

Closure Report

2RP-5523

Site Description

Site Name:	Cedar Canyon 15 1 SWD	Incident ID: NAB1919137314
Company:	Oxy, Permian	
Legal Description:	U/L D, Section 16, T24S, R29E	
County:	Eddy County, NM	
GPS Coordinates:	N 32.22386 W -103.99366	

Release Data

Date of Release:	5/31/2019
Type of Release:	Produced water
Source of Release:	Integration stell riser failure
Volume of Release:	235 bbls
Volume Recovered:	220 bbls

Remediation Specifications

Remediation Parameters:	Zero remediation required at this spill site. The laboratory results confirm there was no impact to the soils. Nor further action. OCD approval attached.
Remediation Activities:	N/A

Plan Sent to OCD:	11/14/2019	Receipted by OCD on workplan
OCD Approval of Plan:	1/7/2020	Email from Robert Hamlet to Wade Dittrich
Plan Sent to BLM:	N/A	
BLM Approval of Plan:	N/A	

Supporting Documentation

Initial C-141	signed and included	
C-141, page 6	signed and included	
Site Diagram	N/A	
Pictures	N/A	
Lab Summary/Analysis	N/A	
Depth to Groundwater	N/A	

Request for Closure

Based on the completion of the remediation plan as agreed upon, BBC International requests closure approval from NMOCD.	
Cliff Brunson, President of BBC International Inc.	12/8/2020

Hamlet, Robert, EMNRD

From: Hamlet, Robert, EMNRD
Sent: Tuesday, January 7, 2020 1:39 PM
To: 'Wade Dittrich'
Cc: Bratcher, Mike, EMNRD; Venegas, Victoria, EMNRD; Eads, Cristina, EMNRD
Subject: Remediation Approval - OXY - Cedar Canyon 15-1 SWD - (2RP-5523) 5-31-2019
Attachments: Remediation Approval - OXY - Cedar Canyon 15-1 SWD - (2RP-5523) 1.7.20.pdf

Wade,

We have received your Workplan/Remediation Proposal for **2RP-5523 Cedar Canyon 15-1 SWD**, thank you. This Workplan/Remediation proposal is approved.

Please let me know if you have any further questions.

Regards,

Robert J Hamlet
State of New Mexico
Energy, Minerals, and Natural Resources
Oil Conservation Division
811 S. First St., Artesia NM 88210
(575) 748-1283
Robert.Hamlet@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 groundwater, 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, or local laws and/or regulations.



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/REMEDATION WORKPLAN

OXY – CEDAR CANYON 15-1 SWD (Leak Date: 5/31/19)

RP # 2RP-5523

This delineation workplan and remediation proposal addresses the releases associated with RP # 2RP-5523.

The following information includes:

1. Appropriate completed and signed C-141 pages.
2. Scaled digital site map with spill area demarcated and leak point identified along with sample point locations and areas of remediation at appropriate depths.
3. GPS information for sample points and sample methodology.
4. Depth to groundwater information (i.e., pdf of OSE search results, USGS search results, and/or copy of Chevron groundwater trend map).
5. Watercourse/features map within 1000 feet.
6. BLM Cave Karst map.
7. FEMA National Flood map.
8. Laboratory analysis results summary table and original laboratory analysis reports.
9. Potentially other pertinent information as necessary for site specific purposes.

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

OXY proposes zero remediation at this spill site. The laboratory results confirm there was no impact to the soils.

Form C-141

Page 3

State of New Mexico
Oil Conservation Division

Incident ID	NAB1919137314
District RP	2RP-5523
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?	52 (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 checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Are the lateral extents of the release within a 100-year floodplain?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Did the release impact areas not on an exploration, development, production, or storage site?	<input checked="" type="checkbox"/> Yes <input 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.

Form C-141

State of New Mexico
Oil Conservation Division

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Incident ID	NAB1919137314
District RP	2RP-5523
Facility ID	
Application ID	

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: Wade DittrichTitle: Environmental CoordinatorSignature: *Wade Dittrich*Date: 10-10-19email: wade_dittrich@oxy.comTelephone: (575) 390-2828**OCD Only**

Received by: _____

Date: _____

Form C-141

State of New Mexico
Oil Conservation Division

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Incident ID	NAB1919137314
District RP	2RP-5523
Facility ID	
Application ID	

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: Wade Dittrich Title: Environmental Coordinator
Signature:  Date: 10-10-19
email: wade_dittrich@oxy.com Telephone: (575) 390-2828

OCD OnlyReceived by: Karen Collins Date: 4/20/2021☒ Approved ☐ Approved with Attached Conditions of Approval ☐ Denied ☐ Deferral ApprovedSignature:  Date: 4/20/2021

Oxy, Cedar Canyon 15-1 SWD

Leak date: 5/31/19
Eddy County, NM
2RP-5523

Legend

Sample points

LEAK AREA

No remediation necessary



Oxy, Cedar Canyon 15-1 SWD

Sample points

SP1, N 32.22383 W-103.99379

SP2, N 32.22381 W-103.99365

SP3, N 32.22372W-103.99385

SP4, N 32.22372 W-103.99370

NORTH, N 32.22389 W-103.99380

SOUTH, N 32.22365 W-103.99374

EAST, N 32.22379 W-103.99357

WEST, N 32.22370 W-103.99392

Oxy, Cedar Canyon 15 1 SWD
U/L D, Section 16, T24S, R29E
Groundwater: 50'-75'





USGS Home
Contact USGS
Search USGS

National Water Information System: Web Interface

USGS Water Resources

Data Category:
Groundwater

Geographic Area:
New Mexico

GO

Click to hideNews Bulletins

- Introducing The Next Generation of USGS Water Data for the Nation
- Full News

Groundwater levels for New Mexico

Click to hide state-specific text

Search Results -- 1 sites found

Agency code = usgs
site_no list =

- 321355104012001

Minimum number of levels = 1
[Save file of selected sites](#) to local disk for future upload

USGS 321355104012001 24S.29E.07.14444

Eddy County, New Mexico
Latitude 32°13'55", Longitude 104°01'20" NAD27
Land-surface elevation 2,983 feet above NAVD88
The depth of the well is 160 feet below land surface.
This well is completed in the Castile Formation (312CSTL) local aquifer.

