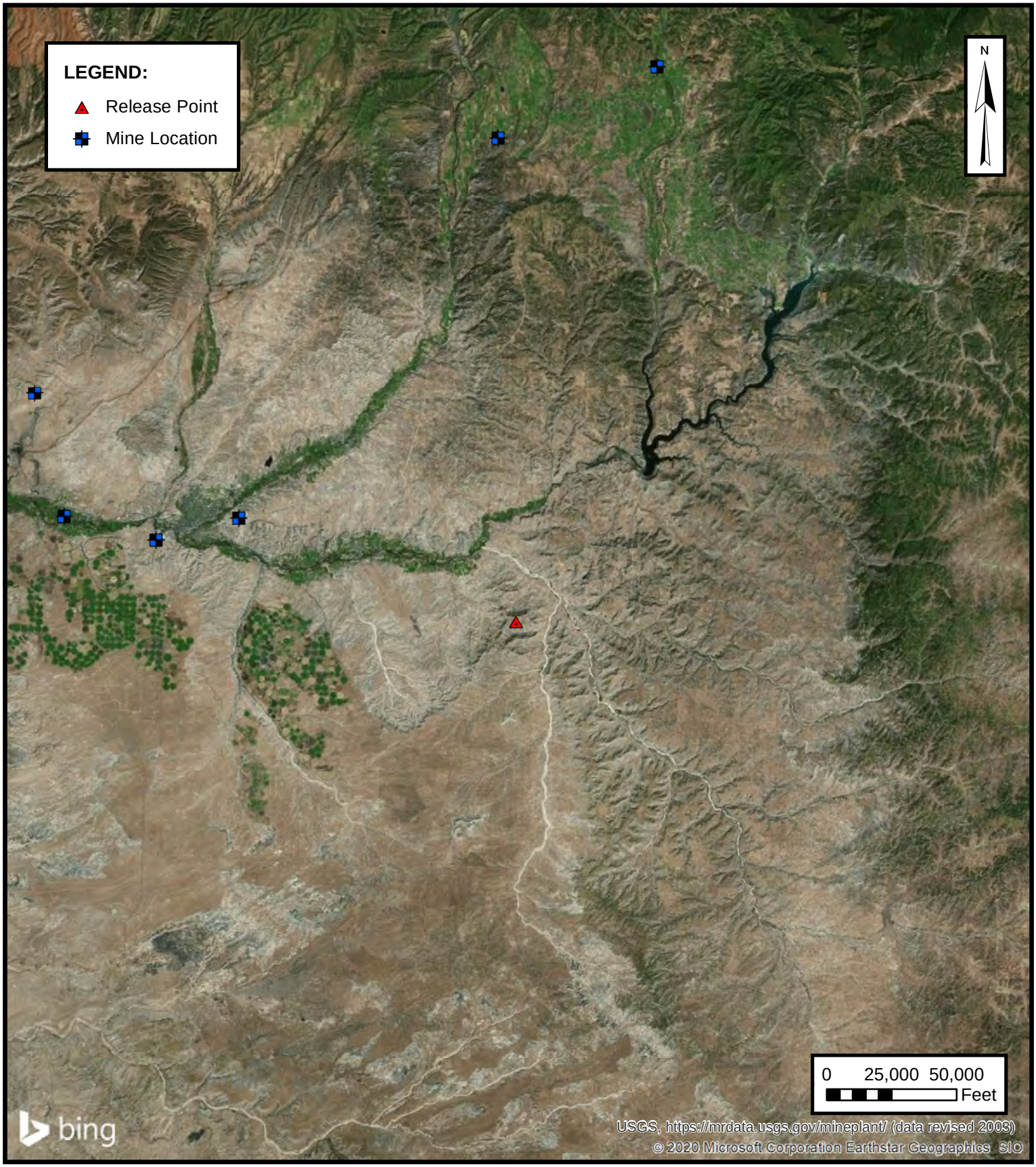
WETLANDS

ENTERPRISE FIELD SERVICES, LLC
STOREY C LS #7 (12/18/20)
NE ¼, S27 T28N R9W, San Juan County, New Mexico
36.638245° N, 107.773088° W

PROJECT NUMBER: 05A1226129

FIGURE

F



ENSOLUM
Environmental & Hydrogeologic Consultants

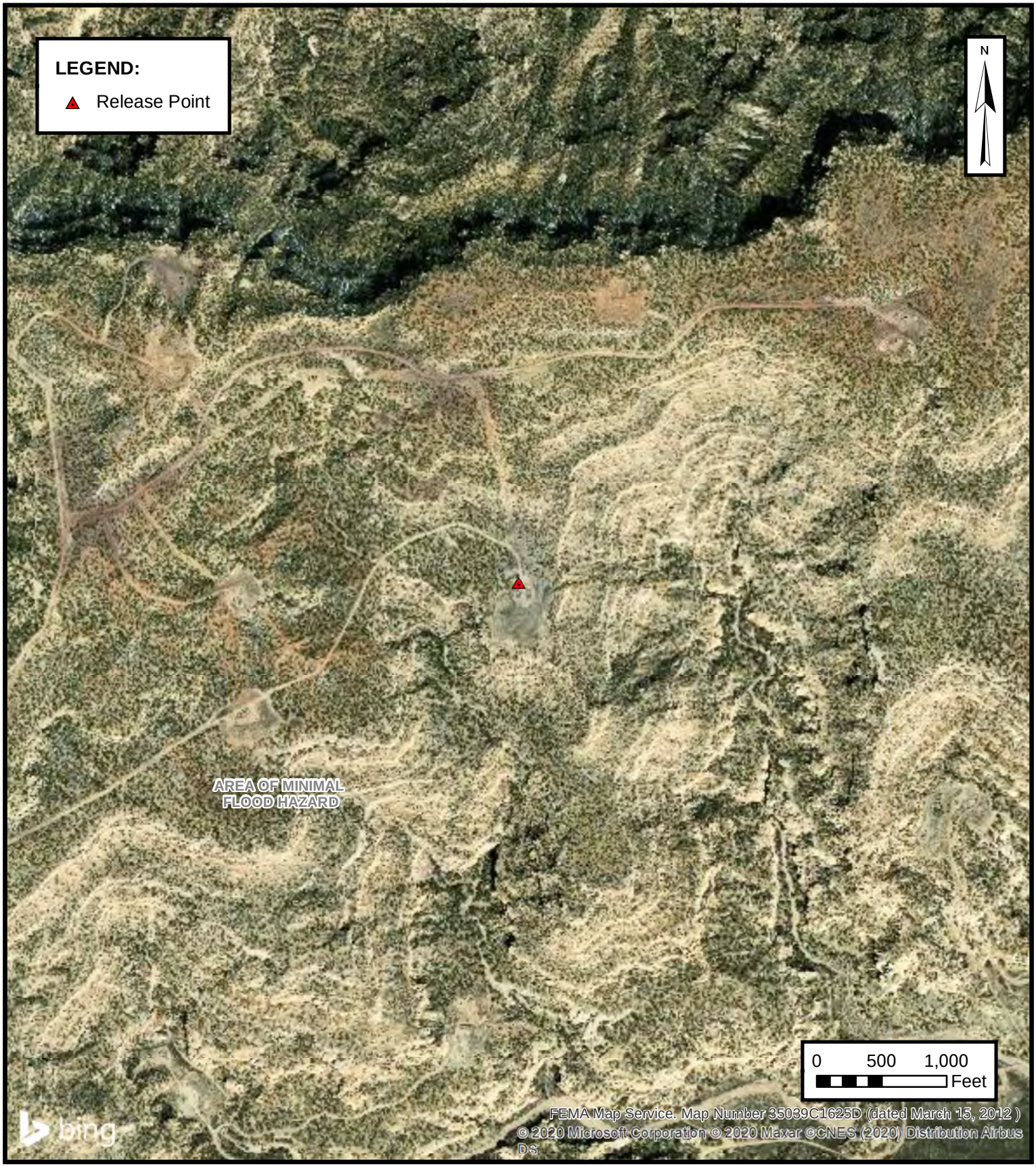
MINES, MILLS AND QUARRIES

ENTERPRISE FIELD SERVICES, LLC
STOREY C LS #7 (12/18/20)
NE ¼, S27 T28N R9W, San Juan County, New Mexico
36.638245° N, 107.773088° W

PROJECT NUMBER: 05A1226129

FIGURE

G



ENSOLUM
Environmental & Hydrogeologic Consultants

100-YEAR FLOOD PLAIN MAP

ENTERPRISE FIELD SERVICES, LLC
STOREY C LS #7 (12/18/20)
NE ¼, S27 T28N R9W, San Juan County, New Mexico
36.638245° N, 107.773088° W

PROJECT NUMBER: 05A1226129

FIGURE

H

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

No records found.

PLSS Search:

Section(s): 27, 21, 22, 23, 26, 28, 33, 34, 35 **Township:** 28N **Range:** 09W

1301

#1A 30-045-26506
#2 30-045-20625
#7 30-045-21575
#9 30-045-21556

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 E Sec. 26 Twp 28 Rng 9

Name of Well/Wells or Pipeline Serviced HANCOCK #9, LACKEY #1A, #2, #7

cps 1909w

Elevation 6160' Completion Date 11/10/87 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. 160'

Depths gas encountered: N/A

Type & amount of coke breeze used: N/A

Depths anodes placed: 375', 365', 340', 330', 320', 285', 260', 250', 240', 220'

Depths vent pipes placed: 424'

Vent pipe perforations: 380'

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.

MERIDIAN OIL INC.
Farmington Region
Post Office Box 4289
Farmington, New Mexico 87499
(505) 327-0251

Revised 0

Drilling Log (Attach Hereto) ☒ WELL CASING

CATHODIC PROTECTION CONSTRUCTION REPORT

DAILY LOG

Completion Date 11-10-87

CPS #	Well Name, Line or Plant:	Work Order #	Static:	Ins. Union Check:
1909-W	LACKEY #1-A		600'E = .82	☒ Good ☐ Bad
	HANCOCK #9 #2		600'E = .79	
	LACKEY #7		600E = .79	

Location:	Anode Size:	Anode Type:	Size Bit:
E26-28-9	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
420'	419'				

Anode Depth	#1	#2	#3	#4	#5	#6	#7	#8	#9	#10
	375'	365'	340'	330'	320'	285'	260'	250'	240'	220'
Anode Output (Amps)	5.8	5.9	5.8	6.2	6.3	4.9	4.6	5.2	4.9	5.6

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 12.2	Amps 26.7	Ohms .46			

Remarks: DRILLED 420'; LOGGED 419'. DRILLER SAID WATER AT 160' CAUGHT SAMPLE. INSTALLED 424' of 1" PVC VENT PIPE; PERFORATED BOTTOM 380'

