ENSOLUM

November 15, 2023

New Mexico Oil Conservation Division
New Mexico Energy, Minerals, and Natural Resources Department
1220 South St. Francis Drive
Santa Fe, New Mexico 87505

Re: Closure Request
Mesa 8105 JV-P #4H Battery
Incident Number NRM2004549559
Lea County, New Mexico

To Whom It May Concern:

Ensolum, LLC (Ensolum), on behalf of BTA Oil Producers, LLC (BTA), has prepared this *Closure Request* to document assessment, excavation, and soil sampling activities performed at the Mesa 8105 JV-P #4H Battery (Site). The purpose of the Site assessment, excavation, and soil sampling activities was to address impacts to soil resulting from a historical crude oil and produced water release at the Site. Based on field observations, excavation activities, and soil sample laboratory analytical results, BTA is submitting this *Closure Request*, requesting no further action for Incident Number NRM2004549559.

SITE DESCRIPTION AND RELEASE SUMMARY

The Site is located in Unit C, Section 11, Township 26 South, Range 32 East, in Lea County, New Mexico (32.06412°, -103.64973°) and is associated with oil and gas exploration and production operations on Federal Land managed by the Bureau of Land Management (BLM).

On February 12, 2020, a gas supply line froze, causing a separator dump valve to malfunction and the catch tank to overflow. Approximately 47 barrels (bbls) of crude oil and 21 bbls of produced water were released along the southern edge of the pad; all released fluids remained on the well pad. A vacuum truck recovered approximately 45 bbls of crude oil and 20 bbls of produced water. A backhoe was used to scrape up the impacted soil; approximately 30 cubic yards of impacted soil was removed and properly disposed of. BTA reported the release to the New Mexico Oil Conservation Division (NMOCD) on a Release Notification Form C-141 (Form C-141) on February 13, 2020. The release was assigned Incident Number NRM2004549559.

SITE CHARACTERIZATION AND CLOSURE CRITERIA

The Site was characterized to assess the applicability of Table I, Closure Criteria for Soils Impacted by a Release, of Title 19, Chapter 15, Part 29 (19.15.29) of the New Mexico Administrative Code (NMAC). Results from the characterization desktop review are presented on page 3 of the Form C-141, Site Assessment/Characterization. Potential Site receptors are identified on Figure 1.

Depth to groundwater at the Site is greater than 100 feet below ground surface (bgs) based on the nearest groundwater well data. The closest permitted groundwater well with depth to groundwater data is New Mexico Office of the State Engineer (NMOSE) well C-04549, located approximately 0.22 miles

west of the Site. The well was drilled during July 2021 to a total depth of 103 feet bgs, and no groundwater was encountered. The borehole was properly abandoned using hydrated bentonite chips. All wells used for depth to groundwater determination are presented on Figure 1. The associated well records are included in Appendix A.

The closest continuously flowing or significant watercourse is greater than 300 feet from the Site. The Site is greater than 200 feet from a lakebed, sinkhole, or playa lake and greater than 300 feet from an occupied residence, school, hospital, institution, church, or wetland. The Site is greater than 1,000 feet to a freshwater well or spring and is not within a 100-year floodplain or overlying a subsurface mine. The Site is not underlain by unstable geology (medium potential karst designation area). Site receptors are identified on Figure 1.

Based on the results of the Site Characterization, the following NMOCD Table I Closure Criteria (Closure Criteria) apply:

- Benzene: 10 milligrams per kilogram (mg/kg)
- Benzene, toluene, ethylbenzene, and total xylenes (BTEX): 50 mg/kg
- Total petroleum hydrocarbons (TPH)-gasoline range organics (GRO) and TPH-diesel range organics (DRO): 1,000 mg/kg
- TPH: 2,500 mg/kg
- Chloride: 20,000 mg/kg

DELINEATION ACTIVITIES AND LABORATORY ANALYTICAL RESULTS

On August 31, 2023, Ensolum personnel were at the Site to evaluate the historical release extent based on information provided on the Form C-141, the documented release extent, and visual observations. The well pad had been reconstructed and extended since the February 2020 release occurred. The historical release area was now beneath approximately 6 feet of caliche used to reconstruct and extend the historical well pad area. Photographic documentation was completed during the Site visit and a photographic log is included as Appendix B.

On September 28, 2023, and September 29, 2023, Ensolum personnel returned to the Site to complete delineation activities to assess for the presence or absence of impacted soil associated with the historical release. Potholes PH01 through PH08 were advanced via excavator at eight locations within and around the historical release extent. The potholes were advanced through approximately 6 feet of new caliche material to the ground surface of the original well pad. The potholes were extended an additional 2 feet to 4 feet below the surface of the original well pad. Soil from the potholes was field screened at 1-foot intervals (starting at the original ground surface) for volatile organic compounds (VOCs) utilizing a calibrated photoionization detector (PID) and chloride using Hach® chloride QuanTab®. Field screening results and observations for the potholes were logged on lithologic/soil sampling logs, which are included in Appendix C. Discrete delineation soil samples were collected from the potholes at depths ranging from 0.5 feet to 4 feet bgs. The soil sample locations were mapped utilizing a handheld Global Positioning System (GPS) unit and are depicted on Figure 2. Photographic documentation was completed during the Site visit and a photographic log is included as Appendix B.

The soil samples were placed directly into pre-cleaned glass jars, labeled with the location, date, time, sampler name, method of analysis, and immediately placed on ice. The soil samples were transported under strict chain-of-custody procedures to Cardinal Laboratories (Cardinal) in Hobbs, New Mexico, for analysis of the following chemicals of concern (COCs): BTEX following United States Environmental Protection Agency (EPA) Method 8021B; TPH- GRO, TPH- DRO, and TPH-oil range organics (ORO) following EPA Method 8015M/D; and chloride following Standard Method SM4500.

Laboratory analytical results for the delineation samples collected from potholes PH01 and PH04, advanced within the release extent, indicated that TPH-GRO/TPH-DRO concentrations exceeded the Site Closure Criteria at a depth of 0.5 feet bgs. Laboratory analytical results for the delineation samples collected from potholes PH02 and PH03, advanced within the release extent, indicated all COC concentrations were compliant with the most stringent Table I Closure Criteria. Laboratory analytical results for the delineation samples collected from potholes PH05 through PH08, advanced outside of the release extent, indicated all COC concentrations were compliant with the most stringent Table I Closure Criteria and defined the lateral extent of the historical release. Based on laboratory analytical results, excavation activities were warranted in the areas around potholes PH01 and PH04. Laboratory analytical results are summarized in Table 1 and the complete analytical reports are included as Appendix D.

EXCAVATION ACTIVITIES AND LABORATORY ANALYTICAL RESULTS

On October 24, 2023, and October 25, 2023, Ensolum personnel were at the Site to oversee excavation of impacted soil from the historical release area as indicated by laboratory analytical results for the delineation samples. Approximately 6 feet of caliche from the new well pad construction was stripped back, and impacted soil was excavated from the areas around potholes PH01 and PH04. The excavations were completed to depths ranging from 1.5 feet to 2.5 feet bgs. To direct excavation activities, soil was field screened for VOCs and chloride as previously described. Photographic documentation of the excavation activities is included in Appendix B.

Following removal of impacted soil, 5-point composite soil samples were collected every 200 square feet from the floor and sidewalls of the excavations. The 5-point composite soil samples were collected by placing five equivalent aliquots of soil into a 1-gallon, resealable plastic bag and homogenizing the samples by thoroughly mixing. Composite soil samples FS01 through FS08 were collected from the floor of the excavation at depths ranging from 1.5 foot to 2.5 feet bgs. Composite soil samples SW01 through SW05 were collected from the sidewalls of the excavation at depths ranging from the ground surface to 2.5 feet bgs. The soil samples were handled and analyzed as previously described. The excavation extent and excavation soil sample locations were mapped utilizing a handheld GPS unit and are depicted on Figure 3.

Laboratory analytical results for excavation floor samples FS01 through FS08 and sidewall samples SW01 through SW05 indicated all COC concentrations were compliant with the most stringent Table I Closure Criteria. Laboratory analytical results are summarized in Table 1 and the complete laboratory analytical reports are included as Appendix D.

The aerial footprint of the excavations measured approximately 1,350 square feet. A total of approximately 100 cubic yards of impacted soil were removed during excavation activities. The impacted soil was transported and properly disposed of at the R360 Disposal Facility in Hobbs, New Mexico.

CLOSURE REQUEST

Site assessment and excavation activities were conducted at the Site to address the impacted soil resulting from a historical release of produced water and crude oil. Laboratory analytical results for the excavation soil samples, collected from the final excavation extent, indicated all COC concentrations were compliant with the most stringent Table I Closure Criteria Additionally, laboratory analytical results for the delineation soil samples provided lateral and vertical delineation to the most stringent Table I Closure Criteria. Based on the laboratory analytical results, the impacted soil was excavated, and no further remediation is required.

Initial response efforts, excavation of impacted soil, and natural attenuation have mitigated impacts at this Site. Depth to groundwater was determined to be greater than 100 feet bgs within 0.5 miles of the

Site and no other sensitive receptors were identified near the release extent. BTA believes the remedial actions completed are protective of human health, the environment, and groundwater. As such, BTA respectfully requests closure for Incident Number NRM2004549559. Notifications submitted to the NMOCD are included in Appendix E and the final Form C-141 is included in Appendix F.

If you have any questions or comments, please contact Ms. Tacoma Morrissey at (337) 257-8307 or tmorrissey@ensolum.com.

Sincerely,
Ensolum, LLC

Ronni Hayes
Assistant Geologist

Aimee Cole
Senior Managing Scientist

cc: Kelton Beaird, BTA
Bureau of Land Management

Appendices:

Figure 1	Site Receptor Map
Figure 2	Delineation Soil Sample Locations
Figure 3	Excavation Soil Sample Locations
Table 1	Soil Sample Analytical Results
Appendix A	Referenced Well Records
Appendix B	Photographic Log
Appendix C	Lithologic/Soil Sampling Logs
Appendix D	Laboratory Analytical Reports & Chain-of-Custody Documentation
Appendix E	NMOCD Notifications
Appendix F	Final C-141

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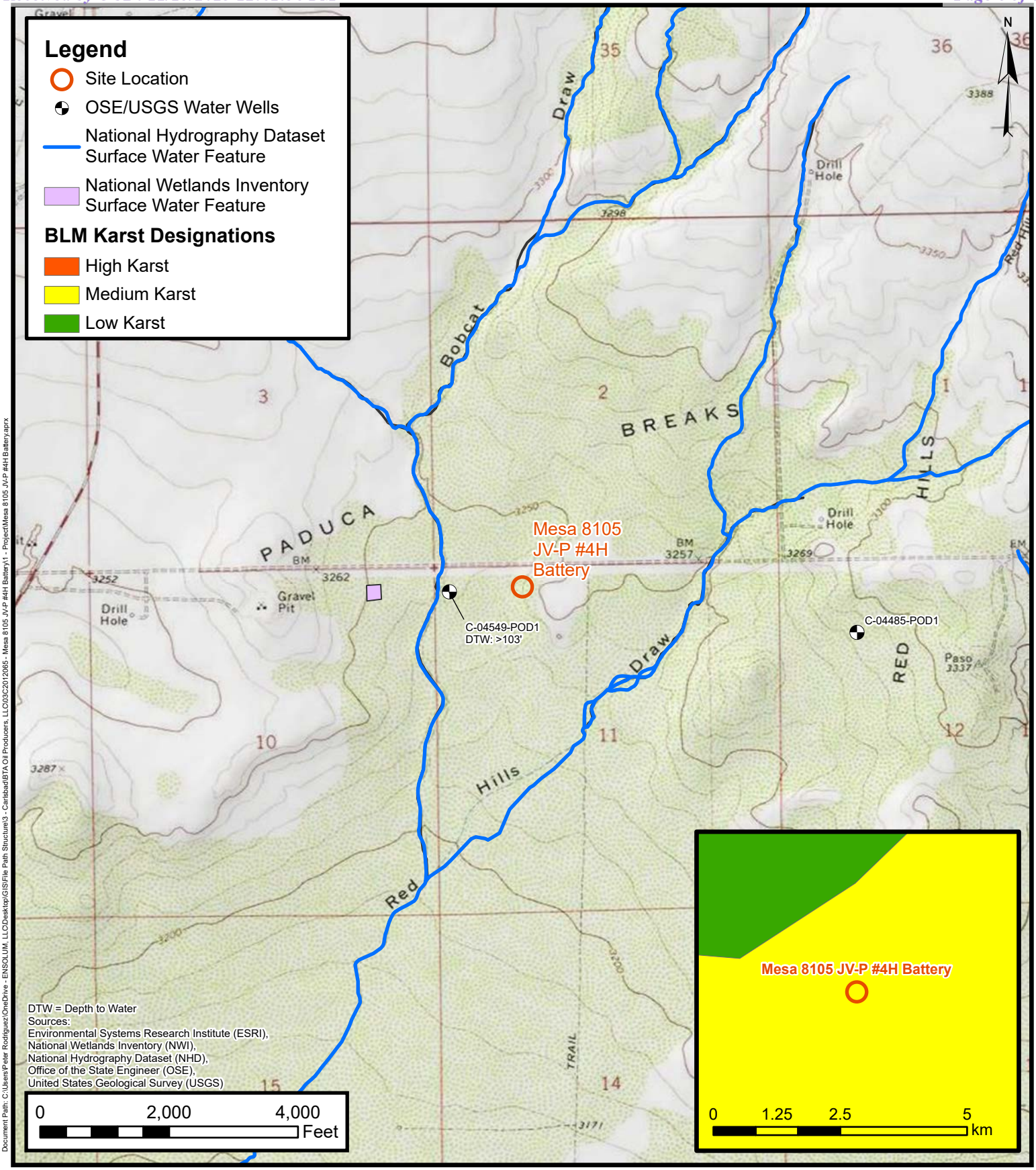
FIGURES



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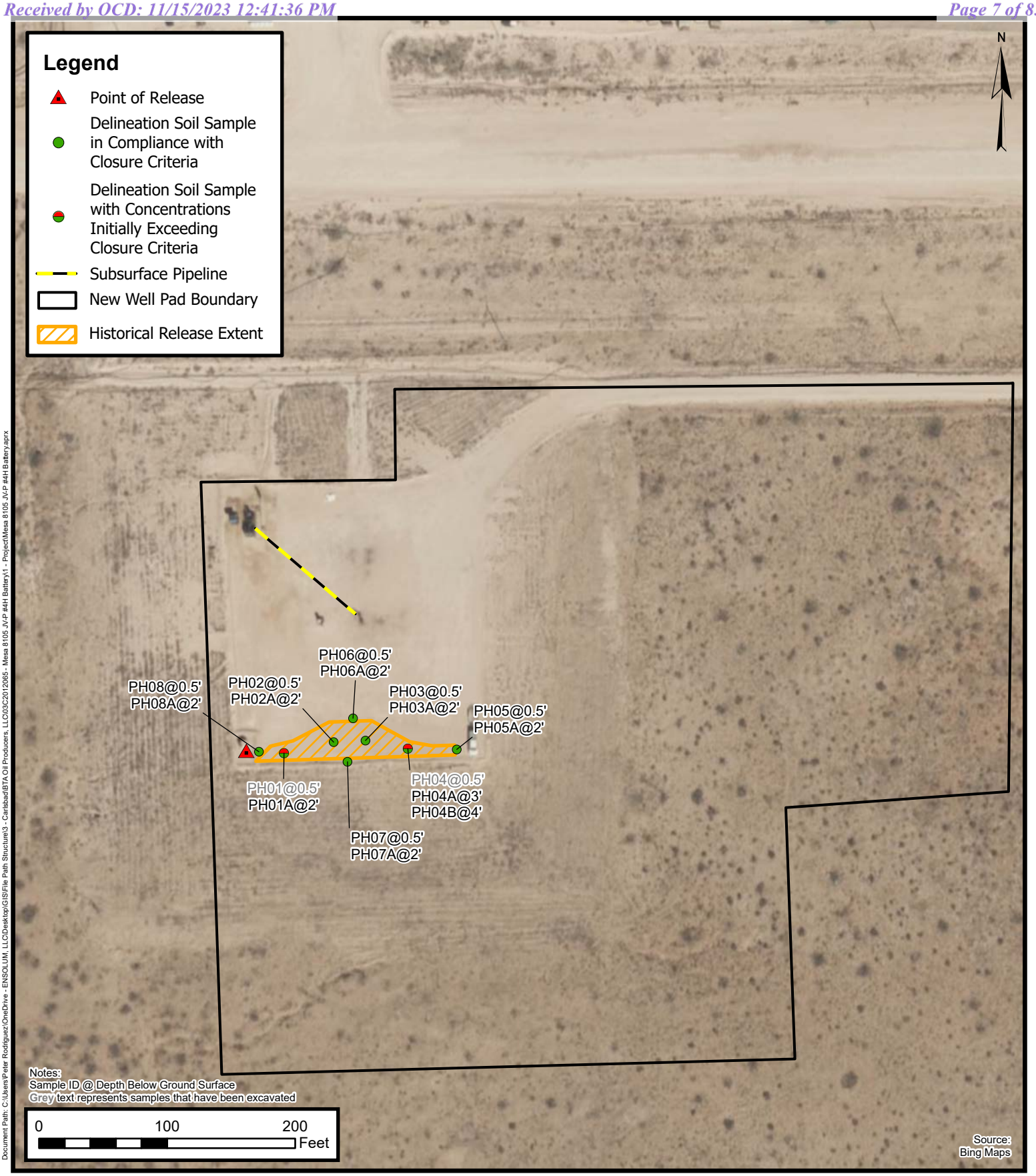
Site Receptor Map

