



DELINEATION/REMEDATION WORKPLAN

OXY – RED TANK 30 31 34H (Leak Date: 8/22/19)

RP # 1RP-5713

This delineation workplan and remediation proposal addresses the releases associated with RP # 1RP-5713.

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

Bottom and confirmation samples will be collected every 75 feet.

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

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

Form C-141

State of New Mexico
Oil Conservation Division

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Incident ID	
District RP	1RP-5713
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?	391 (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 type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release within incorporated municipal boundaries or within a defined municipal fresh water well field?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release within 300 feet of a wetland?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release overlying a subsurface mine?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release overlying an unstable area such as karst geology?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release within a 100-year floodplain?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Did the release impact areas not on an exploration, development, production, or storage site?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No

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

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

- Scaled site map showing impacted area, surface features, subsurface features, delineation points, and monitoring wells.
- Field data
- Data table of soil contaminant concentration data
- Depth to water determination
- Determination of water sources and significant watercourses within 1/2-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	
District RP	1RP-5713
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 Dittrich Title: Environmental Coordinator

Signature:  Date: 10-14-19

email: wade_dittrich@oxy.com Telephone: (575) 390-2828

OCD Only

Received by: _____ Date: _____

Form C-141

State of New Mexico
Oil Conservation Division

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Incident ID	
District RP	1RP-5713
Facility ID	
Application ID	

Remediation Plan

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

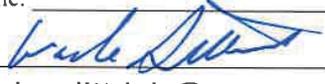
- Detailed description of proposed remediation technique
- Scaled sitemap with GPS coordinates showing delineation points
- Estimated volume of material to be remediated
- Closure criteria is to Table 1 specifications subject to 19.15.29.12(C)(4) NMAC
- Proposed schedule for remediation (note if remediation 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: 10-4-19