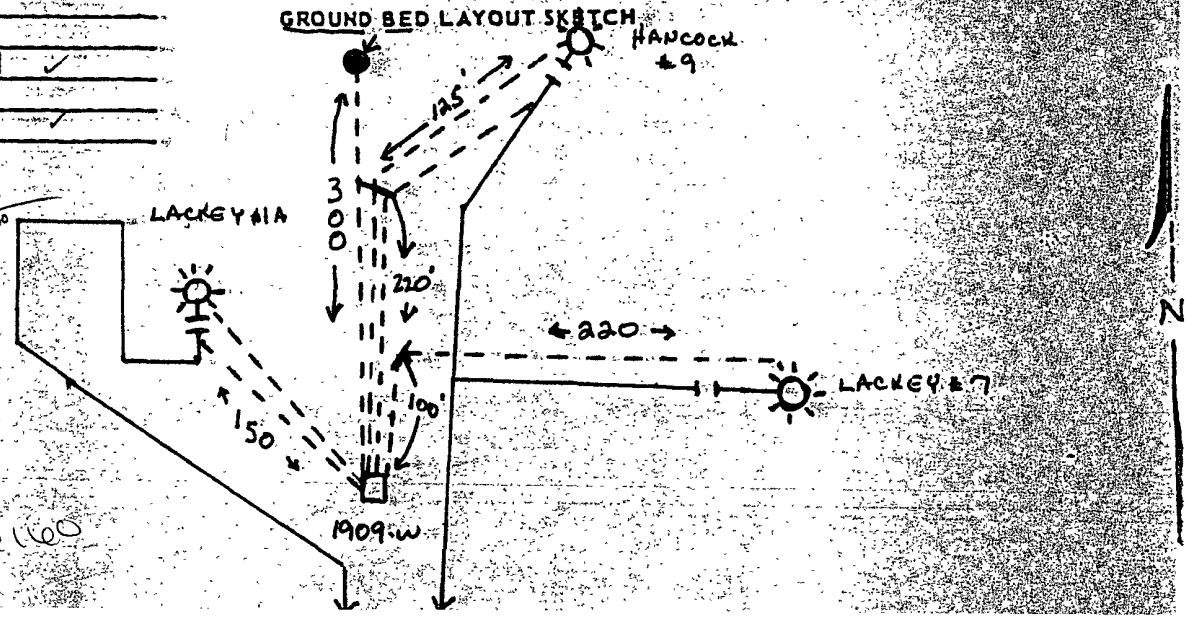
Rectifier Size: 40 V 16 A
Addn'l Depth
Depth Credit: 81 ✓
Extra Cable: 875' ✓
Ditch & 1 Cable: 670' ✓
Ditch & 2 Cable:
25' Meter Pole:
20' Meter Pole: 1 ✓
10' Stub Pole:
Junction Box: 1 ✓

All Construction Completed

(Signature)

4399.00 ✓
-324.00 ✓
175.00 ✓
469.00 ✓
365.00 ✓
269.90
799.98
6153.88
307.69
6461.57

GROUND BED LAYOUT SKETCH



MERIDIAN OIL

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

Date 11-10-87

DEEP WELL GROUNDBED LOG

Company: Meridian

Well No. Lackey #1-A Location E 26-28-9 Volts Applied 12.2 .46 Amperes 26.[illegible]

Depth	Reading	Depth	Reading	Depth	Reading	Depth	Reading
0							
5		230	2.5	455		680	(1) 375 - 3.8 - 5.8
10		235	2.7	460		685	(2) 365 - 3.8 - 5.9
15		240	2.8	465		690	(3) 340 - 3.2 - 5.8
20		245	2.6	470		695	(4) 330 - 3.6 - 6.2
25		250	2.7	475		700	(5) 320 - 4.2 - 6.3
30		255	2.8	480		705	(6) 285 - 3.2 - 4.9
35		260	2.7	485		710	(7) 260 - 3.2 - 4.6
40		265	2.4	490		715	(8) 250 - 3.2 - 5.2
45		270	2.1	495		720	(9) 240 - 3.2 - 4.9
50		275	2.1	500		725	(10) 220 - 3.2 - 5.0
55		280	2.2	505		730	
60		285	2.7	510		735	
65		290	2.4	515		740	
70		295	1.9	520		745	
75		300	1.3	525		750	
80		305	.8	530		755	
85		310	2.4	535		760	
90		315	3.3	540		765	
95		320	3.4	545		770	
100		325	3.4	550		775	
105		330	3.3	555		780	
110		335	3.0	560		785	
115		340	2.8	565		790	
120		345	2.9	670		795	
125		350	1.6	575		800	
130		355	2.0	580		805	
135		360	2.4	585		810	
140		365	3.2	590		815	
145		370	3.4	595		820	
150		375	3.3	600		825	
155		380	2.4	605		830	
160		385	2.1	610		835	
165		390	2.2	615		840	
170	1.5	395	2.2	620		845	
175	1.5	400	1.9	625		850	
180	1.3	405	2.0	630		855	
185	1.7	410	1.8	635		860	
190	2.5	415	1.7 to 419'	640		865	
195	2.0	420		645		870	
200	1.4	425		650		875	
205	1.4	430		655		880	
210	2.0	435		660		885	
215	2.3	440		665		890	
220	2.7	445		670		895	
225	2.5	450		675		900	

GENERAL CPS
CATHODIC PROTECTION SERVICES

WELL TYPE GROUNDBED DATA

DATA SHEET NO. 1 OF 2

COMPANY MERIDIAN OIL CO. JOB No. 13120 DATE: 10-10-87

WELL: LACKEY #1A PIPELINE:

LOCATION: SEC 26 TWP. 28N RGE. 9W CO. SAN JUAN STATE NM

ELEV. ____ FT: ROTARY 419' FT: CABLE TOOL -0- FT: CASING -0- FT

GROUNDBED: DEPTH 419' FT. DIA. 6 3/4 IN. GAB ____ LBS. ANODES 10-2" X 60" TYPE L

DEPTH, FT.	DRILLER'S LOG	EXPLORING ANODE TO STRUCTURE E	I	R	NO COKE	WITH COKE	DEPTH TOP OF ANODES NO.	FT.
	FIRST WATER AT 60' GOOD WATER							
5	AT 175' (SAND)							
10								
15								
20								
25								
30								
35								
40								
45								
50								
55								
60								
65								
70								
75								
80								
85								
90								
95								
100								
5								
10								
15								
20	SAND-SHALE							
25								
30								
35								
40								
45								
50								
55								
60								
65								
70			1.5					
75			1.6					
80			1.3					
85			1.7					
90			2.5					
95			2.0					
200			1.4					
5			1.4					
10			2.0					
15			2.3					

GROUNDBED RESISTANCE (1) VOLTS 122V - AMPS 267 - .46 OHMS

(2) VIBROGROUND _____ OHMS

GENERAL CATHODIC PROTECTION SERVICES

WELL TYPE: GROUNDBED D. A

DATA SHEET NO.

COMPANY: JOB No.: DATE:

WELL: PIPELINE:

LOCATION: SEC. TWP. RGE. CO. STATE

ELEV.: FT.: ROTARY FT.: CABLE TOOL FT.: CASING F

GROUNDBED: DEPTH FT. DIA. IN. GAS LBS. ANODES

DEPTH FT.	DRILLER'S LOG	EXPLORING ANODE TO STRUCTURE E	I	R	NO COKE	WITH COKE	DEPTH TOP OF ANODES NO.	FT.
20	SHALE		2.7					
25			2.5					
30			2.5					
35			2.7					
40			2.8					
45			2.6					
50			2.7					
55			2.8					
60			2.7					
65	SAND & SHALE		2.4					
70								
75								
80								
85								
90								
95								
300								
5								
10								
15								
20								
25								
30								
35								
40								
45								
50								
55								
60								
65								
70								
75								
80								
85								
90								
95								
400	SAND							
5								
10								
15								
20								
25								
30								

GROUNDBED RESISTANCE: (1) VOLTS - AMPS = OHMS

(2) VIBROGROUND OHMS

1296

30-045-26464

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 F Sec. 22 Twp 28 Rng 9

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

cps 1905w

Elevation 6165' Completion Date 11/6/87 Total Depth 390' Land Type* N/A

Casing, Sizes, Types & Depths 20' OF 8" PVC 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. 40', 100' - 140' SAMPLE TAKEN

Depths gas encountered: N/A

Type & amount of coke breeze used: N/A

Depths anodes placed: 355', 345', 335', 325', 265', 255', 245', 235', 225', 170'

Depths vent pipes placed: 383'

Vent pipe perforations: 340'

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.

PM-07-023S (Rev. 10-82)

WELL CASING

CATHODIC PROTECTION CONSTRUCTION REPORT

DAILY LOG

Drilling Log (Attach Hereto) ☐

T. E. G.

Completion Date 11/6/87

CPS #	Well Name, Line or Plant:	Work Order #	Static:	Ins. Union Check
1905 W	HANCOCK #3A		.78V N.	☒ Good ☐ Bad

Location:	Anode Size:	Anode Type:	Size Bit:
NW 22-28-9	2" X 60"	DURION	6 3/4"

Depth Drilled	Depth Logged	Drilling Rig Time	Total Lbs. Coke Used	Lost Circulation Mat'l Used	No. Sacks Mud Used
390'	383'				

	#1	#2	#3	#4	#5	#6	#7	#8	#9	#10
Anode Depth	355'	345'	335'	325'	265'	255'	245'	235'	225'	170'
Anode Output (Amps)	4.3	4.5	4.8	5.4	5.4	6.3	6.1	6.2	5.7	6.3

	#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 11.98	Amps 26.7	Ohms .45		

Remarks: Driller said water at 40', could not blow water out of hole. More water from 100'–140'. Took water sample. Lost circulation at 220', got circulation back next A.M. Set 20' of 8" P.V.C. surface casing. 1 Hr. setting time. Installed 383' of 1" P.V.C. vent pipe perforated 340'.

G.B $4399.00

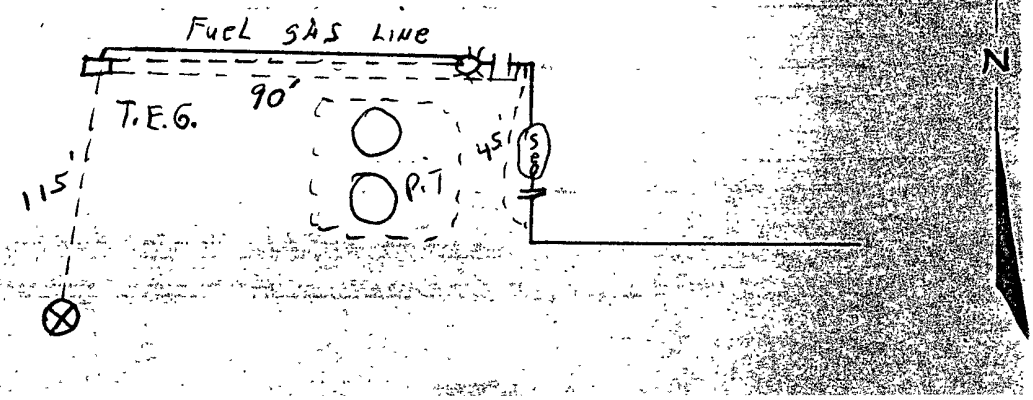
Rectifier Size: — V — A T. E. G.