Output formats

Table of data

Tab-separated data

Graph of data

Reselect period

Date	Time	? Water-level date-time accuracy	Water level, feet below land surface	Water level, feet above specific vertical datum	Referenced vertical datum	? Water-level accuracy	? Status	? Method of measurement	? Measuring agency	? Source of measurem
1983-02-01		D	47.14			2			U	
1987-10-16		D	51.84			2			U	
1988-02-11		D	52.19			2			U	
1992-10-20		D	51.78			2			S	

Explanation

Section	Code	Description
Water-level date-time accuracy	D	Date is accurate to the Day
Water-level accuracy	2	Water level accuracy to nearest hundredth of a foot
Status		The reported water-level measurement represents a static level
Method of measurement	S	Steel-tape measurement.
Method of measurement	U	Unknown method.
Measuring agency		Not determined
Source of measurement	U	Source is unknown.
Water-level approval status	A	Approved for publication -- Processing and review completed.

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Title: Groundwater for New Mexico: Water Levels

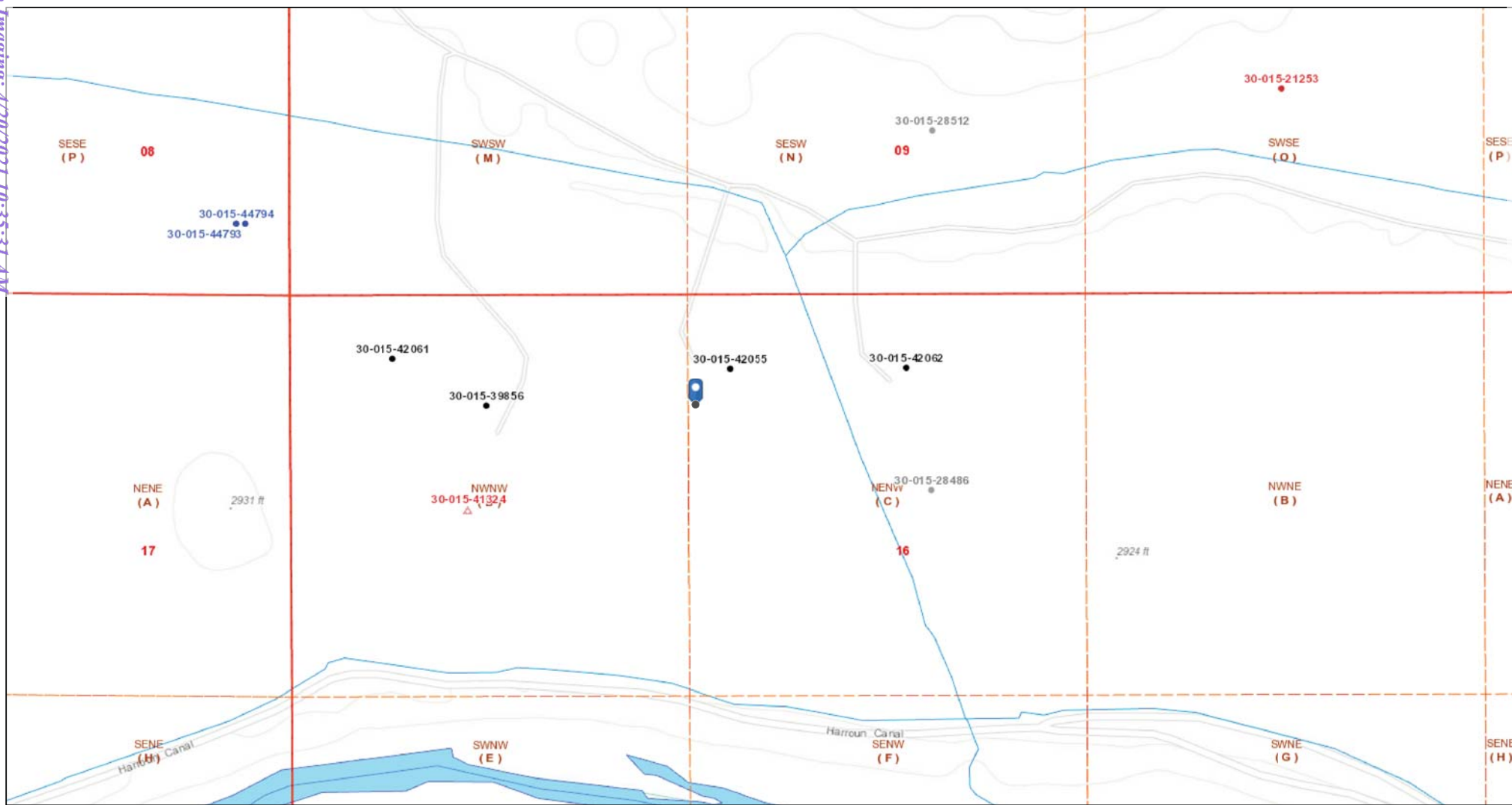
URL: <https://nwis.waterdata.usgs.gov/nm/nwis/gwlevels?>

Page Contact Information: [New Mexico Water Data Maintainer](#)

Page Last Modified: 2019-07-02 15:17:40 EDT

0.49 0.47 nadww01

Cedar Canyon 15-1 SWD



7/2/2019 1:06:12 PM

Well Locations - Small Scale

- Active
- New
- Plugged
- Cancelled
- Temporarily Abandoned

Well Locations - Large Scale

- Miscellaneous
- CO2 Active
- CO2 Cancelled
- CO2 New
- CO2 Plugged
- CO2 Temporarily Abandoned