email: wade_dittrich@oxy.com Telephone: (575) 390-2828

OCD Only

Received by: _____ Date: _____

Approved Approved with Attached Conditions of Approval Denied Deferral Approved

Signature: _____ Date: _____

Oxy, Red Tank 30 31 34H

Leak date: 8/22/19
Lea County, NM
1RP-5713

Legend

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



Oxy, Red Tank 30 31 34H

Sample points

SP1, N 32.36958 W-103.60458

SP2, N 32.36971 W-103.60466

SP3, N 32.36981 W-103.60471

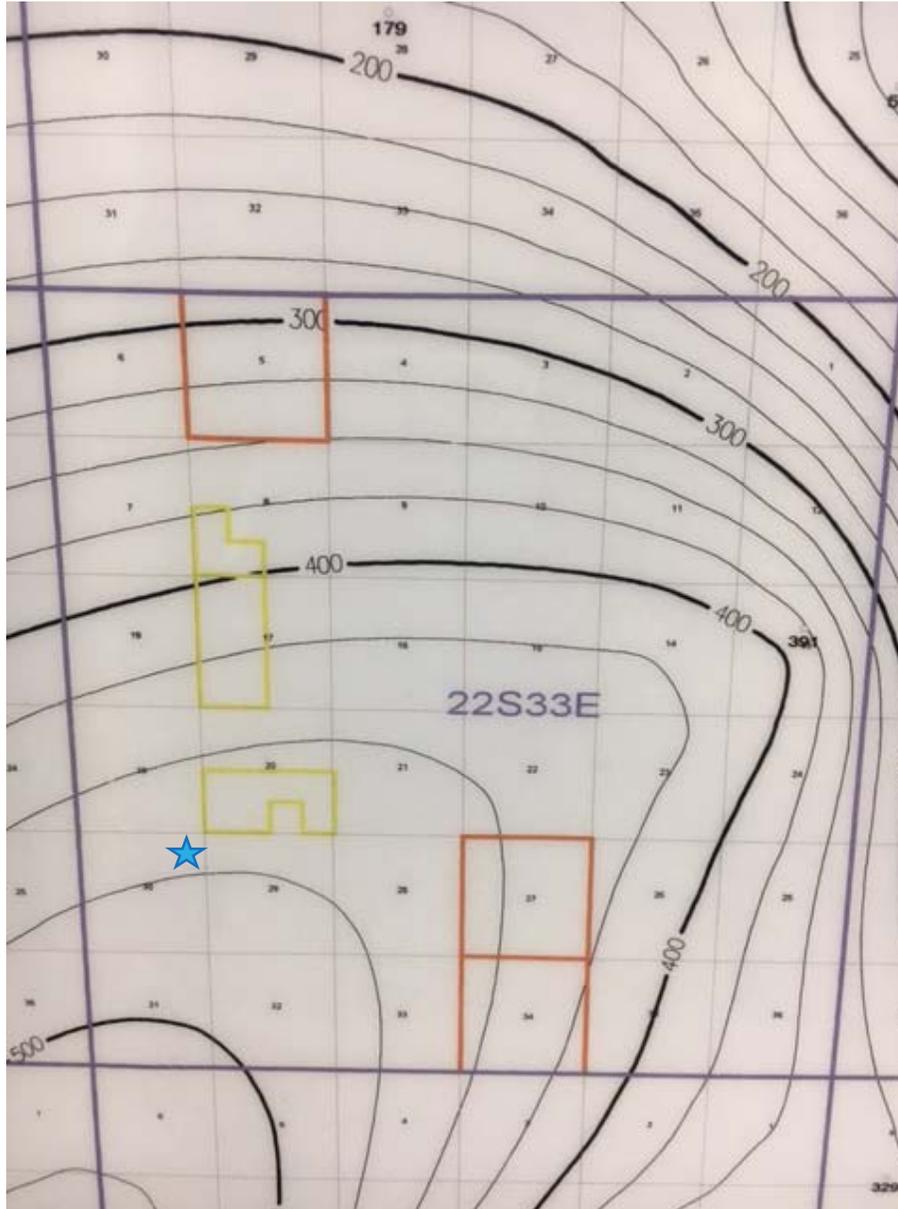
NORTH, N 32.36989 W-103.60471

SOUTH, N 32.36956 W-103.60459

EAST, N 32.36957 W-103.60453

WEST, N 32.36975 W-103.60475

Oxy, Red Tank 30 31 34H
U/L A, Section 30, T22S, R33E
Groundwater: 450'





USGS Home
 Contact USGS
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National Water Information System: Web Interface

[USGS Water Resources](#)

Data Category: Geographic Area:

Click to hide News Bulletins

- [Introducing The Next Generation of USGS Water Data for the Nation](#)
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Groundwater levels for New Mexico

Click to hide state-specific text

Search Results -- 1 sites found

Agency code = usgs
 site_no list =

- 322325103313301

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

USGS 322325103313301 22S.33E.13.23131

Lea County, New Mexico
 Latitude 32°23'38.6", Longitude 103°31'33.6" NAD83
 Land-surface elevation 3,519 feet above NAVD88
 The depth of the well is 508 feet below land surface.
 This well is completed in the Chinle Formation (231CHNL) 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 measurement
1968-06-10		D	387.08			2	S	U		
1970-12-04		D	385.19			2	S	U		
1972-09-21		D	388.35			2		U		
1976-12-16		D	388.60			2		U		
1981-03-10		D	389.83			2		U		
1986-04-10		D	383.14			2		U		
1991-05-03		D	390.28			2	P	U		
1996-02-20		D	391.13			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
Status	P	Site was being pumped.
Status	S	Nearby site that taps the same aquifer was being pumped.
Method of measurement	S	Steel-tape measurement.

Section	Code	Description
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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[U.S. Department of the Interior](#) |
 [U.S. Geological Survey](#)

Title: Groundwater for New Mexico: Water Levels

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

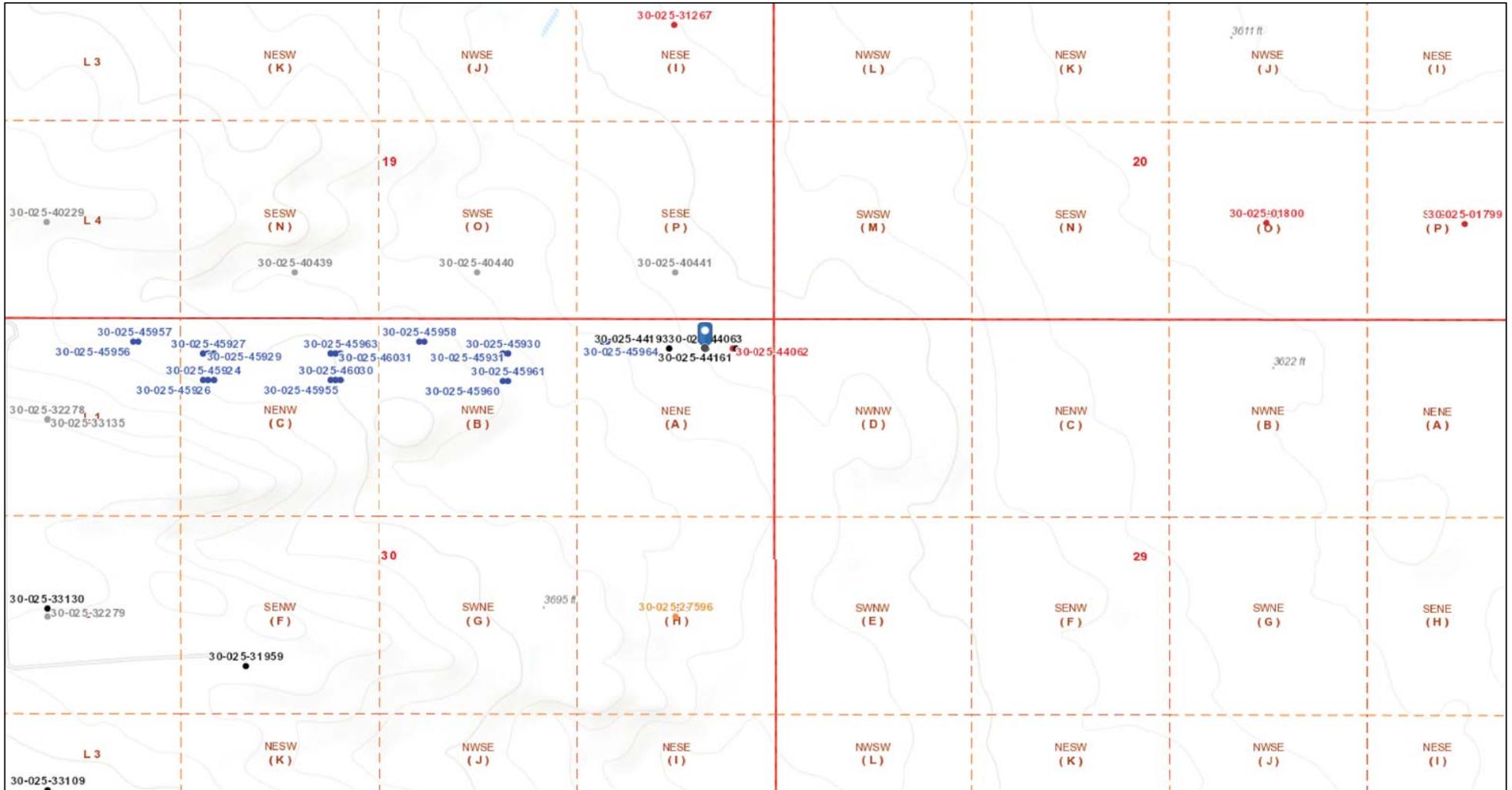
Page Contact Information: [New Mexico Water Data Maintainer](#)

