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## DELINEATION/REMEDIATION WORKPLAN

### OXY – SAND DUNES S. CORRIDOR CTB (Leak Date: 3/9/20)

#### Incident Reference #: NRM2012536459

This delineation workplan and remediation proposal addresses the releases associated with Incident Reference #: NRM2012536459.

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).
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 leak area near SP1 and SP3 (orange shade on diagram) will be excavated to a depth of 1 foot. The leak area near SP2, SP4, and SP5 (light blue shade on diagram) will require zero remediation.***

***OXY will collect sidewall and confirmation samples every 400 square feet. The estimated amount of soil to be excavated is 30 cubic yards. The remediation will be completed within 90 days of approval.***

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	NRM2012536459
District RP	
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?	74 (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 <b>not</b> on an exploration, development, production, or storage site?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No

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

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

- Scaled site map showing impacted area, surface features, subsurface features, delineation points, and monitoring wells.
- Field data
- Data table of soil contaminant concentration data
- Depth to water determination
- Determination of water sources and significant watercourses within 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.

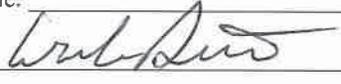
Form C-141

State of New Mexico  
Oil Conservation Division

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Incident ID	NRM2012536459
District RP	
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: 8-31-2020  
 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	NRM2012536459
District RP	
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: 8-31-2020  
 email: wade\_dittrich@oxy.com Telephone: (575) 390-2828

**OCD Only**

Received by: \_\_\_\_\_ Date: \_\_\_\_\_

Approved       Approved with Attached Conditions of Approval       Denied       Deferral Approved

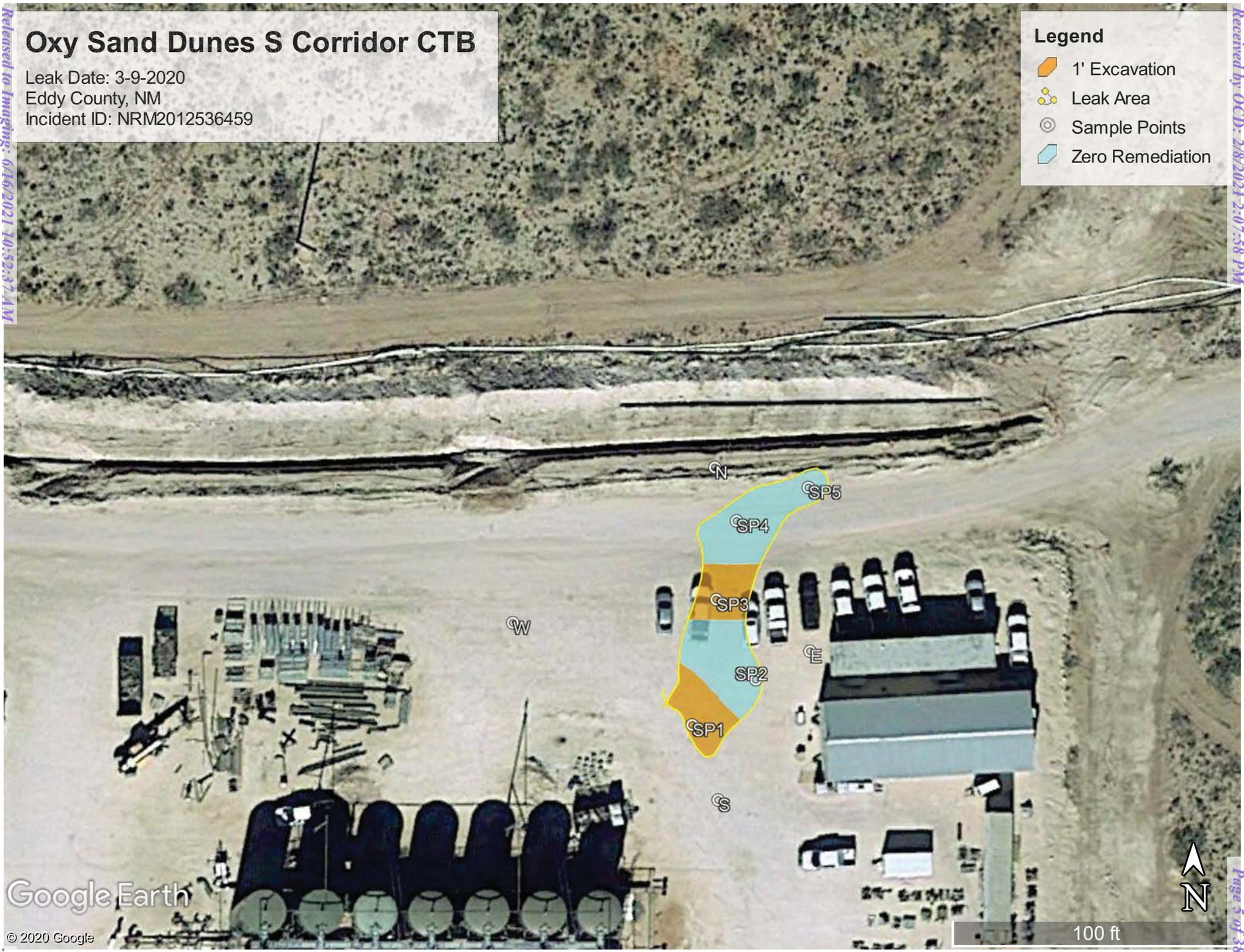
Signature: \_\_\_\_\_ Date: \_\_\_\_\_

# Oxy Sand Dunes S Corridor CTB

Leak Date: 3-9-2020  
Eddy County, NM  
Incident ID: NRM2012536459

**Legend**

-  1' Excavation
-  Leak Area
-  Sample Points
-  Zero Remediation



Google Earth

© 2020 Google

100 ft

Oxy Sand Dunes S Corridor CTB (3-9-20)

Sample Points:

SP1 32.22390 W -103.81283

SP2 32.22394 W -103.81276

SP3 32.22402 W -103.81280

SP4 32.22409 W -103.81278

SP5 32.22413 W -103.81270

North 32.22414 W -103.81274

East 32.22397 W -103.81275

West 32.22399 W -103.81285

South 32.22386 W -103.81280



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

- **Notice** - The USGS Water Resources Mission Area's priority is to maintain the safety and well-being of our communities, including providing critical situational awareness in times of flooding in all 50 U.S. states and additional territories. Our hydrologic monitoring stations continue to send data in near real-time to NWISWeb, and we are continuing critical water monitoring activities to protect life and property on a case-by-case basis. The health and safety of the public and our employees are our highest priorities, and we continue to follow guidance from the White House, the CDC, and state and local authorities.
- [Introducing The Next Generation of USGS Water Data for the Nation](#)
- [Full News](#)

Groundwater levels for New Mexico

Click to hide state-specific text

**Search Results -- 1 sites found**

Agency code = usgs  
 site\_no list = 

- 321310103482101

Minimum number of levels = 1

[Save file of selected sites](#) to local disk for future upload

**USGS 321310103482101 24S.31E.17.13120**

Eddy County, New Mexico

Latitude 32°13'14.1", Longitude 103°48'23.4" NAD83

Land-surface elevation 3,530.00 feet above NGVD29

This well is completed in the Alluvium, Bolson Deposits and Other Surface Deposits (110AVMB) local aquifer.

