



DELINEATION WORKPLAN

OXY – CEDAR CANYON 21-22 FED COM #33H (Leak Date: 11/11/17)

RP # 2RP- 4489

This delineation workplan and remediation proposal addresses the release associated with RP # 2RP-4489.

The following information includes:

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

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

OXY will excavate the spill area as depicted on the following site diagram. The entire leak area (green shade on diagram) will be excavated to a depth of 1 foot.

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

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

Oxy, Cedar Canyon 21-22 Fed Com #333H

Leak date: 11/11/2017 2RP-4489
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	Tws	Rng	X	Y	Distance	DepthWell	DepthWater	Water Column
C_00463		C	ED	4	4	4	17	24S	29E	594332	3564282*	<input type="text"/>	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:

0

ft

Y:

0

ft

Zone:

State Plane Coordinate System - NAD83

☐

X:

0

ft

Y:

0

ft

Zone:

Degrees/Minutes/Seconds

☐

Longitude (X):

Degrees:

0

°

Minutes:

0

'

Seconds:

0

"

Latitude (Y):

Degrees:

0

°

Minutes:

0

'

Seconds:

0

"

UTM - NAD27

☐

Easting (X):

0

mtrs

Northing (Y):

0

mtrs

Zone:

SUBMIT

All Conversion Results are displayed as NAD 1983 UTM Zone 13

Easting (X):

594642.0

mtrs

Northing (Y):

3563170.0

mtrs

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

http://nmwrrs.ose.state.nm.us/nmwrrs/ConvertUTMDispatcher[11/16/2017 9:24:39 AM]

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

Analyte	Method	Sample ID	SP1 @ 1'	SP1 @ 2'	SP1 @ 3'
		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	SM4500C1-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

Analyte	Method	Sample ID	SP2 @ 1'	SP2 @ 2'	SP2 @ 3'
		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	SM4500C1-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

Analyte	Method	Sample ID	SP3 @ 1'	SP3 @ 2'	SP3 @ 2'
		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	SM4500C1-B		832	144	
GRO	TPH 8015M		<10.0	<10.0	<10.0
DRO	TPH 8015M		<10.0	<10.0	<10.0
EXT DRO	TPH 8015M		<10.0	<10.0	<10.0

Analyte	Method	Sample ID	SP4 @ 1'	SP4 @ 2'	SP4 @ 2'
		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	SM4500C1-B		848	128	
GRO	TPH 8015M		<10.0	<10.0	<10.0
DRO	TPH 8015M		<10.0	<10.0	<10.0
EXT DRO	TPH 8015M		<10.0	<10.0	<10.0

Analyte	Method	Sample ID	NORTH @ SURFACE	EAST @ SURFACE	WEST @ SURFACE	SOUTH @ SURFACE
		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	SM4500C1-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

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.

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,



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)

BTX 8021B		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	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 BTX	<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	
Chloride	5440	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*	51.5	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

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Celey D. Keene, Lab Director/Quality Manager

Analytical Results For:

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Cliff Brunson
P.O. Box 805
Hobbs NM, 88241
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Received: 12/15/2017
Reported: 12/27/2017
Project Name: CEDAR CANYON 21-22 #33H
Project Number: NONE GIVEN
Project Location: OXY

Sampling Date: 12/14/2017
Sampling Type: Soil
Sampling Condition: Cool & Intact
Sample Received By: Tamara Oldaker

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, SM4500Cl-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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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
Chloride	192	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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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
Chloride	4640	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*	24.9	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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Analytical Results For:

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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 @ 2 (H703488-05)

BTX 8021B		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	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 BTX	<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
Chloride	496	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
Chloride	176	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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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 3 @ 1 (H703488-07)

BTX 8021B		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	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 BTX	<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
Chloride	832	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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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)

BTX 8021B		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	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 BTX	<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
Chloride	144	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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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
Chloride	848	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, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	128	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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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	
Chloride	32.0	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 87.8 % 28.3-164

Surrogate: 1-Chlorooctadecane 86.8 % 34.7-157

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P.O. Box 805
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Received: 12/15/2017
Reported: 12/27/2017
Project Name: CEDAR CANYON 21-22 #33H
Project Number: NONE GIVEN
Project Location: OXY