BTA Oil Producers, LLC
Mesa 8105 JV-P #4H Battery
Incident Number: NRM2004549559
Unit C, Section 11, Township 26S, Range 32E
Lea County,New Mexico

FIGURE
1



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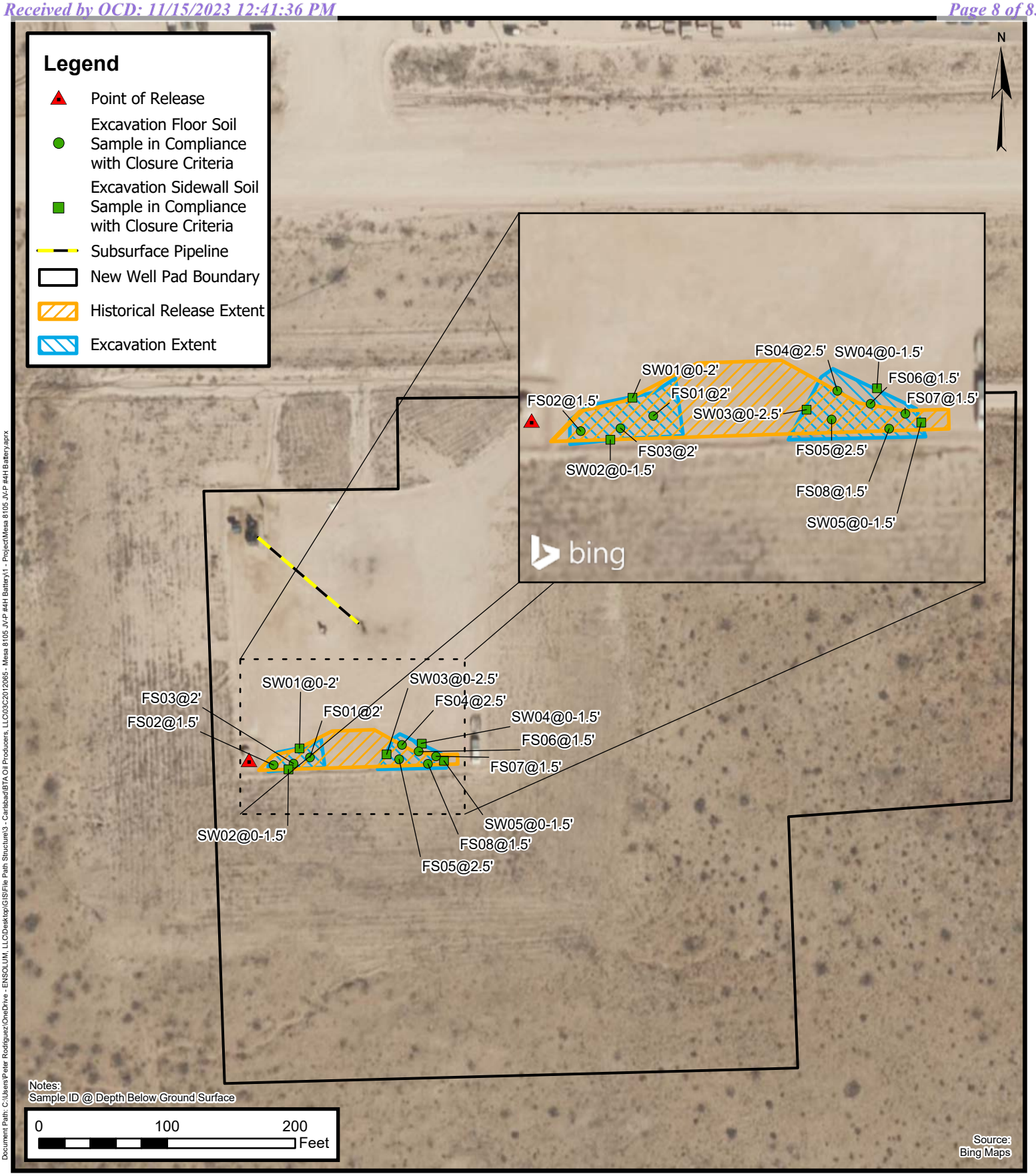
Delineation Soil Sample Locations

BTA Oil Producers, LLC
Mesa 8105 JV-P #4H Battery
Incident Number: NRM2004549559
Unit C, Section 11, Township 26S, Range 32E
Lea County,New Mexico

FIGURE
2



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Excavation Soil Sample Locations

BTA Oil Producers, LLC
Mesa 8105 JV-P #4H Battery
Incident Number: NRM2004549559
Unit C, Section 11, Township 26S, Range 32E
Lea County,New Mexico

FIGURE
3

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TABLES

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TABLE 1
SOIL SAMPLE ANALYTICAL RESULTS
Mesa 8105 JV-P #4H Battery
BTA Oil Producers, LLC
Lea County, New Mexico

Sample I.D.	Sample Date	Sample Depth (feet bgs)	Benzene (mg/kg)	Total BTEX (mg/kg)	TPH GRO (mg/kg)	TPH DRO (mg/kg)	TPH ORO (mg/kg)	GRO+DRO (mg/kg)	Total TPH (mg/kg)	Chloride (mg/kg)
NMOCD Table 1 Closure Criteria (NMAC 19.15.29)			10	50	NE	NE	NE	1,000	2,500	20,000
Delineation Soil Samples										
PH01	09/29/2023	0.5	<0.050	<0.300	<10.0	1,350	481	**1,350**	1,831	784
PH01A	09/29/2023	2	<0.050	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	<16.0
PH02	09/29/2023	0.5	<0.050	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	544
PH02A	09/29/2023	2	<0.050	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	400
PH03	09/28/2023	0.5	<0.050	<0.300	<10.0	16.1	<10.0	16.1	16.1	80.0
PH03A	09/28/2023	2	<0.050	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	48.0
PH04	09/28/2023	0.5	<0.050	<0.300	<10.0	1,350	481	**1,350**	1,831	80.0
PH04A	09/28/2023	3	<0.050	<0.300	<10.0	12.0	<10.0	12.0	12.0	224
PH04B	09/28/2023	4	<0.050	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	144
PH05	09/28/2023	0.5	<0.050	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	64.0
PH05A	09/28/2023	2	<0.050	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	32.0
PH06	09/28/2023	0.5	<0.050	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	464
PH06A	09/28/2023	2	<0.050	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	128
PH07	09/28/2023	0.5	<0.050	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	272
PH07A	09/28/2023	2	<0.050	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	128
PH08	10/24/2023	0.5	<0.050	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	96.0
PH08A	10/24/2023	2	<0.050	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	144
Excavation Floor Soil Samples										
FS01	10/24/2023	2	<0.050	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	160
FS02	10/24/2023	1.5	<0.050	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	240
FS03	10/24/2023	2	<0.050	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	224
FS04	10/25/2023	2.5	<0.050	<0.300	<10.0	64.3	16.1	64.0	80.4	80.0
FS05	10/25/2023	2.5	<0.050	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	80.0
FS06	10/25/2023	1.5	<0.050	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	48.0
FS07	10/25/2023	1.5	<0.050	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	32.0
FS08	10/25/2023	1.5	<0.050	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	16.0

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TABLE 1
SOIL SAMPLE ANALYTICAL RESULTS
Mesa 8105 JV-P #4H Battery
BTA Oil Producers, LLC
Lea County, New Mexico

Sample I.D.	Sample Date	Sample Depth (feet bgs)	Benzene (mg/kg)	Total BTEX (mg/kg)	TPH GRO (mg/kg)	TPH DRO (mg/kg)	TPH ORO (mg/kg)	GRO+DRO (mg/kg)	Total TPH (mg/kg)	Chloride (mg/kg)
NMOCD Table 1 Closure Criteria (NMAC 19.15.29)			**10**	**50**	**NE**	**NE**	**NE**	**1,000**	**2,500**	**20,000**
Excavation Sidewall Soil Samples										
SW01	10/24/2023	0-2	<0.050	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	208
SW02	10/24/2023	0-1.5	<0.050	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	160
SW03	10/25/2023	0.-2.5	<0.050	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	256
SW04	10/25/2023	0-1.5	<0.050	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	160
SW05	10/25/2023	0-1.5	<0.050	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	320

Notes:

bgs: below ground surface

mg/kg: milligrams per kilogram

NMOCD: New Mexico Oil Conservation Division

BTEX: Benzene, Toluene, Ethylbenzene, and Xylenes

Concentrations in bold exceed the NMOCD Table 1 Closure Criteria or reclamation requirements where applicable.

GRO: Gasoline Range Organics

DRO: Diesel Range Organics

ORO: Oil Range Organics

TPH: Total Petroleum Hydrocarbon

Grey text represents samples that have been excavated

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APPENDIX A

Referenced Well Records

WELL RECORD & LOG

OFFICE OF THE STATE ENGINEER

www.ose.state.nm.us

OSE DIT AUG 2 2021 PM4:45

1. GENERAL AND WELL LOCATION

OSE POD NO. (WELL NO.)	WELL TAG ID NO.	OSE FILE NO(S).
POD1 (MW-1)	n/a	C-4549

WELL OWNER NAME(S)	PHONE (OPTIONAL)
BTA Oil Producers	

WELL OWNER MAILING ADDRESS	CITY	STATE	ZIP
104 S. Pecos St.	Midland	TX	79701

WELL LOCATION (FROM GPS)		DEGREES	MINUTES	SECONDS	
	LATITUDE	32	4	40.92	N
	LONGITUDE	103	37	53.68	W

* ACCURACY REQUIRED: ONE TENTH OF A SECOND
* DATUM REQUIRED: WGS 84

DESCRIPTION RELATING WELL LOCATION TO STREET ADDRESS AND COMMON LANDMARKS – PLSS (SECTION, TOWNSHIP, RANGE) WHERE AVAILABLE

NW NW NW Sec. 11 T26S R32E

2. DRILLING & CASING INFORMATION

LICENSE NO.	NAME OF LICENSED DRILLER	NAME OF WELL DRILLING COMPANY
1249	Jackie D. Atkins	Atkins Engineering Associates, Inc.

DRILLING STARTED	DRILLING ENDED	DEPTH OF COMPLETED WELL (FT)	BORE HOLE DEPTH (FT)	DEPTH WATER FIRST ENCOUNTERED (FT)
07/14/2021	07/14/2021	temporary well material	103	n/a

COMPLETED WELL IS: ☐ ARTESIAN ☑ DRY HOLE ☐ SHALLOW (UNCONFINED)

STATIC WATER LEVEL IN COMPLETED WELL (FT): n/a

DRILLING FLUID: ☑ AIR ☐ MUD ADDITIVES – SPECIFY:

DRILLING METHOD: ☐ ROTARY ☐ HAMMER ☐ CABLE TOOL ☑ OTHER – SPECIFY: Hollow Stem Auger

DEPTH (feet bgl) FROM	DEPTH (feet bgl) TO	BORE HOLE DIAM (inches)	CASING MATERIAL AND/OR GRADE (include each casing string, and note sections of screen)	CASING CONNECTION TYPE (add coupling diameter)	CASING INSIDE DIAM. (inches)	CASING WALL THICKNESS (inches)	SLOT SIZE (inches)
0	103	±8.5	Boring- HSA	–	–	–	–

3. ANNULAR MATERIAL

DEPTH (feet bgl) FROM	DEPTH (feet bgl) TO	BORE HOLE DIAM. (inches)	LIST ANNULAR SEAL MATERIAL AND GRAVEL PACK SIZE-RANGE BY INTERVAL	AMOUNT (cubic feet)	METHOD OF PLACEMENT

FOR OSE INTERNAL USE

WR-20 WELL RECORD & LOG (Version 06/30/17)

FILE NO. C-4549	POD NO. 1	TRN NO. 698318	
LOCATION 26S-32E-11	1.1.1	WELL TAG ID NO. NA	PAGE 1 OF 2

OSE DIT AUG 2 2021 PM4:45

4. HYDROGEOLOGIC LOG OF WELL

DEPTH (feet bgl) FROM	DEPTH (feet bgl) TO	THICKNESS (feet)	COLOR AND TYPE OF MATERIAL ENCOUNTERED - INCLUDE WATER-BEARING CAVITIES OR FRACTURE ZONES (attach supplemental sheets to fully describe all units)	WATER BEARING? (YES / NO)	ESTIMATED YIELD FOR WATER-BEARING ZONES (gpm)
0	4	4	Caliche, Consolidated , White	Y ✓ N	
4	9	5	Caliche, Consolidated , with fine-grained, Tan	Y ✓ N	
9	14	5	Caliche, Consolidated , White	Y ✓ N	
14	19	5	Caliche, Consolidated , with fine-grained, Tan	Y ✓ N	
19	69	50	Sand, Fine-grained poorly graded, with caliche , Tanish Brown	Y ✓ N	
69	79	103	Clay, Stiff, High Plasticity, Dark Brown,	Y ✓ N	
				Y N	
				Y N	
				Y N	
				Y N	
				Y N	
				Y N	
				Y N	
				Y N	
				Y N	
				Y N	
				Y N	
				Y N	
				Y N	
				Y N	

METHOD USED TO ESTIMATE YIELD OF WATER-BEARING STRATA:

☐ PUMP ☐ AIR LIFT ☐ BAILER ☐ OTHER – SPECIFY:

TOTAL ESTIMATED WELL YIELD (gpm): 0.00

5. TEST; RIG SUPERVISION

WELL TEST: TEST RESULTS - ATTACH A COPY OF DATA COLLECTED DURING WELL TESTING, INCLUDING DISCHARGE METHOD, START TIME, END TIME, AND A TABLE SHOWING DISCHARGE AND DRAWDOWN OVER THE TESTING PERIOD.

MISCELLANEOUS INFORMATION: Temporary well materials removed and the soil boring backfilled using drill cuttings from total depth to ten feet below ground surface, then hydrated bentonite chips from ten feet below ground surface to surface.

