

# Closure Report

## Site Description

Site Name:	Cedar Canyon 21-22 Fed Com #33H
Company:	Oxy USA Inc.
Legal Description:	U/L L, Section 21, T24S, R29E
County:	Eddy County, NM
GPS Coordinates:	N 32.20021° W-103.99656°

## Release Data

Date of Release:	11/11/2017, discovered
Type of Release:	Oil and produced water
Source of Release:	Poly flow line failure
Volume of Release:	10 bbls oil, 40 bbls produced water
Volume Recovered:	30 bbls

## Remediation Specifications

Remediation Parameters:	Excavate the entire leak area to a depth of 1 foot. Backfill the site with clean soil.	
Remediation Activities:	08/14/2018 to 08/20/2018	
Plan Sent to OCD:	02/20/2018	Email from Cliff Brunson to Mike Bratcher
OCD Approval of Plan:	04/30/2018	Email from Mike Bratcher to Cliff Brunson
Plan Sent to BLM:	02/20/2018	Email from Cliff Brunson to Shelly Tucker
BLM Approval of Plan:	03/30/2018	Email from Shelly Tucker to Cliff Brunson

## Supporting Documentation

Initial C-141	Signed 11/15/17
Final C-141	Upon completion
Site Diagram	November 2017
Groundwater Plot	50'
TOPO Maps	November 2017
Lab Summary	12/14/2017
Lab Analysis	12/14/2017
Correspondence	Request and approval of remediation plan via email

## Request for Closure

Based on the completion of the remediation plan, Oxy Permian requests closure approval from NMOCD.

Wade Dittrich, Environmental Specialist

08/22/2018

**NM OIL CONSERVATION**

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

ARTESIA DISTRICT

Form C-141  
Revised April 3, 2017

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

NOV 15 2017  
RECEIVED

**Release Notification and Corrective Action**

*NAB1732448434*

**OPERATOR**

Initial Report  Final Report

Name of Company	OXY USA INC <i>11/15/17</i>	Contact	WADE DITTRICH
Address	PO BOX 4294; HOUSTON, TX 77210	Telephone No.	575-390-2828
Facility Name	CEDAR CANYON 21-22 FED COM 33H	Facility Type	WELL
Surface Owner	FEDERAL	Mineral Owner	FEDERAL
		API No.	30-015-44133

**LOCATION OF RELEASE**

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County
L	21	24S	29E	1754	SOUTH	374	WEST	EDDY

Latitude 32.200600 Longitude -103.996693 NAD83

**NATURE OF RELEASE**

Type of Release	OIL & PRODUCED WATER	Volume of Release	10 BBLs OIL 40 BBLs PRODUCED WATER	Volume Recovered	30 BBLs PRODUCED WATER
Source of Release	4" POLY FLOWLINE FAILURE	Date and Hour of Occurrence	11/11/2017	Date and Hour of Discovery	11/11/2017
Was Immediate Notice Given?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Not Required	If YES, To Whom?	MIKE BRATCHER-NMOCD; CRYSTAL WEAVER-NMOCD; SHELLY TUCKER-BLM		
By Whom?	WADE DITTRICH	Date and Hour	11/11/2017 @ 6:39 PM		
Was a Watercourse Reached?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	If YES, Volume Impacting the Watercourse.	<i>* Did not meet legs for immediate notification time-frame</i>		

If a Watercourse was Impacted, Describe Fully.\*

Describe Cause of Problem and Remedial Action Taken.\*  
The release was caused by a 4 inch poly flow line failure-leak is 60 ft from wellhead-leak left location. Poly line was fixed and returned to service.

Describe Area Affected and Cleanup Action Taken.\*  
The affected area was 10x100ft (measurements are subject to change with GPS tracking). Remediation will be completed in accordance with a remediation plan approved by the NMOCD and the BLM.

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

Signature:	<i>Wade Dittich</i>	<b>OIL CONSERVATION DIVISION</b>	
Printed Name:	WADE DITTRICH	Approved by Environmental Specialist:	<i>Crystal Weaver</i>
Title:	ENVIRONMENTAL COORDINATOR	Approval Date:	11/20/17
E-mail Address:	wade.dittrich@oxy.com	Expiration Date:	N/A
Date:	11-15-17	Conditions of Approval:	<i>see attached</i>
Phone:	575-390-2828	Attached	<i>* 4489</i>

\* Attach Additional Sheets If Necessary

Operator/Responsible Party,

The OCD has received the form C-141 you provided on **11/15/17** regarding an unauthorized release. The information contained on that form has been entered into our incident database and remediation case number 2RP-4489 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 II office in Artesia on or before 12/15/17. 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; C<sub>6</sub> thru C<sub>36</sub>), 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; C<sub>6</sub> thru C<sub>36</sub>), 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

## Weaver, Crystal, EMNRD

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**From:** Wade\_Dittrich@oxy.com  
**Sent:** Wednesday, November 15, 2017 3:17 PM  
**To:** Bratcher, Mike, EMNRD; Weaver, Crystal, EMNRD; stucker@blm.gov  
**Cc:** Jennifer\_Smith@oxy.com  
**Subject:** Initial C-141-Cedar Canyon 21-22 Fed. Com 33H  
**Attachments:** Scanned from a Xerox Multifunction Device002.pdf

All,

Attached is the [Initial C-141](#). Please review and let me know if there are any questions. Thank you.

Wade Dittrich  
**Environmental Specialist**  
**Oxy Permian-New Mexico**  
575-390-2828 cell  
575-397-8214 office  
**Wade\_Dittrich@Oxy.com**

## **Bratcher, Mike, EMNRD**

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**From:** Wade\_Dittrich@oxy.com  
**Sent:** Saturday, November 11, 2017 6:39 PM  
**To:** Bratcher, Mike, EMNRD; Weaver, Crystal, EMNRD  
**Cc:** stucker@blm.gov; cbrunson@bbcinternational.com; kathy@bbcinternational.com; jgilkey@bbcinternational.com; kswinney@bbcinternational.com  
**Subject:** Cedar Canyon 21-22 Fed. Com 0033H

All,

This is to inform you that Oxy Permian had a **Reportable** release in **Eddy County** at the **Cedar Canyon 21-22 Fed. Com 0033H** on **11/1/2017**.

- **Release Location:** Legal -21-24S-29E, API: 30-015-44133
- **Release Volume:** 10 bbls of Oil and 70 bbls of Produced Water.
- **Recovered:** TBD
- **Cause of Release:** 4 inch poly flow line failure-leak is 60 ft from wellhead-leak left location
- **Approximate Area impacted by release:** 10x100ft (measurements are subject to change with GPS tracking)
- **GPS Coordinates and Driving Direction:** **32.200600,-103.996693** On Mcdonald RD outside of Malaga cross the river and go to int., turn left and go 237ft, turn right and go .3 of a mile and turn left and go .9 of a mile to location on left.