**Output formats**

<a href="#">Table of data</a>
<a href="#">Tab-separated data</a>
<a href="#">Graph of data</a>
<a href="#">Reselect period</a>

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
1959-02-03		D	70.50			2	P	U		
1959-03-25		D	67.67			2		U		
1976-12-02		D	66.02			2		U		
2013-01-17	14:00 MST	m	74.44			2		S	USGS	

Explanation

Section	Code	Description
Water-level date-time accuracy	D	Date is accurate to the Day
Water-level date-time accuracy	m	Date is accurate to the Minute
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.
Method of measurement	S	Steel-tape measurement.
Method of measurement	U	Unknown method.

Section	Code	Description
Measuring agency		Not determined
Measuring agency	USGS	U.S. Geological Survey
Source of measurement	R	Reported by person other than the owner, driller, or another government agency.
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. 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](#)

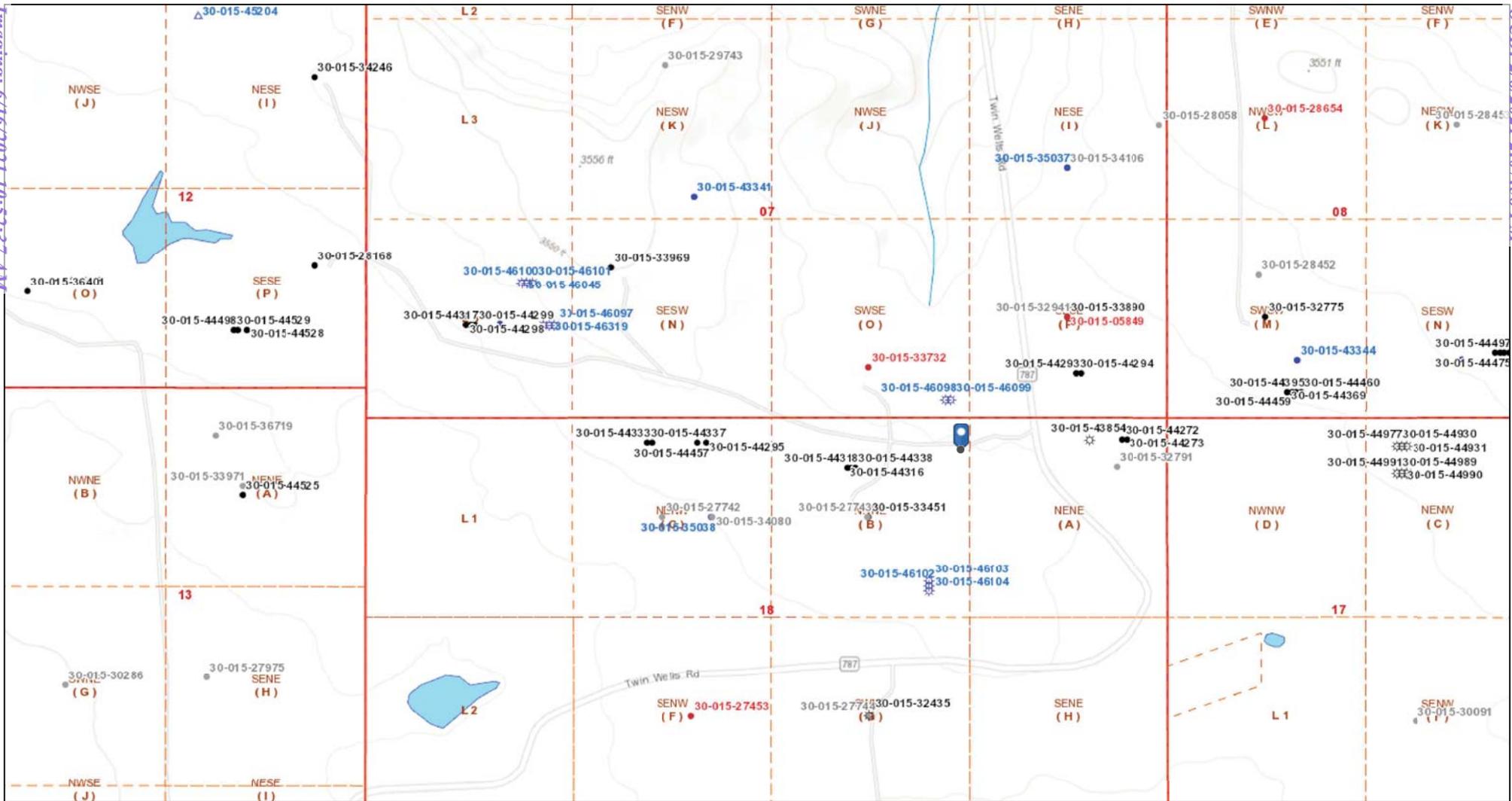
Page Last Modified: 2020-04-07 16:58:31 EDT

0.34 0.26 nadww01

# Oxy Sand Dunes South Corridor CTB (3-9-20) 975ft to h2o

Released to Imaging: 6/16/2021 10:52:37 AM

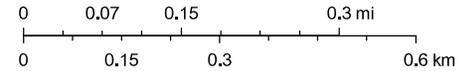
Received by OCD: 2/8/2021 2:07:58 PM



4/7/2020 2:49:35 PM

- |                     |                            |                                  |                                 |   |
|---------------------|----------------------------|----------------------------------|---------------------------------|---|
| Wells - Large Scale | CO2, Temporarily Abandoned | Injection, Active                | Oil, Cancelled                  | Salt Water Injection, New                   |
| ? undefined         | Gas, Active                | Injection, Cancelled             | Oil, New                        | Salt Water Injection, Plugged               |
| ● Miscellaneous     | Gas, Cancelled             | Injection, New                   | Oil, Plugged                    | Salt Water Injection, Temporarily Abandoned |
| ✱ CO2, Active       | Gas, New                   | Injection, Plugged               | Oil, Temporarily Abandoned      | Water, Active                               |
| ✱ CO2, Cancelled    | Gas, Plugged               | Injection, Temporarily Abandoned | Salt Water Injection, Active    | Water, Cancelled                            |
| ✱ CO2, New          | Gas, Temporarily Abandoned | ● Oil, Active                    | Salt Water Injection, Cancelled | Water, New                                  |
| ✱ CO2, Plugged      |                            |                                  |                                 |   |

1:9,028



Oil Conservation Division of the New Mexico Energy, Minerals and Natural Resources Department., Sources: Esri, HERE, Garmin, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI,

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# Oxy, Sand Dunes S. Corridor CTB

