State of New Mexico
Oil Conservation Division

Incident ID	NCLB0525654437
District RP	NA
Facility ID	NA
Application ID	NA

Site Assessment/Characterization

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

What is the shallowest depth to groundwater beneath the area affected by the release?	46 (ft bgs)
Did this release impact groundwater or surface water?	☐ Yes ☒ No
Are the lateral extents of the release within 300 feet of a continuously flowing watercourse or any other significant watercourse?	☐ Yes ☒ No
Are the lateral extents of the release within 200 feet of any lakebed, sinkhole, or playa lake (measured from the ordinary high-water mark)?	☐ Yes ☒ No
Are the lateral extents of the release within 300 feet of an occupied permanent residence, school, hospital, institution, or church?	☐ Yes ☒ No
Are the lateral extents of the release within 500 horizontal feet of a spring or a private domestic fresh water well used by less than five households for domestic or stock watering purposes?	☐ Yes ☒ No
Are the lateral extents of the release within 1000 feet of any other fresh water well or spring?	☐ Yes ☒ No
Are the lateral extents of the release within incorporated municipal boundaries or within a defined municipal fresh water well field?	☐ Yes ☒ No
Are the lateral extents of the release within 300 feet of a wetland?	☐ Yes ☒ No
Are the lateral extents of the release overlying a subsurface mine?	☐ Yes ☒ No
Are the lateral extents of the release overlying an unstable area such as karst geology?	☒ Yes ☐ No
Are the lateral extents of the release within a 100-year floodplain?	☐ Yes ☒ No
Did the release impact areas **not** on an exploration, development, production, or storage site?	☐ Yes ☒ No

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

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

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

If the site characterization report does not include completed efforts at remediation of the release, the report must include a proposed remediation plan. That plan must include the estimated volume of material to be remediated, the proposed remediation technique, proposed sampling plan and methods, anticipated timelines for beginning and completing the remediation. The closure criteria for a release are contained in Table 1 of 19.15.29.12 NMAC, however, use of the table is modified by site- and release-specific parameters.

State of New Mexico
Oil Conservation Division

Incident ID	NCLB0525654437
District RP	NA
Facility ID	NA
Application ID	NA

Remediation Plan

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

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

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

☐ Contamination must be in areas immediately under or around production equipment where remediation could cause a major facility deconstruction.

☐ Extents of contamination must be fully delineated.

☐ Contamination does not cause an imminent risk to human health, the environment, or groundwater.

I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to OCD rules and regulations all operators are required to report and/or file certain release notifications and perform corrective actions for releases which may endanger public health or the environment. The acceptance of a C-141 report by the OCD does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to groundwater, surface water, human health or the environment. In addition, OCD acceptance of a C-141 report does not relieve the operator of responsibility for compliance with any other federal, state, or local laws and/or regulations.

Printed Name: Gene Choquette
Title: MCBU Sr. Environmental Specialist

Signature: Gene Choquette
Date: 07/14/2023

email: gchoquette@chevron.com
Telephone: 713-372-2100

OCD Only

Received by: _____ Date: _____

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

Signature: Nelson Velez
Date: 07/14/2023

Mr. Nelson Velez
Environmental Specialist
EMNRD - Oil Conservation Division
1000 Rio Brazos Road
Aztec, NM 87410

Arcadis U.S., Inc.
10205 Westheimer Road
Suite 800
Houston
Texas 77042
Phone: 713 953 4800
Fax: 713 977 4620
www.arcadis.com

TX Engineering License # F-533
TX Geoscientist License # 50158

Date: April 18, 2023
Subject: Soil Remediation Work Plan/Variance Request
Old Indian Draw Gathering Line Southern Area
Incident# NCLB0525654437

Eddy County, New Mexico

Mr. Velez
NMOCD
April 18, 2023

Contents

Tables

Figures

Photographic Logs

Appendices

Mr. Velez
NMOCD
April 18, 2023

Dear Mr. Velez,

Arcadis U.S., Inc. (Arcadis) has prepared this Soil Remediation Work Plan/Variance Request on behalf of Chevron U.S.A. Inc. (Chevron), for soil remediation activities at the Old Indian Draw Gathering Line Southern Area (Site), located in Eddy County, New Mexico.

Background

The Site is located approximately 8-miles southeast of the City of Carlsbad in Unit Letter J, Section 18, Township 22 South, Range 28 East. Old Indian Draw Gathering Line Site is an inactive pasture location as of March 17, 2023. The Site is located on land owned by the United States Department of the Interior and administered by the Bureau of Land Management (BLM). The site location map is depicted on **Figure 1**.

On June 24, 2005, an equipment failure caused a release of approximately 15 barrels (bbls) of crude oil and 35 bbls of produced water, of which 13 bbls of crude oil and 32 bbls of produced water were recovered. A C-141 Form was not located for this incident, but limited information pertaining to this incident was found on the New Mexico Oil Conservation Division (NMOCD) database. The release was assigned Incident Number NCLB0525654437. No remediation permit number was assigned. The information available from the NMOCD database for this release is included in **Appendix A**.

Initial Site Investigation

On June 14-15, 2021, Larson & Associates, Inc. (Larson) began assessing the release area to depths of approximately 10 feet below ground surface (bgs) at 3 locations within the release area boundaries and at 4 additional locations surrounding the release area utilizing air rotary drilling methods to evaluate the horizontal extent of the release area.

Soil samples were submitted to Eurofins/Xenco Laboratories in Midland, Texas, for analyses of chloride; benzene, toluene, ethylbenzene, and xylenes (BTEX); and total petroleum hydrocarbons (Total TPH). Analytical results were reported below the applicable NMOCD regulatory limits for a site with groundwater less than 50 feet bgs for total TPH (100 milligrams per kilogram (mg/kg)); BTEX (50 mg/kg); and benzene (10 mg/kg) from all soil samples collected. Analytical results indicated chloride concentrations ranged from 9.07 mg/kg in S-10 at 0.5 feet bgs to 2,470 mg/kg in S-3 at 5 feet bgs.

Larson returned to the Site on March 10, 2022, to continue vertical delineation activities utilizing air rotary drilling methods at 2 of the previously drilled locations (S-1 and S-2). Soil samples collected previously from this location were reported above the NMOCD regulatory limit of 600 mg/kg for chloride at a depth of approximately 10 feet bgs. The 2 subsequent borings were installed to approximately 15 feet bgs. Analytical results indicated chloride concentrations of 107 mg/kg in S-1 and 180 mg/kg in S-2 at 15 feet bgs. Vertical delineation of the release area was completed during this assessment, but additional horizontal delineation assessment activities were determined warranted.

Analytical results from the Larson assessment are depicted in **Table 1**. Soil boring locations completed by Larson are depicted on **Figure 2**.

Mr. Velez
NMOCD
April 18, 2023

Additional Field Activities Summary

Arcadis began additional horizontal delineation assessment activities on January 31, 2023, with a stainless-steel hand auger within the affected area. During the assessment, a resilient rock layer was encountered approximately 1-foot bgs at all locations. Arcadis collected 13 soil samples (L-9 through L-21) at depths of approximately six inches bgs. Only 1 soil sample (L-18) from that assessment was reported above the applicable NMOCD closure criteria for chloride at a concentration of 612 mg/kg. Evaluation of soil data collected to date confirmed horizontal and vertical delineation of the southern release area was accomplished in conjunction with the initial Larson assessment activities.

On February 13, 2023, Arcadis oversaw installation of a temporary monitoring well (TW-2) approximately 0.1 mile east of the Site (see **Figure 2**). During the installation of the temporary monitoring well, soil samples were collected from the surface to the top of the groundwater bearing unit at 5-foot intervals to conduct field screening for chloride utilizing Hach testing strips and for volatile organic compounds (VOCs) utilizing a photoionization detector (PID). Field screening results from soil samples collected during the installation of the temporary monitoring well indicated no chloride or VOC impacts in soil from the ground surface down to the groundwater bearing unit encountered at approximately 47.5 feet bgs. No soil samples were submitted for laboratory analysis.

On February 16, 2023, the temporary monitoring well was developed utilizing Environmental Protection Agency (EPA) Standard Methods. Following development activities on the temporary monitoring well, a groundwater sample was collected and submitted to the laboratory for analysis of chloride and total dissolved solids (TDS) concentrations. Laboratory analytical results indicated chloride and TDS concentrations were below the New Mexico Water Quality Control Commission (NMWQCC) Groundwater Standards of 250 milligrams per liter (mg/L) for chloride and 1,000 mg/L for TDS. Chloride was reported at 37.6 mg/L and TDS was reported at 328 mg/L. A copy of the Temporary Monitoring Well Boring Log is provided as **Appendix B**.

Evaluation of soil data collected to date confirm horizontal and vertical delineation of the release area were accomplished in conjunction with the initial Larson soil assessment activities, and that there is no chloride or TDS impact to groundwater proximate to the release area.

Analytical results from the subsequent Arcadis soil assessments can be found in **Table 2,** groundwater analytical results from groundwater samples collected from the temporary monitoring well can be found in **Table 3.** The soil sample locations completed by Arcadis are depicted on **Figure 2**. Laboratory analytical reports for soil and groundwater data collected are included in **Appendix C**.

Remediation Activities Summary

On March 8, 2023, Arcadis began excavation activities within the southern impacted area assuming the most stringent NMAC closure criteria for soil. A resilient calcrete rock layer was encountered across the release area at depths of approximately 1-foot bgs to 2.5 feet bgs. Repeated attempts to break through the resilient calcrete rock layer utilizing an excavator equipped with a trenching bucket and “rock teeth” yielded limited results.

Arcadis collected composite confirmation soil samples from the excavation area in accordance with Table I of part 19.15.29.12 NMAC. Sidewall and base composite confirmation soil samples were collected within 200 square feet sampling areas throughout the excavation area. Composite confirmation base samples were collected from the calcrete rock layer. A total of 42 composite confirmation soil samples were collected.

- All sidewall composite confirmation soil samples were reported below the applicable NMAC closure criteria stipulated in Table I of part 19.15.29.12 for a site with depth to groundwater less than 50 feet bgs for chloride, Total TPH, BTEX, and benzene.
- 22 of the 38 base composite confirmation soil samples were reported below the applicable NMAC closure criteria for chloride. Reported chloride concentrations above the applicable NMAC closure criteria of 600 mg/kg ranged from 602 mg/kg up to 2,190 mg/kg. No base composite confirmation soil samples were reported above the applicate NMAC closure criteria for a site with depth to groundwater less than 50 feet bgs for Total TPH, BTEX, or benzene.

Five-point composite sidewall sample locations are depicted on **Figure 2**, and the composite base sample locations are depicted on **Figure 3**. Current site conditions and the resilient rock layer encountered are documented in the attached **Photographic Log.** Impacted soil excavated to date have been transported to a NMOCD approved disposal facility. Waste manifests are available upon request.

Variance Request

Repeated attempts to break through the resilient calcrete rock layer utilizing an excavator equipped with a trenching bucket and “rock teeth” yielded limited results. Continued excavation activities are believed not practicable based on the site’s geologic conditions. Analytical data collected during assessment activities confirm the release area has been horizontally and vertically defined. As such, Arcadis is requesting approval of the following Variance:

- Due to the resilient calcrete rock layer encountered at shallow depths across the release area, Arcadis is requesting a variance to limit excavation activities to include only removing impacted soil affected above the NMOCD Reclamation Standards present within the release area to the maximum extent practicable (to the surface of the calcrete layer).
- Following excavation of impacted soil affected above the NMOCD closure criteria, a layer of gypsum and/or a desalination product will be installed on the floor of the excavated area. This control is designed to inhibit the downward migration of chloride remaining in-situ.
- Arcadis requests approval to install a geosynthetic liner atop impacted areas exhibiting BTEX, TPH, and/or chloride concentrations above the NMOCD Closure Criteria remaining in-situ. The liner will be installed atop the resilient calcrete rock layer. This engineering control is designed to inhibit the vertical migration of chloride in soil to groundwater along with the upward migration of chloride to further support revegetation of the remediated area.
- Upon installing the geosynthetic liner, the excavated area will be backfilled with locally sourced, non-impacted “like” material.
- Upon completion of remediation activities, the area will be reseeded with a BLM approved seed mixture during the first favorable growing season following closure of the Site.

Upon completion of the remediation and reclamation activities, a *Remediation Summary and Soil Closure Request* will be submitted to the NMOCD, containing a detailed summary of the field activities and laboratory analytical results.

Mr. Velez
NMOCD
April 18, 2023

If you have any questions or comments with regards to this work plan and variance request, please do not hesitate to contact Scott Foord at 713.953.4853 or by e-mail at William.Foord@arcadis.com.

Sincerely,

Arcadis U.S., Inc.

Scott Foord, PG

Program Manager

Tables

Table 1
2021/2022 Soil Analytical Results
Old Indian Draw Gathering Line Southern Area
Eddy County, New Mexico
32° 23' 34.90" North, 104° 07' 31.40" West

Sample	Depth (Feet)	Collection Date	Status	Benzene (mg/Kg)	BTEX (mg/Kg)	C6 - C12 (mg/Kg)	C12 - C28 (mg/Kg)	C28 - C35 (mg/Kg)	TPH (mg/Kg)	Chloride (mg/Kg)
Remediation Level:				**10**	**50**				**100**	**600**
S-1	1	6/14/2021	Removed	<0.00200	<0.00401	<49.7	<49.7	<49.7	<49.7	511
	3	6/14/2021	In-Situ	<0.00201	<0.00402	<49.9	<49.9	<49.9	<49.9	445
	5	6/14/2021	In-Situ	<0.00202	<0.00403	<50.0	<50.0	<50.0	<50.0	**736**
	10	6/14/2021	In-Situ	<0.00200	<0.00401	<49.8	<49.8	<49.8	<49.8	**760**
	15	3/10/2022	In-Situ	--	--	--	--	--	--	107
S-2	1	6/14/2021	Removed	<0.00200	<0.00400	<49.8	<49.8	<49.8	<49.8	**911**
	3	6/14/2021	In-Situ	<0.00200	<0.00399	<49.7	<49.7	<49.7	<49.7	**1,050**
	5	6/14/2021	In-Situ	<0.00199	<0.00398	<50.0	<50.0	<50.0	<50.0	**642**
	10	6/14/2021	In-Situ	<0.00200	<0.00400	<50.0	<50.0	<50.0	<50.0	**808**
	15	3/10/2022	In-Situ	--	--	--	--	--	--	180
S-3	1	6/15/2021	Removed	<0.00202	<0.00403	<49.9	<49.9	<49.9	<49.9	72.6
	3	6/15/2021	In-Situ	<0.00200	<0.00401	<50.0	<50.0	<50.0	<50.0	315
	5	6/15/2021	In-Situ	<0.00200	<0.00400	<50.0	<50.0	<50.0	<50.0	**2,470**
	10	6/15/2021	In-Situ	<0.00199	<0.00398	<49.8	<49.8	<49.8	<49.8	418
S-4	1	6/15/2021	In-Situ	<0.00200	<0.00401	<50.0	<50.0	<50.0	<50.0	245
	3	6/15/2021	In-Situ	<0.00200	<0.00400	<49.9	<49.9	<49.9	<49.9	467
	5	6/15/2021	In-Situ	<0.00200	<0.00399	<49.9	<49.9	<49.9	<49.9	9.79
	10	6/15/2021	In-Situ	<0.00199	<0.00398	<49.8	<49.8	<49.8	<49.8	239
S-9	0.5	6/14/2021	In-Situ	<0.00200	<0.00399	<49.9	<49.9	<49.9	<49.9	276
S-10	0.5	6/14/2021	In-Situ	<0.00200	<0.00401	<50.0	<50.0	<50.0	<50.0	9.07
S-11	0.5	6/14/2021	In-Situ	<0.00201	<0.00402	<50.0	<50.0	<50.0	<50.0	217

Notes: Analysis performed by Xenco Laboratories (Xenco) in Midland, Texas by EPA SW-846 8021B (BTEX), 8015M (TPH), and 300E (Chloride)
Depth in feet below ground surface (bgs)
mg/Kg: milligrams per kilogram equivalent to parts per million (ppm)
<: denotes concentration less than analytical method reporting limit
Bold and Highlighted exceeds OCD remediation action limits

Chevron
Table 2
2023 Soil Analytical Results
Old Indian Draw Gathering Line Southern
Incident No NCLB0525654437
Eddy County, New Mexico

Location ID	Depth (Feet)	Date Collected	Sample Name	Soil Status	BTEX					TPH				Gen Chem
					Benzene mg/kg	Toluene mg/kg	Ethylbenzene mg/kg	Xylenes, Total mg/kg	Total BTEX mg/kg	Gasoline Range Organics (GRO)-C6-C10 mg/kg	Diesel Range Organics (Over C10-C28) mg/kg	Oil Range Organics (Over C28-C36) mg/kg	Total TPH mg/kg	Chloride, Dissolved mg/kg
NMAC Screening Limits					10	- -	- -	- -	50	- -	- -	- -	100	600
L-09	0.5	01/31/2023	L-9-S-0-6" 20230131	In-Situ	--	--	--	--	--	--	--	--	--	<4.96
L-10	0.5	01/31/2023	L-10-S-0-6" 20230131	Removed	--	--	--	--	--	--	--	--	--	149
L-11	0.5	01/31/2023	L-11-S-0-6" 20230131	Removed	--	--	--	--	--	--	--	--	--	17.2
L-12	0.5	01/31/2023	L-12-S-0-6" 20230131	In-Situ	--	--	--	--	--	--	--	--	--	31.3
L-13	0.5	01/31/2023	L-13-S-0-6" 20230131	Removed	--	--	--	--	--	--	--	--	--	211
L-14	0.5	01/31/2023	L-14-S-0-6" 20230131	Removed	--	--	--	--	--	--	--	--	--	571
L-15	0.5	01/31/2023	L-15-S-0-6" 20230131	In-Situ	--	--	--	--	--	--	--	--	--	378
L-16	0.5	01/31/2023	L-16-S-0-6" 20230131	Removed	--	--	--	--	--	--	--	--	--	15.9
L-17	0.5	01/31/2023	L-17-S-0-6" 20230131	Removed	--	--	--	--	--	--	--	--	--	27.2
L-18	0.5	01/31/2023	L-18-S-0-6" 20230131	Removed	--	--	--	--	--	--	--	--	--	**612**
L-19	0.5	01/31/2023	L-19-S-0-6" 20230131	In-Situ	--	--	--	--	--	--	--	--	--	232
L-20	0.5	01/31/2023	L-20-S-0-6" 20230131	In-Situ	--	--	--	--	--	--	--	--	--	121
L-21	0.5	01/31/2023	L-21-S-0-6" 20230131	In-Situ	--	--	--	--	--	--	--	--	--	<4.99
B-22	1	03/09/2023	B-22-S-1'-20230309	In-Situ	0.000468J	<0.000455	<0.000564	<0.00101	<0.00101	36.0J B	27.7J B	<15.0	63.7	238B
B-23	1	03/09/2023	B-23-S-1'-20230309	In-Situ	<0.000381	<0.000451	<0.000559	<0.00100	<0.00100	24.6J B	43.4J B	17.6J	85.6	**700B**
B-24	1	03/09/2023	B-24-S-1'-20230309	In-Situ	<0.000384	<0.000455	<0.000564	<0.00101	<0.00101	17.7J F2	<15.0	<15.0	17.7J	208B
B-25	1	03/09/2023	B-25-S-1'-20230309	In-Situ	<0.000387	<0.000459	<0.000568	<0.00102	<0.00102	41.4J	15.7J	<15.0	57.1	342B
B-26	1	03/09/2023	B-26-S-1'-20230309	In-Situ	<0.000389	<0.000461	<0.000571	<0.00102	<0.00102	<15.0	<15.0	<15.0	<15.0	202B
B-27	1	03/09/2023	B-27-S-1'-20230309	In-Situ	<0.000383	<0.000454	<0.000563	<0.00101	<0.00101	18.7J	<15.0	<15.0	18.7J	142B
B-28	1	03/09/2023	B-28-S-1'-20230309	In-Situ	0.00184J	<0.000453	0.00156J	0.00422	0.00762	30.0J	<15.0	<15.0	30.0J	133B F1
B-29	1	03/09/2023	B-29-S-1'-20230309	In-Situ	0.000766J	<0.000455	0.000640J	0.00194J	0.00335J	19.9J	15.0J	<15.0	34.9J	462B
B-30	1	03/09/2023	B-30-S-1'-20230309	In-Situ	<0.000386	<0.000457	<0.000566	<0.00101	<0.00101	26.1J	37.5J	<15.0	63.6	212B
B-31	1	03/09/2023	B-31-S-1'-20230309	In-Situ	<0.000384	<0.000455	<0.000564	<0.00101	<0.00101	<15.0	<15.0	<15.0	<15.0	118B
B-32	1	03/09/2023	B-32-S-1'-20230309	In-Situ	0.000530J	<0.000459	<0.000568	<0.00102	<0.00102	<15.0	31.2J	<15.0	31.2J	**1090B**
B-33	1	03/09/2023	B-33-S-1'-20230309	In-Situ	<0.000389	<0.000461	<0.000571	<0.00102	<0.00102	<15.0	21.7J	<15.0	21.7J	481B
B-34	1	03/09/2023	B-34-S-1'-20230309	In-Situ	<0.000383	<0.000454	<0.000563	<0.00101	<0.00101	<15.0	17.4J	<15.0	17.4J	**830B**
B-35	1	03/09/2023	B-35-S-1'-20230309	In-Situ	<0.000383	<0.000453	<0.000562	<0.00100	<0.00100	16.8J	28.0J	<15.0	44.8J	118B
B-36	1	03/09/2023	B-36-S-1'-20230309	In-Situ	<0.000384	<0.000455	<0.000564	<0.00101	<0.00101	<15.0	37.6J	16.1J	53.7	198B
B-37	1	03/09/2023	B-37-S-1'-20230309	In-Situ	0.000450J	<0.000459	<0.000568	<0.00102	<0.00102	<15.0	21.6J	<15.0	21.6J	**1450B**
B-38	1	03/09/2023	B-38-S-1'-20230309	In-Situ	<0.000388	<0.000460	<0.000570	<0.00102	<0.00102	16.5J	<15.0	<15.0	16.5J	**1620B F1**
B-39	1	03/09/2023	B-39-S-1'-20230309	In-Situ	<0.000383	<0.000454	0.000577J	<0.00101	0.00148J	18.0J	<15.0	<15.0	18.0J	**2190B**
B-40	1	03/09/2023	B-40-S-1'-20230309	In-Situ	<0.000383	<0.000453	<0.000562	<0.00100	<0.00100	<15.0	<15.0	<15.0	<15.0	**1360B**
B-41	1	03/09/2023	B-41-S-1'-20230309	In-Situ	<0.000384	<0.000455	<0.000564	<0.00101	<0.00101	<15.0	<15.0	<15.0	<15.0	289B
B-42	1	03/09/2023	B-42-S-1'-20230309	In-Situ	<0.000386	<0.000457	<0.000566	<0.00101	<0.00101	<15.0	<15.0	<15.0	<15.0	**985B**
B-43	1	03/09/2023	B-43-S-1'-20230309	In-Situ	0.000837J	<0.000454	0.00265	0.00370J	0.00719	<15.0	<15.0	<15.0	<15.0	**918B**
B-44	1	03/09/2023	B-44-S-1'-20230309	In-Situ	<0.000383	<0.000453	<0.000562	<0.00100	<0.00100	20.3J B *-	<15.0	<15.0	20.3J	129B
B-45	1	03/09/2023	B-45-S-1'-20230309	In-Situ	<0.000384	<0.000455	<0.000564	<0.00101	<0.00101	22.7J B *-	<15.0	<15.0	22.7J	298B
B-46	1	03/09/2023	B-46-S-1'-20230309	In-Situ	<0.000387	<0.000459	<0.000568	<0.00102	<0.00102	26.0J B *-	<15.0	<15.0	26.0J	213B
B-47	1	03/09/2023	B-47-S-1'-20230309	In-Situ	<0.000387	<0.000458	<0.000567	<0.00101	<0.00101	24.0J B *-	<15.0	<15.0	24.0J	**674B**
B-48	1	03/09/2023	B-48-S-1'-20230309	In-Situ	<0.000383	<0.000454	<0.000563	<0.00101	<0.00101	25.5J B *-	<15.0	<15.0	25.5J	**755B**
B-49	1	03/09/2023	B-49-S-1'-20230309	In-Situ	<0.000384	<0.000455	<0.000564	<0.00101	<0.00101	41.7J B *-	<15.0	<15.0	41.7J	357B
B-50	1	03/09/2023	B-50-S-1'-20230309	In-Situ	<0.000383	<0.000454	<0.000563	<0.00101	<0.00101	23.1J B *-	<15.0	<15.0	23.1J	**1040B**
B-51	1	03/09/2023	B-51-S-1'-20230309	In-Situ	<0.000381	<0.000451	<0.000559	<0.00100	<0.00100	27.6J B *-	<15.0	<15.0	27.6J	272B
B-52	1	03/09/2023	B-52-S-1'-20230309	In-Situ	<0.000386	<0.000457	<0.000566	<0.00101	<0.00101	25.7J B *-	<15.0	<15.0	25.7J	168B
B-53	1	03/09/2023	B-53-S-1'-20230309	In-Situ	<0.000384	<0.000455	<0.000564	<0.00101	<0.00101	25.3J B *-	<15.0	<15.0	25.3J	**602B**
B-54	1	03/09/2023	B-54-S-1'-20230309	In-Situ	<0.000383	<0.000454	<0.000563	<0.00101	<0.00101	29.2J B *-	<15.0	<15.0	29.2J	**814B**
B-55	1	03/09/2023	B-55-S-1'-20230309	In-Situ	<0.000383	<0.000453	<0.000562	<0.00100	<0.00100	17.7J B *-	<15.0	<15.0	17.7J	141B
B-56	1	03/09/2023	B-56-S-1'-20230309	In-Situ	<0.000384	<0.000455	<0.000564	<0.00101	<0.00101	22.2J B *-	<15.0	<15.0	22.2J	**1670B**
B-57	1	03/09/2023	B-57-S-1'-20230309	In-Situ	0.000448J	0.000716J	0.00139J	0.00207J	0.00462	24.9J B *-	<15.0	<15.0	24.9J	183B
B-58	1	03/09/2023	B-58-S-1'-20230309	In-Situ	<0.000383	<0.000453	<0.000562	<0.00100	<0.00100	24.0J B *-	<15.0	<15.0	24.0J	212
B-59	1	03/09/2023	B-59-S-1'-20230309	In-Situ	<0.000384	<0.000455	<0.000564	<0.00101	<0.00101	26.3J B *-	<15.0	<15.0	26.3J	**699**
SW-4	1	03/09/2023	SW-4-S-0-1'-20230309	In-Situ	<0.00200	<0.00200	<0.00200	<0.00399	<0.00399	20.7	20.2	<49.9	40.9	68.7
SW-5	1	03/09/2023	SW-5-S-0-1'-20230309	In-Situ	<0.00200	<0.00200	<0.00200	<0.00399	<0.00401	19.3	16.3	<50.0	35.6	122
SW-6	1	03/09/2023	SW-6-S-0-1'-20230309	In-Situ	<0.00199	<0.00199	<0.00199	<0.00398	<0.00398	41.0	24.2	<49.9	65.2	548
SW-7	1	03/09/2023	SW-7-S-0-1'-20230309	In-Situ	<0.00199	<0.00199	<0.00199	<0.00398	<0.00398	28.0	18.1	<49.9	46.1	512

