



August 29, 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 #16H Flowline Break
Incident Number nAPP2123156473
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 #16H Flowline Break (Site). The purpose of the Site assessment, excavation, and soil sampling activities was to assess for the presence or absence of impacts to soil resulting from a produced water release at the Site. Based on field observations, field screening activities, excavation activities and soil sample laboratory analytical results, BTA is submitting this *Closure Request*, describing Site assessment and excavation activities that have occurred and requesting closure for Incident Number nAPP2123156473.

SITE DESCRIPTION AND RELEASE SUMMARY

The Site is located in Unit M, Section 1, Township 26 South, Range 32 East, in Lea County, New Mexico (32.06611°, -103.63649°) and is associated with oil and gas exploration and production operations on Federal Land managed by the Bureau of Land Management (BLM).

On July 22, 2021, internal corrosion of a flowline caused the release of approximately 11 barrels (bbls) of produced water on the well pad. A vacuum truck was immediately dispatched to the Site to recover free-standing fluids; approximately 7 barrels (bbls) of produced water were recovered. BTA reported the release to the New Mexico Oil Conservation Division (NMOCD) and submitted a Release Notification Form C-141 (Form C-141) on August 19, 2021. The release was assigned Incident Number nAPP2123156473.

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 estimated to be greater than 55 feet below ground surface (bgs) based on the nearest groundwater well data. The closest permitted groundwater well with depth to groundwater data is the New Mexico Office of the State Engineer (NMOSE) well C-04485-POD1, located approximately 0.3 miles southeast of the Site. The well was drilled on October 5, 2020, to a total depth

BTA Oil Producers, LLC
Closure Request
Mesa #16H Flowline Break

of 55 feet bgs, and no groundwater was detected. 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 to the Site is an intermittent stream, located approximately 527 feet north of 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): 2,500 mg/kg
- Chloride: 10,000 mg/kg

SITE ASSESSMENT ACTIVITIES AND LABORATORY ANALYTICAL RESULTS

On May 10, 2023, Ensolum personnel were at the Site to evaluate the release extent based on information provided on the Form C-141 and visual observations. Eleven assessment soil samples (SS01 through SS11) were collected within and around the release area at a depth of approximately 0.5 feet bgs, to assess for the presence or absence of impacted soil. The soil samples were field screened for volatile organic compounds (VOCs) utilizing a calibrated photoionization detector (PID) and chloride using Hach® chloride QuanTab® test strips. 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 assessment soil samples SS01 through SS07, collected within the release extent, indicated TPH and/or chloride concentrations exceeded the Site Closure Criteria. Laboratory analytical results for assessment soil samples SS08 through SS11, collected around the release extent, indicated all COC concentrations were compliant with the most stringent Table I Closure Criteria and successfully defined the lateral extent of the release. Based on laboratory analytical results for soil samples SS01 through SS07, excavation activities were warranted.

EXCAVATION ACTIVITIES AND LABORATORY ANALYTICAL RESULTS

Between June 20 to June 22, 2023, Ensolum personnel were at the Site to oversee excavation activities based on laboratory analytical results for assessment soil samples SS01 through SS07. Excavation activities were performed utilizing a back-hoe, hydrovac, and transport vehicles. To direct excavation activities, soil was field screened for VOCs and chloride. The excavation was completed to depths ranging from 0.5 feet to 1-foot bgs. Photographic documentation of the excavation activities is included in Appendix B.

BTA Oil Producers, LLC
Closure Request
Mesa #16H Flowline Break

Following removal of impacted soil, 5-point composite soil samples were collected every 200 square feet from the floor of the excavation. 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. Confirmation soil samples FS01 through FS14 were collected from the floor of the excavation at depths ranging from 0.5 feet to 1-foot bgs. Due to the shallow depth of the excavation, soil from the sidewalls were incorporated into the floor samples. The excavation confirmation soil samples were handled and analyzed following the same procedures previously described.

Laboratory analytical results for excavation soil samples FS01 and FS03 through FS14, collected at a depth of 1-foot bgs indicated all COC concentrations were compliant with the Site Closure Criteria. Laboratory analytical results for excavation soil sample FS02 indicated a TPH concentration exceeding the Site Closure Criteria and additional excavation was required. On July 18, 2023, Ensolum personnel were onsite to oversee the removal of additional soil in the vicinity of floor soil sample FS02. Subsequent sample FS02A was collected from the floor of the excavation at a depth of 1-foot bgs.

The final excavation measured approximately 2,856 square feet in areal extent. A total of approximately 105 cubic yards of impacted soil was removed during the excavation activities. The soil was transported and properly disposed of at the R360 Disposal Facility in Hobbs, New Mexico. The excavation was secured with fencing once the excavation was complete.

Laboratory analytical results for all final excavation samples (FS01, FS02A, and FS03 through FS14) indicated all COC concentrations were compliant with the Site Closure Criteria. Laboratory analytical results are summarized in Table 1 and the complete laboratory analytical reports are included as Appendix C.

CLOSURE REQUEST

Site assessment and excavation activities were conducted at the Site to assess for the presence or absence of impacted soil from the July 2021 release of produced water at the Site. Laboratory analytical results for excavation soil samples, collected from the final excavation extent, indicated all COC concentrations were compliant with the Site Closure Criteria. Based on laboratory analytical results, no further remediation was required.

BTA believes these remedial actions are protective of human health, the environment, and groundwater. As such, BTA respectfully requests closure for Incident Number nAPP2123156473. Notifications submitted to the NMOCD are included in Appendix D and the final Form C-141 is included in Appendix E.

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

Sincerely,
Ensolum, LLC



Peter Van Patten
Project Geologist



Daniel R. Moir, PG
Senior Managing Geologist

cc: Kelton Beaird, BTA
Bureau of Land Management

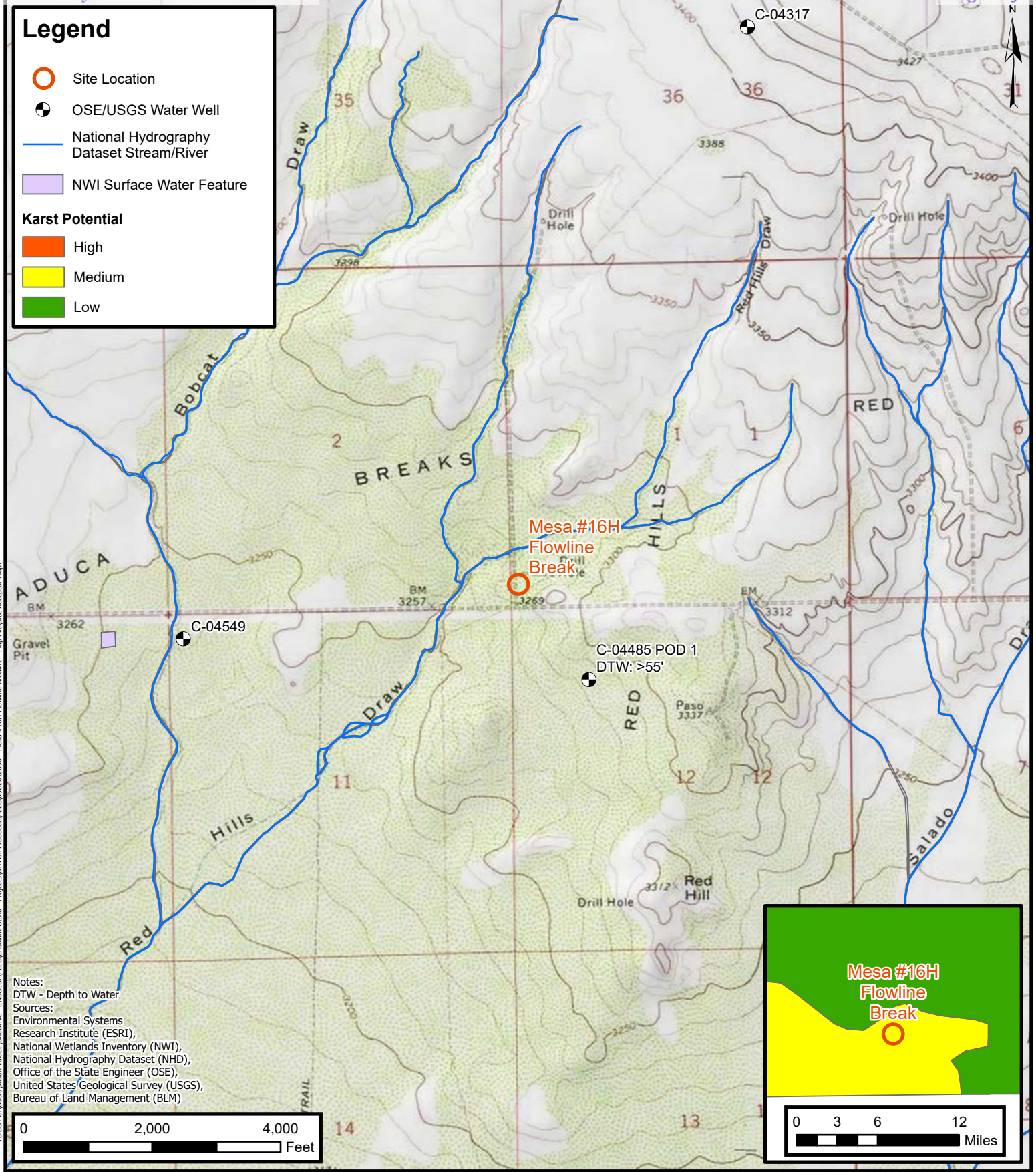
BTA Oil Producers, LLC
Closure Request
Mesa #16H Flowline Break


Appendices:

Figure 1	Site Receptor Map
Figure 2	Assessment 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	Laboratory Analytical Reports & Chain-of-Custody Documentation
Appendix D	NMOCD Notifications
Appendix E	Final C-141