Leak Date: 3-9-20  
Leak County: NM  
Leak Incident ID: NRM2012536459

# BLM CAVE KARST MAP

**Legend**

-  Leak Area

Released to Imaging: 6/16/2021 10:52:37 AM

Received by OCD: 2/8/2021 2:07:58 PM

Twin Wells Rd



# National Flood Hazard Layer FIRMette



32°13'41.65"N

Retrieved by: 6/16/2021 10:52:37 AM



## Legend

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

- |   |   |
|---|---|
| <p><b>SPECIAL FLOOD HAZARD AREAS</b></p>  | <ul style="list-style-type: none"> <li><span style="display: inline-block; width: 15px; height: 15px; background-color: #ADD8E6; border: 1px solid black; margin-right: 5px;"></span> Without Base Flood Elevation (BFE)<br/><i>Zone A, V, A99</i></li> <li><span style="display: inline-block; width: 15px; height: 15px; background: repeating-linear-gradient(45deg, transparent, transparent 2px, #FF0000 2px, #FF0000 4px); border: 1px solid black; margin-right: 5px;"></span> With BFE or Depth <i>Zone AE, AO, AH, VE, AR</i></li> <li><span style="display: inline-block; width: 15px; height: 15px; background: repeating-linear-gradient(-45deg, transparent, transparent 2px, #FF0000 2px, #FF0000 4px); border: 1px solid black; margin-right: 5px;"></span> Regulatory Floodway</li> </ul>   |
| <p><b>OTHER AREAS OF FLOOD HAZARD</b></p> | <ul style="list-style-type: none"> <li><span style="display: inline-block; width: 15px; height: 15px; background-color: #FFA500; border: 1px solid black; margin-right: 5px;"></span> 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 <i>Zone X</i></li> <li><span style="display: inline-block; width: 15px; height: 15px; background: repeating-linear-gradient(45deg, #808080, #808080 2px, #FFFFFF 2px, #FFFFFF 4px); border: 1px solid black; margin-right: 5px;"></span> Future Conditions 1% Annual Chance Flood Hazard <i>Zone X</i></li> <li><span style="display: inline-block; width: 15px; height: 15px; background: repeating-linear-gradient(45deg, #FFD700, #FFD700 2px, #FFFFFF 2px, #FFFFFF 4px); border: 1px solid black; margin-right: 5px;"></span> Area with Reduced Flood Risk due to Levee. See Notes. <i>Zone X</i></li> <li><span style="display: inline-block; width: 15px; height: 15px; background: repeating-linear-gradient(-45deg, #FFD700, #FFD700 2px, #FFFFFF 2px, #FFFFFF 4px); border: 1px solid black; margin-right: 5px;"></span> Area with Flood Risk due to Levee <i>Zone X</i></li> </ul> |
| <p><b>OTHER AREAS</b></p>                 | <ul style="list-style-type: none"> <li><span style="display: inline-block; width: 15px; height: 15px; border: 1px solid black; margin-right: 5px;"></span> NO SCREEN Area of Minimal Flood Hazard <i>Zone X</i></li> <li><span style="display: inline-block; width: 15px; height: 15px; border: 2px solid #000080; margin-right: 5px;"></span> Effective LOMRs</li> <li><span style="display: inline-block; width: 15px; height: 15px; background-color: #FFDAB9; border: 1px solid black; margin-right: 5px;"></span> Area of Undetermined Flood Hazard <i>Zone D</i></li> </ul>   |
| <p><b>GENERAL STRUCTURES</b></p>          | <ul style="list-style-type: none"> <li><span style="display: inline-block; width: 15px; border-bottom: 2px dashed black; margin-right: 5px;"></span> Channel, Culvert, or Storm Sewer</li> <li><span style="display: inline-block; width: 15px; border-bottom: 2px dashed gray; margin-right: 5px;"></span> Levee, Dike, or Floodwall</li> </ul>  |
| <p><b>OTHER FEATURES</b></p>              | <ul style="list-style-type: none"> <li><span style="display: inline-block; width: 15px; border-left: 2px solid black; margin-right: 5px;"></span> Cross Sections with 1% Annual Chance Water Surface Elevation</li> <li><span style="display: inline-block; width: 15px; border-left: 2px dashed black; margin-right: 5px;"></span> Coastal Transect</li> <li><span style="display: inline-block; width: 15px; border-bottom: 2px dashed black; margin-right: 5px;"></span> Base Flood Elevation Line (BFE)</li> <li><span style="display: inline-block; width: 15px; border-bottom: 2px solid red; margin-right: 5px;"></span> Limit of Study</li> <li><span style="display: inline-block; width: 15px; border-bottom: 2px solid yellow; margin-right: 5px;"></span> Jurisdiction Boundary</li> <li><span style="display: inline-block; width: 15px; border-bottom: 2px dashed black; margin-right: 5px;"></span> Coastal Transect Baseline</li> <li><span style="display: inline-block; width: 15px; border-bottom: 2px solid blue; margin-right: 5px;"></span> Profile Baseline</li> <li><span style="display: inline-block; width: 15px; border-bottom: 2px solid blue; margin-right: 5px;"></span> Hydrographic Feature</li> </ul>       |
| <p><b>MAP PANELS</b></p>                  | <ul style="list-style-type: none"> <li><span style="display: inline-block; width: 15px; height: 15px; border: 1px solid green; margin-right: 5px;"></span> Digital Data Available</li> <li><span style="display: inline-block; width: 15px; height: 15px; border: 1px dashed green; margin-right: 5px;"></span> No Digital Data Available</li> <li><span style="display: inline-block; width: 15px; height: 15px; border: 1px solid gray; margin-right: 5px;"></span> Unmapped</li> </ul>   |

Retrieved by: 2/8/2021 2:07:58 PM



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

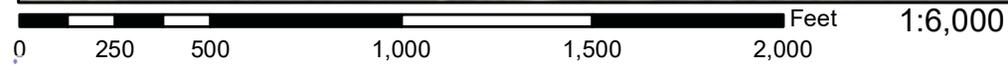
This map complies with FEMA's standards for the use of digital flood maps if it is not void as described below. The basemap shown complies with FEMA's basemap accuracy standards

The flood hazard information is derived directly from the authoritative NFHL web services provided by FEMA. This map was exported on 4/7/2020 at 5:04:13 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.

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



32°13'11.22"N

103°48'27.32"W

Laboratory Analytical Results Summary  
 Oxy, Sand Dunes S Corridor (3-9-2020)

		Sample ID	North @ Surface	East @ Surface	West @ Surface	South @ Surface
<b>Analyte</b>	<b>Method</b>	<b>Date</b>	10/23/20	10/23/20	10/23/20	10/23/20
			mg/kg	mg/kg	mg/kg	mg/kg
<b>Benzene</b>	BTEX 8021B		<0.050	<0.050	<0.050	<0.050
<b>Toluene</b>	BTEX 8021B		<0.050	<0.050	<0.050	<0.050
<b>Ethylbenzene</b>	BTEX 8021B		<0.050	<0.050	<0.050	<0.050
<b>Total Xylenes</b>	BTEX 8021B		<0.150	<0.150	<0.150	<0.150
<b>Total BTEX</b>	BTEX 8021B		<0.300	<0.300	<0.300	<0.300
<b>Chloride</b>	SM4500Cl-B		<b>128</b>	<b>128</b>	<b>176</b>	<b>128</b>
<b>GRO</b>	TPH 8015M		<10.0	<10.0	<10.0	<10.0
<b>DRO</b>	TPH 8015M		<10.0	<10.0	<10.0	<10.0
<b>EXT DRO</b>	TPH 8015M		<10.0	<10.0	<10.0	<10.0

