SUBSEQUENT CLOSURE REPORT

REPORTABLE RELEASE

Spur Energy Partners
BC Federal #45
Incident ID: NAPP2106257147
API# 30-025-39419
Lea County, NM

Prepared by:

Paragon Environmental LLC
1601 N. TURNER ST. STE.500
Hobbs, NM 88240
575-964-7814

GENERAL DETAILS

This report was prepared by Paragon Environmental LLC (Paragon) in response to the release for Spur Energy Partners (Spur) at the **BC Federal #45 (BC Fed)**.

API#: 30-025-39419

Site Coordinates: Latitude: 32.82638889 Longitude: -103.8080555

Unit UL C, Section 19, Township 17S, Range 32E

Incident ID: NAPP2106257147

REGULATORY FRAMEWORK

Depth to Groundwater: Ms. Eads rejected the initial water data that Terracon had submitted with their closure report for reasons stating: the nearest water data is greater than 1/2 of a mile away and or data is greater than 25 years old. Paragon recommended drilling a borehole to determine true DTW. Atkins Drilling was subcontracted and drilled a borehole proving the depth of groundwater is greater than 100 feet BGS. See Appendix A for details and the report that has been filed with the State Office.

The new groundwater takes care of the rejection notes in this regard.

RELEASE DETAILS

This incident occurred due to the failure of packing in the stuffing box. This resulted in the release of 17 bbls of produced water. A vacuum truck was dispatched and recovered 15 bbls of fluids.

Date of Spill: 02/16/2020

Type of Spill: ☒Crude Oil ☒Produced Water ☐ Condensate ☐Other (Specify):

Comments: Reportable release.
Released: 17 bbls of Produced Water
Recovered: 15 bbls of Total Fluids

REMEDIATION ACTIVITIES

On March 2, 2020, Terracon began its assessment and remediation process. Upon conclusion of this project, they submitted a closure report.

Paragon was given this project to aid in bringing it to closure. After a careful review of the project, it was our determination to drill a borehole at the BC Federal Battery that was centrally located to give greater coverage for data.

On October 10, 2022, Paragon and Atkins returned to the site with equipment and personnel and began drilling activities. We drilled the hole to a total depth of 104 feet. They were able to determine that the static water level was 102.8 feet.

Ms. Eads also noted that this spill occurred within less than 300' of an aqueduct/stream. An additional topographic search was done, proving this to be inaccurate. Our search showed the nearest being 1.26 miles away, see attached Topo and Aerial Maps, Figures 1 & 2.

CLOSURE REQUEST

After careful review, Paragon requests that the incident, NAPP21016257147, be closed. Spur has complied with the applicable closure requirements. If you have any questions or need additional information, please contact Chris Jones at 575-964-7814 or chris@paragonenvironmental.net.

Respectfully,

Chris Jones
Environmental Professional
Paragon Environmental LLC

Attachments

Figures:

1- Topo Map
2- Aerial Map

Appendices:

- Appendix A- New Water Data
- Appendix B- C141
- Appendix C- Terracon Original Closure Report

Figures:

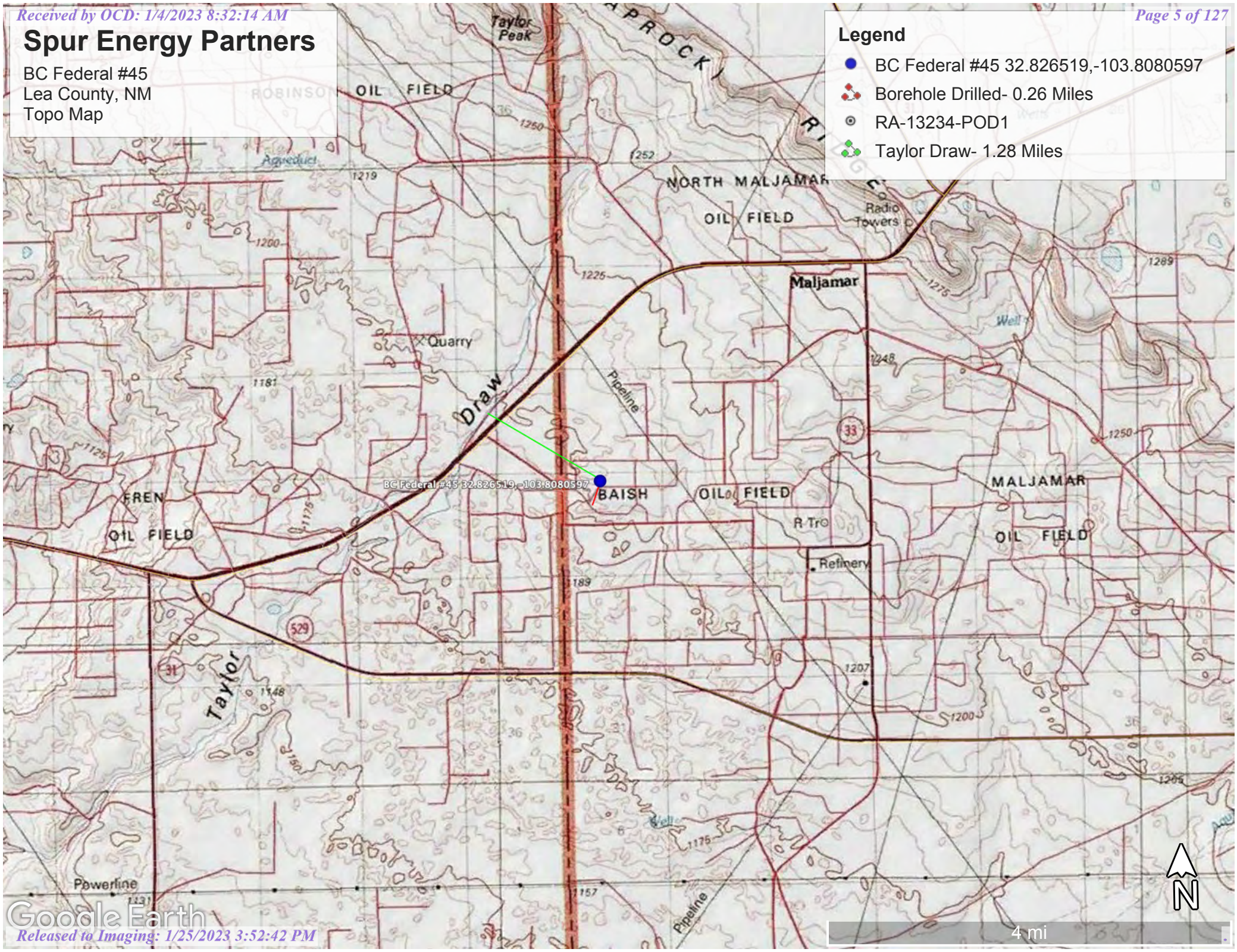
1-Topo Map
2-Aerial Map

Spur Energy Partners

BC Federal #45
Lea County, NM
Topo Map

Legend

- BC Federal #45 32.826519,-103.8080597
- Borehole Drilled- 0.26 Miles
- RA-13234-POD1
- Taylor Draw- 1.28 Miles

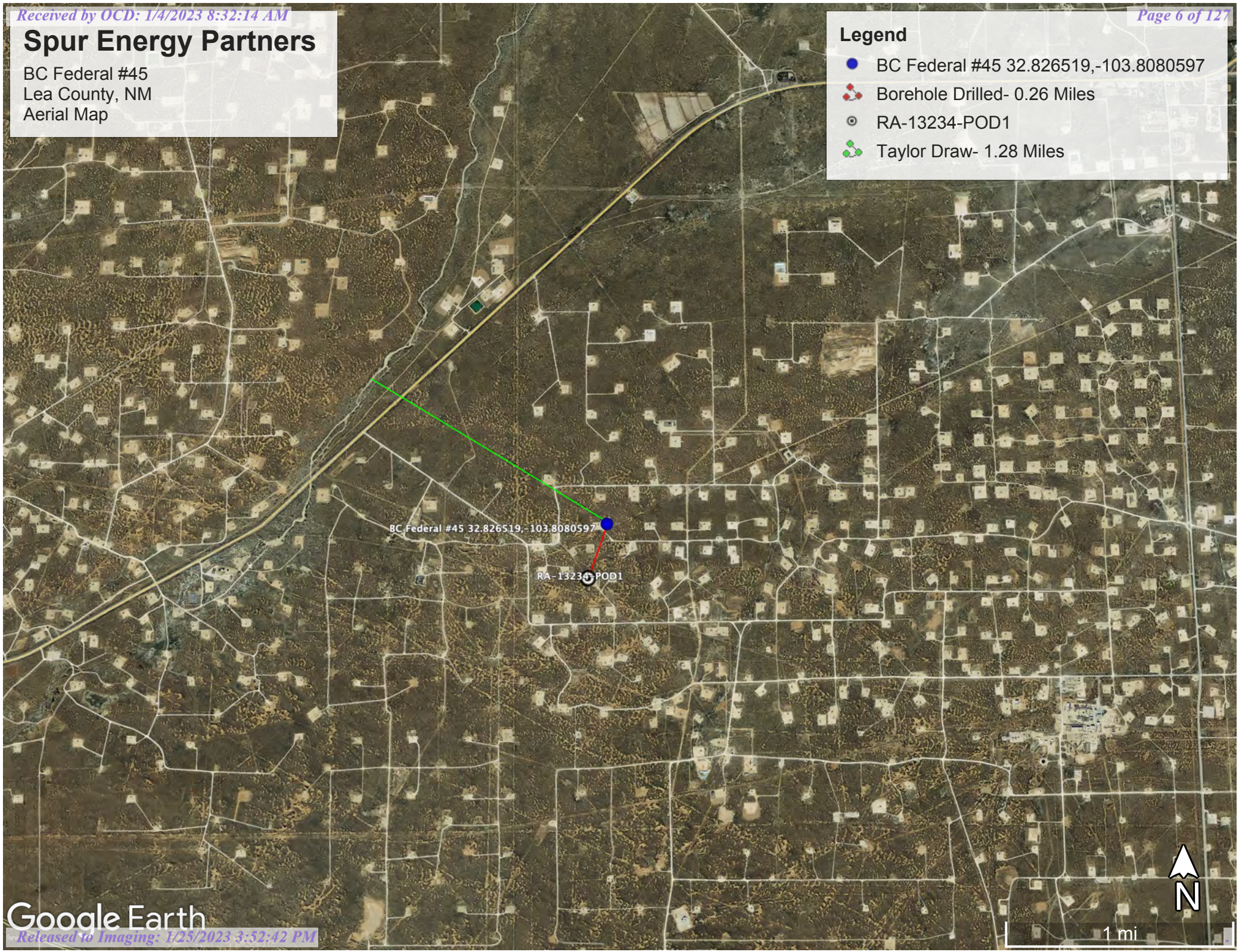


Spur Energy Partners

BC Federal #45
Lea County, NM
Aerial Map

Legend

- BC Federal #45 32.826519,-103.8080597
- Borehole Drilled- 0.26 Miles
- RA-13234-POD1
- Taylor Draw- 1.28 Miles



Appendix A
Referenced Water Data:

New Water Data

New Mexico State of Engineers
Office

Atkins
ENGINEERING ASSOCIATES INC.

2904 W 2nd St.
Roswell, NM 88201
voice: 575.624.2420
fax: 575.624.2421
www.atkinseng.com

11/4/2022

DII-NMOSE
1900 W 2nd Street
Roswell, NM 88201

Hand Delivered to the DII Office of the State Engineer

Re: Well Record RA-13234Pod-1

To whom it may concern:

Attached please find a well log & record and a plugging record, in duplicate, for a one (1) soil borings, RA-13234 Pod-1.

If you have any questions, please contact me at 575.499.9244 or lucas@atkinseng.com.

Sincerely,

Lucas Middleton

Enclosures: as noted above

OSE DII NOV 4 2022 PM3:51

WELL RECORD & LOG

OFFICE OF THE STATE ENGINEER

www.ose.state.nm.us

1. GENERAL AND WELL LOCATION

OSE POD NO. (WELL NO.)	WELL TAG ID NO.	OSE FILE NO(S).
POD-1	n/a	RA-13234

WELL OWNER NAME(S)	PHONE (OPTIONAL)
Spur Energy Partners LLC	

WELL OWNER MAILING ADDRESS	CITY	STATE	ZIP
919 Milam St Ste 2475	Houston	TX	77002

WELL LOCATION (FROM GPS)		DEGREES	MINUTES	SECONDS	
	LATITUDE	32	49	22.88	N
	LONGITUDE	103	48	34.24	W

* ACCURACY REQUIRED: ONE TENTH OF A SECOND
* DATUM REQUIRED: WGS 84

DESCRIPTION RELATING WELL LOCATION TO STREET ADDRESS AND COMMON LANDMARKS – PLSS (SECTION, TOWNSHIP, RANGE) WHERE AVAILABLE

NW SE NW Sec. 19 T17S R23E, NMPM

2. DRILLING & CASING INFORMATION

LICENSE NO.	NAME OF LICENSED DRILLER	NAME OF WELL DRILLING COMPANY
1249	Jackie D. Atkins	Atkins Engineering Associates, Inc.

DRILLING STARTED	DRILLING ENDED	DEPTH OF COMPLETED WELL (FT)	BORE HOLE DEPTH (FT)	DEPTH WATER FIRST ENCOUNTERED (FT)
10/20/2022	10/20/2022	104	±104	n/a

COMPLETED WELL IS: ☐ ARTESIAN ☐ DRY HOLE ☑ SHALLOW (UNCONFINED)

STATIC WATER LEVEL IN COMPLETED WELL (FT): 102.8

DATE STATIC MEASURED: 11/1/2022

DRILLING FLUID: ☑ AIR ☐ MUD ADDITIVES – SPECIFY:

DRILLING METHOD: ☐ ROTARY ☐ HAMMER ☐ CABLE TOOL ☑ OTHER – SPECIFY: Hollow Stem Auger

CHECK HERE IF PITLESS ADAPTER IS INSTALLED ☐

DEPTH (feet bgl) FROM	DEPTH (feet bgl) TO	BORE HOLE DIAM (inches)	CASING MATERIAL AND/OR GRADE (include each casing string, and note sections of screen)	CASING CONNECTION TYPE (add coupling diameter)	CASING INSIDE DIAM. (inches)	CASING WALL THICKNESS (inches)	SLOT SIZE (inches)
0	54	±6.5	Hollow Stem Auger-Soil Boring	--	--	--	--
54	104	±3.25	Air Rotary- Soil Boring	--	--	--	--

3. ANNULAR MATERIAL

DEPTH (feet bgl) FROM	DEPTH (feet bgl) TO	BORE HOLE DIAM. (inches)	LIST ANNULAR SEAL MATERIAL AND GRAVEL PACK SIZE-RANGE BY INTERVAL	AMOUNT (cubic feet)	METHOD OF PLACEMENT

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FOR OSE INTERNAL USE

WR-20 WELL RECORD & LOG (Version 01/28/2022)

FILE NO.	POD NO.	TRN NO.	
LOCATION		WELL TAG ID NO.	PAGE 1 OF 2

4. HYDROGEOLOGIC LOG OF WELL

DEPTH (feet bgl) FROM	DEPTH (feet bgl) TO	THICKNESS (feet)	COLOR AND TYPE OF MATERIAL ENCOUNTERED - INCLUDE WATER-BEARING CAVITIES OR FRACTURE ZONES (attach supplemental sheets to fully describe all units)	WATER BEARING? (YES / NO)	ESTIMATED YIELD FOR WATER-BEARING ZONES (gpm)
0	34	34	Sand, fine grained with semi-consolidated caliche, Tan/ white	Y ✓ N	
34	54	20	Sand, fine-grained, poorly graded, Reddish Brown	Y ✓ N	
54	104	50	Sandstone, fine-grained, poorly graded, semi-consolidated, Tannish Brown	✓ Y N	
				Y N	
				Y N	
				Y N	
				Y N	
				Y N	
				Y N	
				Y N	
				Y N	
				Y N	
				Y N	
				Y N	
				Y N	
				Y N	
				Y N	
				Y N	
				Y N	
				Y N	

METHOD USED TO ESTIMATE YIELD OF WATER-BEARING STRATA:

☐ PUMP ☐ AIR LIFT ☐ BAILER ☐ OTHER – SPECIFY:

TOTAL ESTIMATED WELL YIELD (gpm): 0.00

5. TEST; RIG SUPERVISION

WELL TEST — TEST RESULTS - ATTACH A COPY OF DATA COLLECTED DURING WELL TESTING, INCLUDING DISCHARGE METHOD, START TIME, END TIME, AND A TABLE SHOWING DISCHARGE AND DRAWDOWN OVER THE TESTING PERIOD.

MISCELLANEOUS INFORMATION: Pulled well material. Plugged boring using Neat Cement Type I/II slurry from total depth to surface.

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PRINT NAME(S) OF DRILL RIG SUPERVISOR(S) THAT PROVIDED ONSITE SUPERVISION OF WELL CONSTRUCTION OTHER THAN LICENSEE:

Shane Eldridge, Cameron Pruitt

6. SIGNATURE

THE UNDERSIGNED HEREBY CERTIFIES THAT, TO THE BEST OF HIS OR HER KNOWLEDGE AND BELIEF, THE FOREGOING IS A TRUE AND CORRECT RECORD OF THE ABOVE DESCRIBED HOLE AND THAT HE OR SHE WILL FILE THIS WELL RECORD WITH THE STATE ENGINEER AND THE PERMIT HOLDER WITHIN 30 DAYS AFTER COMPLETION OF WELL DRILLING:

Jack Atkins — Jackie D. Atkins — 11/1/2022

SIGNATURE OF DRILLER / PRINT SIGNEE NAME — DATE

FOR OSE INTERNAL USE — WR-20 WELL RECORD & LOG (Version 01/28/2022)

FILE NO.	POD NO.	TRN NO.	
LOCATION		WELL TAG ID NO.	PAGE 2 OF 2

PLUGGING RECORD

NOTE: A Well Plugging Plan of Operations shall be approved by the State Engineer prior to plugging - 19.27.4 NMAC

I. GENERAL / WELL OWNERSHIP:

State Engineer Well Number: RA-13234 POD-1

Well owner: Spur Energy Partners LLC Phone No.: _____

Mailing address: 919 Milam St Ste 2475

City: Houston State: Texas Zip code: 77002

II. WELL PLUGGING INFORMATION:

1) Name of well drilling company that plugged well: Jackie D. Atkins (Atkins Engineering Associates Inc.)

2) New Mexico Well Driller License No.: 1249 Expiration Date: 04/30/23

3) Well plugging activities were supervised by the following well driller(s)/rig supervisor(s): _____
Shane Eldridge

4) Date well plugging began: 11/1/2022 Date well plugging concluded: 11/1/2022

5) GPS Well Location: Latitude: 32 deg, 49 min, 22.88 sec
Longitude: 103 deg, 48 min, 34.24 sec, WGS 84

6) Depth of well confirmed at initiation of plugging as: 104 ft below ground level (bgl),
by the following manner: weighted tape

7) Static water level measured at initiation of plugging: 102.8 ft bgl

8) Date well plugging plan of operations was approved by the State Engineer: 9/8/2022

9) Were all plugging activities consistent with an approved plugging plan? Yes If not, please describe differences between the approved plugging plan and the well as it was plugged (attach additional pages as needed):

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Version: September 8, 2009
Page 1 of 2

10) Log of Plugging Activities - Label vertical scale with depths, and indicate separate plugging intervals with horizontal lines as necessary to illustrate material or methodology changes. Attach additional pages if necessary.

For each interval plugged, describe within the following columns:

Depth (ft bgl)	Plugging Material Used (include any additives used)	Volume of Material Placed (gallons)	Theoretical Volume of Borehole/ Casing (gallons)	Placement Method (tremie pipe, other)	Comments ("casing perforated first", "open annular space also plugged", etc.)
	0-104' Type I/II Neat Cement	Approx. 153 gallons	107 gallons	tremie	5.2 gallons per 94 lb sack

MULTIPLY		BY		AND OBTAIN
cubic feet	x	7.4805	=	gallons
cubic yards	x	201.97	=	gallons

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III. SIGNATURE:

I, Jackie D. Atkins, say that I am familiar with the rules of the Office of the State Engineer pertaining to the plugging of wells and that each and all of the statements in this Plugging Record and attachments are true to the best of my knowledge and belief.

Jack Atkins — Signature of Well Driller

11/1/2022 — Date

Version: September 8, 2009
Page 2 of 2

RA-13234-WR-20 Well Record and Log-forsign

Final Audit Report 2022-11-01

Created:	2022-11-01
By:	Lucas Middleton (lucas@atkinseng.com)
Status:	Signed
Transaction ID:	CBJCHBCAABAAXQCH1sGeyJxiE5NDxSXxA-nZX3Wz92ck

"RA-13234-WR-20 Well Record and Log-forsign" History

Document created by Lucas Middleton (lucas@atkinseng.com)
2022-11-01 - 8:19:33 PM GMT- IP address: 64.17.71.25

Document emailed to Jack Atkins (jack@atkinseng.com) for signature
2022-11-01 - 8:26:48 PM GMT

Email viewed by Jack Atkins (jack@atkinseng.com)
2022-11-01 - 10:18:33 PM GMT- IP address: 64.90.153.232

Document e-signed by Jack Atkins (jack@atkinseng.com)
Signature Date: 2022-11-01 - 10:21:05 PM GMT - Time Source: server- IP address: 64.90.153.232

Agreement completed.
2022-11-01 - 10:21:05 PM GMT

Appendix B:

C-141

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

State of New Mexico
Energy Minerals and Natural Resources Department

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

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

Incident ID	
District RP	
Facility ID	
Application ID	

Release Notification

Responsible Party

Responsible Party Spur Energy Partners LLC	OGRID 328947
Contact Name Braidy Moulder	Contact Telephone (713) 264-2517
Contact email bmoulder@spurepllc.com	Incident # *(assigned by OCD)*
Contact mailing address: 919 Milam Street Suite 2475 Houston Texas 77002	

Location of Release Source

Latitude 32.82638889 Longitude -103.80805556
(NAD 83 in decimal degrees to 5 decimal places)

Site Name BC Federal #45	Site Type Well Pad
Date Release Discovered February 16, 2020	API# *(if applicable)* 30-025-39419

Unit Letter	Section	Township	Range	County
C	19	17 South	32 East	Lea

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

Nature and Volume of Release

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

☐ Crude Oil	Volume Released (bbls)	Volume Recovered (bbls)
☒ Produced Water	Volume Released (bbls) 17	Volume Recovered (bbls) 15
	Is the concentration of dissolved chloride in the produced water >10,000 mg/l?	☐ Yes ☒ No
☐ Condensate	Volume Released (bbls)	Volume Recovered (bbls)
☐ Natural Gas	Volume Released (Mcf)	Volume Recovered (Mcf)
☐ Other (describe)	Volume/Weight Released (provide units)	Volume/Weight Recovered (provide units)
Cause of Release: A stuffing box leaked		

State of New Mexico
Oil Conservation Division

Incident ID	
District RP	
Facility ID	
Application ID	

Was this a major release as defined by 19.15.29.7(A) NMAC? ☐ Yes ☒ No	If YES, for what reason(s) does the responsible party consider this a major release? The Release was less than the 25 (bbls) standard
If YES, was immediate notice given to the OCD? By whom? To whom? When and by what means (phone, email, etc)?	

Initial Response

The responsible party must undertake the following actions immediately unless they could create a safety hazard that would result in injury

☒ The source of the release has been stopped.
☒ The impacted area has been secured to protect human health and the environment.
☒ Released materials have been contained via the use of berms or dikes, absorbent pads, or other containment devices.
☒ All free liquids and recoverable materials have been removed and managed appropriately.

If all the actions described above have not been undertaken, explain why:

Per 19.15.29.8 B. (4) NMAC the responsible party may commence remediation immediately after discovery of a release. If remediation has begun, please attach a narrative of actions to date. If remedial efforts have been successfully completed or if the release occurred within a lined containment area (see 19.15.29.11(A)(5)(a) NMAC), please attach all information needed for closure evaluation.

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: Joseph Guagliardo Title: Staff Scientist

Signature: Date: 3/3/2021

email: JRGuagliardo@Tetratech.com Telephone: 806 300-0410

OCD Only

Received by: Date:

State of New Mexico
Oil Conservation Division

Form C-141

Incident ID	NAPP2106257147
District RP	
Facility ID	
Application ID	

Site Assessment/Characterization

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

What is the shallowest depth to groundwater beneath the area affected by the release?	102 (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

State of New Mexico
Oil Conservation Division

Incident ID	NAPP2106257147
District RP	
Facility ID	
Application ID	

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

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

Printed Name: Kathy Purvis. Title: HSE Coordinator

Signature: Katherine Purvis Date: 01/04/2023

email: katherine.purvis@spurenergy.com Telephone: 575-441-8619

OCD Only

Received by: Jocelyn Harimon Date: 01/04/2023

State of New Mexico
Oil Conservation Division

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District RP	
Facility ID	
Application ID	

Closure

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

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

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

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

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

☒ Description of remediation activities

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

Printed Name: Kathy Purvis. Title: HSE Coordinator

Signature: Katherine Purvis Date: 01/04/2023

email: katherine.purvis@spurenergy.com Telephone: 575-441-8619

OCD Only

Received by: Jocelyn Harimon Date: 01/04/2023

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

Closure Approved by: Jennifer Nobui Date: 01/25/2023

Printed Name: Jennifer Nobui Title: Environmental Specialist A

Appendix C:

Terracon Closure Report

Closure Report

General Site Information:
BC Federal #45 Release

Site Contact:
Todd Mucha, Spur Energy Partners
920 Memorial City Way, Suite 1000, Houston, Texas 77024
(281) 795-2286

Depth to Ground Water
51 - 100 feet below grade surface

Distance to Nearest Surface Water
Brantley Lake (Central Eddy County), approximately 36 miles to the West

Driving Directions
From Hwy 82, Southeast on HWY 224 0.90 mi, stay left and head East on lease road for 0.14 mi, turn left and continue North for 0.25 mi, turn right and continue East for 0.60 mi, turn right and continue South for 0.25 mi, turn right and continue East for 0.34mi, stay right for 0.08 mi and site will be on your right hand side.