Legend:
Analytes exceedng NMAC standards are indicated in **bold** and grey
F1: MS and/or MSD recovery exceeds control limits
814B: Compound was found in the blank and sample
'<' indicates the analyte was not detected at or above the Method Detection Limit (MDL)
mg/kg: Milligram per Kilogram
NMAC : New Mexico Administration Code
bgs: Below ground surface
B-45: Base sample
L: Shallow soil sample
SW : Sidewall sample

Notes:
1. Chloride analyzed by EPA Method 300
2. TPH analyzed by EPA Method 8015 M
3. BTEX analyzed by EPA Method 8260B
4. Closure Criteria New Mexico Administrative Code 19.15.29.12.E(2)
NMOCD: New Mexico Oild Conservation Division
--: No individual standard

Chevron
Table 3
2023 Groundwater Analytical Results
Old Indian Draw Gathering Line Southern
Incident# NCLB0525654437
Eddy County, New Mexico

Sample ID	Sample Date	Benzene	Toluene	Ethylbenzene	Total Xylenes	Chloride	Total Dissolved Solids
New Mexico Water Quality Control Commission Groundwater Standard							
		0.005[1]	1.0[1]	0.7[1]	0.62[1]	250[2]	1,000
TW-2	2/16/23	NA	NA	NA	NA	37.6	328

Notes:

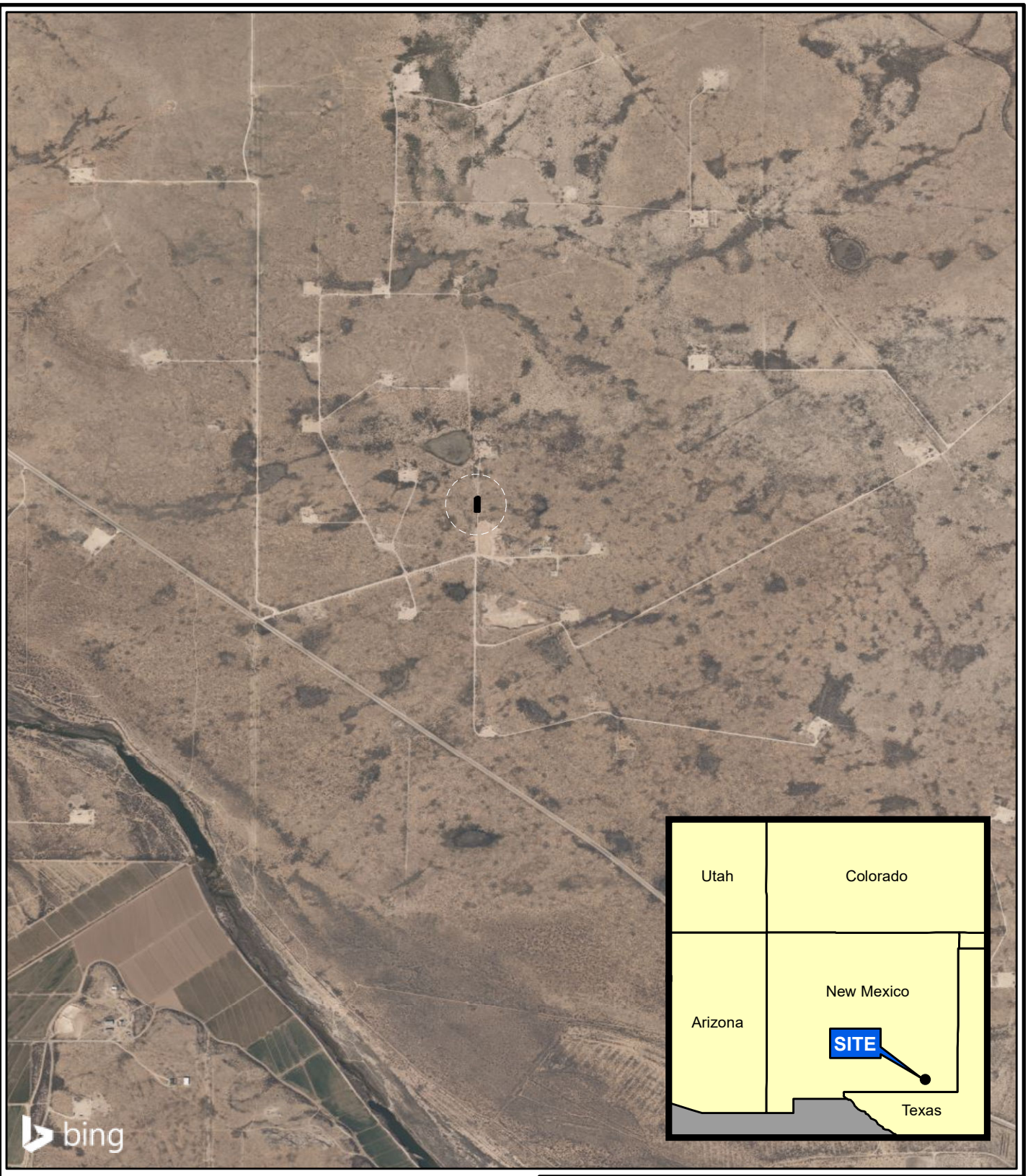
Results shown in mg/L.

[1]Human Health Standards for Groundwater.

[2]Other Standards for Domestic Water Supply.

NA = Not Analyzed

Figures



LEGEND:

Site Boundary

NOTES:
Datum: D_WGS_1984
Source: Bing Map
Site Location: 32.3925°, -104.1253°

0 2,000 4,000 Feet

GRAPHIC SCALE

MCBU
OLD INDIAN DRAW ~ GATHERING LINE SOUTH
INCIDENT NUMBER: NCLB0525654437
EDDY COUNTY, NEW MEXICO

SITE LOCATION MAP

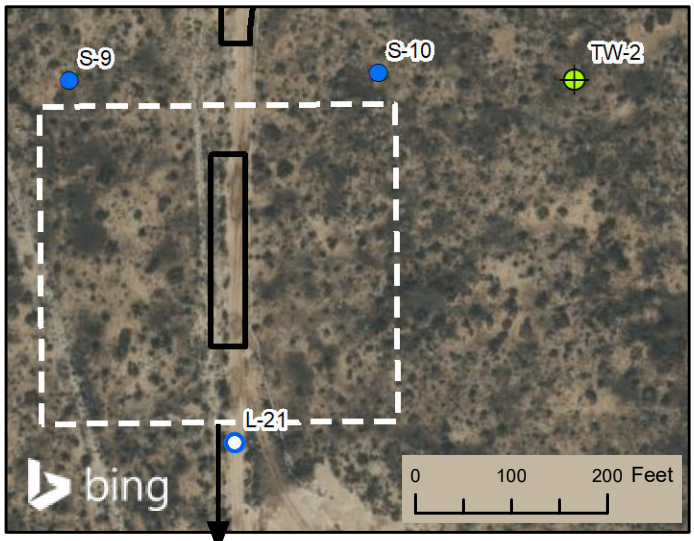
ARCADIS

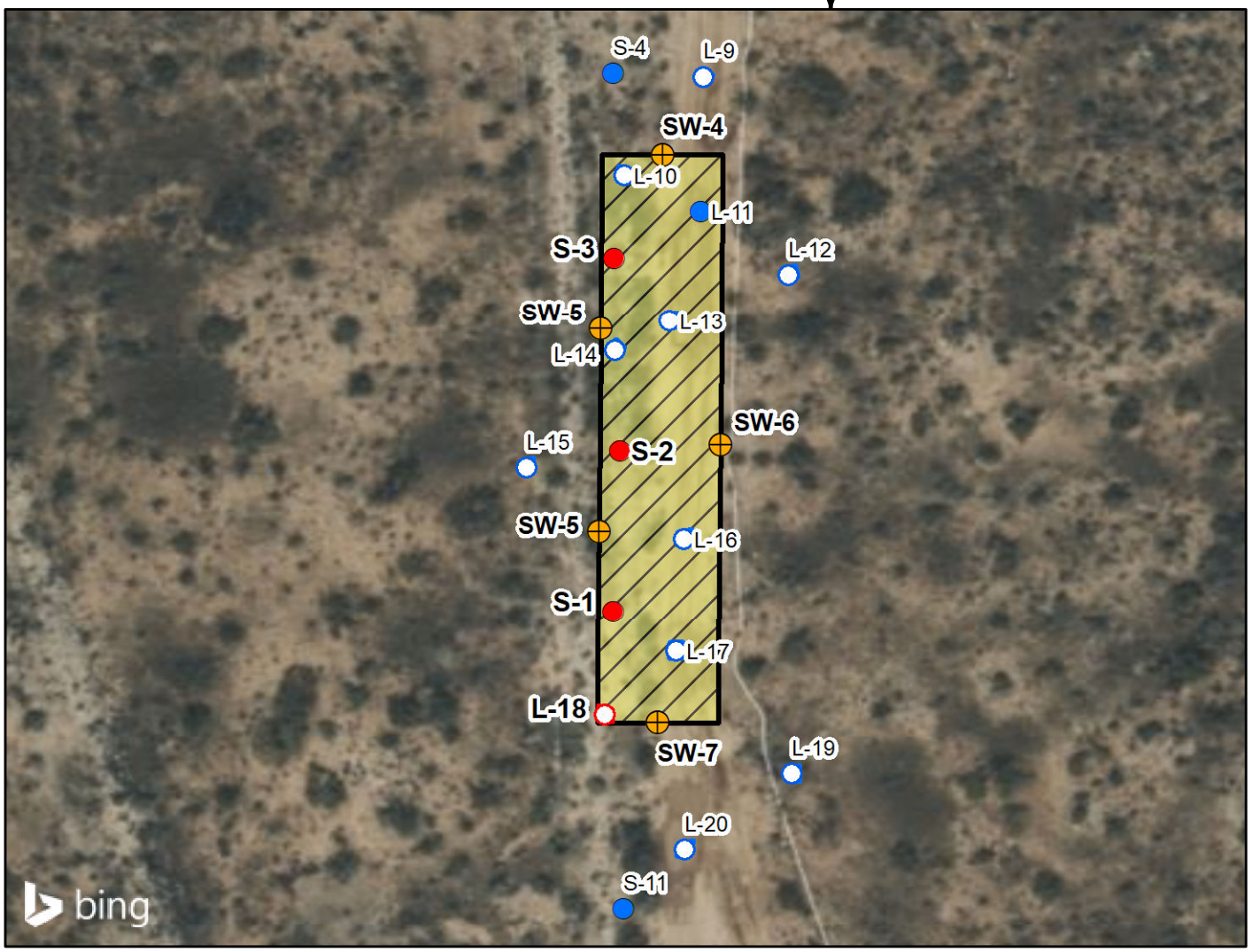
FIGURE 1

City: Houston Div/Group: Remediation West -Air Group Created By: W Berry Last Saved By: wberry ; Client (Project #)
D:_Arcadis\Land Services\Chevron\Old_Indian_Draw\GIS\MXD_Confirmation\OID GL-S_Fig1.mxd 3/15/2023 11:53:55 AM

Legend

- Sidewall Sample Location
- Excavated Area
- 2021/2022 Sample Locations (above 600 mg/kg chloride)
- 2021/2022 Sample Locations (below 600 mg/kg chloride)
- 2023 Field Screening Sample locations (above 600 mg/kg chloride)
- 2023 Sample locations (below 600 mg/kg chloride)
- Temporary Monitor Well





NOTES:
Datum: D_WGS_1984
Source: Google Earth Map
Site Location: 32.3932°, -104.1252°

0 60 120 Feet
GRAPHIC SCALE

MCBU
OLD INDIAN DRAW ~ GATHERING LINE SOUTH
INCIDENT NUMBER: NCLB0525654437
EDDY COUNTY, NEW MEXICO

EXCAVATION SIDEWALL SOIL SAMPLE LOCATIONS

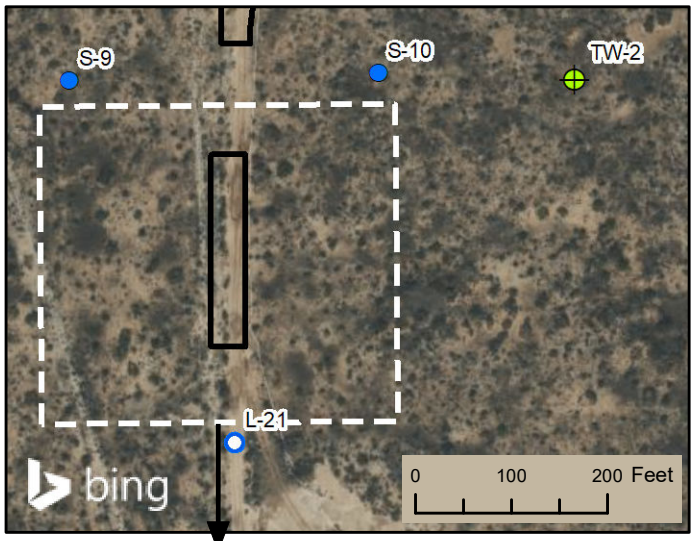
ARCADIS

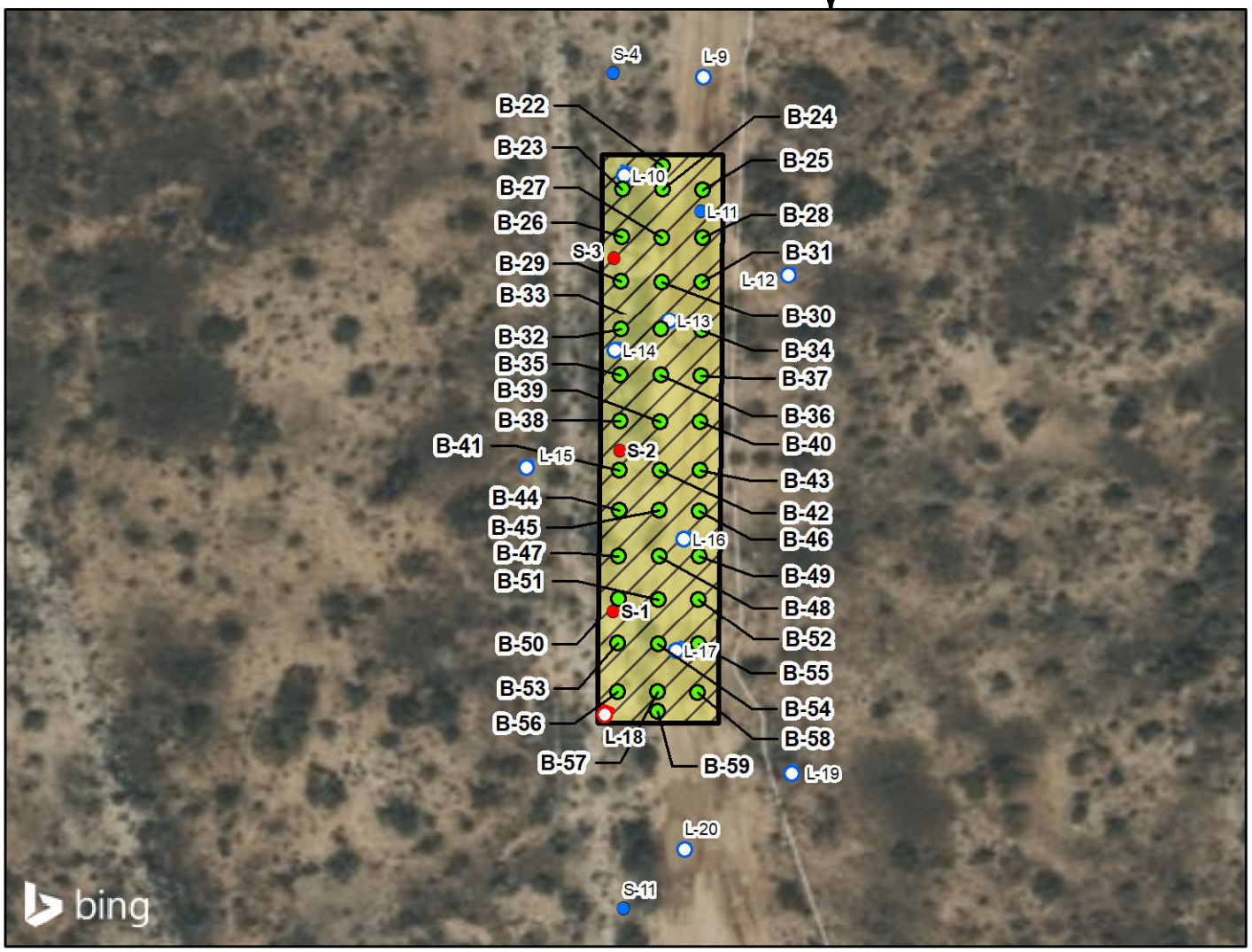
FIGURE 2

City: Houston Div/Group: Remediation West -Air Group Created By: W Berry Last Saved By: wberry ; Client (Project #) D:_Arcadis\Land Services\Chevron\Old_Indian_Draw\GIS\MXD_Confirmation\OID GL-S_Fig2.mxd 4/4/2023 3:38:15 PM

Legend

- Base Sample Location
- Excavated Area
- 2021/2022 Sample Locations (above 600 mg/kg chloride)
- 2021/2022 Sample Locations (below 600 mg/kg chloride)
- 2023 Field Screening Sample locations (above 600 mg/kg chloride)
- 2023 Sample locations (below 600 mg/kg chloride)
- Temporary Monitor Well





NOTES:
Datum: D_WGS_1984
Source: Google Earth Map
Site Location: 32.3932°, -104.1252°

0 60 120 Feet
GRAPHIC SCALE

MCBU
OLD INDIAN DRAW ~ GATHERING LINE SOUTH
INCIDENT NUMBER: NCLB0525654437
EDDY COUNTY, NEW MEXICO

EXCAVATION BASE SOIL SAMPLE LOCATIONS

ARCADIS

FIGURE 3

City: Houston Div/Group: Remediation West -Air Group Created By: W Berry Last Saved By: wberry ; Client (Project #) D:_Arcadis\Land Services\Chevron\Old_Indian_Draw\GIS\MXD_Confirmation\OID GL-S_Fig3.mxd 4/4/2023 3:38:51 PM

Photographic Log

ARCADIS

PHOTOGRAPHIC LOG

Property Name:	Location:	Case No.
Old Indian Draw Gathering Line Southern Area	Eddy County, NM	NCLB0525654437

Photo No.	Date:
1	02/24/2023

Direction Photo Taken:

Facing NW

Description:

View of calcrete rock layer in release area at 1 feet bgs.

ARCADIS

PHOTOGRAPHIC LOG

Property Name:	Location:	Case No.
Old Indian Draw Gathering Line Southern Area	Eddy County, NM	NCLB0525654437

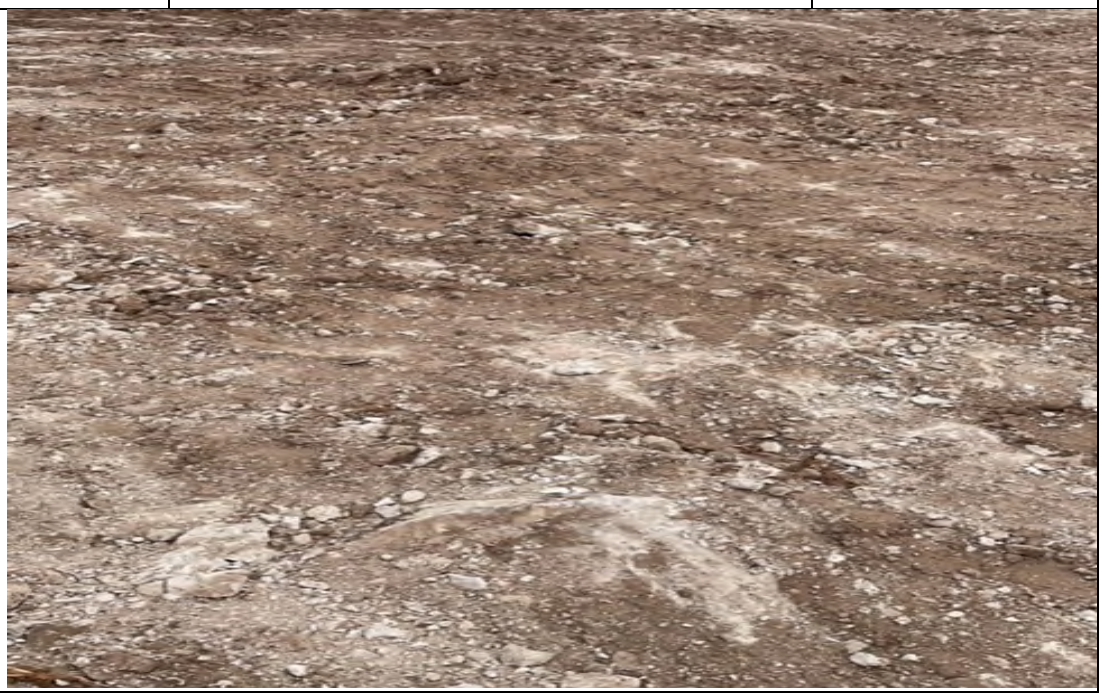
Photo No.	Date:
2	02/24/2023

Direction Photo Taken:

Facing N

Description:

Additional view of calcrete rock layer in release area around 1 feet bgs.



