

Closure Report

Site Description

Site Name:	Harroun 9-1 CTB
Company:	Oxy USA Inc.
Legal Description:	U/L P, Section 9, T24S, R29E
County:	Eddy County, NM
GPS Coordinates:	N 32.22662 W-103.98184

Release Data

Date of Release:	11/04/2017
Type of Release:	Oil and produced water
Source of Release:	Hole in bottom of tank
Volume of Release:	10 bbls oil, 110 bbls produced water
Volume Recovered:	119 bbls

Remediation Specifications

Remediation Parameters:	Excavated the area near SP1 to a depth of 5 feet or as practicable and then placed a liner in the excavation. Excavated the areas of SP2 and SP3 to a depth of 3 feet and placed a liner in the excavation. Excavated the areas of SP3, SP4, and SP5 to a depth of 1 foot. Backfilled the site with clean soil.	
Remediation Activities:	06/11/2018 to 07/17/2018	
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:	n/a	n/a
BLM Approval of Plan:	n/a	n/a

Supporting Documentation

Initial C-141	Signed 11/21/2017
Final C-141	Upon completion
Site Diagram	November 2017
Groundwater Plot	75'-100'
TOPO Maps	November 2017
Lab Summary	12/11/17-12/13/17
Lab Analysis	12/11/17-12/13/17
Correspondence	Request and approval of remediation plan via email

Request for Closure

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

Wade Dittrich, Environmental Specialist

08/06/2018

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	HARROUN 9-1 CTB	Facility Type	CTB
Surface Owner	PRIVATE	Mineral Owner	STATE
		API No.	30-015-34894

LOCATION OF RELEASE

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County
P	9	24S	29E	530	SOUTH	330	EAST	EDDY

Latitude 32.22637 Longitude -103.98201 NAD83

NATURE OF RELEASE

Type of Release	OIL & PRODUCED WATER	Volume of Release	10 BBLS OIL 110 BBLS PRODUCED WATER	Volume Recovered	119 BBLS
Source of Release	HOLE IN BOTTOM OF TANK	Date and Hour of Occurrence	11/4/2017	Date and Hour of Discovery	11/6/2017
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		
By Whom?	WADE DITTRICH	Date and Hour	11/6/2017 @ 9:28 AM		
Was a Watercourse Reached?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	If YES, Volume Impacting the Watercourse.			

If a Watercourse was Impacted, Describe Fully.*


Describe Cause of Problem and Remedial Action Taken.*

Hole in bottom of tank. The issue was corrected and returned to service.

Describe Area Affected and Cleanup Action Taken.*

Affected area of the spill is approximately 50x100 ft (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: 		OIL CONSERVATION DIVISION	
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:	
Date: <u>11-21-17</u> Phone: 575-390-2828		Attached <input type="checkbox"/>	

* Attach Additional Sheets If Necessary

Oxy, Harroun 9-1 CTB

Leak date: 11/04/2017
Eddy County, NM
API# 30-015-34894
2RP-4493

Legend

- 1 ft excavation
- 3 ft excavation with liner
- 5 ft excavation (as practicable) with liner
- Cardinal sample points
- Leak Area (yellow)
- Sample points



Google Earth

© 2018 Google



50 ft

Oxy, Harroun 9-1 CTB

Sample points, hand auger

SP1, N 32.22686 W-103.98242

SP2, N 32.22681 W-103.98237

SP3, N 32.22683 W-103.98229

SP4, N 32.22677 W-103.98225

SP5, N 32.22679 W-103.98214

SP6, N 32.22677 W-103.98245

NORTH, N 32.22687 W-103.98228

SOUTH, N 32.22672 W-103.98240

EAST, N 32.22676 W-103.98211

WEST, N 32.22683 W-103.98247

Groundwater: 75'-100'





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_00863			ED	3	3	1	16	24S	29E	594524	3565091*	<input type="text"/>	1594	220	
C_00863.CLW199506	O		ED	3	3	1	16	24S	29E	594524	3565091*	<input type="text"/>	1594	220	

Average Depth to Water: --

Minimum Depth: --

Maximum Depth: --

Record Count: 2

UTMNAD83 Radius Search (in meters):

Easting (X): 595823

Northing (Y): 3566015

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.

11/14/17 9:48 AM

WATER COLUMN/ AVERAGE DEPTH TO
WATER

Public Land Survey System (PLSS)

Q64:Q16: SEQ4: SESec: 09Tws: 24SRng: 29E

State Plane Coordinate System - NAD27

X:ftY:ftZone:

State Plane Coordinate System - NAD83

X:ftY:ftZone:

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

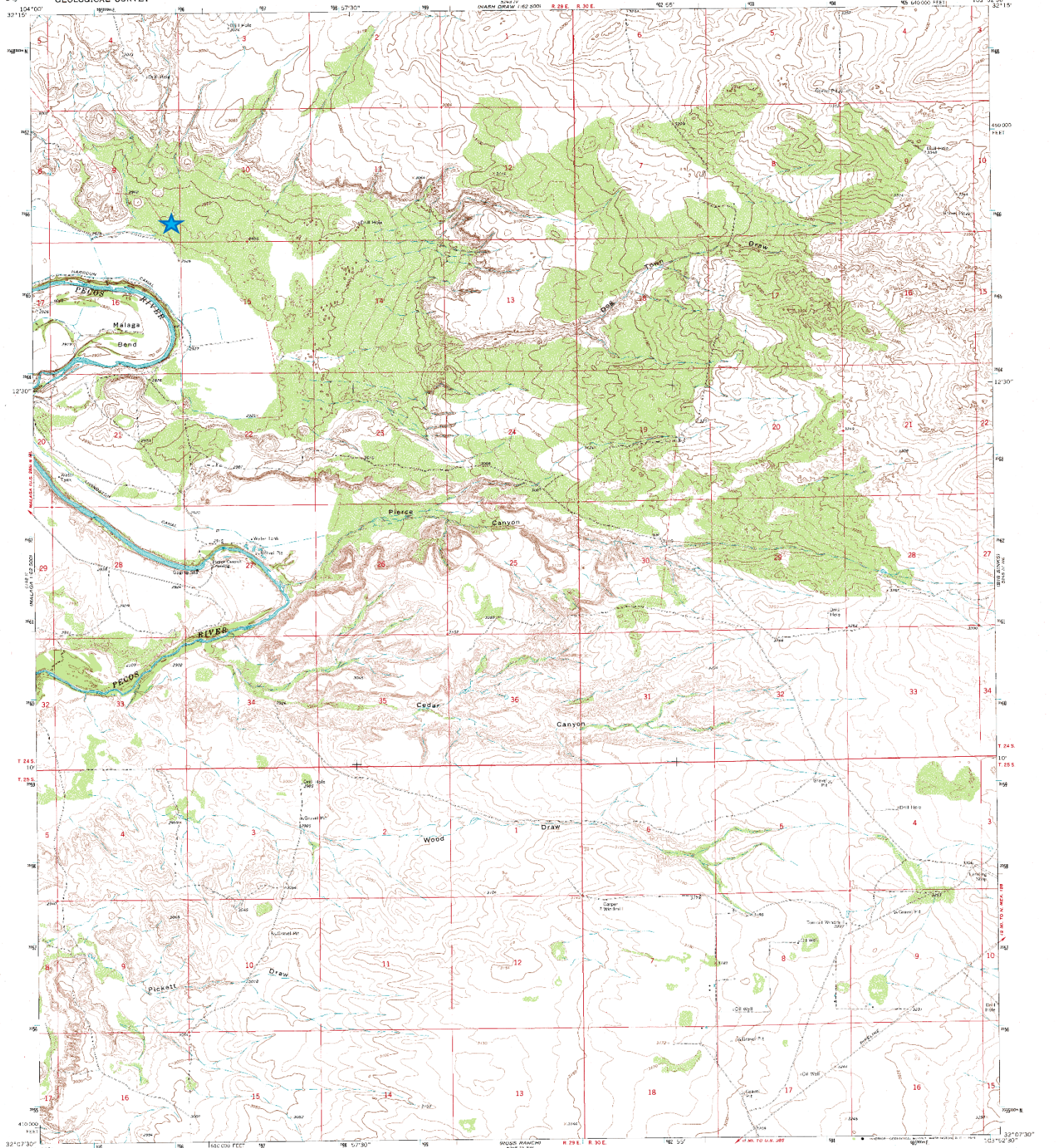
Easting (X):595823.0mtrsNorthing (Y):3566015.0mtrs

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

Oxy, Harroun 9-1 CTB

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

PIERCE CANYON QUADRANGLE
NEW MEXICO—EDDY CO.
7.5 MINUTE SERIES (TOPOGRAPHIC)



Maped, edited, and published by the Geological Survey
Center by USGS and USGAS
Topography by photogrammetric methods from aerial
photographs taken 1967. Field checked 1968
Polycon projection. 1927 North American datum.
10,000 feet and based on New Mexico coordinate system.
8461.70 m
1000-meter Universal Transverse Mercator and UTM
zone 13, shown in blue
Fine red dashed lines indicate selected line lines

UTM COORDINATE ZONE 13
EASTING 1000000
NORTHING 1000000

SCALE 1:24,000
CONTOUR INTERVAL 10 FEET
UNITS IN METERS

ROAD CLASSIFICATION
Light-duty road, all weather. Unimproved road, fair or dry weather.
Improved surface.

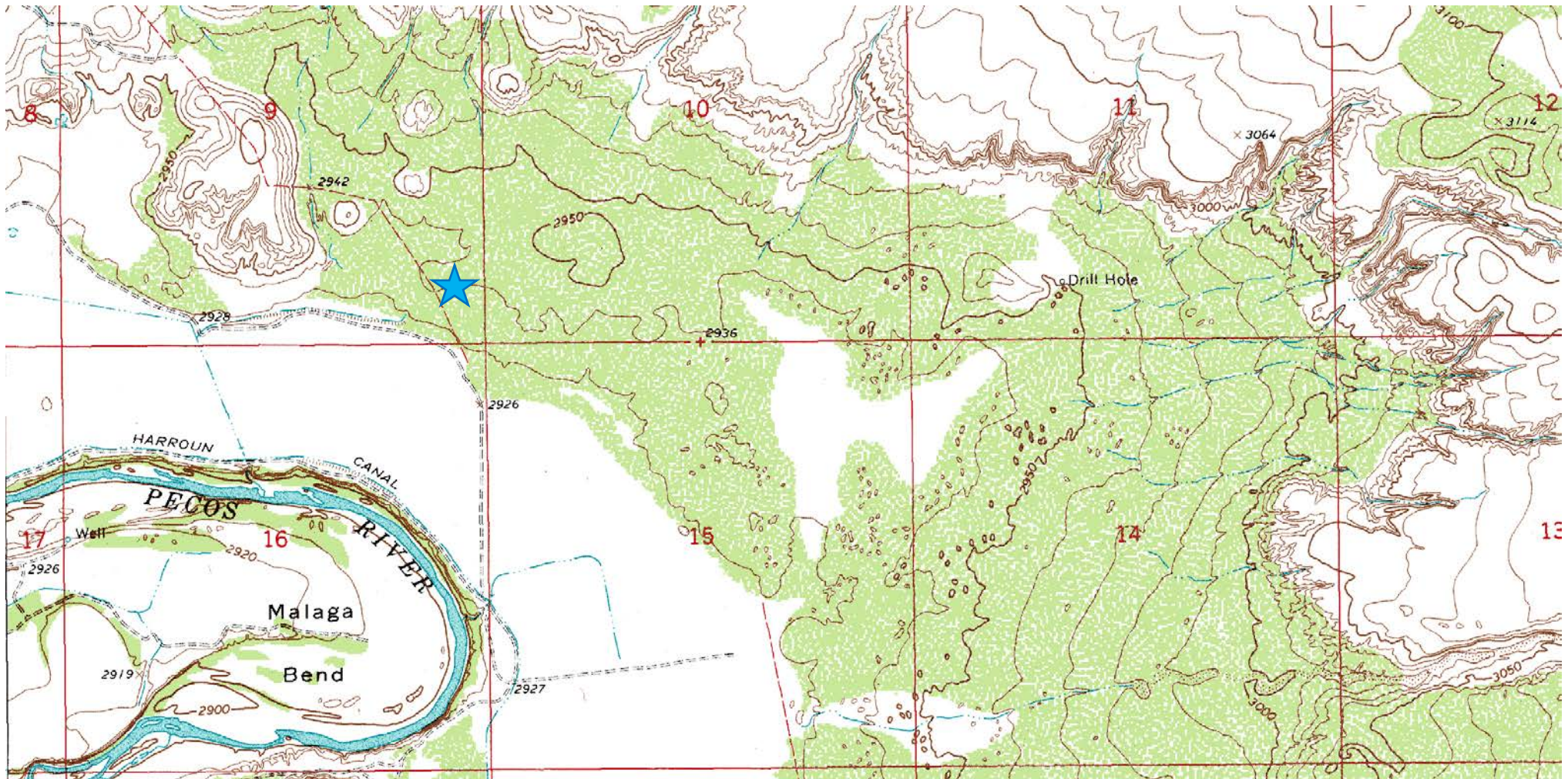
PIERCE CANYON, N. MEX.
N2075-W10302.5/7.5