		Sample ID	SP1 @ Surface	SP1 @ 1'	SP1 @ 2'
<b>Analyte</b>	<b>Method</b>	<b>Date</b>	10/23/20	10/23/20	10/23/20
			mg/kg	mg/kg	mg/kg
<b>Benzene</b>	BTEX 8021B		<0.050	<0.050	n/a
<b>Toluene</b>	BTEX 8021B		<0.050	<0.050	n/a
<b>Ethylbenzene</b>	BTEX 8021B		<0.050	<0.050	n/a
<b>Total Xylenes</b>	BTEX 8021B		<0.150	<0.150	n/a
<b>Total BTEX</b>	BTEX 8021B		<0.300	<0.300	n/a
<b>Chloride</b>	SM4500Cl-B		<b>3760</b>	<b>144</b>	<b>80.0</b>
<b>GRO</b>	TPH 8015M		<10.0	<10.0	n/a
<b>DRO</b>	TPH 8015M		<b>24.8</b>	<10.0	n/a
<b>EXT DRO</b>	TPH 8015M		<10.0	<10.0	n/a

		Sample ID	SP2 @ Surface	SP2 @ 1'	SP2 @ 2'
<b>Analyte</b>	<b>Method</b>	<b>Date</b>	10/23/20	10/23/20	10/23/20
			mg/kg	mg/kg	mg/kg
<b>Benzene</b>	BTEX 8021B		<0.050	<0.050	n/a
<b>Toluene</b>	BTEX 8021B		<0.050	<0.050	n/a
<b>Ethylbenzene</b>	BTEX 8021B		<0.050	<0.050	n/a
<b>Total Xylenes</b>	BTEX 8021B		<0.150	<0.150	n/a
<b>Total BTEX</b>	BTEX 8021B		<0.300	<0.300	n/a
<b>Chloride</b>	SM4500Cl-B		<b>272</b>	<b>160</b>	<b>32.0</b>
<b>GRO</b>	TPH 8015M		<10.0	<10.0	n/a
<b>DRO</b>	TPH 8015M		<b>13.1</b>	<10.0	n/a
<b>EXT DRO</b>	TPH 8015M		<10.0	<10.0	n/a

		Sample ID	SP3 @ Surface	SP3 @ 1'	SP3 @ 2'
<b>Analyte</b>	<b>Method</b>	<b>Date</b>	10/23/20	10/23/20	10/23/20
			mg/kg	mg/kg	mg/kg
<b>Benzene</b>	BTEX 8021B		<0.050	<0.050	n/a
<b>Toluene</b>	BTEX 8021B		<0.050	<0.050	n/a
<b>Ethylbenzene</b>	BTEX 8021B		<0.050	<0.050	n/a
<b>Total Xylenes</b>	BTEX 8021B		<0.150	<0.150	n/a
<b>Total BTEX</b>	BTEX 8021B		<0.300	<0.300	n/a
<b>Chloride</b>	SM4500Cl-B		<b>4560</b>	<b>272</b>	<b>96.0</b>
<b>GRO</b>	TPH 8015M		<10.0	<10.0	n/a
<b>DRO</b>	TPH 8015M		<b>90.8</b>	<10.0	n/a
<b>EXT DRO</b>	TPH 8015M		<b>16.3</b>	<10.0	n/a

Laboratory Analytical Results Summary  
 Oxy, Sand Dunes S Corridor (3-9-2020)

Analyte	Method	Sample ID Date	SP4 @ Surface	SP4 @ 1'	SP4 @ 2'
			10/23/20 mg/kg	10/23/20 mg/kg	10/23/20 mg/kg
Benzene	BTEX 8021B		<0.050	<0.050	n/a
Toluene	BTEX 8021B		<0.050	<0.050	n/a
Ethylbenzene	BTEX 8021B		<0.050	<0.050	n/a
Total Xylenes	BTEX 8021B		<0.150	<0.150	n/a
Total BTEX	BTEX 8021B		<0.300	<0.300	n/a
Chloride	SM4500Cl-B		80.0	96.0	80.0
GRO	TPH 8015M		<10.0	<10.0	n/a
DRO	TPH 8015M		<10.0	<10.0	n/a
EXT DRO	TPH 8015M		<10.0	<10.0	n/a

Analyte	Method	Sample ID Date	SP5 @ Surface	SP5 @ 1'	SP5 @ 2'
			10/23/20 mg/kg	10/23/20 mg/kg	10/23/20 mg/kg
Benzene	BTEX 8021B		<0.050	<0.050	n/a
Toluene	BTEX 8021B		<0.050	<0.050	n/a
Ethylbenzene	BTEX 8021B		<0.050	<0.050	n/a
Total Xylenes	BTEX 8021B		<0.150	<0.150	n/a
Total BTEX	BTEX 8021B		<0.300	<0.300	n/a
Chloride	SM4500Cl-B		112	48.0	96.0
GRO	TPH 8015M		<10.0	<10.0	n/a
DRO	TPH 8015M		16.5	<10.0	n/a
EXT DRO	TPH 8015M		<10.0	<10.0	n/a



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

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November 03, 2020

Cliff Brunson

BBC International, Inc.

P.O. Box 805

Hobbs, NM 88241

RE: SAND DUNES S CORRIDOR

Enclosed are the results of analyses for samples received by the laboratory on 10/27/20 16:40.

Cardinal Laboratories is accredited through Texas NELAP under certificate number T104704398-20-13. Accreditation applies to drinking water, non-potable water and solid and chemical materials. All accredited analytes are denoted by an asterisk (\*). For a complete list of accredited analytes and matrices visit the TCEQ website at [www.tceq.texas.gov/field/qa/lab\\_accred\\_certif.html](http://www.tceq.texas.gov/field/qa/lab_accred_certif.html).

Cardinal Laboratories is accredited through the State of Colorado Department of Public Health and Environment for:

Method EPA 552.2	Haloacetic Acids (HAA-5)
Method EPA 524.2	Total Trihalomethanes (TTHM)
Method EPA 524.4	Regulated VOCs (V1, V2, V3)

Accreditation applies to public drinking water matrices.

This report meets NELAP requirements and is made up of a cover page, analytical results, and a copy of the original chain-of-custody. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

A handwritten signature in black ink that reads "Celey D. Keene".

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:	10/27/2020	Sampling Date:	10/23/2020
Reported:	11/03/2020	Sampling Type:	Soil
Project Name:	SAND DUNES S CORRIDOR	Sampling Condition:	Cool & Intact
Project Number:	( 3 - 9 - 20 )	Sample Received By:	Jodi Henson
Project Location:	OXY- EDDY CO NM		

**Sample ID: N @ SURFACE (H002856-01)**

BTEX 8021B		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	10/28/2020	ND	2.10	105	2.00	6.38	
Toluene*	<0.050	0.050	10/28/2020	ND	2.04	102	2.00	6.40	
Ethylbenzene*	<0.050	0.050	10/28/2020	ND	1.97	98.4	2.00	7.36	
Total Xylenes*	<0.150	0.150	10/28/2020	ND	5.62	93.6	6.00	7.37	
Total BTEX	<0.300	0.300	10/28/2020	ND					

Surrogate: 4-Bromofluorobenzene (PID) 97.8 % 73.3-129

Chloride, SM4500Cl-B		mg/kg		Analyzed By: GM					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	<b>128</b>	16.0	10/28/2020	ND	400	100	400	3.92	