Appendix A

Incident #NCLB0525654437 NMOCD Database Information

NCLB0525654437 2005 MAJOR A OS @ FCLB0525651320

General Incident Information

Site Name:

Well:

Facility: [fCLB0525651320] Chesapeake Old Indian Draw Gaterhing Line

Operator: [147179] CHESAPEAKE OPERATING, INC.

Status: Closure Not Approved

Type: Oil Release

District: Artesia

Severity: Major

Surface Owner:

County: Eddy (15)

Incident Location: G-18-22S-28E 0 FL 0 FL

Lat/Long: 32.393027,-104.125388

Directions:

Notes

Source of Referral: Industry Rep

Resulted In Fire: ☐

Endangered Public Health: ☐

Fresh Water Contamination: ☐

Action / Escalation: Referred to Environmental Inspector

Will or Has Reached Watercourse: ☐

Property Or Environmental Damage: ☐

Contact Details

Contact Name:

Contact Title:

Event Dates

Date of Discovery: 06/24/2005

Extension Date: 11/15/2018

Initial C-141 Received:
Characterization Report Received:
Remediation Plan Received:

Closure Report Received:
OCD Notified of Major Release: 06/24/2005
Cancelled Date:

Characterization Report Approved:
Remediation Plan Approved:
Remediation Due:
Closure Report Approved:

Incidents Materials

Cause	Source	Material	Volume				Units
			Unk.	Spilled	Recovered	Lost	
Equipment Failure	Flow Line - Production	Crude Oil	☐	15	13	2	BBL
Equipment Failure	Flow Line - Production	Produced Water	☐	35	32	3	BBL

Incident Events

Date	Detail
09/13/2005	C-141: The structural integrity of the circulating line was compromised resulting in the release of approximately 50 barrels of fluid. The release area was exposed and clamps installed. Approximately 9390 square feet of surface area was impacted by the release. Saturated soil has been excavated and stockpiled on plastic on site until a remediation plan is developed. Once initial excavation activities are complete, samples will be collected to delineate the lateral and vertical extents of impacts associated with this release. Upon receipt of analytical results, the remediation plan will be developed and submitted to the NMOCD for approval. The excavated soil will be transported

Date	Detail
	to an approved land treatment facility with any other federal, state, or local laws and/or regulations

Appendix B

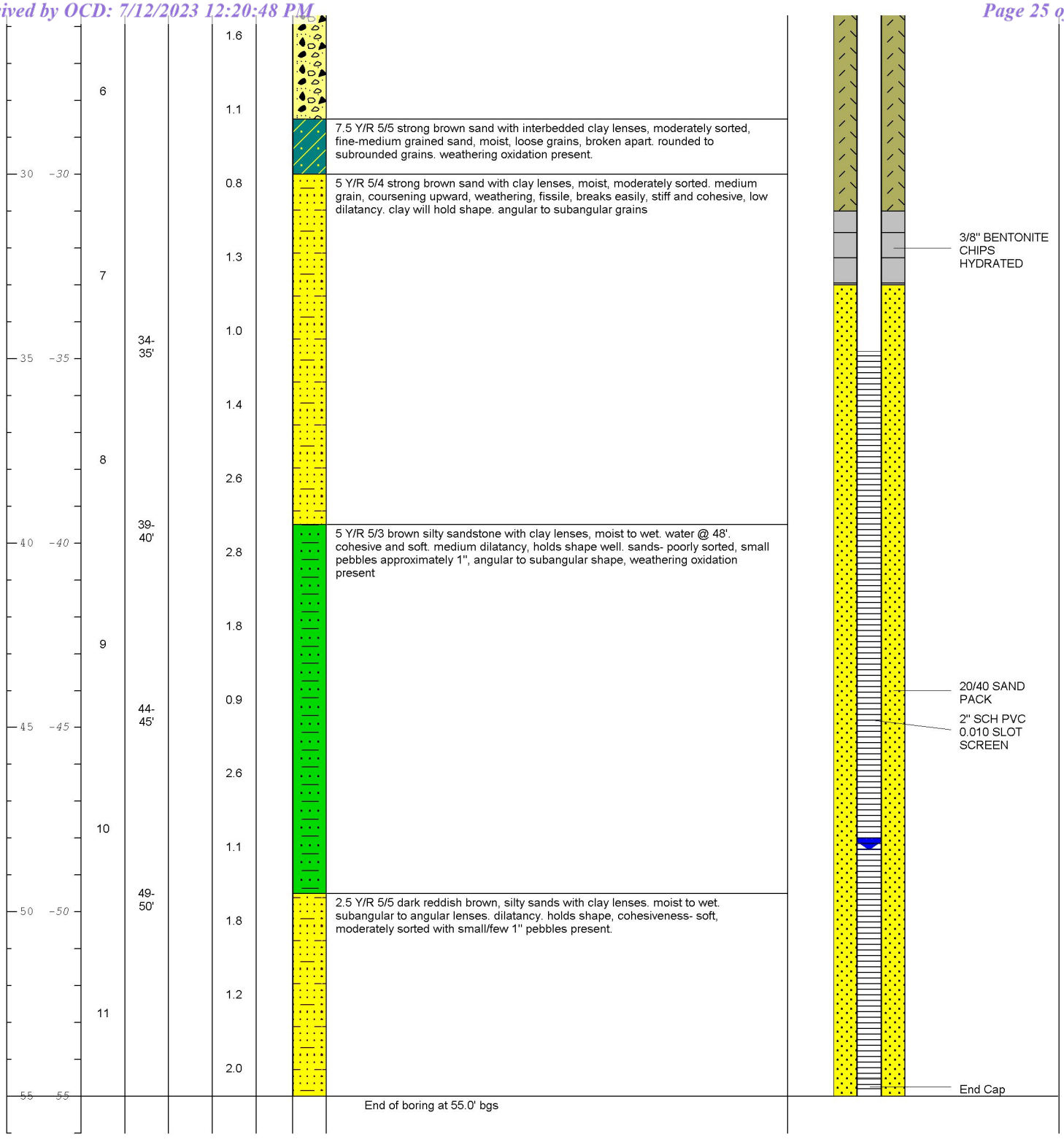
Temporary Monitoring Well Boring Log

Date Start/Finish: 2/13/2023 **Drilling Company:** White Drilling Company, Inc. **Driller's Name:** Bo Atkins **Drilling Method:** Air Rotary/ Split Spoon **Sampling Method:** Grab	**Latitude:** 32.392848 **Longitude:** -104.124242 **Casing Elevation:** NS **Borehole Depth:** 55' **Surface Elevation:** NS **Descriptions By:** Heather Dudley	**Well/Boring ID:** TW-2 **Client:** Chevron-MCBU **Location:** Old Indian Draw Unit #001 Carlsbad, New Mexico

DEPTH	Sample Run Number	Sample/Int/Type	Recovery (feet)	PID	USCS Code	Geologic Column	Stratigraphic Description	Well/Boring Construction
0				0.0			5 Y/R 4/4 brown top soil, sand mixture of clay and silt, very loose grained, pebbles and roots present, moist, soft-cohesive, dilatancy- will hold shape, poorly sorted, subangular shape	
0	1	4-5'		0.8			10 Y/R 7/3 very pale brown, caliche (calcrete caliche- very thick layered) reacts to vinegar, large caliche nodules present- up to 2" wide, fissile, weakly bonded, breaks apart easily, dry, no dilateancy, non-cohesive,broke caliche-very loose grains	
-5				1.0				
	2	9-10'		1.2				
-10				0.9				
	3	14-15'		0.8				
-15				1.7				
	4	19-20'		0.6				
-20				1.7				
	5			0.8				
-25				1.8				
				0.8				
				1.3				

NATURAL COLLAPSE

2" SCH PVC RISER



ARCADIS Design & Consultancy for natural and built assets

Remarks: bgs= below ground surface; TD= total depth; DTW= depth to water; ppm= parts per million; NS=not surveyed, N/A=not applicable/available, btoc= below top of casing

Project: 30166791 Template: LPTEMPLATE_Well_Construction_Final

Data File: Old Indian Draw Date: 2/21/2023 Created/Edited by: Trang Pham

Appendix C

Laboratory Analytical Reports

Arcadis U.S., Inc.
10205 Westheimer Road, Suite 800
Houston
Texas 77042
Phone: 713 953 4800
Fax: 713 977 4620
www.arcadis.com

Incident ID	NCLB0525655219
District RP	NA
Facility ID	NA
Application ID	NA

Site Assessment/Characterization

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

What is the shallowest depth to groundwater beneath the area affected by the release?	46 (ft bgs)
Did this release impact groundwater or surface water?	☐ Yes ☒ No
Are the lateral extents of the release within 300 feet of a continuously flowing watercourse or any other significant watercourse?	☐ Yes ☒ No
Are the lateral extents of the release within 200 feet of any lakebed, sinkhole, or playa lake (measured from the ordinary high-water mark)?	☐ Yes ☒ No
Are the lateral extents of the release within 300 feet of an occupied permanent residence, school, hospital, institution, or church?	☐ Yes ☒ No
Are the lateral extents of the release within 500 horizontal feet of a spring or a private domestic fresh water well used by less than five households for domestic or stock watering purposes?	☐ Yes ☒ No
Are the lateral extents of the release within 1000 feet of any other fresh water well or spring?	☐ Yes ☒ No
Are the lateral extents of the release within incorporated municipal boundaries or within a defined municipal fresh water well field?	☐ Yes ☒ No
Are the lateral extents of the release within 300 feet of a wetland?	☐ Yes ☒ No
Are the lateral extents of the release overlying a subsurface mine?	☐ Yes ☒ No
Are the lateral extents of the release overlying an unstable area such as karst geology?	☒ Yes ☐ No
Are the lateral extents of the release within a 100-year floodplain?	☐ Yes ☒ No
Did the release impact areas **not** on an exploration, development, production, or storage site?	☐ Yes ☒ No

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

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

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

If the site characterization report does not include completed efforts at remediation of the release, the report must include a proposed remediation plan. That plan must include the estimated volume of material to be remediated, the proposed remediation technique, proposed sampling plan and methods, anticipated timelines for beginning and completing the remediation. The closure criteria for a release are contained in Table 1 of 19.15.29.12 NMAC, however, use of the table is modified by site- and release-specific parameters.

State of New Mexico
Oil Conservation Division

Incident ID	NCLB0525655219
District RP	NA
Facility ID	NA
Application ID	NA

Remediation Plan

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

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

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

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

I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to OCD rules and regulations all operators are required to report and/or file certain release notifications and perform corrective actions for releases which may endanger public health or the environment. The acceptance of a C-141 report by the OCD does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to groundwater, surface water, human health or the environment. In addition, OCD acceptance of a C-141 report does not relieve the operator of responsibility for compliance with any other federal, state, or local laws and/or regulations.

Printed Name: Gene Choquette
Title: MCBU Sr. Environmental Specialist

Signature: Gene Choquette
Date: 07/14/2023

email: gchoquette@chevron.com
Telephone: 713-372-2100

OCD Only

Received by: _____ Date: _____

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

Signature: Nelson Velez
Date: 07/14/2023

Mr. Nelson Velez
Environmental Specialist
EMNRD - Oil Conservation Division
1000 Rio Brazos Road
Aztec, NM 87410

Arcadis U.S., Inc.
10205 Westheimer Road
Suite 800
Houston
Texas 77042
Phone: 713 953 4800
Fax: 713 977 4620
www.arcadis.com

TX Engineering License # F-533
TX Geoscientist License # 50158

Date: April 18, 2023
Subject: Soil Remediation Work Plan/Variance Request
Old Indian Draw Gathering Line Northern Area
Incident# NCLB0525655219

Eddy County, New Mexico

Mr. Velez
NMOCD
April 18, 2023

Contents

Tables

Figures

Photographic Logs

Appendices

Mr. Velez
NMOCD
April 18, 2023

Dear Mr. Velez,

Arcadis U.S., Inc. (Arcadis) has prepared this Soil Remediation Work Plan/Variance Request on behalf of Chevron U.S.A. Inc., for soil remediation activities at the Old Indian Draw Gathering Line Northern Area (Site), located in Eddy County, New Mexico.

Background

The Site is located approximately 8-miles southeast of the City of Carlsbad in Unit Letter J, Section 18, Township 22 South, Range 28 East. Old Indian Draw Gathering Line Site is an inactive pasture location improved with pipelines and right-of-ways as of March 17, 2023. The Site is located on land owned by the United States Department of the Interior and administered by the Bureau of Land Management (BLM). The site location map is depicted on **Figure 1**.

On September 6, 2005, a fiberglass high pressure line (3-inch diameter) was leaking produced water at the collar releasing approximately 30 barrels (bbls) of produced water, with 6 bbls recovered. Approximately 7,020 square feet of surface area was impacted by the release. A C-141 Form was not located for this incident, but limited information pertaining to this incident was found on the New Mexico Oil Conservation Division (NMOCD) database. The release was assigned Incident Number NCLB0525655219; no remediation permit number was assigned. The information available from the NMOCD database for this release is included in **Appendix A**.

Initial Site Investigation

On June 14-15, 2021, Larson & Associates, Inc. (Larson) began assessing the release area to depths of approximately 10 feet below ground surface (bgs) at 3 locations within the release area boundaries and at 4 additional locations surrounding the release area utilizing air rotary drilling methods to evaluate the horizontal extent of the release area.

Soil samples were submitted to Eurofins/Xenco Laboratories in Midland, Texas, for analyses of chloride; benzene, toluene, ethylbenzene, and xylenes (BTEX); and total petroleum hydrocarbons (Total TPH). Analytical results were reported below the applicable NMOCD regulatory limits for a site with groundwater less than 50 feet bgs for Total TPH (100 milligrams per kilogram (mg/kg)); BTEX (50 mg/kg); and benzene (10 mg/kg) from all soil samples collected. Analytical results indicated chloride concentrations ranged from 9.07 mg/kg in S-10 at 0.5 feet bgs to 1,060 mg/kg in S-6 at 5 feet bgs.

Larson returned to the Site on March 10, 2022, to continue vertical delineation activities utilizing air rotary drilling methods at the previously drilled S-6 location. Soil samples collected previously from this location were reported above the NMOCD regulatory limit of 600 mg/kg for chloride at a depth of 10 feet bgs. The subsequent boring was installed to approximately 15 feet bgs. Laboratory analytical results indicated chloride concentrations were reported at 458 mg/kg in soil sample S-6 at 15 feet bgs. Vertical delineation of the release area was completed during this assessment, but additional horizontal delineation assessment activities were determined warranted.

Analytical results from the Larson assessment are depicted in **Table 1**. Soil boring locations completed by Larson are depicted on **Figure 2**.

Mr. Velez
NMOCD
April 18, 2023

Additional Field Activities Summary

Arcadis began additional horizontal delineation assessment activities on January 31, 2023, with a stainless-steel hand auger at the Site. During the assessment, a resilient rock layer was encountered approximately 1-foot bgs at all locations. Arcadis collected 8 soil samples (L-1 through L-8) at depths of approximately six inches bgs. Only one soil sample (L-2) from that assessment was reported above the applicable NMOCD regulatory limit for chloride at a concentration of 909 mg/kg. Sample location L-4 was field screened for chloride but was not submitted for laboratory analyses. Field screening from L-4 indicated an estimated chloride concentration of 1,140 mg/kg. Evaluation of soil data collected to date confirmed horizontal and vertical delineation of the northern release area was accomplished in conjunction with the initial Larson assessment activities.

On February 13, 2023, Arcadis oversaw installation of a temporary monitoring well (TW-2) approximately 0.1 mile east of the Site (see **Figure 2**). During the installation of the temporary monitoring well, soil samples were collected from the surface to the top of the groundwater bearing unit at 5-foot intervals to conduct field screening for chloride utilizing Hach testing strips and for volatile organic compounds (VOCs) utilizing a photoionization detector (PID). Field screening results from soil samples collected during the installation of the temporary monitoring well indicated no chloride or VOC impacts in soil from the ground surface down to the groundwater bearing unit encountered at approximately 47.5 feet bgs. No soil samples were submitted for laboratory analysis.

On February 16, 2023, the temporary monitoring well was developed utilizing Environmental Protection Agency (EPA) Standard Methods. Following development activities on the temporary monitoring well, a groundwater sample was collected and submitted to the laboratory for analysis of chloride and total dissolved solids (TDS) concentrations. Laboratory analytical results indicated chloride and TDS concentrations were below the New Mexico Water Quality Control Commission (NMWQCC) Groundwater Standards of 250 milligrams per liter (mg/L) for chloride and 1,000 mg/L for TDS. Chloride was reported at 37.6 mg/L and TDS was reported at 328 mg/L. A copy of the Temporary Monitoring Well Boring Log is provided as **Appendix B**.

Evaluation of soil data collected to date confirm horizontal and vertical delineation of the release area were accomplished in conjunction with the initial Larson soil assessment activities, and that there is no chloride or TDS impact to groundwater proximate to the release area.

Analytical results from the subsequent Arcadis soil assessments can be found in **Table 2,** groundwater analytical results from groundwater samples collected from the temporary monitoring well can be found in **Table 3.** The soil sample locations completed by Arcadis are depicted on **Figure 2**. Laboratory analytical reports for soil and groundwater data collected are included in **Appendix C**.

Remediation Activities Summary

On March 8, 2023, Arcadis began excavation activities within the impacted area assuming the most stringent NMOCD closure criteria for soil. A resilient calcrete rock layer was encountered across the release area at depths of approximately 1-foot bgs to 2.5 feet bgs. Repeated attempts to break through the resilient calcrete rock layer utilizing an excavator equipped with a trenching bucket and “rock teeth” yielded limited results.

Arcadis collected composite confirmation soil samples from the excavation area in accordance with Table I of part 19.15.29.12 NMAC. Sidewall and base composite confirmation soil samples were collected within 200 square feet sampling areas throughout the excavation area. Composite confirmation base samples were collected from the calcrete rock layer. A total of 24 composite confirmation soil samples were collected.

- All sidewall composite confirmation soil samples were reported below the applicable NMOCD closure criteria stipulated in Table I of part 19.15.29.12 for a site with depth to groundwater less than 50 feet bgs for chloride, Total TPH, BTEX, and benzene.
- 11 of the 21 base composite confirmation soil samples were reported below the applicable NMOCD closure criteria for chloride. Reported chloride concentrations above the applicable NMAC closure criteria of 600 mg/kg ranged from 671 mg/kg in soil sample B-20 up to 2,210 mg/kg in soil sample B-21. No base composite confirmation soil samples were reported above the applicable NMOCD closure criteria for a site with depth to groundwater less than 50 feet bgs for Total TPH, BTEX, or benzene.

Five-point composite sidewall sample locations are depicted on **Figure 2**, and the five-point composite base sample locations are depicted on **Figure 3**. Current site conditions and the resilient rock layer encountered are documented in the attached **Photographic Log.** Impacted soil excavated to date has been transported to a NMOCD approved disposal facility. Waste manifests are available upon request.

Variance Request

Repeated attempts to break through the resilient calcrete rock layer utilizing an excavator equipped with a trenching bucket and “rock teeth” yielded limited results. Continued excavation activities are believed not practicable based on the site’s geologic conditions. Analytical data collected during assessment activities confirm the release area has been horizontally and vertically defined. As such, Arcadis is requesting approval of the following Variance:

- Due to the resilient calcrete rock layer encountered at shallow depths across the release area, Arcadis is requesting a variance to limit excavation activities to include only removing impacted soil affected above the NMOCD Reclamation Standards present within the release area to the maximum extent practicable (to the surface of the calcrete layer).
- Following excavation of impacted soil affected above the NMOCD closure criteria, a layer of gypsum and/or a desalination product will be installed on the floor of the excavated area. This control is designed to inhibit the downward migration of chloride remaining in-situ.
- Arcadis requests approval to install a geosynthetic liner atop impacted areas exhibiting BTEX, TPH, and/or chloride concentrations above the NMOCD Closure Criteria remaining in-situ. The liner will be installed atop the resilient calcrete rock layer. This engineering control is designed to inhibit the vertical migration of chloride in soil to groundwater along with the upward migration of chloride to further support revegetation of the remediated area.
- Upon installing the geosynthetic liner, the excavated area will be backfilled with locally sourced, non-impacted “like” material.
- Upon completion of remediation activities, the area will be reseeded with a BLM approved seed mixture during the first favorable growing season following closure of the Site.

Upon completion of the remediation and reclamation activities, a *Remediation Summary and Soil Closure Request* will be submitted to the NMOCD, containing a detailed summary of the field activities and laboratory analytical results.

Mr. Velez
NMOCD
April 18, 2023

If you have any questions or comments with regards to this work plan and variance request, please do not hesitate to contact Scott Foord at 713.953.4853 or by e-mail at William.Foord@arcadis.com.

Sincerely,

Arcadis U.S., Inc.