Legal Description
Unit B Section 19, T17S, R32E, Lea County, New Mexico

March 2, 2021
Terracon Project No. AR207045

Prepared for:
Spur Energy Partners
Houston, Texas

Prepared by:
Terracon Consultants, Inc.
Lubbock, Texas
TBPG Firm No. 50058

March 2, 2021

Spur Energy Partners LLC
920 Memorial City Way, Suite 1000
Houston, Texas 77024

Attn: Mr. Todd Mucha
P: 281-795-2286
E: todd@spurepllc.com

RE: **Closure Report**
BC Federal #45 Release
Unit B Section 19, T17S, R32E, Lea County, New Mexico
Terracon Project No. AR207045

Dear Mr. Mucha,

Terracon Consultants, Inc. (Terracon) is pleased to submit our Closure Report for the site referenced above. The Closure Report was developed in accordance with the New Mexico Oil Conservation Division (NMOCD) regulations concerning clean-up actions required for releases of crude oil and produced water. The Closure Report presents a description of the release incident and OCD notification, site characteristics, potential receptors, and remedial actions required for the site. Terracon developed the Closure Report in general accordance with our Master Service Agreement dated April 29, 2019.

Terracon appreciates this opportunity to provide environmental services to Spur Energy Partners LLC (Spur). Should you have any questions or require additional information, please do not hesitate to contact our office.

Sincerely,
Terracon Consultants, Inc.

Bryant McBrayer	Erin Loyd, P.G.
Staff Scientist	Principal
Lubbock	Office Manager – Lubbock

Terracon

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Closure Report
BC Federal #45 Release
Unit B Section 19, Township 17 South, Range 32 East
Lea County, New Mexico
NMOCD Reference No. TBD
Terracon Project No. AR207045
March 2, 2021

1.0 SITE DESCRIPTION

The site is an approximate 0.8-acre portion of an oil pad within the Unit B Section 19, Township 17 South, Range 32 East, Lea County, New Mexico (hereinafter, the site). The site consists primarily of developed land for an oil well. A Topographic Map illustrating the site location is included as Figure 1 and a Site Plan is included as Figure 2 in Appendix A.

2.0 SCOPE OF SERVICES

Terracon's scope of services is to investigate the magnitude and extent of the documented release, remediation and restoration and develop a Closure Report in accordance with the NMOCD requirements that detail site closure activities to be completed. This Closure Report addresses the February 16th, 2020 release of approximately 17 barrels (bbls) of produced water (15 bbls recovered) from the well head of a pump jack owned by Spur.

3.0 INTRODUCTION AND NOTIFICATION

A release of produced water on February 16th, 2020 at the BC Federal 45 well site in Lea County, New Mexico. The site is operated by Spur. The site is comprised of an approximate 0.8-acre developed area, approximately 3.36 miles southwest of Maljamar, New Mexico. Incident information is provided in the following table:

Required Information	Site and Release information	
Responsible party Local contact	The facility is operated by Spur Energy Partners LLC	
	Contact: Mr. Tom Mucha	P: (281) 795-2286 E: todd@spurepllc.com
NMOCD Notification	Notice of the release was provided to the NMOCD District 2 Artesia Office by Todd Mucha (Spur) on February 16th, 2020.	
Facility description	The facility is BC Federal 45 in Lea County, New Mexico. It is an approximate 0.8-acre pad with a well, located within the Unit B Section 19, Township 17 South, Range 32 East, approximately	

Required Information	Site and Release information	
	3.36 miles southwest of Maljamar, New Mexico. The site is developed and used as a well pad.	
Time of incident	February 16th, 2020, discovered at 7:00 a.m.	
Discharge event	Release of produced water originating from a loosely packed stuffing box on a Spur wellhead. The release origin occurred on the well pad, under development at the time of the release. The release area, near the origin of the release, was limited to an approximately 2,000 sq ft area; the entirety of the release remained on pad. The release is illustrated on Figure 2 of Appendix A	
Type of discharge	The documented fluids release occurred at the surface and appears to be surficial to depth.	
Quantity of spilled material	Total Fluids: 17 bbls	Produced Water: 17 bbls
Site characteristics	Relatively flat with drainage following the native ground surface; very gently sloping to the west.	
Immediate corrective actions	15 bbls were recovered, and the Lease Operator shut in the well. Terracon Remediation Construction Services (RCS) scraped up and stockpiled affected materials proximate to the release origin.	

4.0 INITIAL RESPONSE ACTIONS

4.1 Source Elimination and Site Security

Initial source elimination was accomplished by the Spur foreman shutting in the wellhead and replacing and tightening the stuffing box. Terracon's RCS secured the site and performed containment and site stabilization activities.

4.2 Containment and Site Stabilization

RCS consolidated and stockpiled affected soils proximate to the release origin, comprising an area measuring approximately 500-square-feet (sf). From this area, the affected materials stockpile totaled an estimated 10-cubic yards (cy). Following consolidation of these materials, RCS fenced off the stockpile to deter inadvertent contact with the materials.

5.0 GENERAL SITE CHARACTERISTICS

5.1 Depth to Groundwater

A water well record search of the NMOSE potable water well (POD) Geographic Information System (GIS) data portal identified one registered well (CP-00566-POD1) within 4 miles of the site. The depth to groundwater at the site is anticipated to be between 51 and 100 feet below grade surface (bgs). NMOSE website identified no registered wells within one mile of the site.

5.2 Distance to Nearest Potable Water Well

Based on review of the NMOSE database, registered potable water wells were not present within 0.5 miles of the site.

5.3 Distance to Nearest Surface Water

Brantley Lake (Central Eddy County, NM) is located 36 miles to the West of the site, is the closest surface water body to the site.

5.4 Soil / Waste Characteristics

Soils at the site are classified as Kermit soil and dune land, 0 to 12 percent slopes. This soil has a surface layer of fine sand 0 to 8 inches, and fine sand 8 to 60 inches. The formation is categorized as excessively drained with very low runoff.

5.5 Groundwater Quality

Groundwater quality is unknown at the site. As stated previously, there are no wells registered with the NMOSE website within 0.5 miles of the site.

5.6 Karst Characteristics

Terracon evaluated data from the NMOCD Public file sharepoint site for Karst map designations in reference to the site location. The site appears to be within a low level Karst risk area. Based on site observations within the extent of the release margins, the potential for Karst formations in this area are “low to no potential”. The site has a layer of solid competent rock at 60 inches bgs. The full extent of release quantities and excavation activities took place not greater than 24 inches bgs.

6.0 SOIL REMEDIAL ACTION LEVELS

Crude oil facilities in New Mexico are generally regulated by the NMOCD. Terracon proposes to remediate produced water and crude oil impacted soil of the BC Federal #45 Release consistent with the remediation/abatement goals and objectives set forth in the New Mexico Oil Conservation Division (NMOCD) *Closure Criteria for Soils Impacted by a Release, February 16, 2020.*

The guidance document provides direction for initial response actions, site assessment, sampling procedures and provides closure criteria based on the depth to groundwater, distance to private and domestic water sources, and the distance to the nearest surface water body as follows:

6.1 Remediation Levels

Remediation limits for Chlorides, TPH (GRO+DRO+MRO), GRO+DRO, BTEX (includes benzene, toluene, ethylbenzene and xylenes), and Benzene are selected based on *Restoration, Reclamation, and Re-vegetation* (19.15.29.13) NMAC – D (Reclamation of areas no longer in use) being between 51 and 100 feet:

Constituent	Remediation Limits
Chloride	10,000 mg/kg
TPH (GRO+DRO+MRO)	2,500 mg/kg
GRO+DRO	1,000 mg/kg
BTEX	50 mg/kg
Benzene	10 mg/kg

7.0 SOIL SAMPLING PROCEDURES

Soil sampling procedures are detailed as Exhibit 1 in Appendix B.

8.0 RELEASE INVESTIGATION DATA EVALUATION

During Terracon's March 2, 2020 release investigation activities, a total of 18 soil samples were collected from the site and analyzed for BTEX, chloride, and/or TPH. All samples were collected from within the release margins.

8.1 Release Margins Data Evaluation

Benzene was not detected above the applicable laboratory SDLs in any of the 18 soil samples analyzed within the release margins. The detected benzene concentrations (0 mg/kg) did not exceed the applicable NMOCD RAL for benzene of 10 mg/kg, as summarized in Table 2.

Total BTEX was not detected above applicable laboratory SDLs in any of the 18 soil samples analyzed within the release margins. The Total BTEX concentration ranged from <0.00399 mg/kg in HA-3 (1.5 ft bgs to 2 ft bgs) to 0.0192 mg/kg in HA-1 (1.5 ft bgs to 2 ft bgs). The detected Total BTEX concentrations did not exceed the applicable NMOCD RAL for Total BTEX of 50 mg/kg, as summarized in Table 2.

Total TPH was not detected above applicable laboratory SDLs in any of the 18 soil samples analyzed within the release margins. The Total TPH concentration ranged from 0.288 mg/kg in HA-3 (1.5 ft bgs to 2 ft bgs) to 0.591 mg/kg in HA-3 (surface to 0.5 ft bgs). The samples collected within the release margins did not exhibit Total TPH concentrations above the NMOCD RAL of 2,500 mg/kg for Total TPH, as summarized in Table 2.

Chloride was not detected above applicable laboratory SDLs in any of the 18 soil samples analyzed within the release margins. The chloride concentrations ranged from 4.21 mg/kg in soil sample HA-2 (3.5 to 4 ft bgs) to 5,770 mg/kg in soil sample HA-3 (surface to 0.5 ft bgs). The samples analyzed within the release margins did not exhibit chloride concentrations above the applicable NMOCD RAL for chloride of 10,000 mg/kg, as summarized in Table 2.

8.2 Release Investigation Data Summary

Based on the review of the above release investigation analytical results, the areas within the release margins did not exhibit exceedances of benzene, Total BEX, Total TPH or chloride concentrations. Terracon performed remedial response actions at the site, in order to lower levels of contamination further and to clean up any visible surface contamination.

8.3 Confirmation Margins Data Evaluation

During Terracon's confirmation sampling activities on March 19, 2020 a composite soil sample was taken within the release margins, post reclamation activites. Resulting in three total soil samples being collected from the site and analyzed for BTEX, chloride, and TPH.

8.3.1 Confirmation Assessment Data Evaluation

Benzene was not detected above the applicable laboratory SDL in the confirmation soil samples. Benzene concentration did not exceed the applicable NMOCD RAL for benzene of 10 mg/kg, as summarized in Table 2.

Total BTEX was detected above the applicable laboratory SDL in one of the three soil samples analyzed within the remediated margins. The BTEX concentrations ranged from <0.00411 mg/kg in the confirmation soil sample CS-2 (surface to 1 ft bgs.) to 0.0120 mg/kg in confirmation soil sample CS-1 (surface to 1 ft bgs). The detected Total BTEX concentrations did not exceed the applicable NMOCD RAL for BTEX of 50 mg/kg, as summarized in Table 2.

Total TPH was detected above applicable laboratory SDLs in one of the three soil samples analyzed within the remediated margins. The Total TPH concentrations ranged from <0.270 mg/kg in CS-1 (surface to 1ft bgs) to 0.295 mg/kg in CS-2 (surface to 1 ft bgs). The samples collected within the release margins did not exhibit Total TPH concentrations above the NMOCD RAL of 2,500 mg/kg for Total TPH, as summarized in Table 2.

Chloride was detected above applicable laboratory SDLs in each of the three soil samples analyzed within the remediated margins. The chloride concentrations ranged from 732 mg/kg in soil sample CS-1 (surface to 1ft bgs) to 1,940 mg/kg in soil sample CS-3 (surface to 1 ft bgs). The samples analyzed within the release margins did not exhibit chloride concentrations above the applicable NMOCD RAL for chloride of 10,000 mg/kg, as summarized in Table 2.

8.3.2 Confirmation Data Summary

Based on the review of the above confirmation analytical results, the areas within and surrounding the remediation do not exhibit concentrations above the NMOCD RAL for benzene, Total BTEX, chloride and Total TPH.

9.0 SOIL REMEDIATION

Impacted soil was remediated and managed according to the criteria described below which will remove contaminants to protect fresh waters, public health and the environment.

9.1 Contaminated Soils

Soils exceeding the designated NMOCD RALs described in Section 6 were remediated as follows:

- Impacted soils within the release margins, illustrated on Figure 2 of Appendix A, were excavated either to a maximum depth of 4.5 feet bgs, or upon refusal due to encountering a restrictive barrier, or field evidence demostrated that impacted materials were sufficiently mitigated.
- Following excavation, vertical and horizontal delineation samples were collected from the base and walls of the excavation to confirm the remaining levels of soil contaminants are below the desired NMOCD RALs.

9.2 Soil Management

The selected method of soil management was the removal of excavated soils, upon confirmation of below NMOCD Regulatory levels, the excavation was back-filled with fresh, non-contaminated material in order to mitigate visible, surface staining.

10.0 TERMINATION OF REMEDIAL ACTIONS, FINAL CLOSURE AND REPORTING

10.1 Termination of Remedial Action

Remedial action of soils at the site were terminated when the following criteria were met. Contaminated soils were treated on site. Contaminates within the soil were sufficiently lowered, so that residual contaminant concentrations are below the soil remediation action levels and all visible, surface impacts were mitigated.

10.2 Final Closure

Upon termination of remedial actions (Sections 6 and 9), the area of the release was closed by backfilling the excavated area, contouring to surrounding area topography.

10.3 Final Report

Upon completion of remedial activities, this final report, summarizing actions taken to mitigate environmental damage related to the release will be provided to NMOCD for approval.

APPENDIX A – FIGURES AND PHOTOGRAPHIC LOG

Site Location

N

Project No.	A4207045
Scale:	1": 1 mile
Source:	Google Earth
Date:	2020

Terracon
Consulting Engineers & Scientists
5847 50th Street Lubbock, Texas 79424
PH. (806) 300 - 0140 FAX. (806) 797 - 0947

Figure 1 - Topographic Map

BC Federal Battery
32.82638889, -103.80805556
Lea County, New Mexico

Release Area

Hand Auger

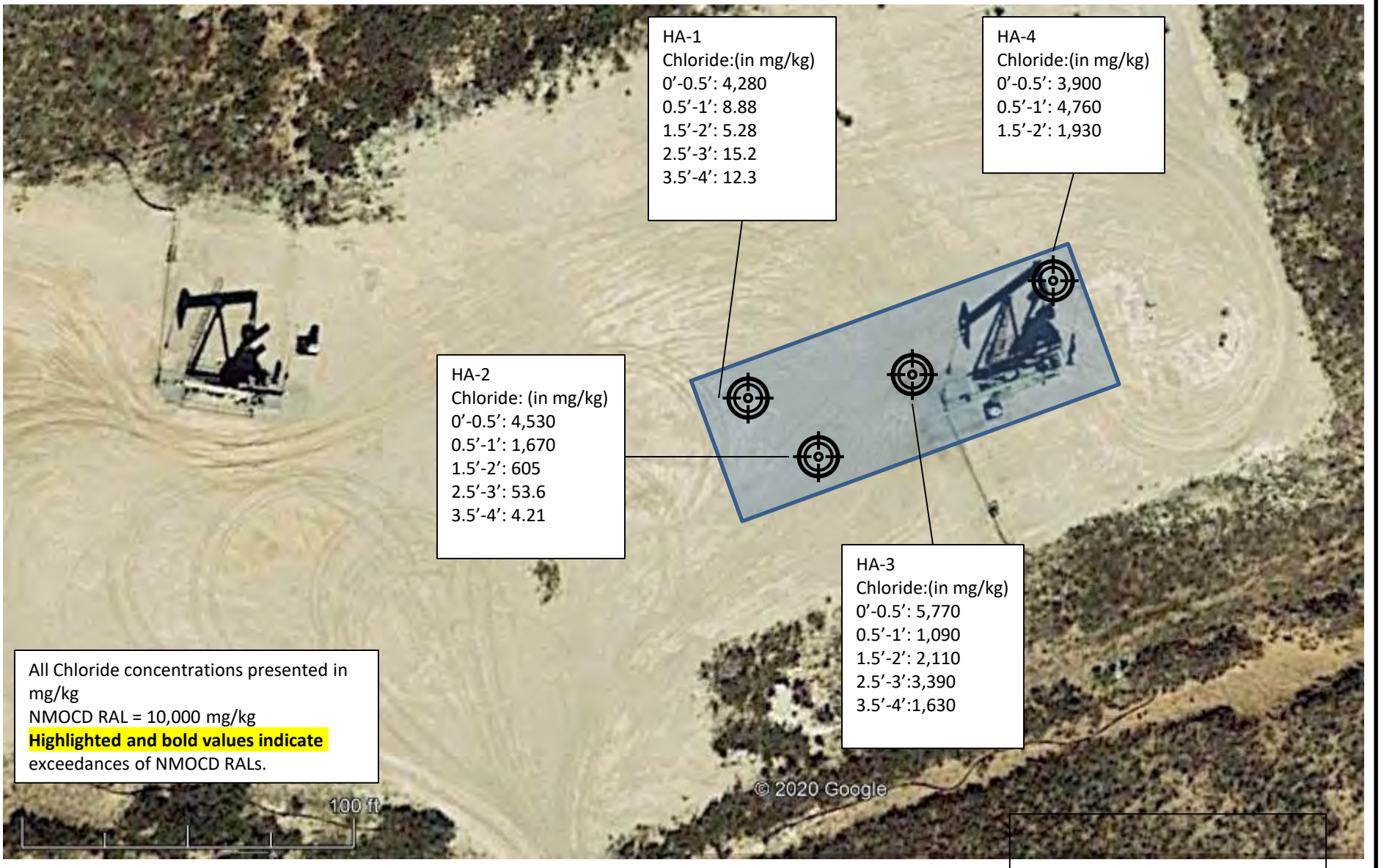
N

Project No.	A4207045
Scale:	1":50 '
Source:	Google Earth
Date:	2020

Terracon
Consulting Engineers & Scientists
5847 50th Street Lubbock, Texas 79424
PH. (806) 300 - 0140 FAX. (806) 797 - 0947

Figure 2 - Site Map

BC Federal Battery
32.82638889, -103.80805556
Lea County, New Mexico



Release Area

Hand Auger

N

Project No.	A4207045
Scale:	1":50 '
Source:	Google Earth
Date:	2020

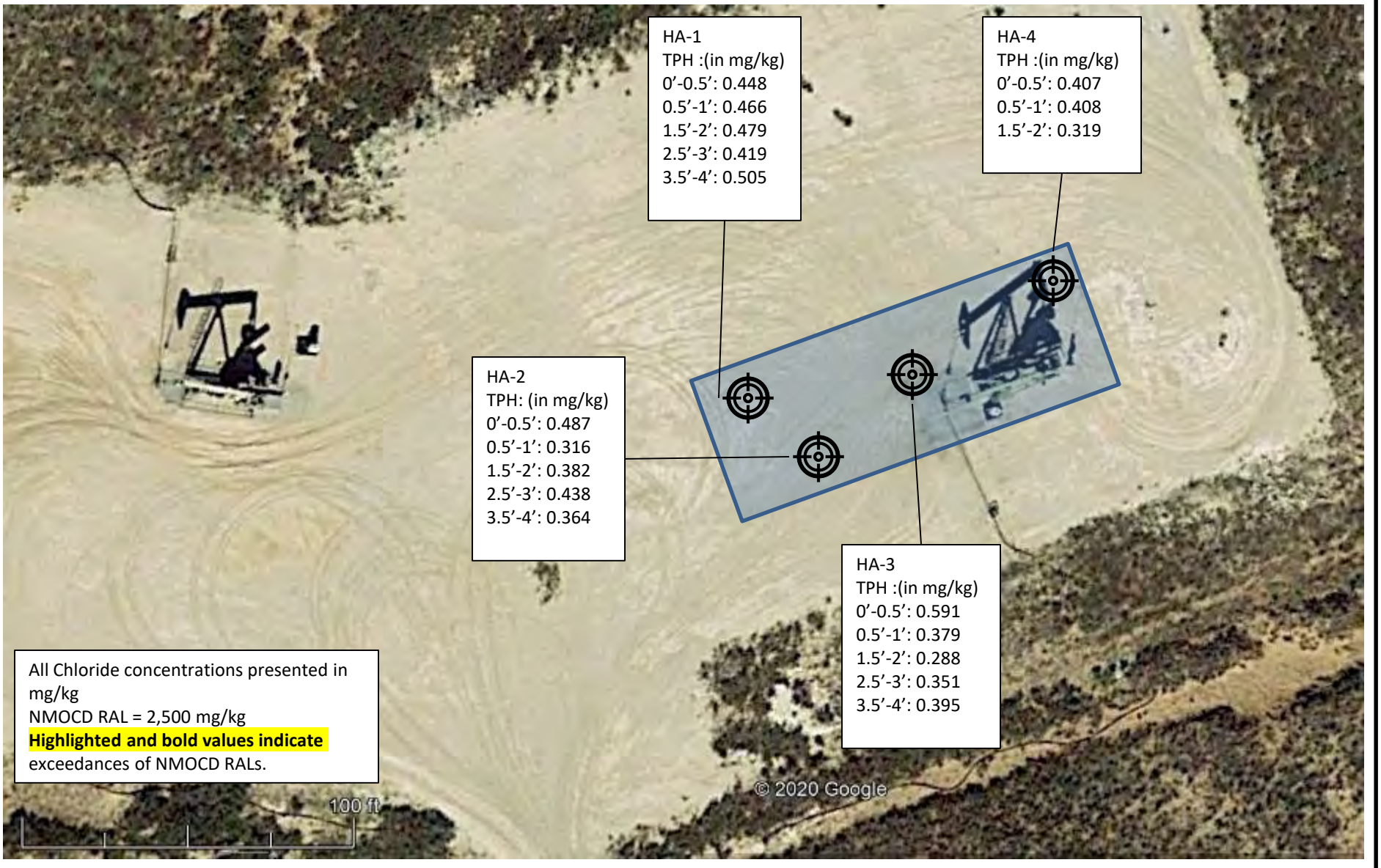
Terracon
Consulting Engineers & Scientists
5847 50th Street Lubbock, Texas 79424
PH. (806) 300 - 0140 FAX. (806) 797 - 0947