Gas Active

- Gas, Cancelled, Never Drilled
- Gas, New
- Gas, Plugged
- Gas, Temporarily Abandoned
- Injection, Active

Injection, Cancelled

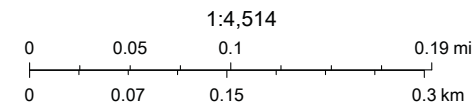
- Injection, New
- Injection, Plugged
- Injection, Temporarily Abandoned
- Oil, Active
- Oil, Cancelled

Oil, New

- Oil, Plugged
- Oil, Temporarily Abandoned
- Salt Water Injection, Active
- Salt Water Injection, Cancelled
- Salt Water Injection, New

Salt Water Injection, Plugged

- Salt Water Injection Temporarily Abandoned
- Water, Active
- Water, Cancelled
- Water, New
- Water, Plugged




OCD, Bureau of Land Management, Texas Parks & Wildlife, Esri, HERE, Garmin, INCREMENT P, USGS, EPA, USDA, BLM


Oxy, Cedar Canyon 15 1 SWD

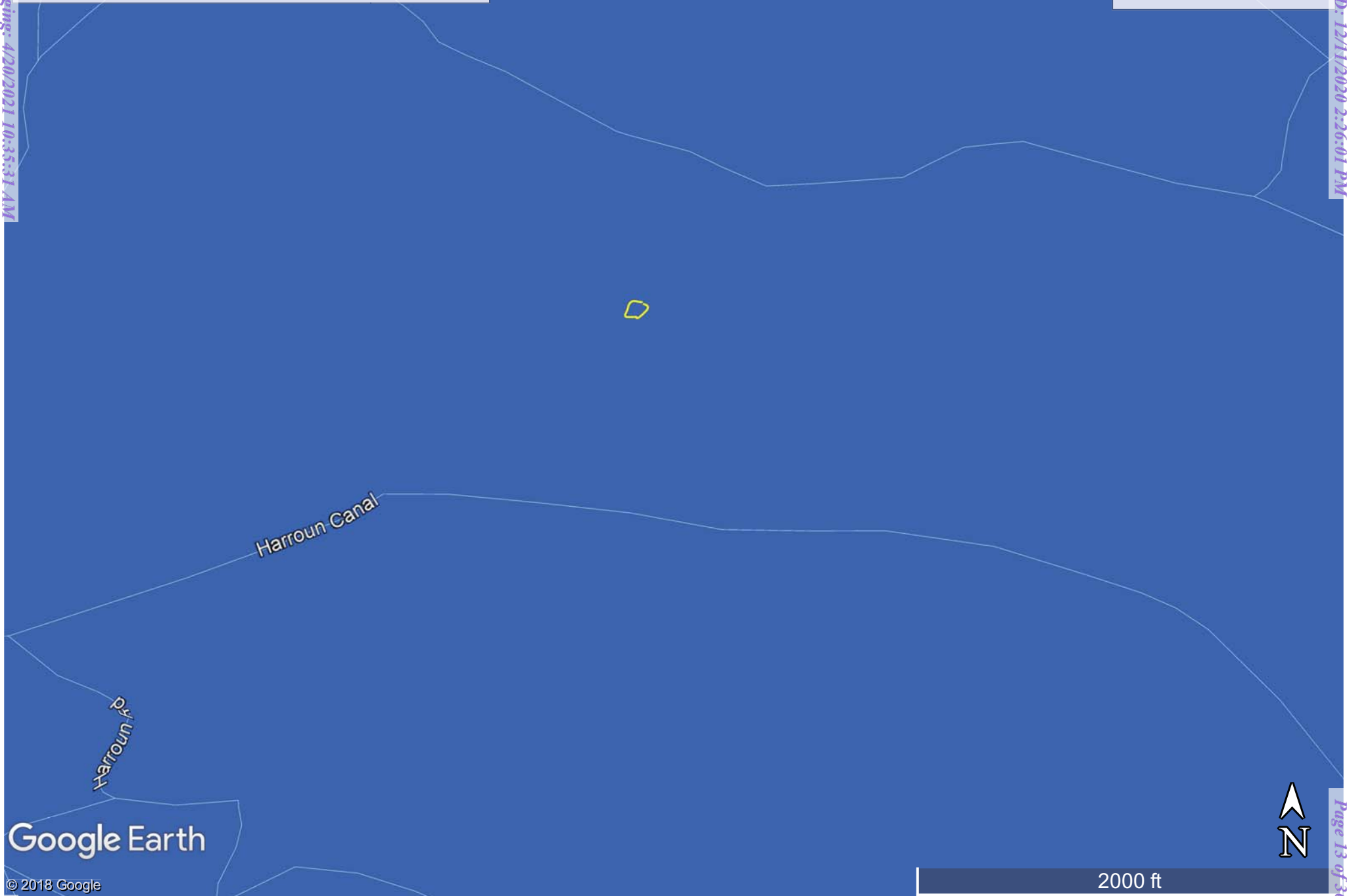
Leak date: 5/31/19
Eddy County, NM

BLM CAVE KARST MAP

Legend

 LEAK AREA

 Medium potential



Google Earth

© 2018 Google

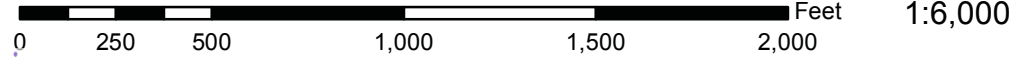


2000 ft

National Flood Hazard Layer FIRMette



32°13'41.11"N



USGS The National Map: Orthoimagery. Data refreshed April, 2019.