Addn'l Depth	—	
Depth Credit:	-117' ✓	-468.00 ✓
Extra Cable:	130' ✓	26.00 ✓
Ditch & 1 Cable:	250'	175.00 ✓
~~Ditch & 2 Cable:~~	—	
25' Meter Pole:	—	
20' Meter Pole:	—	
10' Stub Pole:	—	
Junction Box:	1	269.90 ✓
20' of 8" P.V.C. casing.		$100.40
1 Hr. casing time at $125.00/Hr.		125.00

All Construction Completed

J C Stotts
(Signature)

$4626.90
TAX 231.35
TOTAL $4858.25



MERIDIAN OIL

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

Date 11/6/87

DEEP WELL GROUNDBED LOG

LPS 1905 W

Company Meridian oil

.45 Ω

Well No. HANCOCK #3A Location NW 22-28-9 Volts Applied 11.98 Amperes 26.7

Depth	Reading	Note	Depth	Reading	Note	Depth	Reading	Depth	Reading
0									
5			230	2.6		455		680	
10			235	3.0	– (8)	460		685	
15			240	3.3		465		690	
20			245	3.2	– (7)	470		695	
25			250	3.1		475		700	
30			255	3.1	– (6)	480		705	1 - 395 - 3.7 - 4.5
35			260	3.0		485		710	2 - 345 - 3.6 - 4.5
40			265	2.7	– (5)	490		715	3 - 335 - 3.4 - 4.8
45			270	2.4		495		720	4 - 325 - 3.9 - 5.4
50			275	2.4		500		725	5 - 265 - 3.3 - 5.
55			280	2.0		505		730	6 - 255 - 4.1 - 6.
60			285	1.4		510		735	7 - 245 - 4.3 - 6.1
65			290	1.6		515		740	8 - 235 - 4.0 - 6.
70			295	1.6		520		745	9 - 225 - 3.6 - 5.
75			300	1.6		525		750	10 - 170 - 4.5 - 6.
80			305	1.6		530		755	
85			310	1.6		535		760	
90			315	1.3		540		765	
95			320	1.3		545		770	
100	1.4		325	2.9	– (4)	550		775	
105	1.0		330	3.0		555		780	
110	1.1		335	2.7	– (3)	560		785	
115	1.3		340	2.7		565		790	
120	1.9	WATer (105–140)	345	2.8	– (2)	570		795	
125	1.3		350	2.8		575		800	
130	.7		355	2.8	– (1)	580		805	
135	.6		360	2.7		585		810	
140	.6		365	2.2		590		815	
145	.6		370	1.6	T.D.	595		820	
150	.8		375			600		825	
155	1.1		380	383		605		830	
160	2.2		385			610		835	
165	2.6		390		Drilled To	615		840	
170	3.3	– (10)	395			620		845	
175	3.1		400			625		850	
180	1.6		405			630		855	
185	1.6		410			635		860	
190	2.0		415			640		865	
195	2.2		420			645		870	
200	2.1		425			650		875	
205	2.1		430			655		880	
210	1.7		435			660		885	
215	2.4		440			665		890	
220	2.6		445			670		895	
225	2.9	→ (9)	450			675		900	

CATHODIC PROTECTION SERVICES

WELL TYPE GROUNDBED DATA

DATA SHEET NO. 1 OF 2

COMPANY MERIDIAN OIL CO. JOB No. 13121 DATE: 11-6-87

WELL: HANCOCK #38 PIPELINE:

LOCATION: SEC. 22 TWP. 28 RGE. 9 CO. SAN JUAN STATE NM

ELEV. ____ FT: ROTARY 383' FT: CABLE TOOL -0- FT: CASING 20'-8" PVC

GROUNDBED: DEPTH 383' FT. DIA. 6¾ IN. GAS ____ LBS. ANODES 40-2" x 60" TYPE

DEPTH FT.	DRILLER'S LOG	EXPLORING ANODE TO STRUCTURE E	I	R	NO COKE	WITH COKE	DEPTH TOP OF ANODES NO.	FT.
	FIRST WATER AT 100'-140'							
5	SAND (5GPM)							
10								
15								
20								
25								
30								
35								
40								
45								
50								
55								
60								
65								
70								
75								
80								
85								
90								
95								
100	SANDY SHALE		1.4					
5			1.0					
10			1.1					
15			1.3					
20			1.9					
25			1.3					
30			0.7					
35			0.6					
40			0.6					
45			0.7					
50			0.8					
55			1.1					
60	SHALE		2.2					
65			2.3					
70			3.3		4.5	6.3	110	170
75			3.1					
80			1.6					
85			1.6					
90			2.0					
95			2.2					
200	SANDY SHALE		2.1					
5	(LOST CIRCULATION)		2.1					
10	SHALE		1.7					
15			2.4					

GROUNDBED RESISTANCE: (1) VOLTS 11.98 ÷ AMPS 26.7 = .45 OHMS

(2) VIBROGROUND ____ OHMS

CATHODIC PROTECTION SERVICES

WELL TYPE GROUNDBED DATA

DATA SHEET NO. 2 of 2

COMPANY _____ JOB No. _____ DATE: _____

WELL: HANCOCK #3A PIPELINE: _____

LOCATION: SEC. _____ TWP. _____ RGE. _____ CO. _____ STATE _____

ELEV.: _____ FT.: ROTARY _____ FT.: CABLE TOOL _____ FT.: CASING _____

GROUNDBED: DEPTH _____ FT. DIA. _____ IN. GAB _____ LBS. ANODES _____

DEPTH FT.	DRILLER'S LOG	EXPLORING ANODE TO STRUCTURE E	I	R	NO COKE I	WITH COKE I	DEPTH TOP OF ANODES NO.	FT.
20	SAND		2.6					
25			2.9		3.6	5.3	9	225
30			2.6					
35			3.0		4.0	6.2	8	235
40			3.3					
45			3.2		4.3	6.1	7	245
50			3.1					
55			3.1		4.1	6.3	6	255
60			3.0					
65			2.7		3.3	5.4	5	265
70			2.4					
75			2.4					
80			1.9					
85			1.4					
90			1.6					
95			1.6					
300	SAND		1.6					
5			1.6					
10			1.6					
15			1.3					
20			1.3					
25			2.9		3.9	5.4	4	325
30			3.0					
35	SANDY SHALE		2.7		3.2	4.8	3	335
40			2.7					
45			2.8		3.6	4.5	2	345
50			2.8					
55			2.8		3.7	4.3	1	355
60			2.7					
65			2.2					
70			1.6					
75			1.3					
80								
85								
90	TD 383							
95								
400								
5								
10								
15								
20								
25								
30								

GROUNDBED RESISTANCE: (1) VOLTS _____ ÷ AMPS _____ = _____ OHMS

(2) VIBROGROUND _____ OHMS

TECH INC
[illegible]

CPS-190-CO

API WATER ANALYSIS REPORT FORM

Company		Sample No.	Date Sampled
MERIDIAN OIL COMPANY		1	11-5-87
Field	**Legal Description**	**County or Parish**	**State**
BLANCO	NW 22-28-9	San Juan	N.M.
Lease or Unit	**Well**	**Depth**	**Formation**	**Water, B/D**
	HANCOCK #3A	120'		
Type of Water (Produced, Supply, etc.)	**Sampling Point**		**Sampled By**
	120' Ground Reel		JS

DISSOLVED SOLIDS

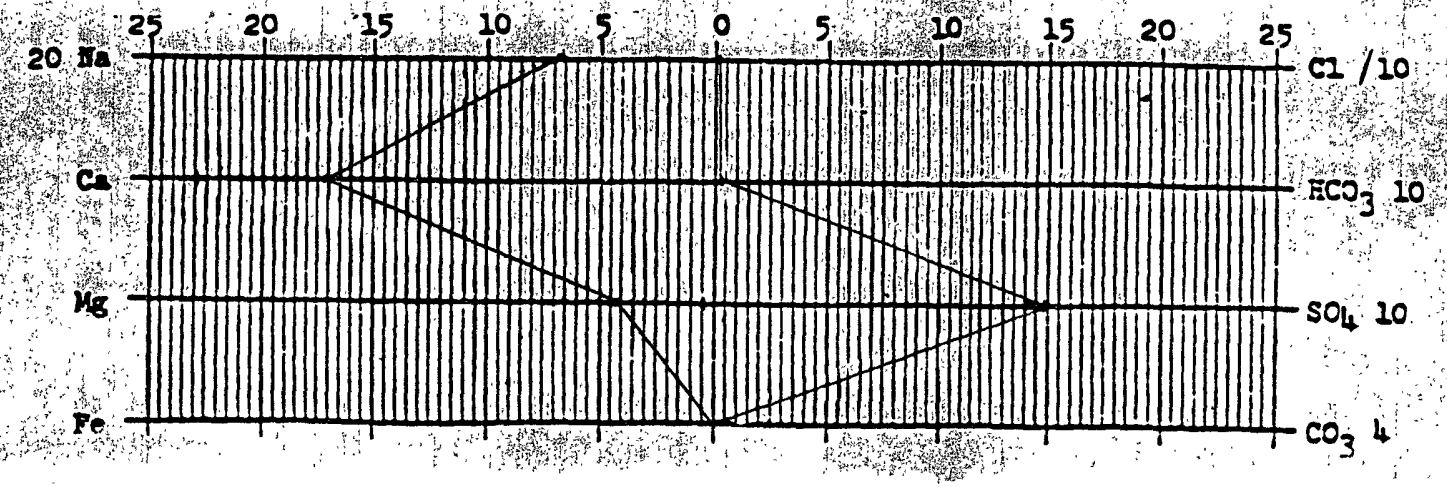
CATIONS	mg/l	me/l
Sodium, Na (calc.)	3054	133
Calcium, Ca	340	17
Magnesium, Mg	53	4.3
Barium, Ba		

ANIONS	mg/l	me/l
Chloride, Cl	64	1.8
Sulfate, SO_4	7300	150.
Carbonate, CO_3	0	0
Bicarbonate, HCO_3	142	2.3

OTHER PROPERTIES

pH	7.41
Specific Gravity, 60/60 F.	1.0089
Resistivity (ohm-meters) 72° F.	1.39
Total Dissolved Solids (calc.)	11,000
Iron, Fe (total)	
Sulfide, as H_2S	0

REMARKS & RECOMMENDATIONS:



709- 30-045-27235
1- 30-045-07107
5- 30-045-20865

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

22250

Operator MERIDIAN OIL Location: Unit N Sec. 26 Twp 28 Rng 9

Name of Well/Wells or Pipeline Serviced HACKEY H #709, #1 & #5

Elevation ____ Completion Date 12-3-91 Total Depth 382' Land Type F

Casing Strings, Sizes, Types & Depths 8" PVC surface CASING - 95' DEEP

If Casing Strings are cemented, show amounts & types used YES; with 23 SACKS NEAT CEMENT

If Cement or Bentonite Plugs have been placed, show depths & amounts used YES - 105' TO 90'

Depths & thickness of water zones with description of water: Fresh, Clear, Salty, Sulphur, Etc. 110'

Depths gas encountered: 380'

Ground bed depth with type & amount of coke breeze used: 382' DEEP with 5,250 lbs Asbury 4518 Flo Coke & Loresco Type SC

Depths anodes placed: 354, 345, 335, 325, 300, 290, 280, 270, 205, 195, 185, 160

Depths vent pipes placed: 382'

Vent pipe perforations: bottom 250'

Remarks:

RECEIVED
FEB 24 1992
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.