Scott Foord, PG

Program Manager

Tables

Table 1
2021/2022 Soil Analytical Results - Larson Associates
Old Indian Gathering Line Northern Area
Eddy County, New Mexico
32° 23' 34.90" North, 104° 07' 31.40" West

Sample	Depth (Feet)	Collection Date	Status	Benzene (mg/Kg)	BTEX (mg/Kg)	C6 - C12 (mg/Kg)	C12 - C28 (mg/Kg)	C28 - C35 (mg/Kg)	TPH (mg/Kg)	Chloride (mg/Kg)
Remediation Level:				**10**	**50**				**100**	**600**
S-4	1	6/15/2021	In-Situ	<0.00200	<0.00401	<50.0	<50.0	<50.0	<50.0	245
	3	6/15/2021	In-Situ	<0.00200	<0.00400	<49.9	<49.9	<49.9	<49.9	467
	5	6/15/2021	In-Situ	<0.00200	<0.00399	<49.9	<49.9	<49.9	<49.9	9.79
	10	6/15/2021	In-Situ	<0.00199	<0.00398	<49.8	<49.8	<49.8	<49.8	239
S-5	1	6/15/2021	In-Situ	<0.00200	<0.00399	<49.7	<49.7	<49.7	<49.7	194
	3	6/15/2021	In-Situ	<0.00199	<0.00398	<49.9	<49.9	<49.9	<49.9	495
	5	6/15/2021	In-Situ	<0.00198	<0.00396	<50.0	<50.0	<50.0	<50.0	**854**
	10	6/15/2021	In-Situ	<0.00200	<0.00400	<49.8	<49.8	<49.8	<49.8	481
S-6	1	6/15/2021	In-Situ	<0.00200	<0.00400	<49.8	<49.8	<49.8	<49.8	286
	3	6/15/2021	In-Situ	<0.00198	<0.00397	<49.7	<49.7	<49.7	<49.7	203
	5	6/15/2021	In-Situ	<0.00199	<0.00398	<50.0	<50.0	<50.0	<50.0	**1,060**
	10	6/15/2021	In-Situ	<0.00199	<0.00398	<50.0	<50.0	<50.0	<50.0	**724**
	15	3/10/2022	In-Situ	--	--	--	--	--	--	458
S-7	1	6/15/2021	In-Situ	<0.00199	<0.00398	<50.0	<50.0	<50.0	<50.0	549
	3	6/15/2021	In-Situ	<0.00199	<0.00398	<49.8	<49.8	<49.8	<49.8	239
	5	6/15/2021	In-Situ	<0.00198	<0.00396	<50.0	<50.0	<50.0	<50.0	590
	10	6/15/2021	In-Situ	<0.00200	<0.00399	<49.9	<49.9	<49.9	<49.9	347
S-8	0.5	6/14/2021	In-Situ	<0.00200	<0.00400	<49.9	<49.9	<49.9	<49.9	24.6
S-9	0.5	6/14/2021	In-Situ	<0.00200	<0.00399	<49.9	<49.9	<49.9	<49.9	276
S-10	0.5	6/14/2021	In-Situ	<0.00200	<0.00401	<50.0	<50.0	<50.0	<50.0	9.07

Laborat Notes: Analysis performed by Xenco Laboratories (Xenco) in Midland, Texas by EPA SW-846 8021B (BTEX), 8015M (TPH), and 300E (Chloride)
Depth in feet below ground surface (bgs)
mg/Kg: milligrams per kilogram equivalent to parts per million (ppm)
<: denotes concentration less than analytical method reporting limit
Bold and Highlighted exceeds OCD remediation action limits

Table 2
2023 Soil Analytical Results
Old Indian Draw Gathering Line Northern
Incident No NCLB0525655219

					BTEX					TPH				Gen Chem
Location ID	Depth (Feet)	Date Collected	Sample Name	Soil Status	Benzene mg/kg	Toluene mg/kg	Ethylbenzene mg/kg	Xylenes, Total mg/kg	Total BTEX mg/kg	Gasoline Range Organics (GRO)-C6-C10 mg/kg	Diesel Range Organics (Over C10-C28) mg/kg	Oil Range Organics (Over C28-C36) mg/kg	Total TPH mg/kg	Chloride, Dissolved mg/kg
NMOCD					10	--	--	--	50	--	--	--	100	600
B-01	2	03/07/2023	B-1-S-2'-20230307	In-Situ	<0.000383	<0.000453	<0.000562	<0.00100	<0.00100	23.3J	<15.0	<15.0	23.3J	133
B-02	2	03/07/2023	B-2-S-2'-20230307	In-Situ	<0.000384	<0.000455	<0.000564	<0.00101	<0.00101	<15.0	<15.0	<15.0	<15.0	97.5
B-03	2	03/07/2023	B-3-S-2'-20230307	In-Situ	0.000428J	<0.000453	<0.000562	<0.00100	<0.00100	<15.0	<15.0	<15.0	<15.0	55.9
B-04	2	03/07/2023	B-4-S-2'-20230307	In-Situ	<0.000384	<0.000455	<0.000564	<0.00101	<0.00101	19.7J	19.0J	<15.0	38.7J	444
B-05	1	03/07/2023	B-5-S-1'-2-20230307	In-Situ	<0.000387	<0.000459	<0.000568	<0.00102	<0.00102	<15.0	<15.0	<15.0	<15.0	332
B-06	1	03/07/2023	B-6-S-1'-2'-20230307	In-Situ	<0.000386	<0.000457	<0.000566	<0.00101	<0.00101	<15.0	<15.0	<15.0	<15.0	308
B-07	1	03/07/2023	B-7-S-1'-2-20230307	In-Situ	<0.000384	<0.000455	<0.000564	<0.00101	<0.00101	17.9J B	27.1J	<15.0	45.0J	**1470**
B-08	1	03/07/2023	B-8-S-1'-2-20230307	In-Situ	0.000532J	0.00151J	0.00157J	0.00669	0.0103	24.1J B	27.3J	<15.0	51.4	**1160**
B-09	1	03/07/2023	B-9-S-1'-2-20230307	In-Situ	<0.000383	<0.000453	<0.000562	<0.00100	<0.00100	24.5J B	<15.0	<15.0	24.5J	**1130**
B-10	1	03/07/2023	B-10-S-1'-20230307	In-Situ	0.000973J	0.00170J	0.00170J	0.00706	0.0114	46.6J B	<15.0	<15.0	46.6J	**1050**
B-11	1	03/07/2023	B-11-S-1'-20230307	In-Situ	<0.000386	0.000487J	<0.000566	<0.00101	0.00105J	25.7J B	16.0J	<15.0	41.7J	581
B-12	1	03/07/2023	B-12-S-1'-20230307	In-Situ	<0.000383	<0.000454	<0.000563	<0.00101	<0.00101	28.8J B	34.6J	<15.0	63.4	**1190**
B-13	1	03/07/2023	B-13-S-1'-20230307	In-Situ	<0.000383	<0.000453	<0.000562	<0.00100	<0.00100	18.9J B	<15.0	<15.0	18.9J	364
B-14	1	03/07/2023	B-14-S-1'-20230307	In-Situ	<0.000383	<0.000454	<0.000563	<0.00101	<0.00101	45.3J B	<15.0	<15.0	45.3J	**768**
B-15	1	03/07/2023	B-15-S-1'-20230307	In-Situ	<0.000383	<0.000453	<0.000562	<0.00100	<0.00100	27.0J B	<14.9	<14.9	27.0J	177
B-16	1	03/07/2023	B-16-S-1'-20230307	In-Situ	<0.000384	<0.000455	<0.000564	<0.00101	<0.00101	37.7J B	<15.0	<15.0	37.7J	575
B-17	1	03/07/2023	B-17-S-1'-20230307	In-Situ	<0.000387	<0.000458	<0.000567	<0.00101	<0.00101	<15.0	<15.0	<15.0	<15.0	393
B-18	1	03/07/2023	B-18-S-1'-20230307	In-Situ	<0.000384	<0.000455	<0.000564	<0.00101	<0.00101	34.8J B	<15.0	<15.0	34.8J	**1320F1**
B-19	1	03/07/2023	B-19-S-1'-20230307	In-Situ	0.000468J	<0.000459	<0.000568	<0.00102	<0.00102	37.9J B	<15.0	<15.0	37.9J	**1280**
B-20	1	03/07/2023	B-20-S-1'-20230307	In-Situ	<0.000389	<0.000461	<0.000571	<0.00102	<0.00102	30.9J B	19.9J	<15.0	50.8	**671**
B-21	1	03/07/2023	B-21-S-1'-20230307	In-Situ	<0.000383	<0.000454	<0.000563	<0.00101	<0.00101	24.4J B	<15.0	<15.0	24.4J	**2210**
L-01	6	01/31/2023	L-1-S-0-6' 20230131	In-Situ	--	--	--	--	--	--	--	--	--	<4.96
L-02	6	01/31/2023	L-2-S-0-6' 20230131	In-Situ	--	--	--	--	--	--	--	--	--	**909**
L-03	6	01/31/2023	L-3-S-0-6' 20230131	In-Situ	--	--	--	--	--	--	--	--	--	12.0
L-05	6	01/31/2023	L-5-S-0-6' 20230131	In-Situ	--	--	--	--	--	--	--	--	--	204
L-06	6	01/31/2023	L-6-S-0-6' 20230131	In-Situ	--	--	--	--	--	--	--	--	--	57.7
L-07	6	01/31/2023	L-7-S-0-6' 20230131	In-Situ	--	--	--	--	--	--	--	--	--	<4.97
L-08	6	01/31/2023	L-8-S-0-6' 20230131	In-Situ	--	--	--	--	--	--	--	--	--	<5.00
SW-1B	2	03/20/2023	SW-1B-S-0-2'-20230320	In-Situ	<0.00198	<0.00198	<0.00198	<0.00396	<0.00396	38.8	19.2	<50.0	58.0	46.5
SW-1	2	03/07/2023	SW-1-S-0-2'- 20230307	Removed	<0.00198	<0.00198	<0.00198	<0.00396	<0.00396	31.1	126	<50.0	**157**	85.5
SW-2	2	03/07/2023	SW-2-S-0-2'- 20230307	In-Situ	<0.00199	0.000708 J	<0.00199	<0.00398	<0.00398	<49.9	39.6	<49.9	39.6	135
SW-3B	1	03/14/2023	SW-3B-S-0-1'-20230314	In-Situ	<0.00199	<0.00199	<0.00199	<0.00398	<0.00398	32.7	51.4	<50.0	84.1	77.6
SW-3	2	03/07/2023	SW-3-S-0-2'- 20230307	Removed	<0.00199	<0.00199	<0.00199	<0.00398	<0.00398	25.9	<49.9	<49.9	25.9	**756**

Legend:
Analytes exceedng NMAC standards are indicated in **bold** and grey
J: Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value
'<' indicates the analyte was not detected at or above the Method Detection Limit (MDL)
mg/kg: Milligram per Kilogram
NMAC : New Mexico Administration Code
bgs: Below ground surface
B-Base sample
L-shallow soil sample
SW : Sidewall sample
Notes:
1. Chloride analyzed by EPA Method 300
2. TPH analyzed by EPA Method 8015 M
3. BTEX analyzed by EPA Method 8260B
4. Closure Criteria New Mexico Administrative Code 19.15.29.12.E(2)
NMOCD: New Mexico Oild Conservation Division
--: No individual standard

Chevron
Table 3
2023 Groundwater Analytical Results
Old Indian Draw Gathering Line Northern
Incident# NCLB0525655219
Eddy County, New Mexico

Sample ID	Sample Date	Benzene	Toluene	Ethylbenzene	Total Xylenes	Chloride	Total Dissolved Solids
New Mexico Water Quality Control Commission Groundwater Standard							
		0.005[1]	1.0[1]	0.7[1]	0.62[1]	250[2]	1,000
TW-2	2/16/23	NA	NA	NA	NA	37.6	328

Notes:

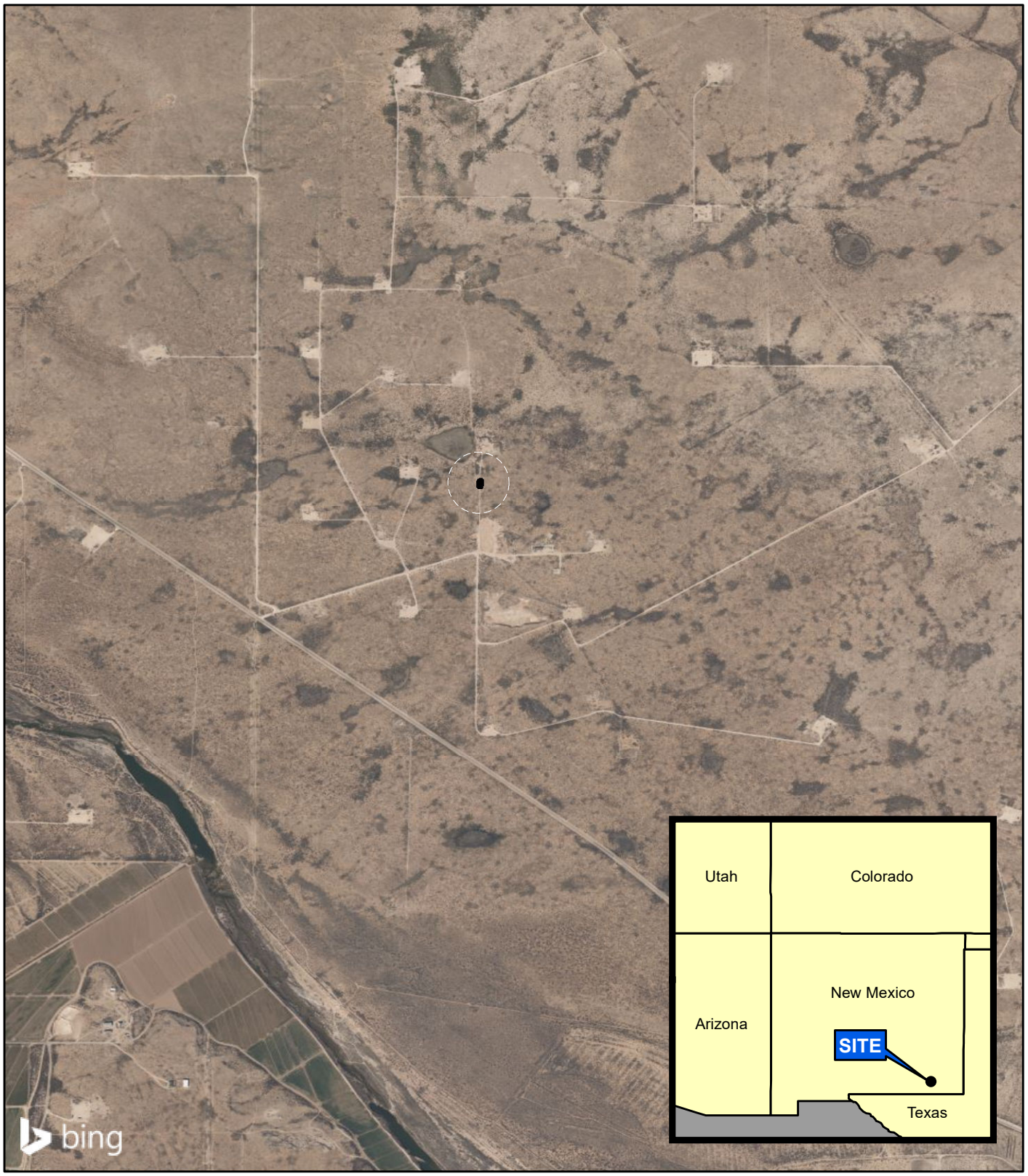
Results shown in mg/L.

[1]Human Health Standards for Groundwater.

[2]Other Standards for Domestic Water Supply.

NA = Not Analyzed

Figures



LEGEND:

Site Boundary

NOTES:
Datum: D_WGS_1984
Source: Google Earth Map
Site Location: 32.3932°, -104.1252°

0 2,000 4,000 Feet

GRAPHIC SCALE

MCBU
OLD INDIAN DRAW ~ GATHERING LINE NORTH
INCIDENT NUMBER: NCLB0525655219
EDDY COUNTY, NEW MEXICO

SITE LOCATION MAP

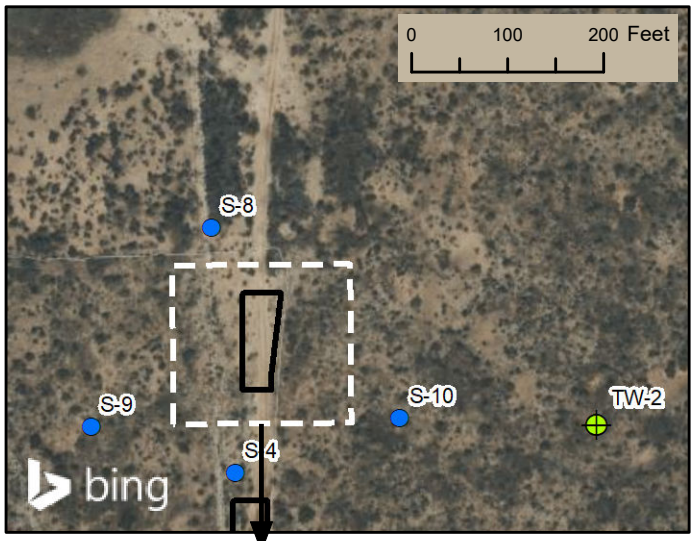
ARCADIS

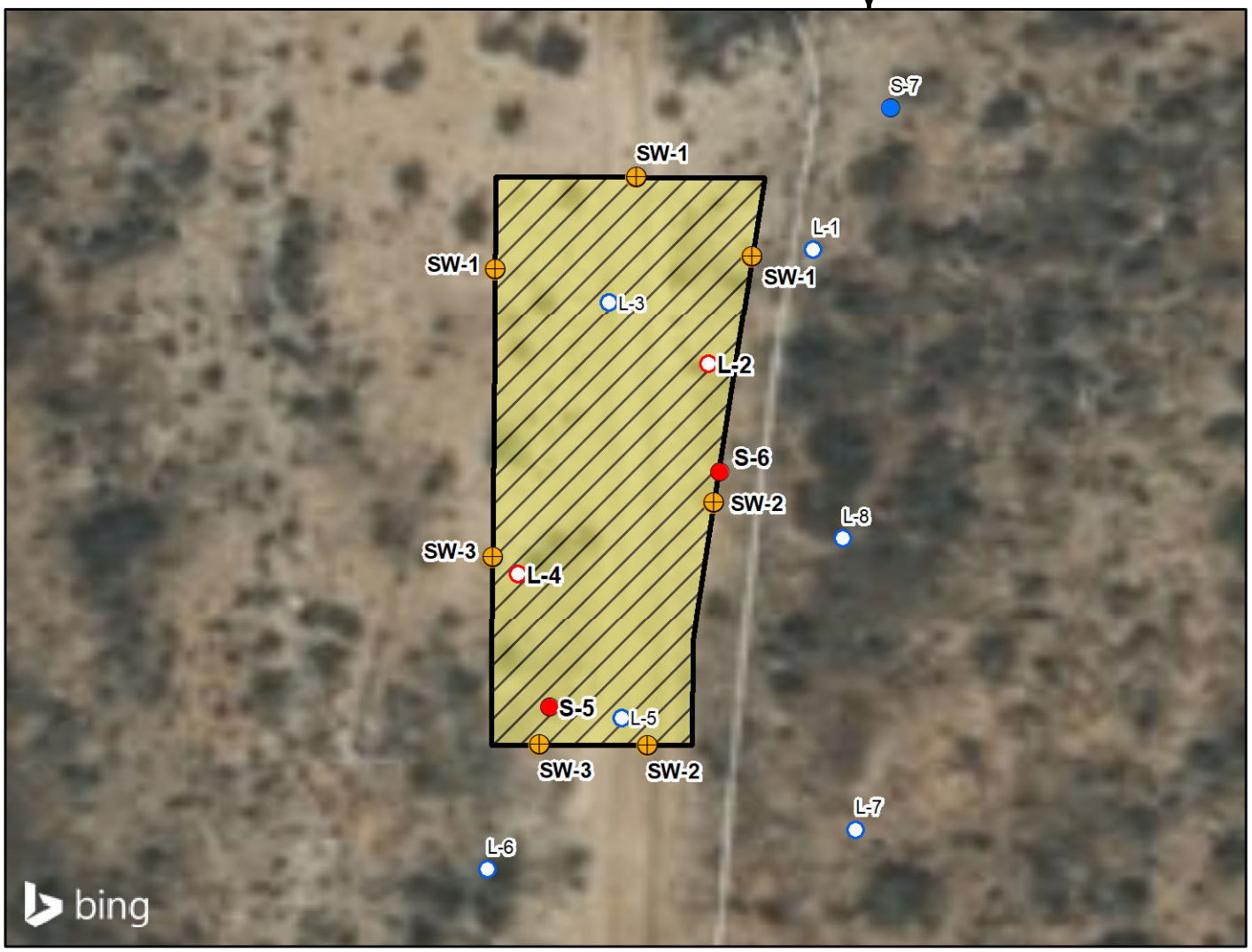
FIGURE 1

City: Houston Div/Group: Remediation West -Air Group Created By: W Berry Last Saved By: wberry ; Client (Project #)
D:_Arcadis\Land Services\Chevron\Old_Indian_Draw\GIS\MXD_Confirmation\OID GL-N_Fig1.mxd 3/15/2023 11:55:31 AM

Legend

- Sidewall Sample Location
- Excavated Area
- 2021/2022 Sample Locations (above 600 mg/kg chloride)
- 2021/2022 Sample Locations (below 600 mg/kg chloride)
- 2023 Field Screening Sample locations (above 600 mg/kg chloride)
- 2023 Sample locations (below 600 mg/kg chloride)
- Temporary Monitor Well





NOTES:
Datum: D_WGS_1984
Source: Google Earth Map
Site Location: 32.3932°, -104.1252°

0 30 60 Feet
GRAPHIC SCALE

MCBU
OLD INDIAN DRAW ~ GATHERING LINE NORTH
INCIDENT NUMBER: NCLB0525655219
EDDY COUNTY, NEW MEXICO

EXCAVATION SIDEWALL SOIL SAMPLE LOCATIONS

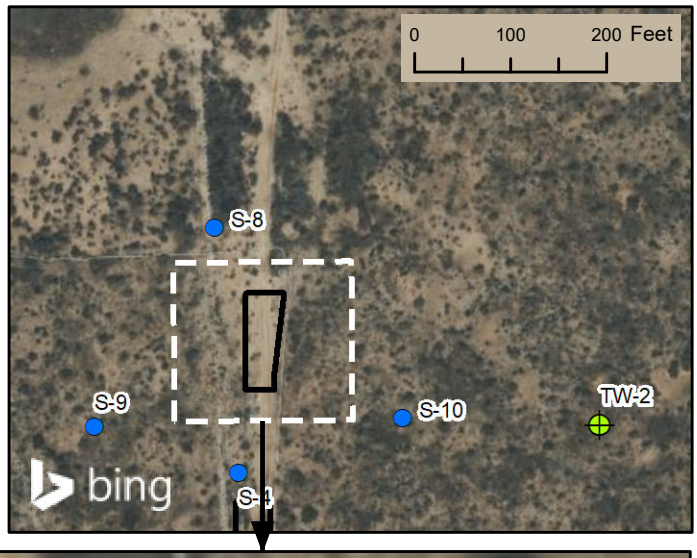
ARCADIS

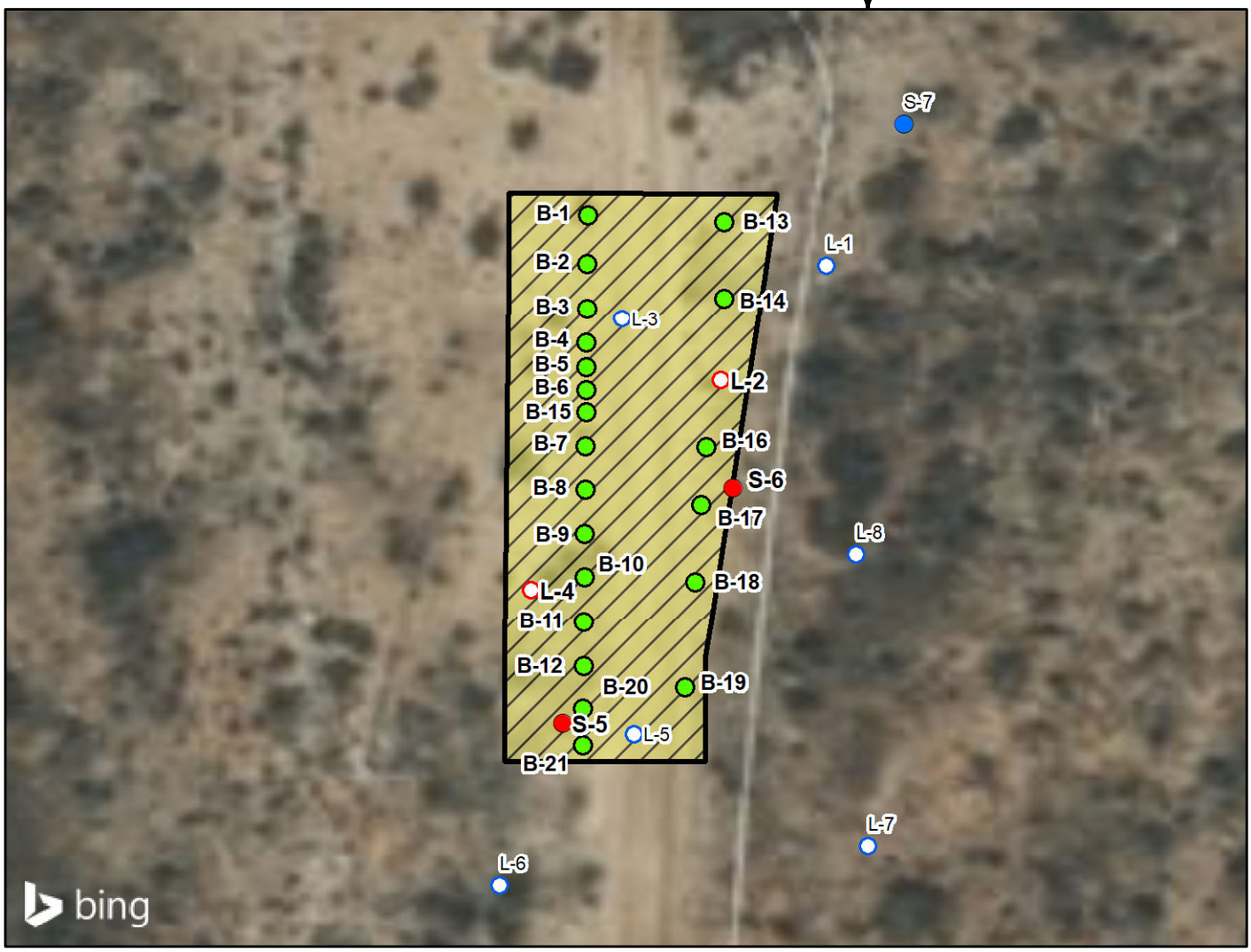
FIGURE 2

City: Houston Div/Group: Remediation West -Air Group Created By: W Berry Last Saved By: wberry ; Client (Project #) D:_Arcadis\Land Services\Chevron\Old_Indian_Draw\GIS\MXD_Confirmation\OID GL-N_Fig2.mxd 4/5/2023 4:28:00 PM

Legend

- Base Sample Location
- Excavated Area
- 2021/2022 Sample Locations (above 600 mg/kg chloride)
- 2021/2022 Sample Locations (below 600 mg/kg chloride)
- 2023 Field Screening Sample locations (above 600 mg/kg chloride)
- 2023 Sample locations (below 600 mg/kg chloride)
- Temporary Monitor Well





NOTES:
Datum: D_WGS_1984
Source: Google Earth Map
Site Location: 32.3932°, -104.1252°

0 30 60 Feet
GRAPHIC SCALE

MCBU
OLD INDIAN DRAW ~ GATHERING LINE NORTH
INCIDENT NUMBER: NCLB0525655219
EDDY COUNTY, NEW MEXICO

EXCAVATION BASE SOIL SAMPLE LOCATIONS

ARCADIS

FIGURE 3

City: Houston Div/Group: Remediation West -Air Group Created By: W Berry Last Saved By: wberry ; Client (Project #) D:_Arcadis\Land Services\Chevron\Old_Indian_Draw\GIS\MXD_Confirmation\OID GL-N_Fig3.mxd 4/5/2023 4:27:17 PM

Photographic Log

ARCADIS

PHOTOGRAPHIC LOG

Property Name:	Location:	Case No.
Old Indian Draw Gathering Line Northern Area	Eddy County, NM	NCLB0525655219

Photo No.	Date:
1	02/23/2023

Direction Photo Taken:

Facing N

Description:

View calcrete rock layer within the release area.