PRINT NAME(S) OF DRILL RIG SUPERVISOR(S) THAT PROVIDED ONSITE SUPERVISION OF WELL CONSTRUCTION OTHER THAN LICENSEE:

Shane Eldridge, Cameron Pruitt, Carmelo Trevino

6. SIGNATURE

THE UNDERSIGNED HEREBY CERTIFIES THAT, TO THE BEST OF HIS OR HER KNOWLEDGE AND BELIEF, THE FOREGOING IS A TRUE AND CORRECT RECORD OF THE ABOVE DESCRIBED HOLE AND THAT HE OR SHE WILL FILE THIS WELL RECORD WITH THE STATE ENGINEER AND THE PERMIT HOLDER WITHIN 30 DAYS AFTER COMPLETION OF WELL DRILLING:

Jack Atkins — Jackie D. Atkins — 07/29/2021

SIGNATURE OF DRILLER / PRINT SIGNEE NAME — DATE

FOR OSE INTERNAL USE — WR-20 WELL RECORD & LOG (Version 06/30/2017)

FILE NO. C-4549	POD NO. 1	TRN NO. 698318	
LOCATION 26S-32E-11	1.1.1	WELL TAG ID NO. NA	PAGE 2 OF 2

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APPENDIX B

Photographic Log

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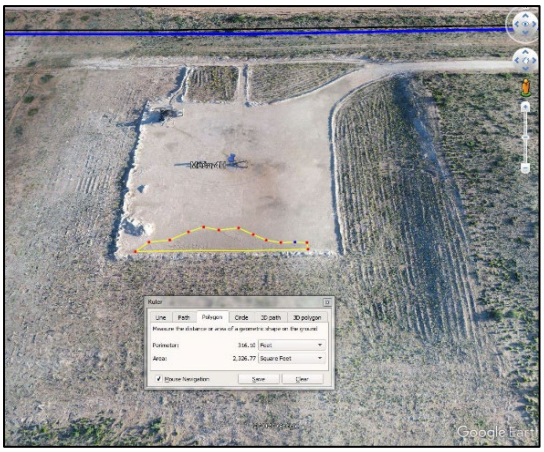
Photographic Log
BTA Oil Producers, LLC
Mesa 8105 JV-P #4H Battery
NRM2004549559



Photograph: 1 Date: 2/12/2020
Description: Satellite view of release footprint
View: Satellite

Photograph: 2 Date: 2/12/2020
Description: Standing fluid during initial release
View: West

Photograph: 3 Date: 2/12/2020
Description: Release area after initial scrape
View: South

Photograph: 4 Date: 8/31/2023
Description: Newly constructed well pad over historical release

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Photographic Log
BTA Oil Producers, LLC
Mesa 8105 JV-P #4H Battery
NRM2004549559

Photograph: 5 Date: 9/28/2023
Description: Delineation activities
View: East

Photograph: 6 Date: 10/24/2023
Description: Excavation activities
View: South

Photograph: 7 Date: 10/25/2023
Description: Excavation near pothole PH01
View: East

Photograph: 8 Date: 10/25/2023
Description: Excavation near pothole PH04
View: East

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APPENDIX C

Lithologic Soil Sampling Logs

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	Sample Name: PH01	Date: 9-29-23
	Site Name: Mesa 8105 JV-P #4H	
	Incident Number: NRM2004549559	
	Job Number: 03C2012068	
LITHOLOGIC / SOIL SAMPLING LOG	Logged By: Ronni Hayes	Method: Trackhoe
Coordinates: 32.063823, -103.649929	Hole Diameter: ~2'	Total Depth: 4 ft bgs

Comments: Field screening conducted with HACH Chloride Test Strips and PID for chloride and vapor, respectively. Chloride test performed with 1:4 dilution factor of soil to distilled water. 40% correction factor included.

Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample ID	Sample Depth (ft bgs)	Depth (ft bgs)	USCS/Rock Symbol	Lithologic Descriptions
						+ 0-6	CCHE	New pad, fresh packed caliche
						0		
Dry	621.6	4.5	N	PH01	0.5	0.5	CCHE	Caliche, abundant limestone gravel, tan color, no staining, no odor, noncohesive, poorly graded
Dry	<163.2	1.4	N		1	1	SAA	SAA, some sand mix
Dry	<163.2	0.7	N	PH01A	2	2	SP	SAND, light brown, no staining, no odor, some limestone gravel, slightly cohesive, poorly graded
Dry	<163.2	1.3	N		3	3	SAA	
Dry	<163.2	0.6	N		4	4	SAA	
								TD at 4 ft bgs

ENSOLUM

	Sample Name: PH02	Date: 9-29-23
	Site Name: Mesa 8105 JV-P #4H	
	Incident Number: NRM2004549559	
	Job Number: 03C2012068	
LITHOLOGIC / SOIL SAMPLING LOG	Logged By: Ronni Hayes	Method: Trackhoe
Coordinates: 32.063846, -103.649823	Hole Diameter: ~2'	Total Depth: 3 ft bgs

Comments: Field screening conducted with HACH Chloride Test Strips and PID for chloride and vapor, respectively. Chloride test performed with 1:4 dilution factor of soil to distilled water. 40% correction factor included.

Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample ID	Sample Depth (ft bgs)	Depth (ft bgs)	USCS/Rock Symbol	Lithologic Descriptions
						+ 0-6	CCHE	New pad, fresh packed caliche
						0		
Dry	498.4	0.3	N	PH02	0.5	0.5	CCHE	Caliche, abundant limestone gravel, tan color, no staining, no odor, noncohesive, poorly graded
Dry	392	0.1	N		1	1	SAA	SAA, some sand mix
Dry	442.4	0.2	N	PH02A	2	2	SP	SAND, light brown, no staining, no odor, some limestone gravel, slightly cohesive, poorly graded
Dry	293.2	0.1	N		3	3	SAA	
								TD at 3 ft bgs

ENSOLUM

	Sample Name: PH03	Date: 9-28-23
	Site Name: Mesa 8105 JV-P #4H	
	Incident Number: NRM2004549559	
	Job Number: 03C2012068	
LITHOLOGIC / SOIL SAMPLING LOG	Logged By: Ronni Hayes	Method: Trackhoe
Coordinates: 32.063852, -103.649719	Hole Diameter: ~2'	Total Depth: 3 ft bgs

Comments: Field screening conducted with HACH Chloride Test Strips and PID for chloride and vapor, respectively. Chloride test performed with 1:4 dilution factor of soil to distilled water. 40% correction factor included.

Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample ID	Sample Depth (ft bgs)	Depth (ft bgs)	USCS/Rock Symbol	Lithologic Descriptions
						+ 0-7	CCHE	New pad, fresh packed caliche
						0		
Dry	<163.2	2.2	N	PH03	0.5	0.5	CCHE	Caliche, abundant limestone gravel, tan color, no staining, no odor, noncohesive
Dry	<163.2	0.4	N		1	1	SAA	SAA, slight odor
Dry	<163.2	0.7	N	PH03A	2	2	CCHE	Caliche, abundant limestone gravel, some sand, tan color, no staining, no odor
Dry	<163.2	0.5	N		3	3	SP	SAND, light brown, no staining, no odor, some limestone gravel, slightly cohesive
								TD at 3 ft bgs

ENSOLUM

Sample Name: PH04	Date: 9-28-23
Site Name: Mesa 8105 JV-P #4H	
Incident Number: NRM2004549559	
Job Number: 03C2012068	
LITHOLOGIC / SOIL SAMPLING LOG	Logged By: Ronni Hayes / Method: Trackhoe
Coordinates: 32.063830, -103.649614	Hole Diameter: ~2' / Total Depth: 4 ft bgs

Comments: Field screening conducted with HACH Chloride Test Strips and PID for chloride and vapor, respectively. Chloride test performed with 1:4 dilution factor of soil to distilled water. 40% correction factor included.

Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample ID	Sample Depth (ft bgs)	Depth (ft bgs)	USCS/Rock Symbol	Lithologic Descriptions
						+0-6.5	CCHE	New pad, fresh packed caliche
						0		
Dry	<163.2	32.9	N	PH04	0.5	0.5	CCHE	Caliche, abundant limestone gravel, tan color, no staining, slight odor, noncohesive
Dry	<163.2	45.1	N		1	1	SAA	
Dry	<163.2	5.9	N			1.5	SAA	
Dry	<163.2	3.2	N		2	2	CCHE	Caliche, abundant limestone gravel, some sand, tan color, no staining, slight odor
Dry	229.6	2.2	Y	PH04A	3	3	SP	SAND, light brown, slight staining, no odor, some limestone gravel, slightly cohesive
Dry	<163.2	0.6	N	PH04B	4	4	SAA	SAA, no staining
								TD at 4 ft bgs

ENSOLUM

	Sample Name: PH05	Date: 9-28-23
	Site Name: Mesa 8105 JV-P #4H	
	Incident Number: NRM2004549559	
	Job Number: 03C2012068	
LITHOLOGIC / SOIL SAMPLING LOG	Logged By: Ronni Hayes	Method: Trackhoe
Coordinates: 32.063830, -103.649495	Hole Diameter: ~2'	Total Depth: 4 ft bgs

Comments: Field screening conducted with HACH Chloride Test Strips and PID for chloride and vapor, respectively. Chloride test performed with 1:4 dilution factor of soil to distilled water. 40% correction factor included.

Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample ID	Sample Depth (ft bgs)	Depth (ft bgs)	USCS/Rock Symbol	Lithologic Descriptions
						+0-6.5	CCHE	New pad, fresh packed caliche
						0		
Dry	<163.2	1.6	N	PH05	0.5	0.5	CCHE	Caliche, abundant limestone gravel, tan color, no staining, slight odor, noncohesive
Dry	<163.2	2.0	N		1	1	SAA	
Dry	<163.2	2.1	N	PH05A	2	2	SAA	
Dry	<163.2	0.9	N		3	3	SP	SAND, light brown, no staining, no odor, some limestone gravel, slightly cohesive, poorly sorted
Dry	<163.2	0.8	N		4	4	SAA	SAA
								TD at 4 ft bgs

ENSOLUM

	Sample Name: PH06	Date: 9-28-23
	Site Name: Mesa 8105 JV-P #4H	
	Incident Number: NRM2004549559	
	Job Number: 03C2012068	
LITHOLOGIC / SOIL SAMPLING LOG	Logged By: Ronni Hayes	Method: Trackhoe
Coordinates: 32.063916, -103.649752	Hole Diameter: ~2'	Total Depth: 3 ft bgs

Comments: Field screening conducted with HACH Chloride Test Strips and PID for chloride and vapor, respectively. Chloride test performed with 1:4 dilution factor of soil to distilled water. 40% correction factor included.

Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample ID	Sample Depth (ft bgs)	Depth (ft bgs)	USCS/Rock Symbol	Lithologic Descriptions
						+0-7	CCHE	New pad, fresh packed caliche
						0		
Dry	498.40	1.0	N	PH06	0.5	0.5	CCHE	Caliche, abundant limestone gravel, tan color, no staining, no odor, noncohesive, poorly sorted
Dry	498.40	1.1	N		1	1	SAA	
Dry	498.40	1.0	N	PH06A	2	2	SP	SAND, light brown, no staining, no odor, some limestone gravel, slightly cohesive
Dry	<163.2	0.9	N		3	3	SAA	
								TD at 3 ft bgs

ENSOLUM

	Sample Name: PH07	Date: 9-28-23
	Site Name: Mesa 8105 JV-P #4H	
	Incident Number: NRM2004549559	
	Job Number: 03C2012068	
LITHOLOGIC / SOIL SAMPLING LOG	Logged By: Ronni Hayes	Method: Trackhoe
Coordinates: 32.063787, -103.649745	Hole Diameter: ~2'	Total Depth: 3 ft bgs

Comments: Field screening conducted with HACH Chloride Test Strips and PID for chloride and vapor, respectively. Chloride test performed with 1:4 dilution factor of soil to distilled water. 40% correction factor included.

Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample ID	Sample Depth (ft bgs)	Depth (ft bgs)	USCS/Rock Symbol	Lithologic Descriptions
						+ 0-7	CCHE	New pad, fresh packed caliche
						0		
Dry	263.2	1.2	N	PH07	0.5	0.5	CCHE	Caliche, abundant limestone gravel, tan color, no staining, slight odor, poorly sorted
Dry	347.2	0.1	N		1	1	SAA	
Dry	<163.2	0.8	N	PH07A	2	2	SP	SAND, brown, no staining, no odor, some limestone gravel, slightly cohesive, poorly sorted
Dry	<163.2	1	N		3	3	SAA	
								TD at 3 ft bgs

ENSOLUM

	Sample Name: PH08	Date: 9-28-23
	Site Name: Mesa 8105 JV-P #4H	
	Incident Number: NRM2004549559	
	Job Number: 03C2012068	
LITHOLOGIC / SOIL SAMPLING LOG	Logged By: Ronni Hayes	Method: Trackhoe
Coordinates: 32.0638125, -103.6499862	Hole Diameter: ~2'	Total Depth: 3 ft bgs

Comments: Field screening conducted with HACH Chloride Test Strips and PID for chloride and vapor, respectively. Chloride test performed with 1:4 dilution factor of soil to distilled water. 40% correction factor included.

Moisture Content	Chloride (ppm)	Vapor (ppm)	Staining	Sample ID	Sample Depth (ft bgs)	Depth (ft bgs)	USCS/Rock Symbol	Lithologic Descriptions
						+0-6	CCHE	New pad, fresh packed caliche
						0		
Dry	<168	0.2	N	PH08	0.5	0.5	CCHE	Caliche, abundant limestone gravel, tan color, no staining, no odor, noncohesive, poorly sorted
Dry	<168	0.0	N		1	1	SAA	
Dry	<168	0.1	N		2	2	SP	SAND, light brown, slight staining, no odor, some limestone gravel, slightly cohesive, poorly sorted
Dry	<168	0	Y	PH08A	3	3	SAA	SAA
								TD at 3 ft bgs

ENSOLUM

APPENDIX D

Laboratory Analytical Reports & Chain of Custody Documentation

CARDINAL Laboratories

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

October 04, 2023

AIMEE COLE

ENSOLUM, LLC

705 W WADLEY AVE.

MIDLAND, TX 79705

RE: MESA 8105 JV-P #4H

Enclosed are the results of analyses for samples received by the laboratory on 09/29/23 13:28.