CPS GROUND BED CONSTRUCTION WORKSHEET

CPS#	P/L NAME(s), NUMBER(s)					
2225-W	LACKEY H #709, #1, #5					
WO #	TOTAL	VOLTS	AMPS	- OHMS	DATE	NAME
J013		71.56	31.4	.368	12-3-91	MRW

REMARKS (notes for construction log) 95' CASING 23 SACKS CEMENT

N 26-28-9 DRILLED 400' LOGGED 382 H_2O AT 100'

PERFORATED BOTTOM 250' MAKING SMALL AMOUNT OF GAS, INSTALLED PLAC

5 BAGS LORESCO 100 ASBURY 4518 FLO COKE

DEPTH	LOG ANODE	ANODE #	DEPTH	LOG ANODE	ANODE #	DEPTH	LOG ANODE	ANODE #	DEPTH	LOG ANODE	ANODE #	
100	1.9		295	3.5		490			685			
105	1.9		300	3.4		495			690			
110	2.8		305	2.3		500			695			
115	3.8		310	1.9		505			700			
120	4.0		315	2.4		510			ANODE #	DEPTH	NO COKE	FULLY COK'D
125	4.2		320	2.8		515						
130	3.7		325	3.2		520			1	354	2.8	6.7
135	3.5		330	3.5		525			2	345	3.5	7.4
140	3.3		335	3.6		530			3	335	3.6	7.3
145	3.2		340	3.5		535			4	325	3.2	6.6
150	2.9		345	3.5		540			5	300	3.6	6.8
155	3.1		350	3.3		545			6	290	4.1	7.5
160	3.1		355	2.8 -		550			7	280	4.0	7.6
165	2.8		360	2.6		555			8	270	4.1	7.7
170	2.6		365	2.6		560			9	205	3.1	6.9
175	2.6		370	2.3		565			10	195	3.3	7.4
180	3.0		375	2.0		570			11	185	3.7	7.9
185	3.6		380	TD	382	575			12	160	3.1	6.9
190	3.3		385			580			13			
195	3.3		390			585			14			
200	3.1		395			590			15			
205	3.1		400			595			16			
210	2.7		405			600			17			
215	2.5		410			605			18			
220	2.7		415			610			19			
225	2.7		420			615			20			
230	2.8		425			620			21			
235	2.6		430			625			22			
240	2.5		435			630			23			
245	2.9		440			635			24			
250	2.9		445			640			25			
255	2.8		450			645			26			
260	2.3		455			650			27			
265	3.4		460			655			28			
270	3.9		465			660			29			
275	4.2		470			665			30			
280	4.0		475			670						
285	4.3		480			675						
290	3.6		485			680						

DISTRIBUTION - original - permanent CPS FILE
copy - Division Corrosion Supervisor
copy - Region Corrosion Specialist

1298

30-045-26384

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 C Sec. 23 Twp 28 Rng 9

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

cps 1906w

Elevation 6164' Completion Date 11/4/87 Total Depth 390' 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. 40' SAMPLE TAKEN

Depths gas encountered: N/A

Type & amount of coke breeze used: N/A

Depths anodes placed: 345', 335', 325', 315', 305', [illegible] 275', [illegible], 255'

Depths vent pipes placed: 390'

Vent pipe perforations: 340'

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) ☐ Completion Date 11/4/87

CPS #	Well Name, Line or Plant:	Work Order #	Static:	Ins. Union Check
1906W	HANCOCK "A" 4A		.82 N	☒ Good ☒ Bad Again 11/5

Location	Anode Size	Anode Type	Size Bit:
NW 23-28-9	2"X60"	DURION	6 3/4"

Depth Drilled	Depth Logged	Drilling Rig Time	Total Lbs. Coke Used	Lost Circulation Mat'l Used	No. Sacks Mud Used
390'	390'				

	#1	#2	#3	#4	#5	#6	#7	#8	#9	#10
Anode Depth	345'	335'	325'	315'	305'	295'	285'	275'	265'	255'
Anode Output (Amps)	3.7	5.3	5.5	5.7	5.2	4.7	4.9	3.8	4.4	3.8

	#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 11.79	Amps 21.6	Ohms .54		

Remarks: Driller said water at 40'. (took water sample)
Installed 390' of 1" P.V.C. vent pipe. Perforated 340'.

G.B = $4399.00

Rectifier Size: ____ V ____ A
Addn'l Depth: —
Depth Credit: -110'
Extra Cable: 165'
Ditch & 1 Cable: 130'
~~Ditch & 2 Cable:~~
25' Meter Pole: —
20' Meter Pole: —
10' Stub Pole: —
Junction Box: 1

T.E.G. no rectifier 199.98 Scottlad
- 440.00
3959.00
3733.00
91.00

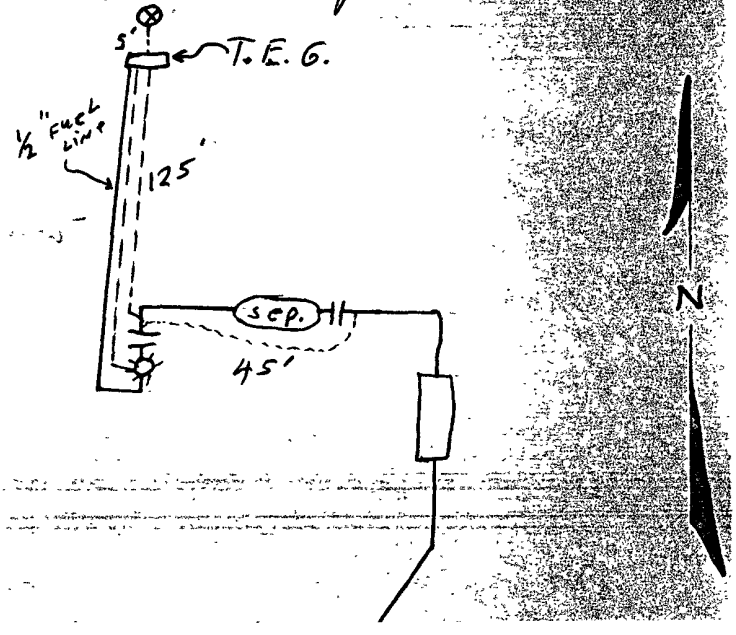
269.90

TOTAL 4352.90
TAX @ 5% 217.68

$ 4570.58

All Construction Completed

J E Stith
(Signature)



61164

MERIDIAN OIL

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

Date 11/4/87

CPS 1906 W

DEEP WELL GROUNDBED LOG

Company Meridian Oil

Well No Hancock #4A Location NW 23-28-9 Volts Applied 11.79 Amperes 21.6

Depth	Reading	Depth	Reading	Depth	Reading	Depth	Reading
0							
5		230	.9	455		680	
10		235	1.0	460		685	
15		240	1.1	465		690	
20		245	1.3	470		695	
25		250	1.5	475		700	
30		255	2.1 — (10)	480		705	
35		260	2.0	485		710	
40	1.7 WATER	265	2.5 — [illegible] (9)	490		715	1-345-2.5 — 3.7
45	1.6	270	2.3	495		720	2-335-3.6 — 5.3
50	1.0	275	2.1 — [illegible] (8)	500		725	3-325-3.8 — 5.5
55	.6	280	2.2	505		730	4-315-3.8 — 5.7
60	.5	285	2.5 — [illegible] (7)	510		735	5-305-3.8 — 5.2
65	.6	290	2.5	515		740	6-295-2.9 — 4.7
70	.7	295	2.2 — [illegible] (6)	520		745	7-285-3.4 — 4.9
75	.7	300	2.6	525		750	8-275-2.8 — 3.8
80	.7	305	2.7 — [illegible] (5)	530		755	9-265-3.3 — 4.4
85	.7	310	2.7	535		760	10-255-2.8 — 3.8
90	.5	315	2.7 — [illegible] (4)	540		765	
95	.6	320	2.6	545		770	
100	.7	325	2.6 — [illegible] (3)	550		775	
105	.7	330	2.6	555		780	
110	.8	335	2.6 — [illegible] (2)	560		785	
115	.7	340	2.4	565		790	
120	.6	345	1.7 — [illegible] — (1)	670		795	
125	.7	350	1.3	575		800	
130	.8	355	1.5 — [illegible]	580		805	
135	1.0	360	1.4	585		810	
140	1.2	365	1.4	590		815	
145	1.2	370	1.6	595		820	
150	1.1	375	1.7	600		825	
155	1.1	380	1.5	605		830	
160	1.0	385	1 4.	610		835	
165	1.3	390	T. D. Drilled To	615		840	
170	1.8	395		620		845	
175	1.1	400		625		850	
180	1.0	405		630		855	
185	.8	410		635		860	
190	.7	415		640		865	
195	.7	420		645		870	
200	.7	425		650		875	
205	.6	430		655		880	
210	.6	435		660		885	
215	.6	440		665		890	
220	.6	445		670		895	
225	.7	450		675		900	

CATHODIC PROTECTION SERVICES

WELL TYPE GROUNDBED DATA

DATA SHEET NO. 1 OF 2

COMPANY MERIDIAN OIL CO. JOB No. _____ DATE _____

WELL: HANCOCK #4A PIPELINE: _____

LOCATION: SEC. 23 TWP. 28N RGE. 9W CO. SAN JUAN STATE NM

ELEV. _____ FT: ROTARY 390 FT: CABLE TOOL -0- FT: CASING -0- F

GROUNDBED: DEPTH 390' FT. DIA. 6 3/4 IN. GAB _____ LBS. ANODES 10-2"X60" TEXAS

DEPTH FT.	DRILLER'S LOG	EXPLORING ANODE TO STRUCTURE E	I	R	NO COKE	WITH COKE	DEPTH TOP OF ANODES NO.	FT.
	FIRST WATER AT 40' (5GPM)							
40	0-40 SAND		1.7					
45	SAND		1.6					
50			1.0					
55			0.6					
60			0.5					
65			0.6					
70			0.7					
75			0.7					
80			0.7					
85			0.6					
90			0.5					
95			0.6					
100			0.7					
5			0.7					
10			0.8					
15			0.7					
20			0.6					
25			0.7					
30			0.8					
35			1.0					
40			1.2					
45	SANDY SHALE		1.2					
50			1.1					
55			1.1					
60			1.0					
65			1.3					
70			1.8					
75			1.1					
80			1.0					
85			0.8					
90			0.7					
95			0.7					
800	SAND		0.7					
5			0.6					
10			0.6					
15			0.6					
20			0.6					
25			0.6					
30			0.9					
35			1.0					
40			1.1					
45			1.3					
50			1.5					

GROUNDBED RESISTANCE: (1) VOLTS 11.79 - AMPS 21.6 = .54 OHMS

(2) VIBROGROUND _____ OHMS

WELL TYPE GROUNDBED DATA

DATA SHEET NO. 2 OF 2

COMPANY MERIDIAN OIL CO. JOB No. DATE:

WELL HANCOCK #4A PIPELINE:

LOCATION: SEC. TWP. RGE. CO. STATE

ELEV. FT: ROTARY FT: CABLE TOOL FT: CASING FT

GROUNDBED: DEPTH FT. DIA IN. GAS LBS. ANODES

DEPTH, FT.	DRILLER'S LOG	EXPLORING ANODE TO STRUCTURE			NO COKE	WITH COKE	ANODE NO.	DEPTH TOP OF ANODES
		E	I	R	I	I		
55	SAND & SHALE		2.1		2.8	3.8	10	255
60			2.0					
65			2.5		3.3	4.4	9	265
70			2.3					
75			2.1		2.8	3.8	8	275
80			2.2					
85			2.5		3.4	4.9	7	285
90			2.5					
95			2.2		2.9	4.7	6	295
3:00			2.6					
5			2.7		3.8	5.2	5	305
10			2.7					
15			2.7		3.8	5.7	4	315
20			2.6					
25			2.6		3.8	5.5	3	325
30			2.6					
35			2.6		3.6	5.3	2	335
40			2.4					
45			1.7		2.5	3.7	1	345
50			1.3					
55	SAND		1.5					
60			1.4					
65			1.4					
70			1.6					
75			1.7					
80			1.5					
85			1.4					
90								
95	390'							
400								
5	TD							
10								
15								
20								
25								
30								
35								
40								
45								
50								
55								
60								
65								

GROUNDBED RESISTANCE (1) VOLTS 11.79 ÷ AMPS 21.6 = .54 OHMS

(2) VERO GROUND OHMS

GENERAL CATHODIC PROTECTION SERVICES CO.

A LUKENS COMPANY

TECH Inc.