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	10/28/2020	ND	224	112	200	3.54	
DRO >C10-C28*	<10.0	10.0	10/28/2020	ND	213	106	200	2.77	
EXT DRO >C28-C36	<10.0	10.0	10/28/2020	ND					

Surrogate: 1-Chlorooctane 93.4 % 44.3-144

Surrogate: 1-Chlorooctadecane 86.4 % 42.2-156

Cardinal Laboratories

\* = Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager



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**Analytical Results For:**

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

Received:	10/27/2020	Sampling Date:	10/23/2020
Reported:	11/03/2020	Sampling Type:	Soil
Project Name:	SAND DUNES S CORRIDOR	Sampling Condition:	Cool & Intact
Project Number:	( 3 - 9 - 20 )	Sample Received By:	Jodi Henson
Project Location:	OXY- EDDY CO NM		

**Sample ID: E @ SURFACE (H002856-02)**

BTEX 8021B		mg/kg		Analyzed By: MS						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	10/28/2020	ND	2.10	105	2.00	6.38		
Toluene*	<0.050	0.050	10/28/2020	ND	2.04	102	2.00	6.40		
Ethylbenzene*	<0.050	0.050	10/28/2020	ND	1.97	98.4	2.00	7.36		
Total Xylenes*	<0.150	0.150	10/28/2020	ND	5.62	93.6	6.00	7.37		
Total BTEX	<0.300	0.300	10/28/2020	ND						

Surrogate: 4-Bromofluorobenzene (PID) 97.5 % 73.3-129

Chloride, SM4500Cl-B		mg/kg		Analyzed By: GM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	128	16.0	10/28/2020	ND	464	116	400	3.51		

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	10/28/2020	ND	224	112	200	3.54		
DRO >C10-C28*	<10.0	10.0	10/28/2020	ND	213	106	200	2.77		
EXT DRO >C28-C36	<10.0	10.0	10/28/2020	ND						

Surrogate: 1-Chlorooctane 89.0 % 44.3-144

Surrogate: 1-Chlorooctadecane 83.7 % 42.2-156

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\* = Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager



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**Analytical Results For:**

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

Received:	10/27/2020	Sampling Date:	10/23/2020
Reported:	11/03/2020	Sampling Type:	Soil
Project Name:	SAND DUNES S CORRIDOR	Sampling Condition:	Cool & Intact
Project Number:	( 3 - 9 - 20 )	Sample Received By:	Jodi Henson
Project Location:	OXY- EDDY CO NM		

**Sample ID: W @ SURFACE (H002856-03)**

BTEX 8021B		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	10/28/2020	ND	2.10	105	2.00	6.38	
Toluene*	<0.050	0.050	10/28/2020	ND	2.04	102	2.00	6.40	
Ethylbenzene*	<0.050	0.050	10/28/2020	ND	1.97	98.4	2.00	7.36	
Total Xylenes*	<0.150	0.150	10/28/2020	ND	5.62	93.6	6.00	7.37	
Total BTEX	<0.300	0.300	10/28/2020	ND					

Surrogate: 4-Bromofluorobenzene (PID) 99.1 % 73.3-129

Chloride, SM4500CI-B		mg/kg		Analyzed By: GM					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	176	16.0	10/28/2020	ND	464	116	400	3.51	

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	10/28/2020	ND	224	112	200	3.54	
DRO >C10-C28*	<10.0	10.0	10/28/2020	ND	213	106	200	2.77	
EXT DRO >C28-C36	<10.0	10.0	10/28/2020	ND					

Surrogate: 1-Chlorooctane 83.9 % 44.3-144

Surrogate: 1-Chlorooctadecane 78.6 % 42.2-156

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Celey D. Keene, Lab Director/Quality Manager



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**Analytical Results For:**

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

Received:	10/27/2020	Sampling Date:	10/23/2020
Reported:	11/03/2020	Sampling Type:	Soil
Project Name:	SAND DUNES S CORRIDOR	Sampling Condition:	Cool & Intact
Project Number:	( 3 - 9 - 20 )	Sample Received By:	Jodi Henson
Project Location:	OXY- EDDY CO NM		

**Sample ID: S @ SURFACE (H002856-04)**

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	10/28/2020	ND	2.10	105	2.00	6.38		
Toluene*	<0.050	0.050	10/28/2020	ND	2.04	102	2.00	6.40		
Ethylbenzene*	<0.050	0.050	10/28/2020	ND	1.97	98.4	2.00	7.36		
Total Xylenes*	<0.150	0.150	10/28/2020	ND	5.62	93.6	6.00	7.37		
Total BTEX	<0.300	0.300	10/28/2020	ND						

Surrogate: 4-Bromofluorobenzene (PID) 97.7 % 73.3-129

Chloride, SM4500Cl-B		mg/kg		Analyzed By: GM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	128	16.0	10/28/2020	ND	464	116	400	3.51		

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	10/28/2020	ND	224	112	200	3.54		
DRO >C10-C28*	<10.0	10.0	10/28/2020	ND	213	106	200	2.77		
EXT DRO >C28-C36	<10.0	10.0	10/28/2020	ND						

Surrogate: 1-Chlorooctane 87.1 % 44.3-144

Surrogate: 1-Chlorooctadecane 81.5 % 42.2-156

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Celey D. Keene, Lab Director/Quality Manager



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**Analytical Results For:**

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

Received:	10/27/2020	Sampling Date:	10/23/2020
Reported:	11/03/2020	Sampling Type:	Soil
Project Name:	SAND DUNES S CORRIDOR	Sampling Condition:	Cool & Intact
Project Number:	( 3 - 9 - 20 )	Sample Received By:	Jodi Henson
Project Location:	OXY- EDDY CO NM		

**Sample ID: SP 1 @ SURFACE (H002856-05)**

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	10/28/2020	ND	2.10	105	2.00	6.38	
Toluene*	<0.050	0.050	10/28/2020	ND	2.04	102	2.00	6.40	
Ethylbenzene*	<0.050	0.050	10/28/2020	ND	1.97	98.4	2.00	7.36	
Total Xylenes*	<0.150	0.150	10/28/2020	ND	5.62	93.6	6.00	7.37	
Total BTEX	<0.300	0.300	10/28/2020	ND					

Surrogate: 4-Bromofluorobenzene (PID) 97.6 % 73.3-129

Chloride, SM4500Cl-B		mg/kg		Analyzed By: GM					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
<b>Chloride</b>	<b>3760</b>	16.0	10/28/2020	ND	464	116	400	3.51	

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	10/28/2020	ND	224	112	200	3.54	
<b>DRO &gt;C10-C28*</b>	<b>24.8</b>	10.0	10/28/2020	ND	213	106	200	2.77	
EXT DRO >C28-C36	<10.0	10.0	10/28/2020	ND					

Surrogate: 1-Chlorooctane 93.9 % 44.3-144

Surrogate: 1-Chlorooctadecane 88.4 % 42.2-156

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Celey D. Keene, Lab Director/Quality Manager



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**Analytical Results For:**

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

Received:	10/27/2020	Sampling Date:	10/23/2020
Reported:	11/03/2020	Sampling Type:	Soil
Project Name:	SAND DUNES S CORRIDOR	Sampling Condition:	Cool & Intact
Project Number:	( 3 - 9 - 20 )	Sample Received By:	Jodi Henson
Project Location:	OXY- EDDY CO NM		