Page Last Modified: 2019-09-09 17:10:39 EDT

0.45 0.43 nadww02

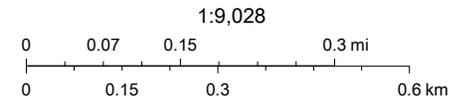


Red Tank 30 31 34H



9/9/2019 2:59:33 PM

- | | | | | | |
|------------------------------|------------------------------|-------------------------------|----------------------------------|-----------------------------------|--|
| Well Locations - Small Scale | Well Locations - Large Scale | Gas Active | Injection, Cancelled | Oil, New | Salt Water Injection, Plugged |
| ● Active | ● Miscellaneous | Gas, Cancelled, Never Drilled | Injection, New | ● Oil, Plugged | △ Salt Water Injection Temporarily Abandoned |
| ● New | ● CO2 Active | Gas, New | Injection, Plugged | ● Oil, Temporarily Abandoned | ● Water, Active |
| ● Plugged | ● CO2 Cancelled | Gas, Plugged | Injection, Temporarily Abandoned | △ Salt Water Injection, Active | ● Water, Cancelled |
| ● Cancelled | ● CO2 New | Gas, Temporarily Abandoned | ● Oil, Active | △ Salt Water Injection, Cancelled | ● Water, New |
| ● Temporarily Abandoned | ● CO2, Plugged | Injection, Active | ● Oil, Cancelled | △ Salt Water Injection, New | ● Water, Plugged |
| | ● CO2, Temporarily Abandoned | | | | |