ARCADIS

PHOTOGRAPHIC LOG

Property Name:	Location:	Case No.
Old Indian Draw Gathering Line Northern Area	Eddy County, NM	NCLB0525655219

Photo No.	Date:
2	02/23/2023

Direction Photo Taken:

Facing NW

Description:

Additional view of calcrete rock layer.

ARCADIS

PHOTOGRAPHIC LOG

Property Name:	Location:	Case No.
Old Indian Draw Gathering Line Northern Area	Eddy County, NM	NCLB0525655219

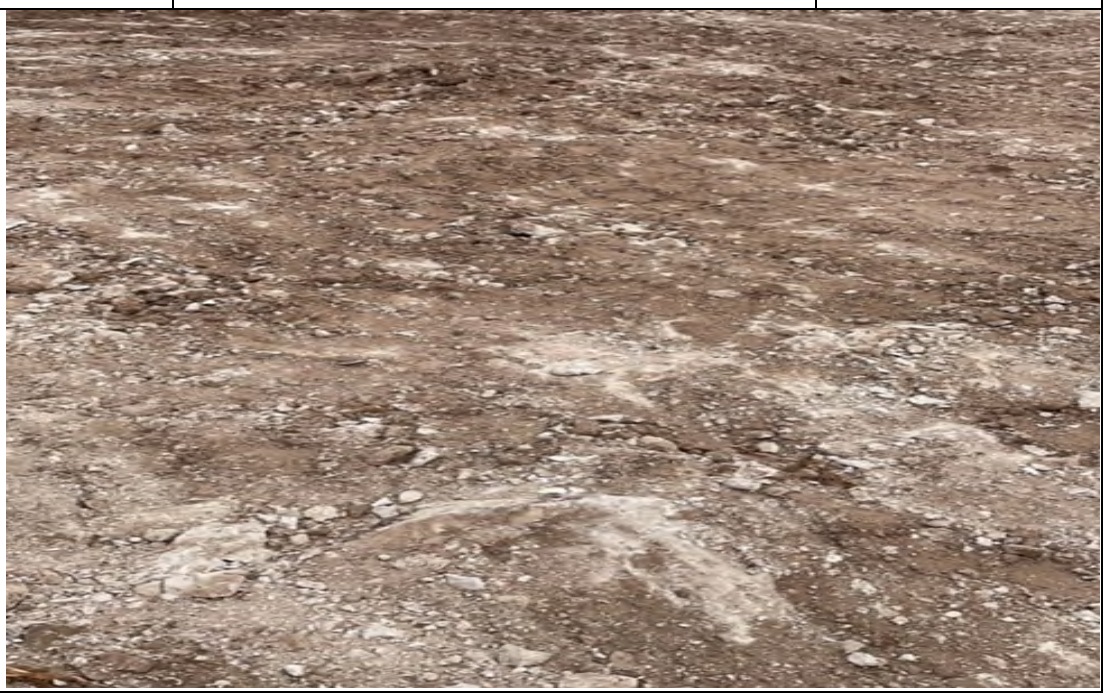
Photo No.	Date:
3	02/23/2023

Direction Photo Taken:

N

Description:

Solid rock layer in release area around 1 feet bgs.



ARCADIS

PHOTOGRAPHIC LOG

Property Name:	Location:	Case No.
Old Indian Draw Gathering Line Northern Area	Eddy County, NM	NCLB0525655219

Photo No.	Date:
4	02/23/2023

Direction Photo Taken:

N

Description:

Area excavated to solid rock layer at 1 to 2 feet bgs.

Appendix A

Incident #NCLB0525655219 NMOCD Database Information

NCLB0525655219 2005 MAJOR A OS @ FCLB0525651320

General Incident Information

Site Name:

Well:

Facility: [fCLB0525651320] Chesapeake Old Indian Draw Gaterhing Line

Operator: [147179] CHESAPEAKE OPERATING, INC.

Status: Closure Not Approved

Type: Oil Release

District: Artesia

Severity: Major

Surface Owner:

County: Eddy (15)

Incident Location: G-18-22S-28E 0 FL 0 FL

Lat/Long: 32.393027,-104.125388

Directions:

Notes

Source of Referral: Industry Rep

Resulted In Fire: ☐

Endangered Public Health: ☐

Fresh Water Contamination: ☐

Action / Escalation: Referred to Environmental Inspector

Will or Has Reached Watercourse: ☐

Property Or Environmental Damage: ☐

Contact Details

Contact Name:

Contact Title:

Event Dates

Date of Discovery: 09/06/2005

Extension Date: 11/15/2018

Initial C-141 Received:
Characterization Report Received:
Remediation Plan Received:

Closure Report Received:
OCD Notified of Major Release: 09/06/2005
Cancelled Date:

Characterization Report Approved:
Remediation Plan Approved:
Remediation Due:
Closure Report Approved:

Incidents Materials

Cause	Source	Material	Volume				Units
			Unk.	Spilled	Recovered	Lost	
Equipment Failure	Flow Line - Production	Produced Water	☐	30	6	24	BBL

Incident Events

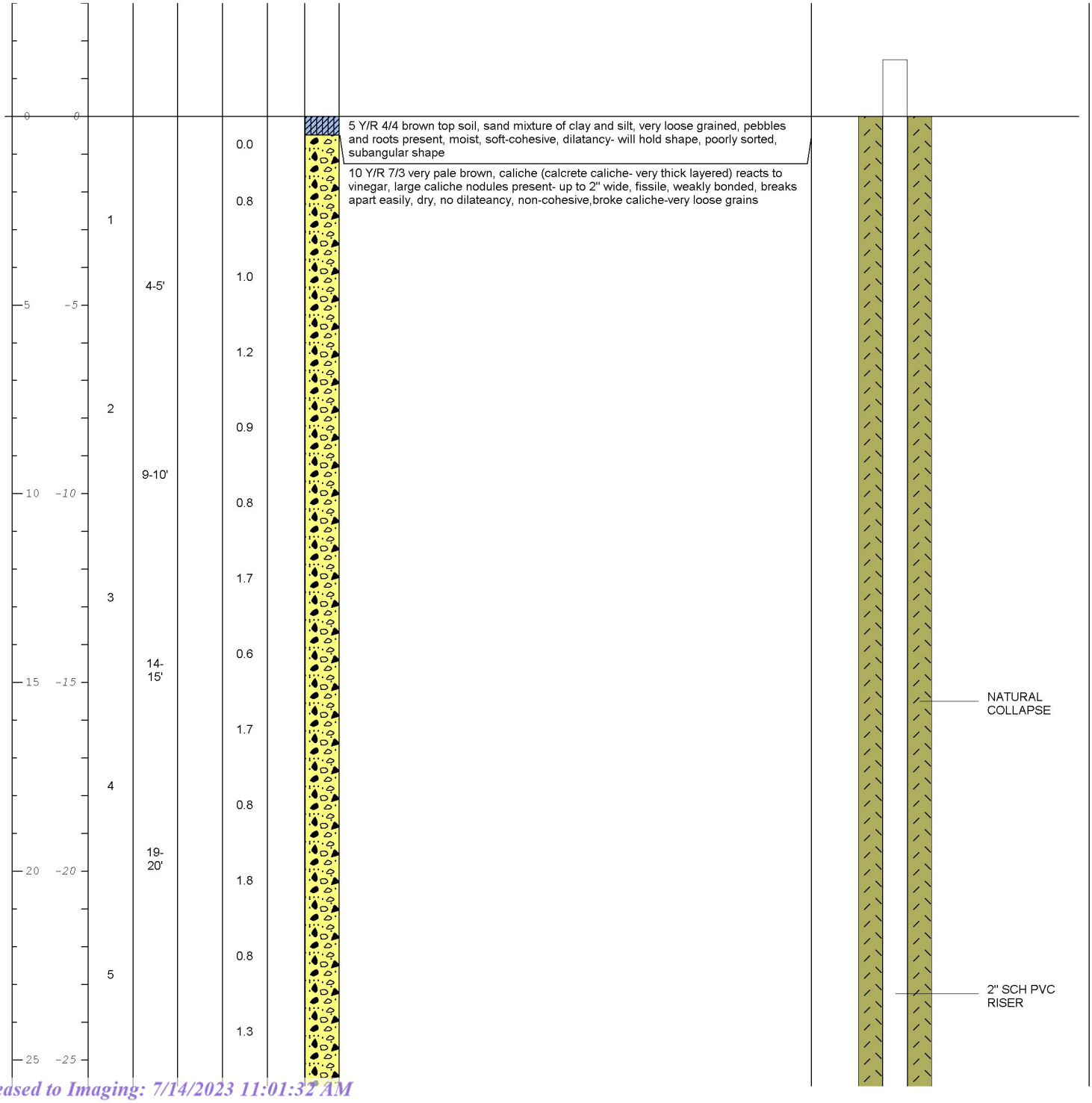
Date	Detail
02/05/2007	C-141: Fibergalss high pressure line (3-inch diameter) leaking produced water at collar. Approximately 7,020 square feet of surface area was impacted by the release. Saturated soil has been excavated and stockpiled on plastic on site unitl a remediation plan is developed. Once initial excavation activities are complete, samples will be collected to delineate the lateral and vertical extents of impacts associated with this release. Upon receipt of analytical results, the remediation plan will be developed and submitted to the NMOCD for approval. The excavated soil will be transported to an approved land treatment facility or blended with clean soil and returned to the excavation.

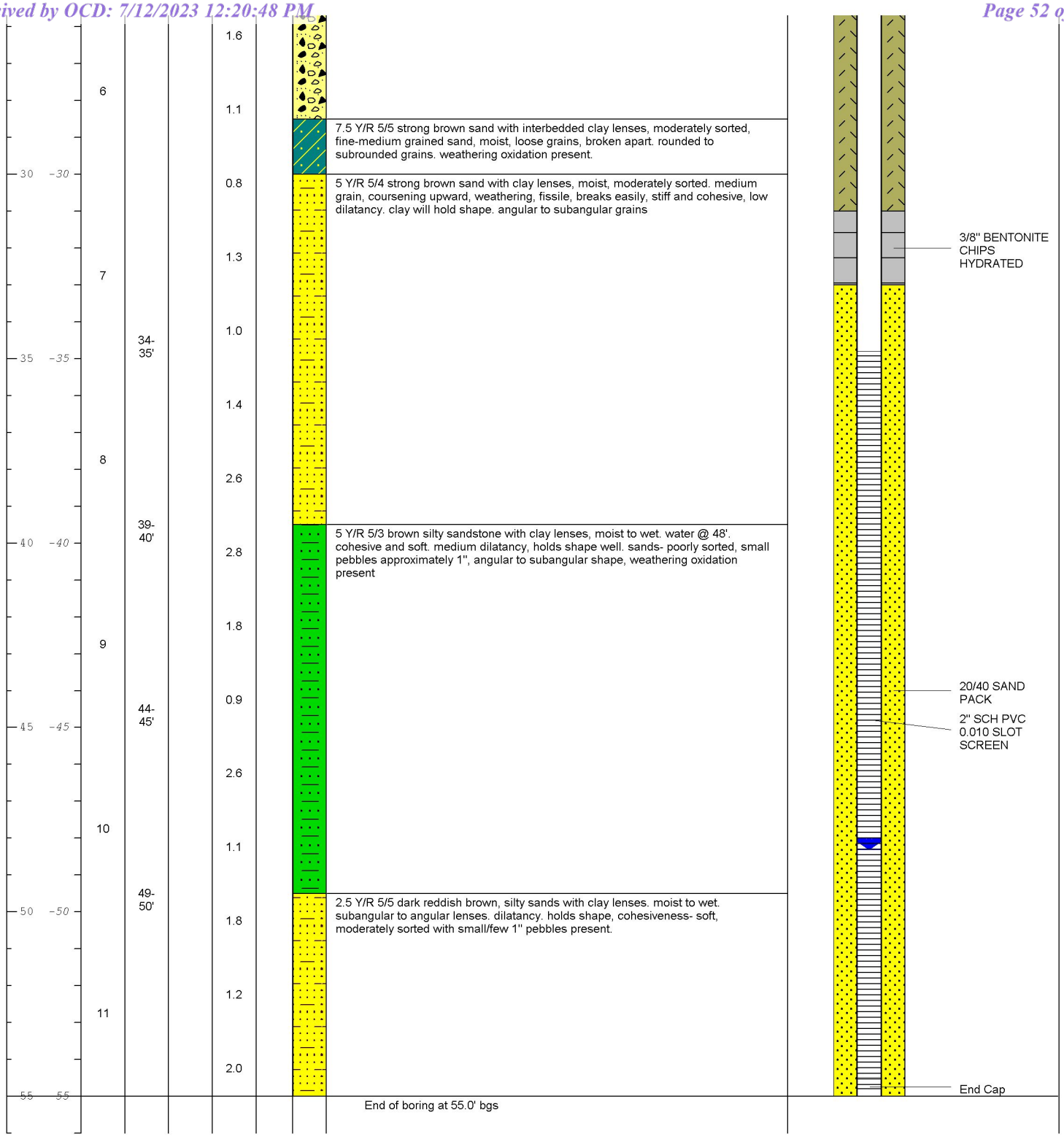
Appendix B

Temporary Monitoring Well Boring Log

Date Start/Finish: 2/13/2023 **Drilling Company:** White Drilling Company, Inc. **Driller's Name:** Bo Atkins **Drilling Method:** Air Rotary/ Split Spoon **Sampling Method:** Grab	**Latitude:** 32.392848 **Longitude:** -104.124242 **Casing Elevation:** NS **Borehole Depth:** 55' **Surface Elevation:** NS **Descriptions By:** Heather Dudley	**Well/Boring ID:** TW-2 **Client:** Chevron-MCBU **Location:** Old Indian Draw Unit #001 Carlsbad, New Mexico

DEPTH	Sample Run Number	Sample/Int/Type	Recovery (feet)	PID	USCS Code	Geologic Column	Stratigraphic Description	Well/Boring Construction
0				0.0			5 Y/R 4/4 brown top soil, sand mixture of clay and silt, very loose grained, pebbles and roots present, moist, soft-cohesive, dilatancy- will hold shape, poorly sorted, subangular shape	
	1	4-5'		0.8			10 Y/R 7/3 very pale brown, caliche (calcrete caliche- very thick layered) reacts to vinegar, large caliche nodules present- up to 2" wide, fissile, weakly bonded, breaks apart easily, dry, no dilateancy, non-cohesive,broke caliche-very loose grains	
-5				1.0				
	2	9-10'		1.2				
-10				0.9				
	3	14-15'		0.8				
-15				1.7				
	4	19-20'		0.6				
-20				1.7				
	5			0.8				
-25				1.8				
				0.8				
				1.3				





Remarks: bgs= below ground surface; TD= total depth; DTW= depth to water; ppm= parts per million; NS=not surveyed, N/A=not applicable/available, btoc= below top of casing

ARCADIS Design & Consultancy for natural and built assets

Project: 30166791 Template: LPTEMPLATE_Well_Construction_Final

Data File: Old Indian Draw Date: 2/21/2023 Created/Edited by: Trang Pham

State of New Mexico
Oil Conservation Division

Incident ID	NKMW1105550129
District RP	NA
Facility ID	NA
Application ID	NA

Site Assessment/Characterization

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

What is the shallowest depth to groundwater beneath the area affected by the release?	46 (ft bgs)
Did this release impact groundwater or surface water?	☐ Yes ☒ No
Are the lateral extents of the release within 300 feet of a continuously flowing watercourse or any other significant watercourse?	☐ Yes ☒ No
Are the lateral extents of the release within 200 feet of any lakebed, sinkhole, or playa lake (measured from the ordinary high-water mark)?	☐ Yes ☒ No
Are the lateral extents of the release within 300 feet of an occupied permanent residence, school, hospital, institution, or church?	☐ Yes ☒ No
Are the lateral extents of the release within 500 horizontal feet of a spring or a private domestic fresh water well used by less than five households for domestic or stock watering purposes?	☐ Yes ☒ No
Are the lateral extents of the release within 1000 feet of any other fresh water well or spring?	☐ Yes ☒ No
Are the lateral extents of the release within incorporated municipal boundaries or within a defined municipal fresh water well field?	☐ Yes ☒ No
Are the lateral extents of the release within 300 feet of a wetland?	☐ Yes ☒ No
Are the lateral extents of the release overlying a subsurface mine?	☐ Yes ☒ No
Are the lateral extents of the release overlying an unstable area such as karst geology?	☒ Yes ☐ No
Are the lateral extents of the release within a 100-year floodplain?	☐ Yes ☒ No
Did the release impact areas **not** on an exploration, development, production, or storage site?	☐ Yes ☒ No

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

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

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

If the site characterization report does not include completed efforts at remediation of the release, the report must include a proposed remediation plan. That plan must include the estimated volume of material to be remediated, the proposed remediation technique, proposed sampling plan and methods, anticipated timelines for beginning and completing the remediation. The closure criteria for a release are contained in Table 1 of 19.15.29.12 NMAC, however, use of the table is modified by site- and release-specific parameters.

State of New Mexico
Oil Conservation Division

Incident ID	NKMW1105550129
District RP	NA
Facility ID	NA
Application ID	NA

Remediation Plan

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

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

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

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

I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to OCD rules and regulations all operators are required to report and/or file certain release notifications and perform corrective actions for releases which may endanger public health or the environment. The acceptance of a C-141 report by the OCD does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to groundwater, surface water, human health or the environment. In addition, OCD acceptance of a C-141 report does not relieve the operator of responsibility for compliance with any other federal, state, or local laws and/or regulations.

Printed Name: Gene Choquette
Title: MCBU Sr. Environmental Specialist

Signature: Gene Choquette
Date: 07/14/2023

email: gchoquette@chevron.com
Telephone: 713-372-2100

OCD Only

Received by: _____ Date: _____

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

Signature: Nelson Velez
Date: 07/14/2023

Mr. Nelson Velez
Environmental Specialist
EMNRD - Oil Conservation Division
1000 Rio Brazos Road
Aztec, NM 87410

Arcadis U.S., Inc.
10205 Westheimer Road
Suite 800
Houston
Texas 77042
Phone: 713 953 4800
Fax: 713 977 4620
www.arcadis.com

TX Engineering License # F-533
TX Geoscientist License # 50158

Date: April 18, 2023
Subject: Soil Remediation Work Plan/Variance Request
Old Indian Draw Unit #001
Incident #'s NKMW1105550129 (2RP-611), NMLB1226438559 (2RP-1297), NJMW1334440905 (2RP-2104), and NAB1433953640 (2RP-2644)

Eddy County, New Mexico

Mr. Velez
NMOCD
April 18, 2023

Contents

Tables

Figures

Photographic Logs

Appendices

Mr. Velez
NMOCD
April 18, 2023

Dear Mr. Velez,

Arcadis U.S., Inc. (Arcadis) has prepared this Soil Remediation Work Plan/Variance Request on behalf of Chevron U.S.A. Inc. (Chevron), for proposed soil remediation activities at the Old Indian Draw Unit #001 (Site), located in Eddy County, New Mexico.

Background

The Site is located approximately 8-miles southeast of the City of Carlsbad in Unit Letter J, Section 18, Township 22 South, Range 28 East. The former Old Indian Draw Unit #001 is an approximate 2.5-acre restored former well pad and tank battery characterized by numerous active and inactive underground utilities that transect the Site. The underground utilities are anticipated to remain active until production operations cease in the area. The Site is located on land owned by the United States Department of the Interior and administered by the Bureau of Land Management (BLM). The site location map is provided as **Figure 1**.

Four open incident numbers are associated with the Site. While environmental records suggest limited remediation activities were conducted at the Site, the incidents were not closed prior to restoring the well pad and tank battery facility. The following Incident numbers associated with the Old Indian Draw Unit #001 Site are being assessed concurrently:

1. Incident No: NKMW1105550129 (2RP-611) – listed under Chesapeake Operating, Inc.

   On February 17, 2011, an equipment failure caused a release of approximately 70 barrels (bbls) of produced water, of which 60 bbls of produced water were recovered. The Initial C-141 Form was submitted to the New Mexico Oil Conservation Division (NMOCD) on February 18, 2011, and assigned remediation permit number 2RP-611.

2. Incident No: NMLB1226438559 (2RP-1297) – listed under Chesapeake Operating, Inc.

   On August 20, 2012, an equipment failure caused a release of approximately 300 bbls of produced water, of which 170 bbls of produced water were recovered. The Initial C-141 Form was submitted to the NMOCD on September 10, 2012, and assigned remediation permit number 2RP-1297.

3. Incident No: NJMW1334440905 (2RP-2104) – listed under Chesapeake Operating, Inc.

   On December 2, 2013, an equipment failure caused a release of approximately 80 bbls of produced water, of which 60 bbls of produced water were recovered. The Initial C-141 Form was submitted to the NMOCD on December 6, 2013, and assigned remediation permit number 2RP-2104. This location is included in the November 2018 Ongoing Corrective Actions/Remediations Agreed Compliance Order-Releases (ACO) between Chevron and NMOCD.

4. Incident No: NAB1433953640 (2RP-2644) – listed under Chevron U.S.A. Inc.

   On October 18, 2014, a release of approximately 13 bbls of produced water and oil, of which 11 bbls of produced water and oil were recovered. The Initial C-141 Form was submitted to the NMOCD on December 3, 2014, and assigned remediation permit number 2RP-2644. This location is included in the November 2018 Ongoing Corrective Actions/Remediations ACO between Chevron and NMOCD.

Mr. Velez
NMOCD
April 18, 2023

Soil and groundwater assessment activities to further evaluate current site conditions associated with the four incidents were conducted in August 2021, March 2022, and resumed in January 2023 through the present date. Additional remediation activities are pending approval of this Work Plan/Variance Request. The four Initial C-141 Forms for this Site are included in **Appendix A**

Initial Soil Investigation

Between August 17-19, 2021, Larson & Associates, Inc. (Larson) conducted an initial assessment at the Site. During the initial assessment, soil samples were collected at depths ranging from 1 to 20 feet below ground surface (bgs) at 16 locations (S-1 through S-16) utilizing air rotary drilling methods. The collected soil samples were submitted to the laboratory for analysis of chloride; benzene, toluene, ethylbenzene, and xylenes (BTEX); and total petroleum hydrocarbons (Total TPH).