Figure 3 - Chloride Concentration Map

BC Federal Battery

32.82638889, -103.80805556

Lea County, New Mexico



Release Area

Hand Auger

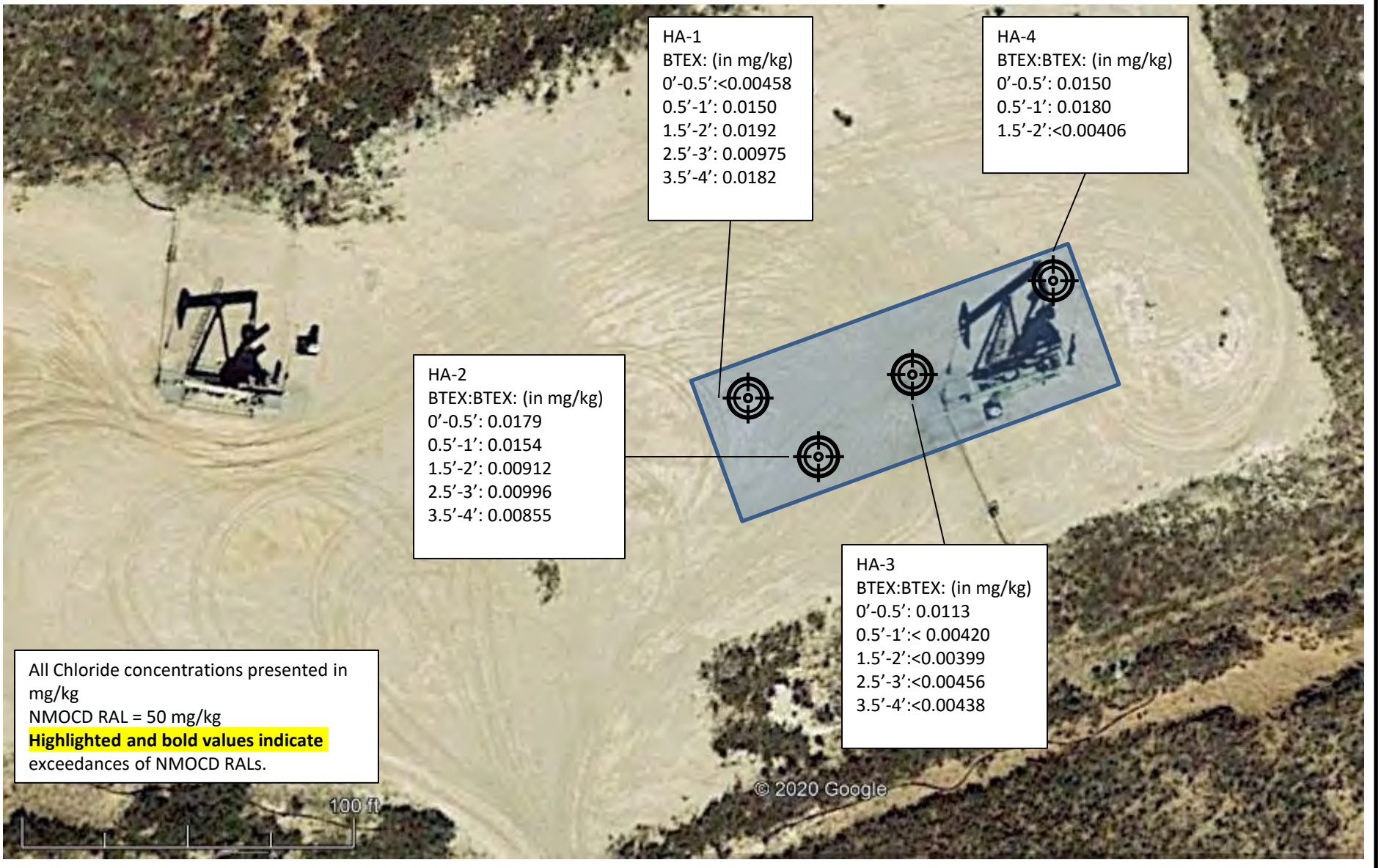
N

Project No.	A4207045
Scale:	1":50 '
Source:	Google Earth
Date:	2020

Terracon
Consulting Engineers & Scientists
5847 50th Street Lubbock, Texas 79424
PH. (806) 300 - 0140 FAX. (806) 797 - 0947

Figure 4 - TPH Concentration Map

BC Federal Battery
32.82638889, -103.80805556
Lea County, New Mexico



Release Area

Hand Auger

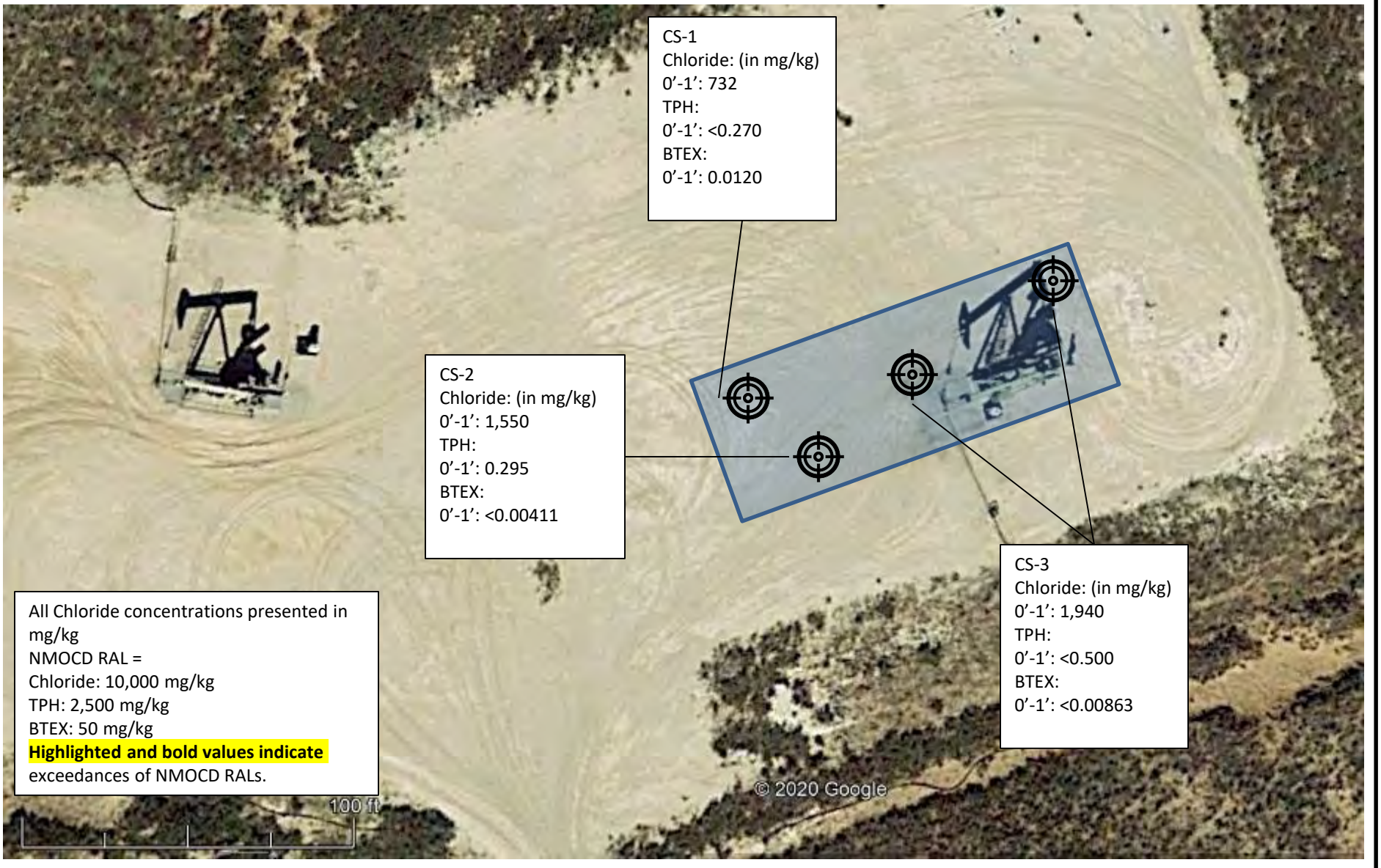
N

Project No.	A4207045
Scale:	1":50 '
Source:	Google Earth
Date:	2020

Terracon
Consulting Engineers & Scientists
5847 50th Street Lubbock, Texas 79424
PH. (806) 300 - 0140 FAX. (806) 797 - 0947

Figure 5 - BTEX Concentration Map

BC Federal Battery
32.82638889, -103.80805556
Lea County, New Mexico



Release Area

Hand Auger

N

Project No.	A4207045
Scale:	1":50 '
Source:	Google Earth
Date:	2020

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Consulting Engineers & Scientists
5847 50th Street Lubbock, Texas 79424
PH. (806) 300 - 0140 FAX. (806) 797 - 0947

Figure 6 - Remediation Concentration Map

BC Federal Battery
32.82638889, -103.80805556
Lea County, New Mexico

Site Location

NMOSE POD Location

N

Project No.	A4207045
Scale:	1": 1mile
Source:	Google Earth
Date:	2020

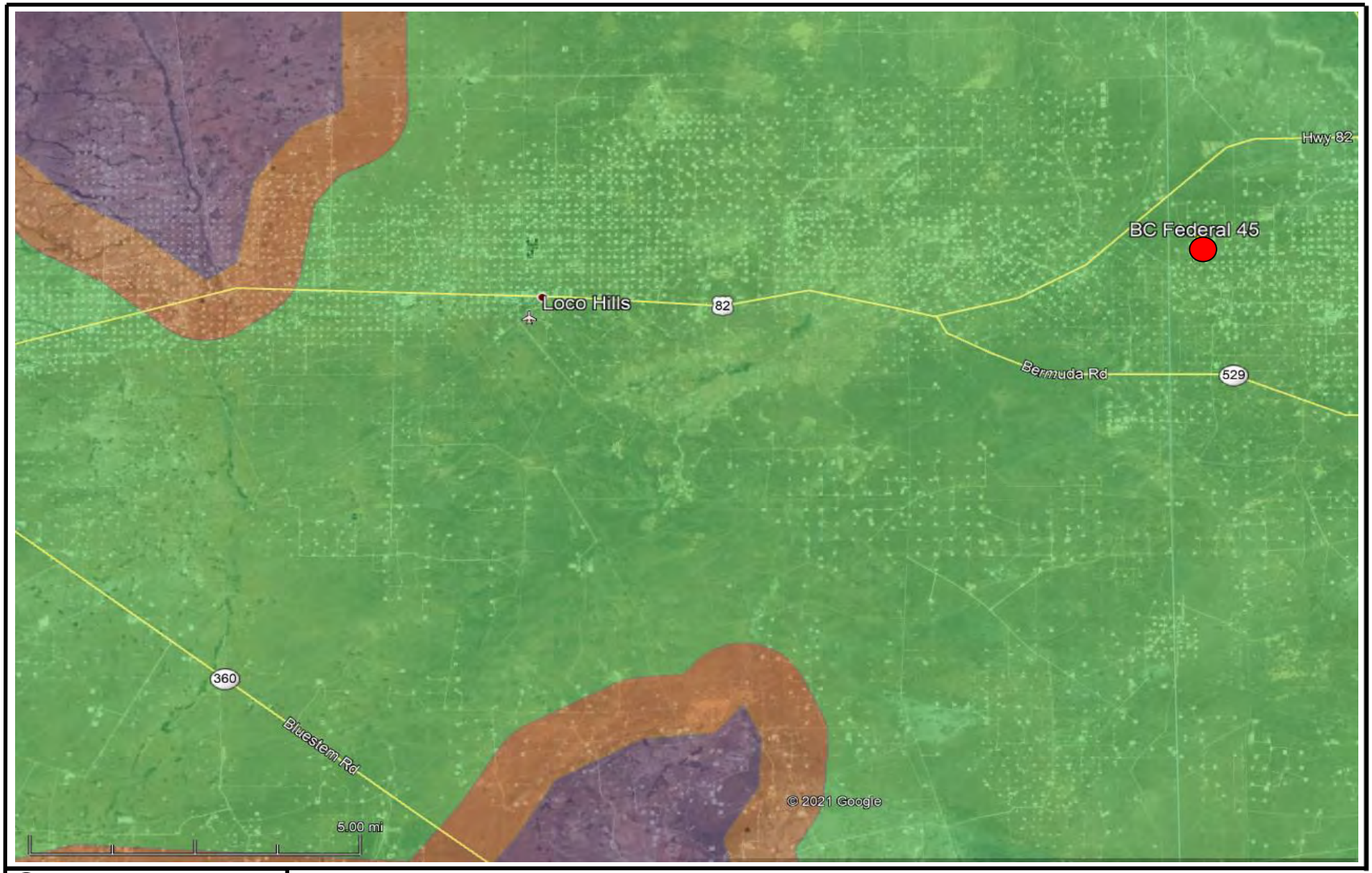
Terracon
Consulting Engineers & Scientists
5847 50th Street Lubbock, Texas 79424
PH. (806) 300 - 0140 FAX. (806) 797 - 0947

Figure 7 - NMOSE POD Location

BC Federal Battery

32.82638889, -103.80805556

Lea County, New Mexico



Site Location

Low Karst

Medium Karst

High Karst

N

Project No.	AR207045
Scale:	1" : 2.5 mi
Source:	Google Earth
Date:	2/17/2021

Terracon
Consulting Engineers & Scientists
5847 50th Street Lubbock, Texas 79424
PH. (806) 300 -0140 FAX. (806) 797 -0947

Figure 8 – Karst Location Map

BC Federal Battery
32.82638889, -103.80805556
Lea County, New Mexico

PHOTOGRAPHIC LOG

BC Federal #45 ■ Lea County, New Mexico
April 16, 2020 ■ Terracon Project No. AR207045

PHOTO 1: View of release site, facing east. 3/27/2020

PHOTO 2: View of release site, facing southeast. 3/27/2020

PHOTO 3: View of release site, facing south. 3/27/2020

PHOTO 4: View of release site, facing south. 3/27/2020

PHOTO 4: View of release site, facing south. 3/27/2020

PHOTO 5: View of release site, facing southwest. 3/27/2020

PHOTO 6: View of release site, facing southwest. 3/27/2020

PHOTO 7: View of release site, facing northwest. 3/27/2020

APPENDIX B – TABLES & PROCEDURES

Exhibit 1 – Soil Sampling Procedures

Table 1 – Closure Criteria for Soils Impacted by a Release

Table 2 – Soil Sample Analytical Results

Table 3 - Confirmation Soil Sample Analytical Results

SOIL SAMPLING PROCEDURES

Soil sampling procedures are detailed as follows:

Soil Sampling Procedures for Laboratory Analysis

Soil Sampling Procedures

Soil sampling for laboratory analysis was conducted according to NMOCD-approved industry standards or other NMOCD-approved procedures. Accepted NMOCD soil sampling procedures and laboratory analytical methods are as follows:

- Collect samples in clean, air-tight glass jars supplied by the laboratory which will conduct the analysis or from a reliable laboratory equipment supplier.
- Label the samples with a unique code for each sample.
- Cool and store samples with cold packs or on ice.
- Promptly ship sample to the lab for analysis following chain of custody procedures.
- All samples must be analyzed within the holding times for the laboratory analytical method specified by EPA.

Analytical Methods

All soil samples must be analyzed using EPA methods, or by other NMOCD-approved methods and must be analyzed within the holding time specified by the method. Below are laboratory analytical methods the selected laboratory will use for analysis of soil samples analyzed for petroleum related constituents.

- Chloride – EPA Method 300.0
- Total Petroleum Hydrocarbons - TPH (GRO+DRO+MRO) – EPA Method 8015M
- Benzene, toluene, ethylbenzene and total xylenes (BTEX) – EPA Method 8021B

Benzene – EPA Method 8021B

Table 1 Closure Criteria for Soils Impacted by a Release			
Minimum depth below any point within the horizontal boundary of the release to ground water less than 10,000 mg/L TDS	**Constituent**	**Method***	**Limit****
≤50 feet	Chloride***	EPA 300.0 or SM4500 Cl B	600 mg/kg
	TPH (GRO+DRO+MRO)	EPA SW-846 Method 8015 M	100 mg/kg
	BTEX	EPA SW-846 Method 8021B or 8260B	50 mg/kg
	Benzene	EPA SW-846 Method 8021B or 8260B	10 mg/kg
51 feet-100 feet	Chloride***	EPA 300.0 or SM4500 Cl B	10,000 mg/kg
	TPH (GRO+DRO+MRO)	EPA SW-846 Method 8015 M	2,500 mg/kg
	GRO+DRO	EPA SW-846 Method 8015 M	1,000 mg/kg
	BTEX	EPA SW-846 Method 8021B or 8260B	50 mg/kg
	Benzene	EPA SW-846 Method 8021B or 8260B	10 mg/kg
>100 feet	Chloride***	EPA 300.0 or SM4500 Cl B	20,000 mg/kg
	TPH (GRO+DRO+MRO)	EPA SW-846 Method 8015 M	2,500 mg/kg
	GRO+DRO	EPA SW-846 Method 8015 M	1,000 mg/kg
	BTEX	EPA SW-846 Method 8021B or 8260B	50 mg/kg
	Benzene	EPA SW-846 Method 8021B or 8260B	10 mg/kg

**Or other methods approved by the division*

***Numerical limits or natural background level, whichever is greater*

****This applies to releases of produced water or other fluids, which may contain chloride*

TABLE 2
SOIL SAMPLE ANALYTICAL RESULTS - BTEX[1], Chloride[2], and TPH[3]
BC Federal #45
Terracon Project No. AR207045

Sample I.D.	Sample Depth (bgs)	Sample Type	Sample Date	BTEX (mg/kg)	Chloride (mg/kg)	TPH (8015M) (mg/kg)			
						GRO	DRO	ORO	TOTAL
HA-3 (0-.5)	0 - 0.5'	Grab	02/27/20	Benzene - <0.00851 Toluene - 0.0113 Ethylbenzene - <0.00580 Total Xylenes - <0.00642 Total BTEX - 0.0113	5,770	0.591	<7.54	<7.54	0.591
HA-3 (.5-1)	0.5 - 1'	Grab	02/27/20	Benzene - <0.00811 Toluene - <0.00420 Ethylbenzene - <0.00553 Total Xylenes - <0.00612 Total BTEX - <0.00420	1,090	0.379	<7.42	<7.42	0.379
HA-3 (1.5-2)	1.5 - 2'	Grab	02/27/20	Benzene - <0.00771 Toluene - <0.00399 Ethylbenzene - <0.00526 Total Xylenes - <0.00582 Total BTEX - <0.00399	2,110	0.288	<7.43	<7.43	0.288
HA-3 (2.5-3)	2.5 - 3'	Grab	02/27/20	Benzene - <0.00881 Toluene - <0.00456 Ethylbenzene - <0.00600 Total Xylenes - <0.00665 Total BTEX - <0.00456	3,390	0.351	<7.46	<7.46	0.351
HA-3 (3.5-4)	3.5 - 4'	Grab	02/27/20	Benzene - <0.00846 Toluene - <0.00438 Ethylbenzene - <0.00577 Total Xylenes - <0.00639 Total BTEX - <0.00438	1,630	0.395	<7.50	<7.50	0.395
HA-4 (0-.5)	0 - 0.5'	Grab	02/27/20	Benzene - <0.00848 Toluene - 0.015 Ethylbenzene - <0.00578 Total Xylenes - <0.00640 Total BTEX - 0.015	3,900	0.407	14.0	<7.42	0.407
HA-4 (.5-1)	0.5 - 1'	Grab	02/27/20	Benzene - <0.00904 Toluene - 0.018 Ethylbenzene - <0.00616 Total Xylenes - <0.00682 Total BTEX - 0.018	4,760	0.408	<7.49	<7.49	0.408
HA-4 (1.5-2)	1.5 - 2'	Grab	02/27/20	Benzene - <0.00783 Toluene - <0.00406 Ethylbenzene - <0.00534 Total Xylenes - <0.00591 Total BTEX - <0.00406	1,930	0.319	<7.49	<7.49	0.319
New Mexico Oil Conservation Division (NMOCD) Remediation and Delineation Standards*				**Benzene - 10** **Toluene - N/A** **Ethylbenzene - N/A** **Total Xylenes - N/A** **Total BTEX - 50**	**10,000**	**1,000**		**N/A**	**2,500**

1. BTEX = Benzene, toluene, ethylbenzene, total xylenes analyzed by EPA Method 8021B
2. Chloride = Chloride analyzed by EPA Method 300.
3. TPH = Total petroleum hydrocarbons analyzed by EPA Method 8015M (GRO/DRO/ORO)
* = NMOCD Remediation and Delineation Standards are proposed in 19.15.29.12 NMAC - N, 8/14/2018
< = Constituent not detected above the indicated laboratory SDL
NA = Not Analyzed
N/A= No Applicable reporting standards
Bold denotes concentrations that exceed the New Mexico Oil Conservation Division (NMOCD) Remediation and Delineation Standards.

TABLE 1
SOIL SAMPLE ANALYTICAL RESULTS - BTEX[1], Chloride[2], and TPH[3]
BC Federal #45
Terracon Project No. AR207045

Sample I.D.	Sample Depth (bgs)	Sample Type	Sample Date	BTEX (mg/kg)	Chloride (mg/kg)	TPH (8015M) (mg/kg)			
						GRO	DRO	ORO	TOTAL
Release Margin Samples									
HA-1 (0-.5)	0 - 0.5'	Grab	02/27/20	Benzene - < 0.00885 U Toluene - < 0.00458 U Ethylbenzene - < 0.00603 U Total Xylenes - < 0.00667 U Total BTEX - < 0.00458 U	4,280	0.448	<7.44	<7.44	0.448
HA-1 (.5-1)	0.5 - 1'	Grab	02/27/20	Benzene - <0.00850 Toluene - 0.015 Ethylbenzene - <0.00579 Total Xylenes - <0.00641 Total BTEX - 0.015	8.88	0.466	<7.52	<7.52	0.449
HA-1 (1.5-2)	1.5 - 2'	Grab	02/27/20	Benzene - <0.00866 Toluene - 0.0192 Ethylbenzene - <0.00590 Total Xylenes - <0.00653 Total BTEX - 0.0192	5.28	0.479	<7.54	<7.54	0.450
HA-1 (2.5-3)	2.5 - 3'	Grab	02/27/20	Benzene - <0.00881 Toluene - 0.00975 Ethylbenzene - <0.00600 Total Xylenes - <0.00665 Total BTEX - 0.0975	15.2	0.419	<7.48	<7.48	0.451
HA-1 (3.5-4)	3.5 - 4'	Grab	02/27/20	Benzene - <0.00823 Toluene - 0.0182 Ethylbenzene - <0.00561 Total Xylenes - <0.00621 Total BTEX - 0.0182	12.3	0.505	<7.47	<7.47	0.452
HA-2 (0-.5)	0 - 0.5'	Grab	02/27/20	Benzene - <0.00899 Toluene - 0.0179 Ethylbenzene - <0.00612 Total Xylenes - <0.00678 Total BTEX - 0.0179	4,530	0.487	<7.43	<7.43	0.453
HA-2 (.5-1)	0.5 - 1'	Grab	02/27/20	Benzene - <0.00868 Toluene - 0.0154 Ethylbenzene - <0.00591 Total Xylenes - <0.00655 Total BTEX - 0.0154	1,670	0.386	<7.45	<7.45	0.454
HA-2 (1.5-2)	1.5 - 2'	Grab	02/27/20	Benzene - <0.00825 Toluene - 0.00912 Ethylbenzene - <0.00562 Total Xylenes - <0.00622 Total BTEX - 0.00912	605	0.312	<7.45	<7.45	0.455
HA-2 (2.5-3)	2.5-3'	Grab	02/27/20	Benzene - <0.00900 Toluene - 0.00996 Ethylbenzene - <0.00614 Total Xylenes - <0.00679 Total BTEX - 0.00996	53.6	0.438	<7.55	<7.55	0.456
HA-2 (3.5-4)	3.5 - 4'	Grab	02/27/20	Benzene - <0.00773 Toluene - 0.00855 Ethylbenzene - <0.00526 Total Xylenes - <0.00583 Total BTEX - 0.00855	4.21	0.364	<7.47	<7.47	0.457
New Mexico Oil Conservation Division (NMOCD) Remediation and Delineation Standards*				**Benzene - 10 Toluene - N/A Ethylbenzene - N/A Total Xylenes - N/A Total BTEX - 50**	**10,000**	**1,000**		**N/A**	**2,500**

1. BTEX = Benzene, toluene, ethylbenzene, total xylenes analyzed by EPA Method 8021B
2. Chloride = Chloride analyzed by EPA Method 300.
3. TPH = Total petroleum hydrocarbons analyzed by EPA Method 8015M (GRO/DRO/ORO)
* = NMOCD Remediation and Delineation Standards are proposed in 19.15.29.12 NMAC - N, 8/14/2018
< = Constituent not detected above the indicated laboratory SDL
NA = Not Analyzed
N/A= No Applicable reporting standards
Bold denotes concentrations that exceed the New Mexico Oil Conservation Division (NMOCD) Remediation and Delineation Standards.

TABLE 2
CONFIRMATION SOIL SAMPLE ANALYTICAL RESULTS - BTEX[1], Chloride[2], and TPH[3]
BC Federal #45
Terracon Project No. AR207045

Sample I.D.	Sample Depth (bgs)	Sample Type	Sample Date	BTEX (mg/kg)	Chloride (mg/kg)	TPH (8015M) (mg/kg)			
						GRO	DRO	MRO	TOTAL
Release Margin Samples									
CS-1 (0-1)	0 - 1'	Grab	03/19/20	Benzene - <0.00902 Toluene - 0.012 Ethylbenzene - <0.00615 Total Xylenes - <0.00681 Total BTEX - 0.012	732	<0.270	<7.54	<7.54	N/A
CS-2(0-1)	0 - 1'	Grab	03/19/20	Benzene - <0.00794 Toluene - <0.00411 Ethylbenzene - <0.00541 Total Xylenes - <0.00599 Total BTEX - <0.00411	1,550	0.295	<7.50	<7.50	N/A
CS-3 (0-1)	0 - 1'	Grab	03/19/20	Benzene - <0.0167 Toluene - <0.00863 Ethylbenzene - <0.0114 Total Xylenes - <0.0126 Total BTEX - <0.00863	1,940	<0.500	69.1	<7.53	N/A
New Mexico Oil Conservation Division (NMOCD) Remediation and Delineation Standards*				**Benzene - 10 Toluene - N/A Ethylbenzene - N/A Total Xylenes - N/A Total BTEX - 50**	**10,000**	**1,000**		**N/A**	**2,500**

1. BTEX = Benzene, toluene, ethylbenzene, total xylenes analyzed by EPA Method 8021B
2. Chloride = Chloride analyzed by EPA Method 300.
3. TPH = Total petroleum hydrocarbons analyzed by EPA Method 8015M (GRO/DRO/ORO)
* = NMOCD Remediation and Delineation Standards are proposed in 19.15.29.12 NMAC - N, 8/14/2018
< = Constituent not detected above the indicated laboratory SDL
NA = Not Analyzed
N/A= No Applicable reporting standards
Bold denotes concentrations that exceed the New Mexico Oil Conservation Division (NMOCD) Remediation and Delineation Standards.