Please let me know if you have any questions.

Wade Dittrich

**Environmental Specialist**

**Oxy Permian-New Mexico**

575-390-2828 cell

575-397-8214 office

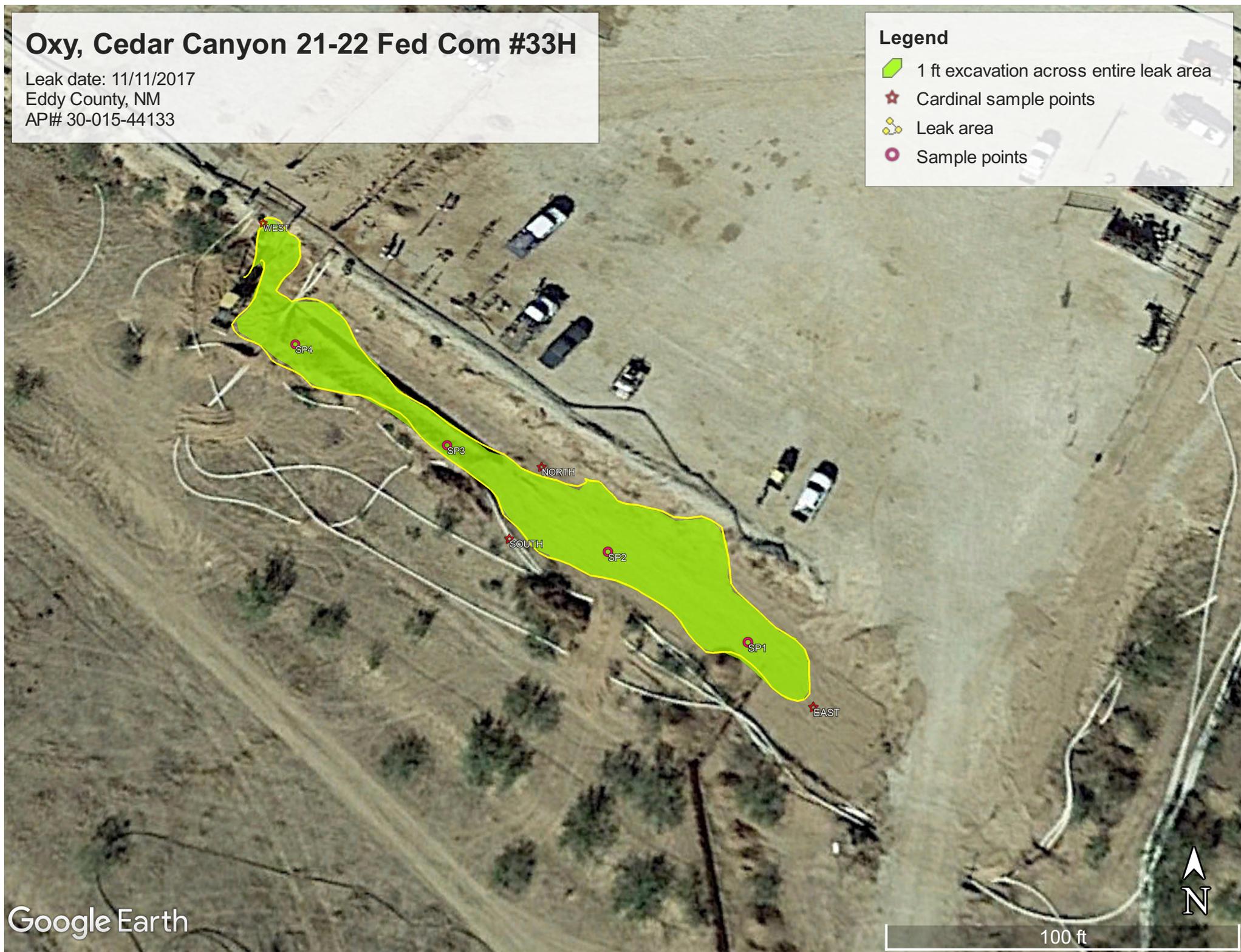
**Wade\_Dittrich@Oxy.com**

# Oxy, Cedar Canyon 21-22 Fed Com #33H

Leak date: 11/11/2017  
Eddy County, NM  
AP# 30-015-44133

## Legend

-  1 ft excavation across entire leak area
-  Cardinal sample points
-  Leak area
-  Sample points



Oxy, Cedar Canyon 21-22 Fed Com #33H

Sample points, hand auger

SP1, N 32.19983 W-103.99655

SP2, N 32.19991 W-103.99669

SP3, N 32.20001 W-103.99686

SP4, N 32.20011 W-103.99703

NORTH, N 32.19999 W-103.99676

SOUTH, N 32.19992 W-103.99680

EAST, N 32.19977 W-103.99648

WEST, N 32.20024 W-103.99708

**Oxy, Cedar Canyon 21-22 Fed Com #33H**

**U/L L, Section 21, T24S, R29E**

**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	Code	POD Sub-basin	County	Q 64	Q 16	Q 4	Sec 17	Tws 24S	Rng 29E	X 594332	Y 3564282*	Distance	DepthWell	DepthWater	Water Column
<a href="#">C_00463</a>		C	ED	4	4	4	17	24S	29E	594332	3564282*	1154	260	4	256

Average Depth to Water: **4 feet**

Minimum Depth: **4 feet**

Maximum Depth: **4 feet**

**Record Count:** 1

**UTMNAD83 Radius Search (in meters):**

**Easting (X):** 594642

**Northing (Y):** 3563170

**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.

11/16/17 9:23 AM

WATER COLUMN/ AVERAGE DEPTH TO WATER

**Public Land Survey System (PLSS)**

Q64:            Q16: **NW**            Q4: **SW**            Sec: **21**            Tws: **24S**            Rng: **29E**

**State Plane Coordinate System - NAD27**

X:            ft            Y:            ft            Zone:

**State Plane Coordinate System - NAD83**

X:            ft            Y:            ft            Zone:

**Degrees/Minutes/Seconds**

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

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

**UTM - NAD27**

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

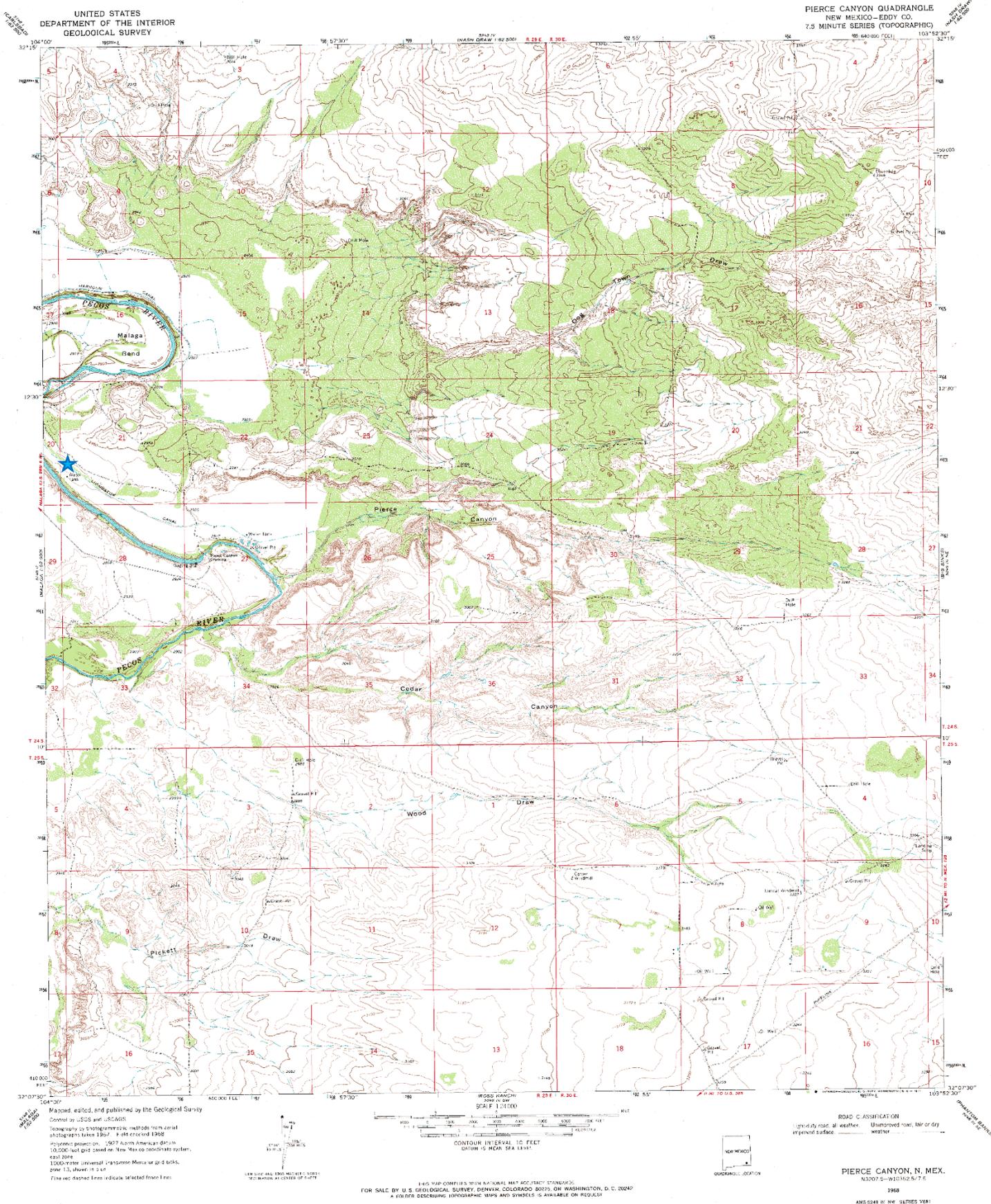
**SUBMIT**

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

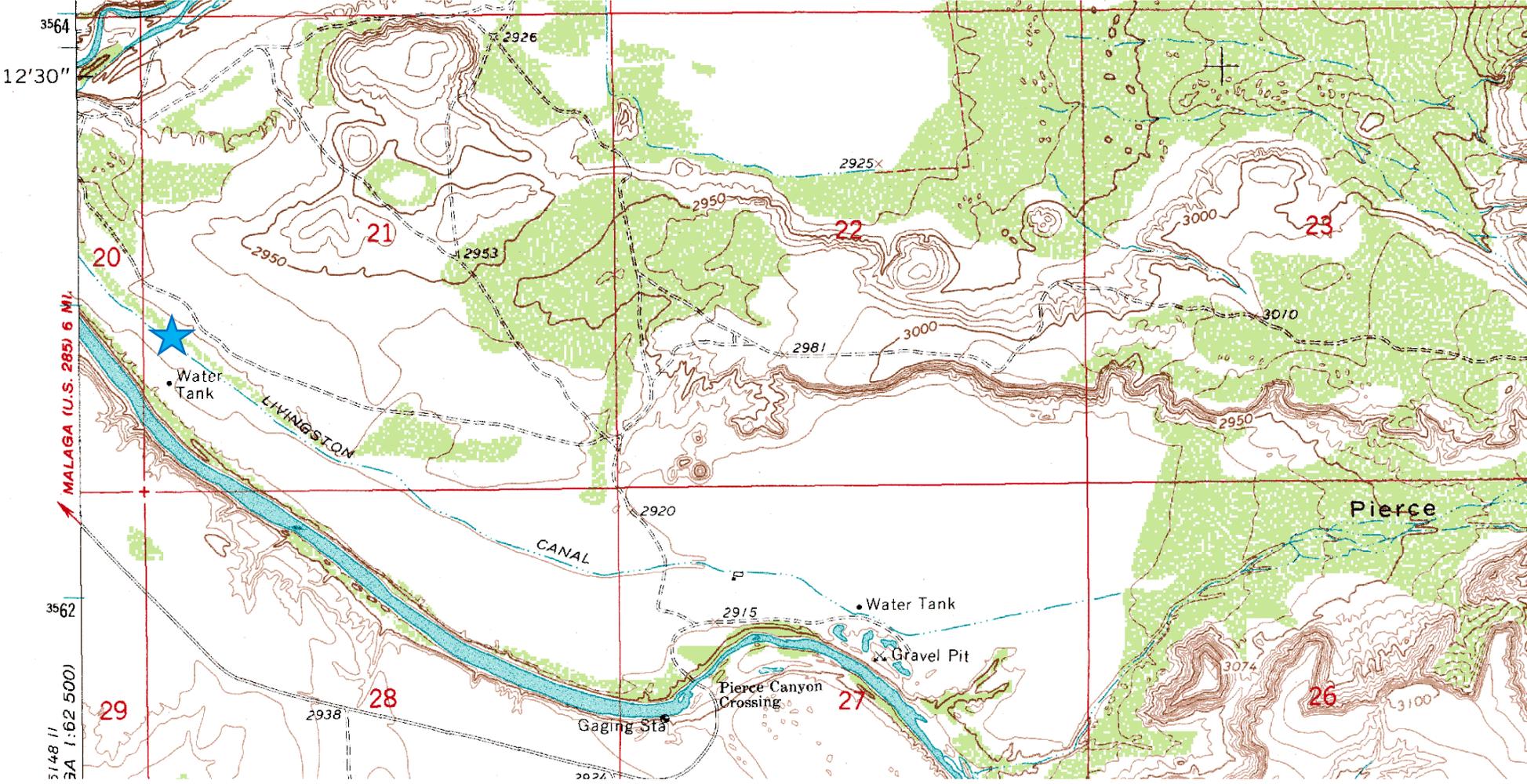
Easting (X): **594642.0** mtrs            Northing (Y): **3563170.0** mtrs