Laboratory analytical results indicated BTEX and Total TPH concentrations were below the applicable laboratory method detection limits (MDLs) in each of the submitted soil samples with the exception of minor detections for TPH (C12-C28 range) at a depth of 1 foot bgs at S-2 (182 milligrams per kilogram (mg/kg)), Total TPH at S-5 at 1 foot bgs (57.1 mg/kg), benzene (0.00515 mg/kg) and BTEX (0.0117 mg/kg) at S-7 at 1 foot bgs, and benzene (0.00437 mg/kg) and BTEX (0.00435 mg/kg and 0.0102 mg/kg) at S-13 at depths of 1 to 3 feet bgs. Vertical delineation in soil for BTEX and TPH constituents was achieved at all sampling locations. Analytical results indicated chloride concentrations ranged from 8.62 mg/kg in soil sample S-15 at 1-foot bgs to 13,600 mg/kg in soil sample S-8 at 10 feet bgs.

On March 8, 2022, Larson revisited the Site in an effort to further characterize chloride impacts. During the Site visit, an air rotary drill rig was utilized to install investigative soil borings proximate to 6 of the previously drilled locations characterized by soil samples that were above the NMOCD regulatory limit of 600 mg/kg for chloride (S-3, S-7, S-8, S-9, S-10, and S-12). The 6 borings were installed at depths ranging from 15 feet bgs to approximately 45 feet bgs. Soil borings S-7 and S-8 were installed in the center of the pad to approximately 45 feet bgs. Larson's assessment activities confirmed chloride impact to soil to depths of approximately 45 feet bgs in the areas characterized by soil borings S-7 and S-8, indicating potential groundwater impact from chloride. No detections for BTEX or TPH were reported in any soil samples collected from the 6 locations during this subsequent soil assessment.

Analytical results from the Larson assessment are depicted in **Table 1**. Soil boring locations completed by Larson are depicted on **Figure 2**.

Safety Concerns

Hydrogen sulfide concentrations have been documented as high as 40,000 parts per million (ppm) from nearby production facilities, and active ancillary fiberglass flow lines that transect the Site are inferred to contain similar concentrations. High consequence health and safety risks (explosion, nervous system impairment and death from concentrations as low as 100 ppm) associated with a potential release from damaged underground fiberglass flowlines and/or a line strike are an ongoing concern at this Site.

Hydro excavation activities began in January 2023 within the impacted areas in an effort to daylight and/or exhume the active underground utilities including numerous fiberglass crude oil flowlines, fiberglass produced water injection lines, electrical lines, and additional ancillary underground utilities associated with previous and

ongoing oil and gas production operations proximate to the former pad area. Multiple hydro excavation units are currently being utilized at the Site.

Risks of potential unanticipated/undetected damage to active underground fiberglass production lines by yellow iron type excavation activities within base rock material proximate to the fiberglass production lines are also a significant concern for continued operations within the well field.

Additional Field Activities Summary

Arcadis began additional soil assessment activities across the former pad area on January 23, 2023, utilizing a stainless-steel hand auger. During soil assessment activities, a resilient rock layer was encountered at depths ranging from approximately 1-foot to 2.5-feet bgs at all boring locations. The depth to resilient rock encountered during assessment activities throughout the Site is depicted on **Figure 3**.

Arcadis collected 62 soil samples (G-1 through G-62) in an approximate grid pattern across the former pad area at depths ranging from approximately six inches bgs to 2 feet bgs in an effort to further characterize the horizontal extent of chloride impacts at the Site. The collected soil samples were field screened for concentrations of chloride. Select soil samples that field screened below applicable screening limits for chloride (600 mg/kg) were submitted for analytical confirmation to Eurofins/Xenco Laboratories in Midland, Texas for BTEX, Total TPH and chloride analyses. The collection of soil samples from deeper intervals was precluded due to the presence of the resilient calcrete rock layer at all sample locations. The soil sample locations are depicted on **Figure 2**.

On February 13, 2023, Arcadis oversaw the installation of a temporary monitoring well (TW-1) at the Site. The temporary monitoring well was installed in the center of the pad approximately 10 feet northeast of the southern wellhead P&A marker at the Site. During the installation of the temporary monitoring well, soil samples were collected from select intervals for laboratory analysis of BTEX, Total TPH, and/or chloride. Laboratory analytical results from soil samples collected during the installation of the temporary monitoring well indicated chloride concentrations above NMOCD closure criteria in soil extend to the groundwater bearing unit encountered at approximately 46 feet bgs; BTEX and Total TPH concentrations were below the applicable laboratory MDLs in all soil samples analyzed for those constituents with the exception of a TPH Gasoline Range Organic (GRO C6-C10) detection at an estimated concentration of 31.1 mg/kg at a depth of approximately 5 feet bgs.

On February 16, 2023, the temporary monitoring well was developed utilizing Environmental Protection Agency (EPA) Standard Methods. Following development activities on the temporary monitoring well, a groundwater sample was collected and submitted to the laboratory for analysis of chloride, total dissolved solids (TDS), and BTEX concentrations. Laboratory analytical results indicated chloride and TDS concentrations were above the New Mexico Water Quality Control Commission (NMWQCC) Groundwater Standards of 250 milligrams per liter (mg/L) for chloride and 1,000 mg/L for TDS. Chloride was reported at 10,400 mg/L and TDS was reported at 15,100 mg/L. BTEX constituents were not detected in groundwater above the applicable laboratory MDLs. A copy of the Temporary Monitoring Well Boring Log is provided as **Appendix B**.

One additional soil sample test trench (S-1) was installed with an excavator down to approximately 2 feet bgs (the top of the calcrete rock layer) northeast of the pad area on February 22, 2023, to further horizontal delineation of chloride impact to soil. The two soil samples collected from S-1 at depths of 1-foot bgs and 2 feet bgs were reported with chloride concentrations of 73.1 mg/kg and 357 mg/kg, respectively.

Evaluation of soil data collected to date confirmed horizontal delineation of the release area was accomplished in conjunction with the initial Larson soil assessment activities conducted in 2021 and 2022. Groundwater impacts

will be further evaluated and an Abatement Plan per NMAC 19.15.30 is anticipated to be submitted to the NMOCD for the Site following completion of soil remediation and reclamation activities.

Analytical results from the subsequent Arcadis soil assessments can be found in **Table 2,** groundwater analytical results from groundwater samples collected from the temporary monitoring well can be found in **Table 3.** The soil sample and temporary monitoring well locations installed by Arcadis are depicted on **Figure 2**. Current site conditions, utilities, and the resilient rock layer encountered are documented in the attached **Photographic Log** and on **Figure 3.** Laboratory analytical reports for soil and groundwater data collected are included in **Appendix C**.

Variance Request

Numerous active and inactive underground utilities have been identified throughout the site boundaries at depths ranging from approximately 3 to 4 feet bgs. Repeated attempts to break through the resilient calcrete rock layer encounter across the Site at depths ranging from approximately 1 foot bgs to 2.5 feet bgs utilizing a track hoe equipped with a trenching bucket and “rock teeth” yielded limited results following attempts at locations safely distanced from known underground utilities.

Continued excavation activities below the calcrete rock layer are believed not practicable based on the Site’s geologic conditions and the associated high-risk potential to damage subsurface utilities which has the potential to cause harm to human health and the environment.

Analytical data collected during assessment activities confirm soil within the release area has been horizontally delineated for chloride, chloride impact to soil extends to the groundwater bearing unit, and that groundwater is impacted with chloride and TDS above applicable NMAC/ NMWQCC screening standards. Assessment activities confirm limited vertically delineated impacts above applicable screening standards for BTEX or TPH are currently present in surface soil but have not migrated to groundwater at the Site. BTEX and TPH concentrations detected in soil are not believed a risk to groundwater.

As such, Arcadis is requesting approval of the following Variance for soil remediation activities:

- Based on the size of the Site and the amount of initial assessment data, Arcadis requests a variance to increase the composite confirmation soil sampling frequency to 500 square feet for excavation base and sidewalls samples within the approximate 2.5-acre release area.
- Due to the abundance of buried fiberglass utilities containing high H2S fluids and the resilient nature of the calcrete rock layer encountered throughout the release area, Arcadis is requesting a variance to limit excavation activities to include only removing impacted soil affected above the NMOCD Reclamation Standards present within the release area to the maximum extent practicable (to the surface of the calcrete rock layer).
- Should any impacted areas be confirmed to not be restricted by the calcrete rock layer and are not immediately adjacent to existing underground utilities, excavation activities will be continued to depths practical with standard excavation equipment.
- Following excavation of impacted soil affected above the NMOCD closure criteria, a layer of gypsum and/or a desalination product will be installed on the floor of the excavated area. This control is designed to inhibit the downward migration of chloride remaining in-situ.

Mr. Velez
NMOCD
April 18, 2023

- Arcadis requests approval to install a geosynthetic liner atop impacted areas exhibiting BTEX, TPH and/or chloride concentrations above the NMOCD Closure Criteria remaining in-situ. The liner will be installed atop the resilient calcrete rock layer and a connecting bentonite slurry liner will be installed below the existing underground utilities. This engineering control is designed to inhibit the vertical migration of site constituents of concern in soil to groundwater along with the upward migration of chloride to further support revegetation of the remediated area.
- Upon installing the geosynthetic liner, the excavated areas will be backfilled with locally sourced, non-impacted “like” material.
- Upon completion of remediation activities, the area will be reseeded with a BLM approved seed mixture during the first favorable growing season following closure of the Site.

Upon completion of the remediation and reclamation activities, a *Remediation Summary and Soil Closure Request* will be submitted to the NMOCD, containing a detailed summary of the field activities and laboratory analytical results.

If you have any questions or comments with regards to this work plan and variance request, please do not hesitate to contact Scott Foord at 713.953.4853 or by e-mail at William.Foord@arcadis.com.

Sincerely,

Arcadis U.S., Inc.

Scott Foord, PG

Program Manager

Tables

Table 1
2021/2022 Soil Analytical Results
Old Indian Draw Unit 001 Historical Release
Eddy County, New Mexico
32° 23' 26.79" North, 104° 07' 27.90" West

Sample	Depth (Feet)	Collection Date	Status	Benzene (mg/Kg)	BTEX (mg/Kg)	C6 - C12 (mg/Kg)	C12 - C28 (mg/Kg)	C28 - C35 (mg/Kg)	TPH (mg/Kg)	Chloride (mg/Kg)
Remediation Level:				**10**	**50**				**100**	**600**
S-1	1	8/17/2021	In-Situ	<0.00198	<0.00396	<50.0	<50.0	<50.0	<50.0	249
	3	8/17/2021	In-Situ	<0.00200	<0.00399	<49.9	<49.9	<49.9	<49.9	221
	5	8/17/2021	In-Situ	<0.00199	<0.00398	<49.8	<49.8	<49.8	<49.8	372
	10	8/17/2021	In-Situ	<0.00201	<0.00402	<49.9	<49.9	<49.9	<49.9	574
S-2	1	8/17/2021	In-Situ	<0.00200	<0.00399	<50.0	182	<50.0	**182**	**909**
	3	8/17/2021	In-Situ	<0.00201	<0.00402	<49.8	<49.8	<49.8	<49.8	511
	5	8/17/2021	In-Situ	<0.00199	<0.00398	<49.9	<49.9	<49.9	<49.9	470
S-3	1	8/17/2021	In-Situ	<0.00202	<0.00403	<49.8	<49.8	<49.8	<49.8	**994**
	3	8/17/2021	In-Situ	<0.00200	<0.00401	<49.9	<49.9	<49.9	<49.9	**2,950**
	5	8/17/2021	In-Situ	<0.00201	<0.00402	<49.9	<49.9	<49.9	<49.9	**2,340**
	10	8/17/2021	In-Situ	<0.00201	<0.00402	<49.8	<49.8	<49.8	<49.8	**2,070**
	15	8/17/2021	In-Situ	<0.00202	<0.00403	<50.0	<50.0	<50.0	<50.0	**1,730**
	20	8/17/2021	In-Situ	<0.00202	<0.00404	<50.0	<50.0	<50.0	<50.0	**1,160**
	25	3/10/2022	In-Situ	--	--	--	--	--	--	57.2
S-4	1	8/18/2021	In-Situ	<0.00200	<0.00399	<49.9	<49.9	<49.9	<49.9	**955**
	3	8/18/2021	In-Situ	<0.00199	<0.00398	<49.9	<49.9	<49.9	<49.9	**1,140**
	5	8/18/2021	In-Situ	<0.00199	<0.00398	<49.8	<49.8	<49.8	<49.8	**698**
	10	8/18/2021	In-Situ	<0.00198	<0.00397	<49.9	<49.9	<49.9	<49.9	502
S-5	1	8/18/2021	In-Situ	<0.00200	<0.00399	<50.0	57.1	<50.0	57.1	180
	3	8/18/2021	In-Situ	<0.00202	<0.00403	<49.8	<49.8	<49.8	<49.8	514
	5	8/18/2021	In-Situ	<0.00200	<0.00401	<50.0	<50.0	<50.0	<50.0	590
	8	8/18/2021	In-Situ	<0.00201	<0.00402	<50.0	<50.0	<50.0	<50.0	405
S-6	1	8/18/2021	In-Situ	<0.00200	<0.00401	<49.8	<49.8	<49.8	<49.8	**1,200**
	3	8/18/2021	In-Situ	<0.00201	<0.00402	<50.0	<50.0	<50.0	<50.0	365
	5	8/18/2021	In-Situ	<0.00201	<0.00402	<50.0	<50.0	<50.0	<50.0	142

Table 1
2021/2022 Soil Analytical Results
Old Indian Draw Unit 001 Historical Release
Eddy County, New Mexico
32° 23' 26.79" North, 104° 07' 27.90" West

Sample	Depth (Feet)	Collection Date	Status	Benzene (mg/Kg)	BTEX (mg/Kg)	C6 - C12 (mg/Kg)	C12 - C28 (mg/Kg)	C28 - C35 (mg/Kg)	TPH (mg/Kg)	Chloride (mg/Kg)
Remediation Level:				**10**	**50**				**100**	**600**
	10	8/18/2021	In-Situ	<0.00200	<0.00399	<49.9	<49.9	<49.9	<49.9	40.9
S-7	1	8/18/2021	In-Situ	0.00515	0.0117	<50.0	<50.0	<50.0	<50.0	**8,350**
	3	8/18/2021	In-Situ	<0.00200	<0.00401	<49.9	<49.9	<49.9	<49.9	**8,180**
	5	8/18/2021	In-Situ	<0.00202	<0.00403	<49.8	<49.8	<49.8	<49.8	**9,990**
	10	8/18/2021	In-Situ	<0.00200	<0.00399	<49.9	<49.9	<49.9	<49.9	**6,270**
	15	8/18/2021	In-Situ	<0.00199	<0.00398	<49.8	<49.8	<49.8	<49.8	**5,640**
	20	3/8/2022	In-Situ	--	--	--	--	--	--	**1,900**
	25	3/8/2022	In-Situ	--	--	--	--	--	--	**2,820**
	30	3/8/2022	In-Situ	--	--	--	--	--	--	**3,330**
	35	3/8/2022	In-Situ	--	--	--	--	--	--	**1,320**
	40	3/8/2022	In-Situ	--	--	--	--	--	--	**868**
	45	3/8/2022	In-Situ	--	--	--	--	--	--	**2,720**
S-8	1	8/18/2021	In-Situ	<0.00199	<0.00398	<49.9	<49.9	<49.9	<49.9	**6,830**
	3	8/18/2021	In-Situ	<0.00198	<0.00397	<49.8	<49.8	<49.8	<49.8	**7,210**
	5	8/18/2021	In-Situ	<0.00202	<0.00404	<49.9	<49.9	<49.9	<49.9	**9,020**
	10	8/18/2021	In-Situ	<0.00202	<0.00403	<49.9	<49.9	<49.9	<49.9	**13,600**
	15	3/8/2022	In-Situ	--	--	--	--	--	--	**2,230**
	20	3/8/2022	In-Situ	--	--	--	--	--	--	**1,610**
	35	3/8/2022	In-Situ	--	--	--	--	--	--	**4,830**
	30	3/8/2022	In-Situ	--	--	--	--	--	--	**3,290**
	35	3/8/2022	In-Situ	--	--	--	--	--	--	**2,030**
	40	3/8/2022	In-Situ	--	--	--	--	--	--	**1,080**
	45	3/8/2022	In-Situ	--	--	--	--	--	--	**1,310**
S-9	1	8/18/2021	In-Situ	<0.00200	<0.00400	<49.9	<49.9	<49.9	<49.9	146

Table 1
2021/2022 Soil Analytical Results
Old Indian Draw Unit 001 Historical Release
Eddy County, New Mexico
32° 23' 26.79" North, 104° 07' 27.90" West

Sample	Depth (Feet)	Collection Date	Status	Benzene (mg/Kg)	BTEX (mg/Kg)	C6 - C12 (mg/Kg)	C12 - C28 (mg/Kg)	C28 - C35 (mg/Kg)	TPH (mg/Kg)	Chloride (mg/Kg)
Remediation Level:				**10**	**50**				**100**	**600**
	3	8/18/2021	In-Situ	<0.00202	<0.00403	<50.0	<50.0	<50.0	<50.0	220
	5	8/18/2021	In-Situ	<0.00201	<0.00402	<49.8	<49.8	<49.8	<49.8	**2,250**
	10	8/18/2021	In-Situ	<0.00200	<0.00401	<50.0	<50.0	<50.0	<50.0	**2,460**
	15	3/9/2022	In-Situ	--	--	--	--	--	--	459
S-10	1	8/18/2021	In-Situ	<0.00200	<0.00399	<50.0	<50.0	<50.0	<50.0	**3,240**
	3	8/18/2021	In-Situ	<0.00199	<0.00398	<49.9	<49.9	<49.9	<49.9	**3,450**
	5	8/18/2021	In-Situ	<0.00199	<0.00398	<49.8	<49.8	<49.8	<49.8	**1,490**
	10	8/18/2021	In-Situ	<0.00200	<0.00401	<49.9	<49.9	<49.9	<49.9	**1,870**
	15	3/9/2022	In-Situ	--	--	--	--	--	--	**1,490**
	20	3/9/2022	In-Situ	--	--	--	--	--	--	**5,320**
	25	3/9/2022	In-Situ	--	--	--	--	--	--	401
S-11	1	8/18/2021	In-Situ	<0.00200	<0.00401	<49.9	<49.9	<49.9	<49.9	25.5
	3	8/18/2021	In-Situ	<0.00199	<0.00398	<49.9	<49.9	<49.9	<49.9	48.5
	5	8/18/2021	In-Situ	<0.00199	<0.00398	<49.8	<49.8	<49.8	<49.8	65.5
S-12	1	8/18/2021	In-Situ	<0.00199	<0.00398	<49.8	<49.8	<49.8	<49.8	**2,670**
	3	8/18/2021	In-Situ	<0.00200	<0.00400	<49.9	<49.9	<49.9	<49.9	**1,740**
	5	8/18/2021	In-Situ	<0.00200	<0.00399	<49.8	<49.8	<49.8	<49.8	**2,060**
	10	3/9/2022	In-Situ	--	--	--	--	--	--	**791**
	15	3/9/2022	In-Situ	--	--	--	--	--	--	162
S-13	1	8/19/2021	In-Situ	<0.00200	0.00435	<50.0	<50.0	<50.0	<50.0	556
	3	8/19/2021	In-Situ	0.00437	0.0102	<49.8	<49.8	<49.8	<49.8	497
	5	8/19/2021	In-Situ	<0.00199	<0.00398	<50.0	<50.0	<50.0	<50.0	366
S-14	1	8/19/2021	In-Situ	<0.00201	<0.00402	<49.8	<49.8	<49.8	<49.8	104
	3	8/19/2021	In-Situ	<0.00199	<0.00398	<49.9	<49.9	<49.9	<49.9	477

Table 1
2021/2022 Soil Analytical Results
Old Indian Draw Unit 001 Historical Release
Eddy County, New Mexico
32° 23' 26.79" North, 104° 07' 27.90" West

Sample	Depth (Feet)	Collection Date	Status	Benzene (mg/Kg)	BTEX (mg/Kg)	C6 - C12 (mg/Kg)	C12 - C28 (mg/Kg)	C28 - C35 (mg/Kg)	TPH (mg/Kg)	Chloride (mg/Kg)
Remediation Level:				**10**	**50**				**100**	**600**
S-15	1	8/18/2021	In-Situ	<0.00199	<0.00398	<49.9	<49.9	<49.9	<49.9	8.62
	3	8/18/2021	In-Situ	<0.00200	<0.00399	<49.8	<49.8	<49.8	<49.8	26.0
S-16	1	8/19/2021	In-Situ	<0.00200	<0.00399	<50.0	<50.0	<50.0	<50.0	233
	3	8/19/2021	In-Situ	<0.00202	<0.00403	<50.0	<50.0	<50.0	<50.0	454
	5	8/19/2021	In-Situ	<0.00200	<0.00400	<49.9	<49.9	<49.9	<49.9	260
	10	8/19/2021	In-Situ	<0.00199	<0.00398	<49.9	<49.9	<49.9	<49.9	244

Notes: Analysis performed by Xenco Laboratories (Xenco) in Midland, Texas by EPA SW-846 8021B (BTEX), 8015M (TPH), and 300E (Chloride)
Depth in feet below ground surface (bgs)
mg/Kg: milligrams per kilogram equivalent to parts per million (ppm)
<: denotes concentration less than analytical method reporting limit
Bold and Highlighted exceeds OCD remediation action limits

Chevron
Table 2
2023 Soil Analytical Results - Arcadis
Old Indian Draw Unit 001
Eddy County, New Mexico

