

Incident ID	nAPP2116142694
District RP	1RP-4930
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?	<u>105</u> (ft bgs)
Did this release impact groundwater or surface water?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release within 300 feet of a continuously flowing watercourse or any other significant watercourse?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> 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)?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release within 300 feet of an occupied permanent residence, school, hospital, institution, or church?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> 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?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release within 1000 feet of any other fresh water well or spring?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Are the lateral extents of the release within incorporated municipal boundaries or within a defined municipal fresh water well field?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release within 300 feet of a wetland?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release overlying a subsurface mine?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release overlying an unstable area such as karst geology?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release within a 100-year floodplain?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Did the release impact areas not on an exploration, development, production, or storage site?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No

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

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

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

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

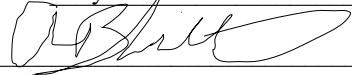
Oil Conservation Division

Incident ID	nAPP2116142694
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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: Amy Barnhill

Title: Waste and Water Specialist

Signature: Date: ~~5/26/2020~~ 6-10-21

Type text here

email: ABarnhill@chevron.com

Telephone: 432-687-7108

OCD Only

Received by: _____

Date: _____

Incident ID	nAPP2116142694
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Remediation Plan

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

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

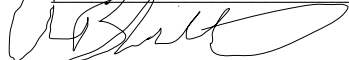
Deferral Requests Only: *Each of the following items must be confirmed as part of any request for deferral of remediation.*

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

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

Printed Name: Amy Barnhill

Title: Waste and Water Specialist

Signature: Date: ~~5/26/2020~~ 6-10-21

email: ABarnhill@chevron.com

Telephone: 432-687-7108

OCD Only

Received by: _____ Date: _____

☒ Approved ☐ Approved with Attached Conditions of Approval ☐ Denied ☐ Deferral ApprovedSignature: 

Date: 06/11/2021

1RP-4930
Delineation Report and Remediation Plan
Northwest Abo Unit Battery (NWAUB)
Crude Oil and Produced Water Release
Eddy County, New Mexico

Latitude: N 32.81466°
Longitude: W 103.56470°

LAI Project No. 20-0107-02

March 25, 2020

Prepared for:
Chevron USA Inc.
6301 Deauville Blvd.
Midland, Texas 79706

Prepared by:
Larson & Associates, Inc.
507 North Marienfeld Street, Suite 205
Midland, Texas 79701



Mark J. Larson, P.G.
Certified Professional Geologist #10490



Rachel E. Owen
Sr. Geoscientist

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1RP-4930
Delineation Report and Remediation Plan
Chevron USA, Inc., NWAUB
Crude Oil and Produced Water Release
March 25, 2020

1.0 INTRODUCTION

Larson & Associates, Inc. (LAI), has prepared this delineation report and remediation plan on behalf of Chevron USA Inc. (Chevron) for submittal to the New Mexico Oil Conservation Division (OCD) District 1 for a crude oil and produced water release at the Northwest Abo Unit Battery (Site) located in Unit O (SW/4, SE/4), Section 21, Township 17 South, Range 34 East in Lea County New Mexico. The geodetic position is North 32.81466° and West -103.56470°. Figure 1 presents a topographic map. Figure 2 presents an aerial map.

1.1 Background

The release occurred on December 28, 2017, due to a water pump failure. Approximately 1.52 barrels (bbls) of crude oil were released and approximately 1 bbl was recovered. Approximately 11.06 bbls of produced water were released and 10 bbls were recovered. The affected area measures approximately 4,342 square feet. Appendix A presents the Chevron spill volume calculation and documentation. The initial C-141 was submitted on January 11, 2018 and assigned a Remediation Permit number of 1RP-4930.

Between March 25 and 31, 2018, BBC International, Inc. (BBC) personnel collected soil samples inside the spill area and in each cardinal direction outside of the spill for horizontal and vertical delineation. The soil samples were delivered to Cardinal Laboratories in Hobbs, New Mexico and were analyzed for benzene, toluene, ethylbenzene and xylenes (BTEX) and total petroleum hydrocarbons (TPH), including gasoline range organics (C6-C12), diesel range organics (>C12-C28) and oil range organics (>C28-C35) by EPA SW-846 Methods 8021B and 8015M, respectively, and chloride by Method SM4500CL-B. Benzene and BTEX were reported below method reporting limits in all samples. TPH was reported above the OCD delineation limit of 100 mg/Kg in the following samples:

SP1, 1' (1,412 mg/Kg)	SP1, 2' (2,266 mg/Kg)
SP1, 3' (237 mg/Kg)	SP1, 4' (604 mg/Kg)
SP2, 1' (3,077 mg/Kg)	SP2, 2' (403.9 mg/Kg)
SP2, 3' (101.3 mg/Kg)	SP3, 1' (1,340 mg/Kg)
SP3, 2' (590 mg/Kg)	SP4, 1' (3,454 mg/Kg)
SP4, 2' (548 mg/Kg)	SP5, 1' (279.9 mg/Kg)
SP5, 2' (131.8 mg/Kg)	SP6, 1' (3,134 mg/Kg)
SP7, 1' (464.6 mg/Kg)	SP7, 2' (212.6 mg/Kg)
SP7, 5' (540 mg/Kg)	

Chloride was reported above the OCD delineation limit of 600 milligrams per kilogram (mg/Kg) in samples SP-6, 1 foot below ground surface (bgs) (2,080 mg/Kg) and SP-6, 2 feet bgs (656 mg/Kg).

BBC submitted the data to OCD on June 20, 2018, in a report titled, "Delineation Workplan". OCD denied approval of the work plan on July 19, 2018, because the plan would leave TPH in soil at concentrations above the OCD remediation limit of 100 mg/Kg and TPH at sample location SP-7 was not delineated below the OCD delineation limit of 100 mg/Kg. OCD requested Chevron to complete the TPH delineation for SP-7 and to resubmit an appropriate remediation plan for the release. Appendix B presents the BBC Delineation Workplan. Appendix C presents regulatory communications.

nAPP2116142

1RP-4930

Delineation Report and Remediation Plan

Chevron USA, Inc., NWAUB

Crude Oil and Produced Water Release

March 25, 2020

1.2 Physical Setting

The physical setting is as follows:

- The surface elevation is approximately 4,073 feet above mean sea level (msl);
- The surface topography gradually decreases to the southeast;
- Surface water is present approximately 928 feet northwest of the site;
- The soils are designated as “Kimbrough-Lea complex, dry, 0 to 3 percent slopes”, consisting of 0 to 3 inches of gravelly loam, underlain by 3 to 10 inches of loam, and 10 to 80 inches of cemented material (caliche);
- The geology consists of alluvial and eolian deposits of the Ogallala Formation (Lower Pliocene to middle Miocene);
- Groundwater was reported in a well at approximately 105 feet below ground surface (bgs) in 1974;
- According to the New Mexico Office of the State Engineer (OSE) website the nearest freshwater well (L-03616-S6) is located in Unit N (SE/4, SW/4) in Section 21, Township 17 South, Range 34 East approximately 0.12 miles or 608 feet southwest of the Site.

1.3 Remediation Action Levels

The following remediation standards are based on closure criteria for soils impacted by a release as presented in Table 1 of 19.15.29 NMAC:

- Benzene 10 mg/Kg
- BTEX 50 mg/Kg
- TPH 100 mg/Kg
- Chloride 600 mg/Kg

Further, 19.15.29.13 NMAC (Restoration, Reclamation and Re-Vegetation) requires the operator to restore the impacted surface area that existed prior to the release or their final land use.

2.0 DELINEATION

On February 10, 2020, LAI personnel used direct push technology (DPT) to collect additional soil samples from SP-7 to complete delineation for TPH. Samples were collected at 6, 10, 15, and 20 feet bgs. The soil samples were delivered under chain of custody and preservation to Permian Basin Environmental Laboratory (PBEL) in Midland, Texas. The laboratory analyzed the samples for TPH, including gasoline range organics (C6-C12), diesel range organics (>C12-C28) and oil range organics (>C28-C35) by EPA SW-846 Method 8015M. Figure 2 presents an aerial map showing the delineation soil sample location. The laboratory reported TPH below the delineation limit of 100 milligrams per kilogram (mg/Kg) all samples. Table 1 presents the soil sample analytical data summary. Appendix D presents the laboratory reports.

3.0 Remediation Plan

Chevron proposes the following remedial actions:

- Excavate soil from an area measuring approximately 492 square feet, encompassing SP-1 to 4.1 feet bgs,

1RP-4930
Delineation Report and Remediation Plan
Chevron USA, Inc., NWAUB
Crude Oil and Produced Water Release
March 25, 2020

- Excavate soil from an area measuring approximately 3,062 square feet encompassing SP-2, SP-3, SP-4, and SP-5 to 3 feet bgs;
- Excavate soil from an area measuring approximately 487 square feet encompassing SP-6 to 4.1 feet bgs, and 301 square feet encompassing SP-7 to 6 feet bgs;
- Collect five (5) point composite bottom and sidewall confirmation soil samples for every 200 square feet of excavation and analyze for BTEX, TPH and chloride;
- Backfill excavations with clean topsoil up to 2 feet bgs and up to surface with clean caliche on the pad assuming achievement of OCD remediation levels; and
- Prepare report with photographs for submittal to OCD District 1.

Figure 3 presents the proposed excavation areas.

Tables

Table 1
Soil Sample Analytical Data Summary
NWAUB
Lea County, New Mexico
North 32 48' 52.78", West 103 33' 52.84"

Page 1 of 1

Sample	Depth (Feet)	Collection Date	Status	C6 - C12 (mg/Kg)	C12 - C28 (mg/Kg)	C28 - C35 (mg/Kg)	TPH (mg/Kg)
Remediation Level:							100 / 2,500
SP-7	6	2/10/2020	In-Situ	<50.0	<50.0	<50.0	<50.0
	10	2/10/2020	In-Situ	<49.9	<49.9	<49.9	<49.9
	15	2/10/2020	In-Situ	<49.9	<49.9	<49.9	<49.9
	20	2/10/2020	In-Situ	<49.9	<49.9	<49.9	<49.9

Notes: Analysis performed by Xenco Laboratories

Depth in feet below ground surface (bgs)

mg/Kg: milligrams per kilogram equivalent to parts per million (ppm)

<: denotes concentration less than analytical method reporting limit

Bold and Highlighted exceeds OCD remediation action limits

Figures

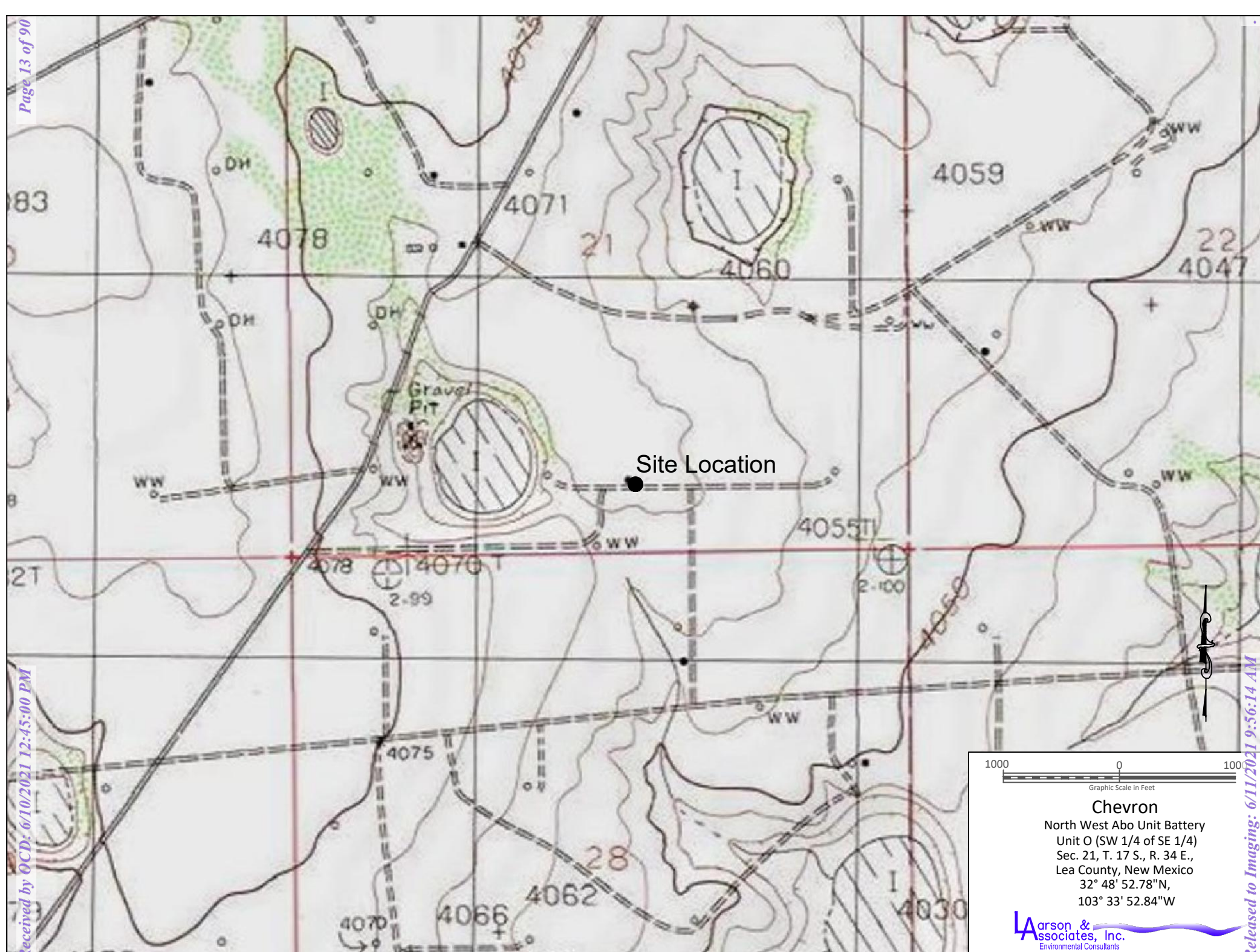
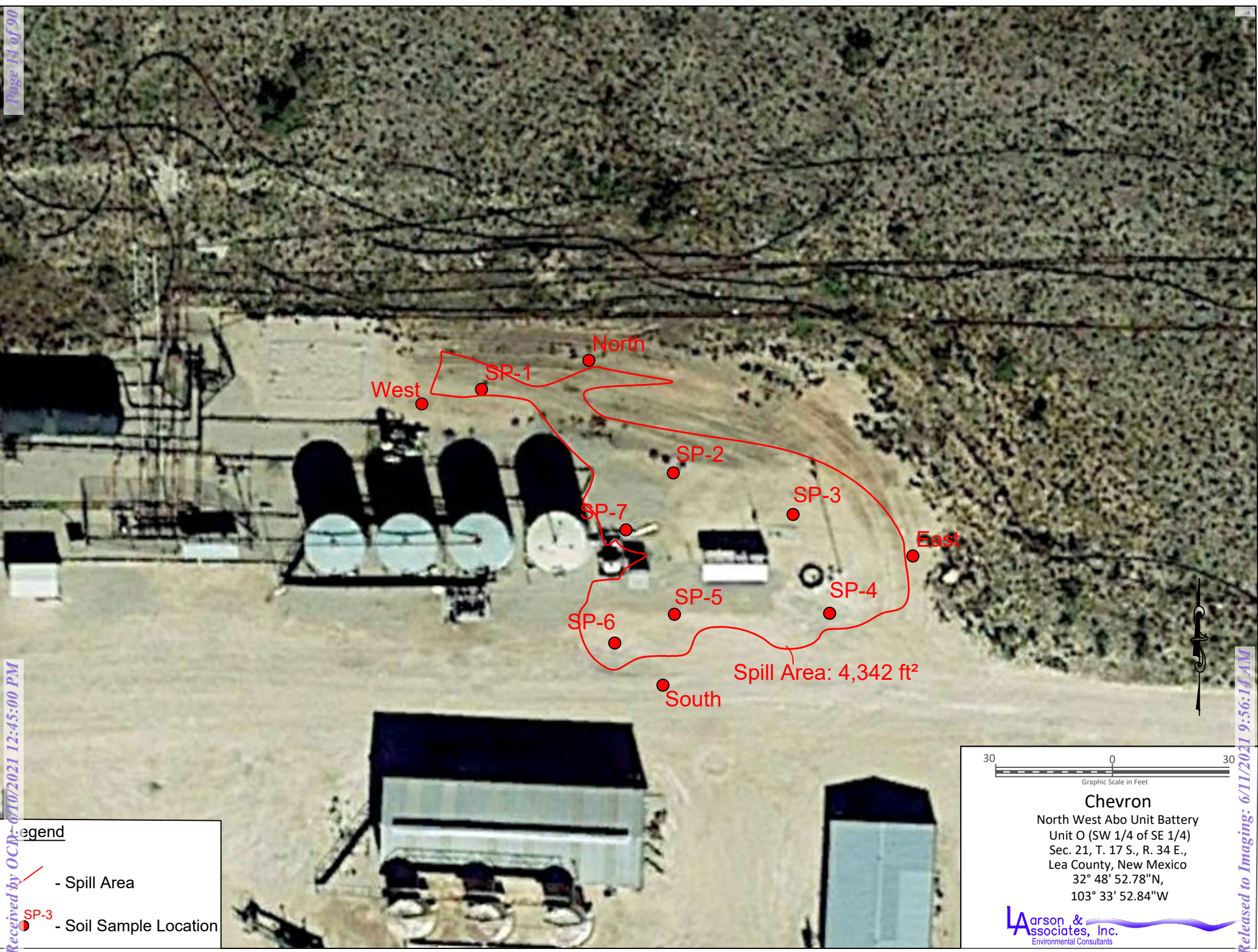