Cardinal Laboratories is accredited through Texas NELAP under certificate number T104704398-22-15. 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 accreditated 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

CARDINAL Laboratories

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

Analytical Results For:

ENSOLUM, LLC
AIMEE COLE
705 W WADLEY AVE.
MIDLAND TX, 79705
Fax To:

Received:	09/29/2023	Sampling Date:	09/29/2023
Reported:	10/04/2023	Sampling Type:	Soil
Project Name:	MESA 8105 JV-P #4H	Sampling Condition:	Cool & Intact
Project Number:	03C2012065	Sample Received By:	Tamara Oldaker
Project Location:	BTA 32.06412-103.64973		

Sample ID: PHO1 @ 0.5' (H235328-01)

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	10/02/2023	ND	2.01	101	2.00	1.37	
Toluene*	<0.050	0.050	10/02/2023	ND	2.16	108	2.00	2.98	
Ethylbenzene*	<0.050	0.050	10/02/2023	ND	2.17	108	2.00	1.35	
Total Xylenes*	<0.150	0.150	10/02/2023	ND	6.54	109	6.00	1.11	
Total BTEX	<0.300	0.300	10/02/2023	ND					

Surrogate: 4-Bromofluorobenzene (PID *117 %* *71.5-134*

Chloride, SM4500Cl-B mg/kg Analyzed By: AC

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**784**	16.0	10/02/2023	ND	432	108	400	3.77	

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	10/02/2023	ND	189	94.4	200	2.47	
DRO >C10-C28*	**1350**	10.0	10/02/2023	ND	193	96.5	200	1.62	
EXT DRO >C28-C36	**481**	10.0	10/02/2023	ND					

Surrogate: 1-Chlorooctane *96.8 %* *48.2-134*

Surrogate: 1-Chlorooctadecane *130 %* *49.1-148*

Cardinal Laboratories *=Accredited Analyte

Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

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

Analytical Results For:

ENSOLUM, LLC
AIMEE COLE
705 W WADLEY AVE.
MIDLAND TX, 79705
Fax To:

Received:	09/29/2023	Sampling Date:	09/29/2023
Reported:	10/04/2023	Sampling Type:	Soil
Project Name:	MESA 8105 JV-P #4H	Sampling Condition:	Cool & Intact
Project Number:	03C2012065	Sample Received By:	Tamara Oldaker
Project Location:	BTA 32.06412-103.64973		

Sample ID: PHO1 A @ 2' (H235328-02)

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	10/02/2023	ND	2.01	101	2.00	1.37	
Toluene*	<0.050	0.050	10/02/2023	ND	2.16	108	2.00	2.98	
Ethylbenzene*	<0.050	0.050	10/02/2023	ND	2.17	108	2.00	1.35	
Total Xylenes*	<0.150	0.150	10/02/2023	ND	6.54	109	6.00	1.11	
Total BTEX	<0.300	0.300	10/02/2023	ND					

Surrogate: 4-Bromofluorobenzene (PID *116 %* *71.5-134*

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	10/02/2023	ND	432	108	400	3.77	

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	10/02/2023	ND	189	94.4	200	2.47	
DRO >C10-C28*	<10.0	10.0	10/02/2023	ND	193	96.5	200	1.62	
EXT DRO >C28-C36	<10.0	10.0	10/02/2023	ND					

Surrogate: 1-Chlorooctane *99.8 %* *48.2-134*

Surrogate: 1-Chlorooctadecane *114 %* *49.1-148*

Cardinal Laboratories *=Accredited Analyte

Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

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

Analytical Results For:

ENSOLUM, LLC
AIMEE COLE
705 W WADLEY AVE.
MIDLAND TX, 79705
Fax To:

Received:	09/29/2023	Sampling Date:	09/29/2023
Reported:	10/04/2023	Sampling Type:	Soil
Project Name:	MESA 8105 JV-P #4H	Sampling Condition:	Cool & Intact
Project Number:	03C2012065	Sample Received By:	Tamara Oldaker
Project Location:	BTA 32.06412-103.64973		

Sample ID: PHO2 @ 0.5' (H235328-03)

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	10/02/2023	ND	2.01	101	2.00	1.37	
Toluene*	<0.050	0.050	10/02/2023	ND	2.16	108	2.00	2.98	
Ethylbenzene*	<0.050	0.050	10/02/2023	ND	2.17	108	2.00	1.35	
Total Xylenes*	<0.150	0.150	10/02/2023	ND	6.54	109	6.00	1.11	
Total BTEX	<0.300	0.300	10/02/2023	ND					

Surrogate: 4-Bromofluorobenzene (PID *116 %* *71.5-134*

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	10/02/2023	ND	432	108	400	3.77	

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	10/02/2023	ND	189	94.4	200	2.47	
DRO >C10-C28*	<10.0	10.0	10/02/2023	ND	193	96.5	200	1.62	
EXT DRO >C28-C36	<10.0	10.0	10/02/2023	ND					

Surrogate: 1-Chlorooctane *95.4 %* *48.2-134*

Surrogate: 1-Chlorooctadecane *107 %* *49.1-148*

Cardinal Laboratories *=Accredited Analyte

Celey D. Keene

Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

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

Analytical Results For:

ENSOLUM, LLC
AIMEE COLE
705 W WADLEY AVE.
MIDLAND TX, 79705
Fax To:

Received:	09/29/2023	Sampling Date:	09/29/2023
Reported:	10/04/2023	Sampling Type:	Soil
Project Name:	MESA 8105 JV-P #4H	Sampling Condition:	Cool & Intact
Project Number:	03C2012065	Sample Received By:	Tamara Oldaker
Project Location:	BTA 32.06412-103.64973		

Sample ID: PHO2 A @ 2' (H235328-04)

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	10/02/2023	ND	2.01	101	2.00	1.37	
Toluene*	<0.050	0.050	10/02/2023	ND	2.16	108	2.00	2.98	
Ethylbenzene*	<0.050	0.050	10/02/2023	ND	2.17	108	2.00	1.35	
Total Xylenes*	<0.150	0.150	10/02/2023	ND	6.54	109	6.00	1.11	
Total BTEX	<0.300	0.300	10/02/2023	ND					

Surrogate: 4-Bromofluorobenzene (PID *116 %* *71.5-134*

Chloride, SM4500Cl-B mg/kg Analyzed By: AC

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**400**	16.0	10/02/2023	ND	432	108	400	3.77	

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	10/02/2023	ND	189	94.4	200	2.47	
DRO >C10-C28*	<10.0	10.0	10/02/2023	ND	193	96.5	200	1.62	
EXT DRO >C28-C36	<10.0	10.0	10/02/2023	ND					

Surrogate: 1-Chlorooctane *120 %* *48.2-134*

Surrogate: 1-Chlorooctadecane *135 %* *49.1-148*

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Celey D. Keene

Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

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

Analytical Results For:

ENSOLUM, LLC
AIMEE COLE
705 W WADLEY AVE.
MIDLAND TX, 79705
Fax To:

Received:	09/29/2023	Sampling Date:	09/28/2023
Reported:	10/04/2023	Sampling Type:	Soil
Project Name:	MESA 8105 JV-P #4H	Sampling Condition:	Cool & Intact
Project Number:	03C2012065	Sample Received By:	Tamara Oldaker
Project Location:	BTA 32.06412-103.64973		

Sample ID: PHO3 @ 0.5' (H235328-05)

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	10/02/2023	ND	2.01	101	2.00	1.37	
Toluene*	<0.050	0.050	10/02/2023	ND	2.16	108	2.00	2.98	
Ethylbenzene*	<0.050	0.050	10/02/2023	ND	2.17	108	2.00	1.35	
Total Xylenes*	<0.150	0.150	10/02/2023	ND	6.54	109	6.00	1.11	
Total BTEX	<0.300	0.300	10/02/2023	ND					

Surrogate: 4-Bromofluorobenzene (PID *115 %* *71.5-134*

Chloride, SM4500Cl-B mg/kg Analyzed By: AC

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**80.0**	16.0	10/02/2023	ND	432	108	400	3.77	

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	10/02/2023	ND	189	94.4	200	2.47	
DRO >C10-C28*	**16.1**	10.0	10/02/2023	ND	193	96.5	200	1.62	
EXT DRO >C28-C36	<10.0	10.0	10/02/2023	ND					

Surrogate: 1-Chlorooctane *97.5 %* *48.2-134*

Surrogate: 1-Chlorooctadecane *111 %* *49.1-148*

Cardinal Laboratories *=Accredited Analyte

Celey D. Keene

Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

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

Analytical Results For:

ENSOLUM, LLC
AIMEE COLE
705 W WADLEY AVE.
MIDLAND TX, 79705
Fax To:

Received:	09/29/2023	Sampling Date:	09/28/2023
Reported:	10/04/2023	Sampling Type:	Soil
Project Name:	MESA 8105 JV-P #4H	Sampling Condition:	Cool & Intact
Project Number:	03C2012065	Sample Received By:	Tamara Oldaker
Project Location:	BTA 32.06412-103.64973		

Sample ID: PHO3 A @ 2' (H235328-06)

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	10/02/2023	ND	2.01	101	2.00	1.37	
Toluene*	<0.050	0.050	10/02/2023	ND	2.16	108	2.00	2.98	
Ethylbenzene*	<0.050	0.050	10/02/2023	ND	2.17	108	2.00	1.35	
Total Xylenes*	<0.150	0.150	10/02/2023	ND	6.54	109	6.00	1.11	
Total BTEX	<0.300	0.300	10/02/2023	ND					

Surrogate: 4-Bromofluorobenzene (PID *126 %* *71.5-134*

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	10/02/2023	ND	432	108	400	3.77	

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	10/02/2023	ND	189	94.4	200	2.47	
DRO >C10-C28*	<10.0	10.0	10/02/2023	ND	193	96.5	200	1.62	
EXT DRO >C28-C36	<10.0	10.0	10/02/2023	ND					

Surrogate: 1-Chlorooctane *96.0 %* *48.2-134*

Surrogate: 1-Chlorooctadecane *108 %* *49.1-148*

Cardinal Laboratories *=Accredited Analyte

Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

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

Analytical Results For:

ENSOLUM, LLC
AIMEE COLE
705 W WADLEY AVE.
MIDLAND TX, 79705
Fax To:

Received:	09/29/2023	Sampling Date:	09/28/2023
Reported:	10/04/2023	Sampling Type:	Soil
Project Name:	MESA 8105 JV-P #4H	Sampling Condition:	Cool & Intact
Project Number:	03C2012065	Sample Received By:	Tamara Oldaker
Project Location:	BTA 32.06412-103.64973		

Sample ID: PHO4 @ 0.5' (H235328-07)

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	10/02/2023	ND	2.01	101	2.00	1.37	
Toluene*	<0.050	0.050	10/02/2023	ND	2.16	108	2.00	2.98	
Ethylbenzene*	<0.050	0.050	10/02/2023	ND	2.17	108	2.00	1.35	
Total Xylenes*	<0.150	0.150	10/02/2023	ND	6.54	109	6.00	1.11	
Total BTEX	<0.300	0.300	10/02/2023	ND					

Surrogate: 4-Bromofluorobenzene (PID *117 %* *71.5-134*

Chloride, SM4500Cl-B mg/kg Analyzed By: AC

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**80.0**	16.0	10/02/2023	ND	432	108	400	3.64	

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	10/02/2023	ND	189	94.4	200	2.47	
DRO >C10-C28*	**1350**	10.0	10/02/2023	ND	193	96.5	200	1.62	
EXT DRO >C28-C36	**481**	10.0	10/02/2023	ND					

Surrogate: 1-Chlorooctane *79.8 %* *48.2-134*

Surrogate: 1-Chlorooctadecane *109 %* *49.1-148*

Cardinal Laboratories *=Accredited Analyte

Celey D. Keene

Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

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Analytical Results For:

ENSOLUM, LLC
AIMEE COLE
705 W WADLEY AVE.
MIDLAND TX, 79705
Fax To:

Received:	09/29/2023	Sampling Date:	09/28/2023
Reported:	10/04/2023	Sampling Type:	Soil
Project Name:	MESA 8105 JV-P #4H	Sampling Condition:	Cool & Intact
Project Number:	03C2012065	Sample Received By:	Tamara Oldaker
Project Location:	BTA 32.06412-103.64973		

Sample ID: PHO4 A @ 3' (H235328-08)

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	10/02/2023	ND	2.01	101	2.00	1.37	
Toluene*	<0.050	0.050	10/02/2023	ND	2.16	108	2.00	2.98	
Ethylbenzene*	<0.050	0.050	10/02/2023	ND	2.17	108	2.00	1.35	
Total Xylenes*	<0.150	0.150	10/02/2023	ND	6.54	109	6.00	1.11	
Total BTEX	<0.300	0.300	10/02/2023	ND					

Surrogate: 4-Bromofluorobenzene (PID *118 %* *71.5-134*

Chloride, SM4500Cl-B mg/kg Analyzed By: AC

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**224**	16.0	10/02/2023	ND	432	108	400	3.64	

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	10/02/2023	ND	189	94.4	200	2.47	
DRO >C10-C28*	**12.0**	10.0	10/02/2023	ND	193	96.5	200	1.62	
EXT DRO >C28-C36	<10.0	10.0	10/02/2023	ND					

Surrogate: 1-Chlorooctane *90.2 %* *48.2-134*

Surrogate: 1-Chlorooctadecane *102 %* *49.1-148*

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Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

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

Analytical Results For:

ENSOLUM, LLC
AIMEE COLE
705 W WADLEY AVE.
MIDLAND TX, 79705
Fax To:

Received:	09/29/2023	Sampling Date:	09/28/2023
Reported:	10/04/2023	Sampling Type:	Soil
Project Name:	MESA 8105 JV-P #4H	Sampling Condition:	Cool & Intact
Project Number:	03C2012065	Sample Received By:	Tamara Oldaker
Project Location:	BTA 32.06412-103.64973		

Sample ID: PHO4 B @ 4' (H235328-09)

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	10/02/2023	ND	2.01	101	2.00	1.37	
Toluene*	<0.050	0.050	10/02/2023	ND	2.16	108	2.00	2.98	
Ethylbenzene*	<0.050	0.050	10/02/2023	ND	2.17	108	2.00	1.35	
Total Xylenes*	<0.150	0.150	10/02/2023	ND	6.54	109	6.00	1.11	
Total BTEX	<0.300	0.300	10/02/2023	ND					

Surrogate: 4-Bromofluorobenzene (PID *115 %* *71.5-134*

Chloride, SM4500Cl-B mg/kg **Analyzed By: AC**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**144**	16.0	10/02/2023	ND	432	108	400	3.64	

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	10/02/2023	ND	189	94.4	200	2.47	
DRO >C10-C28*	<10.0	10.0	10/02/2023	ND	193	96.5	200	1.62	
EXT DRO >C28-C36	<10.0	10.0	10/02/2023	ND					

Surrogate: 1-Chlorooctane *100 %* *48.2-134*

Surrogate: 1-Chlorooctadecane *114 %* *49.1-148*

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CARDINAL Laboratories

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Analytical Results For:

ENSOLUM, LLC
AIMEE COLE
705 W WADLEY AVE.
MIDLAND TX, 79705
Fax To:

Received:	09/29/2023	Sampling Date:	09/28/2023
Reported:	10/04/2023	Sampling Type:	Soil
Project Name:	MESA 8105 JV-P #4H	Sampling Condition:	Cool & Intact
Project Number:	03C2012065	Sample Received By:	Tamara Oldaker
Project Location:	BTA 32.06412-103.64973		

Sample ID: PHO5 @ 0.5' (H235328-10)

BTEX 8021B mg/kg **Analyzed By: MS**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	10/02/2023	ND	2.01	101	2.00	1.37	
Toluene*	<0.050	0.050	10/02/2023	ND	2.16	108	2.00	2.98	
Ethylbenzene*	<0.050	0.050	10/02/2023	ND	2.17	108	2.00	1.35	
Total Xylenes*	<0.150	0.150	10/02/2023	ND	6.54	109	6.00	1.11	
Total BTEX	<0.300	0.300	10/02/2023	ND					

Surrogate: 4-Bromofluorobenzene (PID *117 %* *71.5-134*

Chloride, SM4500Cl-B mg/kg **Analyzed By: AC**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**64.0**	16.0	10/02/2023	ND	432	108	400	3.64	

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	10/02/2023	ND	189	94.4	200	2.47	
DRO >C10-C28*	<10.0	10.0	10/02/2023	ND	193	96.5	200	1.62	
EXT DRO >C28-C36	<10.0	10.0	10/02/2023	ND					

Surrogate: 1-Chlorooctane *93.2 %* *48.2-134*

Surrogate: 1-Chlorooctadecane *104 %* *49.1-148*

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Analytical Results For:

ENSOLUM, LLC
AIMEE COLE
705 W WADLEY AVE.
MIDLAND TX, 79705
Fax To:

Received:	09/29/2023	Sampling Date:	09/28/2023
Reported:	10/04/2023	Sampling Type:	Soil
Project Name:	MESA 8105 JV-P #4H	Sampling Condition:	Cool & Intact
Project Number:	03C2012065	Sample Received By:	Tamara Oldaker
Project Location:	BTA 32.06412-103.64973		

Sample ID: PHO5 A @ 2' (H235328-11)

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	10/02/2023	ND	2.01	101	2.00	1.37	
Toluene*	<0.050	0.050	10/02/2023	ND	2.16	108	2.00	2.98	
Ethylbenzene*	<0.050	0.050	10/02/2023	ND	2.17	108	2.00	1.35	
Total Xylenes*	<0.150	0.150	10/02/2023	ND	6.54	109	6.00	1.11	
Total BTEX	<0.300	0.300	10/02/2023	ND					

Surrogate: 4-Bromofluorobenzene (PID *115 %* *71.5-134*

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	10/02/2023	ND	432	108	400	3.64	

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	10/02/2023	ND	189	94.4	200	2.47	
DRO >C10-C28*	<10.0	10.0	10/02/2023	ND	193	96.5	200	1.62	
EXT DRO >C28-C36	<10.0	10.0	10/02/2023	ND					