1968

AMS 2448 TO NW—SERIES 1981

THIS MAP COMPLETES WITH NATIONAL MAP ACCURACY STANDARDS
FOR SALE BY U.S. GEOLOGICAL SURVEY, DENVER, COLORADO 80205 OR WASHINGTON, D.C. 20242
A FOLDER DESCRIBING TOPOGRAPHIC MAPS AND SYMBOLS IS AVAILABLE ON REQUEST

Oxy, Harroun 9-1 CTB



Laboratory Analytical Results Summary
HARROUN 9-1 CTB

		Sample ID	SP1 @ 1'	SP1 @ 3'	SP1 @ 5'	SP1 @ 7'	SP1 @ 8'
Analyte	Method	Date	12/11/17	12/11/17	12/11/17	12/11/17	12/11/17
			mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
Benzene	BTEX 8021B		<0.050	<0.100	<0.500	<0.050	<0.050
Toluene	BTEX 8021B		<0.050	0.154	0.522	<0.050	<0.050
Ethylbenzene	BTEX 8021B		<0.050	<0.100	<0.500	<0.050	<0.050
Total Xylenes	BTEX 8021B		<0.150	0.774	6.46	<0.150	<0.150
Total BTEX	BTEX 8021B		<0.300	0.928	6.98	<0.300	<0.300
Chloride	SM4500Cl-B		10400	4320	5440	<16.0	32
GRO	TPH 8015M		<10.0	83.4	461	48.8	<10.0
DRO	TPH 8015M		165	1470	2970	1240	22.8
EXT DRO	TPH 8015M		146	331	526	424	55.3

		Sample ID	SP2 @ 1'	SP2 @ 3'	SP2 @ 4'	SP2 @ 5'	SP2 @ 6'
Analyte	Method	Date	12/11/17	12/11/17	12/11/17	12/11/17	12/11/17
			mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
Benzene	BTEX 8021B		<0.050	<0.100	<0.100	<0.050	<0.050
Toluene	BTEX 8021B		<0.050	0.107	0.16	<0.050	<0.050
Ethylbenzene	BTEX 8021B		<0.050	<0.100	<0.100	<0.050	<0.050
Total Xylenes	BTEX 8021B		<0.150	<0.300	<0.300	<0.150	<0.150
Total BTEX	BTEX 8021B		<0.300	<0.600	<0.600	<0.300	<0.300
Chloride	SM4500Cl-B		8800	4480	<16.0	64	32
GRO	TPH 8015M		<10.0	61.7	114	<10.0	<10.0
DRO	TPH 8015M		25.9	1220	1440	20.7	<10.0
EXT DRO	TPH 8015M		10.8	266	371	40.6	<10.0

		Sample ID	SP3 @ 1'	SP3 @ 2'	SP3 @ 3'
Analyte	Method	Date	12/11/17	12/11/17	12/11/17
			mg/kg	mg/kg	mg/kg
Benzene	BTEX 8021B		<0.050	0.214	<0.050
Toluene	BTEX 8021B		<0.050	0.293	<0.050
Ethylbenzene	BTEX 8021B		<0.050	0.075	<0.050
Total Xylenes	BTEX 8021B		<0.150	<0.150	<0.150
Total BTEX	BTEX 8021B		<0.300	0.607	<0.300
Chloride	SM4500Cl-B		32	64	<16.0
GRO	TPH 8015M		41.5	<10.0	<10.0
DRO	TPH 8015M		1270	315	<10.0
EXT DRO	TPH 8015M		402	132	<10.0

		Sample ID	SP4 @ 1'	SP4 @ 2'
Analyte	Method	Date	12/13/17	12/13/17
			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	SM4500Cl-B		<16.0	48
GRO	TPH 8015M		21.1	<10.0
DRO	TPH 8015M		793	63
EXT DRO	TPH 8015M		173	12.5

		Sample ID	SP5 @ 1'	SP5 @ 2'
Analyte	Method	Date	12/13/17	12/13/17
			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	SM4500Cl-B		48	<16.0
GRO	TPH 8015M		17.7	<10.0
DRO	TPH 8015M		516	79.3
EXT DRO	TPH 8015M		126	18.6

		Sample ID	SP6 @ 1'	SP6 @ 3'	SP6 @ 4'	SP6 @ 5'
Analyte	Method	Date	12/13/17	12/13/17	12/13/17	12/13/17
			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	0.183	0.26
Total BTEX	BTEX 8021B		<0.300	<0.300	<0.300	<0.300
Chloride	SM4500Cl-B		6720	4240	<16.0	48
GRO	TPH 8015M		<10.0	<10.0	23.7	31
DRO	TPH 8015M		<10.0	<10.0	718	930
EXT DRO	TPH 8015M		<10.0	<10.0	178	227

		Sample ID	NORTH @ SURFACE	EAST @ SURFACE	WEST @ SURFACE	SOUTH @ SURFACE
Analyte	Method	Date	12/13/17	12/13/17	12/13/17	12/13/17
			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	SM4500Cl-B		32	<16.0	<16.0	32
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

December 27, 2017

Cliff Brunson

BBC International, Inc.