FIGURES



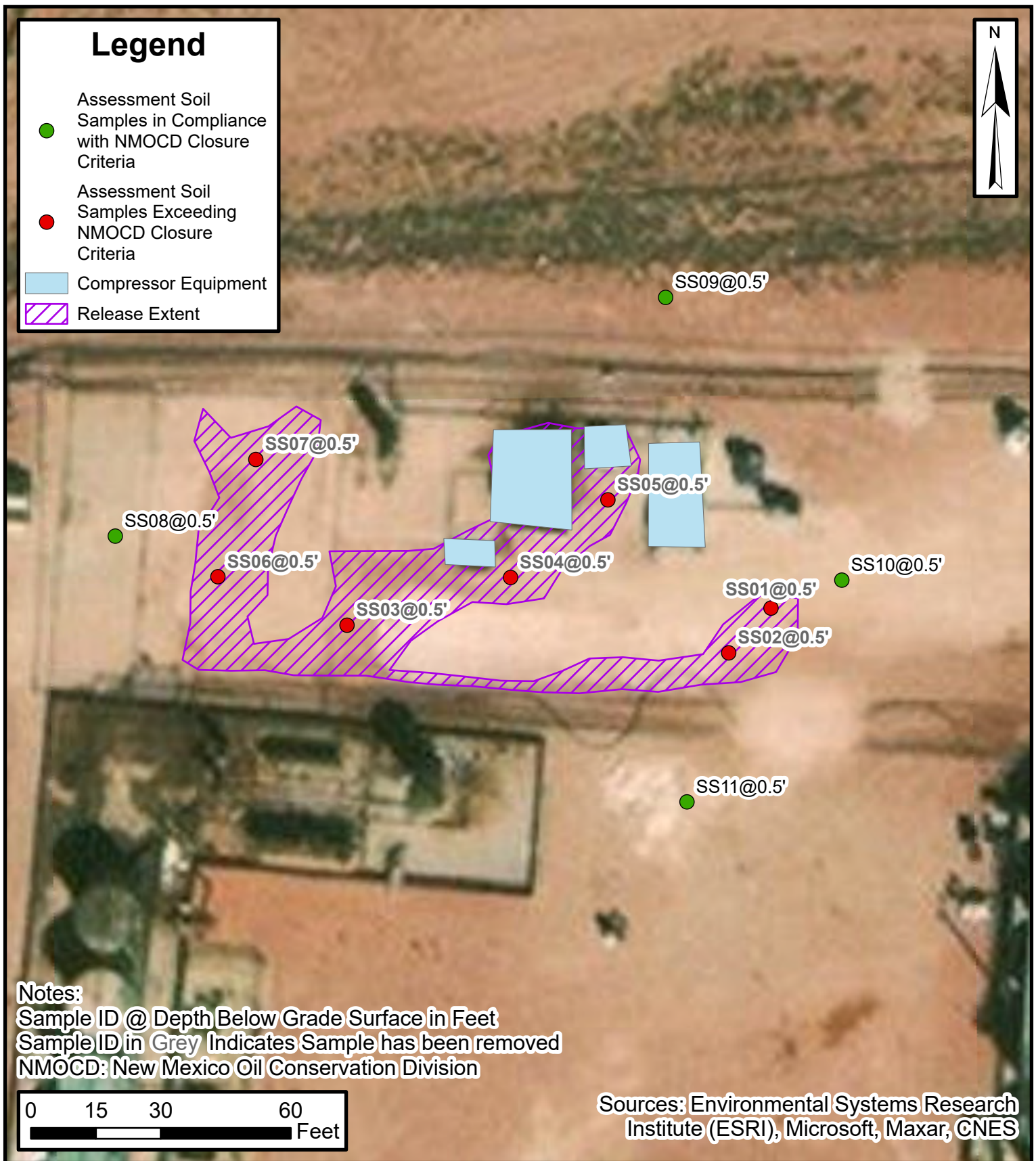


Environmental, Engineering and Hydrogeologic Consultants

Site Receptor Map

BTA Oil Producers, LLC
Mesa #16H Flowline Break
Incident Number: nAPP2123156473
Unit M, Sec 1, T26S, R32E
Lea County, New Mexico

FIGURE 1



Assessment Soil Sample Locations

BTA Oil Producers, LLC
 Mesa #16H Flowline Break
 Incident Number: nAPP2123156473
 Unit M, Sec 1, T26S, R32E
 Lea County, New Mexico

FIGURE
2



Excavation Soil Sample Locations

BTA Oil Producers, LLC
 Mesa #16H Flowline Break
 Incident Number: nAPP2123156473
 Unit M, Sec 1, T26S, R32E
 Lea County, New Mexico

FIGURE
3



TABLES



TABLE I
SOIL SAMPLE ANALYTICAL RESULTS
Mesa #16H Flowline Break
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 I Closure Criteria (NMAC 19.15.29)			10	50	NE	NE	NE	1,000	2,500	10,000
Assessment Soil Samples										
SS01	05/10/2023	0.5	<0.050	<0.300	<10.0	1,380	592	1,380	1,972	4,000
SS02	05/10/2023	0.5	<0.050	<0.300	<10.0	2,380	739	2,380	3,119	13,400
SS03	05/10/2023	0.5	<0.050	<0.300	<10.0	1,850	910	1,850	2,760	9,000
SS04	05/10/2023	0.5	<0.050	<0.300	<10.0	16,900	5,870	16,900	22,770	8,800
SS05	05/10/2023	0.5	<0.050	<0.300	<10.0	1,740	3,230	1,740	4,970	80.0
SS06	05/10/2023	0.5	<0.050	<0.300	<10.0	3,650	1,080	3,650	4,730	21,200
SS07	05/10/2023	0.5	<0.050	<0.300	<10.0	2,350	1,120	2,350	3,470	752
SS08	05/10/2023	0.5	<0.050	<0.300	<10.0	11.6	20.7	11.6	32.3	144
SS09	05/10/2023	0.5	<0.050	<0.300	<10.0	11.5	<10.0	11.5	11.5	64.0
SS10	05/10/2023	0.5	<0.050	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	128
SS11	05/10/2023	0.5	<0.050	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	112
Excavation Soil Samples										
FS01	06/20/2023	1	<0.050	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	2,560
FS02	06/20/2023	0.5	<0.050	<0.300	<10.0	3,570	1,410	3,570	4,980	4,000
FS02A	07/18/2023	1	<0.050	<0.300	<10.0	60.5	11.0	60.5	71.5	3,440
FS03	06/22/2023	1	<0.050	<0.300	<10.0	383	181	383	564	1,640
FS04	06/22/2023	1	<0.050	<0.300	<10.0	21.9	<10.0	21.9	21.9	128
FS05	06/22/2023	1	<0.050	<0.300	<10.0	354	127	354	481	1,330
FS06	06/22/2023	1	<0.050	<0.300	<10.0	61.2	36.1	61.2	97.3	2,040
FS07	06/22/2023	1	<0.050	<0.300	<10.0	288	101	288	389	1,800
FS08	06/22/2023	1	<0.050	<0.300	<10.0	247	91.3	247	338	2,000
FS09	06/22/2023	1	<0.050	<0.300	<10.0	515	135	515	650	3,320



TABLE I
SOIL SAMPLE ANALYTICAL RESULTS
Mesa #16H Flowline Break
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 I Closure Criteria (NMAC 19.15.29)			10	50	NE	NE	NE	1,000	2,500	10,000
FS10	06/22/2023	1	<0.050	<0.300	<10.0	471	161	471	632	1,600
FS11	06/22/2023	1	<0.050	<0.300	<10.0	47.4	18.9	47.4	66.3	784
FS12	06/22/2023	1	<0.050	<0.300	<10.0	60.5	19.3	60.5	79.8	176
FS13	06/22/2023	1	<0.050	<0.300	<10.0	25.9	<10.0	25.9	25.9	592
FS14	06/22/2023	1	<0.050	<0.300	<10.0	277	89.0	277	366	528

Notes:

bgs: below ground surface
mg/kg: milligrams per kilogram
NMOCD: New Mexico Oil Conservation Division
NMAC: New Mexico Administrative Code
BTEX: Benzene, Toluene, Ethylbenzene, and Xylenes
Concentrations in **bold** exceed the NMOCD Table I Closure Criteria or reclamation standard where applicable.

GRO: Gasoline Range Organics
DRO: Diesel Range Organics
ORO: Oil Range Organics
TPH: Total Petroleum Hydrocarbon



APPENDIX A

Referenced Well Records



WELL RECORD & LOG

OFFICE OF THE STATE ENGINEER

www.ose.state.nm.us

1. GENERAL AND WELL LOCATION	OSE POD NO. (WELL NO.) C-04485		OWL 362		WELL TAG ID NO. NA		OSE FILE NO(S). C-04485		
	WELL OWNER NAME(S) KJ ENVIRONMENTAL						PHONE (OPTIONAL) 214-287-5875		
	WELL OWNER MAILING ADDRESS 500 MOSSELEY ROAD						CITY CROSS ROADS		
							STATE TX		
							ZIP 76227		
	WELL LOCATION (FROM GPS)		DEGREES		MINUTES	SECONDS	* ACCURACY REQUIRED: ONE TENTH OF A SECOND * DATUM REQUIRED: WGS 84		
			LATITUDE		N				
			3548560						
			LONGITUDE		629271		W		
DESCRIPTION RELATING WELL LOCATION TO STREET ADDRESS AND COMMON LANDMARKS - PLSS (SECTION, TOWNSHIP, RANGE) WHERE AVAILABLE									
2. DRILLING & CASING INFORMATION	LICENSE NO WD 1186		NAME OF LICENSED DRILLER RODNEY HAMMER				NAME OF WELL DRILLING COMPANY ENVIRO-DRILL, INC.		
	DRILLING STARTED 10/05/2020		DRILLING ENDED 10/06/2020		DEPTH OF COMPLETED WELL (FT) 55'		BORE HOLE DEPTH (FT) 55'		
							DEPTH WATER FIRST ENCOUNTERED (FT) None (Dry)		
	COMPLETED WELL IS: <input type="checkbox"/> ARTESIAN <input checked="" type="checkbox"/> DRY HOLE <input type="checkbox"/> SHALLOW (UNCONFINED)							STATIC WATER LEVEL IN COMPLETED WELL (FT)	
	DRILLING FLUID: <input type="checkbox"/> AIR <input type="checkbox"/> MUD ADDITIVES - SPECIFY:								
	DRILLING METHOD: <input checked="" type="checkbox"/> ROTARY <input type="checkbox"/> HAMMER <input type="checkbox"/> CABLE TOOL <input checked="" type="checkbox"/> OTHER - SPECIFY: HSA								
	DEPTH (feet bgl)		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)	
	FROM	TO							
	55	45	8"	Screen	FJT	2"	2"	.010	
	45	0	8"	Blank	11	11	11		
3. ANNULAR MATERIAL	DEPTH (feet bgl)		BORE HOLE DIAM. (inches)	LIST ANNULAR SEAL MATERIAL AND GRAVEL PACK SIZE-RANGE BY INTERVAL	AMOUNT (cubic feet)	METHOD OF PLACEMENT			
	FROM	TO							
	55	43	8"	Sand 10/20	10	tremie			
	43	41	8"	Hole Plug	1				
	41	0	8"	Grout	100 gal.	↓			

FOR OSE INTERNAL USE

FILE NO. 11-2599

LOCATION 2-2-11

POD NO.