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

Oxy, Red Tank 30 31 34H

Leak date: 8/22/19
Lea County, NM

BLM CAVE KARST MAP

Legend

-  Leak area
-  Low potential

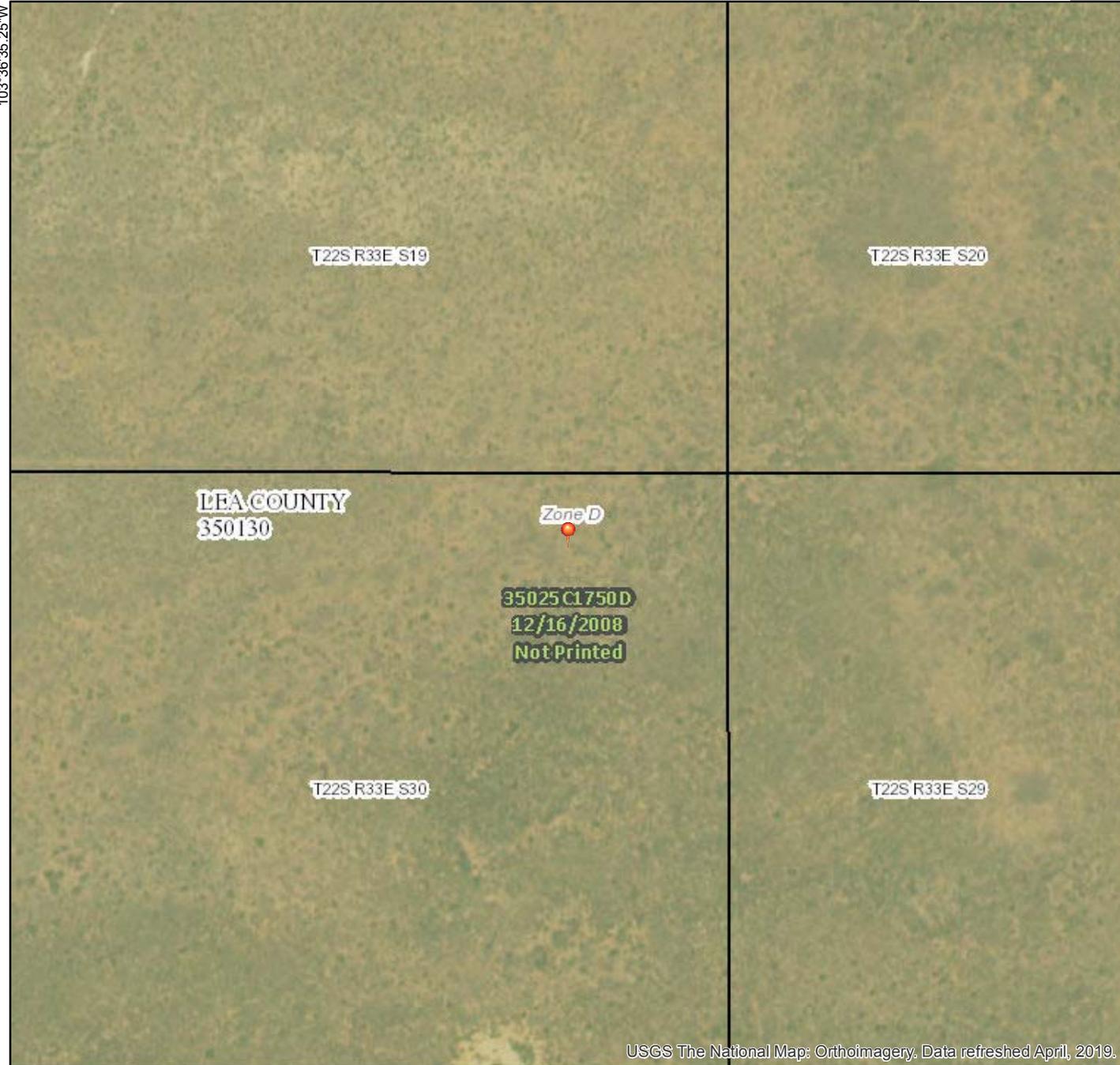


National Flood Hazard Layer FIRMette



32°22'25.54"N

103°36'35.25"W



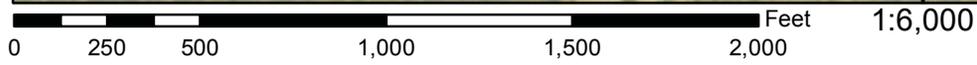
Legend

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 D
 - OTHER AREAS**
 - NO SCREEN Area of Minimal Flood Hazard Zone X
 - Effective LOMRs
 - Area of Undetermined Flood Hazard Zone D
 - GENERAL STRUCTURES**
 - Channel, Culvert, or Storm Sewer
 - Levee, Dike, or Floodwall
 - OTHER FEATURES**
 - Cross Sections with 1% Annual Chance Water Surface Elevation
 - Coastal Transect
 - Base Flood Elevation Line (BFE)
 - Limit of Study
 - Jurisdiction Boundary
 - Coastal Transect Baseline
 - Profile Baseline
 - Hydrographic Feature
 - 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.



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



32°21'55.15"N

103°35'57.80"W

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 9/9/2019 at 5:20:19 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.

Laboratory Analytical Results Summary
Red Tank 30 31 34H (8/22/19)

Analyte	Method	Sample ID	SP1 @	SP1 @ 1'	SP1 @ 2'	SP1 @ 3'
			SURFACE	SP1 @ 1'	SP1 @ 2'	SP1 @ 3'
		Date	9/19/19	9/19/19	9/19/19	9/19/19
			mg/kg	mg/kg	mg/kg	mg/kg
Benzene	BTEX 8021B		<0.050	<0.050	n/a	n/a
Toluene	BTEX 8021B		<0.050	<0.050	n/a	n/a
Ethylbenzene	BTEX 8021B		<0.050	<0.050	n/a	n/a
Total Xylenes	BTEX 8021B		<0.150	<0.150	n/a	n/a
Total BTEX	BTEX 8021B		<0.300	<0.300	n/a	n/a
Chloride	SM4500Cl-B		10000	480	48	32
GRO	TPH 8015M		<10.0	<10.0	n/a	n/a
DRO	TPH 8015M		7480	<10.0	n/a	n/a
EXT DRO	TPH 8015M		2380	<10.0	n/a	n/a

Analyte	Method	Sample ID	SP2 @	SP2 @ 1'	SP2 @ 2'	SP2 @ 3'
			SURFACE	SP2 @ 1'	SP2 @ 2'	SP2 @ 3'
		Date	9/19/19	9/19/19	9/19/19	9/19/19
			mg/kg	mg/kg	mg/kg	mg/kg
Benzene	BTEX 8021B		<0.050	<0.050	n/a	n/a
Toluene	BTEX 8021B		<0.050	<0.050	n/a	n/a
Ethylbenzene	BTEX 8021B		<0.050	<0.050	n/a	n/a
Total Xylenes	BTEX 8021B		<0.150	<0.150	n/a	n/a
Total BTEX	BTEX 8021B		<0.300	<0.300	n/a	n/a
Chloride	SM4500Cl-B		9440	672	48	<16.0
GRO	TPH 8015M		<10.0	<10.0	n/a	n/a
DRO	TPH 8015M		9780	<10.0	n/a	n/a
EXT DRO	TPH 8015M		2960	<10.0	n/a	n/a