103°59'18.45"W

Legend

SEE FIS REPORT FOR DETAILED LEGEND AND INDEX MAP FOR FIRM PANEL LAYOUT

SPECIAL FLOOD HAZARD AREAS		Without Base Flood Elevation (BFE) Zone A, V, A99
		With BFE or Depth Zone AE, AO, AH, VE, AR
		Regulatory Floodway
OTHER AREAS OF FLOOD HAZARD		0.2% Annual Chance Flood Hazard, Areas of 1% annual chance flood with average depth less than one foot or with drainage areas of less than one square mile Zone X
		Future Conditions 1% Annual Chance Flood Hazard Zone X
		Area with Reduced Flood Risk due to Levee. See Notes. Zone X
		Area with Flood Risk due to Levee Zone X
OTHER AREAS		NO SCREEN Area of Minimal Flood Hazard Zone X
		Effective LOMRs
GENERAL STRUCTURES		Channel, Culvert, or Storm Sewer
		Levee, Dike, or Floodwall
OTHER FEATURES		20.2 Cross Sections with 1% Annual Chance Water Surface Elevation
		17.5
		Coastal Transect
		Base Flood Elevation Line (BFE)
		Limit of Study
		Jurisdiction Boundary
		Coastal Transect Baseline
MAP PANELS		Digital Data Available
		No Digital Data Available
		Unmapped

The pin displayed on the map is an approximate point selected by the user and does not represent an authoritative property location.

This map complies with FEMA's standards for the use of digital flood maps if it is not void as described below. The basemap shown complies with FEMA's basemap accuracy standards

The flood hazard information is derived directly from the authoritative NFHL web services provided by FEMA. This map was exported on 7/2/2019 at 3:26:58 PM and does not reflect changes or amendments subsequent to this date and time. The NFHL and effective information may change or become superseded by new data over time.

This map image is void if the one or more of the following map elements do not appear: basemap imagery, flood zone labels, legend, scale bar, map creation date, community identifiers, FIRM panel number, and FIRM effective date. Map images for unmapped and unmodernized areas cannot be used for regulatory purposes.

Released for Imaging: 4/20/2021 10:35:31 AM
M005 59:05:00P

Received by OCD: 12/18/2020 2:26:07 PM

Laboratory Analytical Results Summary
Cedar Canyon 15-1 SWD (5/31/19)

		Sample ID	SP1 @ SURFACE	SP1 @ 1'	SP1 @ 2'
Analyte	Method	Date	9/10/19	9/10/19	9/10/19
			mg/kg	mg/kg	mg/kg
Benzene	BTEX 8021B		<0.050	<0.050	n/a
Toluene	BTEX 8021B		<0.050	<0.050	n/a
Ethylbenzene	BTEX 8021B		<0.050	<0.050	n/a
Total Xylenes	BTEX 8021B		<0.150	<0.150	n/a
Total BTEX	BTEX 8021B		<0.300	<0.300	n/a
Chloride	SM4500Cl-B		32	160	160
GRO	TPH 8015M		<10.0	<10.0	n/a
DRO	TPH 8015M		<10.0	<10.0	n/a
EXT DRO	TPH 8015M		<10.0	<10.0	n/a

		Sample ID	SP2 @ SURFACE	SP2 @ 1'	SP2 @ 2'
Analyte	Method	Date	9/10/19	9/10/19	9/10/19
			mg/kg	mg/kg	mg/kg
Benzene	BTEX 8021B		<0.050	<0.050	n/a
Toluene	BTEX 8021B		<0.050	<0.050	n/a
Ethylbenzene	BTEX 8021B		<0.050	<0.050	n/a
Total Xylenes	BTEX 8021B		<0.150	<0.150	n/a
Total BTEX	BTEX 8021B		<0.300	<0.300	n/a
Chloride	SM4500Cl-B		16	32	16
GRO	TPH 8015M		<10.0	<10.0	n/a
DRO	TPH 8015M		<10.0	<10.0	n/a
EXT DRO	TPH 8015M		<10.0	<10.0	n/a

		Sample ID	SP3 @ SURFACE	SP3 @ 1'	SP3 @ 2'
Analyte	Method	Date	9/10/19	9/10/19	9/10/19
			mg/kg	mg/kg	mg/kg
Benzene	BTEX 8021B		<0.050	<0.050	n/a
Toluene	BTEX 8021B		<0.050	<0.050	n/a
Ethylbenzene	BTEX 8021B		<0.050	<0.050	n/a
Total Xylenes	BTEX 8021B		<0.150	<0.150	n/a
Total BTEX	BTEX 8021B		<0.300	<0.300	n/a
Chloride	SM4500Cl-B		16	32	16
GRO	TPH 8015M		<10.0	<10.0	n/a
DRO	TPH 8015M		<10.0	<10.0	n/a
EXT DRO	TPH 8015M		<10.0	<10.0	n/a

		Sample ID	SP4 @ SURFACE	SP4 @ 1'	SP4 @ 2'
Analyte	Method	Date	9/10/19	9/10/19	9/10/19
			mg/kg	mg/kg	mg/kg
Benzene	BTEX 8021B		<0.050	<0.050	n/a
Toluene	BTEX 8021B		<0.050	<0.050	n/a
Ethylbenzene	BTEX 8021B		<0.050	<0.050	n/a
Total Xylenes	BTEX 8021B		<0.150	<0.150	n/a
Total BTEX	BTEX 8021B		<0.300	<0.300	n/a
Chloride	SM4500Cl-B		64	160	144
GRO	TPH 8015M		<10.0	<10.0	n/a
DRO	TPH 8015M		<10.0	<10.0	n/a
EXT DRO	TPH 8015M		<10.0	<10.0	n/a

		Sample ID	NORTH @ SURFACE	EAST @ SURFACE	WEST @ SURFACE	SOUTH @ SURFACE
Analyte	Method	Date	9/10/19	9/10/19	9/10/19	9/10/19
			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		16	32	16	<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



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

September 18, 2019

Cliff Brunson

BBC International, Inc.