2N-33E-10

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

TRN NO. 109336

WELL TAG ID NO.

PAGE 1 OF 2

603 ALBANY OFFICE

WR-20 WELL RECORD & LOG (Version 06/30/2017)

Released to Imaging: 12/28/2023 10:40:14 AM



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National Water Information System: Web Interface

USGS Water Resources

Data Category: Geographic Area:

Click to hide News Bulletins

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- Explore the NEW [USGS National Water Dashboard](#) interactive map to access real-time water data from over 13,500 stations nationwide.
- [Full News](#)

Groundwater levels for New Mexico

Click to hide state-specific text

❗ Important: [Next Generation Monitoring Location Page](#)

Search Results -- 1 sites found

Agency code = usgs

site_no list =

- 320449103360101

Minimum number of levels = 1

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

USGS 320449103360101 25S.33E.31.44424

Lea County, New Mexico

Latitude 32°04'49", Longitude 103°36'01" NAD27

Land-surface elevation 3,383 feet above NAVD88

This well is completed in the Other aquifers (N9999OTHER) national aquifer.

This well is completed in the Chinle Formation (231CHNL) local aquifer.

Output formats

Table of data
Tab-separated data
Graph of data
Reselect period

Date	Time	? Water-level date-time accuracy	? Parameter code	Water level, feet below land surface	Water level, feet above specific vertical datum	Referenced vertical datum	? Status	? Method of measurement	? Measuring agency	? Source of measurement
1981-03-25			D	62610	3189.23	NGVD29	P		Z	
1981-03-25			D	62611	3190.85	NAVD88	P		Z	
1981-03-25			D	72019	192.15		P		Z	
1986-03-18			D	62610	3191.59	NGVD29	1		Z	
1986-03-18			D	62611	3193.21	NAVD88	1		Z	
1986-03-18			D	72019	189.79		1		Z	

Explanation

Section	Code	Description
Water-level date-time accuracy	D	Date is accurate to the Day
Parameter code	62610	Groundwater level above NGVD 1929, feet
Parameter code	62611	Groundwater level above NAVD 1988, feet

Section	Code	Description
Parameter code	72019	Depth to water level, feet below land surface
Referenced vertical datum	NAVD88	North American Vertical Datum of 1988
Referenced vertical datum	NGVD29	National Geodetic Vertical Datum of 1929
Status	1	Static
Status	P	Pumping
Method of measurement	Z	Other.
Measuring agency		Not determined
Source of measurement		Not determined
Water-level approval status	A	Approved for publication -- Processing and review completed.

[Questions or Comments](#)[Automated retrievals](#)[Help](#)[Data Tips](#)[Explanation of terms](#)[Subscribe for system changes](#)[News](#)[Accessibility](#)[FOIA](#)[Privacy](#)[Policies and Notices](#)[U.S. Department of the Interior](#) | [U.S. Geological Survey](#)**Title: Groundwater for New Mexico: Water Levels****URL: <https://nwis.waterdata.usgs.gov/nm/nwis/gwlevels?>**Page Contact Information: [New Mexico Water Data Maintainer](#)

Page Last Modified: 2023-08-22 16:37:19 EDT

0.27 0.24 nadww02



APPENDIX B

Photographic Log



Photographic Log

BTA Oil Producers, LLC

Mesa #16H Flowline Break

Incident Number nAPP2123156473

Mesa 3H Tank Battery
(Mesa 16H Flowline Release - 7/22/2021) NAPP21231564



Photograph: 1
Description: Release extent
View: N/A
Date: 7/22/2021



Photograph: 2
Description: Initial assessment activities
View: Northwest
Date: 5/10/2023



Photograph: 3
Description: Excavation activities
View: Southeast
Date: 6/22/2023



Photograph: 4
Description: Excavation activities
View: Southeast
Date: 6/22/2023



APPENDIX C

Laboratory Analytical Reports & Chain of Custody Documentation



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

May 17, 2023

HADLIE GREEN

ENSOLUM

3122 NATIONAL PARKS HWY

CARLSBAD, NM 88220

RE: MESA #16H FLOWLINE

Enclosed are the results of analyses for samples received by the laboratory on 05/12/23 14:35.

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

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

Accreditation applies to public drinking water matrices.

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

Sincerely,

A handwritten signature in black ink that reads "Celey D. Keene". The signature is written in a cursive, flowing style.

Celey D. Keene

Lab Director/Quality Manager



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

Analytical Results For:

ENSOLUM
HADLIE GREEN
3122 NATIONAL PARKS HWY
CARLSBAD NM, 88220
Fax To:

Received: 05/12/2023
Reported: 05/17/2023
Project Name: MESA #16H FLOWLINE
Project Number: 03C2012030
Project Location: BTA 32.06611,-103.636649

Sampling Date: 05/10/2023
Sampling Type: Soil
Sampling Condition: Cool & Intact
Sample Received By: Tamara Oldaker

Sample ID: SS 01 0.5' (H232398-01)

BTX 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	05/15/2023	ND	2.11	105	2.00	1.52	
Toluene*	<0.050	0.050	05/15/2023	ND	2.24	112	2.00	0.0359	
Ethylbenzene*	<0.050	0.050	05/15/2023	ND	2.40	120	2.00	1.46	
Total Xylenes*	<0.150	0.150	05/15/2023	ND	7.16	119	6.00	2.69	
Total BTX	<0.300	0.300	05/15/2023	ND					

Surrogate: 4-Bromofluorobenzene (PID) 114 % 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	4000	16.0	05/15/2023	ND	432	108	400	0.00	

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	05/15/2023	ND	199	99.5	200	4.05	
DRO >C10-C28*	1380	10.0	05/15/2023	ND	192	95.8	200	10.3	
EXT DRO >C28-C36	592	10.0	05/15/2023	ND					

Surrogate: 1-Chlorooctane 99.6 % 48.2-134

Surrogate: 1-Chlorooctadecane 130 % 49.1-148

Cardinal Laboratories

*=Accredited Analyte

PLEASE NOTE: Liability and Damages. Cardinal's liability and client's exclusive remedy for any claim arising, whether based in contract or tort, shall be limited to the amount paid by client for analyses. All claims, including those for negligence and any other cause whatsoever shall be deemed waived unless made in writing and received by Cardinal within thirty (30) days after completion of the applicable service. In no event shall Cardinal be liable for incidental or consequential damages, including, without limitation, business interruptions, loss of use, or loss of profits incurred by client, its subsidiaries, affiliates or successors arising out of or related to the performance of the services hereunder by Cardinal, regardless of whether such claim is based upon any of the above stated reasons or otherwise. Results relate only to the samples identified above. This report shall not be reproduced except in full with written approval of Cardinal Laboratories.

Celey D. Keene, Lab Director/Quality Manager



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

Analytical Results For:

ENSOLUM
HADLIE GREEN
3122 NATIONAL PARKS HWY
CARLSBAD NM, 88220
Fax To:

Received: 05/12/2023
Reported: 05/17/2023
Project Name: MESA #16H FLOWLINE
Project Number: 03C2012030
Project Location: BTA 32.06611,-103.636649

Sampling Date: 05/10/2023
Sampling Type: Soil
Sampling Condition: Cool & Intact
Sample Received By: Tamara Oldaker

Sample ID: SS 02 0.5' (H232398-02)

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	05/15/2023	ND	2.11	105	2.00	1.52		
Toluene*	<0.050	0.050	05/15/2023	ND	2.24	112	2.00	0.0359		
Ethylbenzene*	<0.050	0.050	05/15/2023	ND	2.40	120	2.00	1.46		
Total Xylenes*	<0.150	0.150	05/15/2023	ND	7.16	119	6.00	2.69		
Total BTEx	<0.300	0.300	05/15/2023	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	13400	16.0	05/15/2023	ND	432	108	400	0.00		

TPH 8015M		mg/kg		Analyzed By: MS				S-04	
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	05/15/2023	ND	199	99.5	200	4.05	
DRO >C10-C28*	2380	10.0	05/15/2023	ND	192	95.8	200	10.3	
EXT DRO >C28-C36	739	10.0	05/15/2023	ND					

Surrogate: 1-Chlorooctane 108 % 48.2-134

Surrogate: 1-Chlorooctadecane 156 % 49.1-148

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Celey D. Keene, Lab Director/Quality Manager



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Analytical Results For:

ENSOLUM
HADLIE GREEN
3122 NATIONAL PARKS HWY
CARLSBAD NM, 88220
Fax To:

Received: 05/12/2023
Reported: 05/17/2023
Project Name: MESA #16H FLOWLINE
Project Number: 03C2012030
Project Location: BTA 32.06611,-103.636649

Sampling Date: 05/10/2023
Sampling Type: Soil
Sampling Condition: Cool & Intact
Sample Received By: Tamara Oldaker

Sample ID: SS 03 0.5' (H232398-03)

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	05/15/2023	ND	2.11	105	2.00	1.52		
Toluene*	<0.050	0.050	05/15/2023	ND	2.24	112	2.00	0.0359		
Ethylbenzene*	<0.050	0.050	05/15/2023	ND	2.40	120	2.00	1.46		
Total Xylenes*	<0.150	0.150	05/15/2023	ND	7.16	119	6.00	2.69		
Total BTEx	<0.300	0.300	05/15/2023	ND						

Surrogate: 4-Bromofluorobenzene (PID) 107 % 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	9000	16.0	05/15/2023	ND	432	108	400	0.00		

TPH 8015M		mg/kg		Analyzed By: MS				S-04	
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	05/15/2023	ND	199	99.5	200	4.05	
DRO >C10-C28*	1850	10.0	05/15/2023	ND	192	95.8	200	10.3	
EXT DRO >C28-C36	910	10.0	05/15/2023	ND					