P.O. Box 805

Hobbs, NM 88241

RE: HARROUN 9-1 CTB

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,

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

Analytical Results For:

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

Received: 12/15/2017
Reported: 12/27/2017
Project Name: HARROUN 9-1 CTB
Project Number: NONE GIVEN
Project Location: OXY

Sampling Date: 12/11/2017
Sampling Type: Soil
Sampling Condition: Cool & Intact
Sample Received By: Tamara Oldaker

Sample ID: SP1 @ 1 (H703487-01)

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	12/20/2017	ND	1.70	85.2	2.00	0.0320	
Toluene*	<0.050	0.050	12/20/2017	ND	1.68	83.8	2.00	0.392	
Ethylbenzene*	<0.050	0.050	12/20/2017	ND	1.67	83.6	2.00	0.316	
Total Xylenes*	<0.150	0.150	12/20/2017	ND	5.16	86.0	6.00	0.544	
Total BTX	<0.300	0.300	12/20/2017	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	10400	16.0	12/20/2017	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	12/20/2017	ND	238	119	200	0.833	
DRO >C10-C28*	165	10.0	12/20/2017	ND	213	106	200	3.06	
EXT DRO >C28-C36	146	10.0	12/20/2017	ND					

Surrogate: 1-Chlorooctane 86.7 % 28.3-164

Surrogate: 1-Chlorooctadecane 95.7 % 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
Reported: 12/27/2017
Project Name: HARROUN 9-1 CTB
Project Number: NONE GIVEN
Project Location: OXY

Sampling Date: 12/11/2017
Sampling Type: Soil
Sampling Condition: Cool & Intact
Sample Received By: Tamara Oldaker

Sample ID: SP1 @ 3 (H703487-02)

BTEx 8021B		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.100	0.100	12/20/2017	ND	1.70	85.2	2.00	0.0320	
Toluene*	0.154	0.100	12/20/2017	ND	1.68	83.8	2.00	0.392	
Ethylbenzene*	<0.100	0.100	12/20/2017	ND	1.67	83.6	2.00	0.316	
Total Xylenes*	0.774	0.300	12/20/2017	ND	5.16	86.0	6.00	0.544	
Total BTEX	0.928	0.600	12/20/2017	ND					

Surrogate: 4-Bromofluorobenzene (PID) 132 % 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	4320	16.0	12/20/2017	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*	83.4	10.0	12/20/2017	ND	238	119	200	0.833	
DRO >C10-C28*	1470	10.0	12/20/2017	ND	213	106	200	3.06	
EXT DRO >C28-C36	331	10.0	12/20/2017	ND					

Surrogate: 1-Chlorooctane 104 % 28.3-164

Surrogate: 1-Chlorooctadecane 136 % 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:	12/11/2017
Reported:	12/27/2017	Sampling Type:	Soil
Project Name:	HARROUN 9-1 CTB	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	OXY		

Sample ID: SP1 @ 5 (H703487-03)

BTEx 8021B		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.500	0.500	12/20/2017	ND	1.70	85.2	2.00	0.0320	
Toluene*	0.522	0.500	12/20/2017	ND	1.68	83.8	2.00	0.392	
Ethylbenzene*	<0.500	0.500	12/20/2017	ND	1.67	83.6	2.00	0.316	
Total Xylenes*	6.46	1.50	12/20/2017	ND	5.16	86.0	6.00	0.544	
Total BTEX	6.98	3.00	12/20/2017	ND					

Surrogate: 4-Bromofluorobenzene (PID) 102 % 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	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*	461	10.0	12/20/2017	ND	238	119	200	0.833	
DRO >C10-C28*	2970	10.0	12/20/2017	ND	213	106	200	3.06	
EXT DRO >C28-C36	526	10.0	12/20/2017	ND					

Surrogate: 1-Chlorooctane 130 % 28.3-164

Surrogate: 1-Chlorooctadecane 124 % 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
Reported: 12/27/2017
Project Name: HARROUN 9-1 CTB
Project Number: NONE GIVEN
Project Location: OXY

Sampling Date: 12/11/2017
Sampling Type: Soil
Sampling Condition: Cool & Intact
Sample Received By: Tamara Oldaker

Sample ID: SP1 @ 7 (H703487-04)

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	12/20/2017	ND	1.70	85.2	2.00	0.0320	
Toluene*	<0.050	0.050	12/20/2017	ND	1.68	83.8	2.00	0.392	
Ethylbenzene*	<0.050	0.050	12/20/2017	ND	1.67	83.6	2.00	0.316	
Total Xylenes*	<0.150	0.150	12/20/2017	ND	5.16	86.0	6.00	0.544	
Total BTEx	<0.300	0.300	12/20/2017	ND					

Surrogate: 4-Bromofluorobenzene (PID) 125 % 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	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*	48.8	10.0	12/20/2017	ND	238	119	200	0.833	
DRO >C10-C28*	1240	10.0	12/20/2017	ND	213	106	200	3.06	
EXT DRO >C28-C36	424	10.0	12/20/2017	ND					

Surrogate: 1-Chlorooctane 92.9 % 28.3-164

Surrogate: 1-Chlorooctadecane 129 % 34.7-157

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Received: 12/15/2017
Reported: 12/27/2017
Project Name: HARROUN 9-1 CTB
Project Number: NONE GIVEN
Project Location: OXY

Sampling Date: 12/11/2017
Sampling Type: Soil
Sampling Condition: Cool & Intact
Sample Received By: Tamara Oldaker

Sample ID: SP1 @ 8 (H703487-05)

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	12/20/2017	ND	1.70	85.2	2.00	0.0320	
Toluene*	<0.050	0.050	12/20/2017	ND	1.68	83.8	2.00	0.392	
Ethylbenzene*	<0.050	0.050	12/20/2017	ND	1.67	83.6	2.00	0.316	
Total Xylenes*	<0.150	0.150	12/20/2017	ND	5.16	86.0	6.00	0.544	
Total BTEX	<0.300	0.300	12/20/2017	ND					

Surrogate: 4-Bromofluorobenzene (PID) 95.0 % 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	32.0	16.0	12/20/2017	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	12/20/2017	ND	238	119	200	0.833	
DRO >C10-C28*	22.8	10.0	12/20/2017	ND	213	106	200	3.06	
EXT DRO >C28-C36	55.3	10.0	12/20/2017	ND					

Surrogate: 1-Chlorooctane 79.7 % 28.3-164

Surrogate: 1-Chlorooctadecane 81.7 % 34.7-157

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Received:	12/15/2017	Sampling Date:	12/11/2017
Reported:	12/27/2017	Sampling Type:	Soil
Project Name:	HARROUN 9-1 CTB	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	OXY		

Sample ID: SP2 @ 1 (H703487-06)