Surrogate: 1-Chlorooctane *89.1 %* *48.2-134*

Surrogate: 1-Chlorooctadecane *99.0 %* *49.1-148*

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CARDINAL Laboratories

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Analytical Results For:

ENSOLUM, LLC
AIMEE COLE
705 W WADLEY AVE.
MIDLAND TX, 79705
Fax To:

Received:	09/29/2023	Sampling Date:	09/28/2023
Reported:	10/04/2023	Sampling Type:	Soil
Project Name:	MESA 8105 JV-P #4H	Sampling Condition:	Cool & Intact
Project Number:	03C2012065	Sample Received By:	Tamara Oldaker
Project Location:	BTA 32.06412-103.64973		

Sample ID: PHO6 @ 0.5' (H235328-12)

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	10/02/2023	ND	2.01	101	2.00	1.37	
Toluene*	<0.050	0.050	10/02/2023	ND	2.16	108	2.00	2.98	
Ethylbenzene*	<0.050	0.050	10/02/2023	ND	2.17	108	2.00	1.35	
Total Xylenes*	<0.150	0.150	10/02/2023	ND	6.54	109	6.00	1.11	
Total BTEX	<0.300	0.300	10/02/2023	ND					

Surrogate: 4-Bromofluorobenzene (PID *118 %* *71.5-134*

Chloride, SM4500Cl-B mg/kg Analyzed By: AC

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**464**	16.0	10/02/2023	ND	432	108	400	3.64	

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	10/02/2023	ND	189	94.4	200	2.47	
DRO >C10-C28*	<10.0	10.0	10/02/2023	ND	193	96.5	200	1.62	
EXT DRO >C28-C36	<10.0	10.0	10/02/2023	ND					

Surrogate: 1-Chlorooctane *88.4 %* *48.2-134*

Surrogate: 1-Chlorooctadecane *97.6 %* *49.1-148*

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Analytical Results For:

ENSOLUM, LLC
AIMEE COLE
705 W WADLEY AVE.
MIDLAND TX, 79705
Fax To:

Received:	09/29/2023	Sampling Date:	09/28/2023
Reported:	10/04/2023	Sampling Type:	Soil
Project Name:	MESA 8105 JV-P #4H	Sampling Condition:	Cool & Intact
Project Number:	03C2012065	Sample Received By:	Tamara Oldaker
Project Location:	BTA 32.06412-103.64973		

Sample ID: PHO6 A @ 2' (H235328-13)

BTEX 8021B mg/kg Analyzed By: MS

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	10/02/2023	ND	2.01	101	2.00	1.37	
Toluene*	<0.050	0.050	10/02/2023	ND	2.16	108	2.00	2.98	
Ethylbenzene*	<0.050	0.050	10/02/2023	ND	2.17	108	2.00	1.35	
Total Xylenes*	<0.150	0.150	10/02/2023	ND	6.54	109	6.00	1.11	
Total BTEX	<0.300	0.300	10/02/2023	ND					

Surrogate: 4-Bromofluorobenzene (PID *119 %* *71.5-134*

Chloride, SM4500Cl-B mg/kg Analyzed By: AC

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**128**	16.0	10/02/2023	ND	432	108	400	3.64	

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	10/02/2023	ND	189	94.4	200	2.47	
DRO >C10-C28*	<10.0	10.0	10/02/2023	ND	193	96.5	200	1.62	
EXT DRO >C28-C36	<10.0	10.0	10/02/2023	ND					

Surrogate: 1-Chlorooctane *89.7 %* *48.2-134*

Surrogate: 1-Chlorooctadecane *100 %* *49.1-148*

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CARDINAL Laboratories

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Analytical Results For:

ENSOLUM, LLC
AIMEE COLE
705 W WADLEY AVE.
MIDLAND TX, 79705
Fax To:

Received:	09/29/2023	Sampling Date:	09/28/2023
Reported:	10/04/2023	Sampling Type:	Soil
Project Name:	MESA 8105 JV-P #4H	Sampling Condition:	Cool & Intact
Project Number:	03C2012065	Sample Received By:	Tamara Oldaker
Project Location:	BTA 32.06412-103.64973		

Sample ID: PHO7 @ 0.5' (H235328-14)

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	10/02/2023	ND	2.01	101	2.00	1.37	
Toluene*	<0.050	0.050	10/02/2023	ND	2.16	108	2.00	2.98	
Ethylbenzene*	<0.050	0.050	10/02/2023	ND	2.17	108	2.00	1.35	
Total Xylenes*	<0.150	0.150	10/02/2023	ND	6.54	109	6.00	1.11	
Total BTEX	<0.300	0.300	10/02/2023	ND					

Surrogate: 4-Bromofluorobenzene (PID *118 %* *71.5-134*

Chloride, SM4500Cl-B mg/kg **Analyzed By: AC**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**272**	16.0	10/02/2023	ND	432	108	400	3.64	

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	10/02/2023	ND	189	94.4	200	2.47	
DRO >C10-C28*	<10.0	10.0	10/02/2023	ND	193	96.5	200	1.62	
EXT DRO >C28-C36	<10.0	10.0	10/02/2023	ND					

Surrogate: 1-Chlorooctane *103 %* *48.2-134*

Surrogate: 1-Chlorooctadecane *114 %* *49.1-148*

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CARDINAL Laboratories

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Analytical Results For:

ENSOLUM, LLC
AIMEE COLE
705 W WADLEY AVE.
MIDLAND TX, 79705
Fax To:

Received:	09/29/2023	Sampling Date:	09/28/2023
Reported:	10/04/2023	Sampling Type:	Soil
Project Name:	MESA 8105 JV-P #4H	Sampling Condition:	Cool & Intact
Project Number:	03C2012065	Sample Received By:	Tamara Oldaker
Project Location:	BTA 32.06412-103.64973		

Sample ID: PHO7 A @ 2' (H235328-15)

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	10/04/2023	ND	2.18	109	2.00	4.80	
Toluene*	<0.050	0.050	10/04/2023	ND	2.28	114	2.00	5.47	
Ethylbenzene*	<0.050	0.050	10/04/2023	ND	2.28	114	2.00	4.30	
Total Xylenes*	<0.150	0.150	10/04/2023	ND	6.30	105	6.00	4.83	
Total BTEX	<0.300	0.300	10/04/2023	ND					

Surrogate: 4-Bromofluorobenzene (PID *115 %* *71.5-134*

Chloride, SM4500Cl-B mg/kg Analyzed By: AC

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**128**	16.0	10/02/2023	ND	432	108	400	3.64	

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	10/02/2023	ND	189	94.4	200	2.47	
DRO >C10-C28*	<10.0	10.0	10/02/2023	ND	193	96.5	200	1.62	
EXT DRO >C28-C36	<10.0	10.0	10/02/2023	ND					

Surrogate: 1-Chlorooctane *84.1 %* *48.2-134*

Surrogate: 1-Chlorooctadecane *93.0 %* *49.1-148*

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Notes and Definitions

ND	Analyte NOT DETECTED at or above the reporting limit
RPD	Relative Percent Difference
**	Samples not received at proper temperature of 6°C or below.
***	Insufficient time to reach temperature.
-	Chloride by SM4500Cl-B does not require samples be received at or below 6°C
	Samples reported on an as received basis (wet) unless otherwise noted on report

Cardinal Laboratories *=Accredited Analyte

Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

101 East Marland, Hobbs, NM 88240
(575) 393-2326 FAX (575) 393-2476

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

Company Name:	Ensolum LLC
Project Manager:	Aimee Cole
Address:	3122 National Parks
City:	Carlsbad State: NM Zip: 88220
Phone #:	720-384-7365 Fax #:
Project #:	03C201206S Project Owner: BTA Oil
Project Name:	Mesa 8105 JV-P #4H
Project Location:	32.06412, -103.64973
Sampler Name:	Ryan Hyes

BILL TO

P.O. #:	
Company:	BTA Oil
Attn:	~~Aimee Cole~~ Kelton Beard
Address:	104 S Pecos St
City:	Midland
State:	Tx Zip: 79701
Phone #:	
Fax #:	

ANALYSIS REQUEST

FOR LAB USE ONLY Lab I.D.	Sample I.D.	(G)RAB OR (C)OMP.	# CONTAINERS	MATRIX: GROUNDWATER	WASTEWATER	SOIL	OIL	SLUDGE	OTHER:	PRESERV.: ACID/BASE:	ICE / COOL	OTHER:	SAMPLING: DATE	TIME	Cl-	BTEX	TPH
H235328																	
1	PH01 @ 0.5'	G	1			X					X		9/29/23	1000	X	X	X
2	PH01A @ 2'													1010			
3	PH02 @ 0.5'													0920			
4	PH02A @ 2'													0928			
5	PH03 @ 0.5'												9/28/23	1005			
6	PH03A @ 2'													1015			
7	PH04 @ 0.5'													1250			
8	PH04A @ 3'													1325			
9	PH04B @ 4'													1335			
10	PH05 @ 0.5'													1215			

Relinquished By:	Date: 9-29-23	Received By:	Verbal Result: ☐ Yes ☐ No Add'l Phone #:
	Time: 1328		All Results are emailed. Please provide Email address: acole@ensolum.com, hgreen@ensolum.com
Relinquished By:	Date:	Received By:	REMARKS:
	Time:		

Delivered By: (Circle One)	Observed Temp. °C 3.2	Sample Condition: Cool ☑ Yes ☐ No; Intact ☑ Yes ☐ No	CHECKED BY: (Initials)	Turnaround Time: Standard ☒ Rush ☐
Sampler - UPS - Bus - Other:	Corrected Temp. °C			Thermometer ID #140 Correction Factor 0°C

Bacteria (only) Sample Condition: Cool ☐ Yes ☐ No; Intact ☐ Yes ☐ No; Observed Temp. °C; Corrected Temp. °C

FORM-006 R 3.4 07/11/23

† Cardinal cannot accept verbal changes. Please email changes to celey.keene@cardinallabsnm.com

CARDINAL Laboratories

101 East Marland, Hobbs, NM 88240
(575) 393-2326 FAX (575) 393-2476

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

Company Name: Ensolum, LLC	BILL TO
Project Manager: Anee Cole	P.O. #:
Address: 3122 National Parks Hwy	Company: BTA Oil
City: Carlsbad State: NM Zip: 88220	Attn: ~~Aimee Cole~~ Kelton Beard
Phone #: 720-384-7365 Fax #:	Address: 1045 Pecos St
Project #: 03C201 20165 Project Owner: BTA Oil	City: Midland
Project Name: Mesa 8105 JV-P #4H	State: Tx Zip: 79701
Project Location: 32.06412, -103.64973	Phone #:
Sampler Name: Ronni Hayes	Fax #:

FOR LAB USE ONLY					MATRIX							PRESERV.			SAMPLING		ANALYSIS REQUEST		
Lab I.D.	Sample I.D.	Depth (feet)	(G)RAB OR (C)OMP.	# CONTAINERS	GROUNDWATER	WASTEWATER	SOIL	OIL	SLUDGE	OTHER :	ACID/BASE:	ICE / COOL	OTHER :	DATE	TIME	BTEX	TPH	Cl-
H235328																		
11	PH05 A	2'	G	1			X					X		9/28/23	1226	X	X	X
12	PH06	0.5'													0942			
13	PH06A	2'													0949			
14	PH07	0.5'													1036			
15	PH07A	2'	↓	↓			↓					↓		↓	1041	↓	↓	↓

PLEASE NOTE: Liability and Damages. Cardinal's liability and client's exclusive remedy for any claim arising whether based in contract or tort shall be limited to the amount paid by the client for the analyses. All claims including those for negligence and any other cause whatsoever shall be deemed waived unless made in writing and received by Cardinal within 30 days after completion of the applicable service. In no event shall Cardinal be liable for incidental or consequential damages, including without limitation, business interruptions, loss of use, or loss of profits incurred by client, its subsidiaries, affiliates or successors arising out of or related to the performance of services hereunder by Cardinal, regardless of whether such claim is based upon any of the above stated reasons or otherwise.

Relinquished By:	Date: 9-29-23	Received By:	Verbal Result: ☐ Yes ☐ No Add'l Phone #:
	Time: 1328		All Results are emailed. Please provide Email address:
Relinquished By:	Date:	Received By:	acole@ensolum.com, hgreen@ensolum.com
	Time:		REMARKS:

Delivered By: (Circle One)	Observed Temp. °C 3.2	Sample Condition Cool ☑ Yes ☐ No / Intact ☑ Yes ☐ No	CHECKED BY: (Initials)	Turnaround Time: Standard ☒ Rush ☐
Sampler - UPS - Bus - Other:	Corrected Temp. °C			Thermometer ID #113 ~~#140~~ 9/29/23 Correction Factor ~~-0.5 °C~~

Bacteria (only) Sample Condition: Cool ☐ Yes ☐ No Intact ☐ Yes ☐ No Observed Temp. °C ____ Corrected Temp. °C ____

FORM-006 R 3.2 10/07/21

† Cardinal cannot accept verbal changes. Please email changes to celey.keene@cardinallabshm.com

CARDINAL Laboratories

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

October 26, 2023

AIMEE COLE

ENSOLUM

3122 NATIONAL PARKS HWY

CARLSBAD, NM 88220

RE: MESA 8105 JVP #4H BATTERY

Enclosed are the results of analyses for samples received by the laboratory on 10/24/23 16:43.

Cardinal Laboratories is accredited through Texas NELAP under certificate number T104704398-22-15. 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 accreditated 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

CARDINAL Laboratories

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

Analytical Results For:

ENSOLUM
AIMEE COLE
3122 NATIONAL PARKS HWY
CARLSBAD NM, 88220
Fax To:

Received:	10/24/2023	Sampling Date:	10/24/2023
Reported:	10/26/2023	Sampling Type:	Soil
Project Name:	MESA 8105 JVP #4H BATTERY	Sampling Condition:	Cool & Intact
Project Number:	03C2012065	Sample Received By:	Shalyn Rodriguez
Project Location:	BTA 32.06412,-103.64973		

Sample ID: FS 01 @ 2' (H235843-01)

BTEX 8021B mg/kg Analyzed By: JH

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	10/25/2023	ND	2.06	103	2.00	0.608	
Toluene*	<0.050	0.050	10/25/2023	ND	2.03	102	2.00	7.52	
Ethylbenzene*	<0.050	0.050	10/25/2023	ND	2.09	104	2.00	8.89	
Total Xylenes*	<0.150	0.150	10/25/2023	ND	6.36	106	6.00	10.7	
Total BTEX	<0.300	0.300	10/25/2023	ND					

Surrogate: 4-Bromofluorobenzene (PID *106 %* *71.5-134*

Chloride, SM4500Cl-B mg/kg Analyzed By: AC

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**160**	16.0	10/26/2023	ND	416	104	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	10/25/2023	ND	164	82.2	200	0.791	
DRO >C10-C28*	<10.0	10.0	10/25/2023	ND	169	84.5	200	0.00650	
EXT DRO >C28-C36	<10.0	10.0	10/25/2023	ND					

Surrogate: 1-Chlorooctane *73.8 %* *48.2-134*

Surrogate: 1-Chlorooctadecane *78.4 %* *49.1-148*

Cardinal Laboratories *=Accredited Analyte

Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

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

Analytical Results For:

ENSOLUM
AIMEE COLE
3122 NATIONAL PARKS HWY
CARLSBAD NM, 88220
Fax To:

Received:	10/24/2023	Sampling Date:	10/24/2023
Reported:	10/26/2023	Sampling Type:	Soil
Project Name:	MESA 8105 JVP #4H BATTERY	Sampling Condition:	Cool & Intact
Project Number:	03C2012065	Sample Received By:	Shalyn Rodriguez
Project Location:	BTA 32.06412,-103.64973		

Sample ID: FS 02 @ 1.5' (H235843-02)