P.O. Box 805

Hobbs, NM 88241

RE: CEDAR CANYON 15-1 SWD

Enclosed are the results of analyses for samples received by the laboratory on 09/13/19 15:40.

Cardinal Laboratories is accredited through Texas NELAP under certificate number T104704398-18-11. 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, flowing style.

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:	09/13/2019	Sampling Date:	09/10/2019
Reported:	09/18/2019	Sampling Type:	Soil
Project Name:	CEDAR CANYON 15-1 SWD	Sampling Condition:	Cool & Intact
Project Number:	5-31-19	Sample Received By:	Jodi Henson
Project Location:	NOT GIVEN		

Sample ID: SP 1 @ SURFACE (H903172-01)

BTEX 8021B		mg/kg		Analyzed By: BF					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	09/17/2019	ND	2.02	101	2.00	3.46	
Toluene*	<0.050	0.050	09/17/2019	ND	2.01	101	2.00	1.74	
Ethylbenzene*	<0.050	0.050	09/17/2019	ND	2.03	102	2.00	1.46	
Total Xylenes*	<0.150	0.150	09/17/2019	ND	6.05	101	6.00	1.97	
Total BTEX	<0.300	0.300	09/17/2019	ND					

Surrogate: 4-Bromofluorobenzene (PID) 83.2 % 73.3-129

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	09/16/2019	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	09/17/2019	ND	210	105	200	0.401	
DRO >C10-C28*	<10.0	10.0	09/17/2019	ND	205	103	200	1.86	
EXT DRO >C28-C36	<10.0	10.0	09/17/2019	ND					

Surrogate: 1-Chlorooctane 79.3 % 41-142

Surrogate: 1-Chlorooctadecane 83.7 % 37.6-147

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



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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:	09/13/2019	Sampling Date:	09/10/2019
Reported:	09/18/2019	Sampling Type:	Soil
Project Name:	CEDAR CANYON 15-1 SWD	Sampling Condition:	Cool & Intact
Project Number:	5-31-19	Sample Received By:	Jodi Henson
Project Location:	NOT GIVEN		

Sample ID: SP 1 @ 1' (H903172-02)

BTEx 8021B		mg/kg		Analyzed By: BF						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	09/17/2019	ND	2.02	101	2.00	3.46		
Toluene*	<0.050	0.050	09/17/2019	ND	2.01	101	2.00	1.74		
Ethylbenzene*	<0.050	0.050	09/17/2019	ND	2.03	102	2.00	1.46		
Total Xylenes*	<0.150	0.150	09/17/2019	ND	6.05	101	6.00	1.97		
Total BTEx	<0.300	0.300	09/17/2019	ND						

Surrogate: 4-Bromofluorobenzene (PID) 80.8 % 73.3-129

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	160	16.0	09/16/2019	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	09/17/2019	ND	210	105	200	0.401	
DRO >C10-C28*	<10.0	10.0	09/17/2019	ND	205	103	200	1.86	
EXT DRO >C28-C36	<10.0	10.0	09/17/2019	ND					

Surrogate: 1-Chlorooctane 75.5 % 41-142

Surrogate: 1-Chlorooctadecane 79.0 % 37.6-147

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Analytical Results For:

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

Received:	09/13/2019	Sampling Date:	09/10/2019
Reported:	09/18/2019	Sampling Type:	Soil
Project Name:	CEDAR CANYON 15-1 SWD	Sampling Condition:	Cool & Intact
Project Number:	5-31-19	Sample Received By:	Jodi Henson
Project Location:	NOT GIVEN		

Sample ID: SP 1 @ 2' (H903172-03)

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	160	16.0	09/16/2019	ND	432	108	400	0.00		

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Analytical Results For:

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 Fax To: (575) 397-0397

Received:	09/13/2019	Sampling Date:	09/10/2019
Reported:	09/18/2019	Sampling Type:	Soil
Project Name:	CEDAR CANYON 15-1 SWD	Sampling Condition:	Cool & Intact
Project Number:	5-31-19	Sample Received By:	Jodi Henson
Project Location:	NOT GIVEN		

Sample ID: SP 2 @ SURFACE (H903172-04)

BTX 8021B		mg/kg		Analyzed By: BF					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	09/17/2019	ND	2.02	101	2.00	3.46	
Toluene*	<0.050	0.050	09/17/2019	ND	2.01	101	2.00	1.74	
Ethylbenzene*	<0.050	0.050	09/17/2019	ND	2.03	102	2.00	1.46	
Total Xylenes*	<0.150	0.150	09/17/2019	ND	6.05	101	6.00	1.97	
Total BTX	<0.300	0.300	09/17/2019	ND					

Surrogate: 4-Bromofluorobenzene (PID) 82.7 % 73.3-129

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	09/16/2019	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	09/16/2019	ND	195	97.7	200	0.849	
DRO >C10-C28*	<10.0	10.0	09/16/2019	ND	189	94.3	200	4.14	
EXT DRO >C28-C36	<10.0	10.0	09/16/2019	ND					

Surrogate: 1-Chlorooctane 75.5 % 41-142

Surrogate: 1-Chlorooctadecane 81.8 % 37.6-147

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Analytical Results For:

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Received:	09/13/2019	Sampling Date:	09/10/2019
Reported:	09/18/2019	Sampling Type:	Soil
Project Name:	CEDAR CANYON 15-1 SWD	Sampling Condition:	Cool & Intact
Project Number:	5-31-19	Sample Received By:	Jodi Henson
Project Location:	NOT GIVEN		

Sample ID: SP 2 @ 1' (H903172-05)