CPJ 1906 CD

API WATER ANALYSIS REPORT FORM

Sample No. 2	Date Sampled 11-3-87		
Company MERIDIAN OIL COMPANY	Legal Description	County or Parish San Juan	State N.M.
Field Blanco	Well Hancock #4A	Depth 60'	Formation	Water, B/D
Lease or Unit			Sampled By
Type of Water (Produced, Supply, etc.)	Sampling Point 60'		

DISSOLVED SOLIDS

CATIONS	mg/l	me/l
Sodium, Na (calc.)	2370	103
Calcium, Ca	202	10.1
Magnesium, Mg	35	2.8
Barium, Ba		

ANIONS	mg/l	me/l
Chloride, Cl	46	1.3
Sulfate, SO_4	5220	11[illegible]
Carbonate, CO_3	0	0
Bicarbonate, HCO_3	116	1.9

OTHER PROPERTIES

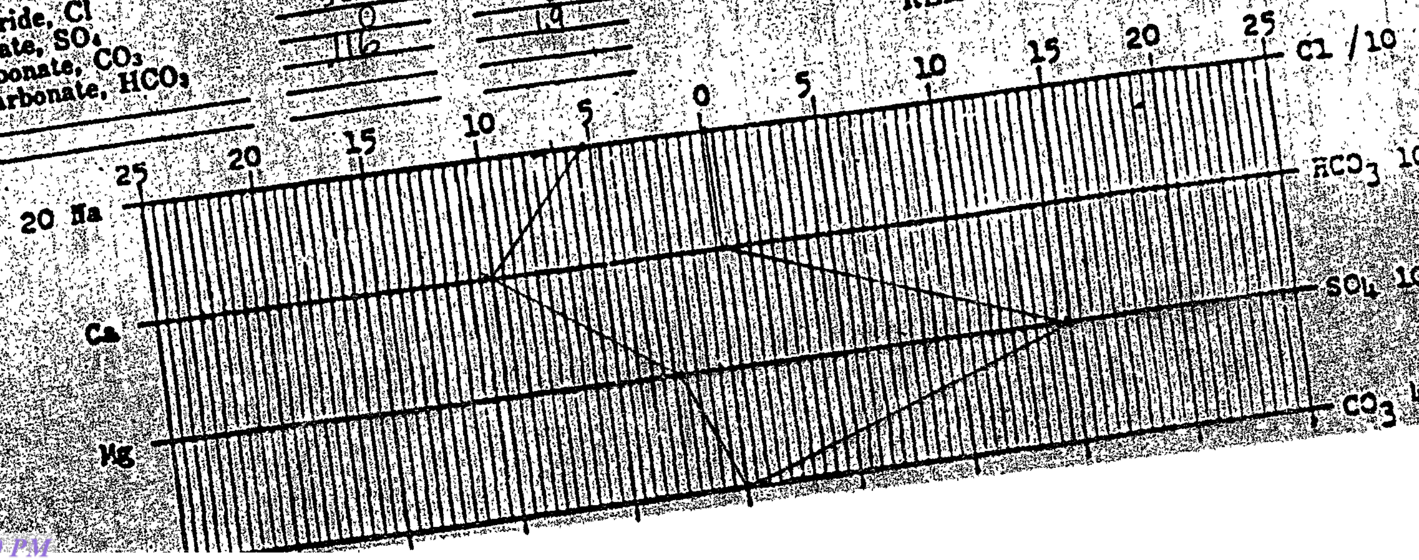
pH	6.74
Specific Gravity, 60/60 F.	1.0085
Resistivity (ohm-meters) 72° F.	1.52

Total Dissolved Solids (calc.) 8000

Iron, Fe (total) 0

Sulfide, as H_2S

REMARKS & RECOMMENDATIONS:



A#2A 30-045-26715
A#4 30-045-07106
A#8 30-045-21557

3894

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 O Sec. 26 Twp 28 Rng 9

Name of Well/Wells or Pipeline Serviced HANCOCK A #2A, #4, #8

cps 1951w

Elevation 5955' Completion Date 5/20/88 Total Depth 400' Land Type* N/A

Casing, Sizes, Types & Depths 40' OF 8" PVC 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. 40' NO SAMPLE

Depths gas encountered: N/A

Type & amount of coke breeze used: N/A

Depths anodes placed: 325', 315', 305', 295', 260', 250', 240', 205', 190', 150'

Depths vent pipes placed: 385'

Vent pipe perforations: 360'

Remarks: gb #1

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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 10-87)

WELL CASING

CATHODIC PROTECTION CONSTRUCTION REPORT

DAILY LOG

Comp 6-20-88

Drilling Log (Attach Hereto) ☐ Completion Date 5/20/88

CPS #	Well Name, Line or Plant:	Work Order #	Status:	Ins. Union Check:
1951 W	HANCOCK A-2A #4	54041A		☐ Good ☒ Bad
	HANCOCK A-2A #8	2054041A		

Location	Anode Size	Anode Type	Size Bit
O-26-28-9	2" X 60"	Durion	6 3/4"

Depth Drilled	Depth Logged	Drilling Avg Time	Total Lbs. Coke Used	Low Calculation Mat'l Used	No. Sacks Mud Used
400'	385'				

Anode Depth	#1	#2	#3	#4	#5	#6	#7	#8	#9	#10
	325	315	305	295	260	250	240	205	190	15
Anode Output (Amps)	#1	#2	#3	#4	#5	#6	#7	#8	#9	#10
	6.6	6.7	6.9	6.6	6.0	6.6	6.4	6.1	5.8	5.8
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 11.6	Amps 33.3	Ohms .35			

Remarks: WATER AT 40'. WOULD NOT SETTLE OUT FOR WATER SAMPLE
INSTALLED 40' of 8" P.V.C. CASING, 2 Hr. SETTING TIME. INSTALLED 385'
of 1" P.V.C. VENT PIPE, PERFERATED 360'.

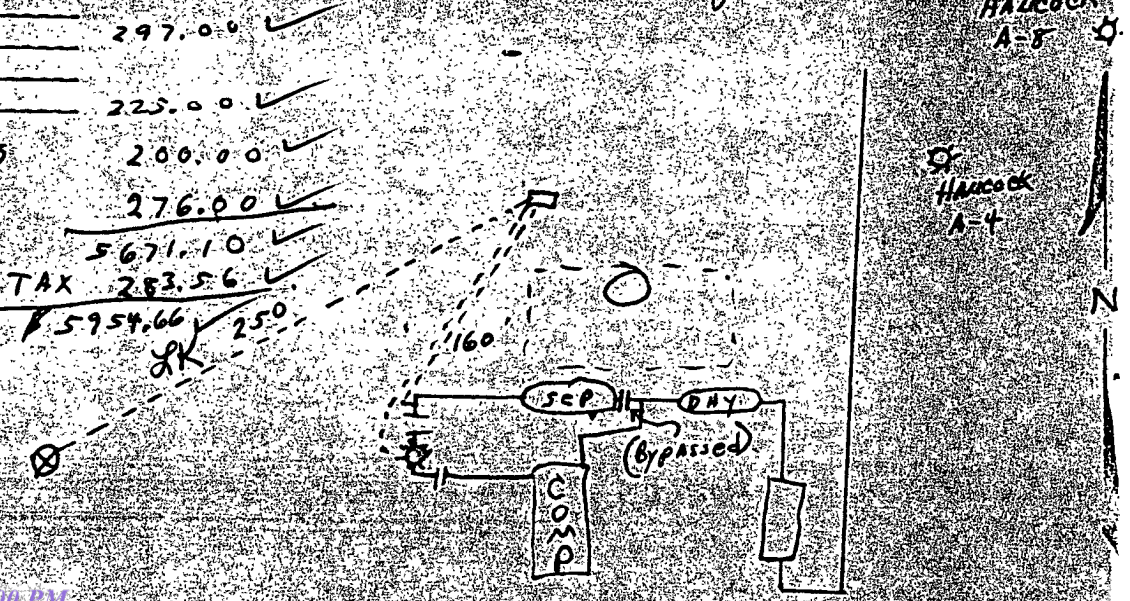
We need TO INSTALL 2 INS UNIONS AT WELL Head

G.B. 4074.00

Rectifier Size:	40V	16A	669.00
Addn'l Depth			
Depth Credit:	-115'		-402.50
Extra Cable:	190'		45.60
Ditch & Cable:	410'		287.00
25' Meter Pole:	—		
20' Meter Pole:	1		297.00
10' Stub Pole:	—		
Junction Box:	1		225.00
2 Joints of 8 P.V.C. CASING			200.00
2 Hr. setting time			276.00
			5671.10
		TAX	283.56
			5954.66

All Construction Completed

(Signature)



5955

Cathodic Protection Services Co.
1608 Schofield Ln.
P.O. Box
Farmington, NM 87499
(505) 327-9215
(505) 325-1946

Date 5/20/88

Company Meridian oil

Well No. HANCOCK A-2A Location O-26-28-9 Volts Applied 11.8 Amperes 33.3

Depth	Reading	Remarks
40	2.5	WATER
45	2.7	
50	2.6	
55	2.5	
60	2.9	
65	2.9	
70	2.8	
75	2.7	
80	2.8	
85	2.4	
90	2.0	
95	1.6	
100	2.2	
105	2.6	
110	2.4	
115	2.4	
120	1.9	
125	1.6	
130	1.2	
135	1.3	
140	1.4	
145	2.9	
150	3.2 —	(10)
155	2.9	
160	2.8	
165	2.3	
170	2.0	
175	2.1	
180	2.6	
185	3.0	
190	3.0 —	(9)
195	2.8	
200	2.5	
205	3.0 —	(8)
210	2.9	
215	2.6	
220	2.3	
225	1.9	
230	1.8	
235	2.7	
240	3.0 —	(7)
245	2.1 •	
250	3.1 —	(6)
255	3.2 •	
260	2.9 —	(5)
265	2.7	
270	2.6	
275	2.3	
280	2.3	
285	2.5	
290	3.0	
295	3.1 —	(4)
300	3.1	
305	3.1 —	(3)
310	3.2 •	
315	3.0 —	(2)
320	3.1	
325	3.1 —	(1)
330	2.9	
335	2.9	
340	2.8	
345	2.7	
350	2.9	
355	1.5	
360	1.4	
365	1.4	
370	1.2	
375	1.4	
380	1.2	
385		T.D.
400		Drilled To

Depth	Entry
690	1 - 325 - 4.7 - 6.6
695	2 - 315 - 4.4 - 6.7
700	3 - 305 - 4.7 - 6.9
705	4 - 295 - 4.4 - 6.6
710	5 - 260 - 4.1 - 6.0
715	6 - 250 - 4.4 - 6.6
720	7 - 240 - 4.3 - 6.4
725	8 - 205 - 4.4 -
730	9 - 190 - 4.3 -
735	10 - 150 - 4.4 -

D. CRASS DRILLING CO.

1951

Drill No. 3

DRILLER'S WELL LOG

S. P No. HANCOCK A-2A Date 5-19-88

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	35	SAND
35	70	SANDy Shale
70	125	Shale
125	140	SAND
140	210	Shale
210	230	SANDstone
230	390	Shale
390	400	SANDstone

Mud Bran Lime

Rock Bit Number Make

Remarks: Water @ 40'
Set 40' CASING. 2 Hrs.

Driller Ronnie Brown

1664 #2 30-045-07178
#6 30-045-20917
#9 30-045-07166

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 G Sec. 26 Twp 28 Rng 9

Name of Well/Wells or Pipeline Serviced HANCOCK A #2, #6, #9

cps 1985w

Elevation 6011' Completion Date 8/22/88 Total Depth 340' Land Type* N/A

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

If Casing is cemented, show amounts & types used 25'

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. 90'

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OIL CON. DIV
DIST. 3

Depths gas encountered: 200'

Type & amount of coke breeze used: N/A

Depths anodes placed: 300', 270', 260', 250', 225', 215', 155', 145', 130', 120'

Depths vent pipes placed: 335'

Vent pipe perforations: 260'

Remarks: gb #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.