BTEX 8021B mg/kg Analyzed By: JH

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	10/25/2023	ND	2.06	103	2.00	0.608	
Toluene*	<0.050	0.050	10/25/2023	ND	2.03	102	2.00	7.52	
Ethylbenzene*	<0.050	0.050	10/25/2023	ND	2.09	104	2.00	8.89	
Total Xylenes*	<0.150	0.150	10/25/2023	ND	6.36	106	6.00	10.7	
Total BTEX	<0.300	0.300	10/25/2023	ND					

Surrogate: 4-Bromofluorobenzene (PID *101 %* *71.5-134*

Chloride, SM4500Cl-B mg/kg Analyzed By: AC

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**240**	16.0	10/26/2023	ND	432	108	400	3.77	

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	10/25/2023	ND	164	82.2	200	0.791	
DRO >C10-C28*	<10.0	10.0	10/25/2023	ND	169	84.5	200	0.00650	
EXT DRO >C28-C36	<10.0	10.0	10/25/2023	ND					

Surrogate: 1-Chlorooctane *73.9 %* *48.2-134*

Surrogate: 1-Chlorooctadecane *78.8 %* *49.1-148*

Cardinal Laboratories *=Accredited Analyte

Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

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

Analytical Results For:

ENSOLUM
AIMEE COLE
3122 NATIONAL PARKS HWY
CARLSBAD NM, 88220
Fax To:

Received:	10/24/2023	Sampling Date:	10/24/2023
Reported:	10/26/2023	Sampling Type:	Soil
Project Name:	MESA 8105 JVP #4H BATTERY	Sampling Condition:	Cool & Intact
Project Number:	03C2012065	Sample Received By:	Shalyn Rodriguez
Project Location:	BTA 32.06412,-103.64973		

Sample ID: FS 03 @ 2' (H235843-03)

BTEX 8021B mg/kg Analyzed By: JH

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	10/25/2023	ND	2.06	103	2.00	0.608	
Toluene*	<0.050	0.050	10/25/2023	ND	2.03	102	2.00	7.52	
Ethylbenzene*	<0.050	0.050	10/25/2023	ND	2.09	104	2.00	8.89	
Total Xylenes*	<0.150	0.150	10/25/2023	ND	6.36	106	6.00	10.7	
Total BTEX	<0.300	0.300	10/25/2023	ND					

Surrogate: 4-Bromofluorobenzene (PID *103 %* *71.5-134*

Chloride, SM4500Cl-B mg/kg Analyzed By: AC

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**224**	16.0	10/26/2023	ND	432	108	400	3.77	

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	10/25/2023	ND	164	82.2	200	0.791	
DRO >C10-C28*	<10.0	10.0	10/25/2023	ND	169	84.5	200	0.00650	
EXT DRO >C28-C36	<10.0	10.0	10/25/2023	ND					

Surrogate: 1-Chlorooctane *81.1 %* *48.2-134*

Surrogate: 1-Chlorooctadecane *84.7 %* *49.1-148*

Cardinal Laboratories *=Accredited Analyte

Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

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

Analytical Results For:

ENSOLUM
AIMEE COLE
3122 NATIONAL PARKS HWY
CARLSBAD NM, 88220
Fax To:

Received:	10/24/2023	Sampling Date:	10/24/2023
Reported:	10/26/2023	Sampling Type:	Soil
Project Name:	MESA 8105 JVP #4H BATTERY	Sampling Condition:	Cool & Intact
Project Number:	03C2012065	Sample Received By:	Shalyn Rodriguez
Project Location:	BTA 32.06412,-103.64973		

Sample ID: SW 01 @ 0-2' (H235843-04)

BTEX 8021B mg/kg **Analyzed By: AW**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	10/26/2023	ND	2.06	103	2.00	2.98	
Toluene*	<0.050	0.050	10/26/2023	ND	2.14	107	2.00	3.10	
Ethylbenzene*	<0.050	0.050	10/26/2023	ND	2.14	107	2.00	2.78	
Total Xylenes*	<0.150	0.150	10/26/2023	ND	6.47	108	6.00	2.59	
Total BTEX	<0.300	0.300	10/26/2023	ND					

Surrogate: 4-Bromofluorobenzene (PID *106 %* *71.5-134*

Chloride, SM4500Cl-B mg/kg **Analyzed By: AC**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**208**	16.0	10/26/2023	ND	432	108	400	3.77	

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	10/25/2023	ND	164	82.2	200	0.791	
DRO >C10-C28*	<10.0	10.0	10/25/2023	ND	169	84.5	200	0.00650	
EXT DRO >C28-C36	<10.0	10.0	10/25/2023	ND					

Surrogate: 1-Chlorooctane *89.6 %* *48.2-134*

Surrogate: 1-Chlorooctadecane *93.5 %* *49.1-148*

Cardinal Laboratories *=Accredited Analyte

Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

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

Analytical Results For:

ENSOLUM
AIMEE COLE
3122 NATIONAL PARKS HWY
CARLSBAD NM, 88220
Fax To:

Received:	10/24/2023	Sampling Date:	10/24/2023
Reported:	10/26/2023	Sampling Type:	Soil
Project Name:	MESA 8105 JVP #4H BATTERY	Sampling Condition:	Cool & Intact
Project Number:	03C2012065	Sample Received By:	Shalyn Rodriguez
Project Location:	BTA 32.06412,-103.64973		

Sample ID: SW 02 @ 0-1.5' (H235843-05)

BTEX 8021B mg/kg Analyzed By: AW

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	10/26/2023	ND	2.06	103	2.00	2.98	
Toluene*	<0.050	0.050	10/26/2023	ND	2.14	107	2.00	3.10	
Ethylbenzene*	<0.050	0.050	10/26/2023	ND	2.14	107	2.00	2.78	
Total Xylenes*	<0.150	0.150	10/26/2023	ND	6.47	108	6.00	2.59	
Total BTEX	<0.300	0.300	10/26/2023	ND					

Surrogate: 4-Bromofluorobenzene (PID *106 %* *71.5-134*

Chloride, SM4500Cl-B mg/kg Analyzed By: AC

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**160**	16.0	10/26/2023	ND	432	108	400	3.77	

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	10/25/2023	ND	164	82.2	200	0.791	
DRO >C10-C28*	<10.0	10.0	10/25/2023	ND	169	84.5	200	0.00650	
EXT DRO >C28-C36	<10.0	10.0	10/25/2023	ND					

Surrogate: 1-Chlorooctane *77.5 %* *48.2-134*

Surrogate: 1-Chlorooctadecane *79.1 %* *49.1-148*

Cardinal Laboratories *=Accredited Analyte

Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

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

Notes and Definitions

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

Cardinal Laboratories *=Accredited Analyte

Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

101 East Marland, Hobbs, NM 88240
(575) 393-2326 FAX (575) 393-2476

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

		BILL TO	
Company Name:	Ensolum LLC	P.O. #:	
Project Manager:	Aimee Cole	Company:	BTA O.I
Address:	3122 National Parks Hwy	Attn:	Kelton Beard
City:	Carlsbad State: NM Zip: 88220	Address:	104 S. Pecos St
Phone #:	726-384-7365 Fax #:	City:	Midland
Project #:	03C261206S Project Owner: BTA O.I	State:	TX Zip: 79701
Project Name:	Mesa 8105 JV-P #4H	Phone #:	
Project Location:	32.06412, -103.64973	Fax #:	
Sampler Name:	Ronni Hayes		

FOR LAB USE ONLY				MATRIX						PRESERV.			SAMPLING		ANALYSIS REQUEST		
Lab I.D.	Sample I.D.	(G)RAB OR (C)OMP.	# CONTAINERS	GROUNDWATER	WASTEWATER	SOIL	OIL	SLUDGE	OTHER :	ACID/BASE:	ICE / COOL	OTHER :	DATE	TIME	TPH	BTEX	Cl-
H235843																	
1	FS01 @ 2'	C	1			X					X		10-24-23	1342	X	X	X
2	FS02 @ 1.5'	C	1			X					X			1412			
3	FS03 @ 2'	C	1			X					X			1430			
4	SW01 @ 0-2'	C	1			X					X			1349			
5	SW02 @ 0-1.5'	C	1			X					X			1437			

PLEASE NOTE: Liability and Damages. Cardinal's liability and client's exclusive remedy for any claim arising whether based in contract or tort, shall be limited to the amount paid by the client for the analyses. All claims including those for negligence and any other cause whatsoever shall be deemed waived unless made in writing and received by Cardinal within 30 days after completion of the applicable service. In no event shall Cardinal be liable for incidental or consequential damages, including without limitation, business interruptions, loss of use, or loss of profits incurred by client, its subsidiaries, affiliates or successors arising out of or related to the performance of services hereunder by Cardinal, regardless of whether such claim is based upon any of the above stated reasons or otherwise.

Relinquished By:	Date: 10-24-23	Received By:	Verbal Result: ☐ Yes ☐ No Add'l Phone #:
	Time: 1643		All Results are emailed. Please provide Email address:
Relinquished By:	Date:	Received By:	acole@ensolum.com.
	Time:		REMARKS:

Delivered By: (Circle One)	Observed Temp. °C 1.7	Sample Condition Cool Intact	CHECKED BY: (Initials)	Turnaround Time: Standard ☐ Rush ☒ 48 hrs	Bacteria (only) Sample Condition Cool Intact Observed Temp. °C
Sampler - UPS - Bus - Other:	Corrected Temp. °C	☐ Yes ☐ Yes ☐ No ☐ No	SK	Thermometer ID #140 Correction Factor 0°C	☐ Yes ☐ Yes ☐ No ☐ No Corrected Temp. °C

FORM-006 R 3.4 07/11/23

† Cardinal cannot accept verbal changes. Please email changes to celey.keene@cardinallabsnm.com

CARDINAL Laboratories

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

November 02, 2023

AIMEE COLE

ENSOLUM

3122 NATIONAL PARKS HWY

CARLSBAD, NM 88220

RE: MESA 8105 JV-P #4H

Enclosed are the results of analyses for samples received by the laboratory on 10/26/23 14:00.

Cardinal Laboratories is accredited through Texas NELAP under certificate number T104704398-22-15. 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 accreditated 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,

Mike Snyder For Celey D. Keene

Lab Director/Quality Manager

CARDINAL Laboratories

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

Analytical Results For:

ENSOLUM
AIMEE COLE
3122 NATIONAL PARKS HWY
CARLSBAD NM, 88220
Fax To:

Received:	10/26/2023	Sampling Date:	10/25/2023
Reported:	11/02/2023	Sampling Type:	Soil
Project Name:	MESA 8105 JV-P #4H	Sampling Condition:	Cool & Intact
Project Number:	03C2012065	Sample Received By:	Shalyn Rodriguez
Project Location:	32.06412,-103.64973		

Sample ID: FS 04 2.5 (H235871-01)

BTEX 8021B mg/kg Analyzed By: JH

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	10/31/2023	ND	1.91	95.3	2.00	4.40	
Toluene*	<0.050	0.050	10/31/2023	ND	1.95	97.6	2.00	4.27	
Ethylbenzene*	<0.050	0.050	10/31/2023	ND	1.95	97.3	2.00	4.94	
Total Xylenes*	<0.150	0.150	10/31/2023	ND	5.81	96.9	6.00	4.90	
Total BTEX	<0.300	0.300	10/31/2023	ND					

Surrogate: 4-Bromofluorobenzene (PID *105 %* *71.5-134*

Chloride, SM4500Cl-B mg/kg Analyzed By: AC

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**80.0**	16.0	10/31/2023	ND	416	104	400	7.41	

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	10/31/2023	ND	198	99.0	200	4.77	
DRO >C10-C28*	**64.3**	10.0	10/31/2023	ND	201	100	200	1.24	
EXT DRO >C28-C36	**16.1**	10.0	10/31/2023	ND					

Surrogate: 1-Chlorooctane *109 %* *48.2-134*

Surrogate: 1-Chlorooctadecane *127 %* *49.1-148*

Cardinal Laboratories *=Accredited Analyte

Mike Snyder For Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

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

Analytical Results For:

ENSOLUM
AIMEE COLE
3122 NATIONAL PARKS HWY
CARLSBAD NM, 88220
Fax To:

Received:	10/26/2023	Sampling Date:	10/25/2023
Reported:	11/02/2023	Sampling Type:	Soil
Project Name:	MESA 8105 JV-P #4H	Sampling Condition:	Cool & Intact
Project Number:	03C2012065	Sample Received By:	Shalyn Rodriguez
Project Location:	32.06412,-103.64973		

Sample ID: FS 05 2.5 (H235871-02)

BTEX 8021B mg/kg **Analyzed By: JH**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	10/31/2023	ND	1.91	95.3	2.00	4.40	
Toluene*	<0.050	0.050	10/31/2023	ND	1.95	97.6	2.00	4.27	
Ethylbenzene*	<0.050	0.050	10/31/2023	ND	1.95	97.3	2.00	4.94	
Total Xylenes*	<0.150	0.150	10/31/2023	ND	5.81	96.9	6.00	4.90	
Total BTEX	<0.300	0.300	10/31/2023	ND					

Surrogate: 4-Bromofluorobenzene (PID *104 %* *71.5-134*

Chloride, SM4500Cl-B mg/kg **Analyzed By: AC**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**80.0**	16.0	10/31/2023	ND	416	104	400	7.41	

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	10/31/2023	ND	198	99.0	200	4.77	
DRO >C10-C28*	<10.0	10.0	10/31/2023	ND	201	100	200	1.24	
EXT DRO >C28-C36	<10.0	10.0	10/31/2023	ND					

Surrogate: 1-Chlorooctane *87.7 %* *48.2-134*

Surrogate: 1-Chlorooctadecane *101 %* *49.1-148*

Cardinal Laboratories *=Accredited Analyte

Mike Snyder For Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

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

Analytical Results For:

ENSOLUM
AIMEE COLE
3122 NATIONAL PARKS HWY
CARLSBAD NM, 88220
Fax To:

Received:	10/26/2023	Sampling Date:	10/25/2023
Reported:	11/02/2023	Sampling Type:	Soil
Project Name:	MESA 8105 JV-P #4H	Sampling Condition:	Cool & Intact
Project Number:	03C2012065	Sample Received By:	Shalyn Rodriguez
Project Location:	32.06412,-103.64973		

Sample ID: FS 06 1.5 (H235871-03)

BTEX 8021B mg/kg Analyzed By: JH

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	10/31/2023	ND	1.91	95.3	2.00	4.40	
Toluene*	<0.050	0.050	10/31/2023	ND	1.95	97.6	2.00	4.27	
Ethylbenzene*	<0.050	0.050	10/31/2023	ND	1.95	97.3	2.00	4.94	
Total Xylenes*	<0.150	0.150	10/31/2023	ND	5.81	96.9	6.00	4.90	
Total BTEX	<0.300	0.300	10/31/2023	ND					

Surrogate: 4-Bromofluorobenzene (PID *103 %* *71.5-134*

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	10/31/2023	ND	416	104	400	7.41	

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	10/31/2023	ND	198	99.0	200	4.77	
DRO >C10-C28*	<10.0	10.0	10/31/2023	ND	201	100	200	1.24	
EXT DRO >C28-C36	<10.0	10.0	10/31/2023	ND					

Surrogate: 1-Chlorooctane *79.6 %* *48.2-134*

Surrogate: 1-Chlorooctadecane *90.9 %* *49.1-148*

Cardinal Laboratories *=Accredited Analyte

Mike Snyder For Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

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

Analytical Results For:

ENSOLUM
AIMEE COLE
3122 NATIONAL PARKS HWY
CARLSBAD NM, 88220
Fax To:

Received:	10/26/2023	Sampling Date:	10/25/2023
Reported:	11/02/2023	Sampling Type:	Soil
Project Name:	MESA 8105 JV-P #4H	Sampling Condition:	Cool & Intact
Project Number:	03C2012065	Sample Received By:	Shalyn Rodriguez
Project Location:	32.06412,-103.64973		

Sample ID: FS 07 1.5 (H235871-04)