Analyte	Method	Sample ID	SP3 @	SP3 @ 1'	SP3 @ 2'	SP3 @ 3'
			SURFACE	SP3 @ 1'	SP3 @ 2'	SP3 @ 3'
		Date	9/19/19	9/19/19	9/19/19	9/19/19
			mg/kg	mg/kg	mg/kg	mg/kg
Benzene	BTEX 8021B		<0.050	<0.050	n/a	n/a
Toluene	BTEX 8021B		<0.050	<0.050	n/a	n/a
Ethylbenzene	BTEX 8021B		<0.050	<0.050	n/a	n/a
Total Xylenes	BTEX 8021B		<0.150	<0.150	n/a	n/a
Total BTEX	BTEX 8021B		<0.300	<0.300	n/a	n/a
Chloride	SM4500Cl-B		8960	544	96	32
GRO	TPH 8015M		<10.0	<10.0	n/a	n/a
DRO	TPH 8015M		9130	<10.0	n/a	n/a
EXT DRO	TPH 8015M		2760	<10.0	n/a	n/a

Analyte	Method	Sample ID	NORTH @	EAST @	WEST @	SOUTH @
			SURFACE	SURFACE	SURFACE	SURFACE
		Date	9/19/19	9/19/19	9/19/19	9/19/19
			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		<16.0	<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

September 26, 2019

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

RE: RED TANK 30-31 34H

Enclosed are the results of analyses for samples received by the laboratory on 09/23/19 11:20.

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,

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: 09/23/2019
Reported: 09/26/2019
Project Name: RED TANK 30-31 34H
Project Number: 8/22/19
Project Location: OXY

Sampling Date: 09/19/2019
Sampling Type: Soil
Sampling Condition: Cool & Intact
Sample Received By: Tamara Oldaker

Sample ID: SP 1 @ SURFACE (H903259-01)

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	09/24/2019	ND	1.86	93.1	2.00	1.03		
Toluene*	<0.050	0.050	09/24/2019	ND	1.84	92.2	2.00	0.422		
Ethylbenzene*	<0.050	0.050	09/24/2019	ND	1.82	91.0	2.00	1.55		
Total Xylenes*	<0.150	0.150	09/24/2019	ND	5.46	91.1	6.00	1.46		
Total BTEX	<0.300	0.300	09/24/2019	ND						

Surrogate: 4-Bromofluorobenzene (PID) 81.1 % 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	10000	16.0	09/24/2019	ND	432	108	400	0.00		

TPH 8015M		mg/kg		Analyzed By: MS							S-04
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier		
GRO C6-C10*	<10.0	10.0	09/23/2019	ND	202	101	200	0.0144			
DRO >C10-C28*	7480	10.0	09/23/2019	ND	199	99.6	200	10.3			
EXT DRO >C28-C36	2380	10.0	09/23/2019	ND							

Surrogate: 1-Chlorooctane 85.9 % 41-142

Surrogate: 1-Chlorooctadecane 382 % 37.6-147

Cardinal Laboratories

* = Accredited Analyte

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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: 09/23/2019
 Reported: 09/26/2019
 Project Name: RED TANK 30-31 34H
 Project Number: 8/22/19
 Project Location: OXY

Sampling Date: 09/19/2019
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Tamara Oldaker

Sample ID: SP 1 @ 1' (H903259-02)

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	09/24/2019	ND	1.86	93.1	2.00	1.03		
Toluene*	<0.050	0.050	09/24/2019	ND	1.84	92.2	2.00	0.422		
Ethylbenzene*	<0.050	0.050	09/24/2019	ND	1.82	91.0	2.00	1.55		
Total Xylenes*	<0.150	0.150	09/24/2019	ND	5.46	91.1	6.00	1.46		
Total BTEX	<0.300	0.300	09/24/2019	ND						

Surrogate: 4-Bromofluorobenzene (PID) 83.4 % 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	480	16.0	09/24/2019	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	09/24/2019	ND	202	101	200	0.0144		
DRO >C10-C28*	<10.0	10.0	09/24/2019	ND	199	99.6	200	10.3		
EXT DRO >C28-C36	<10.0	10.0	09/24/2019	ND						

Surrogate: 1-Chlorooctane 92.8 % 41-142

Surrogate: 1-Chlorooctadecane 100 % 37.6-147

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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:	09/23/2019	Sampling Date:	09/19/2019
Reported:	09/26/2019	Sampling Type:	Soil
Project Name:	RED TANK 30-31 34H	Sampling Condition:	Cool & Intact
Project Number:	8/22/19	Sample Received By:	Tamara Oldaker
Project Location:	OXY		

Sample ID: SP 1 @ 2' (H903259-03)

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	09/24/2019	ND	432	108	400	0.00	

Sample ID: SP 1 @ 3' (H903259-04)

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	09/24/2019	ND	432	108	400	0.00	

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Analytical Results For:

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

Received:	09/23/2019	Sampling Date:	09/19/2019
Reported:	09/26/2019	Sampling Type:	Soil
Project Name:	RED TANK 30-31 34H	Sampling Condition:	Cool & Intact
Project Number:	8/22/19	Sample Received By:	Tamara Oldaker
Project Location:	OXY		

Sample ID: SP 2 @ SURFACE (H903259-05)