BTX 8021B		mg/kg		Analyzed By: BF					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	09/17/2019	ND	2.02	101	2.00	3.46	
Toluene*	<0.050	0.050	09/17/2019	ND	2.01	101	2.00	1.74	
Ethylbenzene*	<0.050	0.050	09/17/2019	ND	2.03	102	2.00	1.46	
Total Xylenes*	<0.150	0.150	09/17/2019	ND	6.05	101	6.00	1.97	
Total BTX	<0.300	0.300	09/17/2019	ND					

Surrogate: 4-Bromofluorobenzene (PID) 84.3 % 73.3-129

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	09/16/2019	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	09/16/2019	ND	195	97.7	200	0.849	
DRO >C10-C28*	<10.0	10.0	09/16/2019	ND	189	94.3	200	4.14	
EXT DRO >C28-C36	<10.0	10.0	09/16/2019	ND					

Surrogate: 1-Chlorooctane 68.1 % 41-142

Surrogate: 1-Chlorooctadecane 73.2 % 37.6-147

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Analytical Results For:

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Received:	09/13/2019	Sampling Date:	09/10/2019
Reported:	09/18/2019	Sampling Type:	Soil
Project Name:	CEDAR CANYON 15-1 SWD	Sampling Condition:	Cool & Intact
Project Number:	5-31-19	Sample Received By:	Jodi Henson
Project Location:	NOT GIVEN		

Sample ID: SP 2 @ 2' (H903172-06)

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	09/16/2019	ND	432	108	400	0.00		

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Received:	09/13/2019	Sampling Date:	09/10/2019
Reported:	09/18/2019	Sampling Type:	Soil
Project Name:	CEDAR CANYON 15-1 SWD	Sampling Condition:	Cool & Intact
Project Number:	5-31-19	Sample Received By:	Jodi Henson
Project Location:	NOT GIVEN		

Sample ID: SP 3 @ SURFACE (H903172-07)

BTX 8021B		mg/kg		Analyzed By: BF					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	09/17/2019	ND	2.02	101	2.00	3.46	
Toluene*	<0.050	0.050	09/17/2019	ND	2.01	101	2.00	1.74	
Ethylbenzene*	<0.050	0.050	09/17/2019	ND	2.03	102	2.00	1.46	
Total Xylenes*	<0.150	0.150	09/17/2019	ND	6.05	101	6.00	1.97	
Total BTX	<0.300	0.300	09/17/2019	ND					

Surrogate: 4-Bromofluorobenzene (PID) 81.8 % 73.3-129

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	09/16/2019	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	09/16/2019	ND	195	97.7	200	0.849	
DRO >C10-C28*	<10.0	10.0	09/16/2019	ND	189	94.3	200	4.14	
EXT DRO >C28-C36	<10.0	10.0	09/16/2019	ND					

Surrogate: 1-Chlorooctane 68.7 % 41-142

Surrogate: 1-Chlorooctadecane 72.8 % 37.6-147

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Received:	09/13/2019	Sampling Date:	09/10/2019
Reported:	09/18/2019	Sampling Type:	Soil
Project Name:	CEDAR CANYON 15-1 SWD	Sampling Condition:	Cool & Intact
Project Number:	5-31-19	Sample Received By:	Jodi Henson
Project Location:	NOT GIVEN		

Sample ID: SP 3 @ 1' (H903172-08)

BTEx 8021B		mg/kg		Analyzed By: BF						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	09/17/2019	ND	2.02	101	2.00	3.46		
Toluene*	<0.050	0.050	09/17/2019	ND	2.01	101	2.00	1.74		
Ethylbenzene*	<0.050	0.050	09/17/2019	ND	2.03	102	2.00	1.46		
Total Xylenes*	<0.150	0.150	09/17/2019	ND	6.05	101	6.00	1.97		
Total BTEx	<0.300	0.300	09/17/2019	ND						

Surrogate: 4-Bromofluorobenzene (PID) 85.0 % 73.3-129

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	09/16/2019	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	09/16/2019	ND	195	97.7	200	0.849	
DRO >C10-C28*	<10.0	10.0	09/16/2019	ND	189	94.3	200	4.14	
EXT DRO >C28-C36	<10.0	10.0	09/16/2019	ND					

Surrogate: 1-Chlorooctane 69.4 % 41-142

Surrogate: 1-Chlorooctadecane 74.9 % 37.6-147

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Analytical Results For:

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Received:	09/13/2019	Sampling Date:	09/10/2019
Reported:	09/18/2019	Sampling Type:	Soil
Project Name:	CEDAR CANYON 15-1 SWD	Sampling Condition:	Cool & Intact
Project Number:	5-31-19	Sample Received By:	Jodi Henson
Project Location:	NOT GIVEN		

Sample ID: SP 3 @ 2' (H903172-09)

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	09/16/2019	ND	432	108	400	0.00		

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Received:	09/13/2019	Sampling Date:	09/10/2019
Reported:	09/18/2019	Sampling Type:	Soil
Project Name:	CEDAR CANYON 15-1 SWD	Sampling Condition:	Cool & Intact
Project Number:	5-31-19	Sample Received By:	Jodi Henson
Project Location:	NOT GIVEN		

Sample ID: SP 4 @ SURFACE (H903172-10)

BTX 8021B		mg/kg		Analyzed By: BF					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	09/17/2019	ND	2.02	101	2.00	3.46	
Toluene*	<0.050	0.050	09/17/2019	ND	2.01	101	2.00	1.74	
Ethylbenzene*	<0.050	0.050	09/17/2019	ND	2.03	102	2.00	1.46	
Total Xylenes*	<0.150	0.150	09/17/2019	ND	6.05	101	6.00	1.97	
Total BTX	<0.300	0.300	09/17/2019	ND					

Surrogate: 4-Bromofluorobenzene (PID) 85.9 % 73.3-129

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	09/16/2019	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	09/16/2019	ND	195	97.7	200	0.849	
DRO >C10-C28*	<10.0	10.0	09/16/2019	ND	189	94.3	200	4.14	
EXT DRO >C28-C36	<10.0	10.0	09/16/2019	ND					