APPENDIX C – ANALYTICAL REPORT AND CHAIN OF CUSTODY

Analytical Report 654105

for

Terracon-Lubbock

Project Manager: Bryant McBrayer

BC Federal 45

AR207045

03-MAR-20

Collected By: Client

6701 Aberdeen, Suite 9 Lubbock, TX 79424

Xenco-Houston (EPA Lab Code: TX00122):
Texas (T104704215-19-30), Arizona (AZ0765), Florida (E871002-24), Louisiana (03054)
Oklahoma (2019-058), North Carolina (681), Arkansas (19-037-0)

Xenco-Dallas (EPA Lab Code: TX01468):
Texas (TX104704295-19-22), Arizona (AZ0809), Arkansas (17-063-0)

Xenco-El Paso (EPA Lab Code: TX00127): Texas (T104704221-19-16)
Xenco-Lubbock (EPA Lab Code: TX00139): Texas (T104704219-19-21)
Xenco-Midland (EPA Lab Code: TX00158): Texas (T104704400-19-19)
Xenco-Carlsbad (LELAP): Louisiana (05092)
Xenco-San Antonio (EPA Lab Code: TNI02385): Texas (T104704534-19-5)
Xenco Phoenix (EPA Lab Code: AZ00901): Arizona (AZ0757)
Xenco-Tampa: Florida (E87429), North Carolina (483)

03-MAR-20

Project Manager: **Bryant McBrayer**
Terracon-Lubbock
5827 50th st, Suite 1
Lubbock, TX 79424

Reference: XENCO Report No(s): **654105**
BC Federal 45
Project Address:

Bryant McBrayer:

We are reporting to you the results of the analyses performed on the samples received under the project name referenced above and identified with the XENCO Report Number(s) 654105. All results being reported under this Report Number apply to the samples analyzed and properly identified with a Laboratory ID number. Subcontracted analyses are identified in this report with either the NELAC certification number of the subcontract lab in the analyst ID field, or the complete subcontracted report attached to this report.

Unless otherwise noted in a Case Narrative, all data reported in this Analytical Report are in compliance with NELAC standards. The uncertainty of measurement associated with the results of analysis reported is available upon request. Should insufficient sample be provided to the laboratory to meet the method and NELAC Matrix Duplicate and Matrix Spike requirements, then the data will be analyzed, evaluated and reported using all other available quality control measures.

The validity and integrity of this report will remain intact as long as it is accompanied by this letter and reproduced in full, unless written approval is granted by XENCO Laboratories. This report will be filed for at least 5 years in our archives after which time it will be destroyed without further notice, unless otherwise arranged with you. The samples received, and described as recorded in Report No. 654105 will be filed for 45 days, and after that time they will be properly disposed without further notice, unless otherwise arranged with you. We reserve the right to return to you any unused samples, extracts or solutions related to them if we consider so necessary (e.g., samples identified as hazardous waste, sample sizes exceeding analytical standard practices, controlled substances under regulated protocols, etc).

We thank you for selecting XENCO Laboratories to serve your analytical needs. If you have any questions concerning this report, please feel free to contact us at any time.

Respectfully,

Jessica Kramer

Jessica Kramer
Project Assistant

Sample Cross Reference 654105

Terracon-Lubbock, Lubbock, TX

BC Federal 45

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
HA-1 (0-0.5)	S	02-27-20 12:05	0 - 0.5 ft	654105-001
HA-1 (0.5-1)	S	02-27-20 12:07	0.5 - 1	654105-002
HA-1 (1.5-2)	S	02-27-20 12:09	1.5 - 2 ft	654105-003
HA-1 (2.5-3)	S	02-27-20 12:11	2.5 - 3 ft	654105-004
HA-1 (3.5-4)	S	02-27-20 12:13	3.5 - 4 ft	654105-005
HA-2 (0-0.5)	S	02-27-20 12:20	0 - 0.5 ft	654105-006
HA-2 (0.5-1)	S	02-27-20 12:22	0.5 - 1 ft	654105-007
HA-2 (1.5-2)	S	02-27-20 12:24	1.5 - 2 ft	654105-008
HA-2 (2.5-3)	S	02-27-20 12:26	2.5 - 3 ft	654105-009
HA-2 (3.5-4)	S	02-27-20 12:28	3.5 - 4 ft	654105-010
HA-3 (0-0.5)	S	02-27-20 12:35	0 - 0.5 ft	654105-011
HA-3 (0.5-1)	S	02-27-20 12:37	0.5 - 1	654105-012
HA-3 (1.5-2)	S	02-27-20 12:39	1.5 - 2	654105-013
HA-3 (2.5-3)	S	02-27-20 12:41	2.5 - 3 ft	654105-014
HA-3 (3.5-4)	S	02-27-20 12:43	3.5 - 4 ft	654105-015
HA-4 (0-0.5)	S	02-27-20 12:50	0 - 0.5 ft	654105-016
HA-4 (0.5-1)	S	02-27-20 12:52	0.5 - 1 ft	654105-017
HA-4 (1.5-2)	S	02-27-20 12:54	1.5 - 2 ft	654105-018

CASE NARRATIVE

Client Name: Terracon-Lubbock

Project Name: BC Federal 45

Project ID: *AR207045*
Work Order Number(s): *654105*

Report Date: *03-MAR-20*
Date Received: *02/28/2020*

This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted. The data have been reviewed and are technically compliant with the requirements of the methods used, except where noted by the laboratory.

Sample receipt non conformances and comments:

Lab Sample ID 654105-015 was randomly selected for Matrix Spike/Matrix Spike Duplicate (MS/MSD). Chloride recovered above QC limits in the Matrix Spike and Matrix Spike Duplicate. Outlier/s are due to possible matrix interference. Samples in the analytical batch are: 654105-014, -015, -016, -017, -018. The Laboratory Control Sample for Chloride is within laboratory Control Limits, therefore the data was accepted.

Sample receipt non conformances and comments per sample:

None

Analytical non conformances and comments:

Batch: LBA-3118303 BTEX by EPA 8021B
Soil samples were not received in Terracore kits and therefore were prepared by method 5030.
Surrogate 4-Bromofluorobenzene recovered above QC limits. Matrix interferences is suspected; data confirmed by re-analysis.
Samples affected are: 654105-003,654105-004,654105-005,654105-007,654105-010,654105-011,654105-014,654105-012,654105-013.
Surrogate a,a,a-Trifluorotoluene recovered above QC limits Data confirmed by re-analysis. Samples affected are: 7697930-1-BKS,7697930-1-BLK,654105-001 S,654105-002,654105-003,654105-004,654105-005,654105-007,654105-017,654105-010,654105-011,654105-012,654105-013,654105-014,654105-009.

Batch: LBA-3118307 TPH GRO by EPA 8015 Mod.
Surrogate 4-Bromofluorobenzene recovered above QC limits Data confirmed by re-analysis. Samples affected are: 7697931-1-BKS,7697931-1-BSD,654105-001 S,654105-001 SD.

Batch: LBA-3118319 Chloride by EPA 300
Lab Sample ID 654105-015 was randomly selected for Matrix Spike/Matrix Spike Duplicate (MS/MSD). Chloride recovered above QC limits in the Matrix Spike and Matrix Spike Duplicate. Outlier/s are due to possible matrix interference. Samples in the analytical batch are: 654105-014, -015, -016, -017, -018. The Laboratory Control Sample for Chloride is within laboratory Control Limits, therefore the data was accepted.

CASE NARRATIVE

Client Name: Terracon-Lubbock

Project Name: BC Federal 45

Project ID: *AR207045*
Work Order Number(s): *654105*

Report Date: *03-MAR-20*
Date Received: *02/28/2020*

Batch: LBA-3118328 DRO-ORO By SW8015B
Diesel Range Organics (DRO) Relative Percent Difference (RPD) between matrix spike and duplicate was above quality control limits.
Samples in the analytical batch are: 654105-001, -002, -003, -004, -005, -006, -007, -008, -009, -010, -011, -012, -013, -014, -015, -016, -017, -018

Oil Range Hydrocarbons (ORO) recovered below QC limits in the Blank Spike and Duplicate indicating bias low results. Samples in the analytical batch are: 654105-001, -002, -003, -004, -005, -006, -007, -008, -009, -010, -011, -012, -013, -014, -015, -016, -017, -018.

Lab Sample ID 654105-001 was randomly selected for Matrix Spike/Matrix Spike Duplicate (MS/MSD). Oil Range Hydrocarbons (ORO) recovered below QC limits in the Matrix Spike and Matrix Spike Duplicate. Outlier/s are due to possible matrix interference. Samples in the analytical batch are: 654105-001, -002, -003, -004, -005, -006, -007, -008, -009, -010, -011, -012, -013, -014, -015, -016, -017, -018.

Surrogate Tricosane recovered below QC limits Data confirmed by re-analysis. Samples affected are: 7697921-1-BLK,654105-001 S,654105-001 SD,654105-014.

Certificate of Analytical Results
654105
Terracon-Lubbock, Lubbock, TX
BC Federal 45

Sample Id: **HA-1 (0-0.5)** Matrix: Soil Sample Depth: 0 - 0.5 ft

Lab Sample Id: 654105-001 Date Collected: 02.27.20 12.05 Date Received: 02.28.20 12.25

Analytical Method: Chloride by EPA 300 Prep Method: E300P

Analyst: RNL % Moist: Tech: RNL

Seq Number: 3118316 Date Prep: 02.28.20 13.30

Prep seq: 7697911

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Chloride	16887-00-6	**4280**	250	5.72	mg/kg	02.28.20 16:09	D	10

Analytical Method: DRO-ORO By SW8015B Prep Method: 8015

Analyst: MIT % Moist: Tech: MIT

Seq Number: 3118328 Date Prep: 03.02.20 13.30

Prep seq: 7697921

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Diesel Range Organics (DRO)	C10C28DRO	<7.44	24.9	7.44	mg/kg	03.02.20 20:34	U	1
Oil Range Hydrocarbons (ORO)	PHCG2835	<7.44	24.9	7.44	mg/kg	03.02.20 20:34	U	1

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
Tricosane	65	65 - 144	%		
n-Triacontane	96	46 - 152	%		

Analytical Method: TPH GRO by EPA 8015 Mod. Prep Method: 5030B

Analyst: MIT % Moist: Tech: MIT

Seq Number: 3118307 Date Prep: 03.02.20 12.00

Prep seq: 7697931

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
TPH-GRO	8006-61-9	**0.448**	3.91	0.265	mg/kg	03.02.20 18:37	J	20

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
4-Bromofluorobenzene	86	76 - 123	%		
a,a,a-Trifluorotoluene	82	69 - 120	%		

Certificate of Analytical Results
654105
Terracon-Lubbock, Lubbock, TX
BC Federal 45

Sample Id: **HA-1 (0-0.5)** Matrix: Soil Sample Depth: 0 - 0.5 ft

Lab Sample Id: 654105-001 Date Collected: 02.27.20 12.05 Date Received: 02.28.20 12.25

Analytical Method: BTEX by EPA 8021B Prep Method: 5030B

Analyst: MIT % Moist: Tech: MIT

Seq Number: 3118303 Date Prep: 03.02.20 12.00

Prep seq: 7697930

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Benzene	71-43-2	<0.00885	0.0196	0.00885	mg/kg	03.02.20 18:37	U	20
Toluene	108-88-3	<0.00458	0.0196	0.00458	mg/kg	03.02.20 18:37	U	20
Ethylbenzene	100-41-4	<0.00603	0.0196	0.00603	mg/kg	03.02.20 18:37	U	20
m,p-Xylenes	179601-23-1	<0.00667	0.0391	0.00667	mg/kg	03.02.20 18:37	U	20
o-Xylene	95-47-6	<0.00667	0.0196	0.00667	mg/kg	03.02.20 18:37	U	20
Total Xylenes	1330-20-7	<0.00667		0.00667	mg/kg	03.02.20 18:37	U	
Total BTEX		<0.00458		0.00458	mg/kg	03.02.20 18:37	U	

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
4-Bromofluorobenzene	100	68 - 120	%		
a,a,a-Trifluorotoluene	105	71 - 121	%		

Certificate of Analytical Results
654105
Terracon-Lubbock, Lubbock, TX
BC Federal 45

Sample Id: **HA-1 (0.5-1)** Matrix: Soil Sample Depth: 0.5 - 1

Lab Sample Id: 654105-002 Date Collected: 02.27.20 12.07 Date Received: 02.28.20 12.25

Analytical Method: Chloride by EPA 300 Prep Method: E300P

Analyst: RNL % Moist: Tech: RNL

Seq Number: 3118316 Date Prep: 02.28.20 13.30

Prep seq: 7697911

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Chloride	16887-00-6	**8.88**	25.0	0.572	mg/kg	02.28.20 16:21	J	1

Analytical Method: DRO-ORO By SW8015B Prep Method: 8015

Analyst: MIT % Moist: Tech: MIT

Seq Number: 3118328 Date Prep: 03.02.20 13.30

Prep seq: 7697921

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Diesel Range Organics (DRO)	C10C28DRO	<7.52	25.1	7.52	mg/kg	03.02.20 23:11	U	1
Oil Range Hydrocarbons (ORO)	PHCG2835	<7.52	25.1	7.52	mg/kg	03.02.20 23:11	U	1

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
Tricosane	70	65 - 144	%		
n-Triacontane	101	46 - 152	%		

Analytical Method: TPH GRO by EPA 8015 Mod. Prep Method: 5030B

Analyst: MIT % Moist: Tech: MIT

Seq Number: 3118307 Date Prep: 03.02.20 12.00

Prep seq: 7697931

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
TPH-GRO	8006-61-9	**0.466**	3.76	0.255	mg/kg	03.02.20 21:03	J	19

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
4-Bromofluorobenzene	103	76 - 123	%		
a,a,a-Trifluorotoluene	102	69 - 120	%		

Certificate of Analytical Results
654105
Terracon-Lubbock, Lubbock, TX
BC Federal 45

Sample Id: **HA-1 (0.5-1)** Matrix: Soil Sample Depth: 0.5 - 1

Lab Sample Id: 654105-002 Date Collected: 02.27.20 12.07 Date Received: 02.28.20 12.25

Analytical Method: BTEX by EPA 8021B Prep Method: 5030B

Analyst: MIT % Moist: Tech: MIT

Seq Number: 3118303 Date Prep: 03.02.20 12.00

Prep seq: 7697930

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Benzene	71-43-2	<0.00850	0.0188	0.00850	mg/kg	03.02.20 21:03	U	19
Toluene	108-88-3	**0.0150**	0.0188	0.00440	mg/kg	03.02.20 21:03	J	19
Ethylbenzene	100-41-4	<0.00579	0.0188	0.00579	mg/kg	03.02.20 21:03	U	19
m,p-Xylenes	179601-23-1	<0.00641	0.0376	0.00641	mg/kg	03.02.20 21:03	U	19
o-Xylene	95-47-6	<0.00641	0.0188	0.00641	mg/kg	03.02.20 21:03	U	19
Total Xylenes	1330-20-7	<0.00641		0.00641	mg/kg	03.02.20 21:03	U	
Total BTEX		**0.0150**		0.00440	mg/kg	03.02.20 21:03	J	

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
4-Bromofluorobenzene	120	68 - 120	%		
a,a,a-Trifluorotoluene	130	71 - 121	%		**

Certificate of Analytical Results
654105
Terracon-Lubbock, Lubbock, TX
BC Federal 45

Sample Id: **HA-1 (1.5-2)** Matrix: Soil Sample Depth: 1.5 - 2 ft

Lab Sample Id: 654105-003 Date Collected: 02.27.20 12.09 Date Received: 02.28.20 12.25

Analytical Method: Chloride by EPA 300 Prep Method: E300P

Analyst: RNL % Moist: Tech: RNL

Seq Number: 3118316 Date Prep: 02.28.20 13.30

Prep seq: 7697911

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Chloride	16887-00-6	**5.28**	25.0	0.572	mg/kg	02.28.20 16:58	J	1

Analytical Method: DRO-ORO By SW8015B Prep Method: 8015

Analyst: MIT % Moist: Tech: MIT

Seq Number: 3118328 Date Prep: 03.02.20 13.30

Prep seq: 7697921

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Diesel Range Organics (DRO)	C10C28DRO	<7.54	25.2	7.54	mg/kg	03.02.20 23:49	U	1
Oil Range Hydrocarbons (ORO)	PHCG2835	<7.54	25.2	7.54	mg/kg	03.02.20 23:49	U	1

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
Tricosane	70	65 - 144	%		
n-Triacontane	107	46 - 152	%		

Analytical Method: TPH GRO by EPA 8015 Mod. Prep Method: 5030B

Analyst: MIT % Moist: Tech: MIT

Seq Number: 3118307 Date Prep: 03.02.20 12.00

Prep seq: 7697931

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
TPH-GRO	8006-61-9	**0.479**	3.83	0.260	mg/kg	03.02.20 21:27	J	19

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
4-Bromofluorobenzene	106	76 - 123	%		
a,a,a-Trifluorotoluene	105	69 - 120	%		

Certificate of Analytical Results
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Sample Id: **HA-1 (1.5-2)** Matrix: Soil Sample Depth: 1.5 - 2 ft

Lab Sample Id: 654105-003 Date Collected: 02.27.20 12.09 Date Received: 02.28.20 12.25

Analytical Method: BTEX by EPA 8021B Prep Method: 5030B

Analyst: MIT % Moist: Tech: MIT

Seq Number: 3118303 Date Prep: 03.02.20 12.00

Prep seq: 7697930

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Benzene	71-43-2	<0.00866	0.0192	0.00866	mg/kg	03.02.20 21:27	U	19
Toluene	108-88-3	**0.0192**	0.0192	0.00448	mg/kg	03.02.20 21:27	J	19
Ethylbenzene	100-41-4	<0.00590	0.0192	0.00590	mg/kg	03.02.20 21:27	U	19
m,p-Xylenes	179601-23-1	<0.00653	0.0383	0.00653	mg/kg	03.02.20 21:27	U	19
o-Xylene	95-47-6	<0.00653	0.0192	0.00653	mg/kg	03.02.20 21:27	U	19
Total Xylenes	1330-20-7	<0.00653		0.00653	mg/kg	03.02.20 21:27	U	
Total BTEX		**0.0192**		0.00448	mg/kg	03.02.20 21:27	J	

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
4-Bromofluorobenzene	124	68 - 120	%		**
a,a,a-Trifluorotoluene	131	71 - 121	%		**

Certificate of Analytical Results
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Terracon-Lubbock, Lubbock, TX
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Sample Id: **HA-1 (2.5-3)** Matrix: Soil Sample Depth: 2.5 - 3 ft

Lab Sample Id: 654105-004 Date Collected: 02.27.20 12.11 Date Received: 02.28.20 12.25

Analytical Method: Chloride by EPA 300 Prep Method: E300P

Analyst: RNL % Moist: Tech: RNL

Seq Number: 3118316 Date Prep: 02.28.20 13.30

Prep seq: 7697911

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Chloride	16887-00-6	**15.2**	25.0	0.572	mg/kg	02.28.20 17:11	J	1

Analytical Method: DRO-ORO By SW8015B Prep Method: 8015

Analyst: MIT % Moist: Tech: MIT

Seq Number: 3118328 Date Prep: 03.02.20 13.30

Prep seq: 7697921

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Diesel Range Organics (DRO)	C10C28DRO	<7.48	25.0	7.48	mg/kg	03.03.20 00:27	U	1
Oil Range Hydrocarbons (ORO)	PHCG2835	<7.48	25.0	7.48	mg/kg	03.03.20 00:27	U	1

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
Tricosane	70	65 - 144	%		
n-Triacontane	103	46 - 152	%		

Analytical Method: TPH GRO by EPA 8015 Mod. Prep Method: 5030B

Analyst: MIT % Moist: Tech: MIT

Seq Number: 3118307 Date Prep: 03.02.20 12.00

Prep seq: 7697931

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
TPH-GRO	8006-61-9	**0.419**	3.90	0.264	mg/kg	03.02.20 21:51	J	19

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
4-Bromofluorobenzene	107	76 - 123	%		
a,a,a-Trifluorotoluene	106	69 - 120	%		

Certificate of Analytical Results
654105
Terracon-Lubbock, Lubbock, TX
BC Federal 45

Sample Id: **HA-1 (2.5-3)** Matrix: Soil Sample Depth: 2.5 - 3 ft

Lab Sample Id: 654105-004 Date Collected: 02.27.20 12.11 Date Received: 02.28.20 12.25

Analytical Method: BTEX by EPA 8021B Prep Method: 5030B

Analyst: MIT % Moist: Tech: MIT

Seq Number: 3118303 Date Prep: 03.02.20 12.00

Prep seq: 7697930

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Benzene	71-43-2	<0.00881	0.0195	0.00881	mg/kg	03.02.20 21:51	U	19
Toluene	108-88-3	**0.00975**	0.0195	0.00456	mg/kg	03.02.20 21:51	J	19
Ethylbenzene	100-41-4	<0.00600	0.0195	0.00600	mg/kg	03.02.20 21:51	U	19
m,p-Xylenes	179601-23-1	<0.00665	0.0390	0.00665	mg/kg	03.02.20 21:51	U	19
o-Xylene	95-47-6	<0.00665	0.0195	0.00665	mg/kg	03.02.20 21:51	U	19
Total Xylenes	1330-20-7	<0.00665		0.00665	mg/kg	03.02.20 21:51	U	
Total BTEX		**0.00975**		0.00456	mg/kg	03.02.20 21:51	J	

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
4-Bromofluorobenzene	125	68 - 120	%		**
a,a,a-Trifluorotoluene	133	71 - 121	%		**

Certificate of Analytical Results
654105
Terracon-Lubbock, Lubbock, TX
BC Federal 45

Sample Id: **HA-1 (3.5-4)** Matrix: Soil Sample Depth: 3.5 - 4 ft

Lab Sample Id: 654105-005 Date Collected: 02.27.20 12.13 Date Received: 02.28.20 12.25

Analytical Method: Chloride by EPA 300 Prep Method: E300P

Analyst: RNL % Moist: Tech: RNL

Seq Number: 3118316 Date Prep: 02.28.20 13.30

Prep seq: 7697911

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Chloride	16887-00-6	**12.3**	25.0	0.572	mg/kg	02.28.20 17:23	J	1

Analytical Method: DRO-ORO By SW8015B Prep Method: 8015

Analyst: MIT % Moist: Tech: MIT

Seq Number: 3118328 Date Prep: 03.02.20 13.30

Prep seq: 7697921

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Diesel Range Organics (DRO)	C10C28DRO	<7.47	25.0	7.47	mg/kg	03.03.20 01:04	U	1
Oil Range Hydrocarbons (ORO)	PHCG2835	<7.47	25.0	7.47	mg/kg	03.03.20 01:04	U	1

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
Tricosane	78	65 - 144	%		
n-Triacontane	108	46 - 152	%		

Analytical Method: TPH GRO by EPA 8015 Mod. Prep Method: 5030B

Analyst: MIT % Moist: Tech: MIT

Seq Number: 3118307 Date Prep: 03.02.20 12.00

Prep seq: 7697931

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
TPH-GRO	8006-61-9	**0.505**	3.64	0.247	mg/kg	03.02.20 22:16	J	18

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
4-Bromofluorobenzene	108	76 - 123	%		
a,a,a-Trifluorotoluene	107	69 - 120	%		

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Sample Id: **HA-1 (3.5-4)** Matrix: Soil Sample Depth: 3.5 - 4 ft

Lab Sample Id: 654105-005 Date Collected: 02.27.20 12.13 Date Received: 02.28.20 12.25

Analytical Method: BTEX by EPA 8021B Prep Method: 5030B

Analyst: MIT % Moist: Tech: MIT

Seq Number: 3118303 Date Prep: 03.02.20 12.00

Prep seq: 7697930

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Benzene	71-43-2	<0.00823	0.0182	0.00823	mg/kg	03.02.20 22:16	U	18
Toluene	108-88-3	**0.0182**	0.0182	0.00426	mg/kg	03.02.20 22:16	J	18
Ethylbenzene	100-41-4	<0.00561	0.0182	0.00561	mg/kg	03.02.20 22:16	U	18
m,p-Xylenes	179601-23-1	<0.00621	0.0364	0.00621	mg/kg	03.02.20 22:16	U	18
o-Xylene	95-47-6	<0.00621	0.0182	0.00621	mg/kg	03.02.20 22:16	U	18
Total Xylenes	1330-20-7	<0.00621		0.00621	mg/kg	03.02.20 22:16	U	
Total BTEX		**0.0182**		0.00426	mg/kg	03.02.20 22:16	J	

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
4-Bromofluorobenzene	126	68 - 120	%		**
a,a,a-Trifluorotoluene	135	71 - 121	%		**

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Sample Id: **HA-2 (0-0.5)** Matrix: Soil Sample Depth: 0 - 0.5 ft