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	09/24/2019	ND	1.86	93.1	2.00	1.03		
Toluene*	<0.050	0.050	09/24/2019	ND	1.84	92.2	2.00	0.422		
Ethylbenzene*	<0.050	0.050	09/24/2019	ND	1.82	91.0	2.00	1.55		
Total Xylenes*	<0.150	0.150	09/24/2019	ND	5.46	91.1	6.00	1.46		
Total BTEX	<0.300	0.300	09/24/2019	ND						

Surrogate: 4-Bromofluorobenzene (PID) 79.1 % 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	9440	16.0	09/24/2019	ND	432	108	400	0.00		

TPH 8015M		mg/kg		Analyzed By: MS							S-04
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier		
GRO C6-C10*	<10.0	10.0	09/24/2019	ND	202	101	200	0.0144			
DRO >C10-C28*	9780	10.0	09/24/2019	ND	199	99.6	200	10.3			
EXT DRO >C28-C36	2960	10.0	09/24/2019	ND							

Surrogate: 1-Chlorooctane 91.4 % 41-142

Surrogate: 1-Chlorooctadecane 485 % 37.6-147

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Analytical Results For:

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

Received:	09/23/2019	Sampling Date:	09/19/2019
Reported:	09/26/2019	Sampling Type:	Soil
Project Name:	RED TANK 30-31 34H	Sampling Condition:	Cool & Intact
Project Number:	8/22/19	Sample Received By:	Tamara Oldaker
Project Location:	OXY		

Sample ID: SP 2 @ 1' (H903259-06)

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	09/24/2019	ND	1.86	93.1	2.00	1.03		
Toluene*	<0.050	0.050	09/24/2019	ND	1.84	92.2	2.00	0.422		
Ethylbenzene*	<0.050	0.050	09/24/2019	ND	1.82	91.0	2.00	1.55		
Total Xylenes*	<0.150	0.150	09/24/2019	ND	5.46	91.1	6.00	1.46		
Total BTEX	<0.300	0.300	09/24/2019	ND						

Surrogate: 4-Bromofluorobenzene (PID) 81.4 % 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	672	16.0	09/24/2019	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	09/24/2019	ND	202	101	200	0.0144		
DRO >C10-C28*	<10.0	10.0	09/24/2019	ND	199	99.6	200	10.3		
EXT DRO >C28-C36	<10.0	10.0	09/24/2019	ND						

Surrogate: 1-Chlorooctane 86.7 % 41-142

Surrogate: 1-Chlorooctadecane 94.4 % 37.6-147

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Analytical Results For:

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

Received:	09/23/2019	Sampling Date:	09/19/2019
Reported:	09/26/2019	Sampling Type:	Soil
Project Name:	RED TANK 30-31 34H	Sampling Condition:	Cool & Intact
Project Number:	8/22/19	Sample Received By:	Tamara Oldaker
Project Location:	OXY		

Sample ID: SP 2 @ 2' (H903259-07)

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	09/24/2019	ND	432	108	400	0.00	

Sample ID: SP 2 @ 3' (H903259-08)

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	09/24/2019	ND	432	108	400	0.00	

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Received: 09/23/2019
Reported: 09/26/2019
Project Name: RED TANK 30-31 34H
Project Number: 8/22/19
Project Location: OXY

Sampling Date: 09/19/2019
Sampling Type: Soil
Sampling Condition: Cool & Intact
Sample Received By: Tamara Oldaker

Sample ID: SP 3 @ SURFACE (H903259-09)

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	09/24/2019	ND	1.86	93.1	2.00	1.03		
Toluene*	<0.050	0.050	09/24/2019	ND	1.84	92.2	2.00	0.422		
Ethylbenzene*	<0.050	0.050	09/24/2019	ND	1.82	91.0	2.00	1.55		
Total Xylenes*	<0.150	0.150	09/24/2019	ND	5.46	91.1	6.00	1.46		
Total BTEX	<0.300	0.300	09/24/2019	ND						

Surrogate: 4-Bromofluorobenzene (PID) 78.8 % 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	8960	16.0	09/24/2019	ND	432	108	400	0.00		

TPH 8015M		mg/kg		Analyzed By: MS							S-04
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier		
GRO C6-C10*	<10.0	10.0	09/24/2019	ND	202	101	200	0.0144			
DRO >C10-C28*	9130	10.0	09/24/2019	ND	199	99.6	200	10.3			
EXT DRO >C28-C36	2760	10.0	09/24/2019	ND							

Surrogate: 1-Chlorooctane 87.1 % 41-142

Surrogate: 1-Chlorooctadecane 456 % 37.6-147

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Analytical Results For:

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

Received:	09/23/2019	Sampling Date:	09/19/2019
Reported:	09/26/2019	Sampling Type:	Soil
Project Name:	RED TANK 30-31 34H	Sampling Condition:	Cool & Intact
Project Number:	8/22/19	Sample Received By:	Tamara Oldaker
Project Location:	OXY		

Sample ID: SP 3 @ 1' (H903259-10)

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	09/24/2019	ND	1.86	93.1	2.00	1.03		
Toluene*	<0.050	0.050	09/24/2019	ND	1.84	92.2	2.00	0.422		
Ethylbenzene*	<0.050	0.050	09/24/2019	ND	1.82	91.0	2.00	1.55		
Total Xylenes*	<0.150	0.150	09/24/2019	ND	5.46	91.1	6.00	1.46		
Total BTEX	<0.300	0.300	09/24/2019	ND						