BTEX 8021B mg/kg Analyzed By: JH

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	10/31/2023	ND	1.91	95.3	2.00	4.40	
Toluene*	<0.050	0.050	10/31/2023	ND	1.95	97.6	2.00	4.27	
Ethylbenzene*	<0.050	0.050	10/31/2023	ND	1.95	97.3	2.00	4.94	
Total Xylenes*	<0.150	0.150	10/31/2023	ND	5.81	96.9	6.00	4.90	
Total BTEX	<0.300	0.300	10/31/2023	ND					

Surrogate: 4-Bromofluorobenzene (PID *102 %* *71.5-134*

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	10/31/2023	ND	416	104	400	7.41	

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	10/31/2023	ND	198	99.0	200	4.77	
DRO >C10-C28*	<10.0	10.0	10/31/2023	ND	201	100	200	1.24	
EXT DRO >C28-C36	<10.0	10.0	10/31/2023	ND					

Surrogate: 1-Chlorooctane *86.6 %* *48.2-134*

Surrogate: 1-Chlorooctadecane *98.0 %* *49.1-148*

Cardinal Laboratories *=Accredited Analyte

Mike Snyder For Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

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

Analytical Results For:

ENSOLUM
AIMEE COLE
3122 NATIONAL PARKS HWY
CARLSBAD NM, 88220
Fax To:

Received:	10/26/2023	Sampling Date:	10/25/2023
Reported:	11/02/2023	Sampling Type:	Soil
Project Name:	MESA 8105 JV-P #4H	Sampling Condition:	Cool & Intact
Project Number:	03C2012065	Sample Received By:	Shalyn Rodriguez
Project Location:	32.06412,-103.64973		

Sample ID: FS 08 1.5 (H235871-05)

BTEX 8021B mg/kg Analyzed By: JH

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	10/31/2023	ND	1.98	98.9	2.00	3.16	
Toluene*	<0.050	0.050	10/31/2023	ND	1.94	96.9	2.00	3.39	
Ethylbenzene*	<0.050	0.050	10/31/2023	ND	1.95	97.4	2.00	3.42	
Total Xylenes*	<0.150	0.150	10/31/2023	ND	5.48	91.4	6.00	2.64	
Total BTEX	<0.300	0.300	10/31/2023	ND					

Surrogate: 4-Bromofluorobenzene (PID *93.8 %* *71.5-134*

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	10/31/2023	ND	416	104	400	7.41	

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	10/31/2023	ND	198	99.0	200	4.77	
DRO >C10-C28*	<10.0	10.0	10/31/2023	ND	201	100	200	1.24	
EXT DRO >C28-C36	<10.0	10.0	10/31/2023	ND					

Surrogate: 1-Chlorooctane *98.0 %* *48.2-134*

Surrogate: 1-Chlorooctadecane *112 %* *49.1-148*

Cardinal Laboratories *=Accredited Analyte

Mike Snyder For Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

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

Analytical Results For:

ENSOLUM
AIMEE COLE
3122 NATIONAL PARKS HWY
CARLSBAD NM, 88220
Fax To:

Received:	10/26/2023	Sampling Date:	10/25/2023
Reported:	11/02/2023	Sampling Type:	Soil
Project Name:	MESA 8105 JV-P #4H	Sampling Condition:	Cool & Intact
Project Number:	03C2012065	Sample Received By:	Shalyn Rodriguez
Project Location:	32.06412,-103.64973		

Sample ID: SW 03 0-2.5 (H235871-06)

BTEX 8021B mg/kg Analyzed By: JH

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	10/31/2023	ND	1.98	98.9	2.00	3.16	
Toluene*	<0.050	0.050	10/31/2023	ND	1.94	96.9	2.00	3.39	
Ethylbenzene*	<0.050	0.050	10/31/2023	ND	1.95	97.4	2.00	3.42	
Total Xylenes*	<0.150	0.150	10/31/2023	ND	5.48	91.4	6.00	2.64	
Total BTEX	<0.300	0.300	10/31/2023	ND					

Surrogate: 4-Bromofluorobenzene (PID *93.7 %* *71.5-134*

Chloride, SM4500Cl-B mg/kg Analyzed By: AC

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**256**	16.0	10/31/2023	ND	416	104	400	7.41	

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	10/31/2023	ND	198	99.0	200	4.77	
DRO >C10-C28*	<10.0	10.0	10/31/2023	ND	201	100	200	1.24	
EXT DRO >C28-C36	<10.0	10.0	10/31/2023	ND					

Surrogate: 1-Chlorooctane *109 %* *48.2-134*

Surrogate: 1-Chlorooctadecane *124 %* *49.1-148*

Cardinal Laboratories *=Accredited Analyte

Mike Snyder For Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

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

Analytical Results For:

ENSOLUM
AIMEE COLE
3122 NATIONAL PARKS HWY
CARLSBAD NM, 88220
Fax To:

Received:	10/26/2023	Sampling Date:	10/25/2023
Reported:	11/02/2023	Sampling Type:	Soil
Project Name:	MESA 8105 JV-P #4H	Sampling Condition:	Cool & Intact
Project Number:	03C2012065	Sample Received By:	Shalyn Rodriguez
Project Location:	32.06412,-103.64973		

Sample ID: SW 04 0-1.5 (H235871-07)

BTEX 8021B mg/kg Analyzed By: JH

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	10/31/2023	ND	1.98	98.9	2.00	3.16	
Toluene*	<0.050	0.050	10/31/2023	ND	1.94	96.9	2.00	3.39	
Ethylbenzene*	<0.050	0.050	10/31/2023	ND	1.95	97.4	2.00	3.42	
Total Xylenes*	<0.150	0.150	10/31/2023	ND	5.48	91.4	6.00	2.64	
Total BTEX	<0.300	0.300	10/31/2023	ND					

Surrogate: 4-Bromofluorobenzene (PID *94.1 %* *71.5-134*

Chloride, SM4500Cl-B mg/kg Analyzed By: AC

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**160**	16.0	10/31/2023	ND	416	104	400	7.41	

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	10/31/2023	ND	198	99.0	200	4.77	
DRO >C10-C28*	<10.0	10.0	10/31/2023	ND	201	100	200	1.24	
EXT DRO >C28-C36	<10.0	10.0	10/31/2023	ND					

Surrogate: 1-Chlorooctane *70.6 %* *48.2-134*

Surrogate: 1-Chlorooctadecane *80.2 %* *49.1-148*

Cardinal Laboratories *=Accredited Analyte

Mike Snyder For Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

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

Analytical Results For:

ENSOLUM
AIMEE COLE
3122 NATIONAL PARKS HWY
CARLSBAD NM, 88220
Fax To:

Received:	10/26/2023	Sampling Date:	10/25/2023
Reported:	11/02/2023	Sampling Type:	Soil
Project Name:	MESA 8105 JV-P #4H	Sampling Condition:	Cool & Intact
Project Number:	03C2012065	Sample Received By:	Shalyn Rodriguez
Project Location:	32.06412,-103.64973		

Sample ID: SW 05 0-1.5 (H235871-08)

BTEX 8021B mg/kg Analyzed By: JH

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	10/31/2023	ND	1.98	98.9	2.00	3.16	
Toluene*	<0.050	0.050	10/31/2023	ND	1.94	96.9	2.00	3.39	
Ethylbenzene*	<0.050	0.050	10/31/2023	ND	1.95	97.4	2.00	3.42	
Total Xylenes*	<0.150	0.150	10/31/2023	ND	5.48	91.4	6.00	2.64	
Total BTEX	<0.300	0.300	10/31/2023	ND					

Surrogate: 4-Bromofluorobenzene (PID *93.9 %* *71.5-134*

Chloride, SM4500Cl-B mg/kg Analyzed By: AC

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**320**	16.0	10/31/2023	ND	416	104	400	7.41	

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	10/31/2023	ND	198	99.0	200	4.77	
DRO >C10-C28*	<10.0	10.0	10/31/2023	ND	201	100	200	1.24	
EXT DRO >C28-C36	<10.0	10.0	10/31/2023	ND					

Surrogate: 1-Chlorooctane *75.7 %* *48.2-134*

Surrogate: 1-Chlorooctadecane *85.8 %* *49.1-148*

Cardinal Laboratories *=Accredited Analyte

Mike Snyder For Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

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

Notes and Definitions

QM-07	The spike recovery was outside acceptance limits for the MS and/or MSD. The batch was accepted based on acceptable LCS recovery.
BS-3	Blank spike recovery outside of lab established statistical limits, but still within method limits. Data is not adversely affected.
ND	Analyte NOT DETECTED at or above the reporting limit
RPD	Relative Percent Difference
**	Samples not received at proper temperature of 6°C or below.
***	Insufficient time to reach temperature.
-	Chloride by SM4500Cl-B does not require samples be received at or below 6°C
	Samples reported on an as received basis (wet) unless otherwise noted on report

Cardinal Laboratories *=Accredited Analyte

Mike Snyder For Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

101 East Marland, Hobbs, NM 88240
(575) 393-2326 FAX (575) 393-2476

Company Name: Ensolum, LLC	**BILL TO**
Project Manager: Aimee Cole	P.O. #:
Address: 3122 National Parks Hwy	Company: BTA Oil
City: Carlsbad State: NM Zip: 88220	Attn: Kelton Beaird
Phone #: 432-557-8895 Fax #:	Address: 104 S Pecos St.
Project #: 03C2012065 Project Owner: BTA Oil	City: Midland
Project Name: Mesa 8105 JV-P #4H	State: Texas Zip: 79701
Project Location: 32.06412, -103.64973	Phone #:
Sampler Name: Ronni Hayes	Fax #:

FOR LAB USE ONLY Lab I.D.	Sample I.D.	Depth (feet)	(G)RAB OR (C)OMP.	# CONTAINERS	MATRIX: GROUNDWATER	WASTEWATER	SOIL	OIL	SLUDGE	OTHER :	PRESERV.: ACID/BASE:	ICE / COOL	OTHER :	SAMPLING: DATE	TIME	BTEX	TPH	Cl-
H235871																		
1	FS04	2.5	C	1			X					X		10-25-23	1455	X	X	X
2	FS05	2.5													1452			
3	FS06	1.5													1420			
4	FS07	1.5													1422			
5	FS08	1.5													1424			
6	SW03	0-2.5													1450			
7	SW04	0-1.5													1432			
8	SW05	0-1.5	↓	↓			↓					↓		↓	1436	↓	↓	↓

Relinquished By:	Date: 10.26.23 Time: 400	Received By:	Verbal Result: ☐ Yes ☐ No Add'l Phone #:
			All Results are emailed. Please provide Email address: acole@ensolum.com.
Relinquished By:	Date: Time:	Received By:	REMARKS:
Delivered By: (Circle One) Sampler - UPS - Bus - Other:	Observed Temp. °C -1.1 Corrected Temp. °C	Sample Condition Cool Intact ☐ Yes ☐ Yes ☐ No ☐ No	CHECKED BY: (Initials) SR
			Turnaround Time: Standard ☒ Rush ☐ Thermometer ID #113 Correction Factor -0.5°C #140
			Bacteria (only) Sample Condition Cool Intact ☐ Yes ☐ Yes ☐ No ☐ No Observed Temp. °C Corrected Temp. °C

FORM-006 R 3.2 10/07/21

† Cardinal cannot accept verbal changes. Please email changes to celey.keene@cardinallabsnm.com

ENSOLUM

APPENDIX E

NMOCD Notifications

From: Buchanan, Michael, EMNRD
To: Hadlie Green; Enviro, OCD, EMNRD
Cc: Kelton Beaird; Bratcher, Michael, EMNRD; Hamlet, Robert, EMNRD; Velez, Nelson, EMNRD
Subject: RE: [EXTERNAL] BTA - Sampling Notification - Week of 09/11/2023
Date: Wednesday, September 6, 2023 2:31:06 PM
Attachments: image005.jpg
image006.png
image007.png
image008.png
image009.png

[**EXTERNAL EMAIL**]

Good afternoon, Hadlie

The OCD has received your notification. Include a copy of this and all notifications in the remedial and/or closure reports to ensure the notifications are documented in the project file.

Thank you,

Mike Buchanan ● Environmental Specialist
Environmental Bureau
EMNRD - Oil Conservation Division
8801 Horizon Blvd. NE, Suite 260 | Albuquerque, NM 87113
505.490.0798 | michael.buchanan@emnrd.nm.gov
http://www.emnrd.nm.gov/ocd

From: Hadlie Green <hgreen@ensolum.com>
Sent: Wednesday, September 6, 2023 9:52 AM
To: Enviro, OCD, EMNRD <OCD.Enviro@emnrd.nm.gov>
Cc: Kelton Beaird <KBeaird@btaoil.com>
Subject: [EXTERNAL] BTA - Sampling Notification - Week of 09/11/2023

CAUTION: This email originated outside of our organization. Exercise caution prior to clicking on links or opening attachments.

All,

BTA anticipates collecting confirmation samples at the following locations the week of September 11, 2023.

- Mesa 8105 JV-P 013H / NCH1835547953, NAB1906552791, NAB1906551740
  - Sampling Date: 9/11/2023 @ 9:00 AM MST
- Mesa 8105-JV-P 004H / nOY1831160155
  - Sampling Date: 9/12-13/2023 @ 9:00 AM MST
- Rojo 18/19 & 38/39 Tank Battery / nAPP2103447746
  - Sampling Date: 9/12-13/2023 @ 9:00 AM MST
- Mesa 8105 JV-P #4H / nRM2004549559
  - Sampling Date: 9/14/2023 @ 9:00 AM MST
- Chiso 14 State Jet Pump Excavation / nAPP2205837214
  - Sampling Date: 9/14-15/2023 @ 9:00 AM MST
- Mesa B #2 Tank Battery / nAPP2113973789
  - Sampling Date: 9/15/2023 @ 9:00 AM MST

Thank you,

Hadlie Green
Project Geologist
432-557-8895
hgreen@ensolum.com
Ensolum, LLC

From: Rodgers, Scott, EMNRD
To: Hadlie Green; Hamlet, Robert, EMNRD; Velez, Nelson, EMNRD; Bratcher, Michael, EMNRD
Cc: Kelton Beaird; Tacoma Morrissey
Subject: RE: [EXTERNAL] BTA - Sampling Notification - Week of 09/25/2023
Date: Wednesday, September 20, 2023 3:06:34 PM
Attachments: image005.jpg
image006.png
image007.png
image008.png
image009.png

> You don't often get email from scott.rodgers@emnrd.nm.gov. Learn why this is important

[**EXTERNAL EMAIL**]

The OCD has received your notification. When reporting sampling at multiple locations it is required to provide and **date and time for each location**. Include a copy of this and all notifications in the remedial and/or closure reports to ensure the notifications are documented in the project file.

Scott Rodgers ● Environmental Specialist
Environmental Bureau
EMNRD - Oil Conservation Division
8801 Horizon Blvd. NE, Suite 260 | Albuquerque, NM 87113
505.469.1830 | scott.rodgers@emnrd.nm.gov
http://www.emnrd.nm.gov/ocd

From: Hadlie Green <hgreen@ensolum.com>
Sent: Wednesday, September 20, 2023 3:02 PM
To: Enviro, OCD, EMNRD <OCD.Enviro@emnrd.nm.gov>
Cc: Kelton Beaird <KBeaird@btaoil.com>; Tacoma Morrissey <tmorrissey@ensolum.com>
Subject: [EXTERNAL] BTA - Sampling Notification - Week of 09/25/2023

CAUTION: This email originated outside of our organization. Exercise caution prior to clicking on links or opening attachments.

All,

BTA anticipates collecting confirmation samples at the following locations the week of September 25, 2023.