**Sample ID: SP 1 @ 1' (H002856-06)**

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	10/28/2020	ND	2.10	105	2.00	6.38	
Toluene*	<0.050	0.050	10/28/2020	ND	2.04	102	2.00	6.40	
Ethylbenzene*	<0.050	0.050	10/28/2020	ND	1.97	98.4	2.00	7.36	
Total Xylenes*	<0.150	0.150	10/28/2020	ND	5.62	93.6	6.00	7.37	
Total BTEX	<0.300	0.300	10/28/2020	ND					

Surrogate: 4-Bromofluorobenzene (PID) 98.8 % 73.3-129

Chloride, SM4500Cl-B		mg/kg		Analyzed By: GM					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
<b>Chloride</b>	<b>144</b>	16.0	10/28/2020	ND	464	116	400	3.51	

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	10/28/2020	ND	224	112	200	3.54	
DRO >C10-C28*	<10.0	10.0	10/28/2020	ND	213	106	200	2.77	
EXT DRO >C28-C36	<10.0	10.0	10/28/2020	ND					

Surrogate: 1-Chlorooctane 91.9 % 44.3-144

Surrogate: 1-Chlorooctadecane 87.3 % 42.2-156

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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:	10/27/2020	Sampling Date:	10/23/2020
Reported:	11/03/2020	Sampling Type:	Soil
Project Name:	SAND DUNES S CORRIDOR	Sampling Condition:	Cool & Intact
Project Number:	( 3 - 9 - 20 )	Sample Received By:	Jodi Henson
Project Location:	OXY- EDDY CO NM		

**Sample ID: SP 1 @ 2' (H002856-07)**

Chloride, SM4500Cl-B		mg/kg		Analyzed By: GM					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
<b>Chloride</b>	<b>80.0</b>	16.0	10/28/2020	ND	464	116	400	3.51	

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Celey D. Keene, Lab Director/Quality Manager



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**Analytical Results For:**

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

Received:	10/27/2020	Sampling Date:	10/23/2020
Reported:	11/03/2020	Sampling Type:	Soil
Project Name:	SAND DUNES S CORRIDOR	Sampling Condition:	Cool & Intact
Project Number:	( 3 - 9 - 20 )	Sample Received By:	Jodi Henson
Project Location:	OXY- EDDY CO NM		

**Sample ID: SP 2 @ SURFACE (H002856-08)**

BTEX 8021B		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	10/28/2020	ND	2.10	105	2.00	6.38	
Toluene*	<0.050	0.050	10/28/2020	ND	2.04	102	2.00	6.40	
Ethylbenzene*	<0.050	0.050	10/28/2020	ND	1.97	98.4	2.00	7.36	
Total Xylenes*	<0.150	0.150	10/28/2020	ND	5.62	93.6	6.00	7.37	
Total BTEX	<0.300	0.300	10/28/2020	ND					

Surrogate: 4-Bromofluorobenzene (PID) 98.1 % 73.3-129

Chloride, SM4500Cl-B		mg/kg		Analyzed By: GM					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
<b>Chloride</b>	<b>272</b>	16.0	10/28/2020	ND	464	116	400	3.51	

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	10/28/2020	ND	224	112	200	3.54	
<b>DRO &gt;C10-C28*</b>	<b>13.1</b>	10.0	10/28/2020	ND	213	106	200	2.77	
EXT DRO >C28-C36	<10.0	10.0	10/28/2020	ND					

Surrogate: 1-Chlorooctane 81.9 % 44.3-144

Surrogate: 1-Chlorooctadecane 77.4 % 42.2-156

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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:	10/27/2020	Sampling Date:	10/23/2020
Reported:	11/03/2020	Sampling Type:	Soil
Project Name:	SAND DUNES S CORRIDOR	Sampling Condition:	Cool & Intact
Project Number:	( 3 - 9 - 20 )	Sample Received By:	Jodi Henson
Project Location:	OXY- EDDY CO NM		

**Sample ID: SP 2 @ 1' (H002856-09)**

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	10/28/2020	ND	2.10	105	2.00	6.38	
Toluene*	<0.050	0.050	10/28/2020	ND	2.04	102	2.00	6.40	
Ethylbenzene*	<0.050	0.050	10/28/2020	ND	1.97	98.4	2.00	7.36	
Total Xylenes*	<0.150	0.150	10/28/2020	ND	5.62	93.6	6.00	7.37	
Total BTEX	<0.300	0.300	10/28/2020	ND					

Surrogate: 4-Bromofluorobenzene (PID) 98.5 % 73.3-129

Chloride, SM4500CI-B		mg/kg		Analyzed By: GM					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	160	16.0	10/28/2020	ND	464	116	400	3.51	

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	10/28/2020	ND	224	112	200	3.54	
DRO >C10-C28*	<10.0	10.0	10/28/2020	ND	213	106	200	2.77	
EXT DRO >C28-C36	<10.0	10.0	10/28/2020	ND					

Surrogate: 1-Chlorooctane 86.4 % 44.3-144

Surrogate: 1-Chlorooctadecane 81.9 % 42.2-156

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Celey D. Keene, Lab Director/Quality Manager



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**Analytical Results For:**

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

Received:	10/27/2020	Sampling Date:	10/23/2020
Reported:	11/03/2020	Sampling Type:	Soil
Project Name:	SAND DUNES S CORRIDOR	Sampling Condition:	Cool & Intact
Project Number:	( 3 - 9 - 20 )	Sample Received By:	Jodi Henson
Project Location:	OXY- EDDY CO NM		

**Sample ID: SP 2 @ 2' (H002856-10)**

Chloride, SM4500Cl-B		mg/kg		Analyzed By: GM					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
<b>Chloride</b>	<b>32.0</b>	16.0	10/28/2020	ND	464	116	400	3.51	

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**Analytical Results For:**

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

Received:	10/27/2020	Sampling Date:	10/23/2020
Reported:	11/03/2020	Sampling Type:	Soil
Project Name:	SAND DUNES S CORRIDOR	Sampling Condition:	Cool & Intact
Project Number:	( 3 - 9 - 20 )	Sample Received By:	Jodi Henson
Project Location:	OXY- EDDY CO NM		

**Sample ID: SP 3 @ SURFACE (H002856-11)**

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	10/28/2020	ND	2.10	105	2.00	6.38	
Toluene*	<0.050	0.050	10/28/2020	ND	2.04	102	2.00	6.40	
Ethylbenzene*	<0.050	0.050	10/28/2020	ND	1.97	98.4	2.00	7.36	
Total Xylenes*	<0.150	0.150	10/28/2020	ND	5.62	93.6	6.00	7.37	
Total BTEX	<0.300	0.300	10/28/2020	ND					

Surrogate: 4-Bromofluorobenzene (PID) 98.9 % 73.3-129

Chloride, SM4500Cl-B		mg/kg		Analyzed By: GM					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
<b>Chloride</b>	<b>4560</b>	16.0	10/28/2020	ND	464	116	400	3.51	

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	10/28/2020	ND	224	112	200	3.54	
<b>DRO &gt;C10-C28*</b>	<b>90.8</b>	10.0	10/28/2020	ND	213	106	200	2.77	
<b>EXT DRO &gt;C28-C36</b>	<b>16.3</b>	10.0	10/28/2020	ND					