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	12/20/2017	ND	1.70	85.2	2.00	0.0320		
Toluene*	<0.050	0.050	12/20/2017	ND	1.68	83.8	2.00	0.392		
Ethylbenzene*	<0.050	0.050	12/20/2017	ND	1.67	83.6	2.00	0.316		
Total Xylenes*	<0.150	0.150	12/20/2017	ND	5.16	86.0	6.00	0.544		
Total BTEx	<0.300	0.300	12/20/2017	ND						

Surrogate: 4-Bromofluorobenzene (PID) 95.7 % 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	8800	16.0	12/20/2017	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	12/20/2017	ND	238	119	200	0.833	
DRO >C10-C28*	25.9	10.0	12/20/2017	ND	213	106	200	3.06	
EXT DRO >C28-C36	10.8	10.0	12/20/2017	ND					

Surrogate: 1-Chlorooctane 79.4 % 28.3-164

Surrogate: 1-Chlorooctadecane 84.8 % 34.7-157

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Received: 12/15/2017
Reported: 12/27/2017
Project Name: HARROUN 9-1 CTB
Project Number: NONE GIVEN
Project Location: OXY

Sampling Date: 12/11/2017
Sampling Type: Soil
Sampling Condition: Cool & Intact
Sample Received By: Tamara Oldaker

Sample ID: SP2 @ 3 (H703487-07)

BTEX 8021B		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.100	0.100	12/20/2017	ND	1.70	85.2	2.00	0.0320	
Toluene*	0.107	0.100	12/20/2017	ND	1.68	83.8	2.00	0.392	
Ethylbenzene*	<0.100	0.100	12/20/2017	ND	1.67	83.6	2.00	0.316	
Total Xylenes*	<0.300	0.300	12/20/2017	ND	5.16	86.0	6.00	0.544	
Total BTEX	<0.600	0.600	12/20/2017	ND					

Surrogate: 4-Bromofluorobenzene (PID) 129 % 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	4480	16.0	12/20/2017	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*	61.7	10.0	12/20/2017	ND	238	119	200	0.833	
DRO >C10-C28*	1220	10.0	12/20/2017	ND	213	106	200	3.06	
EXT DRO >C28-C36	266	10.0	12/20/2017	ND					

Surrogate: 1-Chlorooctane 93.0 % 28.3-164

Surrogate: 1-Chlorooctadecane 109 % 34.7-157

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Received: 12/15/2017
Reported: 12/27/2017
Project Name: HARROUN 9-1 CTB
Project Number: NONE GIVEN
Project Location: OXY

Sampling Date: 12/11/2017
Sampling Type: Soil
Sampling Condition: Cool & Intact
Sample Received By: Tamara Oldaker

Sample ID: SP2 @ 4 (H703487-08)

BTEx 8021B		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.100	0.100	12/20/2017	ND	1.70	85.2	2.00	0.0320	
Toluene*	0.160	0.100	12/20/2017	ND	1.68	83.8	2.00	0.392	
Ethylbenzene*	<0.100	0.100	12/20/2017	ND	1.67	83.6	2.00	0.316	
Total Xylenes*	<0.300	0.300	12/20/2017	ND	5.16	86.0	6.00	0.544	
Total BTEX	<0.600	0.600	12/20/2017	ND					

Surrogate: 4-Bromofluorobenzene (PID) 142 % 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	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*	114	10.0	12/20/2017	ND	238	119	200	0.833	
DRO >C10-C28*	1440	10.0	12/20/2017	ND	213	106	200	3.06	
EXT DRO >C28-C36	371	10.0	12/20/2017	ND					

Surrogate: 1-Chlorooctane 93.2 % 28.3-164

Surrogate: 1-Chlorooctadecane 129 % 34.7-157

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Received: 12/15/2017
Reported: 12/27/2017
Project Name: HARROUN 9-1 CTB
Project Number: NONE GIVEN
Project Location: OXY

Sampling Date: 12/11/2017
Sampling Type: Soil
Sampling Condition: Cool & Intact
Sample Received By: Tamara Oldaker

Sample ID: SP2 @ 5 (H703487-09)

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	12/20/2017	ND	1.70	85.2	2.00	0.0320	
Toluene*	<0.050	0.050	12/20/2017	ND	1.68	83.8	2.00	0.392	
Ethylbenzene*	<0.050	0.050	12/20/2017	ND	1.67	83.6	2.00	0.316	
Total Xylenes*	<0.150	0.150	12/20/2017	ND	5.16	86.0	6.00	0.544	
Total BTEX	<0.300	0.300	12/20/2017	ND					

Surrogate: 4-Bromofluorobenzene (PID) 97.4 % 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	64.0	16.0	12/20/2017	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	12/20/2017	ND	238	119	200	0.833	
DRO >C10-C28*	20.7	10.0	12/20/2017	ND	213	106	200	3.06	
EXT DRO >C28-C36	40.6	10.0	12/20/2017	ND					

Surrogate: 1-Chlorooctane 92.5 % 28.3-164

Surrogate: 1-Chlorooctadecane 97.4 % 34.7-157

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Fax To: (575) 397-0397

Received: 12/15/2017
Reported: 12/27/2017
Project Name: HARROUN 9-1 CTB
Project Number: NONE GIVEN
Project Location: OXY

Sampling Date: 12/11/2017
Sampling Type: Soil
Sampling Condition: Cool & Intact
Sample Received By: Tamara Oldaker

Sample ID: SP2 @ 6 (H703487-10)

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	12/20/2017	ND	1.70	85.2	2.00	0.0320	
Toluene*	<0.050	0.050	12/20/2017	ND	1.68	83.8	2.00	0.392	
Ethylbenzene*	<0.050	0.050	12/20/2017	ND	1.67	83.6	2.00	0.316	
Total Xylenes*	<0.150	0.150	12/20/2017	ND	5.16	86.0	6.00	0.544	
Total BTEX	<0.300	0.300	12/20/2017	ND					

Surrogate: 4-Bromofluorobenzene (PID) 94.2 % 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	32.0	16.0	12/20/2017	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	12/20/2017	ND	238	119	200	0.833	
DRO >C10-C28*	<10.0	10.0	12/20/2017	ND	213	106	200	3.06	
EXT DRO >C28-C36	<10.0	10.0	12/20/2017	ND					