1 - 30-045-07152
12 - 30-045-21561
10 - 30-045-20821

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

Operator MERIDIAN OIL Location: Unit L Sec. 28 Twp 28 Rng 9

Name of Well/Wells or Pipeline Serviced HANCOCK B #1 B #12 B #10

Elevation ____ Completion Date ____ Total Depth ____ Land Type ____

Casing Strings, Sizes, Types & Depths 100' of 8" PVC surface CASING

If Casing Strings are cemented, show amounts & types used Yes with 25 bags cement

If Cement or Bentonite Plugs have been placed, show depths & amounts used No

Depths & thickness of water zones with description of water: Fresh, Clear, Salty, Sulphur, Etc. FRESH WATER 140'

Depths gas encountered: No

Ground bed depth with type & amount of coke breeze used: 430' deep with 5750 lbs of Asbury 218 R COKE breeze

Depths anodes placed: 410, 400, 390, 380, 370, 310, 300, 290, 280, 250, 240, 230, 220, 210, 200

Depths vent pipes placed: 430'

Vent pipe perforations: bottom 300'

Remarks:

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

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

DATE: 5/8/96

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

Operator Meridian Oil Inc. Location: Unit G Sec. 34 Twp 28 Rng 09

Name of Well/Wells or Pipeline Serviced
Storey C #11

Elevation 6824' Completion Date 5/8/96 Total Depth 491' Land Type F

Casing Strings, Sizes, Types & Depths 5/7 Set 59' of 8" PVC Casing.
No Gas, Water, or Boulders were Encountered During Casing.

If Casing Strings are cemented, show amounts & types used Cemented
With 15 Sacks

If Cement or Bentonite Plugs have been placed, show depths & amounts used
None

Depths & thickness of water zones with description of water: Fresh, Clear,
Salty, Sulphur, Etc. Hit Fresh Water at 360'.

Depths gas encountered: None

Ground bed depth with type & amount of coke breeze used: 491' Depth.
Used 130 Sacks of Asbury 218R (6500#)

Depths anodes placed: 475', 465', 455', 445', 435', 425', 415', 405', 395', 355', 345', 325', 315', 230', +165'

Depths vent pipes placed: Surface To 491'.

Vent pipe perforations: Bottom 360'.

Remarks:

RECEIVED
FEB 19 1997
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.

CPS GROUND BED CONSTRUCTION WORKSHEET

CPS# 2915-W | P/L NAME(S) & NUMBER(S): STorey C #11

Q = 2I15 | TOTAL | VOLTS 11.7? | AMPS 19.3 | = OHMS .610 | DATE 5/8/96 | NAME: JOHN L. MOSS

REMARKS (notes for construction log): Driller Reported DAMP AREAS AT 70', 200', 260', AND WATER AT 360'. INSTALLED 491' OF 1" PE VENT PIPE, WITH THE BOTTOM 360' PERFORATED. COKE BREEZE TO 115'.

DEPTH	LOG ANODE	ANODE #	DEPTH	LOG ANODE	ANODE #	DEPTH	LOG ANODE	ANODE #	DEPTH	LOG ANODE	ANODE #
100			295			490	TD	491'	685		
105			300			495			690		
110			305			500			695		
115			310			505			700		
120			315		−13	510					
125			320			515			ANODE #	DEPTH	NO COKE	FULLY COKED
130	.3		325		−12	520			1	475'	1.8	4.0
135	.3		330			525			2	465'	1.7	3.9
140	.4		335			530			3	455'	1.7	4.0
145	.4		340			535			4	445'	3.0	4.6
150	.4		345		−11	540			5	435'	1.4	3.1
155	1.0		350			545			6	425'	1.3	2.8
160	1.3		355		−10	550			7	415'	1.2	2.7
165	1.3	−15	360			555			8	405'	1.6	3.1
170	.9		365			560			9	395'	1.4	3.2
175	.4		370			565			10	385'	1.3	3.6
180	.3		375			570			11	345'	1.2	3.6
185	.2		380			575			12	325'	1.3	3.3
190	.2		385			580			13	215'	1.5	3.2
195	.1		390			585			14	220'	3.0	5.4
200	.3		395		−9	590			15	165'	1.7	2.3
205	.3		400			595			16			
210	.4		405		−8	600			17			
215	.2		410			605			18			
220	1.0		415		−7	610			19			
225	.9		420			615			20			
230	2.8	−14	425		−6	620			21			
235	2.8		430			625			22			
240	1.2		435		−5	630			23			
245	1.2		440			635			24			
250	1.0		445		−4	640			25			
255	1.0		450			645			26			
260	1.1		455		−3	650			27			
265	1.1		460			655			28			
270	1.1		465		−2	660			29			
275	.9		470			665			30			
280	.9		475		−1	670						
285	.9		480			675						
290	1.0		485			680						

DISTRIBUTION – ORIGINAL – DEPARTMENT CPS FILE – DIVISION CORROSION SUBDIVISION

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

Operator Burlington Resources Location: Unit P Sec. 35 Twp 28 Rng 9

Name of Well/Wells or Pipeline Serviced Hancock "A" #1A

30-045-29492

Elevation ____ Completion Date 8-12-98 Total Depth 300' Land Type I

Casing Strings, Sizes, Types & Depths 8" PVC X 20'

If Casing Strings are cemented, show amounts & types used 4 Bags Cement

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

None

Depths & thickness of water zones with description of water: Fresh, Clear, Salty, Sulphur, Etc. 100', seep

Depths gas encountered: none

Ground bed depth with type & amount of coke breeze used: 300' = 1500 lbs Loresco SW

Depths anodes placed: 290, 280, 273, 266, 259, 245, 238, 231

Depths vent pipes placed: 300'

Vent pipe perforations: Bottom 200'

Remarks:

RECEIVED
MAR - 9 1999
OIL CON. DIV.
DIST. 3

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

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

TIERRA DYNAMIC COMPANY — DEEP WELL GROUNDED LOG DATA SHEET — Lease # 04209

COMPANY NAME: Burlington Resources

WELL NAME: Hancock "A" 1A

LEGAL LOCATION: Sec. 35-28-9 COUNTY: San Juan

DATE: 8-12-98

DEPTH: 300'

BIT SIZE: 6 3/4

DRILLER NAME: Jack Ledbetter

SIZE AND TYPE OF CASING: 8" PVC X 20'

TYPE OF COKE: Loresco SW

AMT. OF COKE BACKFILL: 1500 lbs

VENT PIPE: 300'

PERF. PIPE: Bottom 200'

ANODE AMT. & TYPE: Anotec-Duriron

BOULDER DRILLING:

DEPTH FT.	LOG	ANODE	DEPTH FT.	LOG	ANODE	DEPTH FT.	LOG	ANODE
100			265	1.9	4	430		
105			270	2.0		435		
110			275	2.0	3	440		
115			280	2.0	2	445		
120			285	1.9		450		
125			290	1.8	1	455		
130			295	1.7		460		
135			300	T.D.		465		
140			305			470		
145			310			475		
150	3.3		315			480		
155	3.0		320			485		
160	3.1		325			490		
165	2.5		330			495		
170	2.3		335			500		
175	1.5		340			505		
180	1.4		345			510		
185	1.5		350			515		
190	3.2		355			520		
195	3.1		360			525		
200	2.7		365			530		
205	2.8		370			535		
210	2.6		375			540		
215	2.5		380			545		
220	2.6		385			550		
225	2.1		390			555		
230	2.6	8	395			560		
235	3.0		400			565		
240	3.3	7	405			570		
245	2.8	6	410			575		
250	1.5		415			580		
255	1.7		420			585		
260	1.8	5	425			590		
						595		

COMPLETION INFORMATION:

WATER DEPTHS: 100 seep

ISOLATION PLUGS:

ANODE#	DEPTH	OUTPUT NO COK	OUTPUT COKED
1	290	1.8	3.5
2	280	1.9	4.1
3	273	2.0	4.1
4	266	2.0	4.1
5	259	1.9	4.0
6	245	2.8	5.0
7	238	3.1	5.4
8	231	2.7	4.2
9			
10			
11			
12			
13			
14			
15			
16			
17			
18			
19			
20			
21			
22			
23			
24			
25			
26			
27			
28			
29			
30			

LOGING VOLTS: 12.56 VOLTAGE SOURCE: Auto

TOTAL AMPS: 12.7 TOTAL G/B RESISTANCE: .9

REMARKS:

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.

97057-1125

REQUEST FOR APPROVAL TO ACCEPT SOLID WASTE

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

2. **Originating Site:**
Storey C LS #7 Pipeline

3. **Location of Material (Street Address, City, State or ULSTR):**
Unit Letter A Section 27 T28N R 9W; 36.638245, -107.773088

Dec 2020

4. **Source and Description of Waste:**
Source: Soil/Sediment/water from remediation activities associated with a natural gas pipeline leak.
Description: Soil/Sediment/water from remediation activities associated with a natural gas pipeline leak.
Estimated Volume 50 yd^3 / bbls Known Volume (to be entered by the operator at the end of the haul) 70 yd^3 / 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 esentative for Enterprise Field Services, LLC authorizes Envirotech, Inc. to complete
Generator S
the required testi esting Certification.

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

5. **Transporter: TBD**

OCD Permitted Surface Waste Management Facility

Name and Facility Permit #: **Envirotech, Inc. Soil Remediation Facility * Permit #: NM01-0011**
Address of Facility: **Hill Top, NM**
Method of Treatment and/or Disposal:
☐ Evaporation ☐ Injection ☐ Treating Plant ☒ Landfarm ☐ Landfill ☐ Other

Waste Acceptance Status:

☒ **APPROVED** ☐ **DENIED** (Must Be Maintained As Permanent Record)

PRINT NAME: Greg Crabtree TITLE: Enviro Manager DATE: 12/23/20

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

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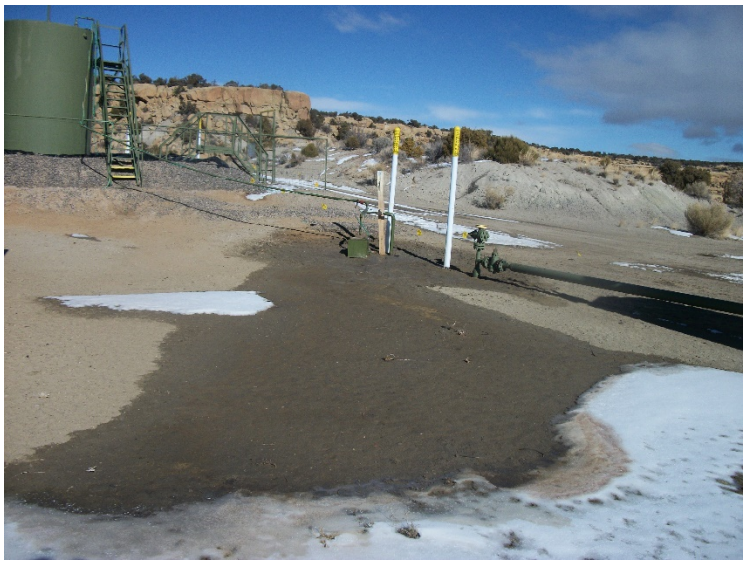
APPENDIX D

Photographic Documentation

SITE PHOTOGRAPHS

Closure Report
Enterprise Field Services, LLC
Storey C LS #7 (12/18/20)
Ensolum Project No. 05A1226129

ENSOLUM

Photograph 1 Photograph Description: View of the release area.	
Photograph 2 Photograph Description: View of the in-process excavation activities.	
Photograph 3 Photograph Description: View of the excavation after initial restoration.	

ENSOLUM

APPENDIX E

Regulatory Correspondence

From: Long, Thomas
To: "Smith, Cory, EMNRD (Cory.Smith@state.nm.us)"; "slandon@blm.gov"
Cc: Stone, Brian
Subject: FW: Storey C LS #7 - UL A Section 27 T28N R 9W; 36.638245, -107.773088
Date: Thursday, December 31, 2020 1:32:00 PM
Attachments: Storey Site Drawing..jpg
Storey CL S7.pdf

Cory/Sheri,

Please find the attached site sketch and lab report for the Storey C LS #7 excavation. All sample results are below the NMOCD Tier I remediation standard. Entperise will backfill with clean imported fill material. If you have any questions, please call or email.