Figure 1 - Topographic Map



Legend

- Spill Area
- SP-3 - Soil Sample Location

30 0 30
Graphic Scale in Feet

Chevron
North West Abo Unit Battery
Unit O (SW 1/4 of SE 1/4)
Sec. 21, T. 17 S., R. 34 E.,
Lea County, New Mexico
32° 48' 52.78"N,
103° 33' 52.84"W

Larson & Associates, Inc.
Environmental Consultants

Figure 2 - Aerial Map

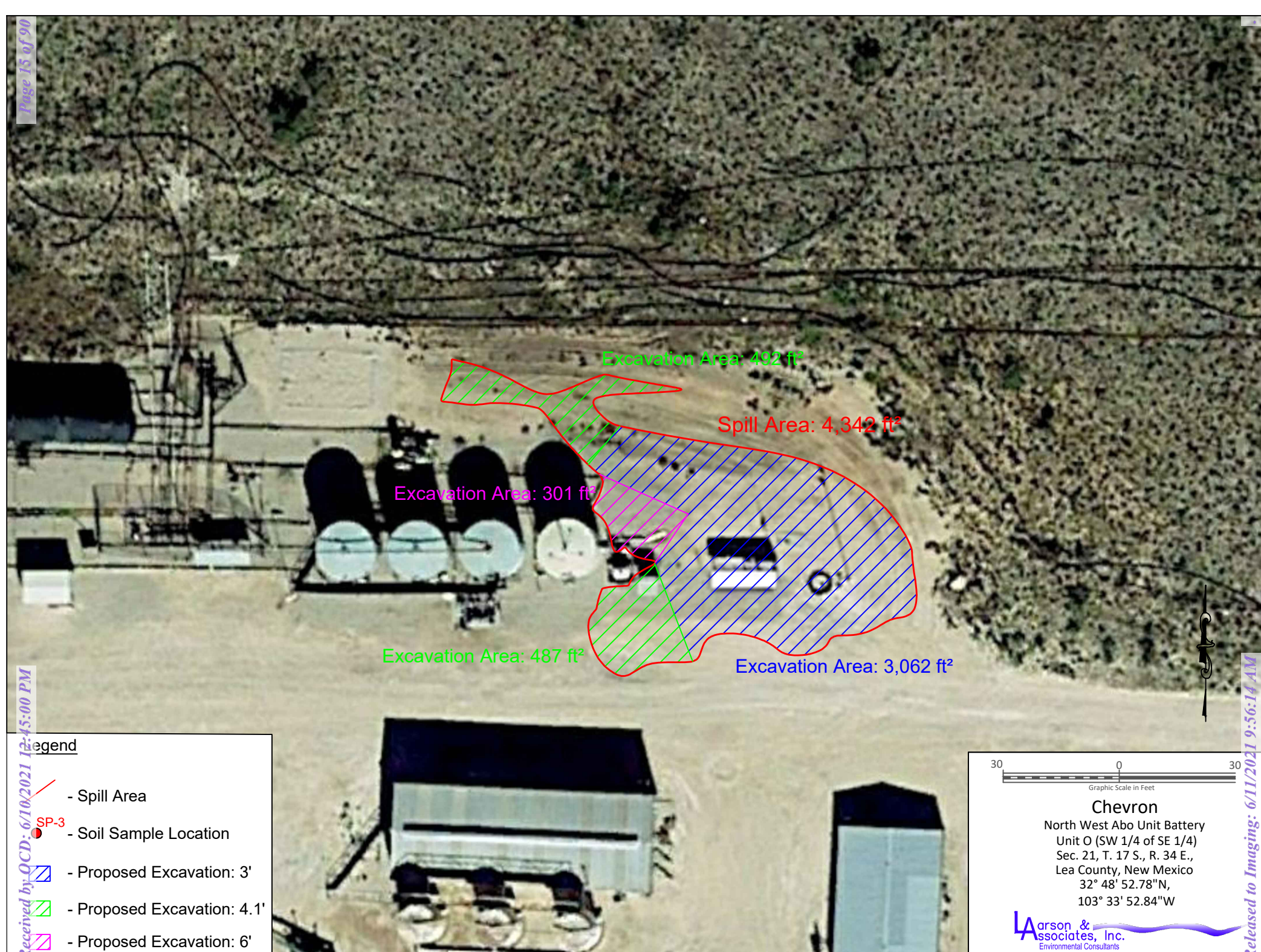


Figure 3 - Aerial Map Showing Proposed Excavations

Appendix A

Initial 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

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

Form C-141
Revised August 8, 2011

Submit 1 Copy to appropriate District Office in
accordance with 19.15.29 NMAC.

Release Notification and Corrective Action

OPERATOR

☒ Initial Report ☐ Final Report

Name of Company	Chevron USA Inc.	Contact	Josepha DeLeon
Address	6301 Deauville Blvd., Midland, TX 79706	Telephone No.	wk: 575-263-0424 cell: 432-425-1528
Facility Name	North West Abo Unit Battery	Facility Type:	Battery
Surface Owner	State	Mineral Owner	State of New Mexico
		API No.	See attached

LOCATION OF RELEASE

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County
O	21	17S	34E					Lea

Latitude 32.814740 Longitude; -103.564660

NATURE OF RELEASE

Type of Release	Spill	Volume of Release:	1.52 barrels oil; 11.06 barrels produced water	Volume Recovered:	1 barrels oil 10 barrels produced water
Source of Release	Water pump failure	Date and Hour of Occurrence	12/28/2017; 05:12 AM	Date and Hour of Discovery	12/28/2017; 08:00 AM
Was Immediate Notice Given?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Not Required	If YES, To Whom?	Olivia Yu / Maxey Brown - email		
By Whom?	Josepha DeLeon	Date and Hour:	12/28/2017; 10:08 AM		
Was a Watercourse Reached?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	If YES, Volume Impacting the Watercourse.			

If a Watercourse was Impacted, Describe Fully.*

N/A

RECEIVED

By Olivia Yu at 3:16 pm, Jan 12, 2018



Describe Cause of Problem and Remedial Action Taken.*

Loss of power causing an interruption in instrument air supply, water pump failure and resulting in a release of 1.52 barrels oil and 11.06 barrels produced water to caliche pad. Recovered 1 barrel of oil and 10 barrels produced water.

Describe Area Affected and Cleanup Action Taken.*

Spill within Tank Battery's caliche pad. None of the material went off the pad. Remediation to follow. Shut lease in. Vacuum truck extracted liquid. Manually opened valve to equalize to other tanks.

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

Signature:				<u>OIL CONSERVATION DIVISION</u>	
Printed Name:	Josepha DeLeon			Approved by Environmental Specialist:	
Title:	HES Compliance Support - Environmental			Approval Date:	1/12/2018
E-mail Address:	jdx@chevron.com			Expiration Date:	
Date	01/11/2018			Conditions of Approval:	Attached <input checked="" type="checkbox"/>
Phone:	432-425-1528			see attached directive	

* Attach Additional Sheets If Necessary

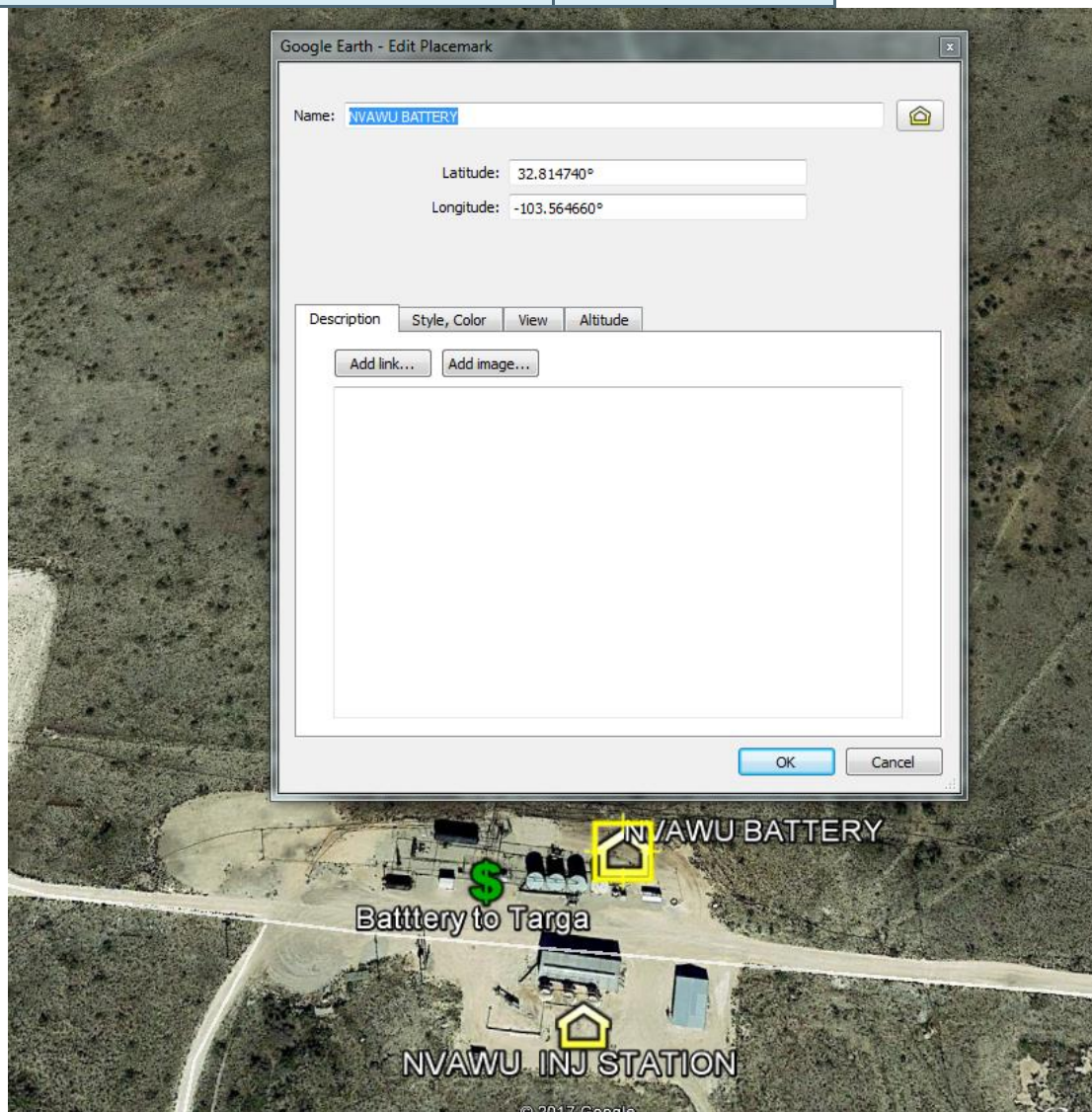
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1RP-4930

nOY1801255310

pOY1801255305

NVAWU 01	3002525652
NVAWU 11 2	3002524019
NVAWU 30	3002533987
NVAWU 31	3002533988
NVAWU 06 H	3002524026
NVAWU 08	3002524061
NVAWU 09	3002524064
NVAWU 10H	3002524062
NVAWU 13	3002524046
NVAWU 14	3002523944
NVAWU 19	3002523880
NVAWU 29H	3002534668
NVAWU 20H	3002523915
NVAWU 23	3002524050
NVAWU 24H	3002524087
NVAWU 26	3002533637
NVAWU 27	3002533638
NVAWU 28H	3002533926
NVAWU 32	3002534094



Operator/Responsible Party,

The OCD has received the form C-141 you provided on 1/11/2018 regarding an unauthorized release. The information contained on that form has been entered into our incident database and remediation case number 1RP-4930 has been assigned. **Please refer to this case number in all future correspondence.**

It is the Division's obligation under both the Oil & Gas Act and Water Quality Act to provide for the protection of public health and the environment. Our regulations (19.15.29.11 NMAC) state the following,

The responsible person shall complete division-approved corrective action for releases that endanger public health or the environment. The responsible person shall address releases in accordance with a remediation plan submitted to and approved by the division or with an abatement plan submitted in accordance with 19.15.30 NMAC. [emphasis added]

Release characterization is the first phase of corrective action unless the release is ongoing or is of limited volume and all impacts can be immediately addressed. Proper and cost-effective remediation typically cannot occur without adequate characterization of the impacts of any release. Furthermore, the Division has the ability to impose reasonable conditions upon the efforts it oversees. **As such, the Division is requiring a workplan for the characterization of impacts associated with this release be submitted to the OCD District 1 office in Hobbs on or before 2/12/2018. If and when the release characterization workplan is approved, there will be an associated deadline for submittal of the resultant investigation report. Modest extensions of time to these deadlines may be granted, but only with acceptable justification.**

The goals of a characterization effort are: 1) determination of the lateral and vertical extents along with the magnitude of soil contamination. 2) determine if groundwater or surface waters have been impacted. 3) If groundwater or surface waters have been impacted, what are the extents and magnitude of that impact. 4) The characterization of any other adverse impacts that may have occurred (examples: impacts on vegetation, impacts on wildlife, air quality, loss of use of property, etc.). To meet these goals as quickly as possible, the following items must, at a minimum, be addressed in the release characterization workplan and subsequent reporting:

- Horizontal delineation of soil impacts in each of the four cardinal compass directions. Adsorbed soil contamination must be characterized for the following constituents using the associated laboratory methods: benzene, toluene, ethylbenzene, and total xylenes by either Method 8260 or 8021, total petroleum hydrocarbons by Method 8015 extended range (GRO+DRO+MRO; C₆ thru C₃₆), and for chloride by Method 300. This is not an exclusive list of potential contaminants. Analyzed parameters should be modified based on the nature of the released substance(s). Soil sampling must be both within the impacted area and beyond.
- Vertical delineation of soil impacts. Adsorbed soil contamination must be characterized for the following constituents using the associated laboratory methods: benzene, toluene, ethylbenzene, and total xylenes by either Method 8260 or 8021, total petroleum hydrocarbons by Method 8015 extended range (GRO+DRO+MRO; C₆ thru C₃₆), and for chloride by Method 300. As above, this is not an exclusive list of potential contaminants and can be modified. Vertical characterization samples should be taken at depth intervals no greater than five feet apart. Lithologic description of encountered soils must also be provided. At least ten vertical feet of soils with contaminant concentrations at or below these values must be demonstrated as existing above the water table.
- Nominal detection limits for field and laboratory analyses must be provided.
- Composite sampling is not generally allowed.
- Field screening and assessment techniques are acceptable (headspace, titration, EC [include algorithm for validation purposes], EM, etc.), but the sampling and assay procedures must be clearly defined. Copies of field notes are highly desirable. A statistically significant set of split samples must be submitted for confirmatory laboratory analysis, including the laterally farthest and vertically deepest sets of soil samples. Make sure there are at least two soil samples submitted

for laboratory analysis from each borehole or test pit (highest observed contamination and deepest depth investigated). Copies of the actual laboratory results must be provided including chain of custody documentation.