Surrogate: 1-Chlorooctane 66.4 % 41-142

Surrogate: 1-Chlorooctadecane 71.6 % 37.6-147

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Analytical Results For:

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 Fax To: (575) 397-0397

Received: 09/13/2019
 Reported: 09/18/2019
 Project Name: CEDAR CANYON 15-1 SWD
 Project Number: 5-31-19
 Project Location: NOT GIVEN

Sampling Date: 09/10/2019
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Jodi Henson

Sample ID: SP 4 @ 1' (H903172-11)

BTEx 8021B		mg/kg		Analyzed By: BF					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	09/17/2019	ND	2.02	101	2.00	3.46	
Toluene*	<0.050	0.050	09/17/2019	ND	2.01	101	2.00	1.74	
Ethylbenzene*	<0.050	0.050	09/17/2019	ND	2.03	102	2.00	1.46	
Total Xylenes*	<0.150	0.150	09/17/2019	ND	6.05	101	6.00	1.97	
Total BTEx	<0.300	0.300	09/17/2019	ND					

Surrogate: 4-Bromofluorobenzene (PID) 83.3 % 73.3-129

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	160	16.0	09/16/2019	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	09/16/2019	ND	195	97.7	200	0.849	
DRO >C10-C28*	<10.0	10.0	09/16/2019	ND	189	94.3	200	4.14	
EXT DRO >C28-C36	<10.0	10.0	09/16/2019	ND					

Surrogate: 1-Chlorooctane 70.9 % 41-142

Surrogate: 1-Chlorooctadecane 75.6 % 37.6-147

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Analytical Results For:

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Received:	09/13/2019	Sampling Date:	09/10/2019
Reported:	09/18/2019	Sampling Type:	Soil
Project Name:	CEDAR CANYON 15-1 SWD	Sampling Condition:	Cool & Intact
Project Number:	5-31-19	Sample Received By:	Jodi Henson
Project Location:	NOT GIVEN		

Sample ID: SP 4 @ 2' (H903172-12)

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	144	16.0	09/16/2019	ND	432	108	400	0.00		

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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:	09/13/2019	Sampling Date:	09/10/2019
Reported:	09/18/2019	Sampling Type:	Soil
Project Name:	CEDAR CANYON 15-1 SWD	Sampling Condition:	Cool & Intact
Project Number:	5-31-19	Sample Received By:	Jodi Henson
Project Location:	NOT GIVEN		

Sample ID: NORTH @ SURFACE (H903172-13)

BTX 8021B		mg/kg		Analyzed By: BF					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	09/17/2019	ND	2.02	101	2.00	3.46	
Toluene*	<0.050	0.050	09/17/2019	ND	2.01	101	2.00	1.74	
Ethylbenzene*	<0.050	0.050	09/17/2019	ND	2.03	102	2.00	1.46	
Total Xylenes*	<0.150	0.150	09/17/2019	ND	6.05	101	6.00	1.97	
Total BTX	<0.300	0.300	09/17/2019	ND					

Surrogate: 4-Bromofluorobenzene (PID) 88.1 % 73.3-129

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	09/16/2019	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	09/16/2019	ND	195	97.7	200	0.849	
DRO >C10-C28*	<10.0	10.0	09/16/2019	ND	189	94.3	200	4.14	
EXT DRO >C28-C36	<10.0	10.0	09/16/2019	ND					

Surrogate: 1-Chlorooctane 71.8 % 41-142

Surrogate: 1-Chlorooctadecane 76.6 % 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:	09/13/2019	Sampling Date:	09/10/2019
Reported:	09/18/2019	Sampling Type:	Soil
Project Name:	CEDAR CANYON 15-1 SWD	Sampling Condition:	Cool & Intact
Project Number:	5-31-19	Sample Received By:	Jodi Henson
Project Location:	NOT GIVEN		

Sample ID: EAST @ SURFACE (H903172-14)

BTEx 8021B		mg/kg		Analyzed By: CK						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	09/17/2019	ND	2.14	107	2.00	1.74		
Toluene*	<0.050	0.050	09/17/2019	ND	1.87	93.6	2.00	1.52		
Ethylbenzene*	<0.050	0.050	09/17/2019	ND	1.87	93.5	2.00	1.70		
Total Xylenes*	<0.150	0.150	09/17/2019	ND	5.65	94.2	6.00	1.72		
Total BTEx	<0.300	0.300	09/17/2019	ND						

Surrogate: 4-Bromofluorobenzene (PID) 95.0 % 73.3-129

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	09/16/2019	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	09/16/2019	ND	195	97.7	200	0.849	
DRO >C10-C28*	<10.0	10.0	09/16/2019	ND	189	94.3	200	4.14	
EXT DRO >C28-C36	<10.0	10.0	09/16/2019	ND					

Surrogate: 1-Chlorooctane 65.8 % 41-142

Surrogate: 1-Chlorooctadecane 69.8 % 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:	09/13/2019	Sampling Date:	09/10/2019
Reported:	09/18/2019	Sampling Type:	Soil
Project Name:	CEDAR CANYON 15-1 SWD	Sampling Condition:	Cool & Intact
Project Number:	5-31-19	Sample Received By:	Jodi Henson
Project Location:	NOT GIVEN		

Sample ID: WEST @ SURFACE (H903172-15)

BTX 8021B		mg/kg		Analyzed By: CK						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	09/17/2019	ND	2.14	107	2.00	1.74		
Toluene*	<0.050	0.050	09/17/2019	ND	1.87	93.6	2.00	1.52		
Ethylbenzene*	<0.050	0.050	09/17/2019	ND	1.87	93.5	2.00	1.70		
Total Xylenes*	<0.150	0.150	09/17/2019	ND	5.65	94.2	6.00	1.72		
Total BTX	<0.300	0.300	09/17/2019	ND						