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

Enterprise Products

From: Smith, Cory, EMNRD <Cory.Smith@state.nm.us>
Sent: Tuesday, December 29, 2020 8:52 AM
To: Long, Thomas <tjlong@eprod.com>; 'slandon@blm.gov' <slandon@blm.gov>
Cc: Stone, Brian <bmstone@eprod.com>
Subject: [EXTERNAL] RE: Storey C LS #7 - UL A Section 27 T28N R 9W; 36.638245, -107.773088

[Use caution with links/attachments]
Tom,

Thank you for the notification of release, please submit an initial C-141 though the E-permitting system no later than January 7, 2021.

Cory Smith • Environmental Specialist
Environmental Bureau
EMNRD - Oil Conservation Division
1000 Rio Brazos | Aztec, NM 87410
505.334.6178 x115 | Cory.Smith@state.nm.us
http://www.emnrd.state.nm.us/OCD/

From: Long, Thomas <tjlong@eprod.com>
Sent: Monday, December 28, 2020 1:47 PM
To: Smith, Cory, EMNRD <Cory.Smith@state.nm.us>; 'slandon@blm.gov' <slandon@blm.gov>
Cc: Stone, Brian <bmstone@eprod.com>
Subject: [EXT] Storey C LS #7 - UL A Section 27 T28N R 9W; 36.638245, -107.773088

Cory/Sheri,

This email is a notification that Entperise had release of condensate from the Storey C LS #7 meter tube on December 18, 2020. An area of approximately 10 feet by 20 was affected. No washes were affected. Entperise began remediation on December 23, 2020 and determined the release reportable per NMOCD regulation today, December 28, 2020, due the volume of impacted soil. I will keep you informed as to when we will be collecting soil samples for laboratory analysis. If you have any questions, please call or email.

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

Enterprise Products

ENSOLUM

APPENDIX F

Table 1 – Soil Analytical Summary

ENSOLUM

TABLE 1
Storey C LS #7 (12/18/20)
SOIL ANALYTICAL SUMMARY

Sample I.D.	Date	Sample Type C- Composite G - Grab	Sample Depth (Feet)	Benzene (mg/kg)	Toluene (mg/kg)	Ethylbenzene (mg/kg)	Xylenes (mg/kg)	Total BTEX (mg/kg)	TPH GRO (mg/kg)	TPH DRO (mg/kg)	TPH MRO (mg/kg)	Total Combined TPH (GRO/DRO/MRO) (mg/kg)	Chloride (mg/kg)
New Mexico Energy, Mineral & Natural Resources Department Oil Conservation Division Closure Criteria (Tier I)				**10**	**NE**	**NE**	**NE**	**50**				**100**	**600**
Excavation Composite Soil Samples													
S-1	12.30.20	C	0 to 4	<0.021	<0.041	<0.041	<0.082	ND	<4.1	<9.6	<48	ND	<60
S-2	12.30.20	C	4 to 5	<0.018	<0.035	<0.035	<0.071	ND	<3.5	<9.5	<47	ND	<61
S-3	12.30.20	C	0 to 4	<0.019	<0.037	<0.037	<0.074	ND	<3.7	<9.7	<48	ND	<59
S-4	12.30.20	C	4 to 5	<0.019	<0.037	<0.037	<0.075	ND	<3.7	<9.5	<48	ND	<60
S-5	12.30.20	C	0 to 3	<0.019	<0.037	<0.037	<0.074	ND	6.0	31	<48	37	<60
S-6	12.30.20	C	5	<0.018	<0.036	<0.036	<0.072	ND	<3.6	<9.6	<48	ND	<60
S-7	12.30.20	C	3	<0.021	<0.042	<0.042	<0.084	ND	<4.2	<9.3	<47	ND	<60
S-8	12.30.20	C	0 to 1	<0.019	<0.039	<0.039	<0.077	ND	<3.9	<9.8	<49	ND	<60

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

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

NE = Not established

mg/kg = milligram per kilogram

BTEX = Benzene, Toluene, Ethylbenzene, and Xylenes

TPH = Total Petroleum Hydrocarbon

GRO = Gasoline Range Organics

DRO = Diesel Range Organics

MRO = Motor Oil/Lube Oil Range Organics

ENSOLUM

APPENDIX G

Laboratory Data Sheets & Chain of Custody Documentation

HALL ENVIRONMENTAL ANALYSIS LABORATORY

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

January 04, 2021

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

RE: Storey CL S7 OrderNo.: 2012D19

Dear Kyle Summers:

Hall Environmental Analysis Laboratory received 8 sample(s) on 12/31/2020 for the analyses presented in the following report.

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

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

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

Sincerely,

Andy Freeman
Laboratory Manager
4901 Hawkins NE
Albuquerque, NM 87109

Analytical Report
Lab Order **2012D19**
Date Reported: **1/4/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: ENSOLUM **Client Sample ID:** S-1
Project: Storey CL S7 **Collection Date:** 12/30/2020 11:00:00 AM
Lab ID: 2012D19-001 **Matrix:** MEOH (SOIL) **Received Date:** 12/31/2020 7:50:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **VP**	
Chloride	ND	60		mg/Kg	20	12/31/2020 10:28:40 AM	57297
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **mb**	
Diesel Range Organics (DRO)	ND	9.6		mg/Kg	1	12/31/2020 8:59:35 AM	57294
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	12/31/2020 8:59:35 AM	57294
Surr: DNOP	93.1	30.4-154		%Rec	1	12/31/2020 8:59:35 AM	57294
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	4.1		mg/Kg	1	12/31/2020 9:15:14 AM	57269
Surr: BFB	96.9	75.3-105		%Rec	1	12/31/2020 9:15:14 AM	57269
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**	
Benzene	ND	0.021		mg/Kg	1	12/31/2020 9:15:14 AM	57269
Toluene	ND	0.041		mg/Kg	1	12/31/2020 9:15:14 AM	57269
Ethylbenzene	ND	0.041		mg/Kg	1	12/31/2020 9:15:14 AM	57269
Xylenes, Total	ND	0.082		mg/Kg	1	12/31/2020 9:15:14 AM	57269
Surr: 4-Bromofluorobenzene	113	80-120		%Rec	1	12/31/2020 9:15:14 AM	57269

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

Qualifiers:

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

Analytical Report
Lab Order **2012D19**
Date Reported: **1/4/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: ENSOLUM **Client Sample ID:** S-2
Project: Storey CL S7 **Collection Date:** 12/30/2020 11:05:00 AM
Lab ID: 2012D19-002 **Matrix:** MEOH (SOIL) **Received Date:** 12/31/2020 7:50:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **VP**	
Chloride	ND	61		mg/Kg	20	12/31/2020 10:41:04 AM	57297
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **mb**	
Diesel Range Organics (DRO)	ND	9.5		mg/Kg	1	12/31/2020 9:23:07 AM	57294
Motor Oil Range Organics (MRO)	ND	47		mg/Kg	1	12/31/2020 9:23:07 AM	57294
Surr: DNOP	92.1	30.4-154		%Rec	1	12/31/2020 9:23:07 AM	57294
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	3.5		mg/Kg	1	12/31/2020 9:38:45 AM	57269
Surr: BFB	96.7	75.3-105		%Rec	1	12/31/2020 9:38:45 AM	57269
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**	
Benzene	ND	0.018		mg/Kg	1	12/31/2020 9:38:45 AM	57269
Toluene	ND	0.035		mg/Kg	1	12/31/2020 9:38:45 AM	57269
Ethylbenzene	ND	0.035		mg/Kg	1	12/31/2020 9:38:45 AM	57269
Xylenes, Total	ND	0.071		mg/Kg	1	12/31/2020 9:38:45 AM	57269
Surr: 4-Bromofluorobenzene	113	80-120		%Rec	1	12/31/2020 9:38:45 AM	57269

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

Qualifiers:

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

Analytical Report
Lab Order **2012D19**
Date Reported: **1/4/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: ENSOLUM **Client Sample ID:** S-3
Project: Storey CL S7 **Collection Date:** 12/30/2020 11:10:00 AM
Lab ID: 2012D19-003 **Matrix:** MEOH (SOIL) **Received Date:** 12/31/2020 7:50:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **VP**	
Chloride	ND	59		mg/Kg	20	12/31/2020 10:53:28 AM	57297
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **mb**	
Diesel Range Organics (DRO)	ND	9.7		mg/Kg	1	12/31/2020 9:46:53 AM	57294
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	12/31/2020 9:46:53 AM	57294
Surr: DNOP	93.4	30.4-154		%Rec	1	12/31/2020 9:46:53 AM	57294
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	3.7		mg/Kg	1	12/31/2020 10:02:20 AM	57269
Surr: BFB	95.5	75.3-105		%Rec	1	12/31/2020 10:02:20 AM	57269
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**	
Benzene	ND	0.019		mg/Kg	1	12/31/2020 10:02:20 AM	57269
Toluene	ND	0.037		mg/Kg	1	12/31/2020 10:02:20 AM	57269
Ethylbenzene	ND	0.037		mg/Kg	1	12/31/2020 10:02:20 AM	57269
Xylenes, Total	ND	0.074		mg/Kg	1	12/31/2020 10:02:20 AM	57269
Surr: 4-Bromofluorobenzene	112	80-120		%Rec	1	12/31/2020 10:02:20 AM	57269

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

Qualifiers:

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

Analytical Report
Lab Order **2012D19**
Date Reported: **1/4/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: ENSOLUM **Client Sample ID:** S-4
Project: Storey CL S7 **Collection Date:** 12/30/2020 11:15:00 AM
Lab ID: 2012D19-004 **Matrix:** MEOH (SOIL) **Received Date:** 12/31/2020 7:50:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **VP**	
Chloride	ND	60		mg/Kg	20	12/31/2020 11:05:53 AM	57297
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **mb**	
Diesel Range Organics (DRO)	ND	9.5		mg/Kg	1	12/31/2020 10:10:40 AM	57294
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	12/31/2020 10:10:40 AM	57294
Surr: DNOP	93.7	30.4-154		%Rec	1	12/31/2020 10:10:40 AM	57294
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	3.7		mg/Kg	1	12/31/2020 10:25:55 AM	57269
Surr: BFB	96.6	75.3-105		%Rec	1	12/31/2020 10:25:55 AM	57269
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**	
Benzene	ND	0.019		mg/Kg	1	12/31/2020 10:25:55 AM	57269
Toluene	ND	0.037		mg/Kg	1	12/31/2020 10:25:55 AM	57269
Ethylbenzene	ND	0.037		mg/Kg	1	12/31/2020 10:25:55 AM	57269
Xylenes, Total	ND	0.075		mg/Kg	1	12/31/2020 10:25:55 AM	57269
Surr: 4-Bromofluorobenzene	111	80-120		%Rec	1	12/31/2020 10:25:55 AM	57269

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

Qualifiers:

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

Analytical Report
Lab Order **2012D19**
Date Reported: **1/4/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: ENSOLUM **Client Sample ID:** S-5
Project: Storey CL S7 **Collection Date:** 12/30/2020 11:20:00 AM
Lab ID: 2012D19-005 **Matrix:** MEOH (SOIL) **Received Date:** 12/31/2020 7:50:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **VP**	
Chloride	ND	60		mg/Kg	20	12/31/2020 11:18:17 AM	57297
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **mb**	
Diesel Range Organics (DRO)	31	9.7		mg/Kg	1	12/31/2020 9:02:21 AM	57294
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	12/31/2020 9:02:21 AM	57294
Surr: DNOP	103	30.4-154		%Rec	1	12/31/2020 9:02:21 AM	57294
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	6.0	3.7		mg/Kg	1	12/31/2020 10:49:48 AM	57269
Surr: BFB	118	75.3-105	S	%Rec	1	12/31/2020 10:49:48 AM	57269
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**	
Benzene	ND	0.019		mg/Kg	1	12/31/2020 10:49:48 AM	57269
Toluene	ND	0.037		mg/Kg	1	12/31/2020 10:49:48 AM	57269
Ethylbenzene	ND	0.037		mg/Kg	1	12/31/2020 10:49:48 AM	57269
Xylenes, Total	ND	0.074		mg/Kg	1	12/31/2020 10:49:48 AM	57269
Surr: 4-Bromofluorobenzene	113	80-120		%Rec	1	12/31/2020 10:49:48 AM	57269