Lab Sample Id: 654105-006 Date Collected: 02.27.20 12.20 Date Received: 02.28.20 12.25

Analytical Method: Chloride by EPA 300 Prep Method: E300P

Analyst: RNL % Moist: Tech: RNL

Seq Number: 3118316 Date Prep: 02.28.20 13.30

Prep seq: 7697911

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Chloride	16887-00-6	**4530**	1250	28.6	mg/kg	02.28.20 17:48	D	50

Analytical Method: DRO-ORO By SW8015B Prep Method: 8015

Analyst: MIT % Moist: Tech: MIT

Seq Number: 3118328 Date Prep: 03.02.20 13.30

Prep seq: 7697921

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Diesel Range Organics (DRO)	C10C28DRO	<7.43	24.8	7.43	mg/kg	03.03.20 01:42	U	1
Oil Range Hydrocarbons (ORO)	PHCG2835	<7.43	24.8	7.43	mg/kg	03.03.20 01:42	U	1

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
Tricosane	66	65 - 144	%		
n-Triacontane	101	46 - 152	%		

Analytical Method: TPH GRO by EPA 8015 Mod. Prep Method: 5030B

Analyst: MIT % Moist: Tech: MIT

Seq Number: 3118307 Date Prep: 03.02.20 12.00

Prep seq: 7697931

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
TPH-GRO	8006-61-9	**0.487**	3.98	0.269	mg/kg	03.02.20 22:40	J	20

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
4-Bromofluorobenzene	83	76 - 123	%		
a,a,a-Trifluorotoluene	78	69 - 120	%		

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Sample Id: **HA-2 (0-0.5)** Matrix: Soil Sample Depth: 0 - 0.5 ft

Lab Sample Id: 654105-006 Date Collected: 02.27.20 12.20 Date Received: 02.28.20 12.25

Analytical Method: BTEX by EPA 8021B Prep Method: 5030B

Analyst: MIT % Moist: Tech: MIT

Seq Number: 3118303 Date Prep: 03.02.20 12.00

Prep seq: 7697930

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Benzene	71-43-2	<0.00899	0.0199	0.00899	mg/kg	03.02.20 22:40	U	20
Toluene	108-88-3	**0.0179**	0.0199	0.00465	mg/kg	03.02.20 22:40	J	20
Ethylbenzene	100-41-4	<0.00612	0.0199	0.00612	mg/kg	03.02.20 22:40	U	20
m,p-Xylenes	179601-23-1	<0.00678	0.0398	0.00678	mg/kg	03.02.20 22:40	U	20
o-Xylene	95-47-6	<0.00678	0.0199	0.00678	mg/kg	03.02.20 22:40	U	20
Total Xylenes	1330-20-7	<0.00678		0.00678	mg/kg	03.02.20 22:40	U	
Total BTEX		**0.0179**		0.00465	mg/kg	03.02.20 22:40	J	

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
4-Bromofluorobenzene	97	68 - 120	%		
a,a,a-Trifluorotoluene	98	71 - 121	%		

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Sample Id: **HA-2 (0.5-1)** Matrix: Soil Sample Depth: 0.5 - 1 ft

Lab Sample Id: 654105-007 Date Collected: 02.27.20 12.22 Date Received: 02.28.20 12.25

Analytical Method: Chloride by EPA 300 Prep Method: E300P

Analyst: RNL % Moist: Tech: RNL

Seq Number: 3118316 Date Prep: 02.28.20 13.30

Prep seq: 7697911

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Chloride	16887-00-6	**1670**	125	2.86	mg/kg	02.28.20 18:13	D	5

Analytical Method: DRO-ORO By SW8015B Prep Method: 8015

Analyst: MIT % Moist: Tech: MIT

Seq Number: 3118328 Date Prep: 03.02.20 13.30

Prep seq: 7697921

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Diesel Range Organics (DRO)	C10C28DRO	<7.45	24.9	7.45	mg/kg	03.03.20 02:23	U	1
Oil Range Hydrocarbons (ORO)	PHCG2835	<7.45	24.9	7.45	mg/kg	03.03.20 02:23	U	1

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
Tricosane	75	65 - 144	%		
n-Triacontane	109	46 - 152	%		

Analytical Method: TPH GRO by EPA 8015 Mod. Prep Method: 5030B

Analyst: MIT % Moist: Tech: MIT

Seq Number: 3118307 Date Prep: 03.02.20 12.00

Prep seq: 7697931

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
TPH-GRO	8006-61-9	**0.386**	3.84	0.260	mg/kg	03.02.20 23:04	J	19

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
4-Bromofluorobenzene	105	76 - 123	%		
a,a,a-Trifluorotoluene	105	69 - 120	%		

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Sample Id: **HA-2 (0.5-1)** Matrix: Soil Sample Depth: 0.5 - 1 ft

Lab Sample Id: 654105-007 Date Collected: 02.27.20 12.22 Date Received: 02.28.20 12.25

Analytical Method: BTEX by EPA 8021B Prep Method: 5030B

Analyst: MIT % Moist: Tech: MIT

Seq Number: 3118303 Date Prep: 03.02.20 12.00

Prep seq: 7697930

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Benzene	71-43-2	<0.00868	0.0192	0.00868	mg/kg	03.02.20 23:04	U	19
Toluene	108-88-3	**0.0154**	0.0192	0.00449	mg/kg	03.02.20 23:04	J	19
Ethylbenzene	100-41-4	<0.00591	0.0192	0.00591	mg/kg	03.02.20 23:04	U	19
m,p-Xylenes	179601-23-1	<0.00655	0.0384	0.00655	mg/kg	03.02.20 23:04	U	19
o-Xylene	95-47-6	<0.00655	0.0192	0.00655	mg/kg	03.02.20 23:04	U	19
Total Xylenes	1330-20-7	<0.00655		0.00655	mg/kg	03.02.20 23:04	U	
Total BTEX		**0.0154**		0.00449	mg/kg	03.02.20 23:04	J	

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
4-Bromofluorobenzene	122	68 - 120	%		**
a,a,a-Trifluorotoluene	133	71 - 121	%		**

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Sample Id: **HA-2 (1.5-2)** Matrix: Soil Sample Depth: 1.5 - 2 ft

Lab Sample Id: 654105-008 Date Collected: 02.27.20 12.24 Date Received: 02.28.20 12.25

Analytical Method: Chloride by EPA 300 Prep Method: E300P

Analyst: RNL % Moist: Tech: RNL

Seq Number: 3118316 Date Prep: 02.28.20 13.30

Prep seq: 7697911

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Chloride	16887-00-6	**605**	125	2.86	mg/kg	02.28.20 18:50	D	5

Analytical Method: DRO-ORO By SW8015B Prep Method: 8015

Analyst: MIT % Moist: Tech: MIT

Seq Number: 3118328 Date Prep: 03.02.20 13.30

Prep seq: 7697921

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Diesel Range Organics (DRO)	C10C28DRO	<7.45	24.9	7.45	mg/kg	03.03.20 03:00	U	1
Oil Range Hydrocarbons (ORO)	PHCG2835	<7.45	24.9	7.45	mg/kg	03.03.20 03:00	U	1

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
Tricosane	78	65 - 144	%		
n-Triacontane	110	46 - 152	%		

Analytical Method: TPH GRO by EPA 8015 Mod. Prep Method: 5030B

Analyst: MIT % Moist: Tech: MIT

Seq Number: 3118307 Date Prep: 03.02.20 12.00

Prep seq: 7697931

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
TPH-GRO	8006-61-9	**0.312**	3.65	0.247	mg/kg	03.02.20 23:27	J	18

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
4-Bromofluorobenzene	80	76 - 123	%		
a,a,a-Trifluorotoluene	74	69 - 120	%		

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Sample Id: **HA-2 (1.5-2)** Matrix: Soil Sample Depth: 1.5 - 2 ft

Lab Sample Id: 654105-008 Date Collected: 02.27.20 12.24 Date Received: 02.28.20 12.25

Analytical Method: BTEX by EPA 8021B Prep Method: 5030B

Analyst: MIT % Moist: Tech: MIT

Seq Number: 3118303 Date Prep: 03.02.20 12.00

Prep seq: 7697930

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Benzene	71-43-2	<0.00825	0.0182	0.00825	mg/kg	03.02.20 23:27	U	18
Toluene	108-88-3	**0.00912**	0.0182	0.00427	mg/kg	03.02.20 23:27	J	18
Ethylbenzene	100-41-4	<0.00562	0.0182	0.00562	mg/kg	03.02.20 23:27	U	18
m,p-Xylenes	179601-23-1	<0.00622	0.0365	0.00622	mg/kg	03.02.20 23:27	U	18
o-Xylene	95-47-6	<0.00622	0.0182	0.00622	mg/kg	03.02.20 23:27	U	18
Total Xylenes	1330-20-7	<0.00622		0.00622	mg/kg	03.02.20 23:27	U	
Total BTEX		**0.00912**		0.00427	mg/kg	03.02.20 23:27	J	

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
4-Bromofluorobenzene	93	68 - 120	%		
a,a,a-Trifluorotoluene	94	71 - 121	%		

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Sample Id: **HA-2 (2.5-3)** Matrix: Soil Sample Depth: 2.5 - 3 ft

Lab Sample Id: 654105-009 Date Collected: 02.27.20 12.26 Date Received: 02.28.20 12.25

Analytical Method: Chloride by EPA 300 Prep Method: E300P

Analyst: RNL % Moist: Tech: RNL

Seq Number: 3118316 Date Prep: 02.28.20 13.30

Prep seq: 7697911

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Chloride	16887-00-6	**53.6**	25.0	0.572	mg/kg	02.28.20 19:02		1

Analytical Method: DRO-ORO By SW8015B Prep Method: 8015

Analyst: MIT % Moist: Tech: MIT

Seq Number: 3118328 Date Prep: 03.02.20 13.30

Prep seq: 7697921

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Diesel Range Organics (DRO)	C10C28DRO	<7.55	25.2	7.55	mg/kg	03.03.20 03:40	U	1
Oil Range Hydrocarbons (ORO)	PHCG2835	<7.55	25.2	7.55	mg/kg	03.03.20 03:40	U	1

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
Tricosane	72	65 - 144	%		
n-Triacontane	107	46 - 152	%		

Analytical Method: TPH GRO by EPA 8015 Mod. Prep Method: 5030B

Analyst: MIT % Moist: Tech: MIT

Seq Number: 3118307 Date Prep: 03.02.20 12.00

Prep seq: 7697931

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
TPH-GRO	8006-61-9	**0.438**	3.98	0.270	mg/kg	03.02.20 23:51	J	20

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
4-Bromofluorobenzene	103	76 - 123	%		
a,a,a-Trifluorotoluene	106	69 - 120	%		

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Sample Id: **HA-2 (2.5-3)** Matrix: Soil Sample Depth: 2.5 - 3 ft

Lab Sample Id: 654105-009 Date Collected: 02.27.20 12.26 Date Received: 02.28.20 12.25

Analytical Method: BTEX by EPA 8021B Prep Method: 5030B

Analyst: MIT % Moist: Tech: MIT

Seq Number: 3118303 Date Prep: 03.02.20 12.00

Prep seq: 7697930

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Benzene	71-43-2	<0.00900	0.0199	0.00900	mg/kg	03.02.20 23:51	U	20
Toluene	108-88-3	**0.00996**	0.0199	0.00466	mg/kg	03.02.20 23:51	J	20
Ethylbenzene	100-41-4	<0.00614	0.0199	0.00614	mg/kg	03.02.20 23:51	U	20
m,p-Xylenes	179601-23-1	<0.00679	0.0398	0.00679	mg/kg	03.02.20 23:51	U	20
o-Xylene	95-47-6	<0.00679	0.0199	0.00679	mg/kg	03.02.20 23:51	U	20
Total Xylenes	1330-20-7	<0.00679		0.00679	mg/kg	03.02.20 23:51	U	
Total BTEX		**0.00996**		0.00466	mg/kg	03.02.20 23:51	J	

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
4-Bromofluorobenzene	120	68 - 120	%		
a,a,a-Trifluorotoluene	132	71 - 121	%		**

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Sample Id: **HA-2 (3.5-4)** Matrix: Soil Sample Depth: 3.5 - 4 ft

Lab Sample Id: 654105-010 Date Collected: 02.27.20 12.28 Date Received: 02.28.20 12.25

Analytical Method: Chloride by EPA 300 Prep Method: E300P

Analyst: RNL % Moist: Tech: RNL

Seq Number: 3118316 Date Prep: 02.28.20 13.30

Prep seq: 7697911

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Chloride	16887-00-6	**4.21**	25.0	0.572	mg/kg	02.28.20 19:15	J	1

Analytical Method: DRO-ORO By SW8015B Prep Method: 8015

Analyst: MIT % Moist: Tech: MIT

Seq Number: 3118328 Date Prep: 03.02.20 13.30

Prep seq: 7697921

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Diesel Range Organics (DRO)	C10C28DRO	<7.47	25.0	7.47	mg/kg	03.03.20 04:21	U	1
Oil Range Hydrocarbons (ORO)	PHCG2835	<7.47	25.0	7.47	mg/kg	03.03.20 04:21	U	1

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
Tricosane	71	65 - 144	%		
n-Triacontane	104	46 - 152	%		

Analytical Method: TPH GRO by EPA 8015 Mod. Prep Method: 5030B

Analyst: MIT % Moist: Tech: MIT

Seq Number: 3118307 Date Prep: 03.02.20 12.00

Prep seq: 7697931

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
TPH-GRO	8006-61-9	**0.364**	3.42	0.232	mg/kg	03.03.20 00:15	J	17

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
4-Bromofluorobenzene	109	76 - 123	%		
a,a,a-Trifluorotoluene	105	69 - 120	%		

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Sample Id: **HA-2 (3.5-4)** Matrix: Soil Sample Depth: 3.5 - 4 ft

Lab Sample Id: 654105-010 Date Collected: 02.27.20 12.28 Date Received: 02.28.20 12.25

Analytical Method: BTEX by EPA 8021B Prep Method: 5030B

Analyst: MIT % Moist: Tech: MIT

Seq Number: 3118303 Date Prep: 03.02.20 12.00

Prep seq: 7697930

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Benzene	71-43-2	<0.00773	0.0171	0.00773	mg/kg	03.03.20 00:15	U	17
Toluene	108-88-3	**0.00855**	0.0171	0.00400	mg/kg	03.03.20 00:15	J	17
Ethylbenzene	100-41-4	<0.00526	0.0171	0.00526	mg/kg	03.03.20 00:15	U	17
m,p-Xylenes	179601-23-1	<0.00583	0.0342	0.00583	mg/kg	03.03.20 00:15	U	17
o-Xylene	95-47-6	<0.00583	0.0171	0.00583	mg/kg	03.03.20 00:15	U	17
Total Xylenes	1330-20-7	<0.00583		0.00583	mg/kg	03.03.20 00:15	U	
Total BTEX		**0.00855**		0.00400	mg/kg	03.03.20 00:15	J	

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
4-Bromofluorobenzene	127	68 - 120	%		**
a,a,a-Trifluorotoluene	133	71 - 121	%		**

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Sample Id: **HA-3 (0-0.5)** Matrix: Soil Sample Depth: 0 - 0.5 ft

Lab Sample Id: 654105-011 Date Collected: 02.27.20 12.35 Date Received: 02.28.20 12.25

Analytical Method: Chloride by EPA 300 Prep Method: E300P

Analyst: RNL % Moist: Tech: RNL

Seq Number: 3118316 Date Prep: 02.28.20 13.30

Prep seq: 7697911

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Chloride	16887-00-6	**5770**	1250	28.6	mg/kg	02.28.20 20:05	D	50

Analytical Method: DRO-ORO By SW8015B Prep Method: 8015

Analyst: MIT % Moist: Tech: MIT

Seq Number: 3118328 Date Prep: 03.02.20 13.30

Prep seq: 7697921

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Diesel Range Organics (DRO)	C10C28DRO	<7.54	25.2	7.54	mg/kg	03.03.20 04:58	U	1
Oil Range Hydrocarbons (ORO)	PHCG2835	<7.54	25.2	7.54	mg/kg	03.03.20 04:58	U	1

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
Tricosane	71	65 - 144	%		
n-Triacontane	104	46 - 152	%		

Analytical Method: TPH GRO by EPA 8015 Mod. Prep Method: 5030B

Analyst: MIT % Moist: Tech: MIT

Seq Number: 3118307 Date Prep: 03.02.20 12.00

Prep seq: 7697931

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
TPH-GRO	8006-61-9	**0.591**	3.77	0.255	mg/kg	03.03.20 02:17	J	19

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
4-Bromofluorobenzene	111	76 - 123	%		
a,a,a-Trifluorotoluene	105	69 - 120	%		

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Sample Id: **HA-3 (0-0.5)** Matrix: Soil Sample Depth: 0 - 0.5 ft

Lab Sample Id: 654105-011 Date Collected: 02.27.20 12.35 Date Received: 02.28.20 12.25

Analytical Method: BTEX by EPA 8021B Prep Method: 5030B

Analyst: MIT % Moist: Tech: MIT

Seq Number: 3118303 Date Prep: 03.02.20 12.00

Prep seq: 7697930

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Benzene	71-43-2	<0.00851	0.0188	0.00851	mg/kg	03.03.20 02:17	U	19
Toluene	108-88-3	**0.0113**	0.0188	0.00441	mg/kg	03.03.20 02:17	J	19
Ethylbenzene	100-41-4	<0.00580	0.0188	0.00580	mg/kg	03.03.20 02:17	U	19
m,p-Xylenes	179601-23-1	<0.00642	0.0377	0.00642	mg/kg	03.03.20 02:17	U	19
o-Xylene	95-47-6	<0.00642	0.0188	0.00642	mg/kg	03.03.20 02:17	U	19
Total Xylenes	1330-20-7	<0.00642		0.00642	mg/kg	03.03.20 02:17	U	
Total BTEX		**0.0113**		0.00441	mg/kg	03.03.20 02:17	J	

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
4-Bromofluorobenzene	128	68 - 120	%		**
a,a,a-Trifluorotoluene	131	71 - 121	%		**

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BC Federal 45

Sample Id: **HA-3 (0.5-1)** Matrix: Soil Sample Depth: 0.5 - 1

Lab Sample Id: 654105-012 Date Collected: 02.27.20 12.37 Date Received: 02.28.20 12.25

Analytical Method: Chloride by EPA 300 Prep Method: E300P

Analyst: RNL % Moist: Tech: RNL

Seq Number: 3118316 Date Prep: 02.28.20 13.30

Prep seq: 7697911

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Chloride	16887-00-6	**1090**	125	2.86	mg/kg	02.28.20 20:29	D	5

Analytical Method: DRO-ORO By SW8015B Prep Method: 8015

Analyst: MIT % Moist: Tech: MIT

Seq Number: 3118328 Date Prep: 03.02.20 13.30

Prep seq: 7697921

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Diesel Range Organics (DRO)	C10C28DRO	<7.42	24.8	7.42	mg/kg	03.03.20 05:36	U	1
Oil Range Hydrocarbons (ORO)	PHCG2835	<7.42	24.8	7.42	mg/kg	03.03.20 05:36	U	1

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
Tricosane	75	65 - 144	%		
n-Triacontane	110	46 - 152	%		

Analytical Method: TPH GRO by EPA 8015 Mod. Prep Method: 5030B

Analyst: MIT % Moist: Tech: MIT

Seq Number: 3118307 Date Prep: 03.02.20 12.00

Prep seq: 7697931

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
TPH-GRO	8006-61-9	**0.379**	3.59	0.243	mg/kg	03.03.20 02:42	J	18

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
4-Bromofluorobenzene	107	76 - 123	%		
a,a,a-Trifluorotoluene	103	69 - 120	%		

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Sample Id: **HA-3 (0.5-1)** Matrix: Soil Sample Depth: 0.5 - 1

Lab Sample Id: 654105-012 Date Collected: 02.27.20 12.37 Date Received: 02.28.20 12.25

Analytical Method: BTEX by EPA 8021B Prep Method: 5030B

Analyst: MIT % Moist: Tech: MIT

Seq Number: 3118303 Date Prep: 03.02.20 12.00

Prep seq: 7697930

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Benzene	71-43-2	<0.00811	0.0180	0.00811	mg/kg	03.03.20 02:42	U	18
Toluene	108-88-3	<0.00420	0.0180	0.00420	mg/kg	03.03.20 02:42	U	18
Ethylbenzene	100-41-4	<0.00553	0.0180	0.00553	mg/kg	03.03.20 02:42	U	18
m,p-Xylenes	179601-23-1	<0.00612	0.0359	0.00612	mg/kg	03.03.20 02:42	U	18
o-Xylene	95-47-6	<0.00612	0.0180	0.00612	mg/kg	03.03.20 02:42	U	18
Total Xylenes	1330-20-7	<0.00612		0.00612	mg/kg	03.03.20 02:42	U	
Total BTEX		<0.00420		0.00420	mg/kg	03.03.20 02:42	U	

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
4-Bromofluorobenzene	125	68 - 120	%		**
a,a,a-Trifluorotoluene	129	71 - 121	%		**

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Sample Id: **HA-3 (1.5-2)** Matrix: Soil Sample Depth: 1.5 - 2

Lab Sample Id: 654105-013 Date Collected: 02.27.20 12.39 Date Received: 02.28.20 12.25

Analytical Method: Chloride by EPA 300 Prep Method: E300P

Analyst: RNL % Moist: Tech: RNL

Seq Number: 3118316 Date Prep: 02.28.20 13.30

Prep seq: 7697911

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Chloride	16887-00-6	**2110**	125	2.86	mg/kg	02.28.20 20:54	D	5

Analytical Method: DRO-ORO By SW8015B Prep Method: 8015

Analyst: MIT % Moist: Tech: MIT

Seq Number: 3118328 Date Prep: 03.02.20 13.30

Prep seq: 7697921

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Diesel Range Organics (DRO)	C10C28DRO	<7.43	24.8	7.43	mg/kg	03.03.20 06:16	U	1
Oil Range Hydrocarbons (ORO)	PHCG2835	<7.43	24.8	7.43	mg/kg	03.03.20 06:16	U	1

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
Tricosane	74	65 - 144	%		
n-Triacontane	108	46 - 152	%		

Analytical Method: TPH GRO by EPA 8015 Mod. Prep Method: 5030B

Analyst: MIT % Moist: Tech: MIT

Seq Number: 3118307 Date Prep: 03.02.20 12.00

Prep seq: 7697931

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
TPH-GRO	8006-61-9	**0.288**	3.41	0.231	mg/kg	03.03.20 03:06	J	17

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
4-Bromofluorobenzene	104	76 - 123	%		
a,a,a-Trifluorotoluene	101	69 - 120	%		

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Sample Id: **HA-3 (1.5-2)** Matrix: Soil Sample Depth: 1.5 - 2

Lab Sample Id: 654105-013 Date Collected: 02.27.20 12.39 Date Received: 02.28.20 12.25

Analytical Method: BTEX by EPA 8021B Prep Method: 5030B

Analyst: MIT % Moist: Tech: MIT

Seq Number: 3118303 Date Prep: 03.02.20 12.00

Prep seq: 7697930

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Benzene	71-43-2	<0.00771	0.0171	0.00771	mg/kg	03.03.20 03:06	U	17
Toluene	108-88-3	<0.00399	0.0171	0.00399	mg/kg	03.03.20 03:06	U	17
Ethylbenzene	100-41-4	<0.00526	0.0171	0.00526	mg/kg	03.03.20 03:06	U	17
m,p-Xylenes	179601-23-1	<0.00582	0.0341	0.00582	mg/kg	03.03.20 03:06	U	17
o-Xylene	95-47-6	<0.00582	0.0171	0.00582	mg/kg	03.03.20 03:06	U	17
Total Xylenes	1330-20-7	<0.00582		0.00582	mg/kg	03.03.20 03:06	U	
Total BTEX		<0.00399		0.00399	mg/kg	03.03.20 03:06	U	

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
4-Bromofluorobenzene	121	68 - 120	%		**
a,a,a-Trifluorotoluene	127	71 - 121	%		**

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Sample Id: **HA-3 (2.5-3)** Matrix: Soil Sample Depth: 2.5 - 3 ft

Lab Sample Id: 654105-014 Date Collected: 02.27.20 12.41 Date Received: 02.28.20 12.25

Analytical Method: Chloride by EPA 300 Prep Method: E300P

Analyst: RNL % Moist: Tech: RNL

Seq Number: 3118319 Date Prep: 02.28.20 13.30

Prep seq: 7697944

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Chloride	16887-00-6	**3390**	250	5.72	mg/kg	02.28.20 22:09	D	10

Analytical Method: DRO-ORO By SW8015B Prep Method: 8015

Analyst: MIT % Moist: Tech: MIT

Seq Number: 3118328 Date Prep: 03.02.20 13.30

Prep seq: 7697921

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Diesel Range Organics (DRO)	C10C28DRO	<7.46	24.9	7.46	mg/kg	03.03.20 06:57	U	1
Oil Range Hydrocarbons (ORO)	PHCG2835	<7.46	24.9	7.46	mg/kg	03.03.20 06:57	U	1

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
Tricosane	61	65 - 144	%		**
n-Triacontane	91	46 - 152	%		