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

# Oxy, Cedar Canyon 21-22 Fed Com #33H



# Oxy, Cedar Canyon 21-22 Fed Com #33H



Laboratory Analytical Results Summary  
Cedar Canyon 21-22 Fed Com #33H

		Sample ID	SP1 @ 1'	SP1 @ 2'	SP1 @ 3'
Analyte	Method	Date	12/14/17	12/14/17	12/14/17
			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	SM4500CI-B		5440	512	192
GRO	TPH 8015M		<10.0	<10.0	<10.0
DRO	TPH 8015M		51.5	<10.0	<10.0
EXT DRO	TPH 8015M		<10.0	<10.0	<10.0

		Sample ID	NORTH @ SURFACE	EAST @ SURFACE	WEST @ SURFACE	SOUTH @ SURFACE
Analyte	Method	Date	12/14/17	12/14/17	12/14/17	12/14/17
			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	SM4500CI-B		32	<16.0	32	<16.0
GRO	TPH 8015M		<10.0	<10.0	<10.0	<10.0
DRO	TPH 8015M		<10.0	<10.0	<10.0	<10.0
EXT DRO	TPH 8015M		<10.0	<10.0	<10.0	<10.0

		Sample ID	SP2 @ 1'	SP2 @ 2'	SP2 @ 3'
Analyte	Method	Date	12/14/17	12/14/17	12/14/17
			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	SM4500CI-B		4640	496	176
GRO	TPH 8015M		<10.0	<10.0	<10.0
DRO	TPH 8015M		24.9	<10.0	<10.0
EXT DRO	TPH 8015M		<10.0	<10.0	<10.0

		Sample ID	SP3 @ 1'	SP3 @ 2'
Analyte	Method	Date	12/14/17	12/14/17
			mg/kg	mg/kg
Benzene	BTEX 8021B		<0.050	<0.050
Toluene	BTEX 8021B		<0.050	<0.050
Ethylbenzene	BTEX 8021B		<0.050	<0.050
Total Xylenes	BTEX 8021B		<0.150	<0.150
Total BTEX	BTEX 8021B		<0.300	<0.300
Chloride	SM4500CI-B		832	144
GRO	TPH 8015M		<10.0	<10.0
DRO	TPH 8015M		<10.0	<10.0
EXT DRO	TPH 8015M		<10.0	<10.0

		Sample ID	SP4 @ 1'	SP4 @ 2'
Analyte	Method	Date	12/14/17	12/14/17
			mg/kg	mg/kg
Benzene	BTEX 8021B		<0.050	<0.050
Toluene	BTEX 8021B		<0.050	<0.050
Ethylbenzene	BTEX 8021B		<0.050	<0.050
Total Xylenes	BTEX 8021B		<0.150	<0.150
Total BTEX	BTEX 8021B		<0.300	<0.300
Chloride	SM4500CI-B		848	128
GRO	TPH 8015M		<10.0	<10.0
DRO	TPH 8015M		<10.0	<10.0
EXT DRO	TPH 8015M		<10.0	<10.0



December 27, 2017

Cliff Brunson  
BBC International, Inc.  
P.O. Box 805  
Hobbs, NM 88241

RE: CEDAR CANYON 21-22 #33H

Enclosed are the results of analyses for samples received by the laboratory on 12/15/17 13:37.

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](http://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.

Celey D. Keene  
Lab Director/Quality Manager

**Analytical Results For:**

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

Received:	12/15/2017	Sampling Date:	12/14/2017
Reported:	12/27/2017	Sampling Type:	Soil
Project Name:	CEDAR CANYON 21-22 #33H	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	OXY		

**Sample ID: SP 1 @ 1 (H703488-01)**

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	12/22/2017	ND	3.90	97.4	4.00	2.14	
Toluene*	<0.050	0.050	12/22/2017	ND	3.86	96.4	4.00	1.94	
Ethylbenzene*	<0.050	0.050	12/22/2017	ND	3.83	95.6	4.00	1.39	
Total Xylenes*	<0.150	0.150	12/22/2017	ND	11.5	96.0	12.0	1.48	
Total BTEX	<0.300	0.300	12/22/2017	ND					

*Surrogate: 4-Bromofluorobenzene (PID) 94.3 % 72-148*

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
<b>Chloride</b>	<b>5440</b>	16.0	12/20/2017	ND	400	100	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	12/21/2017	ND	210	105	200	12.8	
<b>DRO &gt;C10-C28*</b>	<b>51.5</b>	10.0	12/21/2017	ND	205	102	200	11.7	
EXT DRO >C28-C36	<10.0	10.0	12/21/2017	ND					

*Surrogate: 1-Chlorooctane 90.3 % 28.3-164*
*Surrogate: 1-Chlorooctadecane 95.1 % 34.7-157*

Cardinal Laboratories

\*=Accredited Analyte

PLEASE NOTE: Liability and Damages. Cardinal's liability and client's exclusive remedy for any claim arising, whether based in contract or tort, shall be limited to the amount paid by client for analyses. All claims, including those for negligence and any other cause whatsoever shall be deemed waived unless made in writing and received by Cardinal within thirty (30) days after completion of the applicable service. In no event shall Cardinal be liable for incidental or consequential damages, including, without limitation, business interruptions, loss of use, or loss of profits incurred by client, its subsidiaries, affiliates or successors arising out of or related to the performance of the services hereunder by Cardinal, regardless of whether such claim is based upon any of the above stated reasons or otherwise. Results relate only to the samples identified above. This report shall not be reproduced except in full with written approval of Cardinal Laboratories.