Surrogate: 4-Bromofluorobenzene (PID) 93.8 % 73.3-129

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	09/16/2019	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	09/16/2019	ND	195	97.7	200	0.849	
DRO >C10-C28*	<10.0	10.0	09/16/2019	ND	189	94.3	200	4.14	
EXT DRO >C28-C36	<10.0	10.0	09/16/2019	ND					

Surrogate: 1-Chlorooctane 65.1 % 41-142

Surrogate: 1-Chlorooctadecane 67.8 % 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:	09/13/2019	Sampling Date:	09/10/2019
Reported:	09/18/2019	Sampling Type:	Soil
Project Name:	CEDAR CANYON 15-1 SWD	Sampling Condition:	Cool & Intact
Project Number:	5-31-19	Sample Received By:	Jodi Henson
Project Location:	NOT GIVEN		

Sample ID: SOUTH @ SURFACE (H903172-16)

BTX 8021B		mg/kg		Analyzed By: CK						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	09/17/2019	ND	2.14	107	2.00	1.74		
Toluene*	<0.050	0.050	09/17/2019	ND	1.87	93.6	2.00	1.52		
Ethylbenzene*	<0.050	0.050	09/17/2019	ND	1.87	93.5	2.00	1.70		
Total Xylenes*	<0.150	0.150	09/17/2019	ND	5.65	94.2	6.00	1.72		
Total BTX	<0.300	0.300	09/17/2019	ND						

Surrogate: 4-Bromofluorobenzene (PID) 92.4 % 73.3-129

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	09/16/2019	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	09/17/2019	ND	195	97.7	200	0.849	
DRO >C10-C28*	<10.0	10.0	09/17/2019	ND	189	94.3	200	4.14	
EXT DRO >C28-C36	<10.0	10.0	09/17/2019	ND					

Surrogate: 1-Chlorooctane 67.6 % 41-142

Surrogate: 1-Chlorooctadecane 71.2 % 37.6-147

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Notes and Definitions

QR-03	The RPD value for the sample duplicate or MS/MSD was outside of QC acceptance limits due to matrix interference. QC batch accepted based on LCS and/or LCSD recovery and/or RPD values.
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

Page 19 of 20

Company Name: BBC International, Inc.				BILL TO				ANALYSIS REQUEST																							
Project Manager: Cliff Brunson				P.O. #:				<div style="display: flex; justify-content: space-between;"> <div style="writing-mode: vertical-rl; transform: rotate(180deg);">Chloride</div> <div style="writing-mode: vertical-rl; transform: rotate(180deg);">TPH Ext</div> <div style="writing-mode: vertical-rl; transform: rotate(180deg);">BTX</div> </div>																							
Address: P.O. Box 805				Company: <i>Oxy</i>																											
City: Hobbs State: NM Zip: 88241				Attn: <i>W. Dittreich</i>																											
Phone #: 575-397-6388 Fax #: 575-397-0397				Address:																											
Project #: Project Owner:				City:																											
Project Name: Cedar Canyon 15-1 SWD - 5-31-19				State: Zip:																											
Project Location:				Phone #:																											
Sampler Name: Jeff Ornelas				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>H903172</i>																															
<i>1</i>	SP1 @ SURFACE	<i>G</i>	<i>1</i>			<i>✓</i>				<i>✓</i>			9-10-19	9:40	<i>✓</i>	<i>✓</i>	<i>✓</i>														
<i>2</i>	SP1 @ 1'												9-10-19	9:50	<i>✓</i>	<i>✓</i>	<i>✓</i>														
<i>3</i>	SP1 @ 2'												9-10-19	10:22	<i>✓</i>	<i>✓</i>	<i>✓</i>														
<i>4</i>	SP2 @ SURFACE												9-10-19	10:32	<i>✓</i>	<i>✓</i>	<i>✓</i>														
<i>5</i>	SP2 @ 1'												9-10-19	10:47	<i>✓</i>	<i>✓</i>	<i>✓</i>														
<i>6</i>	SP2 @ 2'												9-10-19	11:11	<i>✓</i>	<i>✓</i>	<i>✓</i>														
<i>7</i>	SP3 @ SURFACE												9-10-19	11:36	<i>✓</i>	<i>✓</i>	<i>✓</i>														
<i>8</i>	SP3 @ 1'												9-10-19	11:42	<i>✓</i>	<i>✓</i>	<i>✓</i>														
<i>9</i>	SP3 @ 2'												9-10-19	12:19	<i>✓</i>	<i>✓</i>	<i>✓</i>														
<i>10</i>	SP4 @ SURFACE												9-10-19	12:50	<i>✓</i>	<i>✓</i>	<i>✓</i>														

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Relinquished By: <i>[Signature]</i>	Date: <i>9-13-19</i>	Received By: <i>[Signature]</i>	Phone Result: <input type="checkbox"/> Yes <input type="checkbox"/> No	Add'l Phone #:
Relinquished By: <i>[Signature]</i>	Date: <i>9-13-19</i>	Received By: <i>[Signature]</i>	Fax Result: <input type="checkbox"/> Yes <input type="checkbox"/> No	Add'l Fax #:
Delivered By: (Circle One)	Time: <i>3:40 PM</i>	Time: <i>3:40 PM</i>	REMARKS:	
Sampler - UPS - Bus - Other: <i>2.9c 2.7c #97</i>	Sample Condition	CHECKED BY: <i>[Signature]</i>		
	Cool Intact			
	<input type="checkbox"/> Yes <input type="checkbox"/> No			
	<input type="checkbox"/> Yes <input type="checkbox"/> No			

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

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 11888

CONDITIONS OF APPROVAL

Operator:			OGRID:	Action Number:	Action Type:
OXY USA INC P.O. Box 4294 Houston, TX772104294			16696	11888	C-141
OCD Reviewer			Condition		
kcollins			None		