Analytical Method: TPH GRO by EPA 8015 Mod. Prep Method: 5030B

Analyst: MIT % Moist: Tech: MIT

Seq Number: 3118307 Date Prep: 03.02.20 12.00

Prep seq: 7697931

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
TPH-GRO	8006-61-9	**0.351**	3.90	0.264	mg/kg	03.03.20 03:30	J	19

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
4-Bromofluorobenzene	111	76 - 123	%		
a,a,a-Trifluorotoluene	103	69 - 120	%		

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Sample Id: **HA-3 (2.5-3)** Matrix: Soil Sample Depth: 2.5 - 3 ft

Lab Sample Id: 654105-014 Date Collected: 02.27.20 12.41 Date Received: 02.28.20 12.25

Analytical Method: BTEX by EPA 8021B Prep Method: 5030B

Analyst: MIT % Moist: Tech: MIT

Seq Number: 3118303 Date Prep: 03.02.20 12.00

Prep seq: 7697930

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Benzene	71-43-2	<0.00881	0.0195	0.00881	mg/kg	03.03.20 03:30	U	19
Toluene	108-88-3	<0.00456	0.0195	0.00456	mg/kg	03.03.20 03:30	U	19
Ethylbenzene	100-41-4	<0.00600	0.0195	0.00600	mg/kg	03.03.20 03:30	U	19
m,p-Xylenes	179601-23-1	<0.00665	0.0390	0.00665	mg/kg	03.03.20 03:30	U	19
o-Xylene	95-47-6	<0.00665	0.0195	0.00665	mg/kg	03.03.20 03:30	U	19
Total Xylenes	1330-20-7	<0.00665		0.00665	mg/kg	03.03.20 03:30	U	
Total BTEX		<0.00456		0.00456	mg/kg	03.03.20 03:30	U	

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
4-Bromofluorobenzene	128	68 - 120	%		**
a,a,a-Trifluorotoluene	128	71 - 121	%		**

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Sample Id: **HA-3 (3.5-4)** Matrix: Soil Sample Depth: 3.5 - 4 ft

Lab Sample Id: 654105-015 Date Collected: 02.27.20 12.43 Date Received: 02.28.20 12.25

Analytical Method: Chloride by EPA 300 Prep Method: E300P

Analyst: RNL % Moist: Tech: RNL

Seq Number: 3118319 Date Prep: 02.28.20 13.30

Prep seq: 7697944

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Chloride	16887-00-6	**1630**	125	2.86	mg/kg	02.28.20 22:34	DX	5

Analytical Method: DRO-ORO By SW8015B Prep Method: 8015

Analyst: MIT % Moist: Tech: MIT

Seq Number: 3118328 Date Prep: 03.02.20 13.30

Prep seq: 7697921

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Diesel Range Organics (DRO)	C10C28DRO	<7.50	25.1	7.50	mg/kg	03.03.20 07:34	U	1
Oil Range Hydrocarbons (ORO)	PHCG2835	<7.50	25.1	7.50	mg/kg	03.03.20 07:34	U	1

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
Tricosane	71	65 - 144	%		
n-Triacontane	105	46 - 152	%		

Analytical Method: TPH GRO by EPA 8015 Mod. Prep Method: 5030B

Analyst: MIT % Moist: Tech: MIT

Seq Number: 3118307 Date Prep: 03.02.20 12.00

Prep seq: 7697931

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
TPH-GRO	8006-61-9	**0.395**	3.75	0.254	mg/kg	03.03.20 03:54	J	19

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
4-Bromofluorobenzene	77	76 - 123	%		
a,a,a-Trifluorotoluene	75	69 - 120	%		

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Sample Id: **HA-3 (3.5-4)** Matrix: Soil Sample Depth: 3.5 - 4 ft

Lab Sample Id: 654105-015 Date Collected: 02.27.20 12.43 Date Received: 02.28.20 12.25

Analytical Method: BTEX by EPA 8021B Prep Method: 5030B

Analyst: MIT % Moist: Tech: MIT

Seq Number: 3118303 Date Prep: 03.02.20 12.00

Prep seq: 7697930

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Benzene	71-43-2	<0.00846	0.0187	0.00846	mg/kg	03.03.20 03:54	U	19
Toluene	108-88-3	<0.00438	0.0187	0.00438	mg/kg	03.03.20 03:54	U	19
Ethylbenzene	100-41-4	<0.00577	0.0187	0.00577	mg/kg	03.03.20 03:54	U	19
m,p-Xylenes	179601-23-1	<0.00639	0.0375	0.00639	mg/kg	03.03.20 03:54	U	19
o-Xylene	95-47-6	<0.00639	0.0187	0.00639	mg/kg	03.03.20 03:54	U	19
Total Xylenes	1330-20-7	<0.00639		0.00639	mg/kg	03.03.20 03:54	U	
Total BTEX		<0.00438		0.00438	mg/kg	03.03.20 03:54	U	

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
4-Bromofluorobenzene	90	68 - 120	%		
a,a,a-Trifluorotoluene	94	71 - 121	%		

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Sample Id: **HA-4 (0-0.5)** Matrix: Soil Sample Depth: 0 - 0.5 ft

Lab Sample Id: 654105-016 Date Collected: 02.27.20 12.50 Date Received: 02.28.20 12.25

Analytical Method: Chloride by EPA 300 Prep Method: E300P

Analyst: RNL % Moist: Tech: RNL

Seq Number: 3118319 Date Prep: 02.28.20 13.30

Prep seq: 7697944

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Chloride	16887-00-6	**3900**	250	5.72	mg/kg	02.28.20 23:23	D	10

Analytical Method: DRO-ORO By SW8015B Prep Method: 8015

Analyst: MIT % Moist: Tech: MIT

Seq Number: 3118328 Date Prep: 03.02.20 13.30

Prep seq: 7697921

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Diesel Range Organics (DRO)	C10C28DRO	**14.0**	24.8	7.42	mg/kg	03.03.20 08:10	J	1
Oil Range Hydrocarbons (ORO)	PHCG2835	<7.42	24.8	7.42	mg/kg	03.03.20 08:10	U	1

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
Tricosane	75	65 - 144	%		
n-Triacontane	108	46 - 152	%		

Analytical Method: TPH GRO by EPA 8015 Mod. Prep Method: 5030B

Analyst: MIT % Moist: Tech: MIT

Seq Number: 3118307 Date Prep: 03.02.20 12.00

Prep seq: 7697931

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
TPH-GRO	8006-61-9	**0.407**	3.75	0.254	mg/kg	03.03.20 04:18	J	19

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
4-Bromofluorobenzene	88	76 - 123	%		
a,a,a-Trifluorotoluene	85	69 - 120	%		

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Sample Id:	**HA-4 (0-0.5)**	Matrix:	Soil	Sample Depth:	0 - 0.5 ft
Lab Sample Id:	654105-016	Date Collected:	02.27.20 12.50	Date Received:	02.28.20 12.25
Analytical Method:	BTEX by EPA 8021B			Prep Method:	5030B
Analyst:	MIT	% Moist:		Tech:	MIT
Seq Number:	3118303	Date Prep:	03.02.20 12.00		
		Prep seq:	7697930		

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Benzene	71-43-2	<0.00848	0.0188	0.00848	mg/kg	03.03.20 04:18	U	19
Toluene	108-88-3	**0.0150**	0.0188	0.00439	mg/kg	03.03.20 04:18	J	19
Ethylbenzene	100-41-4	<0.00578	0.0188	0.00578	mg/kg	03.03.20 04:18	U	19
m,p-Xylenes	179601-23-1	<0.00640	0.0375	0.00640	mg/kg	03.03.20 04:18	U	19
o-Xylene	95-47-6	<0.00640	0.0188	0.00640	mg/kg	03.03.20 04:18	U	19
Total Xylenes	1330-20-7	<0.00640		0.00640	mg/kg	03.03.20 04:18	U	
Total BTEX		**0.0150**		0.00439	mg/kg	03.03.20 04:18	J	

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
4-Bromofluorobenzene	102	68 - 120	%		
a,a,a-Trifluorotoluene	106	71 - 121	%		

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Sample Id: **HA-4 (0.5-1)** Matrix: Soil Sample Depth: 0.5 - 1 ft

Lab Sample Id: 654105-017 Date Collected: 02.27.20 12.52 Date Received: 02.28.20 12.25

Analytical Method: Chloride by EPA 300 Prep Method: E300P

Analyst: RNL % Moist: Tech: RNL

Seq Number: 3118319 Date Prep: 02.28.20 13.30

Prep seq: 7697944

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Chloride	16887-00-6	**4760**	1250	28.6	mg/kg	02.28.20 23:48	D	50

Analytical Method: DRO-ORO By SW8015B Prep Method: 8015

Analyst: MIT % Moist: Tech: MIT

Seq Number: 3118328 Date Prep: 03.02.20 13.30

Prep seq: 7697921

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Diesel Range Organics (DRO)	C10C28DRO	<7.49	25.0	7.49	mg/kg	03.03.20 08:49	U	1
Oil Range Hydrocarbons (ORO)	PHCG2835	<7.49	25.0	7.49	mg/kg	03.03.20 08:49	U	1

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
Tricosane	69	65 - 144	%		
n-Triacontane	104	46 - 152	%		

Analytical Method: TPH GRO by EPA 8015 Mod. Prep Method: 5030B

Analyst: MIT % Moist: Tech: MIT

Seq Number: 3118307 Date Prep: 03.02.20 12.00

Prep seq: 7697931

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
TPH-GRO	8006-61-9	**0.408**	4.00	0.271	mg/kg	03.03.20 04:43	J	20

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
4-Bromofluorobenzene	103	76 - 123	%		
a,a,a-Trifluorotoluene	102	69 - 120	%		

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Sample Id: **HA-4 (0.5-1)** Matrix: Soil Sample Depth: 0.5 - 1 ft

Lab Sample Id: 654105-017 Date Collected: 02.27.20 12.52 Date Received: 02.28.20 12.25

Analytical Method: BTEX by EPA 8021B Prep Method: 5030B

Analyst: MIT % Moist: Tech: MIT

Seq Number: 3118303 Date Prep: 03.02.20 12.00

Prep seq: 7697930

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Benzene	71-43-2	<0.00904	0.0200	0.00904	mg/kg	03.03.20 04:43	U	20
Toluene	108-88-3	**0.0180**	0.0200	0.00468	mg/kg	03.03.20 04:43	J	20
Ethylbenzene	100-41-4	<0.00616	0.0200	0.00616	mg/kg	03.03.20 04:43	U	20
m,p-Xylenes	179601-23-1	<0.00682	0.0400	0.00682	mg/kg	03.03.20 04:43	U	20
o-Xylene	95-47-6	<0.00682	0.0200	0.00682	mg/kg	03.03.20 04:43	U	20
Total Xylenes	1330-20-7	<0.00682		0.00682	mg/kg	03.03.20 04:43	U	
Total BTEX		**0.0180**		0.00468	mg/kg	03.03.20 04:43	J	

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
4-Bromofluorobenzene	120	68 - 120	%		
a,a,a-Trifluorotoluene	128	71 - 121	%		**

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Sample Id: **HA-4 (1.5-2)** Matrix: Soil Sample Depth: 1.5 - 2 ft

Lab Sample Id: 654105-018 Date Collected: 02.27.20 12.54 Date Received: 02.28.20 12.25

Analytical Method: Chloride by EPA 300 Prep Method: E300P

Analyst: RNL % Moist: Tech: RNL

Seq Number: 3118319 Date Prep: 02.28.20 13.30

Prep seq: 7697944

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Chloride	16887-00-6	**1930**	125	2.86	mg/kg	02.29.20 00:13	D	5

Analytical Method: DRO-ORO By SW8015B Prep Method: 8015

Analyst: MIT % Moist: Tech: MIT

Seq Number: 3118328 Date Prep: 03.02.20 13.30

Prep seq: 7697921

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Diesel Range Organics (DRO)	C10C28DRO	<7.49	25.1	7.49	mg/kg	03.03.20 09:25	U	1
Oil Range Hydrocarbons (ORO)	PHCG2835	<7.49	25.1	7.49	mg/kg	03.03.20 09:25	U	1

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
Tricosane	79	65 - 144	%		
n-Triacontane	111	46 - 152	%		

Analytical Method: TPH GRO by EPA 8015 Mod. Prep Method: 5030B

Analyst: MIT % Moist: Tech: MIT

Seq Number: 3118307 Date Prep: 03.02.20 12.00

Prep seq: 7697931

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
TPH-GRO	8006-61-9	**0.319**	3.47	0.235	mg/kg	03.03.20 05:07	J	17

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
4-Bromofluorobenzene	84	76 - 123	%		
a,a,a-Trifluorotoluene	81	69 - 120	%		

Certificate of Analytical Results
654105
Terracon-Lubbock, Lubbock, TX
BC Federal 45

Sample Id: **HA-4 (1.5-2)** Matrix: Soil Sample Depth: 1.5 - 2 ft

Lab Sample Id: 654105-018 Date Collected: 02.27.20 12.54 Date Received: 02.28.20 12.25

Analytical Method: BTEX by EPA 8021B Prep Method: 5030B

Analyst: MIT % Moist: Tech: MIT

Seq Number: 3118303 Date Prep: 03.02.20 12.00

Prep seq: 7697930

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Benzene	71-43-2	<0.00783	0.0173	0.00783	mg/kg	03.03.20 05:07	U	17
Toluene	108-88-3	<0.00406	0.0173	0.00406	mg/kg	03.03.20 05:07	U	17
Ethylbenzene	100-41-4	<0.00534	0.0173	0.00534	mg/kg	03.03.20 05:07	U	17
m,p-Xylenes	179601-23-1	<0.00591	0.0347	0.00591	mg/kg	03.03.20 05:07	U	17
o-Xylene	95-47-6	<0.00591	0.0173	0.00591	mg/kg	03.03.20 05:07	U	17
Total Xylenes	1330-20-7	<0.00591		0.00591	mg/kg	03.03.20 05:07	U	
Total BTEX		<0.00406		0.00406	mg/kg	03.03.20 05:07	U	

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
4-Bromofluorobenzene	98	68 - 120	%		
a,a,a-Trifluorotoluene	101	71 - 121	%		

Certificate of Analytical Results
654105
Terracon-Lubbock, Lubbock, TX
BC Federal 45

Sample Id: **7697911-1-BLK** Matrix: Solid Sample Depth:

Lab Sample Id: 7697911-1-BLK Date Collected: Date Received:

Analytical Method: Chloride by EPA 300 Prep Method: E300P

Analyst: RNL % Moist: Tech: RNL

Seq Number: 3118316 Date Prep: 02.28.20 13.30

Prep seq: 7697911

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Chloride	16887-00-6	<0.572	25.0	0.572	mg/kg	02.28.20 15:19	U	1

Sample Id: **7697921-1-BLK** Matrix: Solid Sample Depth:

Lab Sample Id: 7697921-1-BLK Date Collected: Date Received:

Analytical Method: DRO-ORO By SW8015B Prep Method: 8015

Analyst: MIT % Moist: Tech: MIT

Seq Number: 3118328 Date Prep: 03.02.20 13.30

Prep seq: 7697921

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Diesel Range Organics (DRO)	C10C28DRO	<7.48	25.0	7.48	mg/kg	03.02.20 19:57	U	1
Oil Range Hydrocarbons (ORO)	PHCG2835	<7.48	25.0	7.48	mg/kg	03.02.20 19:57	U	1

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
Tricosane	64	65 - 144	%		**
n-Triacontane	95	46 - 152	%		

Certificate of Analytical Results

654105

Terracon-Lubbock, Lubbock, TX

BC Federal 45

Sample Id: **7697930-1-BLK** Matrix: Solid Sample Depth:

Lab Sample Id: 7697930-1-BLK Date Collected: Date Received:

Analytical Method: BTEX by EPA 8021B Prep Method: 5030B

Analyst: MIT % Moist: Tech: MIT

Seq Number: 3118303 Date Prep: 03.02.20 12.00

Prep seq: 7697930

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Benzene	71-43-2	<0.00904	0.0200	0.00904	mg/kg	03.02.20 18:12	U	20
Toluene	108-88-3	<0.00468	0.0200	0.00468	mg/kg	03.02.20 18:12	U	20
Ethylbenzene	100-41-4	<0.00616	0.0200	0.00616	mg/kg	03.02.20 18:12	U	20
m,p-Xylenes	179601-23-1	<0.00682	0.0400	0.00682	mg/kg	03.02.20 18:12	U	20
o-Xylene	95-47-6	<0.00682	0.0200	0.00682	mg/kg	03.02.20 18:12	U	20

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
4-Bromofluorobenzene	120	68 - 120	%		
a,a,a-Trifluorotoluene	122	71 - 121	%		**

Sample Id: **7697931-1-BLK** Matrix: Solid Sample Depth:

Lab Sample Id: 7697931-1-BLK Date Collected: Date Received:

Analytical Method: TPH GRO by EPA 8015 Mod. Prep Method: 5030B

Analyst: MIT % Moist: Tech: MIT

Seq Number: 3118307 Date Prep: 03.02.20 12.00

Prep seq: 7697931

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
TPH-GRO	8006-61-9	<0.271	4.00	0.271	mg/kg	03.02.20 18:12	U	20

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
4-Bromofluorobenzene	104	76 - 123	%		
a,a,a-Trifluorotoluene	97	69 - 120	%		

Sample Id: **7697944-1-BLK** Matrix: Solid Sample Depth:

Lab Sample Id: 7697944-1-BLK Date Collected: Date Received:

Analytical Method: Chloride by EPA 300 Prep Method: E300P

Analyst: RNL % Moist: Tech: RNL

Seq Number: 3118319 Date Prep: 02.28.20 13.30

Prep seq: 7697944

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Chloride	16887-00-6	<0.572	25.0	0.572	mg/kg	02.28.20 21:19	U	1

Flagging Criteria

X In our quality control review of the data a QC deficiency was observed and flagged as noted. MS/MSD recoveries were found to be outside of the laboratory control limits due to possible matrix /chemical interference, or a concentration of target analyte high enough to affect the recovery of the spike concentration. This condition could also affect the relative percent difference in the MS/MSD.

B A target analyte or common laboratory contaminant was identified in the method blank. Its presence indicates possible field or laboratory contamination.

D The sample(s) were diluted due to targets detected over the highest point of the calibration curve, or due to matrix interference. Dilution factors are included in the final results. The result is from a diluted sample.

E The data exceeds the upper calibration limit; therefore, the concentration is reported as estimated.

F RPD exceeded lab control limits.

J The target analyte was positively identified below the quantitation limit and above the detection limit.

U Analyte was not detected.

L The LCS data for this analytical batch was reported below the laboratory control limits for this analyte. The department supervisor and QA Director reviewed data. The samples were either reanalyzed or flagged as estimated concentrations.

H The LCS data for this analytical batch was reported above the laboratory control limits. Supporting QC Data were reviewed by the Department Supervisor and QA Director. Data were determined to be valid for reporting.

K Sample analyzed outside of recommended hold time.

JN A combination of the "N" and the "J" qualifier. The analysis indicates that the analyte is "tentatively identified" and the associated numerical value may not be consistent with the amount actually present in the environmental sample.

** Surrogate recovered outside laboratory control limit.

BRL Below Reporting Limit.

RL Reporting Limit

MDL Method Detection Limit **SDL** Sample Detection Limit **LOD** Limit of Detection

PQL Practical Quantitation Limit **MQL** Method Quantitation Limit **LOQ** Limit of Quantitation

DL Method Detection Limit

NC Non-Calculable

SMP Client Sample **BLK** Method Blank

BKS/LCS Blank Spike/Laboratory Control Sample **BKSD/LCSD** Blank Spike Duplicate/Laboratory Control Sample Duplicate

MD/SD Method Duplicate/Sample Duplicate **MS** Matrix Spike **MSD:** Matrix Spike Duplicate

+ NELAC certification not offered for this compound.

* (Next to analyte name or method description) = Outside XENCO's scope of NELAC accreditation

Form 2 - Surrogate Recoveries

Project Name: BC Federal 45

Work Orders : 654105,

Project ID: AR207045

Lab Batch #: 3118303 **Sample:** 7697930-1-BKS / BKS **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 03/02/20 15:46

BTEX by EPA 8021B Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
4-Bromofluorobenzene	0.120	0.100	120	68-120	
a,a,a-Trifluorotoluene	2.47	2.00	124	71-121	**

Lab Batch #: 3118303 **Sample:** 7697930-1-BSD / BSD **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 03/02/20 16:10

BTEX by EPA 8021B Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
4-Bromofluorobenzene	0.119	0.100	119	68-120	
a,a,a-Trifluorotoluene	2.41	2.00	121	71-121	

Lab Batch #: 3118303 **Sample:** 7697930-1-BLK / BLK **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 03/02/20 18:12

BTEX by EPA 8021B Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
4-Bromofluorobenzene	0.120	0.100	120	68-120	
a,a,a-Trifluorotoluene	2.43	2.00	122	71-121	**

Lab Batch #: 3118303 **Sample:** 654105-001 S / MS **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 03/02/20 19:01

BTEX by EPA 8021B Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
4-Bromofluorobenzene	0.115	0.100	115	68-120	
a,a,a-Trifluorotoluene	2.57	2.01	128	71-121	**

Lab Batch #: 3118303 **Sample:** 654105-001 SD / MSD **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 03/02/20 19:26

BTEX by EPA 8021B Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
4-Bromofluorobenzene	0.0914	0.100	91	68-120	
a,a,a-Trifluorotoluene	1.85	1.85	100	71-121	

* Surrogate outside of Laboratory QC limits
** Surrogates outside limits; data and surrogates confirmed by reanalysis
*** Poor recoveries due to dilution
Surrogate Recovery [D] = 100 * A / B
All results are based on MDL and validated for QC purposes.

Form 2 - Surrogate Recoveries

Project Name: BC Federal 45

Work Orders : 654105,

Project ID: AR207045

Lab Batch #: 3118328 **Sample:** 7697921-1-BKS / BKS **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 03/02/20 16:44

DRO-ORO By SW8015B Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Tricosane	6.80	10.0	68	65-144	
n-Triacontane	9.84	10.0	98	46-152	

Lab Batch #: 3118328 **Sample:** 7697921-1-BSD / BSD **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 03/02/20 18:02

DRO-ORO By SW8015B Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Tricosane	6.77	10.0	68	65-144	
n-Triacontane	9.50	10.0	95	46-152	

Lab Batch #: 3118328 **Sample:** 7697921-1-BLK / BLK **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 03/02/20 19:57

DRO-ORO By SW8015B Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Tricosane	6.36	10.0	64	65-144	**
n-Triacontane	9.52	10.0	95	46-152	

Lab Batch #: 3118328 **Sample:** 654105-001 S / MS **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 03/02/20 21:16

DRO-ORO By SW8015B Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Tricosane	6.34	9.90	64	65-144	**
n-Triacontane	9.18	9.90	93	46-152	

Lab Batch #: 3118328 **Sample:** 654105-001 SD / MSD **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 03/02/20 21:53

DRO-ORO By SW8015B Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Tricosane	5.33	10.1	53	65-144	**
n-Triacontane	7.57	10.1	75	46-152	

* Surrogate outside of Laboratory QC limits
** Surrogates outside limits; data and surrogates confirmed by reanalysis
*** Poor recoveries due to dilution
Surrogate Recovery [D] = 100 * A / B
All results are based on MDL and validated for QC purposes.

Form 2 - Surrogate Recoveries

Project Name: BC Federal 45

Work Orders : 654105,

Project ID: AR207045

Lab Batch #: 3118307 **Sample:** 7697931-1-BKS / BKS **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 03/02/20 16:34

TPH GRO by EPA 8015 Mod. Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
4-Bromofluorobenzene	0.136	0.100	136	76-123	**
a,a,a-Trifluorotoluene	2.04	2.00	102	69-120	

Lab Batch #: 3118307 **Sample:** 7697931-1-BSD / BSD **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 03/02/20 16:58

TPH GRO by EPA 8015 Mod. Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
4-Bromofluorobenzene	0.141	0.100	141	76-123	**
a,a,a-Trifluorotoluene	1.99	2.00	100	69-120	

Lab Batch #: 3118307 **Sample:** 7697931-1-BLK / BLK **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 03/02/20 18:12

TPH GRO by EPA 8015 Mod. Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
4-Bromofluorobenzene	0.104	0.100	104	76-123	
a,a,a-Trifluorotoluene	1.94	2.00	97	69-120	

Lab Batch #: 3118307 **Sample:** 654105-001 S / MS **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 03/02/20 19:50

TPH GRO by EPA 8015 Mod. Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
4-Bromofluorobenzene	0.137	0.100	137	76-123	**
a,a,a-Trifluorotoluene	2.09	1.94	108	69-120	

Lab Batch #: 3118307 **Sample:** 654105-001 SD / MSD **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 03/02/20 20:14

TPH GRO by EPA 8015 Mod. Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
4-Bromofluorobenzene	0.137	0.100	137	76-123	**
a,a,a-Trifluorotoluene	1.93	1.89	102	69-120	

* Surrogate outside of Laboratory QC limits
** Surrogates outside limits; data and surrogates confirmed by reanalysis
*** Poor recoveries due to dilution
Surrogate Recovery [D] = 100 * A / B
All results are based on MDL and validated for QC purposes.