Celey D. Keene, Lab Director/Quality Manager

**Analytical Results For:**

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

Received:	12/15/2017	Sampling Date:	12/14/2017
Reported:	12/27/2017	Sampling Type:	Soil
Project Name:	CEDAR CANYON 21-22 #33H	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	OXY		

**Sample ID: SP 1 @ 2 (H703488-02)**

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	12/22/2017	ND	3.90	97.4	4.00	2.14	
Toluene*	<0.050	0.050	12/22/2017	ND	3.86	96.4	4.00	1.94	
Ethylbenzene*	<0.050	0.050	12/22/2017	ND	3.83	95.6	4.00	1.39	
Total Xylenes*	<0.150	0.150	12/22/2017	ND	11.5	96.0	12.0	1.48	
Total BTEX	<0.300	0.300	12/22/2017	ND					

Surrogate: 4-Bromofluorobenzene (PID) 93.3 % 72-148

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	512	16.0	12/20/2017	ND	400	100	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	12/21/2017	ND	210	105	200	12.8	
DRO >C10-C28*	<10.0	10.0	12/21/2017	ND	205	102	200	11.7	
EXT DRO >C28-C36	<10.0	10.0	12/21/2017	ND					

Surrogate: 1-Chlorooctane 89.1 % 28.3-164

Surrogate: 1-Chlorooctadecane 91.9 % 34.7-157

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\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager

**Analytical Results For:**

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

Received:	12/15/2017	Sampling Date:	12/14/2017
Reported:	12/27/2017	Sampling Type:	Soil
Project Name:	CEDAR CANYON 21-22 #33H	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	OXY		

**Sample ID: SP 1 @ 3 (H703488-03)**

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	12/22/2017	ND	3.90	97.4	4.00	2.14	
Toluene*	<0.050	0.050	12/22/2017	ND	3.86	96.4	4.00	1.94	
Ethylbenzene*	<0.050	0.050	12/22/2017	ND	3.83	95.6	4.00	1.39	
Total Xylenes*	<0.150	0.150	12/22/2017	ND	11.5	96.0	12.0	1.48	
Total BTEX	<0.300	0.300	12/22/2017	ND					

Surrogate: 4-Bromofluorobenzene (PID) 93.9 % 72-148

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
<b>Chloride</b>	<b>192</b>	16.0	12/20/2017	ND	400	100	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	12/21/2017	ND	210	105	200	12.8	
DRO >C10-C28*	<10.0	10.0	12/21/2017	ND	205	102	200	11.7	
EXT DRO >C28-C36	<10.0	10.0	12/21/2017	ND					

Surrogate: 1-Chlorooctane 75.9 % 28.3-164

Surrogate: 1-Chlorooctadecane 78.2 % 34.7-157

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

Received:	12/15/2017	Sampling Date:	12/14/2017
Reported:	12/27/2017	Sampling Type:	Soil
Project Name:	CEDAR CANYON 21-22 #33H	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	OXY		

**Sample ID: SP 2 @ 1 (H703488-04)**

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	12/22/2017	ND	3.90	97.4	4.00	2.14	
Toluene*	<0.050	0.050	12/22/2017	ND	3.86	96.4	4.00	1.94	
Ethylbenzene*	<0.050	0.050	12/22/2017	ND	3.83	95.6	4.00	1.39	
Total Xylenes*	<0.150	0.150	12/22/2017	ND	11.5	96.0	12.0	1.48	
Total BTEX	<0.300	0.300	12/22/2017	ND					

Surrogate: 4-Bromofluorobenzene (PID) 93.7 % 72-148

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
<b>Chloride</b>	<b>4640</b>	16.0	12/20/2017	ND	400	100	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	12/21/2017	ND	210	105	200	12.8	
<b>DRO &gt;C10-C28*</b>	<b>24.9</b>	10.0	12/21/2017	ND	205	102	200	11.7	
EXT DRO >C28-C36	<10.0	10.0	12/21/2017	ND					

Surrogate: 1-Chlorooctane 84.0 % 28.3-164

Surrogate: 1-Chlorooctadecane 87.0 % 34.7-157

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

Received:	12/15/2017	Sampling Date:	12/14/2017
Reported:	12/27/2017	Sampling Type:	Soil
Project Name:	CEDAR CANYON 21-22 #33H	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	OXY		

**Sample ID: SP 2 @ 2 (H703488-05)**

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	12/22/2017	ND	3.90	97.4	4.00	2.14	
Toluene*	<0.050	0.050	12/22/2017	ND	3.86	96.4	4.00	1.94	
Ethylbenzene*	<0.050	0.050	12/22/2017	ND	3.83	95.6	4.00	1.39	
Total Xylenes*	<0.150	0.150	12/22/2017	ND	11.5	96.0	12.0	1.48	
Total BTEX	<0.300	0.300	12/22/2017	ND					

Surrogate: 4-Bromofluorobenzene (PID) 92.1 % 72-148

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
<b>Chloride</b>	<b>496</b>	16.0	12/20/2017	ND	400	100	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	12/22/2017	ND	210	105	200	12.8	
DRO >C10-C28*	<10.0	10.0	12/22/2017	ND	205	102	200	11.7	
EXT DRO >C28-C36	<10.0	10.0	12/22/2017	ND					

Surrogate: 1-Chlorooctane 82.9 % 28.3-164

Surrogate: 1-Chlorooctadecane 86.5 % 34.7-157

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Received:	12/15/2017	Sampling Date:	12/14/2017
Reported:	12/27/2017	Sampling Type:	Soil
Project Name:	CEDAR CANYON 21-22 #33H	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	OXY		

**Sample ID: SP 2 @ 3 (H703488-06)**

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	12/22/2017	ND	3.90	97.4	4.00	2.14	
Toluene*	<0.050	0.050	12/22/2017	ND	3.86	96.4	4.00	1.94	
Ethylbenzene*	<0.050	0.050	12/22/2017	ND	3.83	95.6	4.00	1.39	
Total Xylenes*	<0.150	0.150	12/22/2017	ND	11.5	96.0	12.0	1.48	
Total BTEX	<0.300	0.300	12/22/2017	ND					

Surrogate: 4-Bromofluorobenzene (PID) 93.2 % 72-148

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
<b>Chloride</b>	<b>176</b>	16.0	12/20/2017	ND	400	100	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	12/22/2017	ND	210	105	200	12.8	
DRO >C10-C28*	<10.0	10.0	12/22/2017	ND	205	102	200	11.7	
EXT DRO >C28-C36	<10.0	10.0	12/22/2017	ND					