- Probable depth to shallowest protectable groundwater and lateral distance to nearest surface water. If there is an estimate of groundwater depth, the information used to arrive at that estimate must be provided. If there is a reasonable assumption that the depth to protectable water is 50 feet or less, the responsible party should anticipate the need for at least one groundwater monitoring well to be installed in the area of likely maximum contamination.

- If groundwater contamination is encountered, an additional investigation workplan may be required to determine the extents of that contamination. Groundwater and/or surface water samples, if any, must be analyzed by a competent laboratory for volatile organic hydrocarbons (typically Method 8260 full list), total dissolved solids, pH, major anions and cations including chloride and sulfate, dissolved iron, and dissolved manganese. The investigation workplan must provide the groundwater sampling method(s) and sample handling protocols. To the fullest extent possible, aqueous analyses must be undertaken using nominal method detection limits. As with the soil analyses, copies of the actual laboratory results must be provided including chain of custody documentation.

- Accurately scaled and well-drafted site maps must be provided providing the location of borings, test pits, monitoring wells, potentially impacted areas, and significant surface features including roads and site infrastructure that might limit either the release characterization or remedial efforts. Field sketches may be included in subsequent reporting, but should not be considered stand-alone documentation of the site's layout. Digital photographic documentation of the location and fieldwork is recommended, especially if unusual circumstances are encountered.

Nothing herein should be interpreted to preclude emergency response actions or to imply immediate remediation by removal cannot proceed as warranted. Nonetheless, characterization of impacts and confirmation of the effectiveness of remedial efforts must still be provided to the OCD before any release incident will be closed.

Jim Griswold

OCD Environmental Bureau Chief
1220 South St. Francis Drive
Santa Fe, New Mexico 87505
505-476-3465
jim.griswold@state.nm.us

Appendix B

BBC Report



PHONE (575) 397-6388 • FAX (575) 397- 0397 • 1324 W. MARLAND • P.O. BOX 805 • HOBBS, NM 88241-0805
E-MAIL: cbrunson@bbcinternational.com

DELINEATION WORKPLAN

CHEVRON – NORTH WEST ABO UNIT BATTERY

(Leak Date: 12/28/17)

RP # 1RP-4930

This delineation workplan and remediation proposal addresses the release associated with RP # 1RP-4930.

The following information includes:

1. Scaled digital site map with spill area demarcated and leak point identified along with sample point locations and areas of remediation at appropriate depths.
2. GPS information for sample points and sample methodology
3. Depth to groundwater information (i.e., pdf of OSE search results and/or copy of Chevron groundwater trend map).
4. Laboratory analysis results summary table and original laboratory analysis reports
5. A copy of the initial C-141
6. Potentially other pertinent information as necessary for site specific purposes.

Based on the information included in this package and the NMOCD guidelines, the following remediation is proposed:

Chevron will remediate the spill area as depicted on the following site diagram. The leak area near SP1 – SP5 and SP7 (pink shade on diagram) will be excavated to a depth of 6 inches. The leak area near SP6 (green shade on diagram) will be excavated to a depth of 2 feet.

The entire site will then be backfilled with clean soil and revegetated (if warranted) to the standards of the appropriate regulatory agency or private surface owner.

All excavated materials will be disposed of at an NMOCD-approved disposal facility.

Chevron, North West Abo Unit Battery

Leak date: 12/28/2017
Lea County, NM
API# see attached C-141
1RP-4930

Legend

- 2 ft Excavation
- 6 in Scrape
- Cardinal sample points
- Leak Area
- Sample points



Google Earth

© 2018 Google

70 ft



Chevron, North West Abo Unit Battery

Sample points

SP1, N 32.81484 W-103.56479

SP2, N 32.81478 W-103.56463

SP3, N 32.81475 W-103.56453

SP4, N 32.81468 W-103.56450

SP5, N 32.81468 W-103.56463

SP6, N 32.81466 W-103.56468

SP7, N 32.81474 W-103.56467

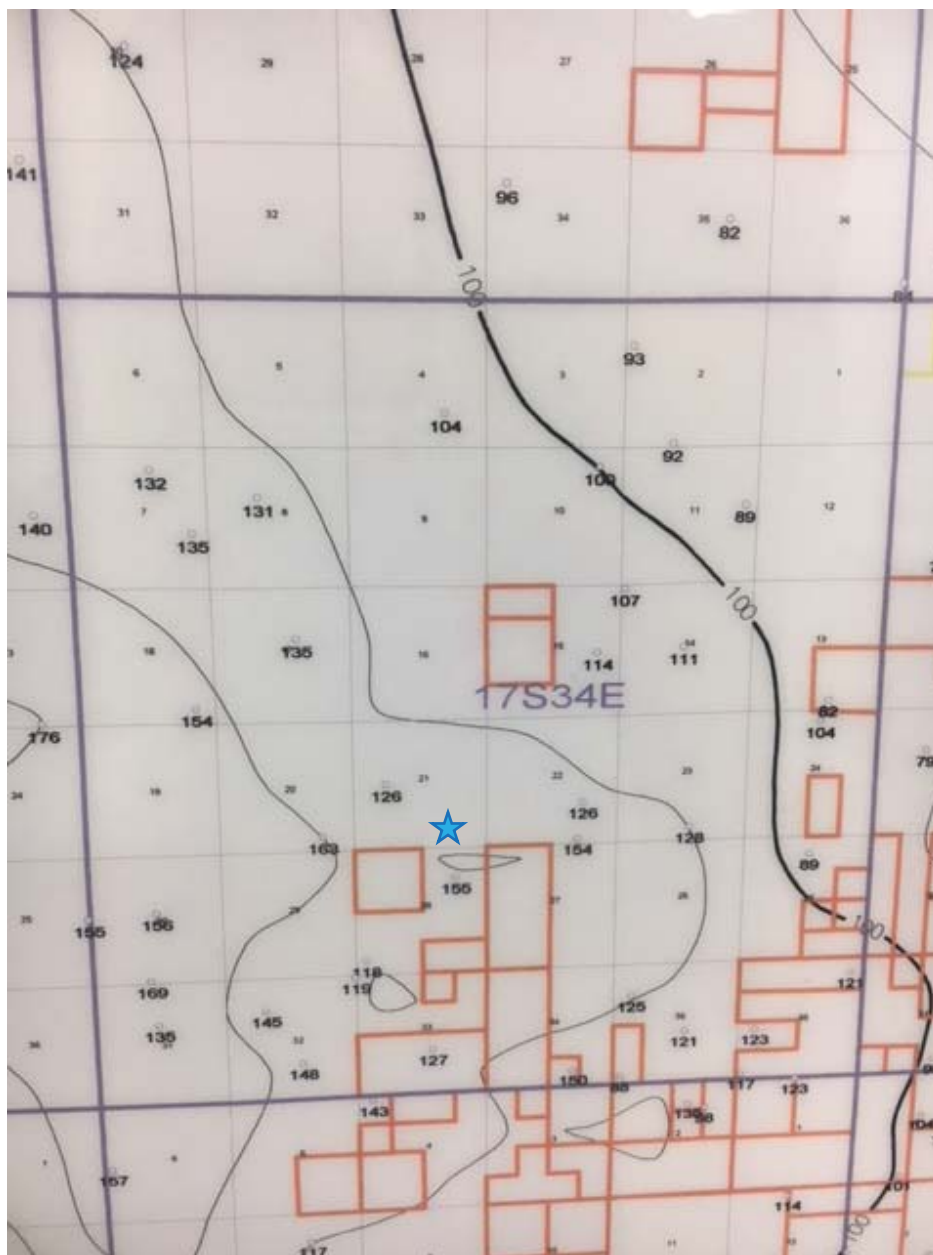
NORTH, N 32.81486 W-103.56470

SOUTH, N 32.81463 W-103.56464

EAST, N 32.81472 W-103.56443

WEST, N 32.81483 W-103.56484

**Chevron N Vacuum Abo W TB
U/L O, Section 21, T17S, R34E
Lea County, NM
Groundwater: 50'-75'**





New Mexico Office of the State Engineer

Water Column/Average Depth to Water

(A CLW##### in the POD suffix indicates the POD has been replaced & no longer serves a water right file.)

(R=POD has been replaced, O=orphaned, C=the file is closed)

(quarters are 1=NW 2=NE 3=SW 4=SE)

(quarters are smallest to largest)

(NAD83 UTM in meters)

(In feet)

POD Number	POD Sub-Code	basin	County	Q 64	Q 16	Q 4	Sec	Tws	Rng	X	Y	Distance	Depth Well	Depth Water	Water Column
L 03616 S6	L	LE		4	4	3	21	17S	34E	634177	3631573*	321	232	105	127
L 03398	L	LE		2	2	28	17S	34E	634888	3631285*	568	242	125	117	
L 03616 S3	L	LE		2	2	4	21	17S	34E	634974	3632189*	708	242	121	121
L 06897	L	LE		3	4	2	21	17S	34E	634768	3632392*	767	176	118	58
L 03616 S5	L	LE		4	3	1	22	17S	34E	635370	3632398*	1142	245	138	107
L 02724 S	L	LE		4	4	3	22	17S	34E	635739	3631673	1258	242	110	132
L 02724 POD9	L	LE		4	4	3	22	17S	34E	635785	3631601*	1307	240	170	70
L 04624	L	LE		1	1	21	17S	34E	633659	3632876*	1449	186	170	16	
L 03616 S4	L	LE		4	1	22	17S	34E	635674	3632507*	1451	244	105	139	
L 06760	L	LE		1	1	1	22	17S	34E	635163	3633000*	1485	162	98	64
L 02724 POD10	L	LE		1	4	4	27	17S	34E	635884	3630725	1698	250	164	86

Average Depth to Water: **129 feet**

Minimum Depth: **98 feet**

Maximum Depth: **170 feet**

Record Count: 11

UTMNAD83 Radius Search (in meters):

Easting (X): 634480

Northing (Y): 3631681

Radius: 1700

*UTM location was derived from PLSS - see Help

The data is furnished by the NMOSE/ISC and is accepted by the recipient with the expressed understanding that the OSE/ISC make no warranties, expressed or implied, concerning the accuracy, completeness, reliability, usability, or suitability for any particular purpose of the data.

1/17/18 11:27 AM

Page 1 of 1

WATER COLUMN/ AVERAGE
DEPTH TO WATER

Public Land Survey System (PLSS)

☒ Q64: Q16: SW Q4: SE Sec: 21 Tws: 17S Rng: 34E

State Plane Coordinate System - NAD27

☐ X: 0 ft Y: 0 ft Zone:

State Plane Coordinate System - NAD83

☐ X: 0 ft Y: 0 ft Zone:

Degrees/Minutes/Seconds

☐ Longitude (X): Degrees: 0 ° Minutes: 0 ' Seconds: 0 "

Latitude (Y): Degrees: 0 ° Minutes: 0 ' Seconds: 0 "

UTM - NAD27

☐ Easting (X): 0 mtrs Northing (Y): 0 mtrs Zone:

SUBMIT**All Conversion Results are displayed as NAD 1983 UTM Zone 13**

Easting (X): 634480.0 mtrs Northing (Y): 3631681.0 mtrs

~~ Please keep screen open to copy UTM values for Reports. ~~

Laboratory Analytical Results Summary
North Vacuum Abo West Battery

		Sample ID	SP1 @ 1'	SP1 @ 2'	SP1 @ 3'	SP1 @ 4'	SP1 @ 5'
Analyte	Method	Date	5/25/18	5/25/18	5/25/18	5/25/18	5/25/18
			mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
Benzene	BTEX 8021B		<0.050	<0.050	<0.050	<0.050	<0.050
Toluene	BTEX 8021B		<0.050	<0.050	<0.050	<0.050	<0.050
Ethylbenzene	BTEX 8021B		<0.050	<0.050	<0.050	<0.050	<0.050
Total Xylenes	BTEX 8021B		<0.150	<0.150	<0.150	<0.150	<0.150
Total BTEX	BTEX 8021B		<0.300	<0.300	<0.300	<0.300	<0.300
Chloride	SM4500Cl-B		64	32	16	16	64
GRO	TPH 8015M		<10.0	<10.0	<10.0	<10.0	<10.0
DRO	TPH 8015M		1120	1810	174	451	11.8
EXT DRO	TPH 8015M		292	456	63	153	<10.0

		Sample ID	SP2 @ 1'	SP2 @ 2'	SP2 @ 3'	SP2 @ 4'	SP2 @ 5'
Analyte	Method	Date	5/25/18	5/25/18	5/25/18	5/25/18	5/25/18
			mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
Benzene	BTEX 8021B		<0.050	<0.050	<0.050	<0.050	<0.050
Toluene	BTEX 8021B		<0.050	<0.050	<0.050	<0.050	<0.050
Ethylbenzene	BTEX 8021B		<0.050	<0.050	<0.050	<0.050	<0.050
Total Xylenes	BTEX 8021B		<0.150	<0.150	<0.150	<0.150	<0.150
Total BTEX	BTEX 8021B		<0.300	<0.300	<0.300	<0.300	<0.300
Chloride	SM4500Cl-B		144	16	48	16	80
GRO	TPH 8015M		<50.0	<10.0	<10.0	<10.0	<10.0
DRO	TPH 8015M		2490	310	69.1	<10.0	16.4
EXT DRO	TPH 8015M		587	93.9	32.2	<10.0	<10.0

		Sample ID	SP3 @ 1'	SP3 @ 2'	SP3 @ 3'	SP3 @ 4'
Analyte	Method	Date	5/29/18	5/29/18	5/29/18	5/29/18
			mg/kg	mg/kg	mg/kg	mg/kg
Benzene	BTEX 8021B		<0.050	<0.050	<0.050	<0.050
Toluene	BTEX 8021B		<0.050	<0.050	<0.050	<0.050
Ethylbenzene	BTEX 8021B		<0.050	<0.050	<0.050	<0.050
Total Xylenes	BTEX 8021B		<0.150	<0.150	<0.150	<0.150
Total BTEX	BTEX 8021B		<0.300	<0.300	<0.300	<0.300
Chloride	SM4500Cl-B		32	48	48	64
GRO	TPH 8015M		<10.0	<10.0	<10.0	<10.0
DRO	TPH 8015M		1060	473	24.6	16.7
EXT DRO	TPH 8015M		280	117	<10.0	<10.0

		Sample ID	SP4 @ 1'	SP4 @ 2'	SP4 @ 3'	SP4 @ 4'
Analyte	Method	Date	5/29/18	5/29/18	5/29/18	5/29/18
			mg/kg	mg/kg	mg/kg	mg/kg
Benzene	BTEX 8021B		<0.050	<0.050	<0.050	<0.050
Toluene	BTEX 8021B		<0.050	<0.050	<0.050	<0.050
Ethylbenzene	BTEX 8021B		<0.050	<0.050	<0.050	<0.050
Total Xylenes	BTEX 8021B		<0.150	<0.150	<0.150	<0.150
Total BTEX	BTEX 8021B		<0.300	<0.300	<0.300	<0.300
Chloride	SM4500Cl-B		144	64	48	48
GRO	TPH 8015M		<50.0	<10.0	<10.0	<10.0
DRO	TPH 8015M		2780	466	<10.0	<10.0
EXT DRO	TPH 8015M		674	82	<10.0	<10.0