Surrogate: 1-Chlorooctane 113 % 48.2-134

Surrogate: 1-Chlorooctadecane 159 % 49.1-148

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Analytical Results For:

ENSOLUM
HADLIE GREEN
3122 NATIONAL PARKS HWY
CARLSBAD NM, 88220
Fax To:

Received: 05/12/2023
Reported: 05/17/2023
Project Name: MESA #16H FLOWLINE
Project Number: 03C2012030
Project Location: BTA 32.06611,-103.636649

Sampling Date: 05/10/2023
Sampling Type: Soil
Sampling Condition: Cool & Intact
Sample Received By: Tamara Oldaker

Sample ID: SS 04 0.5' (H232398-04)

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	05/15/2023	ND	2.11	105	2.00	1.52		
Toluene*	<0.050	0.050	05/15/2023	ND	2.24	112	2.00	0.0359		
Ethylbenzene*	<0.050	0.050	05/15/2023	ND	2.40	120	2.00	1.46		
Total Xylenes*	<0.150	0.150	05/15/2023	ND	7.16	119	6.00	2.69		
Total BTEx	<0.300	0.300	05/15/2023	ND						

Surrogate: 4-Bromofluorobenzene (PID) 82.6 % 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	8800	16.0	05/15/2023	ND	432	108	400	0.00		

TPH 8015M		mg/kg		Analyzed By: MS				S-06	
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<100	100	05/16/2023	ND	199	99.5	200	4.05	
DRO >C10-C28*	16900	100	05/16/2023	ND	192	95.8	200	10.3	
EXT DRO >C28-C36	5870	100	05/16/2023	ND					

Surrogate: 1-Chlorooctane 112 % 48.2-134

Surrogate: 1-Chlorooctadecane 812 % 49.1-148

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Analytical Results For:

ENSOLUM
HADLIE GREEN
3122 NATIONAL PARKS HWY
CARLSBAD NM, 88220
Fax To:

Received: 05/12/2023
Reported: 05/17/2023
Project Name: MESA #16H FLOWLINE
Project Number: 03C2012030
Project Location: BTA 32.06611,-103.636649

Sampling Date: 05/10/2023
Sampling Type: Soil
Sampling Condition: Cool & Intact
Sample Received By: Tamara Oldaker

Sample ID: SS 05 0.5' (H232398-05)

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	05/16/2023	ND	2.11	105	2.00	1.52		
Toluene*	<0.050	0.050	05/16/2023	ND	2.24	112	2.00	0.0359		
Ethylbenzene*	<0.050	0.050	05/16/2023	ND	2.40	120	2.00	1.46		
Total Xylenes*	<0.150	0.150	05/16/2023	ND	7.16	119	6.00	2.69		
Total BTEx	<0.300	0.300	05/16/2023	ND						

Surrogate: 4-Bromofluorobenzene (PID) 97.1 % 71.5-134

Chloride, SM4500CI-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	05/15/2023	ND	432	108	400	0.00		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	05/15/2023	ND	199	99.5	200	4.05	
DRO >C10-C28*	1740	10.0	05/15/2023	ND	192	95.8	200	10.3	
EXT DRO >C28-C36	3230	10.0	05/15/2023	ND					

Surrogate: 1-Chlorooctane 108 % 48.2-134

Surrogate: 1-Chlorooctadecane 133 % 49.1-148

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Celey D. Keene, Lab Director/Quality Manager



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Analytical Results For:

ENSOLUM
HADLIE GREEN
3122 NATIONAL PARKS HWY
CARLSBAD NM, 88220
Fax To:

Received: 05/12/2023
Reported: 05/17/2023
Project Name: MESA #16H FLOWLINE
Project Number: 03C2012030
Project Location: BTA 32.06611,-103.636649

Sampling Date: 05/10/2023
Sampling Type: Soil
Sampling Condition: Cool & Intact
Sample Received By: Tamara Oldaker

Sample ID: SS 06 0.5' (H232398-06)

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	05/15/2023	ND	2.11	105	2.00	1.52		
Toluene*	<0.050	0.050	05/15/2023	ND	2.24	112	2.00	0.0359		
Ethylbenzene*	<0.050	0.050	05/15/2023	ND	2.40	120	2.00	1.46		
Total Xylenes*	<0.150	0.150	05/15/2023	ND	7.16	119	6.00	2.69		
Total BTEx	<0.300	0.300	05/15/2023	ND						

Surrogate: 4-Bromofluorobenzene (PID) 93.6 % 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	21200	16.0	05/15/2023	ND	432	108	400	0.00		

TPH 8015M		mg/kg		Analyzed By: MS				S-04	
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	05/15/2023	ND	199	99.5	200	4.05	
DRO >C10-C28*	3650	10.0	05/15/2023	ND	192	95.8	200	10.3	
EXT DRO >C28-C36	1080	10.0	05/15/2023	ND					

Surrogate: 1-Chlorooctane 106 % 48.2-134

Surrogate: 1-Chlorooctadecane 150 % 49.1-148

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Analytical Results For:

ENSOLUM
HADLIE GREEN
3122 NATIONAL PARKS HWY
CARLSBAD NM, 88220
Fax To:

Received: 05/12/2023
Reported: 05/17/2023
Project Name: MESA #16H FLOWLINE
Project Number: 03C2012030
Project Location: BTA 32.06611,-103.636649

Sampling Date: 05/10/2023
Sampling Type: Soil
Sampling Condition: Cool & Intact
Sample Received By: Tamara Oldaker

Sample ID: SS 07 0.5' (H232398-07)

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	05/15/2023	ND	2.32	116	2.00	6.49	QM-07	
Toluene*	<0.050	0.050	05/15/2023	ND	2.31	115	2.00	5.99		
Ethylbenzene*	<0.050	0.050	05/15/2023	ND	2.27	114	2.00	6.05		
Total Xylenes*	<0.150	0.150	05/15/2023	ND	6.91	115	6.00	6.96		
Total BTEX	<0.300	0.300	05/15/2023	ND						

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

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	752	16.0	05/15/2023	ND	432	108	400	0.00		

TPH 8015M		mg/kg		Analyzed By: MS					S-04	
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
GRO C6-C10*	<10.0	10.0	05/15/2023	ND	199	99.5	200	4.05		
DRO >C10-C28*	2350	10.0	05/15/2023	ND	192	95.8	200	10.3		
EXT DRO >C28-C36	1120	10.0	05/15/2023	ND						

Surrogate: 1-Chlorooctane 109 % 48.2-134

Surrogate: 1-Chlorooctadecane 214 % 49.1-148

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Celey D. Keene, Lab Director/Quality Manager



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Analytical Results For:

ENSOLUM
HADLIE GREEN
3122 NATIONAL PARKS HWY
CARLSBAD NM, 88220
Fax To:

Received: 05/12/2023
Reported: 05/17/2023
Project Name: MESA #16H FLOWLINE
Project Number: 03C2012030
Project Location: BTA 32.06611,-103.636649

Sampling Date: 05/10/2023
Sampling Type: Soil
Sampling Condition: Cool & Intact
Sample Received By: Tamara Oldaker

Sample ID: SS 08 0.5' (H232398-08)

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	05/15/2023	ND	2.32	116	2.00	6.49		
Toluene*	<0.050	0.050	05/15/2023	ND	2.31	115	2.00	5.99		
Ethylbenzene*	<0.050	0.050	05/15/2023	ND	2.27	114	2.00	6.05		
Total Xylenes*	<0.150	0.150	05/15/2023	ND	6.91	115	6.00	6.96		
Total BTEx	<0.300	0.300	05/15/2023	ND						

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

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	144	16.0	05/15/2023	ND	432	108	400	0.00		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	05/16/2023	ND	199	99.5	200	4.05	
DRO >C10-C28*	11.6	10.0	05/16/2023	ND	192	95.8	200	10.3	
EXT DRO >C28-C36	20.7	10.0	05/16/2023	ND					

Surrogate: 1-Chlorooctane 121 % 48.2-134

Surrogate: 1-Chlorooctadecane 136 % 49.1-148

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Celey D. Keene, Lab Director/Quality Manager



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Analytical Results For:

ENSOLUM
HADLIE GREEN
3122 NATIONAL PARKS HWY
CARLSBAD NM, 88220
Fax To:

Received: 05/12/2023
Reported: 05/17/2023
Project Name: MESA #16H FLOWLINE
Project Number: 03C2012030
Project Location: BTA 32.06611,-103.636649

Sampling Date: 05/10/2023
Sampling Type: Soil
Sampling Condition: Cool & Intact
Sample Received By: Tamara Oldaker

Sample ID: SS 09 0.5' (H232398-09)

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	05/15/2023	ND	2.32	116	2.00	6.49		
Toluene*	<0.050	0.050	05/15/2023	ND	2.31	115	2.00	5.99		
Ethylbenzene*	<0.050	0.050	05/15/2023	ND	2.27	114	2.00	6.05		
Total Xylenes*	<0.150	0.150	05/15/2023	ND	6.91	115	6.00	6.96		
Total BTEx	<0.300	0.300	05/15/2023	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	64.0	16.0	05/15/2023	ND	432	108	400	0.00		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	05/15/2023	ND	199	99.5	200	4.05	
DRO >C10-C28*	11.5	10.0	05/15/2023	ND	192	95.8	200	10.3	
EXT DRO >C28-C36	<10.0	10.0	05/15/2023	ND					

Surrogate: 1-Chlorooctane 113 % 48.2-134

Surrogate: 1-Chlorooctadecane 127 % 49.1-148

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Celey D. Keene, Lab Director/Quality Manager



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Analytical Results For:

ENSOLUM
HADLIE GREEN
3122 NATIONAL PARKS HWY
CARLSBAD NM, 88220
Fax To:

Received: 05/12/2023
Reported: 05/17/2023
Project Name: MESA #16H FLOWLINE
Project Number: 03C2012030
Project Location: BTA 32.06611,-103.636649

Sampling Date: 05/10/2023
Sampling Type: Soil
Sampling Condition: Cool & Intact
Sample Received By: Tamara Oldaker

Sample ID: SS 10 0.5' (H232398-10)

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	05/15/2023	ND	2.32	116	2.00	6.49		
Toluene*	<0.050	0.050	05/15/2023	ND	2.31	115	2.00	5.99		
Ethylbenzene*	<0.050	0.050	05/15/2023	ND	2.27	114	2.00	6.05		
Total Xylenes*	<0.150	0.150	05/15/2023	ND	6.91	115	6.00	6.96		
Total BTEx	<0.300	0.300	05/15/2023	ND						