BS / BSD Recoveries

Project Name: BC Federal 45

Work Order #: 654105 **Project ID:** AR207045

Analyst: MIT **Date Prepared:** 03/02/2020 **Date Analyzed:** 03/02/2020

Lab Batch ID: 3118303 **Sample:** 7697930-1-BKS **Batch #:** 1 **Matrix:** Solid

Units: mg/kg

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Benzene	<0.00904	2.00	1.91	96	2.00	1.93	97	1	55-120	20	
Toluene	<0.00468	2.00	2.00	100	2.00	2.00	100	0	77-120	20	
Ethylbenzene	<0.00616	2.00	2.05	103	2.00	2.10	105	2	77-120	20	
m,p-Xylenes	<0.00682	4.00	4.05	101	4.00	4.16	104	3	78-120	20	
o-Xylene	<0.00682	2.00	2.05	103	2.00	2.10	105	2	78-120	20	

Analyst: RNL **Date Prepared:** 02/28/2020 **Date Analyzed:** 02/28/2020

Lab Batch ID: 3118316 **Sample:** 7697911-1-BKS **Batch #:** 1 **Matrix:** Solid

Units: mg/kg

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

Chloride by EPA 300 Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Chloride	<0.572	250	241	96	250	238	95	1	90-110	20	

Relative Percent Difference RPD = 200*|(C-F)/(C+F)|
Blank Spike Recovery [D] = 100*(C)/[B]
Blank Spike Duplicate Recovery [G] = 100*(F)/[E]
All results are based on MDL and Validated for QC Purposes

BS / BSD Recoveries

Project Name: BC Federal 45

Work Order #: 654105 **Project ID:** AR207045

Analyst: RNL **Date Prepared:** 02/28/2020 **Date Analyzed:** 02/28/2020

Lab Batch ID: 3118319 **Sample:** 7697944-1-BKS **Batch #:** 1 **Matrix:** Solid

Units: mg/kg

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

Chloride by EPA 300 Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Chloride	<0.572	250	243	97	250	239	96	2	90-110	20	

Analyst: MIT **Date Prepared:** 03/02/2020 **Date Analyzed:** 03/02/2020

Lab Batch ID: 3118328 **Sample:** 7697921-1-BKS **Batch #:** 1 **Matrix:** Solid

Units: mg/kg

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

DRO-ORO By SW8015B Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Diesel Range Organics (DRO)	<7.48	100	75.8	76	100	75.1	75	1	63-139	20	

Analyst: MIT **Date Prepared:** 03/02/2020 **Date Analyzed:** 03/02/2020

Lab Batch ID: 3118307 **Sample:** 7697931-1-BKS **Batch #:** 1 **Matrix:** Solid

Units: mg/kg

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

TPH GRO by EPA 8015 Mod. Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
TPH-GRO	<0.271	20.0	20.5	103	20.0	21.4	107	4	35-129	20	

Relative Percent Difference RPD = 200*|(C-F)/(C+F)|
Blank Spike Recovery [D] = 100*(C)/[B]
Blank Spike Duplicate Recovery [G] = 100*(F)/[E]
All results are based on MDL and Validated for QC Purposes

Form 3 - MS / MSD Recoveries

Project Name: BC Federal 45

Work Order # : 654105 **Project ID:** AR207045

Lab Batch ID: 3118303 **QC- Sample ID:** 654105-001 S **Batch #:** 1 **Matrix:** Soil

Date Analyzed: 03/02/2020 **Date Prepared:** 03/02/2020 **Analyst:** MIT

Reporting Units: mg/kg

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Benzene	<0.00909	2.01	1.87	93	1.85	1.81	98	3	54-120	25	
Toluene	<0.00471	2.01	1.94	97	1.85	1.92	104	1	57-120	25	
Ethylbenzene	<0.00620	2.01	1.99	99	1.85	1.99	108	0	58-131	25	
m,p-Xylenes	<0.00686	4.02	3.93	98	3.70	3.93	106	0	62-124	25	
o-Xylene	<0.00686	2.01	1.94	97	1.85	1.94	105	0	62-124	25	

Lab Batch ID: 3118316 **QC- Sample ID:** 654105-002 S **Batch #:** 1 **Matrix:** Soil

Date Analyzed: 02/28/2020 **Date Prepared:** 02/28/2020 **Analyst:** RNL

Reporting Units: mg/kg

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

Chloride by EPA 300 Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Chloride	8.88	250	276	107	250	265	102	4	80-120	20	

Lab Batch ID: 3118316 **QC- Sample ID:** 654105-010 S **Batch #:** 1 **Matrix:** Soil

Date Analyzed: 02/28/2020 **Date Prepared:** 02/28/2020 **Analyst:** RNL

Reporting Units: mg/kg

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

Chloride by EPA 300 Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Chloride	4.21	250	244	96	250	246	97	1	80-120	20	

Matrix Spike Percent Recovery [D] = 100*(C-A)/B
Relative Percent Difference RPD = 200*|(C-F)/(C+F)|

Matrix Spike Duplicate Percent Recovery [G] = 100*(F-A)/E

ND = Not Detected, J = Present Below Reporting Limit, B = Present in Blank, NR = Not Requested, I = Interference, NA = Not Applicable
N = See Narrative, EQL = Estimated Quantitation Limit, NC = Non Calculable - Sample amount is > 4 times the amount spiked.

Form 3 - MS / MSD Recoveries

Project Name: BC Federal 45

Work Order # : 654105 **Project ID:** AR207045

Lab Batch ID: 3118319 **QC- Sample ID:** 654105-015 S **Batch #:** 1 **Matrix:** Soil

Date Analyzed: 02/28/2020 **Date Prepared:** 02/28/2020 **Analyst:** RNL

Reporting Units: mg/kg

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

Chloride by EPA 300 Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Chloride	1380	250	2830	NC	250	2800	NC	1	80-120	20	X

Lab Batch ID: 3118328 **QC- Sample ID:** 654105-001 S **Batch #:** 1 **Matrix:** Soil

Date Analyzed: 03/02/2020 **Date Prepared:** 03/02/2020 **Analyst:** MIT

Reporting Units: mg/kg

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

DRO-ORO By SW8015B Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Diesel Range Organics (DRO)	<7.41	99.0	80.6	81	101	64.4	64	22	63-139	20	

Lab Batch ID: 3118307 **QC- Sample ID:** 654105-001 S **Batch #:** 1 **Matrix:** Soil

Date Analyzed: 03/02/2020 **Date Prepared:** 03/02/2020 **Analyst:** MIT

Reporting Units: mg/kg

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

TPH GRO by EPA 8015 Mod. Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
TPH-GRO	0.448	19.4	18.0	90	18.9	16.3	84	10	35-129	20	

Matrix Spike Percent Recovery [D] = 100*(C-A)/B

Matrix Spike Duplicate Percent Recovery [G] = 100*(F-A)/E

Relative Percent Difference RPD = 200*|(C-F)/(C+F)|

ND = Not Detected, J = Present Below Reporting Limit, B = Present in Blank, NR = Not Requested, I = Interference, NA = Not Applicable

N = See Narrative, EQL = Estimated Quantitation Limit, NC = Non Calculable - Sample amount is > 4 times the amount spiked.

654105

654105

CHAIN OF CUSTODY RECORD

Terracon

Laboratory: Xenco
Address: 6701 Aberdeen, Lubbock, Texas 79424
Phone:
Contact: Bryant McBrayer (806)853-3619
SRS #:

Office Location: Lubbock
Project Manager: Bryant McBrayer
Sampler's Name: Bryant McBrayer
Sampler's Signature:

Project Number: AR207045
Project Name: BC Federal 45

ANALYSIS REQUESTED

LAB USE ONLY
DUE DATE:
TEMP OF COOLER WHEN RECEIVED (°C): 1.0/1.1 IR-4 +0.1
Page 1 of 1

Matrix	Date	Time	Comp	Grab	Identifying Marks of Sample(s)	Start Depth	End Depth	No. Type of Containers: 2 oz Glass	4 oz Glass	5035 kit	40 ml VOA	Chloride (EPA Method 300)	TPH Extended 8015	BTEX (EPA Method 8021B)	Hold	Lab Sample ID
S	2/27/2020	12:05		X	HA-1 - (0 - .5)	0	0.5		X			X	X	X		1
S	2/27/2020	12:07		X	HA-1 - (.5 - 1)	0.5	1		X			X	X	X		2
S	2/27/2020	12:09		X	HA-1 - (1.5 - 2)	1.5	2		X			X	X	X		3
S	2/27/2020	12:11		X	HA-1 - (2.5 - 3)	2.5	3		X			X	X	X		4
S	2/27/2020	12:13		X	HA-1 - (3.5 - 4)	3.5	4		X			X	X	X		5
S	2/27/2020	12:20		X	HA-2 - (0 - .5)	0	0.5		X			X	X	X		6
S	2/27/2020	12:22		X	HA-2 - (.5 - 1)	0.5	1		X			X	X	X		7
S	2/27/2020	12:24		X	HA-2 - (1.5 - 2)	1.5	2		X			X	X	X		8
S	2/27/2020	12:26		X	HA-2 - (2.5 - 3)	2.5	3		X			X	X	X		9
S	2/27/2020	12:28		X	HA-2 - (3.5 - 4)	3.5	4		X			X	X	X		10
S	2/27/2020	12:35		X	HA-3 - (0 - .5)	0	0.5		X			X	X	X		11
S	2/27/2020	12:37		X	HA-3 - (.5 - 1)	0.5	1		X			X	X	X		12
S	2/27/2020	12:39		X	HA-3 - (1.5 - 2)	1.5	2		X			X	X	X		13
S	2/27/2020	12:41		X	HA-3 - (2.5 - 3)	2.5	3		X			X	X	X		14
S	2/27/2020	12:43		X	HA-3 - (3.5 - 4)	3.5	4		X			X	X	X		15
S	2/27/2020	12:50		X	HA-4 - (0 - .5)	0	0.5		X			X	X	X		16
S	2/27/2020	12:52		X	HA-4 - (.5 - 1)	0.5	1		X			X	X	X		17
S	2/27/2020	12:54		X	HA-4 - (1.5 - 2)	1.5	2		X			X	X	X		18

TURNAROUND TIME: ☐ Normal ☒ 48-Hour Rush 12'25 ☐ 24-Hour Rush

TRRP Laboratory Review Checklist: ☐ Yes ☐ No

Relinquished by (Signature)	Date:	Time:	Received by (Signature)	Date:	Time:
[signature]	2/28/2020	1235	Brenda Ward		
Relinquished by (Signature)	Date:	Time:	Received by (Signature)	Date:	Time:
Relinquished by (Signature)	Date:	Time:	Received by (Signature)	Date:	Time:
Relinquished by (Signature)	Date:	Time:	Received by (Signature)	Date:	Time:

NOTES: Client: Spur

e-mail results to:
bryant.mcbrayer@terracon.com
erin.loyd@terracon.com
jrguesnier@terracon.com

Matrix: WW-Wastewater; W - Water; S - Soil; L - Liquid; A - Air Bag; C - Charcoal tube; SL - Sludge
Container: VOA - 40 ml vial; A/G - Amber Glass 1L; 250 ml + Glass wide mouth; P/O - Plastic or other _____

XENCO Laboratories

Prelogin/Nonconformance Report- Sample Log-In

Client: Terracon-Lubbock

Date/ Time Received: 02/28/2020 12:25:00 PM

Work Order #: 654105

Acceptable Temperature Range: 0 - 6 degC
Air and Metal samples Acceptable Range: Ambient

Temperature Measuring device used : IR-4

Sample Receipt Checklist	Comments
#1 *Temperature of cooler(s)?	1.1
#2 *Shipping container in good condition?	**Yes**
#3 *Samples received on ice?	**Yes**
#4 *Custody Seals intact on shipping container/ cooler?	**N/A**
#5 Custody Seals intact on sample bottles?	**N/A**
#6*Custody Seals Signed and dated?	**N/A**
#7 *Chain of Custody present?	**Yes**
#8 Any missing/extra samples?	**No**
#9 Chain of Custody signed when relinquished/ received?	**Yes**
#10 Chain of Custody agrees with sample labels/matrix?	**Yes**
#11 Container label(s) legible and intact?	**Yes**
#12 Samples in proper container/ bottle?	**Yes**
#13 Samples properly preserved?	**Yes**
#14 Sample container(s) intact?	**Yes**
#15 Sufficient sample amount for indicated test(s)?	**Yes**
#16 All samples received within hold time?	**Yes**
#17 Subcontract of sample(s)?	**N/A**
#18 Water VOC samples have zero headspace?	**N/A**

*** Must be completed for after-hours delivery of samples prior to placing in the refrigerator**

Analyst: PH Device/Lot#:

Checklist completed by: Brenda Ward Date: 02/28/2020
Brenda Ward

Checklist reviewed by: Jessica Kramer Date: 02/28/2020
Jessica Kramer

Certificate of Analysis Summary 656224

Terracon-Lubbock, Lubbock, TX

Project Name: BC Federal 45

Project Id: AR207045
Contact: Bryant McBrayer
Project Location: Client: Spur

Date Received in Lab: Fri Mar-20-20 10:05 am
Report Date: 27-MAR-20
Project Manager: Jessica Kramer

Analysis Requested									
	Lab Id:	656224-001		656224-002		656224-003			
	Field Id:	CS-1 (0-1)		CS-1 (0-1)		CS-1 (0-1)			
	Depth:	0-1 ft		0-1 ft		0-1 ft			
	Matrix:	SOIL		SOIL		SOIL			
	Sampled:	Mar-19-20 11:59		Mar-19-20 11:59		Mar-19-20 11:59			
BTEX by EPA 8021B	***Extracted:***	Mar-23-20 12:00		Mar-23-20 12:00		Mar-23-20 12:00			
	Analyzed:	Mar-23-20 19:11		Mar-23-20 21:37		Mar-23-20 22:01			
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL		
Benzene		<0.00902	0.0200	<0.00794	0.0176	<0.0167	0.0369		
Toluene		0.0120 J	0.0200	<0.00411	0.0176	<0.00863	0.0369		
Ethylbenzene		<0.00615	0.0200	<0.00541	0.0176	<0.0114	0.0369		
m,p-Xylenes		<0.00681	0.0399	<0.00599	0.0351	<0.0126	0.0738		
o-Xylene		<0.00681	0.0200	<0.00599	0.0176	<0.0126	0.0369		
Total Xylenes		<0.00681	0.0200	<0.00599	0.0176	<0.0126	0.0369		
Total BTEX		0.0120 J	0.0200	<0.00411	0.0176	<0.00863	0.0369		
Chloride by EPA 300 **SUB: T104704215-19-30**	***Extracted:***	Mar-20-20 12:27		Mar-20-20 12:27		Mar-20-20 12:27			
	Analyzed:	Mar-20-20 15:15		Mar-20-20 15:27		Mar-20-20 15:39			
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL		
Chloride		732	9.96	1550	9.98	1940	10.1		
DRO-ORO By SW8015B	***Extracted:***	Mar-23-20 11:15		Mar-23-20 11:15		Mar-23-20 11:15			
	Analyzed:	Mar-23-20 23:42		Mar-24-20 02:34		Mar-24-20 03:19			
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL		
Diesel Range Organics (DRO)		<7.54	25.2	<7.50	25.1	69.1	25.2		
Oil Range Hydrocarbons (ORO)		<7.54	25.2	<7.50	25.1	<7.53	25.2		
TPH GRO by EPA 8015 Mod.	***Extracted:***	Mar-23-20 12:00		Mar-23-20 12:00		Mar-23-20 12:00			
	Analyzed:	Mar-23-20 19:11		Mar-23-20 21:37		Mar-23-20 22:01			
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL		
TPH-GRO		<0.270	3.99	0.295 J	3.51	<0.500	7.38		

Houston - Dallas - Midland - Tampa - Phoenix - Lubbock - San Antonio - El Paso - Atlanta - New Mexico

Jessica Kramer
Project Manager

Analytical Report 656224

for

Terracon-Lubbock

Project Manager: Bryant McBrayer

BC Federal 45

AR207045

27-MAR-20

Collected By: Client

6701 Aberdeen, Suite 9 Lubbock, TX 79424

Xenco-Houston (EPA Lab Code: TX00122):
Texas (T104704215-19-30), Arizona (AZ0765), Florida (E871002-24), Louisiana (03054)
Oklahoma (2019-058), North Carolina (681), Arkansas (19-037-0)

Xenco-Dallas (EPA Lab Code: TX01468):
Texas (TX104704295-19-22), Arizona (AZ0809), Arkansas (17-063-0)

Xenco-El Paso (EPA Lab Code: TX00127): Texas (T104704221-19-16)
Xenco-Lubbock (EPA Lab Code: TX00139): Texas (T104704219-19-21)
Xenco-Midland (EPA Lab Code: TX00158): Texas (T104704400-19-19)
Xenco-Carlsbad (LELAP): Louisiana (05092)
Xenco-San Antonio (EPA Lab Code: TNI02385): Texas (T104704534-19-5)
Xenco Phoenix (EPA Lab Code: AZ00901): Arizona (AZ0757)
Xenco-Tampa: Florida (E87429), North Carolina (483)

27-MAR-20

Project Manager: **Bryant McBrayer**
Terracon-Lubbock
5827 50th st, Suite 1
Lubbock, TX 79424

Reference: XENCO Report No(s): **656224**
BC Federal 45
Project Address: Client: Spur

Bryant McBrayer:

We are reporting to you the results of the analyses performed on the samples received under the project name referenced above and identified with the XENCO Report Number(s) 656224. All results being reported under this Report Number apply to the samples analyzed and properly identified with a Laboratory ID number. Subcontracted analyses are identified in this report with either the NELAC certification number of the subcontract lab in the analyst ID field, or the complete subcontracted report attached to this report.

Unless otherwise noted in a Case Narrative, all data reported in this Analytical Report are in compliance with NELAC standards. The uncertainty of measurement associated with the results of analysis reported is available upon request. Should insufficient sample be provided to the laboratory to meet the method and NELAC Matrix Duplicate and Matrix Spike requirements, then the data will be analyzed, evaluated and reported using all other available quality control measures.

The validity and integrity of this report will remain intact as long as it is accompanied by this letter and reproduced in full, unless written approval is granted by XENCO Laboratories. This report will be filed for at least 5 years in our archives after which time it will be destroyed without further notice, unless otherwise arranged with you. The samples received, and described as recorded in Report No. 656224 will be filed for 45 days, and after that time they will be properly disposed without further notice, unless otherwise arranged with you. We reserve the right to return to you any unused samples, extracts or solutions related to them if we consider so necessary (e.g., samples identified as hazardous waste, sample sizes exceeding analytical standard practices, controlled substances under regulated protocols, etc).

We thank you for selecting XENCO Laboratories to serve your analytical needs. If you have any questions concerning this report, please feel free to contact us at any time.

Respectfully,

Jessica Kramer

Jessica Kramer
Project Manager

Recipient of the Prestigious Small Business Administration Award of Excellence in 1994.
Certified and approved by numerous States and Agencies.
A Small Business and Minority Status Company that delivers SERVICE and QUALITY

Houston - Dallas - Midland - San Antonio - Phoenix - Oklahoma - Latin America

Sample Cross Reference 656224

Terracon-Lubbock, Lubbock, TX

BC Federal 45

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
CS-1 (0-1)	S	03-19-20 11:59	0 - 1 ft	656224-001
CS-1 (0-1)	S	03-19-20 11:59	0 - 1 ft	656224-002
CS-1 (0-1)	S	03-19-20 11:59	0 - 1 ft	656224-003

CASE NARRATIVE

Client Name: Terracon-Lubbock
Project Name: BC Federal 45

Project ID: *AR207045*
Work Order Number(s): *656224*

Report Date: *27-MAR-20*
Date Received: *03/20/2020*

This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted. The data have been reviewed and are technically compliant with the requirements of the methods used, except where noted by the laboratory.

Sample receipt non conformances and comments:

Sample receipt non conformances and comments per sample:

None

Analytical non conformances and comments:

Batch: LBA-3120755 BTEX by EPA 8021B
Surrogate a,a,a-Trifluorotoluene recovered above QC limits Data confirmed by re-analysis. Samples affected are: 7699622-1-BLK,656224-001 S,656224-002.
Soil samples were not received in Terracore kits and therefore were prepared by method 5030.
SW8021BM
Batch 3120755,
Surrogate a,a,a-Trifluorotoluene recovered above QC limits Data confirmed by re-analysis. Samples affected are: 7699622-1-BLK,656224-001 S,656224-002.
Soil samples were not received in Terracore kits and therefore were prepared by method 5030.

Sample 656224-003 was diluted due to hydrocarbons beyond xylene.

Batch: LBA-3120765 TPH GRO by EPA 8015 Mod.
Surrogate 4-Bromofluorobenzene recovered above QC limits Data confirmed by re-analysis. Samples affected are: 7699623-1-BKS,7699623-1-BSD,656224-001 S,656224-001 SD.

Batch: LBA-3120961 DRO-ORO By SW8015B
Surrogate Tricosane, Surrogate n-Triacontane recovered above QC limits. Matrix interferences is suspected; data confirmed by re-analysis.
Samples affected are: 656224-002,656224-003.

Certificate of Analytical Results 656224

Terracon-Lubbock, Lubbock, TX

BC Federal 45

Sample Id:	**CS-1 (0-1)**	Matrix:	Soil	Date Received:	03.20.20 10.05
Lab Sample Id:	656224-001	Date Collected:	03.19.20 11.59	Sample Depth:	0 - 1 ft

Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	JYM			% Moisture:	
Analyst:	JYM	Date Prep:	03.20.20 12.27	Basis:	Wet Weight
Seq Number:	3120506			SUB:	T104704215-19-30

Parameter	Cas Number	Result	RL	MDL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**732**	9.96	0.353	mg/kg	03.20.20 15.15		1

Analytical Method:	DRO-ORO By SW8015B			Prep Method:	SW8015P
Tech:	MIT			% Moisture:	
Analyst:	MIT	Date Prep:	03.23.20 11.15	Basis:	Wet Weight
Seq Number:	3120961				

Parameter	Cas Number	Result	RL	MDL	Units	Analysis Date	Flag	Dil
Diesel Range Organics (DRO)	C10C28DRO	<7.54	25.2	7.54	mg/kg	03.23.20 23.42	U	1
Oil Range Hydrocarbons (ORO)	PHCG2835	<7.54	25.2	7.54	mg/kg	03.23.20 23.42	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
Tricosane	638-67-5	132	%	65-144	03.23.20 23.42	
n-Triacontane	638-68-6	143	%	46-152	03.23.20 23.42	

Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	MIT			% Moisture:	
Analyst:	MIT	Date Prep:	03.23.20 12.00	Basis:	Wet Weight
Seq Number:	3120755				

Parameter	Cas Number	Result	RL	MDL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00902	0.0200	0.00902	mg/kg	03.23.20 19.11	U	1
Toluene	108-88-3	**0.0120**	0.0200	0.00467	mg/kg	03.23.20 19.11	J	1
Ethylbenzene	100-41-4	<0.00615	0.0200	0.00615	mg/kg	03.23.20 19.11	U	1
m,p-Xylenes	179601-23-1	<0.00681	0.0399	0.00681	mg/kg	03.23.20 19.11	U	1
o-Xylene	95-47-6	<0.00681	0.0200	0.00681	mg/kg	03.23.20 19.11	U	1
Total Xylenes	1330-20-7	<0.00681	0.0200	0.00681	mg/kg	03.23.20 19.11	U	1
Total BTEX		**0.0120**	0.0200	0.00467	mg/kg	03.23.20 19.11	J	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	104	%	68-120	03.23.20 19.11	
a,a,a-Trifluorotoluene	98-08-8	113	%	71-121	03.23.20 19.11	

Certificate of Analytical Results 656224

Terracon-Lubbock, Lubbock, TX

BC Federal 45

Sample Id:	**CS-1 (0-1)**	Matrix:	Soil	Date Received:	03.20.20 10.05
Lab Sample Id:	656224-001	Date Collected:	03.19.20 11.59	Sample Depth:	0 - 1 ft
Analytical Method:	TPH GRO by EPA 8015 Mod.			Prep Method:	SW5030B
Tech:	MIT			% Moisture:	
Analyst:	MIT	Date Prep:	03.23.20 12.00	Basis:	Wet Weight
Seq Number:	3120765				

Parameter	Cas Number	Result	RL	MDL	Units	Analysis Date	Flag	Dil
TPH-GRO	8006-61-9	<0.270	3.99	0.270	mg/kg	03.23.20 19.11	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	96	%	76-123	03.23.20 19.11	
a,a,a-Trifluorotoluene	98-08-8	98	%	69-120	03.23.20 19.11	

Certificate of Analytical Results 656224

Terracon-Lubbock, Lubbock, TX

BC Federal 45

Sample Id:	**CS-1 (0-1)**	Matrix:	Soil	Date Received:	03.20.20 10.05
Lab Sample Id:	656224-002	Date Collected:	03.19.20 11.59	Sample Depth:	0 - 1 ft

Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	JYM			% Moisture:	
Analyst:	JYM	Date Prep:	03.20.20 12.27	Basis:	Wet Weight
Seq Number:	3120506			SUB:	T104704215-19-30