Surrogate: 1-Chlorooctane 85.6 % 28.3-164

Surrogate: 1-Chlorooctadecane 87.4 % 34.7-157

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Fax To: (575) 397-0397

Received:	12/15/2017	Sampling Date:	12/11/2017
Reported:	12/27/2017	Sampling Type:	Soil
Project Name:	HARROUN 9-1 CTB	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	OXY		

Sample ID: SP3 @ 1 (H703487-11)

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	12/20/2017	ND	1.70	85.2	2.00	0.0320	
Toluene*	<0.050	0.050	12/20/2017	ND	1.68	83.8	2.00	0.392	
Ethylbenzene*	<0.050	0.050	12/20/2017	ND	1.67	83.6	2.00	0.316	
Total Xylenes*	<0.150	0.150	12/20/2017	ND	5.16	86.0	6.00	0.544	
Total BTEx	<0.300	0.300	12/20/2017	ND					

Surrogate: 4-Bromofluorobenzene (PID) 123 % 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	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*	41.5	10.0	12/20/2017	ND	238	119	200	0.833	
DRO >C10-C28*	1270	10.0	12/20/2017	ND	213	106	200	3.06	
EXT DRO >C28-C36	402	10.0	12/20/2017	ND					

Surrogate: 1-Chlorooctane 89.6 % 28.3-164

Surrogate: 1-Chlorooctadecane 127 % 34.7-157

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Received: 12/15/2017
Reported: 12/27/2017
Project Name: HARROUN 9-1 CTB
Project Number: NONE GIVEN
Project Location: OXY

Sampling Date: 12/11/2017
Sampling Type: Soil
Sampling Condition: Cool & Intact
Sample Received By: Tamara Oldaker

Sample ID: SP3 @ 2 (H703487-12)

BTEX 8021B		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	0.214	0.050	12/20/2017	ND	1.70	85.2	2.00	0.0320	
Toluene*	0.293	0.050	12/20/2017	ND	1.68	83.8	2.00	0.392	
Ethylbenzene*	0.075	0.050	12/20/2017	ND	1.67	83.6	2.00	0.316	
Total Xylenes*	<0.150	0.150	12/20/2017	ND	5.16	86.0	6.00	0.544	
Total BTEX	0.607	0.300	12/20/2017	ND					

Surrogate: 4-Bromofluorobenzene (PID) 102 % 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	64.0	16.0	12/20/2017	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	12/20/2017	ND	238	119	200	0.833	
DRO >C10-C28*	315	10.0	12/20/2017	ND	213	106	200	3.06	
EXT DRO >C28-C36	132	10.0	12/20/2017	ND					

Surrogate: 1-Chlorooctane 72.6 % 28.3-164

Surrogate: 1-Chlorooctadecane 101 % 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
Reported: 12/27/2017
Project Name: HARROUN 9-1 CTB
Project Number: NONE GIVEN
Project Location: OXY

Sampling Date: 12/11/2017
Sampling Type: Soil
Sampling Condition: Cool & Intact
Sample Received By: Tamara Oldaker

Sample ID: SP3 @ 3 (H703487-13)

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	12/20/2017	ND	1.70	85.2	2.00	0.0320		
Toluene*	<0.050	0.050	12/20/2017	ND	1.68	83.8	2.00	0.392		
Ethylbenzene*	<0.050	0.050	12/20/2017	ND	1.67	83.6	2.00	0.316		
Total Xylenes*	<0.150	0.150	12/20/2017	ND	5.16	86.0	6.00	0.544		
Total BTEX	<0.300	0.300	12/20/2017	ND						

Surrogate: 4-Bromofluorobenzene (PID) 95.4 % 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	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	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 102 % 28.3-164

Surrogate: 1-Chlorooctadecane 107 % 34.7-157

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Fax To: (575) 397-0397

Received: 12/15/2017
Reported: 12/27/2017
Project Name: HARROUN 9-1 CTB
Project Number: NONE GIVEN
Project Location: OXY

Sampling Date: 12/13/2017
Sampling Type: Soil
Sampling Condition: Cool & Intact
Sample Received By: Tamara Oldaker

Sample ID: SP4 @ 1 (H703487-14)

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	12/20/2017	ND	1.70	85.2	2.00	0.0320	
Toluene*	<0.050	0.050	12/20/2017	ND	1.68	83.8	2.00	0.392	
Ethylbenzene*	<0.050	0.050	12/20/2017	ND	1.67	83.6	2.00	0.316	
Total Xylenes*	<0.150	0.150	12/20/2017	ND	5.16	86.0	6.00	0.544	
Total BTEx	<0.300	0.300	12/20/2017	ND					

Surrogate: 4-Bromofluorobenzene (PID) 129 % 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*	21.1	10.0	12/21/2017	ND	210	105	200	12.8	
DRO >C10-C28*	793	10.0	12/21/2017	ND	205	102	200	11.7	
EXT DRO >C28-C36	173	10.0	12/21/2017	ND					

Surrogate: 1-Chlorooctane 99.0 % 28.3-164

Surrogate: 1-Chlorooctadecane 114 % 34.7-157

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Received: 12/15/2017
Reported: 12/27/2017
Project Name: HARROUN 9-1 CTB
Project Number: NONE GIVEN
Project Location: OXY

Sampling Date: 12/13/2017
Sampling Type: Soil
Sampling Condition: Cool & Intact
Sample Received By: Tamara Oldaker

Sample ID: SP4 @ 2 (H703487-15)

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	12/20/2017	ND	1.70	85.2	2.00	0.0320	
Toluene*	<0.050	0.050	12/20/2017	ND	1.68	83.8	2.00	0.392	
Ethylbenzene*	<0.050	0.050	12/20/2017	ND	1.67	83.6	2.00	0.316	
Total Xylenes*	<0.150	0.150	12/20/2017	ND	5.16	86.0	6.00	0.544	
Total BTEX	<0.300	0.300	12/20/2017	ND					

Surrogate: 4-Bromofluorobenzene (PID) 95.5 % 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	48.0	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	210	105	200	12.8	
DRO >C10-C28*	63.0	10.0	12/21/2017	ND	205	102	200	11.7	
EXT DRO >C28-C36	12.5	10.0	12/21/2017	ND					

Surrogate: 1-Chlorooctane 80.4 % 28.3-164

Surrogate: 1-Chlorooctadecane 85.1 % 34.7-157

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Received: 12/15/2017
Reported: 12/27/2017
Project Name: HARROUN 9-1 CTB
Project Number: NONE GIVEN
Project Location: OXY