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

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	128	16.0	05/15/2023	ND	432	108	400	0.00		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	05/15/2023	ND	199	99.5	200	4.05	
DRO >C10-C28*	<10.0	10.0	05/15/2023	ND	192	95.8	200	10.3	
EXT DRO >C28-C36	<10.0	10.0	05/15/2023	ND					

Surrogate: 1-Chlorooctane 114 % 48.2-134

Surrogate: 1-Chlorooctadecane 127 % 49.1-148

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Celey D. Keene, Lab Director/Quality Manager



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

Analytical Results For:

ENSOLUM
HADLIE GREEN
3122 NATIONAL PARKS HWY
CARLSBAD NM, 88220
Fax To:

Received: 05/12/2023
Reported: 05/17/2023
Project Name: MESA #16H FLOWLINE
Project Number: 03C2012030
Project Location: BTA 32.06611,-103.636649

Sampling Date: 05/10/2023
Sampling Type: Soil
Sampling Condition: Cool & Intact
Sample Received By: Tamara Oldaker

Sample ID: SS 11 0.5' (H232398-11)

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	05/15/2023	ND	2.32	116	2.00	6.49		
Toluene*	<0.050	0.050	05/15/2023	ND	2.31	115	2.00	5.99		
Ethylbenzene*	<0.050	0.050	05/15/2023	ND	2.27	114	2.00	6.05		
Total Xylenes*	<0.150	0.150	05/15/2023	ND	6.91	115	6.00	6.96		
Total BTEX	<0.300	0.300	05/15/2023	ND						

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

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	112	16.0	05/15/2023	ND	432	108	400	0.00		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	05/15/2023	ND	205	103	200	4.83	
DRO >C10-C28*	<10.0	10.0	05/15/2023	ND	180	89.8	200	2.91	
EXT DRO >C28-C36	<10.0	10.0	05/15/2023	ND					

Surrogate: 1-Chlorooctane 105 % 48.2-134

Surrogate: 1-Chlorooctadecane 114 % 49.1-148

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Celey D. Keene, Lab Director/Quality Manager



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Notes and Definitions

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

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A handwritten signature in black ink, appearing to read "Celey D. Keene", written in a cursive style.

Celey D. Keene, Lab Director/Quality Manager



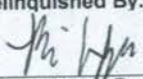
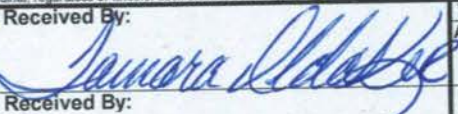
101 East Marland, Hobbs, NM 88240
(575) 393-2326 FAX (575) 393-2476

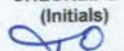
CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

(575) 393-2326 FAX (575) 393-2476				BILL TO				ANALYSIS REQUEST													
Company Name: Ensolum, LLC				P.O. #:																	
Project Manager: Hadlie Green				Company: BTA Oil																	
Address: 3122 National Parks Hwy				Attn: Kevin Jones																	
City: Carlsbad		State: NM		Zip: 88220		Address: 104 S Pecos St															
Phone #: 432-557-8895		Fax #:		City: Midland		State: TX		Zip: 79701													
Project #: 03C2012030		Project Owner: BTA Oil Producers		Phone #: 432-312-2203		Fax #:															
Project Name: Mesa #16H Flowline																					
Project Location: 32.06611, -103.636649																					
Sampler Name: Ronni Hayes																					

FOR LAB USE ONLY		Depth (feet)	G/RAB OR (C)OMP. # CONTAINERS	MATRIX						PRESERV.	SAMPLING		DATE	TIME	BTEx	TPH	Cl-
Lab I.D.	Sample I.D.			GROUNDWATER	WASTEWATER	SOIL	OIL	SLUDGE	OTHER:	ACID/BASE:	ICE / COOL	OTHER:					
H232398		0.5'	G	I			X					X	5/10/23	1010	X	X	X
1	SS01																
2	SS02																
3	SS03																
4	SS04																
5	SS05																
6	SS06																
7	SS07																
8	SS08																
9	SS09																
10	SS10																

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Relinquished By: 		Date: 5-12-23	Received By: 	Verbal Result: <input type="checkbox"/> Yes <input type="checkbox"/> No	Add'l Phone #:
Time: 1435				All Results are emailed. Please provide Email address:	
Relinquished By:		Date:	Received By:	REMARKS:	
Time:					

Delivered By: (Circle One)	Observed Temp. °C: 44	Sample Condition: Cool <input checked="" type="checkbox"/> Intact <input checked="" type="checkbox"/>	CHECKED BY: (Initials): 	Turnaround Time: Standard <input checked="" type="checkbox"/> Rush <input type="checkbox"/>	Bacteria (only) Sample Condition: Cool <input type="checkbox"/> Intact <input type="checkbox"/>
Sampler - UPS - Bus - Other:	Corrected Temp. °C: 38	<input type="checkbox"/> Yes <input type="checkbox"/> No		Thermometer ID #113	<input type="checkbox"/> Yes <input type="checkbox"/> No
		<input type="checkbox"/> No <input type="checkbox"/> No		Correction Factor -0.5°C	Observed Temp. °C: Corrected Temp. °C:

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



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

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

BILL TO										ANALYSIS REQUEST																		
Company Name: Ensolum, LLC										P.O. #:																		
Project Manager: Hadlie Green										Company: BTA Oil																		
Address: 3122 National Parks Hwy										Attn: Kevin Jones																		
City: Carlsbad State: NM Zip: 88220										Address: 104 S Pecos St																		
Phone #: 432-557-8895 Fax #:										City: Midland																		
Project #: 03C2012030 Project Owner: BTA Oil Producers										State: TX Zip: 79701																		
Project Name: Mesa #16H Flowline										Phone #: 432-312-2203																		
Project Location: 32.06611, -103.636649										Fax #:																		
Sampler Name: Ronni Hayes																												
FOR LAB USE ONLY																												
Lab I.D.	Sample I.D.	Depth (feet)	(G)RAB OR (C)OMP.	# CONTAINERS	MATRIX			PRESERV.	SAMPLING																			
					GROUNDWATER	WASTEWATER	SOIL	OIL	SLUDGE	OTHER :	ACID/BASE:	ICE / COOL	OTHER :	DATE	TIME													
H232398 11	SS11	0.5'	G	1			X					X		5/10/23	1105	BTEX	TPH	CI-										
										RH 5/10/23																		

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Relinquished By:	Date: 5-12-23	Received By:	Verbal Result: <input type="checkbox"/> Yes <input type="checkbox"/> No	Add'l Phone #:
<i>W. H. H.</i>	Time: 1435	<i>Tamara Aldridge</i>	All Results are emailed. Please provide Email address:	
Relinquished By:	Date:	Received By:	REMARKS:	
	Time:			
Delivered By: (Circle One)	Observed Temp. °C 4.4	Sample Condition	Turnaround Time: Standard <input checked="" type="checkbox"/> Rush <input type="checkbox"/>	Bacteria (only) Sample Condition
Sampler - UPS - Bus - Other:	Corrected Temp. °C 3.8	Cool <input checked="" type="checkbox"/> Intact <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/>	Thermometer ID #113 Correction Factor -0.5°C	Cool <input type="checkbox"/> Intact <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/>

FORM-006 R 3.2 10/07/21

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

June 28, 2023

HADLIE GREEN

ENSOLUM

3122 NATIONAL PARKS HWY

CARLSBAD, NM 88220

RE: MESA #16H FLOWLINE BREAK

Enclosed are the results of analyses for samples received by the laboratory on 06/23/23 9:29.

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/ga/lab_accred_certif.html.

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

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

Cardinal Laboratories is accredited through the State of New Mexico Environment Department for:

Method SM 9223-B	Total Coliform and E. coli (Colilert MMO-MUG)
Method EPA 524.2	Regulated VOCs and Total Trihalomethanes (TTHM)
Method EPA 552.2	Total Haloacetic Acids (HAA-5)

Accreditation applies to public drinking water matrices for State of Colorado and New Mexico.

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



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Analytical Results For:

ENSOLUM
3122 NATIONAL PARKS HWY
CARLSBAD NM, 88220

Project: MESA #16H FLOWLINE BREAK
Project Number: 03C2012030
Project Manager: HADLIE GREEN
Fax To:

Reported:
28-Jun-23 12:01

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
FS 01 1'	H233249-01	Soil	20-Jun-23 11:20	23-Jun-23 09:29
FS 02 0.5'	H233249-02	Soil	20-Jun-23 09:50	23-Jun-23 09:29
FS 03 1'	H233249-03	Soil	22-Jun-23 08:15	23-Jun-23 09:29
FS 04 1'	H233249-04	Soil	22-Jun-23 08:20	23-Jun-23 09:29
FS 05 1'	H233249-05	Soil	22-Jun-23 08:25	23-Jun-23 09:29
FS 06 1'	H233249-06	Soil	22-Jun-23 08:30	23-Jun-23 09:29
FS 07 1'	H233249-07	Soil	22-Jun-23 08:35	23-Jun-23 09:29
FS 08 1'	H233249-08	Soil	22-Jun-23 08:40	23-Jun-23 09:29
FS 09 1'	H233249-09	Soil	22-Jun-23 08:45	23-Jun-23 09:29
FS 10 1'	H233249-10	Soil	22-Jun-23 08:50	23-Jun-23 09:29
FS 11 1'	H233249-11	Soil	22-Jun-23 09:55	23-Jun-23 09:29
FS 12 1'	H233249-12	Soil	22-Jun-23 10:00	23-Jun-23 09:29
FS 13 1'	H233249-13	Soil	22-Jun-23 10:25	23-Jun-23 09:29
FS 14 1'	H233249-14	Soil	22-Jun-23 12:25	23-Jun-23 09:29

06/28/23 - Client changed the sample depth on -02 (see COC). This is the revised report and will replace the one sent on 06/27/23.