Surrogate: 4-Bromofluorobenzene (PID) 81.4 % 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	544	16.0	09/24/2019	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	09/24/2019	ND	202	101	200	0.0144		
DRO >C10-C28*	<10.0	10.0	09/24/2019	ND	199	99.6	200	10.3		
EXT DRO >C28-C36	<10.0	10.0	09/24/2019	ND						

Surrogate: 1-Chlorooctane 88.6 % 41-142

Surrogate: 1-Chlorooctadecane 97.0 % 37.6-147

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Analytical Results For:

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 Fax To: (575) 397-0397

Received:	09/23/2019	Sampling Date:	09/19/2019
Reported:	09/26/2019	Sampling Type:	Soil
Project Name:	RED TANK 30-31 34H	Sampling Condition:	Cool & Intact
Project Number:	8/22/19	Sample Received By:	Tamara Oldaker
Project Location:	OXY		

Sample ID: SP 3 @ 2' (H903259-11)

Chloride, SM4500Cl-B	mg/kg	Analyzed By: AC							
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	96.0	16.0	09/24/2019	ND	432	108	400	0.00	

Sample ID: SP 3 @ 3' (H903259-12)

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	09/24/2019	ND	432	108	400	0.00	

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Analytical Results For:

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Fax To: (575) 397-0397

Received:	09/23/2019	Sampling Date:	09/19/2019
Reported:	09/26/2019	Sampling Type:	Soil
Project Name:	RED TANK 30-31 34H	Sampling Condition:	Cool & Intact
Project Number:	8/22/19	Sample Received By:	Tamara Oldaker
Project Location:	OXY		

Sample ID: NORTH @ SURFACE (H903259-13)

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	09/24/2019	ND	1.86	93.1	2.00	1.03		
Toluene*	<0.050	0.050	09/24/2019	ND	1.84	92.2	2.00	0.422		
Ethylbenzene*	<0.050	0.050	09/24/2019	ND	1.82	91.0	2.00	1.55		
Total Xylenes*	<0.150	0.150	09/24/2019	ND	5.46	91.1	6.00	1.46		
Total BTEX	<0.300	0.300	09/24/2019	ND						

Surrogate: 4-Bromofluorobenzene (PID) 80.3 % 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	<16.0	16.0	09/24/2019	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	09/24/2019	ND	202	101	200	0.0144		
DRO >C10-C28*	<10.0	10.0	09/24/2019	ND	199	99.6	200	10.3		
EXT DRO >C28-C36	<10.0	10.0	09/24/2019	ND						

Surrogate: 1-Chlorooctane 88.5 % 41-142

Surrogate: 1-Chlorooctadecane 96.1 % 37.6-147

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Analytical Results For:

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 Fax To: (575) 397-0397

Received:	09/23/2019	Sampling Date:	09/19/2019
Reported:	09/26/2019	Sampling Type:	Soil
Project Name:	RED TANK 30-31 34H	Sampling Condition:	Cool & Intact
Project Number:	8/22/19	Sample Received By:	Tamara Oldaker
Project Location:	OXY		

Sample ID: EAST @ SURFACE (H903259-14)

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	09/24/2019	ND	1.86	93.1	2.00	1.03		
Toluene*	<0.050	0.050	09/24/2019	ND	1.84	92.2	2.00	0.422		
Ethylbenzene*	<0.050	0.050	09/24/2019	ND	1.82	91.0	2.00	1.55		
Total Xylenes*	<0.150	0.150	09/24/2019	ND	5.46	91.1	6.00	1.46		
Total BTEX	<0.300	0.300	09/24/2019	ND						

Surrogate: 4-Bromofluorobenzene (PID) 82.2 % 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	<16.0	16.0	09/24/2019	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	09/24/2019	ND	202	101	200	0.0144		
DRO >C10-C28*	<10.0	10.0	09/24/2019	ND	199	99.6	200	10.3		
EXT DRO >C28-C36	<10.0	10.0	09/24/2019	ND						

Surrogate: 1-Chlorooctane 80.6 % 41-142

Surrogate: 1-Chlorooctadecane 87.7 % 37.6-147

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

Received:	09/23/2019	Sampling Date:	09/19/2019
Reported:	09/26/2019	Sampling Type:	Soil
Project Name:	RED TANK 30-31 34H	Sampling Condition:	Cool & Intact
Project Number:	8/22/19	Sample Received By:	Tamara Oldaker
Project Location:	OXY		

Sample ID: WEST @ SURFACE (H903259-15)

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	09/24/2019	ND	1.86	93.1	2.00	1.03		
Toluene*	<0.050	0.050	09/24/2019	ND	1.84	92.2	2.00	0.422		
Ethylbenzene*	<0.050	0.050	09/24/2019	ND	1.82	91.0	2.00	1.55		
Total Xylenes*	<0.150	0.150	09/24/2019	ND	5.46	91.1	6.00	1.46		
Total BTEX	<0.300	0.300	09/24/2019	ND						