		Sample ID	SP5 @ 1'	SP5 @ 2'	SP5 @ 3'
Analyte	Method	Date	5/29/18	5/30/18	5/30/18
			mg/kg	mg/kg	mg/kg
Benzene	BTEX 8021B		<0.050	<0.050	<0.050
Toluene	BTEX 8021B		<0.050	<0.050	<0.050
Ethylbenzene	BTEX 8021B		<0.050	<0.050	<0.050
Total Xylenes	BTEX 8021B		<0.150	<0.150	<0.150
Total BTEX	BTEX 8021B		<0.300	<0.300	<0.300
Chloride	SM4500Cl-B		112	528	480
GRO	TPH 8015M		<10.0	<10.0	<10.0
DRO	TPH 8015M		183	101	21.6
EXT DRO	TPH 8015M		96.9	30.8	<10.0

		Sample ID	SP6 @ 1'	SP6 @ 2'	SP6 @ 3'	SP6 @ 4'
Analyte	Method	Date	5/30/18	5/30/18	5/30/18	5/30/18
			mg/kg	mg/kg	mg/kg	mg/kg
Benzene	BTEX 8021B		<0.050	<0.050	<0.050	<0.050
Toluene	BTEX 8021B		<0.050	<0.050	<0.050	<0.050
Ethylbenzene	BTEX 8021B		<0.050	<0.050	<0.050	<0.050
Total Xylenes	BTEX 8021B		<0.150	<0.150	<0.150	<0.150
Total BTEX	BTEX 8021B		<0.300	<0.300	<0.300	<0.300
Chloride	SM4500Cl-B		2080	656	576	160
GRO	TPH 8015M		<50.0	<10.0	<10.0	<10.0
DRO	TPH 8015M		2460	12.1	<10.0	<10.0
EXT DRO	TPH 8015M		674	<10.0	<10.0	<10.0

		Sample ID	SP7 @ 1'	SP7 @ 2'	SP7 @ 3'	SP7 @ 4'	SP7 @ 5'
Analyte	Method	Date	5/31/18	5/31/18	5/31/18	5/31/18	5/31/18
			mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
Benzene	BTEX 8021B		<0.050	<0.050	<0.050	<0.050	<0.050
Toluene	BTEX 8021B		<0.050	<0.050	<0.050	<0.050	<0.050
Ethylbenzene	BTEX 8021B		<0.050	<0.050	<0.050	<0.050	<0.050
Total Xylenes	BTEX 8021B		<0.150	<0.150	<0.150	<0.150	<0.150
Total BTEX	BTEX 8021B		<0.300	<0.300	<0.300	<0.300	<0.300
Chloride	SM4500Cl-B		32	64	32	64	368
GRO	TPH 8015M		<10.0	<10.0	<10.0	<10.0	<10.0
DRO	TPH 8015M		411	182	<10.0	38.9	421
EXT DRO	TPH 8015M		53.6	30.6	<10.0	<10.0	119

Cardinal		Sample ID	NORTH	EAST	WEST	SOUTH
Analyte	Method	Date	5/31/18	5/31/18	5/31/18	5/31/18
			mg/kg	mg/kg	mg/kg	mg/kg
Benzene	BTEX 8021B		<0.050	<0.050	<0.050	<0.050
Toluene	BTEX 8021B		<0.050	<0.050	<0.050	<0.050
Ethylbenzene	BTEX 8021B		<0.050	<0.050	<0.050	<0.050
Total Xylenes	BTEX 8021B		<0.150	<0.150	<0.150	<0.150
Total BTEX	BTEX 8021B		<0.300	<0.300	<0.300	<0.300
Chloride	SM4500Cl-B		32	80	64	48
GRO	TPH 8015M		<10.0	<10.0	<10.0	<10.0
DRO	TPH 8015M		14.2	11.8	<10.0	<10.0
EXT DRO	TPH 8015M		<10.0	<10.0	<10.0	<10.0



PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

June 11, 2018

Cliff Brunson

BBC International, Inc.

P.O. Box 805

Hobbs, NM 88241

RE: NORTH VACUUM ABO

Enclosed are the results of analyses for samples received by the laboratory on 06/04/18 15:10.

Cardinal Laboratories is accredited through Texas NELAP under certificate number T104704398-17-10. Accreditation applies to drinking water, non-potable water and solid and chemical materials. All accredited analytes are denoted by an asterisk (*). For a complete list of accredited analytes and matrices visit the TCEQ website at www.tceq.texas.gov/field/qa/lab_accred_certif.html.

Cardinal Laboratories is accredited through the State of Colorado Department of Public Health and Environment for:

Method EPA 552.2	Haloacetic Acids (HAA-5)
Method EPA 524.2	Total Trihalomethanes (TTHM)
Method EPA 524.4	Regulated VOCs (V1, V2, V3)

Accreditation applies to public drinking water matrices.

This report meets NELAP requirements and is made up of a cover page, analytical results, and a copy of the original chain-of-custody. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

A handwritten signature in black ink that reads "Celey D. Keene". The signature is written in a cursive style with a large, stylized 'C' and 'K'.

Celey D. Keene

Lab Director/Quality Manager



PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

Analytical Results For:

BBC International, Inc.
 Cliff Brunson
 P.O. Box 805
 Hobbs NM, 88241
 Fax To: (575) 397-0397

Received:	06/04/2018	Sampling Date:	05/25/2018
Reported:	06/11/2018	Sampling Type:	Soil
Project Name:	NORTH VACUUM ABO	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	CHEVRON		

Sample ID: 1 @ 1' (H801507-01)

BTX 8021B		mg/kg		Analyzed By: MS						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	06/05/2018	ND	1.79	89.7	2.00	3.74		
Toluene*	<0.050	0.050	06/05/2018	ND	1.77	88.7	2.00	4.11		
Ethylbenzene*	<0.050	0.050	06/05/2018	ND	1.83	91.5	2.00	2.67		
Total Xylenes*	<0.150	0.150	06/05/2018	ND	5.59	93.2	6.00	2.32		
Total BTX	<0.300	0.300	06/05/2018	ND						

Surrogate: 4-Bromofluorobenzene (PID) 106 % 69.8-142

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	64.0	16.0	06/06/2018	ND	432	108	400	0.00		

TPH 8015M		mg/kg		Analyzed By: MS					S-04	
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
GRO C6-C10*	<10.0	10.0	06/04/2018	ND	187	93.3	200	2.57		
DRO >C10-C28*	1120	10.0	06/04/2018	ND	194	97.1	200	3.45		
EXT DRO >C28-C36	292	10.0	06/04/2018	ND						

Surrogate: 1-Chlorooctane 92.2 % 41-142

Surrogate: 1-Chlorooctadecane 156 % 37.6-147

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Celey D. Keene, Lab Director/Quality Manager



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Analytical Results For:

BBC International, Inc.
 Cliff Brunson
 P.O. Box 805
 Hobbs NM, 88241
 Fax To: (575) 397-0397

Received:	06/04/2018	Sampling Date:	05/25/2018
Reported:	06/11/2018	Sampling Type:	Soil
Project Name:	NORTH VACUUM ABO	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	CHEVRON		

Sample ID: 1 @ 2' (H801507-02)

BTEx 8021B		mg/kg		Analyzed By: MS						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	06/05/2018	ND	1.79	89.7	2.00	3.74		
Toluene*	<0.050	0.050	06/05/2018	ND	1.77	88.7	2.00	4.11		
Ethylbenzene*	<0.050	0.050	06/05/2018	ND	1.83	91.5	2.00	2.67		
Total Xylenes*	<0.150	0.150	06/05/2018	ND	5.59	93.2	6.00	2.32		
Total BTEX	<0.300	0.300	06/05/2018	ND						

Surrogate: 4-Bromofluorobenzene (PID) 107 % 69.8-142

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	32.0	16.0	06/06/2018	ND	432	108	400	0.00		

TPH 8015M	mg/kg		Analyzed By: MS					S-04	
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	06/04/2018	ND	187	93.3	200	2.57	
DRO >C10-C28*	1810	10.0	06/04/2018	ND	194	97.1	200	3.45	
EXT DRO >C28-C36	456	10.0	06/04/2018	ND					

Surrogate: 1-Chlorooctane 91.0 % 41-142

Surrogate: 1-Chlorooctadecane 210 % 37.6-147

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Celey D. Keene, Lab Director/Quality Manager



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Analytical Results For:

BBC International, Inc.
 Cliff Brunson
 P.O. Box 805
 Hobbs NM, 88241
 Fax To: (575) 397-0397

Received:	06/04/2018	Sampling Date:	05/25/2018
Reported:	06/11/2018	Sampling Type:	Soil
Project Name:	NORTH VACUUM ABO	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	CHEVRON		

Sample ID: 1 @ 3' (H801507-03)

BTEx 8021B		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	06/05/2018	ND	1.79	89.7	2.00	3.74	
Toluene*	<0.050	0.050	06/05/2018	ND	1.77	88.7	2.00	4.11	
Ethylbenzene*	<0.050	0.050	06/05/2018	ND	1.83	91.5	2.00	2.67	
Total Xylenes*	<0.150	0.150	06/05/2018	ND	5.59	93.2	6.00	2.32	
Total BTEX	<0.300	0.300	06/05/2018	ND					

Surrogate: 4-Bromofluorobenzene (PID) 111 % 69.8-142

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	16.0	16.0	06/06/2018	ND	432	108	400	0.00	

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	06/04/2018	ND	187	93.3	200	2.57	
DRO >C10-C28*	174	10.0	06/04/2018	ND	194	97.1	200	3.45	
EXT DRO >C28-C36	63.0	10.0	06/04/2018	ND					

Surrogate: 1-Chlorooctane 95.8 % 41-142

Surrogate: 1-Chlorooctadecane 103 % 37.6-147

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Celey D. Keene, Lab Director/Quality Manager



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Analytical Results For:

BBC International, Inc.
 Cliff Brunson
 P.O. Box 805
 Hobbs NM, 88241
 Fax To: (575) 397-0397

Received:	06/04/2018	Sampling Date:	05/25/2018
Reported:	06/11/2018	Sampling Type:	Soil
Project Name:	NORTH VACUUM ABO	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	CHEVRON		

Sample ID: 1 @ 4' (H801507-04)

BTEx 8021B		mg/kg		Analyzed By: MS						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	06/05/2018	ND	1.79	89.7	2.00	3.74		
Toluene*	<0.050	0.050	06/05/2018	ND	1.77	88.7	2.00	4.11		
Ethylbenzene*	<0.050	0.050	06/05/2018	ND	1.83	91.5	2.00	2.67		
Total Xylenes*	<0.150	0.150	06/05/2018	ND	5.59	93.2	6.00	2.32		
Total BTEX	<0.300	0.300	06/05/2018	ND						

Surrogate: 4-Bromofluorobenzene (PID) 115 % 69.8-142

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	16.0	16.0	06/06/2018	ND	432	108	400	0.00	

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	06/04/2018	ND	187	93.3	200	2.57	
DRO >C10-C28*	451	10.0	06/04/2018	ND	194	97.1	200	3.45	
EXT DRO >C28-C36	153	10.0	06/04/2018	ND					

Surrogate: 1-Chlorooctane 85.3 % 41-142

Surrogate: 1-Chlorooctadecane 109 % 37.6-147

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Celey D. Keene, Lab Director/Quality Manager



PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

Analytical Results For:

BBC International, Inc.
 Cliff Brunson
 P.O. Box 805
 Hobbs NM, 88241
 Fax To: (575) 397-0397

Received:	06/04/2018	Sampling Date:	05/25/2018
Reported:	06/11/2018	Sampling Type:	Soil
Project Name:	NORTH VACUUM ABO	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	CHEVRON		

Sample ID: 1 @ 5' (H801507-05)

BTEx 8021B		mg/kg		Analyzed By: MS						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	06/05/2018	ND	1.79	89.7	2.00	3.74		
Toluene*	<0.050	0.050	06/05/2018	ND	1.77	88.7	2.00	4.11		
Ethylbenzene*	<0.050	0.050	06/05/2018	ND	1.83	91.5	2.00	2.67		
Total Xylenes*	<0.150	0.150	06/05/2018	ND	5.59	93.2	6.00	2.32		
Total BTEx	<0.300	0.300	06/05/2018	ND						

Surrogate: 4-Bromofluorobenzene (PID) 115 % 69.8-142

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	64.0	16.0	06/06/2018	ND	432	108	400	0.00		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	06/04/2018	ND	187	93.3	200	2.57	
DRO >C10-C28*	11.8	10.0	06/04/2018	ND	194	97.1	200	3.45	
EXT DRO >C28-C36	<10.0	10.0	06/04/2018	ND					

Surrogate: 1-Chlorooctane 79.9 % 41-142

Surrogate: 1-Chlorooctadecane 76.7 % 37.6-147

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Analytical Results For:

BBC International, Inc.
 Cliff Brunson
 P.O. Box 805
 Hobbs NM, 88241
 Fax To: (575) 397-0397

Received:	06/04/2018	Sampling Date:	05/25/2018
Reported:	06/11/2018	Sampling Type:	Soil
Project Name:	NORTH VACUUM ABO	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	CHEVRON		

Sample ID: 2 @ 1' (H801507-06)

BTX 8021B		mg/kg		Analyzed By: MS						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	06/05/2018	ND	1.79	89.7	2.00	3.74		
Toluene*	<0.050	0.050	06/05/2018	ND	1.77	88.7	2.00	4.11		
Ethylbenzene*	<0.050	0.050	06/05/2018	ND	1.83	91.5	2.00	2.67		
Total Xylenes*	<0.150	0.150	06/05/2018	ND	5.59	93.2	6.00	2.32		
Total BTX	<0.300	0.300	06/05/2018	ND						

Surrogate: 4-Bromofluorobenzene (PID) 111 % 69.8-142

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	144	16.0	06/06/2018	ND	432	108	400	0.00		

TPH 8015M		mg/kg		Analyzed By: MS				S-06	
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<50.0	50.0	06/04/2018	ND	187	93.3	200	2.57	
DRO >C10-C28*	2490	50.0	06/04/2018	ND	194	97.1	200	3.45	
EXT DRO >C28-C36	587	50.0	06/04/2018	ND					

Surrogate: 1-Chlorooctane 69.2 % 41-142

Surrogate: 1-Chlorooctadecane 201 % 37.6-147

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Analytical Results For:

BBC International, Inc.
 Cliff Brunson
 P.O. Box 805
 Hobbs NM, 88241
 Fax To: (575) 397-0397

Received:	06/04/2018	Sampling Date:	05/25/2018
Reported:	06/11/2018	Sampling Type:	Soil
Project Name:	NORTH VACUUM ABO	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	CHEVRON		

Sample ID: 2 @ 2' (H801507-07)

BTEx 8021B		mg/kg		Analyzed By: MS						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	06/05/2018	ND	1.79	89.7	2.00	3.74		
Toluene*	<0.050	0.050	06/05/2018	ND	1.77	88.7	2.00	4.11		
Ethylbenzene*	<0.050	0.050	06/05/2018	ND	1.83	91.5	2.00	2.67		
Total Xylenes*	<0.150	0.150	06/05/2018	ND	5.59	93.2	6.00	2.32		
Total BTEx	<0.300	0.300	06/05/2018	ND						

Surrogate: 4-Bromofluorobenzene (PID) 113 % 69.8-142

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	16.0	16.0	06/06/2018	ND	432	108	400	0.00	

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	06/04/2018	ND	187	93.3	200	2.57	
DRO >C10-C28*	310	10.0	06/04/2018	ND	194	97.1	200	3.45	
EXT DRO >C28-C36	93.9	10.0	06/04/2018	ND					

Surrogate: 1-Chlorooctane 93.9 % 41-142

Surrogate: 1-Chlorooctadecane 107 % 37.6-147

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Analytical Results For:

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 Cliff Brunson
 P.O. Box 805
 Hobbs NM, 88241
 Fax To: (575) 397-0397

Received:	06/04/2018	Sampling Date:	05/25/2018
Reported:	06/11/2018	Sampling Type:	Soil
Project Name:	NORTH VACUUM ABO	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	CHEVRON		

Sample ID: 2 @ 3' (H801507-08)

BTX 8021B		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	06/05/2018	ND	1.79	89.7	2.00	3.74	
Toluene*	<0.050	0.050	06/05/2018	ND	1.77	88.7	2.00	4.11	
Ethylbenzene*	<0.050	0.050	06/05/2018	ND	1.83	91.5	2.00	2.67	
Total Xylenes*	<0.150	0.150	06/05/2018	ND	5.59	93.2	6.00	2.32	
Total BTX	<0.300	0.300	06/05/2018	ND					

Surrogate: 4-Bromofluorobenzene (PID) 118 % 69.8-142

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	48.0	16.0	06/06/2018	ND	432	108	400	0.00	

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	06/04/2018	ND	187	93.3	200	2.57	
DRO >C10-C28*	69.1	10.0	06/04/2018	ND	194	97.1	200	3.45	
EXT DRO >C28-C36	32.2	10.0	06/04/2018	ND					

Surrogate: 1-Chlorooctane 88.5 % 41-142

Surrogate: 1-Chlorooctadecane 88.4 % 37.6-147

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Analytical Results For:

BBC International, Inc.
 Cliff Brunson
 P.O. Box 805
 Hobbs NM, 88241
 Fax To: (575) 397-0397

Received:	06/04/2018	Sampling Date:	05/25/2018
Reported:	06/11/2018	Sampling Type:	Soil
Project Name:	NORTH VACUUM ABO	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	CHEVRON		

Sample ID: 2 @ 4' (H801507-09)

BTEx 8021B		mg/kg		Analyzed By: MS						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	06/05/2018	ND	1.79	89.7	2.00	3.74		
Toluene*	<0.050	0.050	06/05/2018	ND	1.77	88.7	2.00	4.11		
Ethylbenzene*	<0.050	0.050	06/05/2018	ND	1.83	91.5	2.00	2.67		
Total Xylenes*	<0.150	0.150	06/05/2018	ND	5.59	93.2	6.00	2.32		
Total BTEx	<0.300	0.300	06/05/2018	ND						

Surrogate: 4-Bromofluorobenzene (PID) 118 % 69.8-142

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	16.0	16.0	06/06/2018	ND	432	108	400	0.00	

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	06/04/2018	ND	187	93.3	200	2.57	
DRO >C10-C28*	<10.0	10.0	06/04/2018	ND	194	97.1	200	3.45	
EXT DRO >C28-C36	<10.0	10.0	06/04/2018	ND					

Surrogate: 1-Chlorooctane 86.5 % 41-142

Surrogate: 1-Chlorooctadecane 83.3 % 37.6-147

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Celey D. Keene, Lab Director/Quality Manager



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Analytical Results For:

BBC International, Inc.
 Cliff Brunson
 P.O. Box 805
 Hobbs NM, 88241
 Fax To: (575) 397-0397

Received:	06/04/2018	Sampling Date:	05/25/2018
Reported:	06/11/2018	Sampling Type:	Soil
Project Name:	NORTH VACUUM ABO	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	CHEVRON		

Sample ID: 2 @ 5' (H801507-10)

BTEx 8021B		mg/kg		Analyzed By: MS						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	06/05/2018	ND	1.79	89.7	2.00	3.74		
Toluene*	<0.050	0.050	06/05/2018	ND	1.77	88.7	2.00	4.11		
Ethylbenzene*	<0.050	0.050	06/05/2018	ND	1.83	91.5	2.00	2.67		
Total Xylenes*	<0.150	0.150	06/05/2018	ND	5.59	93.2	6.00	2.32		
Total BTEx	<0.300	0.300	06/05/2018	ND						

Surrogate: 4-Bromofluorobenzene (PID) 115 % 69.8-142

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	80.0	16.0	06/06/2018	ND	432	108	400	0.00		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	06/04/2018	ND	187	93.3	200	2.57	
DRO >C10-C28*	16.4	10.0	06/04/2018	ND	194	97.1	200	3.45	
EXT DRO >C28-C36	<10.0	10.0	06/04/2018	ND					

Surrogate: 1-Chlorooctane 87.3 % 41-142

Surrogate: 1-Chlorooctadecane 82.0 % 37.6-147

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Analytical Results For:

BBC International, Inc.
 Cliff Brunson
 P.O. Box 805
 Hobbs NM, 88241
 Fax To: (575) 397-0397

Received:	06/04/2018	Sampling Date:	05/29/2018
Reported:	06/11/2018	Sampling Type:	Soil
Project Name:	NORTH VACUUM ABO	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	CHEVRON		

Sample ID: 3 @ 1' (H801507-11)

BTEx 8021B		mg/kg		Analyzed By: MS						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	06/05/2018	ND	1.79	89.7	2.00	3.74		
Toluene*	<0.050	0.050	06/05/2018	ND	1.77	88.7	2.00	4.11		
Ethylbenzene*	<0.050	0.050	06/05/2018	ND	1.83	91.5	2.00	2.67		
Total Xylenes*	<0.150	0.150	06/05/2018	ND	5.59	93.2	6.00	2.32		
Total BTEx	<0.300	0.300	06/05/2018	ND						

Surrogate: 4-Bromofluorobenzene (PID) 114 % 69.8-142

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	32.0	16.0	06/06/2018	ND	432	108	400	0.00	

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	06/04/2018	ND	187	93.3	200	2.57	
DRO >C10-C28*	1060	10.0	06/04/2018	ND	194	97.1	200	3.45	
EXT DRO >C28-C36	280	10.0	06/04/2018	ND					

Surrogate: 1-Chlorooctane 89.2 % 41-142

Surrogate: 1-Chlorooctadecane 147 % 37.6-147

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Analytical Results For:

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 Cliff Brunson
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 Hobbs NM, 88241
 Fax To: (575) 397-0397

Received:	06/04/2018	Sampling Date:	05/29/2018
Reported:	06/11/2018	Sampling Type:	Soil
Project Name:	NORTH VACUUM ABO	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	CHEVRON		

Sample ID: 3 @ 2' (H801507-12)

BTX 8021B		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	06/05/2018	ND	1.79	89.7	2.00	3.74	
Toluene*	<0.050	0.050	06/05/2018	ND	1.77	88.7	2.00	4.11	
Ethylbenzene*	<0.050	0.050	06/05/2018	ND	1.83	91.5	2.00	2.67	
Total Xylenes*	<0.150	0.150	06/05/2018	ND	5.59	93.2	6.00	2.32	
Total BTX	<0.300	0.300	06/05/2018	ND					

Surrogate: 4-Bromofluorobenzene (PID) 111 % 69.8-142

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	48.0	16.0	06/06/2018	ND	432	108	400	0.00	

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	06/04/2018	ND	187	93.3	200	2.57	
DRO >C10-C28*	473	10.0	06/04/2018	ND	194	97.1	200	3.45	
EXT DRO >C28-C36	117	10.0	06/04/2018	ND					

Surrogate: 1-Chlorooctane 85.2 % 41-142

Surrogate: 1-Chlorooctadecane 113 % 37.6-147

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Analytical Results For:

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 Hobbs NM, 88241
 Fax To: (575) 397-0397

Received:	06/04/2018	Sampling Date:	05/29/2018
Reported:	06/11/2018	Sampling Type:	Soil
Project Name:	NORTH VACUUM ABO	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	CHEVRON		

Sample ID: 3 @ 3' (H801507-13)

BTEx 8021B		mg/kg		Analyzed By: MS						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	06/05/2018	ND	1.79	89.7	2.00	3.74		
Toluene*	<0.050	0.050	06/05/2018	ND	1.77	88.7	2.00	4.11		
Ethylbenzene*	<0.050	0.050	06/05/2018	ND	1.83	91.5	2.00	2.67		
Total Xylenes*	<0.150	0.150	06/05/2018	ND	5.59	93.2	6.00	2.32		
Total BTEx	<0.300	0.300	06/05/2018	ND						

Surrogate: 4-Bromofluorobenzene (PID) 112 % 69.8-142

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	48.0	16.0	06/06/2018	ND	432	108	400	0.00	

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	06/04/2018	ND	187	93.3	200	2.57	
DRO >C10-C28*	24.6	10.0	06/04/2018	ND	194	97.1	200	3.45	
EXT DRO >C28-C36	<10.0	10.0	06/04/2018	ND					

Surrogate: 1-Chlorooctane 83.5 % 41-142

Surrogate: 1-Chlorooctadecane 80.0 % 37.6-147

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Analytical Results For:

BBC International, Inc.
 Cliff Brunson
 P.O. Box 805
 Hobbs NM, 88241
 Fax To: (575) 397-0397

Received:	06/04/2018	Sampling Date:	05/29/2018
Reported:	06/11/2018	Sampling Type:	Soil
Project Name:	NORTH VACUUM ABO	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	CHEVRON		

Sample ID: 3 @ 4' (H801507-14)

BTEx 8021B		mg/kg		Analyzed By: MS						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	06/05/2018	ND	1.79	89.7	2.00	3.74		
Toluene*	<0.050	0.050	06/05/2018	ND	1.77	88.7	2.00	4.11		
Ethylbenzene*	<0.050	0.050	06/05/2018	ND	1.83	91.5	2.00	2.67		
Total Xylenes*	<0.150	0.150	06/05/2018	ND	5.59	93.2	6.00	2.32		
Total BTEx	<0.300	0.300	06/05/2018	ND						

Surrogate: 4-Bromofluorobenzene (PID) 116 % 69.8-142

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	64.0	16.0	06/06/2018	ND	432	108	400	0.00	

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	06/05/2018	ND	184	91.9	200	4.53	
DRO >C10-C28*	16.7	10.0	06/05/2018	ND	183	91.7	200	6.20	
EXT DRO >C28-C36	<10.0	10.0	06/05/2018	ND					

Surrogate: 1-Chlorooctane 95.5 % 41-142

Surrogate: 1-Chlorooctadecane 92.7 % 37.6-147

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Analytical Results For:

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 Cliff Brunson
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 Fax To: (575) 397-0397

Received:	06/04/2018	Sampling Date:	05/29/2018
Reported:	06/11/2018	Sampling Type:	Soil
Project Name:	NORTH VACUUM ABO	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	CHEVRON		

Sample ID: 4 @ 1' (H801507-15)

BTX 8021B		mg/kg		Analyzed By: MS						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	06/05/2018	ND	1.79	89.7	2.00	3.74		
Toluene*	<0.050	0.050	06/05/2018	ND	1.77	88.7	2.00	4.11		
Ethylbenzene*	<0.050	0.050	06/05/2018	ND	1.83	91.5	2.00	2.67		
Total Xylenes*	<0.150	0.150	06/05/2018	ND	5.59	93.2	6.00	2.32		
Total BTX	<0.300	0.300	06/05/2018	ND						

Surrogate: 4-Bromofluorobenzene (PID) 111 % 69.8-142

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	144	16.0	06/06/2018	ND	432	108	400	0.00	

TPH 8015M		mg/kg		Analyzed By: MS				S-06	
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<50.0	50.0	06/05/2018	ND	184	91.9	200	4.53	
DRO >C10-C28*	2780	50.0	06/05/2018	ND	183	91.7	200	6.20	
EXT DRO >C28-C36	674	50.0	06/05/2018	ND					

Surrogate: 1-Chlorooctane 92.0 % 41-142

Surrogate: 1-Chlorooctadecane 246 % 37.6-147

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Analytical Results For:

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Received:	06/04/2018	Sampling Date:	05/29/2018
Reported:	06/11/2018	Sampling Type:	Soil
Project Name:	NORTH VACUUM ABO	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	CHEVRON		

Sample ID: 4 @ 2' (H801507-16)

BTX 8021B		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	06/05/2018	ND	1.79	89.7	2.00	3.74	
Toluene*	<0.050	0.050	06/05/2018	ND	1.77	88.7	2.00	4.11	
Ethylbenzene*	<0.050	0.050	06/05/2018	ND	1.83	91.5	2.00	2.67	
Total Xylenes*	<0.150	0.150	06/05/2018	ND	5.59	93.2	6.00	2.32	
Total BTX	<0.300	0.300	06/05/2018	ND					

Surrogate: 4-Bromofluorobenzene (PID) 113 % 69.8-142

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	64.0	16.0	06/06/2018	ND	432	108	400	0.00	

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	06/05/2018	ND	184	91.9	200	4.53	
DRO >C10-C28*	466	10.0	06/05/2018	ND	183	91.7	200	6.20	
EXT DRO >C28-C36	82.0	10.0	06/05/2018	ND					

Surrogate: 1-Chlorooctane 94.8 % 41-142

Surrogate: 1-Chlorooctadecane 120 % 37.6-147

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Analytical Results For:

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Received:	06/04/2018	Sampling Date:	05/29/2018
Reported:	06/11/2018	Sampling Type:	Soil
Project Name:	NORTH VACUUM ABO	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	CHEVRON		

Sample ID: 4 @ 3' (H801507-17)

BTX 8021B		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	06/05/2018	ND	1.79	89.7	2.00	3.74	
Toluene*	<0.050	0.050	06/05/2018	ND	1.77	88.7	2.00	4.11	
Ethylbenzene*	<0.050	0.050	06/05/2018	ND	1.83	91.5	2.00	2.67	
Total Xylenes*	<0.150	0.150	06/05/2018	ND	5.59	93.2	6.00	2.32	
Total BTX	<0.300	0.300	06/05/2018	ND					

Surrogate: 4-Bromofluorobenzene (PID) 116 % 69.8-142

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	48.0	16.0	06/06/2018	ND	432	108	400	0.00	

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	06/05/2018	ND	184	91.9	200	4.53	
DRO >C10-C28*	<10.0	10.0	06/05/2018	ND	183	91.7	200	6.20	
EXT DRO >C28-C36	<10.0	10.0	06/05/2018	ND					

Surrogate: 1-Chlorooctane 82.9 % 41-142

Surrogate: 1-Chlorooctadecane 79.5 % 37.6-147

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Analytical Results For:

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Received:	06/04/2018	Sampling Date:	05/29/2018
Reported:	06/11/2018	Sampling Type:	Soil
Project Name:	NORTH VACUUM ABO	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	CHEVRON		

Sample ID: 4 @ 4' (H801507-18)

BTEx 8021B		mg/kg		Analyzed By: MS						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	06/05/2018	ND	1.98	98.8	2.00	5.47		
Toluene*	<0.050	0.050	06/05/2018	ND	2.01	100	2.00	5.67		
Ethylbenzene*	<0.050	0.050	06/05/2018	ND	2.03	101	2.00	6.98		
Total Xylenes*	<0.150	0.150	06/05/2018	ND	5.88	98.0	6.00	6.50		
Total BTEx	<0.300	0.300	06/05/2018	ND						

Surrogate: 4-Bromofluorobenzene (PID) 114 % 69.8-142

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	48.0	16.0	06/06/2018	ND	432	108	400	0.00		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	06/05/2018	ND	184	91.9	200	4.53	
DRO >C10-C28*	<10.0	10.0	06/05/2018	ND	183	91.7	200	6.20	
EXT DRO >C28-C36	<10.0	10.0	06/05/2018	ND					

Surrogate: 1-Chlorooctane 87.9 % 41-142

Surrogate: 1-Chlorooctadecane 84.6 % 37.6-147

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Analytical Results For:

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 Cliff Brunson
 P.O. Box 805
 Hobbs NM, 88241
 Fax To: (575) 397-0397

Received:	06/04/2018	Sampling Date:	05/29/2018
Reported:	06/11/2018	Sampling Type:	Soil
Project Name:	NORTH VACUUM ABO	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	CHEVRON		