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Analytical Results For:

ENSOLUM
3122 NATIONAL PARKS HWY
CARLSBAD NM, 88220

Project: MESA #16H FLOWLINE BREAK
Project Number: 03C2012030
Project Manager: HADLIE GREEN
Fax To:

Reported:
28-Jun-23 12:01

FS 01 1'
H233249-01 (Soil)

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Analyst	Analyzed	Method	Notes
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Cardinal Laboratories**Inorganic Compounds**

Chloride	2560		16.0	mg/kg	4	3062313	AC	23-Jun-23	4500-Cl-B	
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Volatile Organic Compounds by EPA Method 8021

Benzene*	<0.050	0.050	mg/kg	50	3062307	JH/	23-Jun-23	8021B	
Toluene*	<0.050	0.050	mg/kg	50	3062307	JH/	23-Jun-23	8021B	
Ethylbenzene*	<0.050	0.050	mg/kg	50	3062307	JH/	23-Jun-23	8021B	
Total Xylenes*	<0.150	0.150	mg/kg	50	3062307	JH/	23-Jun-23	8021B	
Total BTEX	<0.300	0.300	mg/kg	50	3062307	JH/	23-Jun-23	8021B	

Surrogate: 4-Bromofluorobenzene (PID)		113 %	71.5-134		3062307	JH/	23-Jun-23	8021B	
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Petroleum Hydrocarbons by GC FID

GRO C6-C10*	<10.0	10.0	mg/kg	1	3062240	MS	24-Jun-23	8015B	
DRO >C10-C28*	<10.0	10.0	mg/kg	1	3062240	MS	24-Jun-23	8015B	
EXT DRO >C28-C36	<10.0	10.0	mg/kg	1	3062240	MS	24-Jun-23	8015B	

Surrogate: 1-Chlorooctane		95.3 %	48.2-134		3062240	MS	24-Jun-23	8015B	
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Surrogate: 1-Chlorooctadecane		109 %	49.1-148		3062240	MS	24-Jun-23	8015B	
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Celey D. Keene, Lab Director/Quality Manager



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Analytical Results For:

ENSOLUM
3122 NATIONAL PARKS HWY
CARLSBAD NM, 88220

Project: MESA #16H FLOWLINE BREAK
Project Number: 03C2012030
Project Manager: HADLIE GREEN
Fax To:

Reported:
28-Jun-23 12:01

FS 02 0.5'
H233249-02 (Soil)

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Analyst	Analyzed	Method	Notes
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Cardinal Laboratories**Inorganic Compounds**

Chloride	4000		16.0	mg/kg	4	3062313	AC	23-Jun-23	4500-Cl-B	
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Volatile Organic Compounds by EPA Method 8021

Benzene*	<0.050		0.050	mg/kg	50	3062307	JH/	23-Jun-23	8021B	
Toluene*	<0.050		0.050	mg/kg	50	3062307	JH/	23-Jun-23	8021B	
Ethylbenzene*	<0.050		0.050	mg/kg	50	3062307	JH/	23-Jun-23	8021B	
Total Xylenes*	<0.150		0.150	mg/kg	50	3062307	JH/	23-Jun-23	8021B	
Total BTEX	<0.300		0.300	mg/kg	50	3062307	JH/	23-Jun-23	8021B	

Surrogate: 4-Bromofluorobenzene (PID)			112 %	71.5-134		3062307	JH/	23-Jun-23	8021B	
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Petroleum Hydrocarbons by GC FID**S-04**

GRO C6-C10*	<10.0		10.0	mg/kg	1	3062305	MS	23-Jun-23	8015B	
DRO >C10-C28*	3570		10.0	mg/kg	1	3062305	MS	23-Jun-23	8015B	
EXT DRO >C28-C36	1410		10.0	mg/kg	1	3062305	MS	23-Jun-23	8015B	

Surrogate: 1-Chlorooctane			78.1 %	48.2-134		3062305	MS	23-Jun-23	8015B	
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Surrogate: 1-Chlorooctadecane			168 %	49.1-148		3062305	MS	23-Jun-23	8015B	
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Celey D. Keene, Lab Director/Quality Manager



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Analytical Results For:

ENSOLUM
3122 NATIONAL PARKS HWY
CARLSBAD NM, 88220

Project: MESA #16H FLOWLINE BREAK
Project Number: 03C2012030
Project Manager: HADLIE GREEN
Fax To:

Reported:
28-Jun-23 12:01

FS 03 1'
H233249-03 (Soil)

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Analyst	Analyzed	Method	Notes
---------	--------	-----	-----------------	-------	----------	-------	---------	----------	--------	-------

Cardinal Laboratories**Inorganic Compounds**

Chloride	1640		16.0	mg/kg	4	3062313	AC	23-Jun-23	4500-Cl-B	
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Volatile Organic Compounds by EPA Method 8021

Benzene*	<0.050		0.050	mg/kg	50	3062307	JH/	23-Jun-23	8021B	
Toluene*	<0.050		0.050	mg/kg	50	3062307	JH/	23-Jun-23	8021B	
Ethylbenzene*	<0.050		0.050	mg/kg	50	3062307	JH/	23-Jun-23	8021B	
Total Xylenes*	<0.150		0.150	mg/kg	50	3062307	JH/	23-Jun-23	8021B	
Total BTEX	<0.300		0.300	mg/kg	50	3062307	JH/	23-Jun-23	8021B	

Surrogate: 4-Bromofluorobenzene (PID)			112 %		71.5-134	3062307	JH/	23-Jun-23	8021B	
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Petroleum Hydrocarbons by GC FID

GRO C6-C10*	<10.0		10.0	mg/kg	1	3062305	MS	23-Jun-23	8015B	
DRO >C10-C28*	383		10.0	mg/kg	1	3062305	MS	23-Jun-23	8015B	
EXT DRO >C28-C36	181		10.0	mg/kg	1	3062305	MS	23-Jun-23	8015B	

Surrogate: 1-Chlorooctane			78.4 %		48.2-134	3062305	MS	23-Jun-23	8015B	
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Surrogate: 1-Chlorooctadecane			108 %		49.1-148	3062305	MS	23-Jun-23	8015B	
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Celey D. Keene, Lab Director/Quality Manager



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Analytical Results For:

ENSOLUM
3122 NATIONAL PARKS HWY
CARLSBAD NM, 88220

Project: MESA #16H FLOWLINE BREAK
Project Number: 03C2012030
Project Manager: HADLIE GREEN
Fax To:

Reported:
28-Jun-23 12:01

FS 04 1'
H233249-04 (Soil)

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Analyst	Analyzed	Method	Notes
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Cardinal Laboratories**Inorganic Compounds**

Chloride	128		16.0	mg/kg	4	3062313	AC	23-Jun-23	4500-Cl-B	
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Volatile Organic Compounds by EPA Method 8021

Benzene*	<0.050		0.050	mg/kg	50	3062308	MS	23-Jun-23	8021B	
Toluene*	<0.050		0.050	mg/kg	50	3062308	MS	23-Jun-23	8021B	
Ethylbenzene*	<0.050		0.050	mg/kg	50	3062308	MS	23-Jun-23	8021B	
Total Xylenes*	<0.150		0.150	mg/kg	50	3062308	MS	23-Jun-23	8021B	
Total BTEX	<0.300		0.300	mg/kg	50	3062308	MS	23-Jun-23	8021B	

Surrogate: 4-Bromofluorobenzene (PID)			106 %	71.5-134		3062308	MS	23-Jun-23	8021B	
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Petroleum Hydrocarbons by GC FID

GRO C6-C10*	<10.0		10.0	mg/kg	1	3062305	MS	26-Jun-23	8015B	
DRO >C10-C28*	21.9		10.0	mg/kg	1	3062305	MS	26-Jun-23	8015B	
EXT DRO >C28-C36	<10.0		10.0	mg/kg	1	3062305	MS	26-Jun-23	8015B	

Surrogate: 1-Chlorooctane			111 %	48.2-134		3062305	MS	26-Jun-23	8015B	
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Surrogate: 1-Chlorooctadecane			120 %	49.1-148		3062305	MS	26-Jun-23	8015B	
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Celey D. Keene, Lab Director/Quality Manager



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

Analytical Results For:

ENSOLUM
3122 NATIONAL PARKS HWY
CARLSBAD NM, 88220

Project: MESA #16H FLOWLINE BREAK
Project Number: 03C2012030
Project Manager: HADLIE GREEN
Fax To:

Reported:
28-Jun-23 12:01

FS 05 1'
H233249-05 (Soil)

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Analyst	Analyzed	Method	Notes
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Cardinal Laboratories**Inorganic Compounds**

Chloride	1330		16.0	mg/kg	4	3062313	AC	23-Jun-23	4500-Cl-B	
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Volatile Organic Compounds by EPA Method 8021

Benzene*	<0.050		0.050	mg/kg	50	3062308	MS	23-Jun-23	8021B	
Toluene*	<0.050		0.050	mg/kg	50	3062308	MS	23-Jun-23	8021B	
Ethylbenzene*	<0.050		0.050	mg/kg	50	3062308	MS	23-Jun-23	8021B	
Total Xylenes*	<0.150		0.150	mg/kg	50	3062308	MS	23-Jun-23	8021B	
Total BTEX	<0.300		0.300	mg/kg	50	3062308	MS	23-Jun-23	8021B	

Surrogate: 4-Bromofluorobenzene (PID)			108 %		71.5-134	3062308	MS	23-Jun-23	8021B	
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Petroleum Hydrocarbons by GC FID

GRO C6-C10*	<10.0		10.0	mg/kg	1	3062305	MS	23-Jun-23	8015B	
DRO >C10-C28*	354		10.0	mg/kg	1	3062305	MS	23-Jun-23	8015B	
EXT DRO >C28-C36	127		10.0	mg/kg	1	3062305	MS	23-Jun-23	8015B	

Surrogate: 1-Chlorooctane			81.8 %		48.2-134	3062305	MS	23-Jun-23	8015B	
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Surrogate: 1-Chlorooctadecane			109 %		49.1-148	3062305	MS	23-Jun-23	8015B	
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Celey D. Keene, Lab Director/Quality Manager



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Analytical Results For:

ENSOLUM
3122 NATIONAL PARKS HWY
CARLSBAD NM, 88220

Project: MESA #16H FLOWLINE BREAK
Project Number: 03C2012030
Project Manager: HADLIE GREEN
Fax To:

Reported:
28-Jun-23 12:01

FS 06 1'
H233249-06 (Soil)

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Analyst	Analyzed	Method	Notes
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Cardinal Laboratories**Inorganic Compounds**

Chloride	2040		16.0	mg/kg	4	3062317	AC	23-Jun-23	4500-Cl-B	QM-07
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Volatile Organic Compounds by EPA Method 8021