Sampling Date: 12/13/2017
Sampling Type: Soil
Sampling Condition: Cool & Intact
Sample Received By: Tamara Oldaker

Sample ID: SP5 @ 1 (H703487-16)

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	12/20/2017	ND	1.70	85.2	2.00	0.0320	
Toluene*	<0.050	0.050	12/20/2017	ND	1.68	83.8	2.00	0.392	
Ethylbenzene*	<0.050	0.050	12/20/2017	ND	1.67	83.6	2.00	0.316	
Total Xylenes*	<0.150	0.150	12/20/2017	ND	5.16	86.0	6.00	0.544	
Total BTEx	<0.300	0.300	12/20/2017	ND					

Surrogate: 4-Bromofluorobenzene (PID) 124 % 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	48.0	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*	17.7	10.0	12/21/2017	ND	210	105	200	12.8	
DRO >C10-C28*	516	10.0	12/21/2017	ND	205	102	200	11.7	
EXT DRO >C28-C36	126	10.0	12/21/2017	ND					

Surrogate: 1-Chlorooctane 75.0 % 28.3-164

Surrogate: 1-Chlorooctadecane 96.7 % 34.7-157

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Received: 12/15/2017
Reported: 12/27/2017
Project Name: HARROUN 9-1 CTB
Project Number: NONE GIVEN
Project Location: OXY

Sampling Date: 12/13/2017
Sampling Type: Soil
Sampling Condition: Cool & Intact
Sample Received By: Tamara Oldaker

Sample ID: SP5 @ 2 (H703487-17)

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	12/20/2017	ND	1.70	85.2	2.00	0.0320	
Toluene*	<0.050	0.050	12/20/2017	ND	1.68	83.8	2.00	0.392	
Ethylbenzene*	<0.050	0.050	12/20/2017	ND	1.67	83.6	2.00	0.316	
Total Xylenes*	<0.150	0.150	12/20/2017	ND	5.16	86.0	6.00	0.544	
Total BTEX	<0.300	0.300	12/20/2017	ND					

Surrogate: 4-Bromofluorobenzene (PID) 94.9 % 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	<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	210	105	200	12.8	
DRO >C10-C28*	79.3	10.0	12/21/2017	ND	205	102	200	11.7	
EXT DRO >C28-C36	18.6	10.0	12/21/2017	ND					

Surrogate: 1-Chlorooctane 67.4 % 28.3-164

Surrogate: 1-Chlorooctadecane 74.2 % 34.7-157

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Fax To: (575) 397-0397

Received: 12/15/2017
Reported: 12/27/2017
Project Name: HARROUN 9-1 CTB
Project Number: NONE GIVEN
Project Location: OXY

Sampling Date: 12/13/2017
Sampling Type: Soil
Sampling Condition: Cool & Intact
Sample Received By: Tamara Oldaker

Sample ID: SP6 @ 1 (H703487-18)

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	1.87	93.4	2.00	1.01	
Toluene*	<0.050	0.050	12/22/2017	ND	1.88	94.1	2.00	0.0129	
Ethylbenzene*	<0.050	0.050	12/22/2017	ND	1.91	95.3	2.00	0.971	
Total Xylenes*	<0.150	0.150	12/22/2017	ND	5.86	97.7	6.00	1.14	
Total BTX	<0.300	0.300	12/22/2017	ND					

Surrogate: 4-Bromofluorobenzene (PID) 95.0 % 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	6720	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 70.4 % 28.3-164

Surrogate: 1-Chlorooctadecane 73.0 % 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: HARROUN 9-1 CTB
Project Number: NONE GIVEN
Project Location: OXY

Sampling Date: 12/13/2017
Sampling Type: Soil
Sampling Condition: Cool & Intact
Sample Received By: Tamara Oldaker

Sample ID: SP6 @ 3 (H703487-19)

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	1.87	93.4	2.00	1.01	
Toluene*	<0.050	0.050	12/22/2017	ND	1.88	94.1	2.00	0.0129	
Ethylbenzene*	<0.050	0.050	12/22/2017	ND	1.91	95.3	2.00	0.971	
Total Xylenes*	<0.150	0.150	12/22/2017	ND	5.86	97.7	6.00	1.14	
Total BTX	<0.300	0.300	12/22/2017	ND					

Surrogate: 4-Bromofluorobenzene (PID) 96.2 % 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	4240	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 72.3 % 28.3-164

Surrogate: 1-Chlorooctadecane 76.1 % 34.7-157

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Fax To: (575) 397-0397

Received: 12/15/2017
Reported: 12/27/2017
Project Name: HARROUN 9-1 CTB
Project Number: NONE GIVEN
Project Location: OXY

Sampling Date: 12/13/2017
Sampling Type: Soil
Sampling Condition: Cool & Intact
Sample Received By: Tamara Oldaker

Sample ID: SP6 @ 4 (H703487-20)

BTX 8021B		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	12/22/2017	ND	1.87	93.4	2.00	1.01	
Toluene*	<0.050	0.050	12/22/2017	ND	1.88	94.1	2.00	0.0129	
Ethylbenzene*	<0.050	0.050	12/22/2017	ND	1.91	95.3	2.00	0.971	
Total Xylenes*	0.183	0.150	12/22/2017	ND	5.86	97.7	6.00	1.14	
Total BTX	<0.300	0.300	12/22/2017	ND					

Surrogate: 4-Bromofluorobenzene (PID) 144 % 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*	23.7	10.0	12/21/2017	ND	210	105	200	12.8	
DRO >C10-C28*	718	10.0	12/21/2017	ND	205	102	200	11.7	
EXT DRO >C28-C36	178	10.0	12/21/2017	ND					

Surrogate: 1-Chlorooctane 76.0 % 28.3-164

Surrogate: 1-Chlorooctadecane 104 % 34.7-157

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Received:	12/15/2017	Sampling Date:	12/13/2017
Reported:	12/27/2017	Sampling Type:	Soil
Project Name:	HARROUN 9-1 CTB	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	OXY		

Sample ID: SP6 @ 5 (H703487-21)