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

Qualifiers:

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

Analytical Report
Lab Order **2012D19**
Date Reported: **1/4/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: ENSOLUM **Client Sample ID:** S-6
Project: Storey CL S7 **Collection Date:** 12/30/2020 11:25:00 AM
Lab ID: 2012D19-006 **Matrix:** MEOH (SOIL) **Received Date:** 12/31/2020 7:50:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **VP**	
Chloride	ND	60		mg/Kg	20	12/31/2020 11:30:42 AM	57297
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **mb**	
Diesel Range Organics (DRO)	ND	9.6		mg/Kg	1	12/31/2020 9:26:18 AM	57294
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	12/31/2020 9:26:18 AM	57294
Surr: DNOP	106	30.4-154		%Rec	1	12/31/2020 9:26:18 AM	57294
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	3.6		mg/Kg	1	12/31/2020 11:13:25 AM	57269
Surr: BFB	99.3	75.3-105		%Rec	1	12/31/2020 11:13:25 AM	57269
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**	
Benzene	ND	0.018		mg/Kg	1	12/31/2020 11:13:25 AM	57269
Toluene	ND	0.036		mg/Kg	1	12/31/2020 11:13:25 AM	57269
Ethylbenzene	ND	0.036		mg/Kg	1	12/31/2020 11:13:25 AM	57269
Xylenes, Total	ND	0.072		mg/Kg	1	12/31/2020 11:13:25 AM	57269
Surr: 4-Bromofluorobenzene	111	80-120		%Rec	1	12/31/2020 11:13:25 AM	57269

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

Qualifiers:

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

Analytical Report
Lab Order **2012D19**
Date Reported: **1/4/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: ENSOLUM **Client Sample ID:** S-7
Project: Storey CL S7 **Collection Date:** 12/30/2020 11:30:00 AM
Lab ID: 2012D19-007 **Matrix:** MEOH (SOIL) **Received Date:** 12/31/2020 7:50:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **VP**	
Chloride	ND	60		mg/Kg	20	12/31/2020 11:43:07 AM	57297
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **mb**	
Diesel Range Organics (DRO)	ND	9.3		mg/Kg	1	12/31/2020 9:50:20 AM	57294
Motor Oil Range Organics (MRO)	ND	47		mg/Kg	1	12/31/2020 9:50:20 AM	57294
Surr: DNOP	106	30.4-154		%Rec	1	12/31/2020 9:50:20 AM	57294
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	4.2		mg/Kg	1	12/31/2020 11:36:58 AM	57269
Surr: BFB	97.7	75.3-105		%Rec	1	12/31/2020 11:36:58 AM	57269
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**	
Benzene	ND	0.021		mg/Kg	1	12/31/2020 11:36:58 AM	57269
Toluene	ND	0.042		mg/Kg	1	12/31/2020 11:36:58 AM	57269
Ethylbenzene	ND	0.042		mg/Kg	1	12/31/2020 11:36:58 AM	57269
Xylenes, Total	ND	0.084		mg/Kg	1	12/31/2020 11:36:58 AM	57269
Surr: 4-Bromofluorobenzene	112	80-120		%Rec	1	12/31/2020 11:36:58 AM	57269

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

Qualifiers:

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

Analytical Report
Lab Order **2012D19**
Date Reported: **1/4/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: ENSOLUM **Client Sample ID:** S-8
Project: Storey CL S7 **Collection Date:** 12/30/2020 11:35:00 AM
Lab ID: 2012D19-008 **Matrix:** MEOH (SOIL) **Received Date:** 12/31/2020 7:50:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **VP**	
Chloride	ND	60		mg/Kg	20	12/31/2020 11:55:31 AM	57297
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **mb**	
Diesel Range Organics (DRO)	ND	9.8		mg/Kg	1	12/31/2020 10:14:12 AM	57294
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	12/31/2020 10:14:12 AM	57294
Surr: DNOP	106	30.4-154		%Rec	1	12/31/2020 10:14:12 AM	57294
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	3.9		mg/Kg	1	12/31/2020 12:00:28 PM	57269
Surr: BFB	95.6	75.3-105		%Rec	1	12/31/2020 12:00:28 PM	57269
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**	
Benzene	ND	0.019		mg/Kg	1	12/31/2020 12:00:28 PM	57269
Toluene	ND	0.039		mg/Kg	1	12/31/2020 12:00:28 PM	57269
Ethylbenzene	ND	0.039		mg/Kg	1	12/31/2020 12:00:28 PM	57269
Xylenes, Total	ND	0.077		mg/Kg	1	12/31/2020 12:00:28 PM	57269
Surr: 4-Bromofluorobenzene	112	80-120		%Rec	1	12/31/2020 12:00:28 PM	57269

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

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2012D19**

04-Jan-21

Client: ENSOLUM

Project: Storey CL S7

Sample ID: **MB-57297**	SampType: **MBLK**	TestCode: **EPA Method 300.0: Anions**							
Client ID: **PBS**	Batch ID: **57297**	RunNo: **74345**							
Prep Date: **12/31/2020**	Analysis Date: **12/31/2020**	SeqNo: **2625004**	Units: **mg/Kg**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	ND	1.5								

Sample ID: **LCS-57297**	SampType: **LCS**	TestCode: **EPA Method 300.0: Anions**							
Client ID: **LCSS**	Batch ID: **57297**	RunNo: **74345**							
Prep Date: **12/31/2020**	Analysis Date: **12/31/2020**	SeqNo: **2625005**	Units: **mg/Kg**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	14	1.5	15.00	0	94.0	90	110			

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2012D19**

04-Jan-21

Client: ENSOLUM

Project: Storey CL S7

Sample ID: **2012D19-001AMS** SampType: **MS** TestCode: **EPA Method 8015M/D: Diesel Range Organics**

Client ID: **S-1** Batch ID: **57294** RunNo: **74361**

Prep Date: **12/31/2020** Analysis Date: **12/31/2020** SeqNo: **2625210** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	42	9.9	49.36	0	85.7	15	184			
Surr: DNOP	4.4		4.936		89.7	30.4	154			

Sample ID: **2012D19-001AMSD** SampType: **MSD** TestCode: **EPA Method 8015M/D: Diesel Range Organics**

Client ID: **S-1** Batch ID: **57294** RunNo: **74361**

Prep Date: **12/31/2020** Analysis Date: **12/31/2020** SeqNo: **2625211** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	40	9.0	44.96	0	88.0	15	184	6.64	23.9	
Surr: DNOP	4.1		4.496		91.8	30.4	154	0	0	

Sample ID: **MB-57294** SampType: **MBLK** TestCode: **EPA Method 8015M/D: Diesel Range Organics**

Client ID: **PBS** Batch ID: **57294** RunNo: **74362**

Prep Date: **12/31/2020** Analysis Date: **12/31/2020** SeqNo: **2625216** 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	9.9		10.00		98.6	30.4	154			

Sample ID: **LCS-57294** SampType: **LCS** TestCode: **EPA Method 8015M/D: Diesel Range Organics**

Client ID: **LCSS** Batch ID: **57294** RunNo: **74362**

Prep Date: **12/31/2020** Analysis Date: **12/31/2020** SeqNo: **2625218** 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	94.0	68.9	141			
Surr: DNOP	4.5		5.000		90.6	30.4	154			

Qualifiers:

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

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2012D19**
04-Jan-21

Client: ENSOLUM
Project: Storey CL S7

Sample ID: **LCS-57269** SampType: **LCS** TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **LCSS** Batch ID: **57269** RunNo: **74346**
Prep Date: **12/29/2020** Analysis Date: **1/1/2021** SeqNo: **2624888** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	23	5.0	25.00	0	90.9	72.5	106			
Surr: BFB	1000		1000		102	75.3	105			

Qualifiers:

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

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2012D19**
04-Jan-21

Client: ENSOLUM
Project: Storey CL S7

Sample ID: **LCS-57269** SampType: **LCS** TestCode: **EPA Method 8021B: Volatiles**
Client ID: **LCSS** Batch ID: **57269** RunNo: **74346**
Prep Date: **12/29/2020** Analysis Date: **12/31/2020** SeqNo: **2624756** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.95	0.025	1.000	0	94.6	80	120			
Toluene	0.98	0.050	1.000	0	97.8	80	120			
Ethylbenzene	0.97	0.050	1.000	0	97.2	80	120			
Xylenes, Total	3.0	0.10	3.000	0	99.0	80	120			
Surr: 4-Bromofluorobenzene	1.2		1.000		118	80	120			

Qualifiers:

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

HALL ENVIRONMENTAL ANALYSIS LABORATORY

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

Sample Log-In Check List

Client Name: **ENSOLUM** Work Order Number: **2012D19** RcptNo: **1**

Received By: **Cheyenne Cason** **12/31/2020 7:50:00 AM**

Completed By: **Cheyenne Cason** **12/31/2020 7:56:07 AM**

Reviewed By: JR 12/31/20

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: CM 12/31/20

Special Handling (if applicable)

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

Person Notified: Date:

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

Regarding:

Client Instructions:

16. Additional remarks:

17. **Cooler Information**

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	4.9	Good	Yes			

Chain-of-Custody Record

Client: Ensolum, LLC.

Mailing Address: 606 S Rio Grande Suite A 87410

Phone #:

email or Fax#:

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

Accreditation: ☐ Az Compliance
☐ NELAC ☐ Other

☐ EDD (Type)

Turn-Around Time: 1100 on 30 Same Day
☐ Standard ☒ Rush 12-31-20

Project Name: Storey CL S #7

Project #: 05A1226128

Project Manager: K. Summers

Sampler: C DiPonti

On Ice: ☒ Yes ☐ No

# of Coolers: 1

Cooler Temp(including CF): 5.1-0.2=4.9 (°C)

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

Date	Time	Matrix	Sample Name	Container Type and #	Preservative Type	HEAL No. 2012D14	BTEX / MTBE / TMB's (8021)	TPH:8015D(GRO / DRO / MRO)	8081 Pesticides/8082 PCB's	EDB (Method 504.1)	PAHs by 8310 or 8270SIMS	RCRA 8 Metals	Cl, F, Br, NO_3, NO_2, PO_4, SO_4	8260 (VOA)	8270 (Semi-VOA)	Total Coliform (Present/Absent)
12/30	1100	S	S-1	1 4oz jar	Cool	001	X	X					X			
12/30	1105	S	S-2		Cool	002	X	X					X			
12/30	1110	S	S-3		Cool	003	X	X					X			
12/30	1115	S	S-4		Cool	004	X	X					X			
12/30	1120	S	S-5		Cool	005	X	X					X			
12/30	1125	S	S-6		Cool	006	X	X					X			
12/30	1130	S	S-7		Cool	007	X	X					X			
12/30	1135	S	S-8		Cool	008	X	X					X			

Date:	Time:	Relinquished by:	Received by:	Via:	Date	Time
12/30/2020	1415		Chris Walls		12/30/2020	1415
12/30/2020	1741	Christian Walls		Courier	12/31/20	0750

Remarks: PM - Tom Long
AFE # N

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

Operator: Enterprise Field Services, LLC PO Box 4324 Houston, TX 77210	OGRID: 241602
	Action Number: 20468
	Action Type: [C-141] Release Corrective Action (C-141)

CONDITIONS

Created By	Condition	Condition Date
nvelez	None	6/10/2022