Benzene*	<0.050		0.050	mg/kg	50	3062308	MS	23-Jun-23	8021B	
Toluene*	<0.050		0.050	mg/kg	50	3062308	MS	23-Jun-23	8021B	
Ethylbenzene*	<0.050		0.050	mg/kg	50	3062308	MS	23-Jun-23	8021B	
Total Xylenes*	<0.150		0.150	mg/kg	50	3062308	MS	23-Jun-23	8021B	
Total BTEX	<0.300		0.300	mg/kg	50	3062308	MS	23-Jun-23	8021B	

Surrogate: 4-Bromofluorobenzene (PID) 111 % 71.5-134 3062308 MS 23-Jun-23 8021B

Petroleum Hydrocarbons by GC FID

GRO C6-C10*	<10.0		10.0	mg/kg	1	3062305	MS	23-Jun-23	8015B	
DRO >C10-C28*	61.2		10.0	mg/kg	1	3062305	MS	23-Jun-23	8015B	
EXT DRO >C28-C36	36.1		10.0	mg/kg	1	3062305	MS	23-Jun-23	8015B	

Surrogate: 1-Chlorooctane 94.2 % 48.2-134 3062305 MS 23-Jun-23 8015B

Surrogate: 1-Chlorooctadecane 105 % 49.1-148 3062305 MS 23-Jun-23 8015B

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Celey D. Keene, Lab Director/Quality Manager



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Analytical Results For:

ENSOLUM
3122 NATIONAL PARKS HWY
CARLSBAD NM, 88220

Project: MESA #16H FLOWLINE BREAK
Project Number: 03C2012030
Project Manager: HADLIE GREEN
Fax To:

Reported:
28-Jun-23 12:01

FS 07 1'
H233249-07 (Soil)

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Analyst	Analyzed	Method	Notes
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Cardinal Laboratories**Inorganic Compounds**

Chloride	1800		16.0	mg/kg	4	3062317	AC	23-Jun-23	4500-Cl-B	
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Volatile Organic Compounds by EPA Method 8021

Benzene*	<0.050		0.050	mg/kg	50	3062308	MS	23-Jun-23	8021B	
Toluene*	<0.050		0.050	mg/kg	50	3062308	MS	23-Jun-23	8021B	
Ethylbenzene*	<0.050		0.050	mg/kg	50	3062308	MS	23-Jun-23	8021B	
Total Xylenes*	<0.150		0.150	mg/kg	50	3062308	MS	23-Jun-23	8021B	
Total BTEX	<0.300		0.300	mg/kg	50	3062308	MS	23-Jun-23	8021B	

Surrogate: 4-Bromofluorobenzene (PID)			110 %		71.5-134	3062308	MS	23-Jun-23	8021B	
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Petroleum Hydrocarbons by GC FID

GRO C6-C10*	<10.0		10.0	mg/kg	1	3062305	MS	23-Jun-23	8015B	
DRO >C10-C28*	288		10.0	mg/kg	1	3062305	MS	23-Jun-23	8015B	
EXT DRO >C28-C36	101		10.0	mg/kg	1	3062305	MS	23-Jun-23	8015B	

Surrogate: 1-Chlorooctane			93.5 %		48.2-134	3062305	MS	23-Jun-23	8015B	
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Surrogate: 1-Chlorooctadecane			109 %		49.1-148	3062305	MS	23-Jun-23	8015B	
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Celey D. Keene, Lab Director/Quality Manager



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Analytical Results For:

ENSOLUM
3122 NATIONAL PARKS HWY
CARLSBAD NM, 88220

Project: MESA #16H FLOWLINE BREAK
Project Number: 03C2012030
Project Manager: HADLIE GREEN
Fax To:

Reported:
28-Jun-23 12:01

FS 08 1'
H233249-08 (Soil)

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Analyst	Analyzed	Method	Notes
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Cardinal Laboratories**Inorganic Compounds**

Chloride	2000		16.0	mg/kg	4	3062317	AC	23-Jun-23	4500-Cl-B	
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Volatile Organic Compounds by EPA Method 8021

Benzene*	<0.050		0.050	mg/kg	50	3062308	MS	23-Jun-23	8021B	
Toluene*	<0.050		0.050	mg/kg	50	3062308	MS	23-Jun-23	8021B	
Ethylbenzene*	<0.050		0.050	mg/kg	50	3062308	MS	23-Jun-23	8021B	
Total Xylenes*	<0.150		0.150	mg/kg	50	3062308	MS	23-Jun-23	8021B	
Total BTEX	<0.300		0.300	mg/kg	50	3062308	MS	23-Jun-23	8021B	

Surrogate: 4-Bromofluorobenzene (PID)			108 %	71.5-134		3062308	MS	23-Jun-23	8021B	
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Petroleum Hydrocarbons by GC FID

GRO C6-C10*	<10.0		10.0	mg/kg	1	3062305	MS	23-Jun-23	8015B	
DRO >C10-C28*	247		10.0	mg/kg	1	3062305	MS	23-Jun-23	8015B	
EXT DRO >C28-C36	91.3		10.0	mg/kg	1	3062305	MS	23-Jun-23	8015B	

Surrogate: 1-Chlorooctane			86.4 %	48.2-134		3062305	MS	23-Jun-23	8015B	
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Surrogate: 1-Chlorooctadecane			101 %	49.1-148		3062305	MS	23-Jun-23	8015B	
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Celey D. Keene, Lab Director/Quality Manager



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

Analytical Results For:

ENSOLUM
3122 NATIONAL PARKS HWY
CARLSBAD NM, 88220

Project: MESA #16H FLOWLINE BREAK
Project Number: 03C2012030
Project Manager: HADLIE GREEN
Fax To:

Reported:
28-Jun-23 12:01

FS 09 1'
H233249-09 (Soil)

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Analyst	Analyzed	Method	Notes
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Cardinal Laboratories**Inorganic Compounds**

Chloride	3320		16.0	mg/kg	4	3062317	AC	23-Jun-23	4500-Cl-B	
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Volatile Organic Compounds by EPA Method 8021

Benzene*	<0.050		0.050	mg/kg	50	3062308	MS	23-Jun-23	8021B	
Toluene*	<0.050		0.050	mg/kg	50	3062308	MS	23-Jun-23	8021B	
Ethylbenzene*	<0.050		0.050	mg/kg	50	3062308	MS	23-Jun-23	8021B	
Total Xylenes*	<0.150		0.150	mg/kg	50	3062308	MS	23-Jun-23	8021B	
Total BTEX	<0.300		0.300	mg/kg	50	3062308	MS	23-Jun-23	8021B	

Surrogate: 4-Bromofluorobenzene (PID)			106 %	71.5-134		3062308	MS	23-Jun-23	8021B	
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Petroleum Hydrocarbons by GC FID

GRO C6-C10*	<10.0		10.0	mg/kg	1	3062305	MS	23-Jun-23	8015B	
DRO >C10-C28*	515		10.0	mg/kg	1	3062305	MS	23-Jun-23	8015B	
EXT DRO >C28-C36	135		10.0	mg/kg	1	3062305	MS	23-Jun-23	8015B	

Surrogate: 1-Chlorooctane			69.7 %	48.2-134		3062305	MS	23-Jun-23	8015B	
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Surrogate: 1-Chlorooctadecane			80.2 %	49.1-148		3062305	MS	23-Jun-23	8015B	
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Celey D. Keene, Lab Director/Quality Manager



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

Analytical Results For:

ENSOLUM
3122 NATIONAL PARKS HWY
CARLSBAD NM, 88220

Project: MESA #16H FLOWLINE BREAK
Project Number: 03C2012030
Project Manager: HADLIE GREEN
Fax To:

Reported:
28-Jun-23 12:01

FS 10 1'
H233249-10 (Soil)

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Analyst	Analyzed	Method	Notes
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Cardinal Laboratories**Inorganic Compounds**

Chloride	1600		16.0	mg/kg	4	3062317	AC	23-Jun-23	4500-Cl-B	
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Volatile Organic Compounds by EPA Method 8021

Benzene*	<0.050		0.050	mg/kg	50	3062308	MS	23-Jun-23	8021B	
Toluene*	<0.050		0.050	mg/kg	50	3062308	MS	23-Jun-23	8021B	
Ethylbenzene*	<0.050		0.050	mg/kg	50	3062308	MS	23-Jun-23	8021B	
Total Xylenes*	<0.150		0.150	mg/kg	50	3062308	MS	23-Jun-23	8021B	
Total BTEX	<0.300		0.300	mg/kg	50	3062308	MS	23-Jun-23	8021B	

Surrogate: 4-Bromofluorobenzene (PID)			108 %		71.5-134	3062308	MS	23-Jun-23	8021B	
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Petroleum Hydrocarbons by GC FID

GRO C6-C10*	<10.0		10.0	mg/kg	1	3062305	MS	23-Jun-23	8015B	
DRO >C10-C28*	471		10.0	mg/kg	1	3062305	MS	23-Jun-23	8015B	
EXT DRO >C28-C36	161		10.0	mg/kg	1	3062305	MS	23-Jun-23	8015B	

Surrogate: 1-Chlorooctane			84.2 %		48.2-134	3062305	MS	23-Jun-23	8015B	
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Surrogate: 1-Chlorooctadecane			123 %		49.1-148	3062305	MS	23-Jun-23	8015B	
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Celey D. Keene, Lab Director/Quality Manager



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Analytical Results For:

ENSOLUM
3122 NATIONAL PARKS HWY
CARLSBAD NM, 88220

Project: MESA #16H FLOWLINE BREAK
Project Number: 03C2012030
Project Manager: HADLIE GREEN
Fax To:

Reported:
28-Jun-23 12:01

FS 11 1'
H233249-11 (Soil)

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Analyst	Analyzed	Method	Notes
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Cardinal Laboratories**Inorganic Compounds**

Chloride	784		16.0	mg/kg	4	3062317	AC	23-Jun-23	4500-Cl-B	
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Volatile Organic Compounds by EPA Method 8021

Benzene*	<0.050		0.050	mg/kg	50	3062308	MS	23-Jun-23	8021B	
Toluene*	<0.050		0.050	mg/kg	50	3062308	MS	23-Jun-23	8021B	
Ethylbenzene*	<0.050		0.050	mg/kg	50	3062308	MS	23-Jun-23	8021B	
Total Xylenes*	<0.150		0.150	mg/kg	50	3062308	MS	23-Jun-23	8021B	
Total BTEX	<0.300		0.300	mg/kg	50	3062308	MS	23-Jun-23	8021B	