Sample ID: 5 @ 1' (H801507-19)

BTEx 8021B		mg/kg		Analyzed By: MS						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	06/05/2018	ND	1.98	98.8	2.00	5.47		
Toluene*	<0.050	0.050	06/05/2018	ND	2.01	100	2.00	5.67		
Ethylbenzene*	<0.050	0.050	06/05/2018	ND	2.03	101	2.00	6.98		
Total Xylenes*	<0.150	0.150	06/05/2018	ND	5.88	98.0	6.00	6.50		
Total BTEx	<0.300	0.300	06/05/2018	ND						

Surrogate: 4-Bromofluorobenzene (PID) 109 % 69.8-142

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	112	16.0	06/06/2018	ND	432	108	400	0.00		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	06/05/2018	ND	184	91.9	200	4.53	
DRO >C10-C28*	183	10.0	06/05/2018	ND	183	91.7	200	6.20	
EXT DRO >C28-C36	96.9	10.0	06/05/2018	ND					

Surrogate: 1-Chlorooctane 90.9 % 41-142

Surrogate: 1-Chlorooctadecane 95.0 % 37.6-147

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Analytical Results For:

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 Cliff Brunson
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 Hobbs NM, 88241
 Fax To: (575) 397-0397

Received:	06/04/2018	Sampling Date:	05/30/2018
Reported:	06/11/2018	Sampling Type:	Soil
Project Name:	NORTH VACUUM ABO	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	CHEVRON		

Sample ID: 5 @ 2' (H801507-20)

BTX 8021B		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	06/05/2018	ND	1.98	98.8	2.00	5.47	
Toluene*	<0.050	0.050	06/05/2018	ND	2.01	100	2.00	5.67	
Ethylbenzene*	<0.050	0.050	06/05/2018	ND	2.03	101	2.00	6.98	
Total Xylenes*	<0.150	0.150	06/05/2018	ND	5.88	98.0	6.00	6.50	
Total BTX	<0.300	0.300	06/05/2018	ND					

Surrogate: 4-Bromofluorobenzene (PID) 110 % 69.8-142

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	528	16.0	06/06/2018	ND	432	108	400	0.00		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	06/05/2018	ND	184	91.9	200	4.53	
DRO >C10-C28*	101	10.0	06/05/2018	ND	183	91.7	200	6.20	
EXT DRO >C28-C36	30.8	10.0	06/05/2018	ND					

Surrogate: 1-Chlorooctane 80.5 % 41-142

Surrogate: 1-Chlorooctadecane 85.1 % 37.6-147

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Analytical Results For:

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Received:	06/04/2018	Sampling Date:	05/30/2018
Reported:	06/11/2018	Sampling Type:	Soil
Project Name:	NORTH VACUUM ABO	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	CHEVRON		

Sample ID: 5 @ 3' (H801507-21)

BTEx 8021B		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	06/05/2018	ND	1.98	98.8	2.00	5.47	
Toluene*	<0.050	0.050	06/05/2018	ND	2.01	100	2.00	5.67	
Ethylbenzene*	<0.050	0.050	06/05/2018	ND	2.03	101	2.00	6.98	
Total Xylenes*	<0.150	0.150	06/05/2018	ND	5.88	98.0	6.00	6.50	
Total BTEx	<0.300	0.300	06/05/2018	ND					

Surrogate: 4-Bromofluorobenzene (PID) 111 % 69.8-142

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	480	16.0	06/06/2018	ND	432	108	400	0.00	

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	06/05/2018	ND	184	91.9	200	4.53	
DRO >C10-C28*	21.6	10.0	06/05/2018	ND	183	91.7	200	6.20	
EXT DRO >C28-C36	<10.0	10.0	06/05/2018	ND					

Surrogate: 1-Chlorooctane 78.9 % 41-142

Surrogate: 1-Chlorooctadecane 78.2 % 37.6-147

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 Hobbs NM, 88241
 Fax To: (575) 397-0397

Received:	06/04/2018	Sampling Date:	05/30/2018
Reported:	06/11/2018	Sampling Type:	Soil
Project Name:	NORTH VACUUM ABO	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	CHEVRON		

Sample ID: 6 @ 1' (H801507-22)

BTX 8021B		mg/kg		Analyzed By: MS						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	06/05/2018	ND	1.98	98.8	2.00	5.47		
Toluene*	<0.050	0.050	06/05/2018	ND	2.01	100	2.00	5.67		
Ethylbenzene*	<0.050	0.050	06/05/2018	ND	2.03	101	2.00	6.98		
Total Xylenes*	<0.150	0.150	06/05/2018	ND	5.88	98.0	6.00	6.50		
Total BTX	<0.300	0.300	06/05/2018	ND						

Surrogate: 4-Bromofluorobenzene (PID) 104 % 69.8-142

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	2080	16.0	06/06/2018	ND	432	108	400	0.00		

TPH 8015M		mg/kg		Analyzed By: MS				S-06	
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<50.0	50.0	06/05/2018	ND	184	91.9	200	4.53	
DRO >C10-C28*	2460	50.0	06/05/2018	ND	183	91.7	200	6.20	
EXT DRO >C28-C36	674	50.0	06/05/2018	ND					

Surrogate: 1-Chlorooctane 92.5 % 41-142

Surrogate: 1-Chlorooctadecane 243 % 37.6-147

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Analytical Results For:

BBC International, Inc.
 Cliff Brunson
 P.O. Box 805
 Hobbs NM, 88241
 Fax To: (575) 397-0397

Received:	06/04/2018	Sampling Date:	05/30/2018
Reported:	06/11/2018	Sampling Type:	Soil
Project Name:	NORTH VACUUM ABO	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	CHEVRON		

Sample ID: 6 @ 2' (H801507-23)

BTEx 8021B		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	06/05/2018	ND	1.98	98.8	2.00	5.47	
Toluene*	<0.050	0.050	06/05/2018	ND	2.01	100	2.00	5.67	
Ethylbenzene*	<0.050	0.050	06/05/2018	ND	2.03	101	2.00	6.98	
Total Xylenes*	<0.150	0.150	06/05/2018	ND	5.88	98.0	6.00	6.50	
Total BTEx	<0.300	0.300	06/05/2018	ND					

Surrogate: 4-Bromofluorobenzene (PID) 110 % 69.8-142

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	656	16.0	06/06/2018	ND	432	108	400	0.00		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	06/05/2018	ND	184	91.9	200	4.53	
DRO >C10-C28*	12.1	10.0	06/05/2018	ND	183	91.7	200	6.20	
EXT DRO >C28-C36	<10.0	10.0	06/05/2018	ND					

Surrogate: 1-Chlorooctane 88.4 % 41-142

Surrogate: 1-Chlorooctadecane 86.0 % 37.6-147

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Analytical Results For:

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 Fax To: (575) 397-0397

Received:	06/04/2018	Sampling Date:	05/30/2018
Reported:	06/11/2018	Sampling Type:	Soil
Project Name:	NORTH VACUUM ABO	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	CHEVRON		

Sample ID: 6 @ 3' (H801507-24)

BTX 8021B		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	06/05/2018	ND	1.98	98.8	2.00	5.47	
Toluene*	<0.050	0.050	06/05/2018	ND	2.01	100	2.00	5.67	
Ethylbenzene*	<0.050	0.050	06/05/2018	ND	2.03	101	2.00	6.98	
Total Xylenes*	<0.150	0.150	06/05/2018	ND	5.88	98.0	6.00	6.50	
Total BTX	<0.300	0.300	06/05/2018	ND					

Surrogate: 4-Bromofluorobenzene (PID) 110 % 69.8-142

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	576	16.0	06/06/2018	ND	432	108	400	0.00	

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	06/05/2018	ND	184	91.9	200	4.53	
DRO >C10-C28*	<10.0	10.0	06/05/2018	ND	183	91.7	200	6.20	
EXT DRO >C28-C36	<10.0	10.0	06/05/2018	ND					

Surrogate: 1-Chlorooctane 86.3 % 41-142

Surrogate: 1-Chlorooctadecane 83.3 % 37.6-147

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Analytical Results For:

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 P.O. Box 805
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 Fax To: (575) 397-0397

Received:	06/04/2018	Sampling Date:	05/30/2018
Reported:	06/11/2018	Sampling Type:	Soil
Project Name:	NORTH VACUUM ABO	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	CHEVRON		

Sample ID: 6 @ 4' (H801507-25)

BTX 8021B		mg/kg		Analyzed By: MS						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	06/05/2018	ND	1.98	98.8	2.00	5.47		
Toluene*	<0.050	0.050	06/05/2018	ND	2.01	100	2.00	5.67		
Ethylbenzene*	<0.050	0.050	06/05/2018	ND	2.03	101	2.00	6.98		
Total Xylenes*	<0.150	0.150	06/05/2018	ND	5.88	98.0	6.00	6.50		
Total BTX	<0.300	0.300	06/05/2018	ND						

Surrogate: 4-Bromofluorobenzene (PID) 111 % 69.8-142

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	160	16.0	06/06/2018	ND	432	108	400	0.00	

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	06/05/2018	ND	184	91.9	200	4.53	
DRO >C10-C28*	<10.0	10.0	06/05/2018	ND	183	91.7	200	6.20	
EXT DRO >C28-C36	<10.0	10.0	06/05/2018	ND					

Surrogate: 1-Chlorooctane 90.6 % 41-142

Surrogate: 1-Chlorooctadecane 87.1 % 37.6-147

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Analytical Results For:

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 Fax To: (575) 397-0397

Received:	06/04/2018	Sampling Date:	05/31/2018
Reported:	06/11/2018	Sampling Type:	Soil
Project Name:	NORTH VACUUM ABO	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	CHEVRON		

Sample ID: 7 @ 1' (H801507-26)

BTX 8021B		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	06/05/2018	ND	1.98	98.8	2.00	5.47	
Toluene*	<0.050	0.050	06/05/2018	ND	2.01	100	2.00	5.67	
Ethylbenzene*	<0.050	0.050	06/05/2018	ND	2.03	101	2.00	6.98	
Total Xylenes*	<0.150	0.150	06/05/2018	ND	5.88	98.0	6.00	6.50	
Total BTX	<0.300	0.300	06/05/2018	ND					

Surrogate: 4-Bromofluorobenzene (PID) 111 % 69.8-142

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	32.0	16.0	06/06/2018	ND	432	108	400	0.00		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	06/05/2018	ND	184	91.9	200	4.53	
DRO >C10-C28*	411	10.0	06/05/2018	ND	183	91.7	200	6.20	
EXT DRO >C28-C36	53.6	10.0	06/05/2018	ND					

Surrogate: 1-Chlorooctane 90.0 % 41-142

Surrogate: 1-Chlorooctadecane 111 % 37.6-147

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Analytical Results For:

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 Fax To: (575) 397-0397

Received:	06/04/2018	Sampling Date:	05/31/2018
Reported:	06/11/2018	Sampling Type:	Soil
Project Name:	NORTH VACUUM ABO	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	CHEVRON		

Sample ID: 7 @ 2' (H801507-27)

BTX 8021B		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	06/05/2018	ND	1.98	98.8	2.00	5.47	
Toluene*	<0.050	0.050	06/05/2018	ND	2.01	100	2.00	5.67	
Ethylbenzene*	<0.050	0.050	06/05/2018	ND	2.03	101	2.00	6.98	
Total Xylenes*	<0.150	0.150	06/05/2018	ND	5.88	98.0	6.00	6.50	
Total BTX	<0.300	0.300	06/05/2018	ND					

Surrogate: 4-Bromofluorobenzene (PID) 108 % 69.8-142

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	64.0	16.0	06/06/2018	ND	432	108	400	0.00		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	06/05/2018	ND	184	91.9	200	4.53	
DRO >C10-C28*	182	10.0	06/05/2018	ND	183	91.7	200	6.20	
EXT DRO >C28-C36	30.6	10.0	06/05/2018	ND					

Surrogate: 1-Chlorooctane 95.3 % 41-142

Surrogate: 1-Chlorooctadecane 105 % 37.6-147

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Celey D. Keene, Lab Director/Quality Manager



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Analytical Results For:

BBC International, Inc.
 Cliff Brunson
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 Fax To: (575) 397-0397

Received:	06/04/2018	Sampling Date:	05/31/2018
Reported:	06/11/2018	Sampling Type:	Soil
Project Name:	NORTH VACUUM ABO	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	CHEVRON		

Sample ID: 7 @ 3' (H801507-28)

BTEx 8021B		mg/kg		Analyzed By: MS						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	06/05/2018	ND	1.98	98.8	2.00	5.47		
Toluene*	<0.050	0.050	06/05/2018	ND	2.01	100	2.00	5.67		
Ethylbenzene*	<0.050	0.050	06/05/2018	ND	2.03	101	2.00	6.98		
Total Xylenes*	<0.150	0.150	06/05/2018	ND	5.88	98.0	6.00	6.50		
Total BTEx	<0.300	0.300	06/05/2018	ND						

Surrogate: 4-Bromofluorobenzene (PID) 107 % 69.8-142

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	32.0	16.0	06/06/2018	ND	432	108	400	0.00		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	06/05/2018	ND	184	91.9	200	4.53	
DRO >C10-C28*	<10.0	10.0	06/05/2018	ND	183	91.7	200	6.20	
EXT DRO >C28-C36	<10.0	10.0	06/05/2018	ND					

Surrogate: 1-Chlorooctane 85.5 % 41-142

Surrogate: 1-Chlorooctadecane 82.2 % 37.6-147

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Analytical Results For:

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 Fax To: (575) 397-0397

Received:	06/04/2018	Sampling Date:	05/31/2018
Reported:	06/11/2018	Sampling Type:	Soil
Project Name:	NORTH VACUUM ABO	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	CHEVRON		

Sample ID: 7 @ 4' (H801507-29)

BTX 8021B		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	06/05/2018	ND	1.98	98.8	2.00	5.47	
Toluene*	<0.050	0.050	06/05/2018	ND	2.01	100	2.00	5.67	
Ethylbenzene*	<0.050	0.050	06/05/2018	ND	2.03	101	2.00	6.98	
Total Xylenes*	<0.150	0.150	06/05/2018	ND	5.88	98.0	6.00	6.50	
Total BTX	<0.300	0.300	06/05/2018	ND					

Surrogate: 4-Bromofluorobenzene (PID) 110 % 69.8-142

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	64.0	16.0	06/06/2018	ND	432	108	400	0.00		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	06/05/2018	ND	184	91.9	200	4.53	
DRO >C10-C28*	38.9	10.0	06/05/2018	ND	183	91.7	200	6.20	
EXT DRO >C28-C36	<10.0	10.0	06/05/2018	ND					

Surrogate: 1-Chlorooctane 88.4 % 41-142

Surrogate: 1-Chlorooctadecane 88.6 % 37.6-147

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Analytical Results For:

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Received:	06/04/2018	Sampling Date:	05/31/2018
Reported:	06/11/2018	Sampling Type:	Soil
Project Name:	NORTH VACUUM ABO	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	CHEVRON		

Sample ID: 7 @ 5' (H801507-30)

BTX 8021B		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	06/05/2018	ND	1.98	98.8	2.00	5.47	
Toluene*	<0.050	0.050	06/05/2018	ND	2.01	100	2.00	5.67	
Ethylbenzene*	<0.050	0.050	06/05/2018	ND	2.03	101	2.00	6.98	
Total Xylenes*	<0.150	0.150	06/05/2018	ND	5.88	98.0	6.00	6.50	
Total BTX	<0.300	0.300	06/05/2018	ND					

Surrogate: 4-Bromofluorobenzene (PID) 104 % 69.8-142

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	368	16.0	06/06/2018	ND	432	108	400	0.00		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	06/05/2018	ND	184	91.9	200	4.53	
DRO >C10-C28*	421	10.0	06/05/2018	ND	183	91.7	200	6.20	
EXT DRO >C28-C36	119	10.0	06/05/2018	ND					