Surrogate: 1-Chlorooctane 87.3 % 44.3-144

Surrogate: 1-Chlorooctadecane 84.6 % 42.2-156

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Celey D. Keene, Lab Director/Quality Manager



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**Analytical Results For:**

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

Received:	10/27/2020	Sampling Date:	10/23/2020
Reported:	11/03/2020	Sampling Type:	Soil
Project Name:	SAND DUNES S CORRIDOR	Sampling Condition:	Cool & Intact
Project Number:	( 3 - 9 - 20 )	Sample Received By:	Jodi Henson
Project Location:	OXY- EDDY CO NM		

**Sample ID: SP 3 @ 1' (H002856-12)**

BTEX 8021B		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	10/28/2020	ND	2.10	105	2.00	6.38	
Toluene*	<0.050	0.050	10/28/2020	ND	2.04	102	2.00	6.40	
Ethylbenzene*	<0.050	0.050	10/28/2020	ND	1.97	98.4	2.00	7.36	
Total Xylenes*	<0.150	0.150	10/28/2020	ND	5.62	93.6	6.00	7.37	
Total BTEX	<0.300	0.300	10/28/2020	ND					

Surrogate: 4-Bromofluorobenzene (PID) 97.7 % 73.3-129

Chloride, SM4500Cl-B		mg/kg		Analyzed By: GM					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
<b>Chloride</b>	<b>272</b>	16.0	10/28/2020	ND	464	116	400	3.51	

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	10/29/2020	ND	218	109	200	0.822	
DRO >C10-C28*	<10.0	10.0	10/29/2020	ND	206	103	200	2.21	
EXT DRO >C28-C36	<10.0	10.0	10/29/2020	ND					

Surrogate: 1-Chlorooctane 85.3 % 44.3-144

Surrogate: 1-Chlorooctadecane 80.1 % 42.2-156

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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:	10/27/2020	Sampling Date:	10/23/2020
Reported:	11/03/2020	Sampling Type:	Soil
Project Name:	SAND DUNES S CORRIDOR	Sampling Condition:	Cool & Intact
Project Number:	( 3 - 9 - 20 )	Sample Received By:	Jodi Henson
Project Location:	OXY- EDDY CO NM		

**Sample ID: SP 3 @ 2' (H002856-13)**

Chloride, SM4500Cl-B		mg/kg		Analyzed By: GM					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
<b>Chloride</b>	<b>96.0</b>	16.0	10/28/2020	ND	464	116	400	3.51	

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Celey D. Keene, Lab Director/Quality Manager



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**Analytical Results For:**

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

Received:	10/27/2020	Sampling Date:	10/23/2020
Reported:	11/03/2020	Sampling Type:	Soil
Project Name:	SAND DUNES S CORRIDOR	Sampling Condition:	Cool & Intact
Project Number:	( 3 - 9 - 20 )	Sample Received By:	Jodi Henson
Project Location:	OXY- EDDY CO NM		

**Sample ID: SP 4 @ SURFACE (H002856-14)**

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	10/28/2020	ND	2.10	105	2.00	6.38		
Toluene*	<0.050	0.050	10/28/2020	ND	2.04	102	2.00	6.40		
Ethylbenzene*	<0.050	0.050	10/28/2020	ND	1.97	98.4	2.00	7.36		
Total Xylenes*	<0.150	0.150	10/28/2020	ND	5.62	93.6	6.00	7.37		
Total BTEX	<0.300	0.300	10/28/2020	ND						

Surrogate: 4-Bromofluorobenzene (PID) 98.0 % 73.3-129

Chloride, SM4500Cl-B		mg/kg		Analyzed By: GM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	80.0	16.0	10/28/2020	ND	464	116	400	3.51		

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	10/29/2020	ND	218	109	200	0.822		
DRO >C10-C28*	<10.0	10.0	10/29/2020	ND	206	103	200	2.21		
EXT DRO >C28-C36	<10.0	10.0	10/29/2020	ND						

Surrogate: 1-Chlorooctane 78.5 % 44.3-144

Surrogate: 1-Chlorooctadecane 73.6 % 42.2-156

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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:	10/27/2020	Sampling Date:	10/23/2020
Reported:	11/03/2020	Sampling Type:	Soil
Project Name:	SAND DUNES S CORRIDOR	Sampling Condition:	Cool & Intact
Project Number:	( 3 - 9 - 20 )	Sample Received By:	Jodi Henson
Project Location:	OXY- EDDY CO NM		

**Sample ID: SP 4 @ 1' (H002856-15)**

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	10/28/2020	ND	2.10	105	2.00	6.38	
Toluene*	<0.050	0.050	10/28/2020	ND	2.04	102	2.00	6.40	
Ethylbenzene*	<0.050	0.050	10/28/2020	ND	1.97	98.4	2.00	7.36	
Total Xylenes*	<0.150	0.150	10/28/2020	ND	5.62	93.6	6.00	7.37	
Total BTEX	<0.300	0.300	10/28/2020	ND					

Surrogate: 4-Bromofluorobenzene (PID) 98.7 % 73.3-129

Chloride, SM4500CI-B		mg/kg		Analyzed By: GM					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	96.0	16.0	10/28/2020	ND	464	116	400	3.51	

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	10/29/2020	ND	218	109	200	0.822	
DRO >C10-C28*	<10.0	10.0	10/29/2020	ND	206	103	200	2.21	
EXT DRO >C28-C36	<10.0	10.0	10/29/2020	ND					

Surrogate: 1-Chlorooctane 86.0 % 44.3-144

Surrogate: 1-Chlorooctadecane 80.7 % 42.2-156

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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:	10/27/2020	Sampling Date:	10/23/2020
Reported:	11/03/2020	Sampling Type:	Soil
Project Name:	SAND DUNES S CORRIDOR	Sampling Condition:	Cool & Intact
Project Number:	( 3 - 9 - 20 )	Sample Received By:	Jodi Henson
Project Location:	OXY- EDDY CO NM		

**Sample ID: SP 4 @ 2' (H002856-16)**

Chloride, SM4500Cl-B		mg/kg		Analyzed By: GM					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
<b>Chloride</b>	<b>80.0</b>	16.0	10/28/2020	ND	464	116	400	3.51	

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**Analytical Results For:**

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

Received:	10/27/2020	Sampling Date:	10/23/2020
Reported:	11/03/2020	Sampling Type:	Soil
Project Name:	SAND DUNES S CORRIDOR	Sampling Condition:	Cool & Intact
Project Number:	( 3 - 9 - 20 )	Sample Received By:	Jodi Henson
Project Location:	OXY- EDDY CO NM		

**Sample ID: SP 5 @ SURFACE (H002856-17)**

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	10/28/2020	ND	2.10	105	2.00	6.38	
Toluene*	<0.050	0.050	10/28/2020	ND	2.04	102	2.00	6.40	
Ethylbenzene*	<0.050	0.050	10/28/2020	ND	1.97	98.4	2.00	7.36	
Total Xylenes*	<0.150	0.150	10/28/2020	ND	5.62	93.6	6.00	7.37	
Total BTEX	<0.300	0.300	10/28/2020	ND					