Surrogate: 1-Chlorooctane 82.2 % 28.3-164

Surrogate: 1-Chlorooctadecane 85.6 % 34.7-157

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 Fax To: (575) 397-0397

Received:	12/15/2017	Sampling Date:	12/14/2017
Reported:	12/27/2017	Sampling Type:	Soil
Project Name:	CEDAR CANYON 21-22 #33H	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	OXY		

**Sample ID: SP 3 @ 1 (H703488-07)**

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	12/22/2017	ND	3.90	97.4	4.00	2.14	
Toluene*	<0.050	0.050	12/22/2017	ND	3.86	96.4	4.00	1.94	
Ethylbenzene*	<0.050	0.050	12/22/2017	ND	3.83	95.6	4.00	1.39	
Total Xylenes*	<0.150	0.150	12/22/2017	ND	11.5	96.0	12.0	1.48	
Total BTEX	<0.300	0.300	12/22/2017	ND					

Surrogate: 4-Bromofluorobenzene (PID) 91.8 % 72-148

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
<b>Chloride</b>	<b>832</b>	16.0	12/20/2017	ND	400	100	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	12/22/2017	ND	210	105	200	12.8	
DRO >C10-C28*	<10.0	10.0	12/22/2017	ND	205	102	200	11.7	
EXT DRO >C28-C36	<10.0	10.0	12/22/2017	ND					

Surrogate: 1-Chlorooctane 81.5 % 28.3-164

Surrogate: 1-Chlorooctadecane 84.7 % 34.7-157

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

Received:	12/15/2017	Sampling Date:	12/14/2017
Reported:	12/27/2017	Sampling Type:	Soil
Project Name:	CEDAR CANYON 21-22 #33H	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	OXY		

**Sample ID: SP 3 @ 2 (H703488-08)**

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	12/22/2017	ND	3.90	97.4	4.00	2.14	
Toluene*	<0.050	0.050	12/22/2017	ND	3.86	96.4	4.00	1.94	
Ethylbenzene*	<0.050	0.050	12/22/2017	ND	3.83	95.6	4.00	1.39	
Total Xylenes*	<0.150	0.150	12/22/2017	ND	11.5	96.0	12.0	1.48	
Total BTEX	<0.300	0.300	12/22/2017	ND					

Surrogate: 4-Bromofluorobenzene (PID) 92.0 % 72-148

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
<b>Chloride</b>	<b>144</b>	16.0	12/20/2017	ND	400	100	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	12/21/2017	ND	232	116	200	4.86	
DRO >C10-C28*	<10.0	10.0	12/21/2017	ND	227	113	200	3.35	
EXT DRO >C28-C36	<10.0	10.0	12/21/2017	ND					

Surrogate: 1-Chlorooctane 89.1 % 28.3-164

Surrogate: 1-Chlorooctadecane 89.5 % 34.7-157

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 Fax To: (575) 397-0397

Received:	12/15/2017	Sampling Date:	12/14/2017
Reported:	12/27/2017	Sampling Type:	Soil
Project Name:	CEDAR CANYON 21-22 #33H	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	OXY		

**Sample ID: SP 4 @ 1 (H703488-09)**

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	12/22/2017	ND	3.90	97.4	4.00	2.14	
Toluene*	<0.050	0.050	12/22/2017	ND	3.86	96.4	4.00	1.94	
Ethylbenzene*	<0.050	0.050	12/22/2017	ND	3.83	95.6	4.00	1.39	
Total Xylenes*	<0.150	0.150	12/22/2017	ND	11.5	96.0	12.0	1.48	
Total BTEX	<0.300	0.300	12/22/2017	ND					

Surrogate: 4-Bromofluorobenzene (PID) 93.1 % 72-148

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
<b>Chloride</b>	<b>848</b>	16.0	12/20/2017	ND	400	100	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	12/21/2017	ND	232	116	200	4.86	
DRO >C10-C28*	<10.0	10.0	12/21/2017	ND	227	113	200	3.35	
EXT DRO >C28-C36	<10.0	10.0	12/21/2017	ND					

Surrogate: 1-Chlorooctane 97.7 % 28.3-164

Surrogate: 1-Chlorooctadecane 97.2 % 34.7-157

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Received:	12/15/2017	Sampling Date:	12/14/2017
Reported:	12/27/2017	Sampling Type:	Soil
Project Name:	CEDAR CANYON 21-22 #33H	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	OXY		

**Sample ID: SP 4 @ 2 (H703488-10)**

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	12/22/2017	ND	3.90	97.4	4.00	2.14		
Toluene*	<0.050	0.050	12/22/2017	ND	3.86	96.4	4.00	1.94		
Ethylbenzene*	<0.050	0.050	12/22/2017	ND	3.83	95.6	4.00	1.39		
Total Xylenes*	<0.150	0.150	12/22/2017	ND	11.5	96.0	12.0	1.48		
Total BTEX	<0.300	0.300	12/22/2017	ND						

Surrogate: 4-Bromofluorobenzene (PID) 93.1 % 72-148

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
<b>Chloride</b>	<b>128</b>	16.0	12/20/2017	ND	400	100	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	12/21/2017	ND	232	116	200	4.86		
DRO >C10-C28*	<10.0	10.0	12/21/2017	ND	227	113	200	3.35		
EXT DRO >C28-C36	<10.0	10.0	12/21/2017	ND						

Surrogate: 1-Chlorooctane 93.8 % 28.3-164

Surrogate: 1-Chlorooctadecane 93.3 % 34.7-157

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

Received:	12/15/2017	Sampling Date:	12/14/2017
Reported:	12/27/2017	Sampling Type:	Soil
Project Name:	CEDAR CANYON 21-22 #33H	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	OXY		

**Sample ID: NORTH @ SURFACE (H703488-11)**

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	12/22/2017	ND	3.90	97.4	4.00	2.14	
Toluene*	<0.050	0.050	12/22/2017	ND	3.86	96.4	4.00	1.94	
Ethylbenzene*	<0.050	0.050	12/22/2017	ND	3.83	95.6	4.00	1.39	
Total Xylenes*	<0.150	0.150	12/22/2017	ND	11.5	96.0	12.0	1.48	
Total BTEX	<0.300	0.300	12/22/2017	ND					

Surrogate: 4-Bromofluorobenzene (PID) 92.3 % 72-148

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
<b>Chloride</b>	<b>32.0</b>	16.0	12/20/2017	ND	400	100	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	12/21/2017	ND	232	116	200	4.86	
DRO >C10-C28*	<10.0	10.0	12/21/2017	ND	227	113	200	3.35	
EXT DRO >C28-C36	<10.0	10.0	12/21/2017	ND					