Sampling Date: 12/14/2017
Sampling Type: Soil
Sampling Condition: Cool & Intact
Sample Received By: Tamara Oldaker

Sample ID: EAST @ SURFACE (H703488-12)

BTX 8021B		mg/kg		Analyzed By: MS						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	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 BTX	<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

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

Received: 12/15/2017
Reported: 12/27/2017
Project Name: CEDAR CANYON 21-22 #33H
Project Number: NONE GIVEN
Project Location: OXY

Sampling Date: 12/14/2017
Sampling Type: Soil
Sampling Condition: Cool & Intact
Sample Received By: Tamara Oldaker

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	
Chloride	32.0	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 88.0 % 28.3-164

Surrogate: 1-Chlorooctadecane 86.9 % 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: SOUTH @ SURFACE (H703488-14)

BTX 8021B		mg/kg		Analyzed By: MS						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	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 BTX	<0.300	0.300	12/22/2017	ND						

Surrogate: 4-Bromofluorobenzene (PID) 92.6 % 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	<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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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

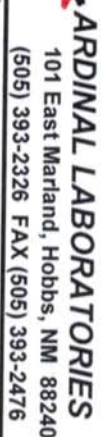
Cardinal Laboratories

*=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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ARDINAL LABORATORIES

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

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

Company Name: BBC International, Inc.		BILL TO		ANALYSIS REQUEST									
Project Manager: Cliff Brunson		P.O. #:											
Address: P.O. Box 805		Company:											
City: Hobbs		Attn:											
Phone #: 575-397-6388		Address:											
State: NM Zip: 88241													
Fax #: 575-397-0397													
Project #:		City:											
Project Name: Cedar Canyon 21-22 #334		State:											
Project Location:		Zip:											
Sampler Name: Jeff Ornelas		Phone #:											
Fax #:													
FOR LAB USE ONLY													
Lab I.D.		Sample I.D.		(G)RAB OR (C)OMP.		# CONTAINERS		MATRIX		PRESERV		SAMPLING	
A703498								GROUNDWATER					
								WASTEWATER					
								SOIL					
								OIL					
								SLUDGE					
								OTHER :					
								ACID/BASE:					
								ICE / COOL					
								OTHER :					
11 N @ Surf													
12 E @ Surf													
13 W @ Surf													
14 S @ Surf													
12, 15, 17													
Relinquished By: Julie Ornelas		Date: 12/15/17		Time: 2:14 PM		Received By: Julie Ornelas		Date: 12/15/17		Time: 2:14 PM			
Relinquished By: Julie Ornelas		Date: 12/15/17		Time: 2:14 PM		Received By: Julie Ornelas		Date: 12/15/17		Time: 2:14 PM			
Delivered By: (Circle One) - 2.12		Sample Condition		Cool <input checked="" type="checkbox"/> Intact <input checked="" type="checkbox"/>		CHECKED BY: (Initials)		2.12					
Sampler - UPS - Bus - Other: Constructed - 1.85													
Cardinal cannot accept verbal changes. Please fax written changes to 505-393-2476													

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

State of New Mexico
Energy Minerals and Natural Resources

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

Form C-141
Revised April 3, 2017

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

Release Notification and Corrective Action

OPERATOR

☒ Initial Report ☐ Final Report

Name of Company	OXY USA INC	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	11/1/2017	Date and Hour of Discovery	11/1/2017
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	11/1/2017 @ 6:39 PM		
Was a Watercourse Reached?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	If YES, Volume Impacting the Watercourse.			

If a Watercourse was Impacted, Describe Fully.*


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: 	<u>OIL CONSERVATION DIVISION</u>		
Printed Name: WADE DITTRICH	Approved by Environmental Specialist:		
Title: ENVIROMENTAL COORDINATOR	Approval Date:	Expiration Date:	
E-mail Address: wade_dittrich@oxy.com	Conditions of Approval:		Attached <input type="checkbox"/>
Date: 11-15-17	Phone: 575-390-2828		

* Attach Additional Sheets If Necessary