BTEx 8021B		mg/kg		Analyzed By: MS				S-04	
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	12/22/2017	ND	1.87	93.4	2.00	1.01	
Toluene*	<0.050	0.050	12/22/2017	ND	1.88	94.1	2.00	0.0129	
Ethylbenzene*	<0.050	0.050	12/22/2017	ND	1.91	95.3	2.00	0.971	
Total Xylenes*	0.260	0.150	12/22/2017	ND	5.86	97.7	6.00	1.14	
Total BTEx	<0.300	0.300	12/22/2017	ND					

Surrogate: 4-Bromofluorobenzene (PID) 172 % 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	48.0	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*	31.0	10.0	12/21/2017	ND	210	105	200	12.8	
DRO >C10-C28*	930	10.0	12/21/2017	ND	205	102	200	11.7	
EXT DRO >C28-C36	227	10.0	12/21/2017	ND					

Surrogate: 1-Chlorooctane 75.3 % 28.3-164

Surrogate: 1-Chlorooctadecane 90.9 % 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
Reported: 12/27/2017
Project Name: HARROUN 9-1 CTB
Project Number: NONE GIVEN
Project Location: OXY

Sampling Date: 12/13/2017
Sampling Type: Soil
Sampling Condition: Cool & Intact
Sample Received By: Tamara Oldaker

Sample ID: NORTH @ SURFACE (H703487-22)

BTX 8021B		mg/kg		Analyzed By: MS						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	12/22/2017	ND	1.87	93.4	2.00	1.01		
Toluene*	<0.050	0.050	12/22/2017	ND	1.88	94.1	2.00	0.0129		
Ethylbenzene*	<0.050	0.050	12/22/2017	ND	1.91	95.3	2.00	0.971		
Total Xylenes*	<0.150	0.150	12/22/2017	ND	5.86	97.7	6.00	1.14		
Total BTX	<0.300	0.300	12/22/2017	ND						

Surrogate: 4-Bromofluorobenzene (PID) 97.2 % 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	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	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 74.7 % 28.3-164

Surrogate: 1-Chlorooctadecane 77.0 % 34.7-157

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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: 12/15/2017
Reported: 12/27/2017
Project Name: HARROUN 9-1 CTB
Project Number: NONE GIVEN
Project Location: OXY

Sampling Date: 12/13/2017
Sampling Type: Soil
Sampling Condition: Cool & Intact
Sample Received By: Tamara Oldaker

Sample ID: EAST @ SURFACE (H703487-23)

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	1.87	93.4	2.00	1.01	
Toluene*	<0.050	0.050	12/22/2017	ND	1.88	94.1	2.00	0.0129	
Ethylbenzene*	<0.050	0.050	12/22/2017	ND	1.91	95.3	2.00	0.971	
Total Xylenes*	<0.150	0.150	12/22/2017	ND	5.86	97.7	6.00	1.14	
Total BTX	<0.300	0.300	12/22/2017	ND					

Surrogate: 4-Bromofluorobenzene (PID) 94.2 % 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	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 78.4 % 28.3-164

Surrogate: 1-Chlorooctadecane 82.4 % 34.7-157

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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:	12/15/2017	Sampling Date:	12/13/2017
Reported:	12/27/2017	Sampling Type:	Soil
Project Name:	HARROUN 9-1 CTB	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	OXY		

Sample ID: WEST @ SURFACE (H703487-24)

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	1.87	93.4	2.00	1.01		
Toluene*	<0.050	0.050	12/22/2017	ND	1.88	94.1	2.00	0.0129		
Ethylbenzene*	<0.050	0.050	12/22/2017	ND	1.91	95.3	2.00	0.971		
Total Xylenes*	<0.150	0.150	12/22/2017	ND	5.86	97.7	6.00	1.14		
Total BTEx	<0.300	0.300	12/22/2017	ND						

Surrogate: 4-Bromofluorobenzene (PID) 94.7 % 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	<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	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 76.2 % 28.3-164

Surrogate: 1-Chlorooctadecane 78.3 % 34.7-157

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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: 12/15/2017
Reported: 12/27/2017
Project Name: HARROUN 9-1 CTB
Project Number: NONE GIVEN
Project Location: OXY

Sampling Date: 12/13/2017
Sampling Type: Soil
Sampling Condition: Cool & Intact
Sample Received By: Tamara Oldaker

Sample ID: SOUTH @ SURFACE (H703487-25)

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) 92.7 % 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	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	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 74.9 % 28.3-164

Surrogate: 1-Chlorooctadecane 75.5 % 34.7-157

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Celey D. Keene, Lab Director/Quality Manager

Notes and Definitions

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

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Celey D. Keene, Lab Director/Quality Manager

ORDINAL LABORATORIES

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

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

[illegible]

104W

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

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

[illegible]

From: Bratcher, Mike, EMNRD
To: [Cliff Brunson](#)
Cc: ["Wade Dittrich"](#); Jennifer_Smith@oxy.com; [Weaver, Crystal, EMNRD](#); ["Ken Swinney"](#); ["Jennifer Gilkey"](#); ["Kathy Purvis"](#)
Subject: RE: OXY Harroun 9-1 CTB (2RP-4493) - Delineation Workplan
Date: Monday, April 30, 2018 12:51:23 PM

RE: OXY USA * Harroun 9-1 CTB * 2RP-4493 * DOR: 11/4/17

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>
Sent: Tuesday, February 20, 2018 12:19 PM
To: Bratcher, Mike, EMNRD <mike.bratcher@state.nm.us>
Cc: 'Wade Dittrich' <Wade_Dittrich@oxy.com>; Jennifer_Smith@oxy.com; Weaver, Crystal, EMNRD <Crystal.Weaver@state.nm.us>; 'Ken Swinney' <kswinney@bbcinternational.com>; 'Jennifer Gilkey' <jgilkey@bbcinternational.com>; 'Kathy Purvis' <kathy@bbcinternational.com>
Subject: OXY Harroun 9-1 CTB (2RP-4493) - Delineation Workplan

Mike,

Please find the attached Delineation Workplan and remediation proposal for the OXY Harroun 9-1 CTB (2RP-4493) that we discussed today in your office. OXY is looking forward to the OCD's approval.

If you have any questions, please let me know.

Thanks, Cliff

Cliff P. Brunson, CEI, CRS
President
BBC International, Inc.
World-Wide Environmental Specialists
Mailing Address:

P. O. Box 805
Hobbs, NM 88241-0805 USA
Shipping Address:
1324 W. Marland St.
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