Surrogate: 4-Bromofluorobenzene (PID) 92.6 % 73.3-129

Chloride, SM4500CI-B		mg/kg		Analyzed By: GM					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
<b>Chloride</b>	<b>112</b>	16.0	10/28/2020	ND	464	116	400	3.51	

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	10/29/2020	ND	218	109	200	0.822	
<b>DRO &gt;C10-C28*</b>	<b>16.5</b>	10.0	10/29/2020	ND	206	103	200	2.21	
EXT DRO >C28-C36	<10.0	10.0	10/29/2020	ND					

Surrogate: 1-Chlorooctane 89.2 % 44.3-144

Surrogate: 1-Chlorooctadecane 83.6 % 42.2-156

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Celey D. Keene, Lab Director/Quality Manager



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**Analytical Results For:**

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

Received:	10/27/2020	Sampling Date:	10/23/2020
Reported:	11/03/2020	Sampling Type:	Soil
Project Name:	SAND DUNES S CORRIDOR	Sampling Condition:	Cool & Intact
Project Number:	( 3 - 9 - 20 )	Sample Received By:	Jodi Henson
Project Location:	OXY- EDDY CO NM		

**Sample ID: SP 5 @ 1' (H002856-18)**

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	10/29/2020	ND	1.85	92.5	2.00	16.7	
Toluene*	<0.050	0.050	10/29/2020	ND	1.76	88.0	2.00	17.5	
Ethylbenzene*	<0.050	0.050	10/29/2020	ND	1.74	87.0	2.00	17.0	
Total Xylenes*	<0.150	0.150	10/29/2020	ND	4.98	83.0	6.00	16.6	
Total BTEX	<0.300	0.300	10/29/2020	ND					

Surrogate: 4-Bromofluorobenzene (PID) 96.8 % 73.3-129

Chloride, SM4500Cl-B		mg/kg		Analyzed By: GM					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	48.0	16.0	10/28/2020	ND	464	116	400	3.51	

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	10/29/2020	ND	218	109	200	0.822	
DRO >C10-C28*	<10.0	10.0	10/29/2020	ND	206	103	200	2.21	
EXT DRO >C28-C36	<10.0	10.0	10/29/2020	ND					

Surrogate: 1-Chlorooctane 81.8 % 44.3-144

Surrogate: 1-Chlorooctadecane 74.4 % 42.2-156

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:	10/27/2020	Sampling Date:	10/23/2020
Reported:	11/03/2020	Sampling Type:	Soil
Project Name:	SAND DUNES S CORRIDOR	Sampling Condition:	Cool & Intact
Project Number:	( 3 - 9 - 20 )	Sample Received By:	Jodi Henson
Project Location:	OXY- EDDY CO NM		

**Sample ID: SP 5 @ 2' (H002856-19)**

Chloride, SM4500Cl-B		mg/kg		Analyzed By: GM					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
<b>Chloride</b>	<b>96.0</b>	16.0	10/28/2020	ND	464	116	400	3.51	

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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.
- QR-04 The RPD for the BS/BSD was outside of historical limits.
- 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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\*=Accredited Analyte

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*Celey D. Keene*

Celey D. Keene, Lab Director/Quality Manager



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

### CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

(1082)

Company Name: BBC International, Inc.		<b>BILL TO</b>		<b>ANALYSIS REQUEST</b>											
Project Manager: Cliff Brunson		P.O. #:													
Address: P.O. Box 805		Company: OXY													
City: Hobbs State: NM Zip: 88241		Attn: WADE													
Phone #: 575-397-6388 Fax #: 575-397-0397		Address:													
Project #: Project Owner: Oxy		City:													
Project Name: Sand Dunes S Corridor (3-9-20)		State: Zip:													
Project Location: EDDY COUNTY, NM		Phone #:													
Sampler Name: Simon Rendon		Fax #:													

FOR LAB USE ONLY		(G)RAB OR (C)OMP.	# CONTAINERS	MATRIX						PRESERV.			SAMPLING		CL	BTEX	TPH	EXT
Lab I.D.	Sample I.D.			GROUNDWATER	WASTEWATER	SOIL	OIL	SLUDGE	OTHER	ACID/BASE	ICE / COOL	OTHER	DATE	TIME				
H002856	1 N @ Surface	G	I								10/23/20	9:05 AM	✓	✓	✓			
	2 E @ Surface										10/23/20	9:17 AM	✓	✓	✓			
	3 W @ Surface										10/23/20	9:30 AM	✓	✓	✓			
	4 S @ Surface										10/23/20	9:43 AM	✓	✓	✓			
	5 SP1 @ Surface										10/23/20	10:04 AM	✓	✓	✓			
	6 SP1 @ 1'										10/23/20	10:31 AM	✓	✓	✓			
	7 SP1 @ 2'										10/23/20	10:48 AM	✓	✓	✓			
	8 SP2 @ Surface										10/23/20	11:14 AM	✓	✓	✓			
	9 SP2 @ 1'										10/23/20	11:27 AM	✓	✓	✓			
	10 SP2 @ 2'										10/23/20	11:42 AM	✓	✓	✓			

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Relinquished By: Roger Hernandez	Date: 10/23/20	Received By: Jodi Henson	Phone Result: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Add'l Phone #:
	Time: 16:40		Fax Result: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Add'l Fax #:
Relinquished By:	Date:	Received By:	REMARKS:	
	Time:			
Delivered By: (Circle One)	Sample Condition	CHECKED BY:		
Sampler - UPS - Bus - Other: 1.92 / #113	Cool Intact <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	(Initials)		

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



Form C-141

State of New Mexico  
Oil Conservation Division

Page 5

Incident ID	NRM2012536459
District RP	
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: 8-31-2020  
 email: wade\_dittrich@oxy.com Telephone: (575) 390-2828

**OCD Only**

Received by: Robert Hamlet Date: 6/16/2021

Approved       Approved with Attached Conditions of Approval       Denied       Deferral Approved

Signature:  Date: 6/16/2021

**District I**  
 1625 N. French Dr., Hobbs, NM 88240  
 Phone:(575) 393-6161 Fax:(575) 393-0720  
**District II**  
 811 S. First St., Artesia, NM 88210  
 Phone:(575) 748-1283 Fax:(575) 748-9720  
**District III**  
 1000 Rio Brazos Rd., Aztec, NM 87410  
 Phone:(505) 334-6178 Fax:(505) 334-6170  
**District IV**  
 1220 S. St Francis Dr., Santa Fe, NM 87505  
 Phone:(505) 476-3470 Fax:(505) 476-3462

**State of New Mexico**  
**Energy, Minerals and Natural Resources**  
**Oil Conservation Division**  
**1220 S. St Francis Dr.**  
**Santa Fe, NM 87505**

CONDITIONS  
 Action 17433

**CONDITIONS**

Operator: OXY USA INC P.O. Box 4294 Houston, TX 772104294	OGRID: 16696
	Action Number: 17433
	Action Type: [C-141] Release Corrective Action (C-141)

**CONDITIONS**

Created By	Condition	Condition Date
rhamlet	The Workplan/Remediation Plan is approved with the following conditions: Please make sure the edges/sidewalls and floor samples are delineated to meet closure criteria standards for proven depth to water determination. Please collect confirmation samples, representing no more than 200 ft2.	6/16/2021