Surrogate: 1-Chlorooctane 71.9 % 41-142

Surrogate: 1-Chlorooctadecane 95.6 % 37.6-147

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Celey D. Keene, Lab Director/Quality Manager



PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

Analytical Results For:

BBC International, Inc.
 Cliff Brunson
 P.O. Box 805
 Hobbs NM, 88241
 Fax To: (575) 397-0397

Received:	06/04/2018	Sampling Date:	05/31/2018
Reported:	06/11/2018	Sampling Type:	Soil
Project Name:	NORTH VACUUM ABO	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	CHEVRON		

Sample ID: NORTH (H801507-31)

BTEx 8021B		mg/kg		Analyzed By: MS						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	06/05/2018	ND	1.98	98.8	2.00	5.47		
Toluene*	<0.050	0.050	06/05/2018	ND	2.01	100	2.00	5.67		
Ethylbenzene*	<0.050	0.050	06/05/2018	ND	2.03	101	2.00	6.98		
Total Xylenes*	<0.150	0.150	06/05/2018	ND	5.88	98.0	6.00	6.50		
Total BTEx	<0.300	0.300	06/05/2018	ND						

Surrogate: 4-Bromofluorobenzene (PID) 109 % 69.8-142

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	32.0	16.0	06/06/2018	ND	432	108	400	0.00		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	06/05/2018	ND	184	91.9	200	4.53	
DRO >C10-C28*	14.2	10.0	06/05/2018	ND	183	91.7	200	6.20	
EXT DRO >C28-C36	<10.0	10.0	06/05/2018	ND					

Surrogate: 1-Chlorooctane 80.7 % 41-142

Surrogate: 1-Chlorooctadecane 79.8 % 37.6-147

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Celey D. Keene, Lab Director/Quality Manager



PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

Analytical Results For:

BBC International, Inc.
 Cliff Brunson
 P.O. Box 805
 Hobbs NM, 88241
 Fax To: (575) 397-0397

Received:	06/04/2018	Sampling Date:	05/31/2018
Reported:	06/11/2018	Sampling Type:	Soil
Project Name:	NORTH VACUUM ABO	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	CHEVRON		

Sample ID: EAST (H801507-32)

BTEx 8021B		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	06/05/2018	ND	1.98	98.8	2.00	5.47	
Toluene*	<0.050	0.050	06/05/2018	ND	2.01	100	2.00	5.67	
Ethylbenzene*	<0.050	0.050	06/05/2018	ND	2.03	101	2.00	6.98	
Total Xylenes*	<0.150	0.150	06/05/2018	ND	5.88	98.0	6.00	6.50	
Total BTEx	<0.300	0.300	06/05/2018	ND					

Surrogate: 4-Bromofluorobenzene (PID) 106 % 69.8-142

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	80.0	16.0	06/06/2018	ND	432	108	400	0.00		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	06/05/2018	ND	184	91.9	200	4.53	
DRO >C10-C28*	11.8	10.0	06/05/2018	ND	183	91.7	200	6.20	
EXT DRO >C28-C36	<10.0	10.0	06/05/2018	ND					

Surrogate: 1-Chlorooctane 78.5 % 41-142

Surrogate: 1-Chlorooctadecane 75.1 % 37.6-147

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Celey D. Keene, Lab Director/Quality Manager



PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

Analytical Results For:

BBC International, Inc.
 Cliff Brunson
 P.O. Box 805
 Hobbs NM, 88241
 Fax To: (575) 397-0397

Received:	06/04/2018	Sampling Date:	05/31/2018
Reported:	06/11/2018	Sampling Type:	Soil
Project Name:	NORTH VACUUM ABO	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	CHEVRON		

Sample ID: WEST (H801507-33)

BTX 8021B		mg/kg		Analyzed By: MS						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	06/05/2018	ND	1.98	98.8	2.00	5.47		
Toluene*	<0.050	0.050	06/05/2018	ND	2.01	100	2.00	5.67		
Ethylbenzene*	<0.050	0.050	06/05/2018	ND	2.03	101	2.00	6.98		
Total Xylenes*	<0.150	0.150	06/05/2018	ND	5.88	98.0	6.00	6.50		
Total BTX	<0.300	0.300	06/05/2018	ND						

Surrogate: 4-Bromofluorobenzene (PID) 101 % 69.8-142

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	64.0	16.0	06/06/2018	ND	432	108	400	0.00		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	06/05/2018	ND	184	91.9	200	4.53	
DRO >C10-C28*	<10.0	10.0	06/05/2018	ND	183	91.7	200	6.20	
EXT DRO >C28-C36	<10.0	10.0	06/05/2018	ND					

Surrogate: 1-Chlorooctane 73.7 % 41-142

Surrogate: 1-Chlorooctadecane 71.2 % 37.6-147

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Celey D. Keene, Lab Director/Quality Manager



PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

Analytical Results For:

BBC International, Inc.
 Cliff Brunson
 P.O. Box 805
 Hobbs NM, 88241
 Fax To: (575) 397-0397

Received:	06/04/2018	Sampling Date:	05/31/2018
Reported:	06/11/2018	Sampling Type:	Soil
Project Name:	NORTH VACUUM ABO	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	CHEVRON		

Sample ID: SOUTH (H801507-34)

BTEx 8021B		mg/kg		Analyzed By: MS						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	06/05/2018	ND	1.98	98.8	2.00	5.47		
Toluene*	<0.050	0.050	06/05/2018	ND	2.01	100	2.00	5.67		
Ethylbenzene*	<0.050	0.050	06/05/2018	ND	2.03	101	2.00	6.98		
Total Xylenes*	<0.150	0.150	06/05/2018	ND	5.88	98.0	6.00	6.50		
Total BTEx	<0.300	0.300	06/05/2018	ND						

Surrogate: 4-Bromofluorobenzene (PID) 108 % 69.8-142

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	48.0	16.0	06/06/2018	ND	432	108	400	0.00	

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	06/05/2018	ND	209	105	200	0.669	
DRO >C10-C28*	<10.0	10.0	06/05/2018	ND	226	113	200	0.0120	
EXT DRO >C28-C36	<10.0	10.0	06/05/2018	ND					

Surrogate: 1-Chlorooctane 65.1 % 41-142

Surrogate: 1-Chlorooctadecane 70.2 % 37.6-147

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Celey D. Keene, Lab Director/Quality Manager

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Notes and Definitions

S-06	The recovery of this surrogate is outside control limits due to sample dilution required from high analyte concentration and/or matrix interference's.
S-04	The surrogate recovery for this sample is outside of established control limits due to a sample matrix effect.
QM-07	The spike recovery was outside acceptance limits for the MS and/or MSD. The batch was accepted based on acceptable LCS recovery.
ND	Analyte NOT DETECTED at or above the reporting limit
RPD	Relative Percent Difference
**	Samples not received at proper temperature of 6°C or below.
***	Insufficient time to reach temperature.
-	Chloride by SM4500Cl-B does not require samples be received at or below 6°C Samples reported on an as received basis (wet) unless otherwise noted on report

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A handwritten signature in black ink, appearing to read "Celey D. Keene".

Celey D. Keene, Lab Director/Quality Manager



CARDINAL LABORATORIES

101 East Marland, Hobbs, NM 88240

(505) 393-2326 FAX (505) 393-2476

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

Company Name: BBC International, Inc.				BILL TO				ANALYSIS REQUEST																			
Project Manager: Cliff Brunson				P.O. #:																							
Address: P.O. Box 805				Company:																							
City: Hobbs State: NM Zip: 88241				Attn:																							
Phone #: 575-397-6388 Fax #: 575-397-0397				Address:																							
Project #: Project Owner: <i>Cherron</i>				City:																							
Project Name: <i>North Vacuum Abo</i>				State: Zip:																							
Project Location:				Phone #:																							
Sampler Name: <i>Jeff Omelas</i>				Fax #:																							
FOR LAB USE ONLY																											
Lab I.D.	Sample I.D.	(G)RAB OR (C)OMP.	# CONTAINERS	MATRIX					PRESERV.			SAMPLING															
				GROUNDWATER	WASTEWATER	SOIL	OIL	SLUDGE	OTHER:	ACID/BASE:	ICE / COOL	OTHER:	DATE	TIME													
<i>H801507</i>																											
<i>1 101</i>		<i>6</i>	<i>1</i>										<i>5/25/18</i>	<i>1015</i>	<i>TPA EXT</i>	<i>BTEX</i>	<i>CL</i>										
<i>2 102</i>		<i>6</i>	<i>1</i>										<i>5/25/18</i>	<i>1038</i>													
<i>3 103</i>		<i>6</i>	<i>1</i>										<i>5/25/18</i>	<i>1050</i>													
<i>4 104</i>		<i>6</i>	<i>1</i>										<i>5/25/18</i>	<i>1111</i>													
<i>5 105</i>		<i>6</i>	<i>1</i>										<i>5/25/18</i>	<i>1145</i>													
<i>6 201</i>		<i>6</i>	<i>1</i>										<i>5/25/18</i>	<i>1212</i>													
<i>7 202</i>		<i>6</i>	<i>1</i>										<i>5/25/18</i>	<i>1250</i>													
<i>8 203</i>		<i>6</i>	<i>1</i>										<i>5/25/18</i>	<i>139</i>													
<i>9 204</i>		<i>6</i>	<i>1</i>										<i>5/25/18</i>	<i>211</i>													
<i>10 205</i>		<i>6</i>	<i>1</i>										<i>5/25/18</i>	<i>249</i>													

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Relinquished By:	Date: <i>6/1/18</i>	Received By:	Phone Result: <input type="checkbox"/> Yes <input type="checkbox"/> No Add'l Phone #:
<i>Jeff Omelas</i>	Time: <i>4:00</i>	<i>Samara Roldan</i>	Fax Result: <input type="checkbox"/> Yes <input type="checkbox"/> No Add'l Fax #:
Relinquished By:	Date: <i>6-4-18</i>	Received By:	REMARKS:
<i>Jeff Omelas</i>	Time: <i>3:10</i>		
Delivered By: (Circle One)	Sample Condition	CHECKED BY:	
Sampler - UPS - Bus - Other: <i>-3.1c</i>	Cool <input type="checkbox"/> Yes <input type="checkbox"/> No Intact <input type="checkbox"/> Yes <input type="checkbox"/> No	(Initials)	
<i>Corrected -3.15c</i>		<i>TD-#75</i>	<i>Has some head space</i>

† Cardinal cannot accept verbal changes. Please fax written changes to 505-393-2476



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(505) 393-2326 FAX (505) 393-2476

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

3 of 4

Company Name: BBC International, Inc.				BILL TO				ANALYSIS REQUEST																													
Project Manager: Cliff Brunson				P.O. #:																																	
Address: P.O. Box 805				Company:																																	
City: Hobbs		State: NM		Zip: 88241		Attn:																															
Phone #: 575-397-6388		Fax #: 575-397-0397		Address:		City:																															
Project #:		Project Owner: Cherron		State:		Zip:																															
Project Name: North Vacuum H2O				Phone #:																																	
Project Location: Jeff Ornelas				Fax #:																																	
Sampler Name: Jeff Ornelas																																					
FOR LAB USE ONLY																																					
Lab I.D.		Sample I.D.		(G)RAB OR (C)OMP.		# CONTAINERS		MATRIX		PRESERV.		SAMPLING																									
				GROUNDWATER		WASTEWATER		SOIL		OIL		SLUDGE		OTHER :		ACID/BASE:		ICE / COOL		OTHER :		DATE		TIME													
H801507				G		1																5/30/18		922		TBA EXT											
21 5 @ 3'				G		1																5/30/18		938		BTX											
22 6 @ 1'				G		1																5/30/18		959		CL											
23 6 @ 2'				G		1																5/30/18		1144													
24 6 @ 3'				G		1																5/30/18		111													
25 6 @ 4'				G		1																5/31/18		850													
26 7 @ 1'				G		1																5/31/18		940													
27 7 @ 2'				G		1																5/31/18		1059													
28 7 @ 3'				G		1																5/31/18		1148													
29 7 @ 4'				G		1																5/31/18		111													
30 7 @ 5'				G		1																															

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Relinquished By:		Date: 6/1/18		Received By:		Phone Result: <input type="checkbox"/> Yes <input type="checkbox"/> No		Add'l Phone #:	
Jeff Ornelas		Time: 4:00				Fax Result: <input type="checkbox"/> Yes <input type="checkbox"/> No		Add'l Fax #:	
Relinquished By:		Date: 6-4-18		Received By:		REMARKS:			
		Time: 3:10		Jennifer Ornelas					
Delivered By: (Circle One)				Sample Condition		CHECKED BY:			
Sampler - UPS - Bus - Other: -3.1c				Cool Intact		(Initials)			
Corrected -3.15c				<input type="checkbox"/> Yes <input type="checkbox"/> No		TO: #75			
				<input type="checkbox"/> Yes <input type="checkbox"/> No		Has some head space			

† Cardinal cannot accept verbal changes. Please fax written changes to 505-393-2476

Appendix C
Regulatory Communications

From: [Hernandez, Christina, EMNRD](#)
To: [Cliff Brunson](#); [Yu, Olivia, EMNRD](#); ["Mann, Ryan"](#)
Cc: ["Barnhill, Amy D."](#); ["Ken Swinney"](#); ["Jennifer Gilkey"](#); ["Kathy Purvis"](#)
Subject: RE: Chevron - North West Abo Unit Battery (RP-4930) - Delineation Workplan
Date: Thursday, July 19, 2018 12:03:19 PM

Dear Mr. Brunson:

Please note that the current RRALs are adjusted accordingly to 30 due to presence of water source < 1000 ft (20 points) and depth to groundwater being between 50-99 ft (10 points).

Based on preliminary laboratory summary results submitted, at this time NMOCD denies the proposed remediation plan due to exceeding TPH RRAL's in sampling locations SP1-SP7. Additionally, delineation is incomplete at sampling location SP7. Please complete delineation and resubmit an appropriate remediation plan for this release.

Thanks,

Christina Hernandez
EMNRD-OCD
Environmental Specialist
1625 N. French Drive
Hobbs, NM 88240
575-393-6161 x111
Christina.Hernandez@state.nm.us

OCD approval does not relieve the operator of liability should their operations fail to adequately investigate and remediate contamination that may pose a threat to ground water, surface water, human health or the environment. In addition, OCD approval does not relieve the operator of responsibility for compliance with any other federal, state, local laws and/or regulations.

From: Cliff Brunson <cbrunson@bbcinternational.com>
Sent: Wednesday, June 20, 2018 6:49 PM
To: Yu, Olivia, EMNRD <Olivia.Yu@state.nm.us>; 'Mann, Ryan' <rmann@slo.state.nm.us>
Cc: Hernandez, Christina, EMNRD <Christina.Hernandez@state.nm.us>; 'Barnhill, Amy D.' <ABarnhill@chevron.com>; 'Ken Swinney' <kswinney@bbcinternational.com>; 'Jennifer Gilkey' <jgilkey@bbcinternational.com>; 'Kathy Purvis' <kathy@bbcinternational.com>
Subject: Chevron - North West Abo Unit Battery (RP-4930) - Delineation Workplan

Olivia and Ryan,

Please find the attached Delineation Workplan and remediation proposal for the Chevron North West Abo Unit Battery (1RP-4930). Chevron is requesting that you review this plan and is looking forward to the OCD's and SLO's approval.

If you have any questions, please let me know.

Thanks, Cliff

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



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From: Mann, Ryan
To: ["Cliff Brunson"; Yu, Olivia, EMNRD](#)
Cc: [Hernandez, Christina, EMNRD](#); ["Barnhill, Amy D."; "Ken Swinney"; "Jennifer Gilkey"; "Kathy Purvis"](#)
Subject: RE: Chevron - North West Abo Unit Battery (RP-4930) - Delineation Workplan
Date: Sunday, July 8, 2018 4:54:55 PM

NMSLO approves of this plan as written. Confirmation samples from the bottom and sidewall, no greater than 50 feet apart are requested. Like approval from NMOCD is also necessary.