Surrogate: 1-Chlorooctane 87.8 % 28.3-164

Surrogate: 1-Chlorooctadecane 86.8 % 34.7-157

Cardinal Laboratories

\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager

**Analytical Results For:**

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

Received:	12/15/2017	Sampling Date:	12/14/2017
Reported:	12/27/2017	Sampling Type:	Soil
Project Name:	CEDAR CANYON 21-22 #33H	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	OXY		

**Sample ID: EAST @ SURFACE (H703488-12)**

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	12/22/2017	ND	3.90	97.4	4.00	2.14	
Toluene*	<0.050	0.050	12/22/2017	ND	3.86	96.4	4.00	1.94	
Ethylbenzene*	<0.050	0.050	12/22/2017	ND	3.83	95.6	4.00	1.39	
Total Xylenes*	<0.150	0.150	12/22/2017	ND	11.5	96.0	12.0	1.48	
Total BTEX	<0.300	0.300	12/22/2017	ND					

Surrogate: 4-Bromofluorobenzene (PID) 93.1 % 72-148

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	12/20/2017	ND	400	100	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	12/21/2017	ND	232	116	200	4.86	
DRO >C10-C28*	<10.0	10.0	12/21/2017	ND	227	113	200	3.35	
EXT DRO >C28-C36	<10.0	10.0	12/21/2017	ND					

Surrogate: 1-Chlorooctane 82.8 % 28.3-164

Surrogate: 1-Chlorooctadecane 81.9 % 34.7-157

Cardinal Laboratories

\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager

**Analytical Results For:**

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

Received:	12/15/2017	Sampling Date:	12/14/2017
Reported:	12/27/2017	Sampling Type:	Soil
Project Name:	CEDAR CANYON 21-22 #33H	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	OXY		

**Sample ID: WEST @ SURFACE (H703488-13)**

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	12/22/2017	ND	3.90	97.4	4.00	2.14	
Toluene*	<0.050	0.050	12/22/2017	ND	3.86	96.4	4.00	1.94	
Ethylbenzene*	<0.050	0.050	12/22/2017	ND	3.83	95.6	4.00	1.39	
Total Xylenes*	<0.150	0.150	12/22/2017	ND	11.5	96.0	12.0	1.48	
Total BTEX	<0.300	0.300	12/22/2017	ND					

Surrogate: 4-Bromofluorobenzene (PID) 93.7 % 72-148

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
<b>Chloride</b>	<b>32.0</b>	16.0	12/20/2017	ND	400	100	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	12/21/2017	ND	232	116	200	4.86	
DRO >C10-C28*	<10.0	10.0	12/21/2017	ND	227	113	200	3.35	
EXT DRO >C28-C36	<10.0	10.0	12/21/2017	ND					

Surrogate: 1-Chlorooctane 88.0 % 28.3-164

Surrogate: 1-Chlorooctadecane 86.9 % 34.7-157

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\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager

**Analytical Results For:**

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

Received:	12/15/2017	Sampling Date:	12/14/2017
Reported:	12/27/2017	Sampling Type:	Soil
Project Name:	CEDAR CANYON 21-22 #33H	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	OXY		

**Sample ID: SOUTH @ SURFACE (H703488-14)**

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	12/22/2017	ND	3.90	97.4	4.00	2.14		
Toluene*	<0.050	0.050	12/22/2017	ND	3.86	96.4	4.00	1.94		
Ethylbenzene*	<0.050	0.050	12/22/2017	ND	3.83	95.6	4.00	1.39		
Total Xylenes*	<0.150	0.150	12/22/2017	ND	11.5	96.0	12.0	1.48		
Total BTEX	<0.300	0.300	12/22/2017	ND						

Surrogate: 4-Bromofluorobenzene (PID) 92.6 % 72-148

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	12/20/2017	ND	400	100	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	12/21/2017	ND	232	116	200	4.86		
DRO >C10-C28*	<10.0	10.0	12/21/2017	ND	227	113	200	3.35		
EXT DRO >C28-C36	<10.0	10.0	12/21/2017	ND						

Surrogate: 1-Chlorooctane 85.2 % 28.3-164

Surrogate: 1-Chlorooctadecane 85.6 % 34.7-157

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Celey D. Keene, Lab Director/Quality Manager

**Notes and Definitions**

- QR-02            The RPD result exceeded the QC control limits; however, both percent recoveries were acceptable. Sample results for the QC batch were accepted based on percent recoveries and completeness of QC data.
- 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





**CARDINAL LABORATORIES**  
 101 East Marland, Hobbs, NM 88240  
 (505) 393-2326 FAX (505) 393-2476

**CHAIN-OF-CUSTODY AND ANALYSIS REQUEST**

**BILL TO**

**ANALYSIS REQUEST**

Company Name: BBC International, Inc. P.O. #:  
 Project Manager: Cliff Brunson Company:  
 Address: P.O. Box 805 City: Hobbs Attn:  
 State: NM Zip: 88241  
 Phone #: 575-397-6388 Fax #: 575-397-0397 Address:  
 Project #: Project Owner: DMH  
 Project Name: Cedar Canyon 21.22 #334  
 City: State: Zip:  
 Project Location: Phone #:  
 Sampler Name: Jeff Ornelas Fax #:

Lab I.D.	Sample I.D.	(G)RAB OR (C)OMP.	# CONTAINERS	MATRIX						DATE	TIME	CI	BTEX	TPH 8015 EXT
				GROUNDWATER	WASTEWATER	SOIL	OIL	SLUDGE	OTHER :					
H703488	1	SP	1											
	2	SP	1											
	3	SP	1											
	4	SP	1											
	5	SP	1											
	6	SP	1											
	7	SP	1											
	8	SP	1											
	9	SP	1											
	10	SP	1											

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Relinquished By: *Jeff Ornelas* Date: 12.14.17 Received By: *Jeff Ornelas* Date: 12.15.17  
 Time: Time:  
 Relinquished By: *Jeff Ornelas* Date: 12.15.17 Received By: *Jeff Ornelas* Date: 12.15.17  
 Time: Time:  
 Delivered By: (Circle One) *UPS* Sample Condition: Cool  Yes  No Intact  Yes  No  
 Sampler - UPS - Bus - Other: *UPS* Checked By: *Jeff Ornelas* (Initials) *JO*