Parameter	Cas Number	Result	RL	MDL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**1550**	9.98	0.353	mg/kg	03.20.20 15.27		1

Analytical Method:	DRO-ORO By SW8015B			Prep Method:	SW8015P
Tech:	MIT			% Moisture:	
Analyst:	MIT	Date Prep:	03.23.20 11.15	Basis:	Wet Weight
Seq Number:	3120961				

Parameter	Cas Number	Result	RL	MDL	Units	Analysis Date	Flag	Dil
Diesel Range Organics (DRO)	C10C28DRO	<7.50	25.1	7.50	mg/kg	03.24.20 02.34	U	1
Oil Range Hydrocarbons (ORO)	PHCG2835	<7.50	25.1	7.50	mg/kg	03.24.20 02.34	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
Tricosane	638-67-5	146	%	65-144	03.24.20 02.34	**
n-Triacontane	638-68-6	166	%	46-152	03.24.20 02.34	**

Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	MIT			% Moisture:	
Analyst:	MIT	Date Prep:	03.23.20 12.00	Basis:	Wet Weight
Seq Number:	3120755				

Parameter	Cas Number	Result	RL	MDL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00794	0.0176	0.00794	mg/kg	03.23.20 21.37	U	1
Toluene	108-88-3	<0.00411	0.0176	0.00411	mg/kg	03.23.20 21.37	U	1
Ethylbenzene	100-41-4	<0.00541	0.0176	0.00541	mg/kg	03.23.20 21.37	U	1
m,p-Xylenes	179601-23-1	<0.00599	0.0351	0.00599	mg/kg	03.23.20 21.37	U	1
o-Xylene	95-47-6	<0.00599	0.0176	0.00599	mg/kg	03.23.20 21.37	U	1
Total Xylenes	1330-20-7	<0.00599	0.0176	0.00599	mg/kg	03.23.20 21.37	U	1
Total BTEX		<0.00411	0.0176	0.00411	mg/kg	03.23.20 21.37	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	113	%	68-120	03.23.20 21.37	
a,a,a-Trifluorotoluene	98-08-8	122	%	71-121	03.23.20 21.37	**

Certificate of Analytical Results 656224

Terracon-Lubbock, Lubbock, TX

BC Federal 45

Sample Id:	**CS-1 (0-1)**	Matrix:	Soil	Date Received:	03.20.20 10.05
Lab Sample Id:	656224-002	Date Collected:	03.19.20 11.59	Sample Depth:	0 - 1 ft
Analytical Method:	TPH GRO by EPA 8015 Mod.			Prep Method:	SW5030B
Tech:	MIT			% Moisture:	
Analyst:	MIT	Date Prep:	03.23.20 12.00	Basis:	Wet Weight
Seq Number:	3120765				

Parameter	Cas Number	Result	RL	MDL	Units	Analysis Date	Flag	Dil
TPH-GRO	8006-61-9	**0.295**	3.51	0.238	mg/kg	03.23.20 21.37	J	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	105	%	76-123	03.23.20 21.37	
a,a,a-Trifluorotoluene	98-08-8	105	%	69-120	03.23.20 21.37	

Certificate of Analytical Results 656224

Terracon-Lubbock, Lubbock, TX

BC Federal 45

Sample Id:	**CS-1 (0-1)**	Matrix:	Soil	Date Received:	03.20.20 10.05
Lab Sample Id:	656224-003	Date Collected:	03.19.20 11.59	Sample Depth:	0 - 1 ft

Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	JYM			% Moisture:	
Analyst:	JYM	Date Prep:	03.20.20 12.27	Basis:	Wet Weight
Seq Number:	3120506			SUB:	T104704215-19-30

Parameter	Cas Number	Result	RL	MDL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**1940**	10.1	0.356	mg/kg	03.20.20 15.39		1

Analytical Method:	DRO-ORO By SW8015B			Prep Method:	SW8015P
Tech:	MIT			% Moisture:	
Analyst:	MIT	Date Prep:	03.23.20 11.15	Basis:	Wet Weight
Seq Number:	3120961				

Parameter	Cas Number	Result	RL	MDL	Units	Analysis Date	Flag	Dil
Diesel Range Organics (DRO)	C10C28DRO	**69.1**	25.2	7.53	mg/kg	03.24.20 03.19		1
Oil Range Hydrocarbons (ORO)	PHCG2835	<7.53	25.2	7.53	mg/kg	03.24.20 03.19	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
Tricosane	638-67-5	145	%	65-144	03.24.20 03.19	**
n-Triacontane	638-68-6	174	%	46-152	03.24.20 03.19	**

Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	MIT			% Moisture:	
Analyst:	MIT	Date Prep:	03.23.20 12.00	Basis:	Wet Weight
Seq Number:	3120755				

Parameter	Cas Number	Result	RL	MDL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.0167	0.0369	0.0167	mg/kg	03.23.20 22.01	U	2
Toluene	108-88-3	<0.00863	0.0369	0.00863	mg/kg	03.23.20 22.01	U	2
Ethylbenzene	100-41-4	<0.0114	0.0369	0.0114	mg/kg	03.23.20 22.01	U	2
m,p-Xylenes	179601-23-1	<0.0126	0.0738	0.0126	mg/kg	03.23.20 22.01	U	2
o-Xylene	95-47-6	<0.0126	0.0369	0.0126	mg/kg	03.23.20 22.01	U	2
Total Xylenes	1330-20-7	<0.0126	0.0369	0.0126	mg/kg	03.23.20 22.01	U	2
Total BTEX		<0.00863	0.0369	0.00863	mg/kg	03.23.20 22.01	U	2

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	107	%	68-120	03.23.20 22.01	
a,a,a-Trifluorotoluene	98-08-8	109	%	71-121	03.23.20 22.01	

Certificate of Analytical Results 656224

Terracon-Lubbock, Lubbock, TX

BC Federal 45

Sample Id:	**CS-1 (0-1)**	Matrix:	Soil	Date Received:	03.20.20 10.05
Lab Sample Id:	656224-003	Date Collected:	03.19.20 11.59	Sample Depth:	0 - 1 ft
Analytical Method:	TPH GRO by EPA 8015 Mod.			Prep Method:	SW5030B
Tech:	MIT			% Moisture:	
Analyst:	MIT	Date Prep:	03.23.20 12.00	Basis:	Wet Weight
Seq Number:	3120765				

Parameter	Cas Number	Result	RL	MDL	Units	Analysis Date	Flag	Dil
TPH-GRO	8006-61-9	<0.500	7.38	0.500	mg/kg	03.23.20 22.01	U	2

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	100	%	76-123	03.23.20 22.01	
a,a,a-Trifluorotoluene	98-08-8	94	%	69-120	03.23.20 22.01	

Flagging Criteria

X In our quality control review of the data a QC deficiency was observed and flagged as noted. MS/MSD recoveries were found to be outside of the laboratory control limits due to possible matrix /chemical interference, or a concentration of target analyte high enough to affect the recovery of the spike concentration. This condition could also affect the relative percent difference in the MS/MSD.

B A target analyte or common laboratory contaminant was identified in the method blank. Its presence indicates possible field or laboratory contamination.

D The sample(s) were diluted due to targets detected over the highest point of the calibration curve, or due to matrix interference. Dilution factors are included in the final results. The result is from a diluted sample.

E The data exceeds the upper calibration limit; therefore, the concentration is reported as estimated.

F RPD exceeded lab control limits.

J The target analyte was positively identified below the quantitation limit and above the detection limit.

U Analyte was not detected.

L The LCS data for this analytical batch was reported below the laboratory control limits for this analyte. The department supervisor and QA Director reviewed data. The samples were either reanalyzed or flagged as estimated concentrations.

H The LCS data for this analytical batch was reported above the laboratory control limits. Supporting QC Data were reviewed by the Department Supervisor and QA Director. Data were determined to be valid for reporting.

K Sample analyzed outside of recommended hold time.

JN A combination of the "N" and the "J" qualifier. The analysis indicates that the analyte is "tentatively identified" and the associated numerical value may not be consistent with the amount actually present in the environmental sample.

** Surrogate recovered outside laboratory control limit.

BRL Below Reporting Limit.

RL Reporting Limit

MDL Method Detection Limit **SDL** Sample Detection Limit **LOD** Limit of Detection

PQL Practical Quantitation Limit **MQL** Method Quantitation Limit **LOQ** Limit of Quantitation

DL Method Detection Limit

NC Non-Calculable

SMP Client Sample **BLK** Method Blank

BKS/LCS Blank Spike/Laboratory Control Sample **BKSD/LCSD** Blank Spike Duplicate/Laboratory Control Sample Duplicate

MD/SD Method Duplicate/Sample Duplicate **MS** Matrix Spike **MSD:** Matrix Spike Duplicate

+ NELAC certification not offered for this compound.

***** (Next to analyte name or method description) = Outside XENCO's scope of NELAC accreditation

QC Summary 656224

Terracon-Lubbock

BC Federal 45

Analytical Method: Chloride by EPA 300 — Prep Method: E300P
Seq Number: 3120506 — Matrix: Solid — Date Prep: 03.20.20
MB Sample Id: 7699390-1-BLK — LCS Sample Id: 7699390-1-BKS — LCSD Sample Id: 7699390-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	<0.354	100	105	105	105	105	80-120	0	20	mg/kg	03.20.20 10:18	

Analytical Method: Chloride by EPA 300 — Prep Method: E300P
Seq Number: 3120506 — Matrix: Soil — Date Prep: 03.20.20
Parent Sample Id: 656007-001 — MS Sample Id: 656007-001 S — MSD Sample Id: 656007-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	11.2	99.8	111	100	111	100	80-120	0	20	mg/kg	03.20.20 12:47	

Analytical Method: Chloride by EPA 300 — Prep Method: E300P
Seq Number: 3120506 — Matrix: Soil — Date Prep: 03.20.20
Parent Sample Id: 656007-004 — MS Sample Id: 656007-004 S — MSD Sample Id: 656007-004 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	18.6	99.6	116	98	117	99	80-120	1	20	mg/kg	03.20.20 13:48	

Analytical Method: DRO-ORO By SW8015B — Prep Method: SW8015P
Seq Number: 3120961 — Matrix: Solid — Date Prep: 03.23.20
MB Sample Id: 7699760-1-BLK — LCS Sample Id: 7699760-1-BKS — LCSD Sample Id: 7699760-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Diesel Range Organics (DRO)	<7.48	100	102	102	116	116	63-139	13	20	mg/kg	03.23.20 19:22	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
Tricosane	138		143		129		65-144	%	03.23.20 19:22
n-Triacontane	147		150		136		46-152	%	03.23.20 19:22

Analytical Method: DRO-ORO By SW8015B — Prep Method: SW8015P
Seq Number: 3120961 — Matrix: Solid — Date Prep: 03.23.20
MB Sample Id: 7699760-1-BLK

Parameter	MB Result	Units	Analysis Date	Flag
Oil Range Hydrocarbons (ORO)	<7.48	mg/kg	03.23.20 22:59	

MS/MSD Percent Recovery — [D] = 100*(C-A) / B — LCS = Laboratory Control Sample — MS = Matrix Spike
Relative Percent Difference — RPD = 200* | (C-E) / (C+E) | — A = Parent Result — B = Spike Added
LCS/LCSD Recovery — [D] = 100 * (C) / [B] — C = MS/LCS Result — D = MSD/LCSD % Rec
Log Difference — Log Diff. = Log(Sample Duplicate) - Log(Original Sample) — E = MSD/LCSD Result

Final 1.000

QC Summary 656224

Terracon-Lubbock

BC Federal 45

Analytical Method: **DRO-ORO By SW8015B** Prep Method: SW8015P
Seq Number: 3120961 Matrix: Soil Date Prep: 03.23.20
Parent Sample Id: 656224-001 MS Sample Id: 656224-001 S MSD Sample Id: 656224-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Diesel Range Organics (DRO)	<7.56	101	120	119	123	123	63-139	2	20	mg/kg	03.24.20 00:24	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
Tricosane	112		128		65-144	%	03.24.20 00:24
n-Triacontane	121		141		46-152	%	03.24.20 00:24

Analytical Method: **BTEX by EPA 8021B** Prep Method: SW5030B
Seq Number: 3120755 Matrix: Solid Date Prep: 03.23.20
MB Sample Id: 7699622-1-BLK LCS Sample Id: 7699622-1-BKS LCSD Sample Id: 7699622-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.000452	0.100	0.0939	94	0.0951	95	55-120	1	20	mg/kg	03.23.20 16:22	
Toluene	<0.000234	0.100	0.100	100	0.0998	100	77-120	0	20	mg/kg	03.23.20 16:22	
Ethylbenzene	<0.000308	0.100	0.101	101	0.102	102	77-120	1	20	mg/kg	03.23.20 16:22	
m,p-Xylenes	<0.000341	0.200	0.200	100	0.203	102	78-120	1	20	mg/kg	03.23.20 16:22	
o-Xylene	<0.000341	0.100	0.101	101	0.102	102	78-120	1	20	mg/kg	03.23.20 16:22	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
4-Bromofluorobenzene	117		113		113		68-120	%	03.23.20 16:22
a,a,a-Trifluorotoluene	123	**	116		116		71-121	%	03.23.20 16:22

Analytical Method: **BTEX by EPA 8021B** Prep Method: SW5030B
Seq Number: 3120755 Matrix: Soil Date Prep: 03.23.20
Parent Sample Id: 656224-001 MS Sample Id: 656224-001 S MSD Sample Id: 656224-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00856	1.89	1.69	89	1.71	89	54-120	1	25	mg/kg	03.23.20 19:36	
Toluene	0.0120	1.89	1.78	94	1.80	93	57-120	1	25	mg/kg	03.23.20 19:36	
Ethylbenzene	<0.00583	1.89	1.83	97	1.85	96	58-131	1	25	mg/kg	03.23.20 19:36	
m,p-Xylenes	<0.00646	3.79	3.63	96	3.68	95	62-124	1	25	mg/kg	03.23.20 19:36	
o-Xylene	<0.00646	1.89	1.78	94	1.81	94	62-124	2	25	mg/kg	03.23.20 19:36	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
4-Bromofluorobenzene	112		105		68-120	%	03.23.20 19:36
a,a,a-Trifluorotoluene	123	**	115		71-121	%	03.23.20 19:36

MS/MSD Percent Recovery [D] = 100*(C-A) / B LCS = Laboratory Control Sample MS = Matrix Spike
Relative Percent Difference RPD = 200* | (C-E) / (C+E) | A = Parent Result B = Spike Added
LCS/LCSD Recovery [D] = 100 * (C) / [B] C = MS/LCS Result D = MSD/LCSD % Rec
Log Difference Log Diff. = Log(Sample Duplicate) - Log(Original Sample) E = MSD/LCSD Result

QC Summary 656224

Terracon-Lubbock

BC Federal 45

Analytical Method: **TPH GRO by EPA 8015 Mod.** Prep Method: SW5030B
Seq Number: 3120765 Matrix: Solid Date Prep: 03.23.20
MB Sample Id: 7699623-1-BLK LCS Sample Id: 7699623-1-BKS LCSD Sample Id: 7699623-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
TPH-GRO	<0.0136	1.00	1.15	115	1.16	116	35-129	1	20	mg/kg	03.23.20 17:10	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
4-Bromofluorobenzene	109		148	**	149	**	76-123	%	03.23.20 17:10
a,a,a-Trifluorotoluene	106		105		104		69-120	%	03.23.20 17:10

Analytical Method: **TPH GRO by EPA 8015 Mod.** Prep Method: SW5030B
Seq Number: 3120765 Matrix: Soil Date Prep: 03.23.20
Parent Sample Id: 656224-001 MS Sample Id: 656224-001 S MSD Sample Id: 656224-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
TPH-GRO	<0.246	18.1	16.3	90	17.0	90	35-129	4	20	mg/kg	03.23.20 20:25	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
4-Bromofluorobenzene	133	**	135	**	76-123	%	03.23.20 20:25
a,a,a-Trifluorotoluene	99		99		69-120	%	03.23.20 20:25

MS/MSD Percent Recovery	[D] = 100*(C-A) / B	LCS = Laboratory Control Sample	MS = Matrix Spike
Relative Percent Difference	RPD = 200* | (C-E) / (C+E) |	A = Parent Result	B = Spike Added
LCS/LCSD Recovery	[D] = 100 * (C) / [B]	C = MS/LCS Result	D = MSD/LCSD % Rec
Log Difference	Log Diff. = Log(Sample Duplicate) - Log(Original Sample)	E = MSD/LCSD Result	

654224

654224

Terracon

CHAIN OF CUSTODY RECORD

Laboratory: Xenco
Address: 6701 Aberdeen, Lubbock, Texas 79424
Phone:
Contact: Bryant McBrayer (806) 853-3619
SRS #:
Sampler's Signature

Office Location: Lubbock
Project Manager: Bryant McBrayer
Sampler's Name: Bryant McBrayer
Project Number: AR207045
Project Name: BC Federal 45

ANALYSIS REQUESTED

LAB USE ONLY
DUE DATE:
TEMP OF COOLER WHEN RECEIVED (°C): 1.0/1.1

Page 1 of 1

Matrix	Date	Time	Comp	Grab	Identifying Marks of Sample(s)	Start Depth	End Depth	No. Type of Containers: 2 oz Glass	4 oz Glass	5035 kit	40 ml VOA	Chloride (EPA Method 300)	TPH Extended 8015	BTEX (EPA Method 8021B)	Hold	Lab Sample ID
S	3/19/2020	13:55	X		CS-1 (0-1)	0	1		X			X	X	X		
S	3/19/2020	13:58	X		CS-2 (0-1)	0	1		X			X	X	X		
S	3/19/2020	14:00	X		CS-3 (0-1)	0	1		X			X	X	X		

TURNAROUND TIME: [X] Normal [ ] 48-Hour Rush [ ] 24-Hour Rush

TRRP Laboratory Review Checklist: [ ] Yes [ ] No

Relinquished by (Signature)	Date:	Time:	Received by (Signature)	Date:	Time:
	3/19/2020	10:05	Brenda Ward		

NOTES: Client: Spur

e-mail results to:
bryant.mcbrayer@terracon.com
erin.loyd@terracon.com
irguesnier@terracon.com

Matrix: WW-Wastewater; W - Water; S - Soil; L - Liquid; A - Air Bag; C - Charcoal tube; SL - Sludge
Container: VOA - 40 ml vial; A/G - Amber Glass 1L; 250 ml - Glass wide mouth; P/O - Plastic or other: _____

Inter-Office Shipment

IOS Number : 60602

Date/Time:	03.19.2020	Created by:	Brenda Ward	Please send report to:	Jessica Kramer
Lab# From:	**Lubbock**	Delivery Priority:		Address:	6701 Aberdeen, Suite 9 Lubbock, TX 79424
Lab# To:	**Houston**	Air Bill No.:	770065286942	E-Mail:	jessica.kramer@xenco.com

Sample Id	Matrix	Client Sample Id	Sample Collection	Method	Method Name	Lab Due	HT Due	PM	Analytes	Sign
656224-001	S	CS-1 (0-1)	03.19.2020 11:59	E300_CL	Chloride by EPA 300	03.25.2020	04.16.2020	JKR	CL	
656224-002	S	CS-1 (0-1)	03.19.2020 11:59	E300_CL	Chloride by EPA 300	03.25.2020	04.16.2020	JKR	CL	
656224-003	S	CS-1 (0-1)	03.19.2020 11:59	E300_CL	Chloride by EPA 300	03.25.2020	04.16.2020	JKR	CL	

Inter Office Shipment or Sample Comments:

Relinquished By: Brenda Ward

Brenda Ward

Date Relinquished: 03.19.2020

Received By: Jose F. Londono

Jose Londono

Date Received: 03.20.2020

Cooler Temperature: 1.5

XENCO Laboratories

Inter Office Report- Sample Receipt Checklist

Sent To: Houston

IOS #: 60602

Acceptable Temperature Range: 0 - 6 degC
Air and Metal samples Acceptable Range: Ambient
Temperature Measuring device used : HOU-068

Sent By: Brenda Ward **Date Sent:** 03.19.2020 01.38 PM

Received By: Jose Londono **Date Received:** 03.20.2020 09.13 AM

Sample Receipt Checklist		Comments
#1 *Temperature of cooler(s)?	1.5	
#2 *Shipping container in good condition?	**Yes**	
#3 *Samples received with appropriate temperature?	**Yes**	
#4 *Custody Seals intact on shipping container/ cooler?	**Yes**	
#5 *Custody Seals Signed and dated for Containers/coolers	**Yes**	
#6 *IOS present?	**Yes**	
#7 Any missing/extra samples?	**No**	
#8 IOS agrees with sample label(s)/matrix?	**Yes**	
#9 Sample matrix/ properties agree with IOS?	**Yes**	
#10 Samples in proper container/ bottle?	**Yes**	
#11 Samples properly preserved?	**Yes**	
#12 Sample container(s) intact?	**Yes**	
#13 Sufficient sample amount for indicated test(s)?	**Yes**	
#14 All samples received within hold time?	**Yes**	

*** Must be completed for after-hours delivery of samples prior to placing in the refrigerator**

NonConformance:

Corrective Action Taken:

Nonconformance Documentation

Contact: _____ **Contacted by :** _____ **Date:** _____

Checklist reviewed by: Jose F. Londono Date: 03.20.2020

Jose Londono

XENCO Laboratories

Prelogin/Nonconformance Report- Sample Log-In

Client: Terracon-Lubbock

Date/ Time Received: 03.19.2020 10.05.00 AM

Work Order #: 656224

Acceptable Temperature Range: 0 - 6 degC
Air and Metal samples Acceptable Range: Ambient

Temperature Measuring device used : IR-4

Sample Receipt Checklist		Comments
#1 *Temperature of cooler(s)?	1.1	
#2 *Shipping container in good condition?	**Yes**	
#3 *Samples received on ice?	**Yes**	
#4 *Custody Seals intact on shipping container/ cooler?	**N/A**	
#5 Custody Seals intact on sample bottles?	**N/A**	
#6*Custody Seals Signed and dated?	**N/A**	
#7 *Chain of Custody present?	**Yes**	
#8 Any missing/extra samples?	**No**	
#9 Chain of Custody signed when relinquished/ received?	**Yes**	
#10 Chain of Custody agrees with sample labels/matrix?	**Yes**	
#11 Container label(s) legible and intact?	**Yes**	
#12 Samples in proper container/ bottle?	**Yes**	
#13 Samples properly preserved?	**Yes**	
#14 Sample container(s) intact?	**Yes**	
#15 Sufficient sample amount for indicated test(s)?	**Yes**	
#16 All samples received within hold time?	**Yes**	
#17 Subcontract of sample(s)?	**Yes**	Chloride sent to Stafford
#18 Water VOC samples have zero headspace?	**N/A**	

*** Must be completed for after-hours delivery of samples prior to placing in the refrigerator**

Analyst: PH Device/Lot#:

Checklist completed by: Brenda Ward Date: 03.19.2020
Brenda Ward

Checklist reviewed by: Jessica Kramer Date: 03.19.2020
Jessica Kramer

APPENDIX D – TERRACON STANDARD OF CARE, LIMITATION, AND RELIANCE

Standard of Care

Terracon's services were performed in a manner consistent with generally accepted practices of the profession undertaken in similar studies in the same geographical area during the same time. Terracon makes no warranties, either express or implied, regarding the findings, conclusions, or recommendations. Please note that Terracon does not warrant the work of laboratories, regulatory agencies, or other third parties supplying information used in the preparation of the report. These services were performed in accordance with the scope of work agreed with you, Solaris Water Midstream, as reflected in our proposal (PA4197040).

Additional Scope Limitations

Development of this RAP is based upon information provided by the Client and Terracon's remediation and construction services line. Such information is subject to change over time. Certain indicators of the presence of hazardous substances, petroleum products, or other constituents may have been latent, inaccessible, unobservable, nondetectable, or not present during these services. We cannot represent that the site contains no hazardous substances, toxic materials, petroleum products, or other latent conditions beyond those by information provided by the Client. The data, interpretations, findings, and our recommendations are based solely upon reformation executed within the scope of these services.

Reliance

This report has been prepared for the exclusive use of Solaris Water Midstream, and any authorization for use or reliance by any other party (except a governmental entity having jurisdiction over the site) is prohibited without the express written authorization of Solaris Water Midstream and Terracon. Any unauthorized distribution or reuse is at Solaris Water Midstream sole risk. Notwithstanding the foregoing, reliance by authorized parties will be subject to the terms, conditions, and limitations stated in the proposal and Solaris Water Midstream and Terracon's Master Services Agreement. The limitation of liability defined in the terms and conditions is the aggregate limit of Terracon's liability to Solaris Water Midstream and all relying parties unless otherwise agreed in writing.

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

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

CONDITIONS

Action 172149

CONDITIONS

Operator: Spur Energy Partners LLC 9655 Katy Freeway Houston, TX 77024	OGRID: 328947
	Action Number: 172149
	Action Type: [C-141] Release Corrective Action (C-141)

CONDITIONS

Created By	Condition	Condition Date
jnobui	Closure Report Approved. Please implement 19.15.29.13 NMAC when completing P&A.	1/25/2023