Ryan Mann
Remediation Specialist
Field Operation Division
(575) 392-3697
(505) 699-1989
New Mexico State Land Office
2827 N. Dal Paso Suite 117
Hobbs, NM 88240

From: Cliff Brunson [mailto:cbrunson@bbcinternational.com]
Sent: Wednesday, June 20, 2018 6:49 PM
To: 'Olivia Yu' <Olivia.Yu@state.nm.us>; Mann, Ryan <rmann@slo.state.nm.us>
Cc: 'Hernandez, Christina, EMNRD' <Christina.Hernandez@state.nm.us>; 'Barnhill, Amy D.' <ABarnhill@chevron.com>; 'Ken Swinney' <kswinney@bbcinternational.com>; 'Jennifer Gilkey' <jgilkey@bbcinternational.com>; 'Kathy Purvis' <kathy@bbcinternational.com>
Subject: Chevron - North West Abo Unit Battery (RP-4930) - Delineation Workplan

Olivia and Ryan,

Please find the attached Delineation Workplan and remediation proposal for the Chevron North West Abo Unit Battery (1RP-4930). Chevron is requesting that you review this plan and is looking forward to the OCD's and SLO's approval.

If you have any questions, please let me know.

Thanks, Cliff

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

E-Mail: cbrunson@bbcinternational.com



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Appendix D
Laboratory Reports



Certificate of Analysis Summary 651946

Larson and Associates, Inc., Midland, TX

Project Name: Chevron NWAUB



Project Id:

Contact: Mark Larson

Project Location:

Date Received in Lab: Tue Feb-11-20 10:44 am

Report Date: 13-FEB-20

Project Manager: Holly Taylor

<i>Analysis Requested</i>	<i>Lab Id:</i>	651946-001		651946-002		651946-003		651946-004			
	<i>Field Id:</i>	SP-7 (6')		SP-7 (10')		SP-7 (15')		SP-7 (20')			
	<i>Depth:</i>	6- ft		10- ft		15- ft		20- ft			
	<i>Matrix:</i>	SOIL		SOIL		SOIL		SOIL			
	<i>Sampled:</i>	Feb-10-20 12:31		Feb-10-20 12:32		Feb-10-20 12:36		Feb-10-20 12:41			
TPH by SW8015 Mod	<i>Extracted:</i>	Feb-11-20 14:00		Feb-11-20 14:00		Feb-11-20 14:00		Feb-11-20 14:00			
	<i>Analyzed:</i>	Feb-12-20 00:42		Feb-12-20 01:03		Feb-12-20 01:24		Feb-12-20 01:46			
	<i>Units/RL:</i>	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL		
Gasoline Range Hydrocarbons (GRO)		<50.0	50.0	<49.9	49.9	<49.9	49.9	<49.9	49.9		
Diesel Range Organics (DRO)		<50.0	50.0	<49.9	49.9	<49.9	49.9	<49.9	49.9		
Motor Oil Range Hydrocarbons (MRO)		<50.0	50.0	<49.9	49.9	<49.9	49.9	<49.9	49.9		
Total TPH		<50.0	50.0	<49.9	49.9	<49.9	49.9	<49.9	49.9		

This analytical report, and the entire data package it represents, has been made for your exclusive and confidential use. The interpretations and results expressed throughout this analytical report represent the best judgment of XENCO Laboratories. XENCO Laboratories assumes no responsibility and makes no warranty to the end use of the data hereby presented. Our liability is limited to the amount invoiced for this work order unless otherwise agreed to in writing.

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

Holly Taylor
Project Manager

Analytical Report 651946

for
Larson and Associates, Inc.

Project Manager: Mark Larson

Chevron NWAUB

13-FEB-20

Collected By: Client



**1211 W. Florida Ave
Midland TX 79701**

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)



13-FEB-20

Project Manager: **Mark Larson**
Larson and Associates, Inc.
P. O. Box 50685
Midland, TX 79710

Reference: XENCO Report No(s): **651946**
Chevron NWAUB
Project Address:

Mark Larson :

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) 651946. 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. 651946 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,

A handwritten signature in black ink that reads 'Holly Taylor'.

Holly Taylor
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 651946****Larson and Associates, Inc., Midland, TX**

Chevron NWAUB

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
SP-7 (6')	S	02-10-20 12:31	6 ft	651946-001
SP-7 (10')	S	02-10-20 12:32	10 ft	651946-002
SP-7 (15')	S	02-10-20 12:36	15 ft	651946-003
SP-7 (20')	S	02-10-20 12:41	20 ft	651946-004



CASE NARRATIVE

Client Name: *Larson and Associates, Inc.*

Project Name: *Chevron NWAUB*

Project ID:

Work Order Number(s): 651946

Report Date: 13-FEB-20

Date Received: 02/11/2020

Sample receipt non conformances and comments:

Sample receipt non conformances and comments per sample:

None

Analytical non conformances and comments:

Batch: LBA-3116240 TPH by SW8015 Mod

Motor Oil Range Hydrocarbons (MRO) recovered below QC limits in the Blank Spike and Duplicate indicating bias low results. Samples in the analytical batch are: 651946-001, -002, -003, -004.



Certificate of Analytical Results 651946



Larson and Associates, Inc., Midland, TX

Chevron NWAUB

Sample Id: **SP-7 (6')**

Matrix: Soil

Date Received: 02.11.20 10.44

Lab Sample Id: 651946-001

Date Collected: 02.10.20 12.31

Sample Depth: 6 ft

Analytical Method: TPH by SW8015 Mod

Prep Method: SW8015P

Tech: DVM

% Moisture:

Analyst: ARM

Date Prep: 02.11.20 14.00

Basis: Wet Weight

Seq Number: 3116240

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.0	50.0	mg/kg	02.12.20 00.42	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.0	50.0	mg/kg	02.12.20 00.42	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.0	50.0	mg/kg	02.12.20 00.42	U	1
Total TPH	PHC635	<50.0	50.0	mg/kg	02.12.20 00.42	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1-Chlorooctane	111-85-3	88	%	70-135	02.12.20 00.42		
o-Terphenyl	84-15-1	88	%	70-135	02.12.20 00.42		



Certificate of Analytical Results 651946



Larson and Associates, Inc., Midland, TX Chevron NWAUB

Sample Id: **SP-7 (10')**
Lab Sample Id: 651946-002

Matrix: Soil
Date Collected: 02.10.20 12.32

Date Received: 02.11.20 10.44
Sample Depth: 10 ft

Analytical Method: TPH by SW8015 Mod

Prep Method: SW8015P

Tech: DVM

% Moisture:

Analyst: ARM

Date Prep: 02.11.20 14.00

Basis: Wet Weight

Seq Number: 3116240

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<49.9	49.9	mg/kg	02.12.20 01.03	U	1
Diesel Range Organics (DRO)	C10C28DRO	<49.9	49.9	mg/kg	02.12.20 01.03	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<49.9	49.9	mg/kg	02.12.20 01.03	U	1
Total TPH	PHC635	<49.9	49.9	mg/kg	02.12.20 01.03	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1-Chlorooctane	111-85-3	86	%	70-135	02.12.20 01.03		
o-Terphenyl	84-15-1	87	%	70-135	02.12.20 01.03		



Certificate of Analytical Results 651946



Larson and Associates, Inc., Midland, TX

Chevron NWAUB

Sample Id: **SP-7 (15')**

Matrix: Soil

Date Received: 02.11.20 10.44

Lab Sample Id: 651946-003

Date Collected: 02.10.20 12.36

Sample Depth: 15 ft

Analytical Method: TPH by SW8015 Mod

Prep Method: SW8015P

Tech: DVM

% Moisture:

Analyst: ARM

Date Prep: 02.11.20 14.00

Basis: Wet Weight

Seq Number: 3116240

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<49.9	49.9	mg/kg	02.12.20 01.24	U	1
Diesel Range Organics (DRO)	C10C28DRO	<49.9	49.9	mg/kg	02.12.20 01.24	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<49.9	49.9	mg/kg	02.12.20 01.24	U	1
Total TPH	PHC635	<49.9	49.9	mg/kg	02.12.20 01.24	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1-Chlorooctane	111-85-3	86	%	70-135	02.12.20 01.24		
o-Terphenyl	84-15-1	86	%	70-135	02.12.20 01.24		



Certificate of Analytical Results 651946



Larson and Associates, Inc., Midland, TX

Chevron NWAUB

Sample Id: **SP-7 (20')**

Matrix: Soil

Date Received: 02.11.20 10.44

Lab Sample Id: 651946-004

Date Collected: 02.10.20 12.41

Sample Depth: 20 ft

Analytical Method: TPH by SW8015 Mod

Prep Method: SW8015P

Tech: DVM

% Moisture:

Analyst: ARM

Date Prep: 02.11.20 14.00

Basis: Wet Weight

Seq Number: 3116240

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<49.9	49.9	mg/kg	02.12.20 01.46	U	1
Diesel Range Organics (DRO)	C10C28DRO	<49.9	49.9	mg/kg	02.12.20 01.46	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<49.9	49.9	mg/kg	02.12.20 01.46	U	1
Total TPH	PHC635	<49.9	49.9	mg/kg	02.12.20 01.46	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1-Chlorooctane	111-85-3	82	%	70-135	02.12.20 01.46		
o-Terphenyl	84-15-1	82	%	70-135	02.12.20 01.46		



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



Larson and Associates, Inc.
Chevron NWAUB

Analytical Method: TPH by SW8015 Mod

Seq Number: 3116240

MB Sample Id: 7696418-1-BLK

Matrix: Solid

LCS Sample Id: 7696418-1-BKS

Prep Method: SW8015P

Date Prep: 02.11.20

LCSD Sample Id: 7696418-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Gasoline Range Hydrocarbons (GRO)	<15.0	1000	901	90	896	90	70-135	1	20	mg/kg	02.11.20 17:56	
Diesel Range Organics (DRO)	<15.0	1000	974	97	948	95	70-135	3	20	mg/kg	02.11.20 17:56	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	88		102		102		70-135	%	02.11.20 17:56
o-Terphenyl	86		101		97		70-135	%	02.11.20 17:56

Analytical Method: TPH by SW8015 Mod

Seq Number: 3116240

Matrix: Solid

MB Sample Id: 7696418-1-BLK

Prep Method: SW8015P

Date Prep: 02.11.20

Parameter	MB Result	Units	Analysis Date	Flag
Motor Oil Range Hydrocarbons (MRO)	<50.0	mg/kg	02.11.20 17:34	

Analytical Method: TPH by SW8015 Mod

Seq Number: 3116240

Matrix: Soil

Parent Sample Id: 651910-001

MS Sample Id: 651910-001 S

Prep Method: SW8015P

Date Prep: 02.11.20

MSD Sample Id: 651910-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Gasoline Range Hydrocarbons (GRO)	<15.0	997	920	92	907	91	70-135	1	20	mg/kg	02.11.20 19:00	
Diesel Range Organics (DRO)	<15.0	997	985	99	978	98	70-135	1	20	mg/kg	02.11.20 19:00	
Motor Oil Range Hydrocarbons (MRO)	<15.0	997	<49.9	0	<49.9	0	70-135	NC	20	mg/kg	02.11.20 19:00	X

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	97		94		70-135	%	02.11.20 19:00
o-Terphenyl	91		92		70-135	%	02.11.20 19:00

MS/MSD Percent Recovery
Relative Percent Difference
LCS/LCSD Recovery
Log Difference

$[D] = 100 * (C - A) / B$
 $RPD = 200 * |(C - E) / (C + E)|$
 $[D] = 100 * (C) / [B]$
 Log Diff. = Log(Sample Duplicate) - Log(Original Sample)

LCS = Laboratory Control Sample
A = Parent Result
C = MS/LCS Result
E = MSD/LCSD Result

MS = Matrix Spike
B = Spike Added
D = MSD/LCSD % Rec

Marion & Associates, Inc.
Environmental Consultants

507 N. Marienfeld, Ste. 200
Midland, TX 79701
432-687-0901

Data Reported to:

DATE: 2/11/2020 PAGE 1 OF 1
PO#: LAB WORK ORDER#
PROJECT LOCATION OR NAME: CHEMUN NWTAUB
LAI PROJECT #: COLLECTOR: DS/EC

TRRP report?
☐ Yes ☒ No

S=SOIL
W=WATER
A=AIR
P=PAINT
SL=SLUDGE
OT=OTHER

TIME ZONE:
Time zone/State:

MST

Field
Sample I.D.

Lab #

Date

Time

Matrix

of Containers

HCl

HNO₃

H₂SO₄ ☐ NaOH ☐

ICE

UNPRESSERVED

ANALYSES

BTEX ☐ MTBE ☐
TRPH 418.1 ☐ TPH 1005 ☒ TPH 1006 ☐
GASOLINE MOD 8015 ☒
DIESEL - MOD 8015 ☒
OIL - MOD 8015 ☒
VOC 8260 ☒
SVOC 8270 ☐ PAH 8270 ☐ HOLDPAH ☐
8081 PESTICIDES ☐ 8151 HERBICIDES ☐
TCLP - METALS (RCRA) ☐ TCLP VOC ☐
TCLP - PEST ☐ HERB ☐ Semi-VOC ☐
TOTAL METALS (RCRA) ☐ OTHER LIST ☐
LEAD - TOTAL ☐ D.W. 200.8 ☐ TCLP ☐
RCI ☐ TOX ☐ FLASHPOINT ☐
TDS ☐ TSS ☐ % MOISTURE ☐ CYANIDE ☐
PH ☐ HEXAVALENT CHROMIUM ☐
EXPLOSIVES ☐ PENTACHLORATE ☐
CHLORIDE ☐ ANIONS ☐ ALKALINITY ☐

FIELD NOTES

SR-7 (10')
SP-7 (10')
SP-7 (15')
SP-7 (20')

2/10/2020 2:31

2:32

2:34

2:41

TOTAL

RELINQUISHED BY: (Signature)

DATE/TIME

RECEIVED BY: (Signature)

TURN AROUND TIME

LABORATORY USE ONLY:

RELINQUISHED BY: (Signature)

DATE/TIME

RECEIVED BY: (Signature)

NORMAL ☐

RECEIVING TEMP: 050

THERM#: 26

RELINQUISHED BY: (Signature)

DATE/TIME

RECEIVED BY: (Signature)

1 DAY ☐

CUSTODY SEALS - ☐ BROKEN ☐ INTACT ☐ NOT USED

LABORATORY:

YCNCO

2 DAY ☐

CARRIER BILL #

HAND DELIVERED

651946

Nº 0976

CHAIN-OF-CUSTODY

XENCO Laboratories**Prelogin/Nonconformance Report- Sample Log-In****Client:** Larson and Associates, Inc.**Date/ Time Received:** 02.11.2020 10.44.00 AM**Work Order #:** 651946**Acceptable Temperature Range:** 0 - 6 degC**Air and Metal samples Acceptable Range:** Ambient**Temperature Measuring device used :****Sample Receipt Checklist****Comments**

#1 *Temperature of cooler(s)?	.6
#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#: r8

Checklist completed by:

Allison Johnson

Date: 02.11.2020

Checklist reviewed by:

Jessica Kramer

Date: 02.12.2020

Appendix E

Photographs

1RP-4930
Chevron USA, Inc.
Northwest Abo Unit Battery



Northwest Abo Tank Battery Viewing North, March 23, 2020



Spill Area Viewing Northwest, March 23, 2020

1RP-4930
Chevron USA, Inc.
Northwest Abo Unit Battery



Spill Area Viewing Southwest, March 23, 2020

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 31359

CONDITIONS

Operator: CHEVRON U S A INC 6301 Deauville Blvd Midland, TX 79706	OGRID: 4323
	Action Number: 31359
	Action Type: [C-141] Release Corrective Action (C-141)

CONDITIONS

Created By	Condition	Condition Date
bbillings	None	6/11/2021