Location ID	Depth (Feet)	Date Collected	Sample Name	Soil Status	BTEX					TPH				Gen Chem
					Benzene mg/kg	Toluene mg/kg	Ethylbenzene mg/kg	Xylenes, Total mg/kg	Total BTEX mg/kg	Gasoline Range Organics (GRO)-C6-C10 mg/kg	Diesel Range Organics (Over C10-C28) mg/kg	Oil Range Organics (Over C28-C36) mg/kg	Total TPH mg/kg	Chloride, Dissolved mg/kg
NMAC Screening Limit					10	- -	- -	- -	50	- -	- -	- -	100	600
G-01	0.5	01/23/2023	G-1-S-0-6"-20230123	In-Situ	--	--	--	--	--	--	--	--	--	237
G-02	0.5	01/23/2023	G-2-S-0-6"-20230123	In-Situ	--	--	--	--	--	--	--	--	--	16.5
G-03	0.5	01/23/2023	G-3-S-0-6"-20230123	In-Situ	--	--	--	--	--	--	--	--	--	63.1
G-07	0.5	01/23/2023	G-7-S-0-6"20230123	In-Situ	--	--	--	--	--	--	--	--	--	357
G-11	0.5	01/23/2023	G-11-S-0-6"-20230123	In-Situ	--	--	--	--	--	--	--	--	--	372
G-12	0.5	01/23/2023	G-12-S-0-6"-20230123	In-Situ	--	--	--	--	--	--	--	--	--	80.7
G-14	0.5	01/23/2023	G-14-S-0-6"-20230123	In-Situ	--	--	--	--	--	--	--	--	--	296
G-25	0.5	01/23/2023	G-25-S-0-6"-20230123	In-Situ	--	--	--	--	--	--	--	--	--	54.4
G-26	0.5	01/23/2023	G-26-S-0-6"-20230123	In-Situ	--	--	--	--	--	--	--	--	--	61.4
G-27	0.5	01/23/2023	G-27-S-0-6"-20230123	In-Situ	--	--	--	--	--	--	--	--	--	257
G-28	0.5	01/23/2023	G-28-S-0-6"-20230123	In-Situ	--	--	--	--	--	--	--	--	--	222
G-31	0.5	01/23/2023	G-31-S-0-6"-20230123	In-Situ	--	--	--	--	--	--	--	--	--	28.8
G-32	0.5	01/23/2023	G-32-S-0-6"-20230123	In-Situ	--	--	--	--	--	--	--	--	--	**3850**
G-33	0.5	01/23/2023	G-33-S-0-6"-20230123	In-Situ	--	--	--	--	--	--	--	--	--	71.6
G-34	0.5	01/23/2023	G-34-S-0-6"-20230123	In-Situ	--	--	--	--	--	--	--	--	--	72.7
G-35	0.5	01/27/2023	G-35-S-0-6"-20230127	In-Situ	--	--	--	--	--	--	--	--	--	436
G-36	0.5	01/27/2023	G-36-S-0-6"-20230127	In-Situ	--	--	--	--	--	--	--	--	--	25.3
G-37	0.5	01/27/2023	G-37-S-0-6"-20230127	In-Situ	--	--	--	--	--	--	--	--	--	2.40J
G-38	0.5	01/27/2023	G-38-S-0-6"-20230127	In-Situ	--	--	--	--	--	--	--	--	--	432
G-39	0.5	01/27/2023	G-39-S-0-6"-20230127	In-Situ	--	--	--	--	--	--	--	--	--	**672**
G-41	0.5	01/27/2023	G-41-S-0-6"-20230127	In-Situ	--	--	--	--	--	--	--	--	--	33.6
G-42	0.5	01/27/2023	G-42-S-0-6"-20230127	In-Situ	--	--	--	--	--	--	--	--	--	2.97J
G-44	0.5	01/31/2023	G-44-S-0-6"-20230131	In-Situ	--	--	--	--	--	--	--	--	--	<5.03
G-45	0.5	01/31/2023	G-45-S-0-6"-20230131	In-Situ	--	--	--	--	--	--	--	--	--	5.16
G-55	1	02/02/2023	G-55-S-1'-20230202	In-Situ	--	--	--	--	--	--	--	--	--	100
G-58	0.5	02/08/2023	G-58-S-0-6'-20230802	In-Situ	<0.00200	<0.00200	<0.00200	<0.00400	<0.00400	<49.8	<49.8	<49.8	<49.8	10.9
G-59	0.5	02/08/2023	G-59-S-0-06'-20230802	In-Situ	<0.00202	<0.00202	<0.00202	<0.00403	<0.00403	<50.0	<50.0	<50.0	<50.0	17.8
G-60	0.5	02/08/2023	G-60-S-0-6"-20230802	In-Situ	<0.00198	<0.00198	<0.00198	<0.00396	<0.00396	<49.8	<49.8	<49.8	<49.8	<5.01
G-61	0.5	02/08/2023	G-61-S-06"-20230802	In-Situ	<0.00199	<0.00199	<0.00199	<0.00398	<0.00398	<49.9	<49.9	<49.9	<49.9	<5.02
G-62	0.5	02/08/2023	G-62-S-0-6"-20230802	In-Situ	<0.00200	<0.00200	<0.00200	<0.00399	<0.00399	<49.9	<49.9	<49.9	<49.9	<4.98
G-63	0.5	02/08/2023	G-63-S-0-6"-20230802	In-Situ	<0.00199	<0.00199	<0.00199	<0.00398	<0.00398	<50.0	<50.0	<50.0	<50.0	<5.01
TW-1	0.5	02/13/2023	TW-1-S-0-0.5'-230213	In-Situ	--	--	--	--	--	--	--	--	--	**975**
TW-1	5	02/13/2023	TW-1-S-4-5'-230213	In-Situ	<0.000387	<0.000458	<0.000567	<0.00101	<0.00101	31.1J B	<15.0	<15.0	31.1J	275
TW-1	10	02/13/2023	TW-1-S-10'-230213	In-Situ	--	--	--	--	--	--	--	--	--	50.5
TW-1	15	02/13/2023	TW-1-S-15'-230213	In-Situ	--	--	--	--	--	--	--	--	--	485
TW-1	20	02/13/2023	TW-1-S-20'-230213	In-Situ	--	--	--	--	--	--	--	--	--	**1850**
TW-1	25	02/13/2023	TW-1-S-25'-230213	In-Situ	--	--	--	--	--	--	--	--	--	**4230**
TW-1	30	02/13/2023	TW-1-S-30'-230213	In-Situ	<0.000388	<0.000460	<0.000570	<0.00102	<0.00102	<14.9	<14.9	<14.9	<14.9	**4710**
TW-1	35	02/13/2023	TW-1-S-35'-230213	In-Situ	--	--	--	--	--	--	--	--	--	**3910**
TW-1	40	02/13/2023	TW-1-S-40'-230213	In-Situ	--	--	--	--	--	--	--	--	--	**1020**
TW-1	45	02/13/2023	TW-1-S-45'-230213	In-Situ	--	--	--	--	--	--	--	--	--	**1020**
S-1	1	02/22/2023	S-1-S-1'-20230223	In-Situ	--	--	--	--	--	--	--	--	--	73.1
S-1	2	02/22/2023	S-1-S-2'-20230223	In-Situ	--	--	--	--	--	--	--	--	--	357

Legend:
Analytes exceedng NMAC standards are indicated in **bold** and grey
J: Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value
'<' indicates the analyte was not detected at or above the Method Detection Limit (MDL)
mg/kg: Milligram per Kilogram
NMAC : New Mexico Administration Code
bgs: Below ground surface
B: Compound was found in the blank and sample
TW: Temporary well
G: Shallow soil sample
Notes:
1. Chloride analyzed by EPA Method 300
2. TPH analyzed by EPA Method 8015 M
3. BTEX analyzed by EPA Method 8260B
4. Closure Criteria New Mexico Administrative Code 19.15.29.12.E(2)
NMOCD: New Mexico Oild Conservation Division
--: No individual standard

Chevron
Table 3
2023 Groundwater Analytical Results
Old Indian Draw Unit 001
Eddy County, New Mexico

Sample ID	Sample Date	Benzene	Toluene	Ethylbenzene	Total Xylenes	Chloride	Total Dissolved Solids
New Mexico Water Quality Control Commission Groundwater Standard							
		0.005[1]	1.0[1]	0.7[1]	0.62[1]	250[2]	1,000
TW-1	2/16/23	<0.000408	<0.000367	<0.000657	<0.000642	10,400	15,100

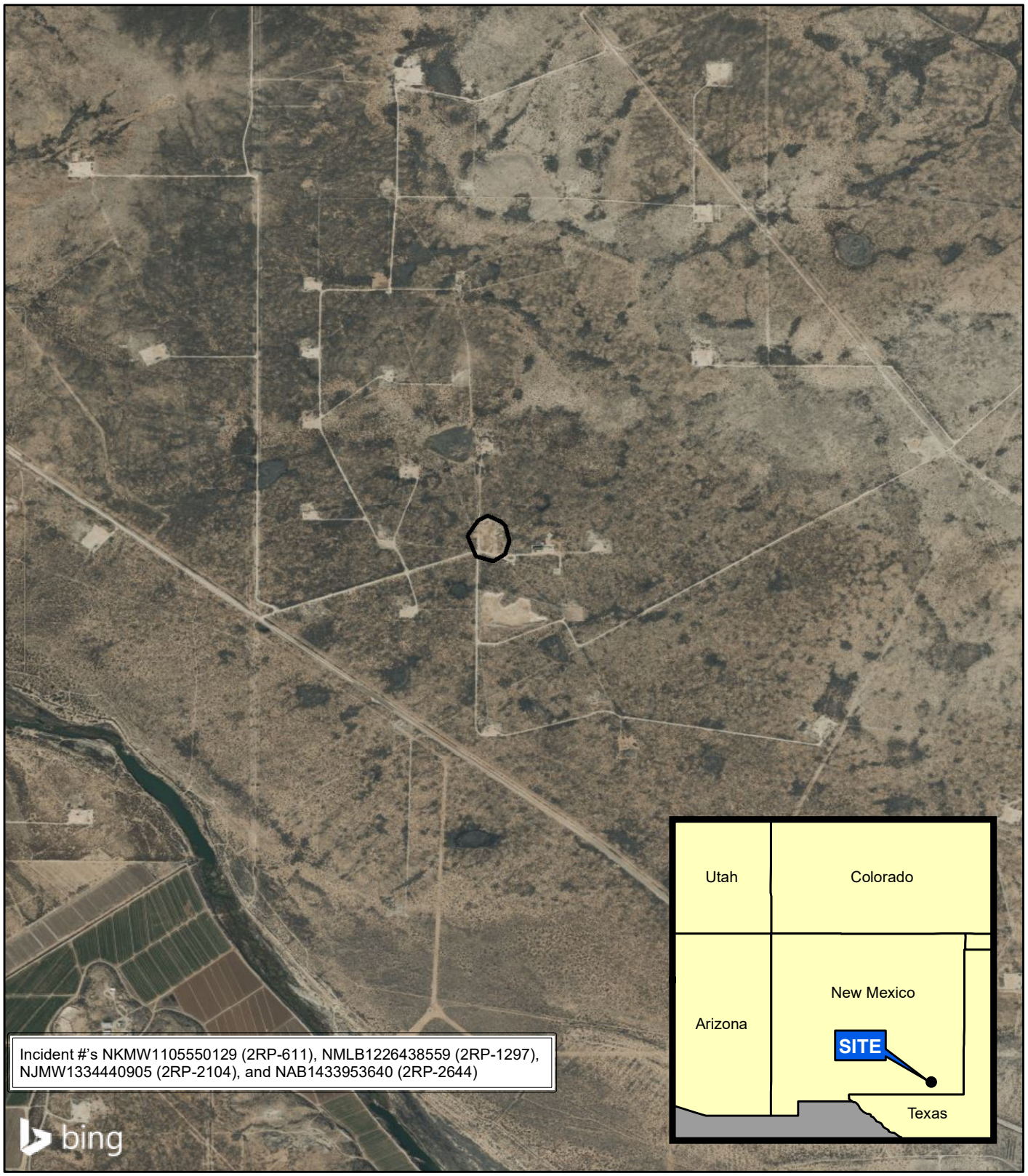
Notes:

Results shown in mg/L.

[1]Human Health Standards for Groundwater.

[2]Other Standards for Domestic Water Supply.

Figures



NOTES:
Datum: D_WGS_1984
Source: Bing Map
Site Location: 32.3925°, -104.1253°

LEGEND:
Site Location

0 2,000 4,000 Feet
GRAPHIC SCALE

MCBU
OLD INDIAN DRAW ~ UNIT #001
EDDY COUNTY, NEW MEXICO

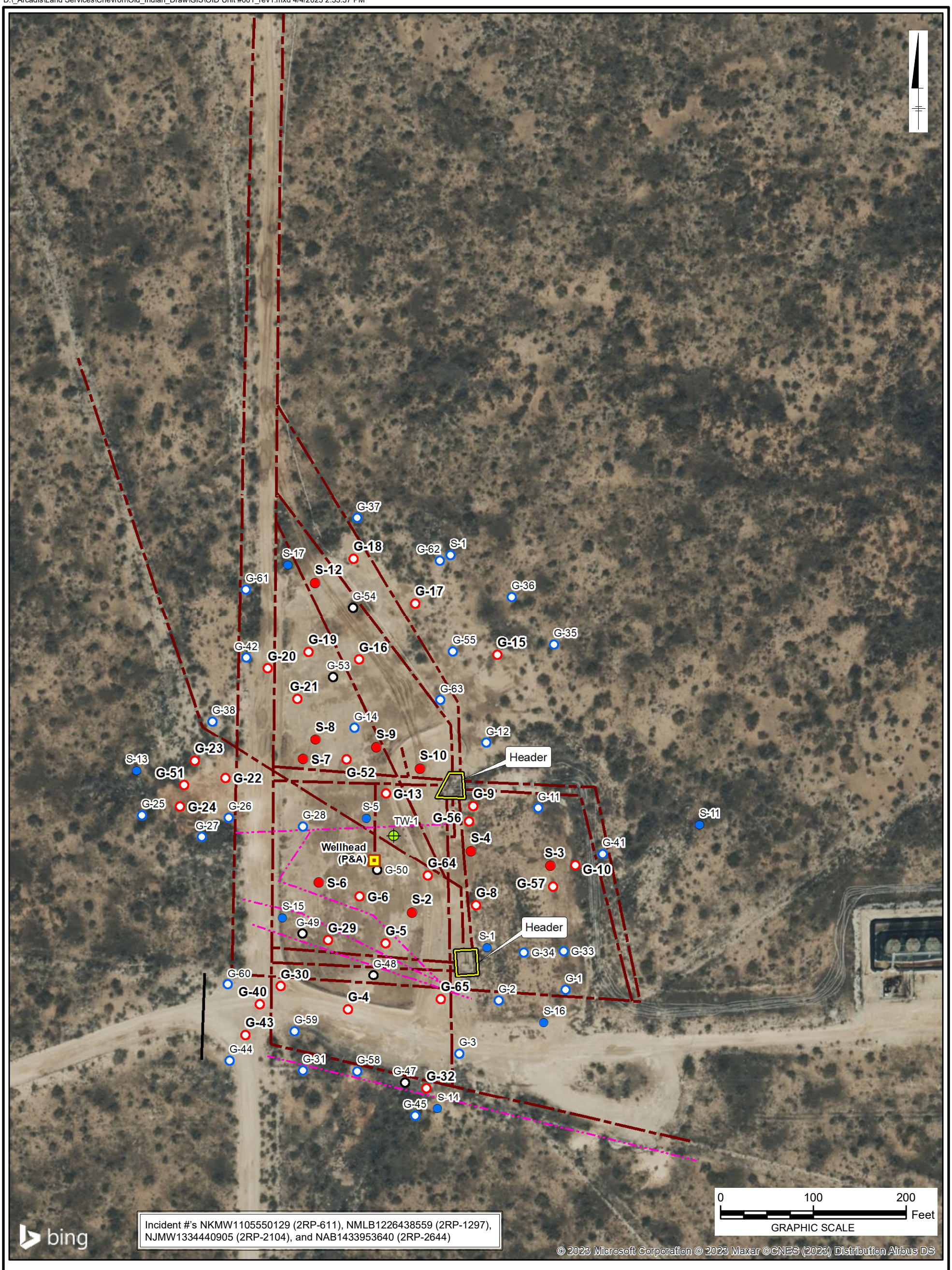
SITE LOCATION MAP

ARCADIS

FIGURE
1

City: Houston Div/Group: Remediation West -Air Group Created By: W Berry Last Saved By: wberry ; Client (Project #)
D:_Arcadis\Land Services\Chevron\Old_Indian_Draw\GIS\OID Unit #001_SLM.mxd 3/29/2023 2:18:13 PM

City: Div/Group: Created By: Last Saved By: wberry
Project (Project #)
D:_Arcadis\Land Services\Chevron\Old_Indian_Draw\GIS\OID Unit #001_rev1.mxd 4/4/2023 2:33:57 PM



Legend

- 2021/2022 Sample Locations (above 600 mg/kg chloride)
- 2021/2022 Sample Locations (below 600 mg/kg chloride)
- 2023 Field Screening Sample locations (above 600 mg/kg chloride)
- 2023 Sample locations (below 600 mg/kg chloride)
- No Screening Results/ Encountered Rock (proposed >6")
- Temporary Monitor Wells
- Production Lines
- Electrical
- Unknown

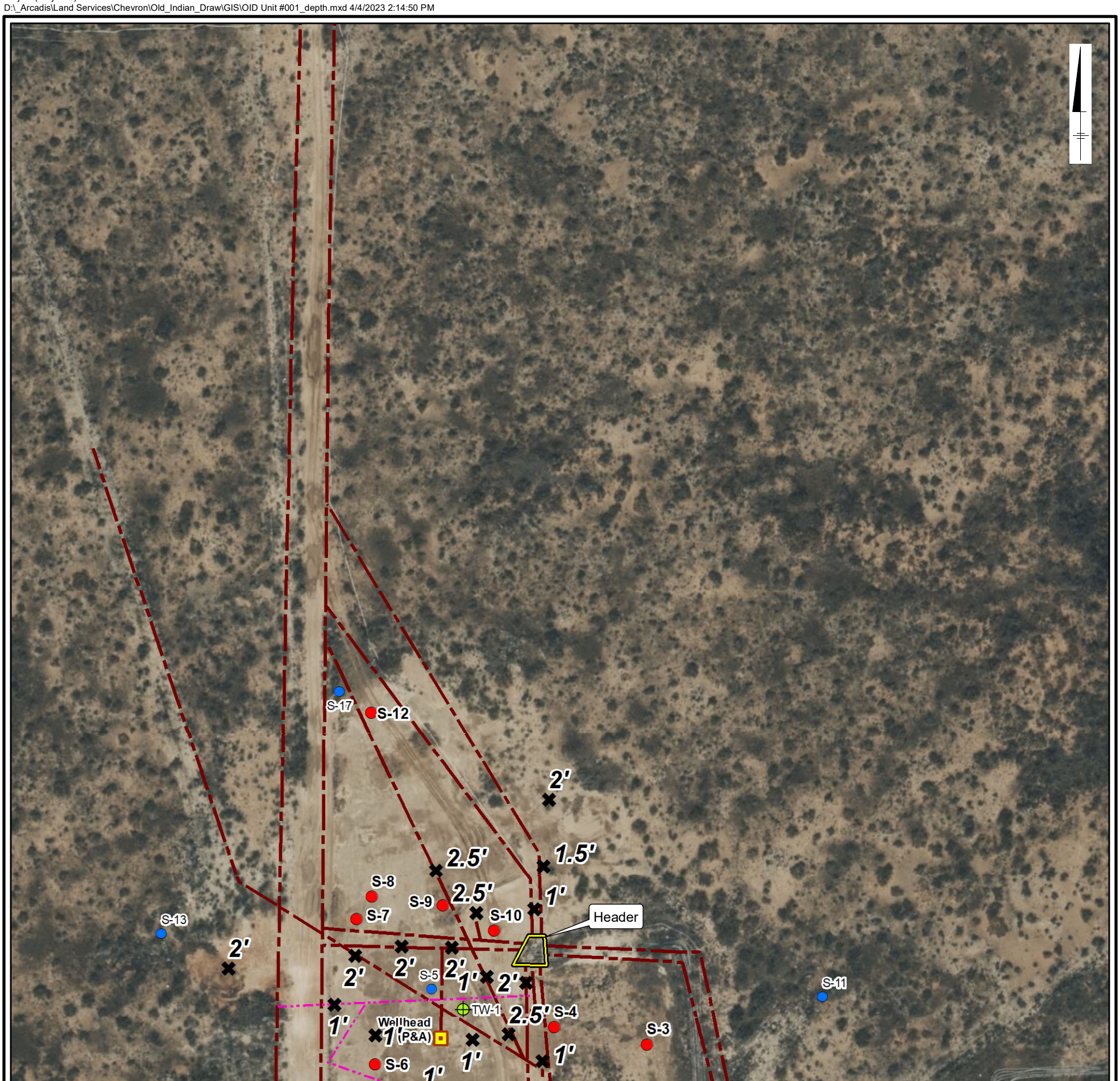
MCBU
OLD INDIAN DRAW ~ UNIT #001
EDDY COUNTY, NEW MEXICO

SITE DETAILS MAP

ARCADIS

FIGURE
2

City: Div/Group: Created By: Last Saved By: wberry
Project (Project #)
D:_Arcadis\Land Services\Chevron\Old_Indian_Draw\GIS\OID Unit #001_depth.mxd 4/4/2023 2:14:50 PM



Legend

- 2021/2022 Sample Locations (above 600 mg/kg chloride)
- 2021/2022 Sample Locations (below 600 mg/kg chloride)
- Temporary Monitor Wells
- Depth to Bedrock
- Production Lines
- Electrical
- Unknown

MCBU
OLD INDIAN DRAW ~ UNIT #001
EDDY COUNTY, NEW MEXICO

DEPTH TO BEDROCK CONFIRMATION MAP

ARCADIS

FIGURE 3

Photographic Log

ARCADIS

PHOTOGRAPHIC LOG

Property Name:	Location:	Case No.
Old Indian Draw Unit 001	Eddy County, NM	NKMW1105550129 (2RP-611), NMLB1226438559 (2RP-1297), NJMW1334440905 (2RP-2104), and NAB1433953640 (2RP-2644)

Photo No.	Date:
1	03/20/2023

Direction Photo Taken:

Facing NW

Description:

View of hydro-excavated area proximate to the northern header area on pad within the release area. Depth to calcrete rock layer ranging from 1 to 1.5 feet bgs.

ARCADIS

PHOTOGRAPHIC LOG

Property Name:	Location:	Case No.
Old Indian Draw Unit 001	Eddy County, NM	NKMW1105550129 (2RP-611), NMLB1226438559 (2RP-1297), NJMW1334440905 (2RP-2104), and NAB1433953640 (2RP-2644)

Photo No.	Date:
2	03/20/2023

Direction Photo Taken:

Facing NE

Description:

View of active polylines and crossing abandoned steel line. Depth to calcrete rock layer ranging from 1 to 1.5 feet bgs.

ARCADIS

PHOTOGRAPHIC LOG

Property Name: Old Indian Draw Unit 001	**Location:** Eddy County, NM	**Case No.** NKMW1105550129 (2RP-611), NMLB1226438559 (2RP-1297), NJMW1334440905 (2RP-2104), and NAB1433953640 (2RP-2644)

Photo No.	**Date:**
3	02/10/2023

Direction Photo Taken:

Facing E

Description:

View of southern header location. Active lines at 2 feet bgs.

ARCADIS

PHOTOGRAPHIC LOG

Property Name: Old Indian Draw Unit 001	**Location:** Eddy County, NM	**Case No.** NKMW1105550129 (2RP-611), NMLB1226438559 (2RP-1297), NJMW1334440905 (2RP-2104), and NAB1433953640 (2RP-2644)

Photo No.	**Date:**
4	02/10/2023

Direction Photo Taken:

Facing N

Description:

Active lines located east of northern header at 2.5 feet bgs.

ARCADIS

PHOTOGRAPHIC LOG

Property Name:	Location:	Case No.
Old Indian Draw Unit 001	Eddy County, NM	NKMW1105550129 (2RP-611), NMLB1226438559 (2RP-1297), NJMW1334440905 (2RP-2104), and NAB1433953640 (2RP-2644)

Photo No.	Date:
5	02/10/2023

Direction Photo Taken:

Facing NW

Description:

View of active fiberglass lines, abandoned electrical, and calcrete rock layer at depths ranging from 1 to 1.5 feet bgs.

ARCADIS

PHOTOGRAPHIC LOG

Property Name:	Location:	Case No.
Old Indian Draw Unit 001	Eddy County, NM	NKMW1105550129 (2RP-611), NMLB1226438559 (2RP-1297), NJMW1334440905 (2RP-2104), and NAB1433953640 (2RP-2644)

Photo No.	Date:
6	02/10/2023

Direction Photo Taken:

N

Description:

Well head marker in the center of pad.

Appendix A

Initial C-141 Forms

RECEIVED
FEB 18 2011
NMOCD ARTESIA

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-141
Revised October 10, 2003

Submit 2 Copies to appropriate District Office in accordance with Rule 116 on back side of form

30-015-20918
nKMW1105555D129 147179

Release Notification and Corrective Action

OPERATOR

☒ Initial Report ☐ Final Report

Name of Company CHESAPEAKE OPERATING, INC.	Contact BRADLEY BLEVINS
Address P. O. BOX 190 HOBBS, NM 88241	Telephone No. 575-391-1462
Facility Name Old Indian Draw Unit 1	Facility Type Tank Battery

Surface Owner	Mineral Owner	Lease No.

LOCATION OF RELEASE API #30-015-20918

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County
J	18	22S	28E	1980	SOUTH	1980	EAST	EDDY

Latitude_____ **Longitude**_____

NATURE OF RELEASE

Type of Release Produced water	Volume of Release 70 BBLS	Volume Recovered 60 BBLS
Source of Release Tank valve corroded and broke	2/17/11 9:00 a.m. Date and Hour of Occurrence	2/17/11 10:00 A.M. Date and Hour of Discovery
Was Immediate Notice Given? ☒ Yes ☐ No ☐ Not Required	If YES, To Whom? Mike Bratcher	
By Whom? Bradley Blevins	Date and Hour 2/17/11 3:05 PM	
Was a Watercourse Reached? ☐ Yes ☒ No	If YES, Volume Impacting the Watercourse.	

If a Watercourse was Impacted, Describe Fully.*

Describe Cause of Problem and Remedial Action Taken.*
Valve to water tank corroded and broke releasing 70 BBLS of produced water into the containment area and onto the location. Vacuum trucks were used to recover free fluids.

Describe Area Affected and Cleanup Action Taken.*
10 BBLS of produced water were lost. Upon completion of delineation and remediation activities a final C-141 and lab data will be furnished to the OCD.