Harroun East Tank Battery / nAPP2202845563
- Sampling Date: 9/27-28/2023 @ 9:00 AM MST

- Mesa 8105 JV-P #4H / nRM2004549559
  - Sampling Date: 9/28-29/2023 @ 9:00 AM MST

Thank you,

Hadlie Green
Project Geologist
432-557-8895
hgreen@ensolum.com
Ensolum, LLC

From:	Wells, Shelly, EMNRD
To:	Hadlie Green; Hamlet, Robert, EMNRD; Velez, Nelson, EMNRD; Maxwell, Ashley, EMNRD; Bratcher, Michael, EMNRD
Cc:	Kelton Beaird; Aimee Cole; Tacoma Morrissey
Subject:	RE: [EXTERNAL] BTA - Sampling Notification - Week of 10/23/2023
Date:	Thursday, October 19, 2023 10:11:07 AM
Attachments:	image001.png image002.png image003.png image004.png

[**EXTERNAL EMAIL**]

Good morning Hadlie,

The OCD has received your notification. Include a copy of this and all notifications in the remedial and/or closure reports to ensure the notifications are documented in the project file.

Thank you,

Shelly

Shelly Wells * Environmental Specialist-Advanced
Environmental Bureau
EMNRD-Oil Conservation Division
1220 S. St. Francis Drive|Santa Fe, NM 87505
(505)469-7520|Shelly.Wells@emnrd.nm.gov
http://www.emnrd.state.nm.us/OCD/

From: Hadlie Green <hgreen@ensolum.com>
Sent: Thursday, October 19, 2023 9:57 AM
To: Enviro, OCD, EMNRD <OCD.Enviro@emnrd.nm.gov>
Cc: Kelton Beaird <KBeaird@btaoil.com>; Aimee Cole <acole@ensolum.com>; Tacoma Morrissey <tmorrissey@ensolum.com>
Subject: [EXTERNAL] BTA - Sampling Notification - Week of 10/23/2023

CAUTION: This email originated outside of our organization. Exercise caution prior to clicking on links or opening attachments.

All,

BTA anticipates collecting confirmation samples at the following locations the week of October 23, 2023.

- RGA #1 / nAPP2228347919

Sampling Date: 10/24/2023 @ 9:00 AM MST

- Mesa 8105 JV-P #4H Battery / NRM2004549559
  - Sampling Date: 10/24-27/2023 @ 9:00 AM MST
- Mesa 8105-JV-P 004H / NOY1831160155
  - Sampling Date: 10/25-26/2023 @ 9:00 AM MST
- Vaca West Tank Battery / nAPP2202849030
  - Sampling Date: 10/25-27/2023 @ 9:00 AM MST
- Ogden 20509 1-3H Tank Battery / NAB1905943420
  - Sampling Date: 10/27/2023 @ 9:00 AM MST

Thank you,

Hadlie Green
Project Geologist
432-557-8895
hgreen@ensolum.com
Ensolum, LLC

ENSOLUM

APPENDIX F

Final C-141

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

State of New Mexico
Energy Minerals and Natural Resources Department

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

Form C-141
Revised August 24, 2018
Submit to appropriate OCD District office

Incident ID	NRM2004549559
District RP	
Facility ID	
Application ID	

Release Notification

Responsible Party

Responsible Party: BTA Oil Producers, LLC	OGRID: 260297
Contact Name: Bob Hall	Contact Telephone: 432-682-3753
Contact email: bhall@btaoil.com	Incident # *(assigned by OCD)*
Contact mailing address: 104 S. Pecos St., Midland, TX 79701	

Location of Release Source

Latitude: 32.06412° Longitude: -103.64973°
(NAD 83 in decimal degrees to 5 decimal places)

Site Name: Mesa 8105 JV-P #4H Battery	Site Type: Tank Battery
Date Release Discovered: 2/12/2020	API# *(if applicable)* Nearest well: Mesa 8105 JV-P #4H API #30-025-42842

Unit Letter	Section	Township	Range	County
C	11	26S	32E	Lea

Surface Owner: ☐ State ☒ Federal ☐ Tribal ☐ Private (*Name:* _____)

Nature and Volume of Release

Material(s) Released (Select all that apply and attach calculations or specific justification for the volumes provided below)

☒ Crude Oil	Volume Released (bbls) 47 BBL	Volume Recovered (bbls) 45 BBL
☒ Produced Water	Volume Released (bbls) 21 BBL	Volume Recovered (bbls) 20 BBL
	Is the concentration of dissolved chloride in the produced water >10,000 mg/l?	☒ Yes ☐ No
☐ Condensate	Volume Released (bbls)	Volume Recovered (bbls)
☐ Natural Gas	Volume Released (Mcf)	Volume Recovered (Mcf)
☐ Other (describe)	Volume/Weight Released (provide units)	Volume/Weight Recovered (provide units)

Cause of Release
Attributed to cold weather, gas supply line froze causing dump valve malfunction on separator that sent fluid to compressor and caused the catch tank to overflow. Fluid spread along the side of the location, but stayed on the pad. (See included details of spill document.)

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Was this a major release as defined by 19.15.29.7(A) NMAC? ☒ Yes ☐ No	If YES, for what reason(s) does the responsible party consider this a major release? The spill volume was greater than 25 BBL, which the NMOCD Rules define as a major release.
If YES, was immediate notice given to the OCD? By whom? To whom? When and by what means (phone, email, etc)? Notification is provided by distribution of the Release Notification and Initial Response sections of the Form C-141 to NMOCD and BLM.	

Initial Response

The responsible party must undertake the following actions immediately unless they could create a safety hazard that would result in injury

☒ The source of the release has been stopped.
☒ The impacted area has been secured to protect human health and the environment.
☒ Released materials have been contained via the use of berms or dikes, absorbent pads, or other containment devices.
☒ All free liquids and recoverable materials have been removed and managed appropriately.

If all the actions described above have not been undertaken, explain why:

Additional Initial Response Details: Vacuum truck recovered all free fluid. Backhoe on-site scraped up impacted soil and about 30 cubic yds were placed on plastic for disposal.

Per 19.15.29.8 B. (4) NMAC the responsible party may commence remediation immediately after discovery of a release. If remediation has begun, please attach a narrative of actions to date. If remedial efforts have been successfully completed or if the release occurred within a lined containment area (see 19.15.29.11(A)(5)(a) NMAC), please attach all information needed for closure evaluation.

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: Bob Hall Title: Environmental Manager

Signature: Bob Hall Date: 2/13/2020

email: bhall@btaoil.com Telephone: 432-682-3753

OCD Only

Received by: Ramona Marcus Date: 2/14/2020

NRM2004549559

Mesa #4
API# 30-025-42842

Spill 2/12/2020

Pictures of Spill
2/12/2020

NRM2004549559

Mesa #4
API# 30-025-42842

Spill 2/12/2020

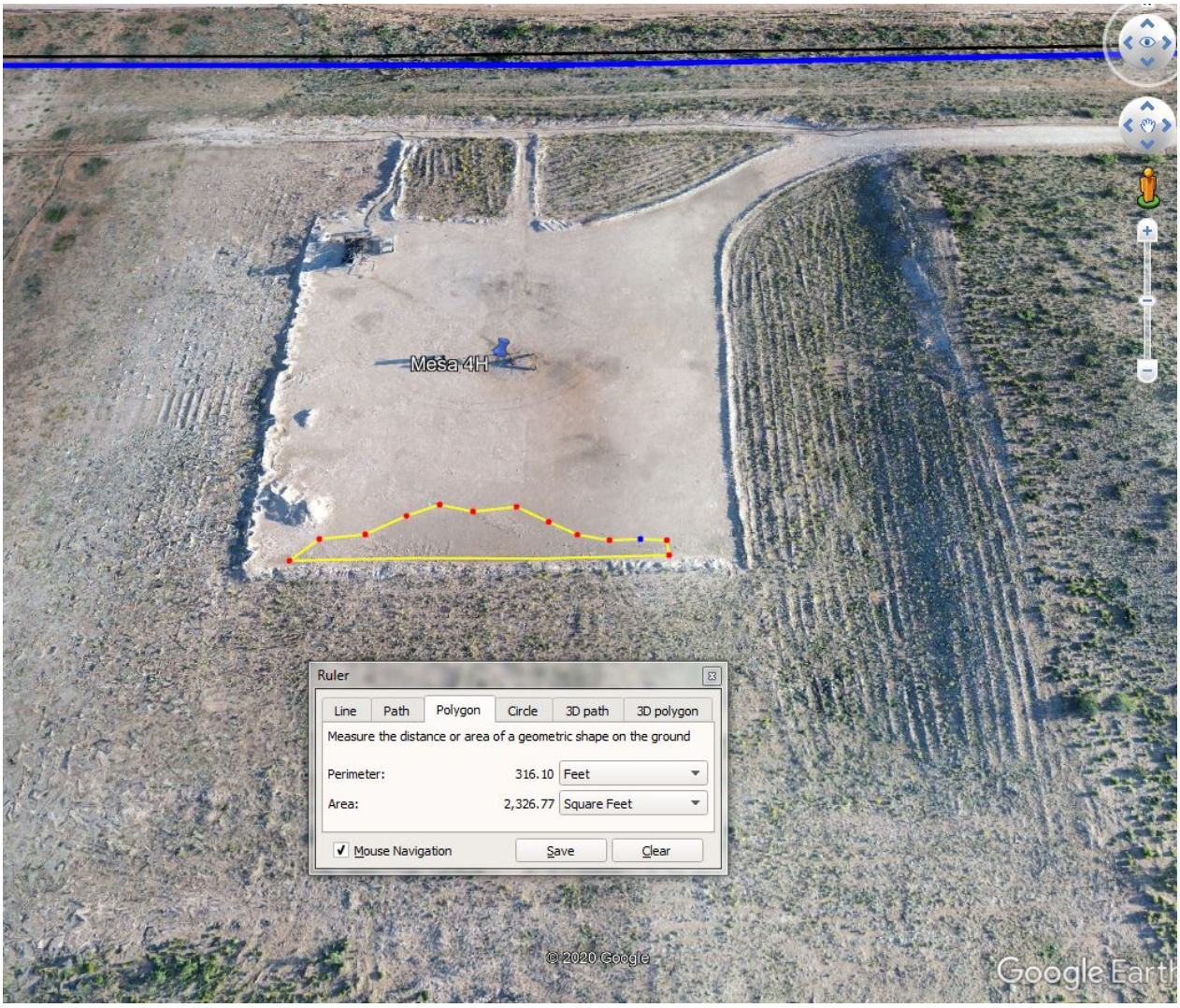
Pictures of Spill Cleanup
2/12/2020

NRM2004549559

Mesa #4

API# 30-025-42842 **Spill 2/12/2020**

Calculation of Volume of Release



2327 square feet

Used 50ft x 50ft = 2500 square feet as approximation in Spill Volume Calculation spreadsheet.

NRM2004549559

Location Mesa #4H
API # 30-025-42842
Spill Date 2/12/2020

Spill Dimensions

ENTER - Length of Spill	50	**feet**
ENTER - Width of Spill	50	**feet**
ENTER - Saturation Depth of Spill	3	**inches**
ENTER - Porosity Factor	0.03	**decimal**

Oil Cut - Well Test / Vessel Throughput or Contents

Oil	7
Water	3
Calculated Oil Cut	0.7

Volume Recovered in Truck / Containment

ENTER - Recovered Oil	45	**BBL**
ENTER - Recovered Water	20	**BBL**

Calculated Values	*calculated*	
Release of Oil in Soil - Unrecovered	2	***BBL***
Release of Water in Soil - Unrecovered	1	***BBL***
Unrecovered Total Release	3	***BBL***

Calculated Values	*calculated*	
Total Release of Oil	47	***BBL***
Total Release of Water	21	***BBL***
Total Release	68	***BBL***

Types of Soil	Porosity Factor
Gravel	0.25
Sand	0.20
Clay/silt/sand Mix	0.15
Clay	0.05
Caliche	0.03
Unknown	0.25

$$\frac{\text{(Length X Width X Depth X 1 ft/12 in) X Porosity}}{5.615\ ft^3 / BBL} \times \text{Oil Cut (or Water Cut)}$$

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Oil Conservation Division

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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?	>100 (ft bgs)
Did this release impact groundwater or surface water?	☐ Yes ☒ No
Are the lateral extents of the release within 300 feet of a continuously flowing watercourse or any other significant watercourse?	☐ Yes ☒ 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)?	☐ Yes ☒ No
Are the lateral extents of the release within 300 feet of an occupied permanent residence, school, hospital, institution, or church?	☐ Yes ☒ 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?	☐ Yes ☒ No
Are the lateral extents of the release within 1000 feet of any other fresh water well or spring?	☐ Yes ☒ No
Are the lateral extents of the release within incorporated municipal boundaries or within a defined municipal fresh water well field?	☐ Yes ☒ No
Are the lateral extents of the release within 300 feet of a wetland?	☐ Yes ☒ No
Are the lateral extents of the release overlying a subsurface mine?	☐ Yes ☒ No
Are the lateral extents of the release overlying an unstable area such as karst geology?	☐ Yes ☒ No
Are the lateral extents of the release within a 100-year floodplain?	☐ Yes ☒ No
Did the release impact areas **not** on an exploration, development, production, or storage site?	☐ Yes ☒ No

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

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

☒ Scaled site map showing impacted area, surface features, subsurface features, delineation points, and monitoring wells.
☒ Field data
☒ Data table of soil contaminant concentration data
☒ Depth to water determination
☒ Determination of water sources and significant watercourses within ½-mile of the lateral extents of the release
☒ Boring or excavation logs
☒ Photographs including date and GIS information
☒ Topographic/Aerial maps
☒ Laboratory data including chain of custody

If the site characterization report does not include completed efforts at remediation of the release, the report must include a proposed remediation plan. That plan must include the estimated volume of material to be remediated, the proposed remediation technique, proposed sampling plan and methods, anticipated timelines for beginning and completing the remediation. The closure criteria for a release are contained in Table 1 of 19.15.29.12 NMAC, however, use of the table is modified by site- and release-specific parameters.

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Printed Name: Kelton Beaird Title: Environmental Manager

Signature: Date: 11/15/2023

email: KBeaird@btaoil Telephone: 432-312-2203

OCD Only

Received by: Shelly Wells Date: 11/15/2023

State of New Mexico
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Closure

The responsible party must attach information demonstrating they have complied with all applicable closure requirements and any conditions or directives of the OCD. This demonstration should be in the form of a comprehensive report (electronic submittals in .pdf format are preferred) including a scaled site map, sampling diagrams, relevant field notes, photographs of any excavation prior to backfilling, laboratory data including chain of custody documents of final sampling, and a narrative of the remedial activities. Refer to 19.15.29.12 NMAC.

Closure Report Attachment Checklist: ***Each of the following items must be included in the closure report.***

☒ A scaled site and sampling diagram as described in 19.15.29.11 NMAC

☒ Photographs of the remediated site prior to backfill or photos of the liner integrity if applicable (Note: appropriate OCD District office must be notified 2 days prior to liner inspection)

☒ Laboratory analyses of final sampling (Note: appropriate ODC District office must be notified 2 days prior to final sampling)

☒ Description of remediation activities

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. The responsible party acknowledges they must substantially restore, reclaim, and re-vegetate the impacted surface area to the conditions that existed prior to the release or their final land use in accordance with 19.15.29.13 NMAC including notification to the OCD when reclamation and re-vegetation are complete.

Printed Name: Kelton Beaird Title: Environmental Manager

Signature: Date: 11/15/2023

email: KBeaird@btaoil Telephone: 432-312-2203

OCD Only

Received by: Shelly Wells Date: 11/15/2023

Closure approval by the OCD does not relieve the responsible party of liability should their operations have failed to adequately investigate and remediate contamination that poses a threat to groundwater, surface water, human health, or the environment nor does not relieve the responsible party of compliance with any other federal, state, or local laws and/or regulations.

Closure Approved by: Scott Rodgers Date: 02/06/2024

Printed Name: Scott Rodgers Title: Environmental Specialist Adv.

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 286013

CONDITIONS

Operator: BTA OIL PRODUCERS, LLC 104 S Pecos Midland, TX 79701	OGRID: 260297
	Action Number: 286013
	Action Type: [C-141] Release Corrective Action (C-141)

CONDITIONS

Created By	Condition	Condition Date
scott.rodgers	None	2/6/2024