Surrogate: 4-Bromofluorobenzene (PID) 79.3 % 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	<16.0	16.0	09/24/2019	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	09/24/2019	ND	202	101	200	0.0144		
DRO >C10-C28*	<10.0	10.0	09/24/2019	ND	199	99.6	200	10.3		
EXT DRO >C28-C36	<10.0	10.0	09/24/2019	ND						

Surrogate: 1-Chlorooctane 91.3 % 41-142

Surrogate: 1-Chlorooctadecane 98.6 % 37.6-147

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* = Accredited Analyte

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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:	09/23/2019	Sampling Date:	09/19/2019
Reported:	09/26/2019	Sampling Type:	Soil
Project Name:	RED TANK 30-31 34H	Sampling Condition:	Cool & Intact
Project Number:	8/22/19	Sample Received By:	Tamara Oldaker
Project Location:	OXY		

Sample ID: SOUTH @ SURFACE (H903259-16)

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	09/24/2019	ND	1.86	93.1	2.00	1.03		
Toluene*	<0.050	0.050	09/24/2019	ND	1.84	92.2	2.00	0.422		
Ethylbenzene*	<0.050	0.050	09/24/2019	ND	1.82	91.0	2.00	1.55		
Total Xylenes*	<0.150	0.150	09/24/2019	ND	5.46	91.1	6.00	1.46		
Total BTEX	<0.300	0.300	09/24/2019	ND						

Surrogate: 4-Bromofluorobenzene (PID) 81.0 % 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	09/24/2019	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	09/24/2019	ND	202	101	200	0.0144		
DRO >C10-C28*	<10.0	10.0	09/24/2019	ND	199	99.6	200	10.3		
EXT DRO >C28-C36	<10.0	10.0	09/24/2019	ND						

Surrogate: 1-Chlorooctane 91.2 % 41-142

Surrogate: 1-Chlorooctadecane 97.8 % 37.6-147

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Celey D. Keene, Lab Director/Quality Manager



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Notes and Definitions

- S-04 The surrogate recovery for this sample is outside of established control limits due to a sample matrix effect.
- 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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*=Accredited Analyte

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Coley D. Keene

Coley D. Keene, Lab Director/Quality Manager



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: <i>Oxy</i>																											
City: Hobbs		State: NM		Zip: 88241		Attn: <i>W. Dettrich</i>																									
Phone #: 575-397-6388		Fax #: 575-397-0397		Address:																											
Project #:		Project Owner: <i>Oxy</i>		City:																											
Project Name: RED TANK 30-31 34H - 8-22-19				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		DATE	TIME	Chloride	TPH Ext	BTEX			
				GROUNDWATER	WASTEWATER	SOIL	OIL	SLUDGE	OTHER	ACID/BASE	ICE / COOL	OTHER																			
<i>4903259</i>		<i>G</i>	<i>1</i>			<input checked="" type="checkbox"/>				<input checked="" type="checkbox"/>			9-19-19	8:50	<i>✓</i>	<i>✓</i>	<i>✓</i>														
<i>1</i>	SP1 @ SURFACE												9-19-19	9:10	<i>✓</i>	<i>✓</i>	<i>✓</i>														
<i>2</i>	SP1 @ 1'												9-19-19	9:20	<i>✓</i>	<i>✓</i>	<i>✓</i>														
<i>3</i>	SP1 @ 2'												9-19-19	9:41	<i>✓</i>	<i>✓</i>	<i>✓</i>														
<i>4</i>	SP1 @ 3'												9-19-19	9:59	<i>✓</i>	<i>✓</i>	<i>✓</i>														
<i>5</i>	SP2 @ SURFACE												9-19-19	10:16	<i>✓</i>	<i>✓</i>	<i>✓</i>														
<i>6</i>	SP2 @ 1'												9-19-19	10:30	<i>✓</i>	<i>✓</i>	<i>✓</i>														
<i>7</i>	SP2 @ 2'												9-19-19	10:50	<i>✓</i>	<i>✓</i>	<i>✓</i>														
<i>8</i>	SP2 @ 3'												9-19-19	11:11	<i>✓</i>	<i>✓</i>	<i>✓</i>														
<i>9</i>	SP3 @ SURFACE												9-19-19	11:33	<i>✓</i>	<i>✓</i>	<i>✓</i>														
<i>10</i>	SP3 @ 1'												9-19-19	11:33	<i>✓</i>	<i>✓</i>	<i>✓</i>														

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Relinquished By: <i>[Signature]</i>	Date: <i>9-23-19</i>	Received By: <i>Israel Per...</i>	Phone Result: <input type="checkbox"/> Yes <input type="checkbox"/> No	Add'l Phone #:
Relinquished By: <i>[Signature]</i>	Date: <i>9-23-19</i>	Received By: <i>Jamora...</i>	Fax Result: <input type="checkbox"/> Yes <input type="checkbox"/> No	Add'l Fax #:
Delivered By: (Circle One) <i>-4.0c</i>	Time: <i>11:20</i>	Sample Condition	REMARKS:	
Sampler - UPS - Bus - Other: <i>Corrected -4.4c</i>	Time: <i>#97</i>	Cool Intact <input type="checkbox"/> Yes <input type="checkbox"/> No		
		Checked BY: <i>TO</i>		

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