**ARDINAL LABORATORIES**  
 101 East Marland, Hobbs, NM 88240  
 (505) 393-2326 FAX (505) 393-2476

**CHAIN-OF-CUSTODY AND ANALYSIS REQUEST**

**BILL TO**

**ANALYSIS REQUEST**

Company Name: BBC International, Inc. P.O. #:  
 Project Manager: Cliff Brunson Company:  
 Address: P.O. Box 805 Attn:  
 City: Hobbs State: NM Zip: 88241  
 Phone #: 575-397-6388 Fax #: 575-397-0397 Address:  
 Project #: Project Owner: Oxy  
 Project Name: Cedar Canyon 21-22 #33H City:  
 Project Location: State: Zip:  
 Sampler Name: Jeff Ornelas Phone #:  
 Fax #:

Lab I.D.	Sample I.D.	(G)RAB OR (C)OMP.	# CONTAINERS	MATRIX						PRESERV	SAMPLING	DATE	TIME	C1	BTEX	TPH 8015 E+H
				GROUNDWATER	WASTEWATER	SOIL	OIL	SLUDGE	OTHER :							
A703498																
11	N @ SURF		1			✓					12/14/17	2:22	✓	✓	✓	
12	E @ SURF		1			✓					2:28		✓	✓	✓	
13	W @ SURF		1			✓					2:33		✓	✓	✓	
14	S @ SURF		1			✓					2:45		✓	✓	✓	
<i>Richard Ornelas</i> 12/15/17																

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Relinquished By: *Jeff Ornelas* Date: 12/15/17 Received By: *Julie Smoylik* Date: 12/15/17  
 Relinquished By: *Julie Smoylik* Date: 12/15/17 Received By: *Janet Ornelas* Date: 12/15/17  
 Delivered By: (Circle One)  UPS  Bus  Other: *Construct - 1.85* Sample Condition:  Cool  Intact  Pres  No  No  No  
 CHECKED BY: *JP* (Initials)  
 Phone Result:  Yes  No Add'l Phone #:  
 Fax Result:  Yes  No Add'l Fax #:  
 REMARKS:

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

2042

**From:** Bratcher, Mike, EMNRD  
**To:** [Cliff Brunson](#); "[Shelly Tucker](#)"  
**Cc:** "[Wade Dittrich](#)"; [Jennifer\\_Smith@oxy.com](mailto:Jennifer_Smith@oxy.com); [Weaver, Crystal, EMNRD](#); "[Ken Swinney](#)"; "[Jennifer Gilkey](#)"; "[Kathy Purvis](#)"  
**Subject:** RE: OXY Cedar Canyon 21-22 Fed Com #33H (2RP-4489) - Delineation Workplan  
**Date:** Monday, April 30, 2018 1:07:00 PM

---

RE: OXY USA \* Cedar Canyon 21 22 33H \* 2RP-4489 \* DOR: 11/1/17

Cliff,

Your proposal for remediation of the above referenced release is approved.

Mike Bratcher  
NMOCD District 2  
811 South First Street  
Artesia, NM 88210  
575-748-1283 Ext 108

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](mailto:cbrunson@bbcinternational.com)>  
**Sent:** Tuesday, February 20, 2018 3:41 PM  
**To:** Bratcher, Mike, EMNRD <[mike.bratcher@state.nm.us](mailto:mike.bratcher@state.nm.us)>; 'Shelly Tucker' <[stucker@blm.gov](mailto:stucker@blm.gov)>  
**Cc:** 'Wade Dittrich' <[Wade\\_Dittrich@oxy.com](mailto:Wade_Dittrich@oxy.com)>; [Jennifer\\_Smith@oxy.com](mailto:Jennifer_Smith@oxy.com); Weaver, Crystal, EMNRD <[Crystal.Weaver@state.nm.us](mailto:Crystal.Weaver@state.nm.us)>; 'Ken Swinney' <[kswinney@bbcinternational.com](mailto:kswinney@bbcinternational.com)>; 'Jennifer Gilkey' <[jgilkey@bbcinternational.com](mailto:jgilkey@bbcinternational.com)>; 'Kathy Purvis' <[kathy@bbcinternational.com](mailto:kathy@bbcinternational.com)>  
**Subject:** OXY Cedar Canyon 21-22 Fed Com #33H (2RP-4489) - Delineation Workplan

Mike,

Please find the attached Delineation Workplan and remediation proposal for the OXY Cedar Canyon 21-22 Fed Com #33H (2RP-4489) that we discussed yesterday in your office. OXY is looking forward to the OCD's approval.

Shelly – OXY requests that you review this plan and look forward to the BLM's approval as well.

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](mailto:cbrunson@bbcinternational.com)



\*\*\*\*\*

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\*\*\*\*\*

**From:** Tucker, Shelly  
**To:** [Cliff Brunson](#)  
**Cc:** [Mike Bratcher](#); [Wade Dittrich](#); [Jennifer\\_Smith@oxy.com](#); [Crystal Weaver](#); [Ken Swinney](#); [Jennifer Gilkey](#); [Kathy Purvis](#)  
**Subject:** Re: OXY Cedar Canyon 21-22 Fed Com #33H (2RP-4489) - Delineation Workplan  
**Date:** Friday, March 30, 2018 12:05:18 PM

---

## BLM concurs with NMOCD approval for \*\*2RP-4489.

On Tue, Feb 20, 2018 at 3:41 PM, Cliff Brunson <[cbrunson@bbcinternational.com](mailto:cbrunson@bbcinternational.com)> wrote:

Mike,

Please find the attached Delineation Workplan and remediation proposal for the OXY Cedar Canyon 21-22 Fed Com #33H (2RP-4489) that we discussed yesterday in your office. OXY is looking forward to the OCD's approval.

Shelly – OXY requests that you review this plan and look forward to the BLM's approval as well.

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](mailto:cbrunson@bbcinternational.com)



\*\*\*\*\*

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**NOTE: LPC Timing Stipulations are in effect - from March 1st through June 15th. Please plan remedial activities accordingly. Check for African Rue...treat (before it gets out of control).**

If you have any questions or concerns, please do not hesitate to contact me.

Sincerely,

*Shelly J Tucker*

Environmental Protection Specialist  
O&G Spill/Release Coordinator

575.234.5905 - Direct

575.361.0084 - Cellular

575.234.6235 - Emergency Spill Number

[stucker@blm.gov](mailto:stucker@blm.gov)

**Bureau of Land Management**

620 E. Greene St  
Carlsbad, NM 88220

The **BLM acceptance/approval does not** relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that may pose a threat to groundwater, surface water, human health or the environment or if the location fails to reclaim properly. **In such an event a site does not achieve successful restoration, or future issues with contaminants are encountered, the operator will be asked to address these issues until they are fully mitigated and the location is successfully reclaimed.** In addition, BLM approval does not relieve the operator of responsibility for compliance with any other federal, state or local laws/regulations.

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