I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to NMOCD 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 NMOCD marked as "Final Report" does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to ground water, surface water, human health or the environment. In addition, NMOCD 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.

Signature: Bradley Blevins

Printed Name: Bradley Blevins

Title: HSE Specialist

E-mail Address: Bradley.blevins@chk.com

Date: 2/18/11 Phone: 575-391-1462

* Attach Additional Sheets If Necessary

OIL CONSERVATION DIVISION

Approved by District Supervisor: Signed By Mike Bratcher

Approval Date: 3/3/11 Expiration Date:

Conditions of Approval: Attached ☐

Remediation per OCD Rules & Guidelines. **SUBMIT REMEDIATION PROPOSAL NOT LATER THAN:** 4/3/11

2RP-611

Bratcher, Mike, EMNRD

From: Cliff P. Brunson [cbrunson@bbcinternational.com]
Sent: Friday, February 18, 2011 5:19 PM
To: Bratcher, Mike, EMNRD
Cc: Bradley Blevins; Ken Swinney; Jennifer Gilkey
Subject: Chesapeake-Old Indian Draw Unit No. 1
Attachments: Initial C-141-Old Indian Draw Unit #1.pdf

Mike,

Please find attached the initial C-141 for the above referenced well site release.

Thanks, Cliff

Cliff P. Brunson, CEI, CRS
President
BBC International, Inc.
World-Wide Environmental Specialists
Mailing Address:
P. O. Box 805
Hobbs, NM 88241-0805 USA
Shipping Address:
1324 W. Marland Blvd.
Hobbs, NM 88240 USA
Phone: (575) 397-6388
Fax: (575) 397-0397
E-mail: cbrunson@bbcinternational.com
Web: www.bbcinternational.com

Bratcher, Mike, EMNRD

From: Cliff P. Brunson [cbrunson@bbcinternational.com]
Sent: Friday, February 18, 2011 5:28 PM
To: Bratcher, Mike, EMNRD
Cc: Bradley Blevins; Ken Swinney; Jennifer Gilkey; James A. Amos; Terry Gregston
Subject: Chesapeake-Old Indian Draw Unit No. 1
Attachments: Initial C-141-Old Indian Draw Unit #1.pdf

Mike,

Please find attached the initial C-141 for the above referenced well site release.

Thanks, Cliff

Cliff P. Brunson, CEI, CRS
President
BBC International, Inc.
World-Wide Environmental Specialists
Mailing Address:
P. O. Box 805
Hobbs, NM 88241-0805 USA
Shipping Address:
1324 W. Marland Blvd.
Hobbs, NM 88240 USA
Phone: (575) 397-6388
Fax: (575) 397-0397
E-mail: cbrunson@bbcinternational.com
Web: www.bbcinternational.com

RECEIVED
SEP 10 2012
NMOCD ARTESIA

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-141
Revised October 10, 2003

Submit 2 Copies to appropriate District Office in accordance with Rule 116 on back side of form

Release Notification and Corrective Action

nMLB 1226438559

OPERATOR ☒ Initial Report ☐ Final Report

Name of Company: Chesapeake Energy 147179	**Contact:** Bradley Blevins
Address: 5014 Carlsbad Highway	**Telephone No.:** (575) 391-1462 ext. 86424
Facility Name: Old Indian Draw Unit Battery	**Facility Type:** Tank Battery

Surface Owner: Federal Government	**Mineral Owner:** Federal Government	**Lease No.:** NM-0415688-A

30-015-20918

LOCATION OF RELEASE

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County
J	18	22 S	28 E					Eddy

Latitude: N 32° 23' 26.01" **Longitude:** W 104° 07' 28.58"

NATURE OF RELEASE

Type of Release: Produced Water	**Volume of Release:** ~300 bbls	**Volume Recovered:** ~170 bbls
Source of Release: Nipple on produced water line	**Date and Hour of Occurrence:** August 30, 2012 @ ~08:30 hrs	**Date and Hour of Discovery:** August 30, 2012 @ ~08:30 hrs
Was Immediate Notice Given? ☒ Yes ☐ No ☐ Not Required	**If YES, To Whom?** Mike Bratcher, NMOCD; James Amos BLM	
By Whom? Bradley Blevins	**Date and Hour:** August 30, 2012 @ ~08:30 hrs	
Was a Watercourse Reached? ☐ Yes ☒ No	**If YES, Volume Impacting the Watercourse:** Not Applicable	

If a Watercourse was Impacted, Describe Fully.* Not Applicable

Depth to Groundwater: ~ 50 feet

Describe Cause of Problem and Remedial Action Taken.* A one-inch nipple ruptured releasing approximately 300 bbls of produced water. Approximately 170 bbls were recovered via vacuum truck. An Emergency Response Team arrived at the release area and began continuous abatement of the impacted area.

Describe Area Affected and Cleanup Action Taken.* Approximately 12,730 square feet of area was affected by the release of produced water. Visibly stained soil was excavated and hauled away for disposal at a state approved facility. Soil samples were collected and submitted to Cardinal Laboratories for testing. Upon receiving acceptable results and NMOCD approval, the affected area will be backfilled, and returned to proper conditions.

I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to NMOCD 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 NMOCD marked as "Final Report" does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to ground water, surface water, human health or the environment. In addition, NMOCD 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.

Signature: Bradley Blevins

Printed Name: Bradley Blevins

Title: EH & S Field Specialist

E-mail Address: bradley.blevins@chk.com

Date: 9-10-12 **Phone:** (575) 391-1462, #86424

OIL CONSERVATION DIVISION

Approved by District Supervisor: Signed By Mike Bratcher

Approval Date: SEP 20 2012 **Expiration Date:**

Conditions of Approval: Remediation per OCD Rules & Guidelines. SUBMIT REMEDIATION PROPOSAL NOT LATER THAN: 10/20/2012

Attached ☐

* Attach Additional Sheets If Necessary

2RP-1297

Bratcher, Mike, EMNRD

From: Bradley Blevins <bradley.blevins@chk.com>
Sent: Monday, September 10, 2012 9:22 AM
To: Amos, James A (jamos@blm.gov); Bratcher, Mike, EMNRD
Cc: Bradley Blevins
Subject: Old Indian Draw Unit 1- Initial C-141
Attachments: 20120910091924109.pdf

Please find the attached initial C-141 for the release on the Old Indian Draw Unit. If you have any questions please let me know.

Thanks,

Bradley Blevins
EH & S Field Specialist
DAR
Hobbs Field Office
North Permian Division
Office: (575) 391-1462 x 86424
Cell: (575) 441-0341
Fax: (575)391-6679

Chesapeake

Bratcher, Mike, EMNRD

From: Bradley Blevins <bradley.blevins@chk.com>
Sent: Thursday, August 30, 2012 9:18 AM
To: Bratcher, Mike, EMNRD; Amos, James A (jamos@blm.gov); James_Amos@blm.gov
Cc: Bradley Blevins; Daniel Dominguez (ddominguezepi@gmail.com)
Subject: Old Indian Draw UT 1 CTB- Release

Mike/ Jim

Chesapeake had a release this am at 8:30 am on the Old Indian Draw UT CTB. A one inch nipple ruptured releasing produced water to the ground surface, pumpers are still investigating the amount of fluid lost and have vacuum truck in route to recover the fluid on location. Environmental plus crew has been dispatched to the release to start clean up phase, once we have all the details we will follow up with a C-141. If you have any questions please let me know.

Thanks,

Bradley Blevins
EH & S Field Specialist
DAR
Hobbs Field Office
North Permian Division
Office: (575) 391-1462 x 86424
Cell: (575) 441-0341
Fax: (575)391-6679

Chesapeake

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

RECEIVED
DEC 06 2013
NMOCD ARTESIA

Form C-141
Revised October 10, 2003

Submit 2 Copies to appropriate District Office in accordance with Rule 116 on back side of form

Release Notification and Corrective Action

nJMW 1334440905

OPERATOR

☒ Initial Report ☐ Final Report

Name of Company Chevron Delaware Basin 4323	Contact Bradley Blevins
Address PO Box 190, Hobbs, NM 88241	Telephone No. (575) 391-1462
Facility Name Old Indian Draw CTB	Facility Type Gathering

Surface Owner BLM	Mineral Owner	API # 30-015-20918(nearest well)

LOCATION OF RELEASE

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County
J	18	22S	28E	1980	South	1980	East	Eddy County, NM

Latitude N 32.39060° **Longitude** W 104.12463°

NATURE OF RELEASE

Type of Release Produced Water	Volume of Release 80 bbls	Volume Recovered 60 bbls
Source of Release Triplex pump failure	Date and Hour of Occurrence 12/02/2013 @ 10:00 am	Date and Hour of Discovery
Was Immediate Notice Given? ☒ Yes ☐ No ☐ Not Required	If YES, To Whom? Mike Bratcher- NMOCD, James Amos- BLM	
By Whom? Bradley Blevins	Date and Hour 12/02/2013 @ 3:00 pm	
Was a Watercourse Reached? ☐ Yes ☒ No	If YES, Volume Impacting the Watercourse.	

If a Watercourse was Impacted, Describe Fully.*

Describe Cause of Problem and Remedial Action Taken.*
A triplex pump failure caused 80 bbls of produced water to leak onto the ground. 60 bbls of fluid were recovered via vacuum truck and the pump was repaired.

Describe Area Affected and Cleanup Action Taken.*
A triplex pump failure caused 80 bbls of produced water to leak onto the ground. 60 bbls of fluid were recovered via vacuum truck and the pump was repaired. Further remediation will be performed in accordance with a remediation plan approved by NMOCD and the BLM.

I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to NMOCD 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 NMOCD marked as "Final Report" does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to ground water, surface water, human health or the environment. In addition, NMOCD 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.

Signature: Bradley Blevins

Printed Name: Bradley Blevins

Title: HE Specialist

E-mail Address: Bradley.blevins@chk.com

Date: 12/6/13 Phone: (575) 391-1462

OIL CONSERVATION DIVISION

Approved by District Supervisor: Signed By Mike Bratcher

Approval Date: DEC 10 2013 Expiration Date:

Conditions of Approval: Attached ☐

Remediation per OCD Rule & Guidelines, & like approval by BLM. SUBMIT REMEDIATION PROPOSAL NO LATER THAN: January 10, 2013

2RP-2104

* Attach Additional Sheets If Necessary

Bratcher, Mike, EMNRD

From: Kathy Purvis <kathy@bbcinternational.com>
Sent: Friday, December 06, 2013 8:48 AM
To: Bratcher, Mike, EMNRD; jamos@blm.gov
Cc: 'Bradley Blevins'; cbrunson@bbcinternational.com; kswinney@bbcinternational.com; jgilkey@bbcinternational.com
Subject: Initial C-141s, Littlefield Federal SWD #1 and Old Indian Draw CTB
Attachments: Initial C-141, Littlefield Federal SWD #1.pdf; Initial C-141, Old Indian Draw CTB.pdf

Attached are the initial C-141s for leaks that occurred at the Littlefield Federal SWD #1 on 12/01/2013 and the Old Indian Draw CTB on 12/02/2013 in Eddy County, NM. Receipt notification via email is greatly appreciated.

Kathy Purvis
BBC International, Inc.
1324 W. Marland
Hobbs, NM 88240
Phone: (575) 397-6388
Fax: (575) 397-0397
Email: kathy@bbcinternational.com

Bratcher, Mike, EMNRD

From: Blevins, Bradley G <Bradley.Blevins@chevron.com>
Sent: Monday, December 02, 2013 2:56 PM
To: Bratcher, Mike, EMNRD; 'Amos, James'
Cc: Blevins, Bradley G
Subject: Old Indian Draw Unit CTB- Release

Mike/ Jim

Chevron had a release at the OIDU CTB. Bolts sheared on triplex pump causing packing to blow out, 80 barrels of produced water was released to the location pad. 60 barrels was recovered by vacuum truck, Cliff Brunson will follow up with a initial C-141. If you have any questions please let me know.

Thanks

Chevron
Bradley Blevins
Chevron Delaware Basin
HE Specialist
Hobbs FMT
Direct 575-391-1462 86424
Cell- 575-441-0341

NM OIL CONSERVATION
ARTESIA DISTRICT
DEC 03 2014
RECEIVED

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-141
Revised October 10, 2003
Submit 2 Copies to appropriate District Office in accordance with Rule 116 on back side of form

Release Notification and Corrective Action

nAB1433953104O **OPERATOR** ☒ Initial Report ☐ Final Report

Name of Company: Chevron 4323	**Contact:** Stephen Gwin
Address: 2401 Avenue 'O' Eunice, NM 88231	**Telephone No.:** (575) 263 – 0427
Facility Name: Indian Draw Tank Battery	**Facility Type:** tank battery

Surface Owner: BLM	**Mineral Owner:**	**API:** 30-015-20918

LOCATION OF RELEASE

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County
J	18	22S	28E					Eddy

Latitude: N 32° 23' 26.79" **Longitude:** W 104° 7' 27.90" 32.390775 104.124417

NATURE OF RELEASE

Type of Release: produced water and oil	**Volume of Release:** ~13 bbls	**Volume Recovered:** ~11 bbls
Source of Release: valve was left open and fluid gravity fed to the ground	**Date and Hour of Occurrence:** 10/18/14 @ am	**Date and Hour of Discovery:** 10/18/14 @ 5:00 am
Was Immediate Notice Given? ☒ Yes ☐ No ☒ Not Required	**If YES, To Whom?** Mike Bratcher, NMOCD	
By Whom? Stephen Gwin	**Date and Hour:** 10/20/14	
Was a Watercourse Reached? ☐ Yes ☒ No	**If YES, Volume Impacting the Watercourse:** Not Applicable	

Depth to Water. ~25 ft bgs

If a Watercourse was Impacted, Describe Fully.* Not Applicable

Describe Cause of Problem and Remedial Action Taken.* Approximately 13 bbls of produced water and oil were released when a valve was left open and fluid gravity fed to the ground. A vacuum truck was dispatched to pick up any free standing liquids. Approximately 11 bbls were recovered.

Describe Area Affected and Cleanup Action Taken.* Approximately 3,000 square feet of surface area was impacted by the release. This tank battery is scheduled to be replaced in February 2015 with construction of the new battery location currently underway. Chevron proposes the stained caliche in the area of the release be removed, hauled to state approved disposal facility, and replaced with clean caliche. Full remediation of the old tank battery area shall occur when the new tank battery comes online. At that time soil samples will be collected from the area and submitted to Cardinal Laboratories for testing. Upon receipt of laboratory analytical data from soil samples to be collected during delineation operations, EPI will prepare and present a Remediation Proposal for NMOCD approval.

I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to NMOCD 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 NMOCD marked as "Final Report" does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to ground water, surface water, human health or the environment. In addition, NMOCD 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.

Signature: Stephen Gwin

Printed Name: Stephen Gwin

Title: HE Specialist

E-mail Address: stephen.gwin@chevron.com

Date: **Phone:** (575) 263-0427

OIL CONSERVATION DIVISION

Signed By Mike Bratcher

Approved by District Supervisor:

Approval Date: 12/4/14 **Expiration Date:** N/A

Conditions of Approval: **Attached** ☐

Remediation per O.C.D. Rules & Guidelines
SUBMIT REMEDIATION PROPOSAL NO LATER THAN: 1/4/15

2RP-2644

* Attach Additional Sheets If Necessary

Site Ranking 20

Bratcher, Mike, EMNRD

From: Daniel Dominguez <ddominguezepi@gmail.com>
Sent: Wednesday, December 03, 2014 3:50 PM
To: Bratcher, Mike, EMNRD; jamos@blm.gov; Gwin, Stephen
Subject: Indian Draw Tank Battery Initial C-141
Attachments: Indian Draw Tank Battery Initial C-141.pdf

Gentlemen,

Attached for your review is the Initial C-141 for the Indian Draw Tank Battery operated by Chevron.

This tank battery is scheduled to be replaced in February 2015 with construction of the new battery location currently underway. Chevron proposes the stained caliche in the area of the release be removed, hauled to state approved disposal facility, and replaced with clean caliche. Full remediation of the old tank battery area shall occur when the new tank battery comes online.

--
Sincerely,
ENVIRONMENTAL PLUS, INC.

Daniel Dominguez
Environmental Consultant/Safety Director

Environmental Plus, Inc.
P.O. Box 1558
2100 Avenue 'O'
Eunice, NM 88231
(575) 631-0401 (Cell)
(575) 394-3481 (Office)
(575) 394-2601 (fax)

Appendix B

Temporary Monitoring Well Boring Log

Date Start/Finish: 2/13/2023
Drilling Company: White Drilling Company, Inc.
Driller's Name: Bo Atkins
Drilling Method: Air Rotary/ Split Spoon
Sampling Method: Grab

Latitude: 32.390881
Longitude: -104.12482
Casing Elevation: NS

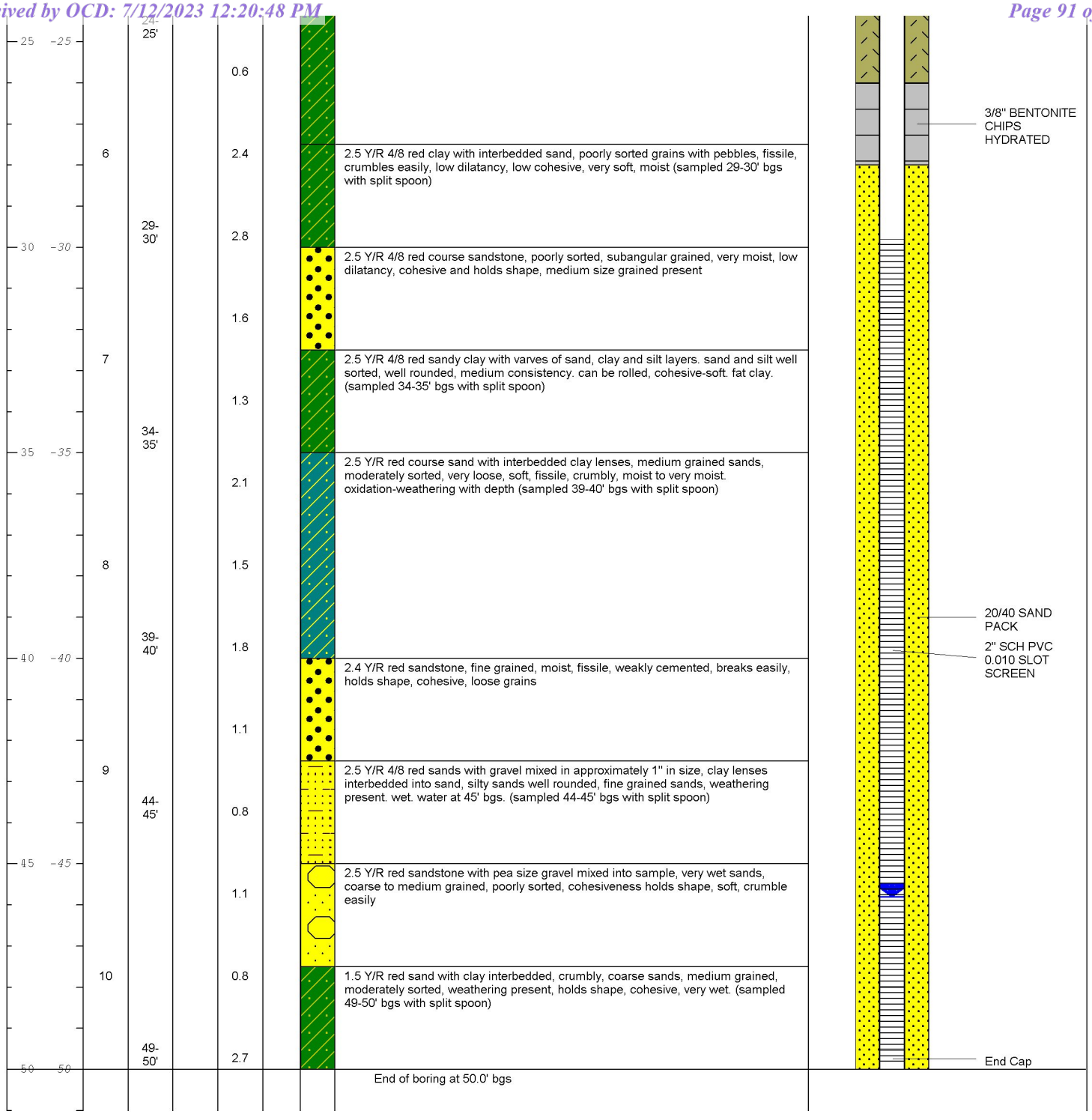
Borehole Depth: 50'
Surface Elevation: NS

Descriptions By: Heather Dudley

Well/Boring ID: TW-1
Client: Chevron-MCBU

Location: Old Indian Draw Unit #001 Carlsbad, New Mexico

DEPTH	Sample Run Number	Sample/Int/Type	Recovery (feet)	PID	USCS Code	Geologic Column	Stratigraphic Description	Well/Boring Construction
0				0.0			7.5 Y/R 5/5, strong brown, with caliche nodules up to 2", weakly cemented, fissile, dry. Shovel used from 0-0.5'. Hydrovaccum down to 2.5' to get through caliche bed	
	1	4-5'		2.9			7.5 Y/R 6/4, light brown sandstone, poorly sorted sand, subangular to angular, granule to pebble size. soft, fissile, moist, crumbly	
-5				1.3			10 Y/R 7/3 very pale brown sandstone with large pieces of core, poorly sorted, subangular to angular grains, fissile, moist, pebbles to granules (sampled 4-5' bgs with split spoon)	
	2	9-10'		1.8			10 Y/R 7/4 very pale brown sandstone with large core pieces, moderately sorted, angular to subangular, granules to pebbles present, moist, crumbly, fissile, very weakly cemented (sampled 9-10' bgs with split spoon)	
-10				2.0			7/5 Y/R 6/5 reddish yellow sandstone, pebbles present, subangular to angular, moist, holds shape, poorly sorted sand	
	3	14-15'		2.0			10 Y/R very pale brown sand, course grained sand, very loose, subangular to angular, poorly sorted pebbles to small cobbles, moist, fissile, blocky, not cohesive, weathered-oxidation (sampled 14-15' bgs with split spoon)	NATURAL COLLAPSE
-15				28				
	4	19-20'		1.9			5 Y/R 5/5 silty sandstone with interbedded clay lenses, coarse grained sands, low dilatancy, holds shape, moist, consistency-soft, poorly sorted, subrounded to round sand, pebbles to cobbles present (sampled 19-20' bgs with split spoon)	
-20				2.6				
				2.4			5 Y/R reddish yellow silty sandstone with clay lenses, medium grained, poorly sorted, pebbles present, subangular to angular sands, low cohesive, low plasticity, crumbly, weathering, oxidation present,moist	
	5			1.4			2.5 Y/R 4/8 red, clay with lenses of silty sand, very moist, fissile, easily crumbles, soft consitency, low dilatancy, does not hold shape. sand and silt well rounded, well sorted (sampled 24-25' bgs with split spoon)	2" SCH PVC RISER
				1.6				



ARCADIS Design & Consultancy for natural and built assets

Remarks: bgs= below ground surface; TD= total depth; DTW= depth to water; NS=not surveyed; top of casing approximately 1.5' above ground surface

Project: 30166791 Template: LPTEMPLATE_Well_Construction_Final

Data File: Old Indian Draw Date: 2/21/2023 Created/Edited by: Trang Pham

Appendix C

Laboratory Analytical Reports

Arcadis U.S., Inc.
10205 Westheimer Road, Suite 800
Houston
Texas 77042
Phone: 713 953 4800
Fax: 713 977 4620
www.arcadis.com

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

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

CONDITIONS

Operator: CHEVRON U S A INC 6301 Deauville Blvd Midland, TX 79706	OGRID: 4323
	Action Number: 239043
	Action Type: [C-141] Release Corrective Action (C-141)

CONDITIONS

Created By	Condition	Condition Date
nvelez	1. Remediation plans for NCLB0525654437, NCLB0525655219, & NKMW1105550129 are approved as written. 2. 90-day Remediation Due date updated to October 12, 2023. Chevron is required to submit a final closure report or a time extension request along with providing a status update of all remedial activities by this date.	7/14/2023