Surrogate: 4-Bromofluorobenzene (PID)			109 %	71.5-134		3062308	MS	23-Jun-23	8021B	
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Petroleum Hydrocarbons by GC FID

GRO C6-C10*	<10.0		10.0	mg/kg	1	3062305	MS	23-Jun-23	8015B	
DRO >C10-C28*	47.4		10.0	mg/kg	1	3062305	MS	23-Jun-23	8015B	
EXT DRO >C28-C36	18.9		10.0	mg/kg	1	3062305	MS	23-Jun-23	8015B	

Surrogate: 1-Chlorooctane			94.0 %	48.2-134		3062305	MS	23-Jun-23	8015B	
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Surrogate: 1-Chlorooctadecane			105 %	49.1-148		3062305	MS	23-Jun-23	8015B	
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Celey D. Keene, Lab Director/Quality Manager



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Analytical Results For:

ENSOLUM
3122 NATIONAL PARKS HWY
CARLSBAD NM, 88220

Project: MESA #16H FLOWLINE BREAK
Project Number: 03C2012030
Project Manager: HADLIE GREEN
Fax To:

Reported:
28-Jun-23 12:01

FS 12 1'
H233249-12 (Soil)

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Analyst	Analyzed	Method	Notes
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Cardinal Laboratories**Inorganic Compounds**

Chloride	176		16.0	mg/kg	4	3062317	AC	23-Jun-23	4500-Cl-B	
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Volatile Organic Compounds by EPA Method 8021

Benzene*	<0.050		0.050	mg/kg	50	3062308	MS	23-Jun-23	8021B	
Toluene*	<0.050		0.050	mg/kg	50	3062308	MS	23-Jun-23	8021B	
Ethylbenzene*	<0.050		0.050	mg/kg	50	3062308	MS	23-Jun-23	8021B	
Total Xylenes*	<0.150		0.150	mg/kg	50	3062308	MS	23-Jun-23	8021B	
Total BTEX	<0.300		0.300	mg/kg	50	3062308	MS	23-Jun-23	8021B	

Surrogate: 4-Bromofluorobenzene (PID)			108 %	71.5-134		3062308	MS	23-Jun-23	8021B	
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Petroleum Hydrocarbons by GC FID

GRO C6-C10*	<10.0		10.0	mg/kg	1	3062305	MS	23-Jun-23	8015B	
DRO >C10-C28*	60.5		10.0	mg/kg	1	3062305	MS	23-Jun-23	8015B	
EXT DRO >C28-C36	19.3		10.0	mg/kg	1	3062305	MS	23-Jun-23	8015B	

Surrogate: 1-Chlorooctane			104 %	48.2-134		3062305	MS	23-Jun-23	8015B	
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Surrogate: 1-Chlorooctadecane			116 %	49.1-148		3062305	MS	23-Jun-23	8015B	
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Celey D. Keene, Lab Director/Quality Manager



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

Analytical Results For:

ENSOLUM
3122 NATIONAL PARKS HWY
CARLSBAD NM, 88220

Project: MESA #16H FLOWLINE BREAK
Project Number: 03C2012030
Project Manager: HADLIE GREEN
Fax To:

Reported:
28-Jun-23 12:01

FS 13 1'
H233249-13 (Soil)

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Analyst	Analyzed	Method	Notes
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Cardinal Laboratories**Inorganic Compounds**

Chloride	592		16.0	mg/kg	4	3062317	AC	23-Jun-23	4500-Cl-B	
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Volatile Organic Compounds by EPA Method 8021

Benzene*	<0.050		0.050	mg/kg	50	3062308	MS	23-Jun-23	8021B	
Toluene*	<0.050		0.050	mg/kg	50	3062308	MS	23-Jun-23	8021B	
Ethylbenzene*	<0.050		0.050	mg/kg	50	3062308	MS	23-Jun-23	8021B	
Total Xylenes*	<0.150		0.150	mg/kg	50	3062308	MS	23-Jun-23	8021B	
Total BTEX	<0.300		0.300	mg/kg	50	3062308	MS	23-Jun-23	8021B	

Surrogate: 4-Bromofluorobenzene (PID)			109 %	71.5-134		3062308	MS	23-Jun-23	8021B	
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Petroleum Hydrocarbons by GC FID

GRO C6-C10*	<10.0		10.0	mg/kg	1	3062305	MS	23-Jun-23	8015B	
DRO >C10-C28*	25.9		10.0	mg/kg	1	3062305	MS	23-Jun-23	8015B	
EXT DRO >C28-C36	<10.0		10.0	mg/kg	1	3062305	MS	23-Jun-23	8015B	

Surrogate: 1-Chlorooctane			106 %	48.2-134		3062305	MS	23-Jun-23	8015B	
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Surrogate: 1-Chlorooctadecane			118 %	49.1-148		3062305	MS	23-Jun-23	8015B	
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Celey D. Keene, Lab Director/Quality Manager



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

Analytical Results For:

ENSOLUM
3122 NATIONAL PARKS HWY
CARLSBAD NM, 88220

Project: MESA #16H FLOWLINE BREAK
Project Number: 03C2012030
Project Manager: HADLIE GREEN
Fax To:

Reported:
28-Jun-23 12:01

FS 14 1'
H233249-14 (Soil)

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Analyst	Analyzed	Method	Notes
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Cardinal Laboratories**Inorganic Compounds**

Chloride	528		16.0	mg/kg	4	3062317	AC	23-Jun-23	4500-Cl-B	
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Volatile Organic Compounds by EPA Method 8021

Benzene*	<0.050		0.050	mg/kg	50	3062308	MS	23-Jun-23	8021B	
Toluene*	<0.050		0.050	mg/kg	50	3062308	MS	23-Jun-23	8021B	
Ethylbenzene*	<0.050		0.050	mg/kg	50	3062308	MS	23-Jun-23	8021B	
Total Xylenes*	<0.150		0.150	mg/kg	50	3062308	MS	23-Jun-23	8021B	
Total BTEX	<0.300		0.300	mg/kg	50	3062308	MS	23-Jun-23	8021B	

Surrogate: 4-Bromofluorobenzene (PID)			107 %	71.5-134		3062308	MS	23-Jun-23	8021B	
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Petroleum Hydrocarbons by GC FID

GRO C6-C10*	<10.0		10.0	mg/kg	1	3062305	MS	23-Jun-23	8015B	
DRO >C10-C28*	277		10.0	mg/kg	1	3062305	MS	23-Jun-23	8015B	
EXT DRO >C28-C36	89.0		10.0	mg/kg	1	3062305	MS	23-Jun-23	8015B	

Surrogate: 1-Chlorooctane			100 %	48.2-134		3062305	MS	23-Jun-23	8015B	
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Surrogate: 1-Chlorooctadecane			116 %	49.1-148		3062305	MS	23-Jun-23	8015B	
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Celey D. Keene, Lab Director/Quality Manager



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Analytical Results For:

ENSOLUM
3122 NATIONAL PARKS HWY
CARLSBAD NM, 88220

Project: MESA #16H FLOWLINE BREAK
Project Number: 03C2012030
Project Manager: HADLIE GREEN
Fax To:

Reported:
28-Jun-23 12:01

Inorganic Compounds - Quality Control**Cardinal Laboratories**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 3062313 - 1:4 DI Water										
Blank (3062313-BLK1)				Prepared & Analyzed: 23-Jun-23						
Chloride	ND	16.0	mg/kg							
LCS (3062313-BS1)				Prepared & Analyzed: 23-Jun-23						
Chloride	432	16.0	mg/kg	400		108	80-120			
LCS Dup (3062313-BSD1)				Prepared & Analyzed: 23-Jun-23						
Chloride	448	16.0	mg/kg	400		112	80-120	3.64	20	
Batch 3062317 - 1:4 DI Water										
Blank (3062317-BLK1)				Prepared & Analyzed: 23-Jun-23						
Chloride	ND	16.0	mg/kg							
LCS (3062317-BS1)				Prepared & Analyzed: 23-Jun-23						
Chloride	400	16.0	mg/kg	400		100	80-120			
LCS Dup (3062317-BSD1)				Prepared & Analyzed: 23-Jun-23						
Chloride	432	16.0	mg/kg	400		108	80-120	7.69	20	

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Celey D. Keene, Lab Director/Quality Manager



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Analytical Results For:

ENSOLUM
3122 NATIONAL PARKS HWY
CARLSBAD NM, 88220

Project: MESA #16H FLOWLINE BREAK
Project Number: 03C2012030
Project Manager: HADLIE GREEN
Fax To:

Reported:
28-Jun-23 12:01

Volatile Organic Compounds by EPA Method 8021 - Quality Control**Cardinal Laboratories**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch 3062307 - Volatiles**Blank (3062307-BLK1)**

Prepared & Analyzed: 23-Jun-23

Benzene	ND	0.050	mg/kg							
Toluene	ND	0.050	mg/kg							
Ethylbenzene	ND	0.050	mg/kg							
Total Xylenes	ND	0.150	mg/kg							
Total BTEX	ND	0.300	mg/kg							
Surrogate: 4-Bromofluorobenzene (PID)	0.0577		mg/kg	0.0500		115	71.5-134			

LCS (3062307-BS1)

Prepared & Analyzed: 23-Jun-23

Benzene	2.03	0.050	mg/kg	2.00		101	82.8-130			
Toluene	1.98	0.050	mg/kg	2.00		99.0	86-128			
Ethylbenzene	2.09	0.050	mg/kg	2.00		105	85.9-128			
m,p-Xylene	4.23	0.100	mg/kg	4.00		106	89-129			
o-Xylene	2.08	0.050	mg/kg	2.00		104	86.1-125			
Total Xylenes	6.31	0.150	mg/kg	6.00		105	88.2-128			
Surrogate: 4-Bromofluorobenzene (PID)	0.0514		mg/kg	0.0500		103	71.5-134			

LCS Dup (3062307-BSD1)

Prepared & Analyzed: 23-Jun-23

Benzene	2.13	0.050	mg/kg	2.00		106	82.8-130	4.97	15.8	
Toluene	2.08	0.050	mg/kg	2.00		104	86-128	5.13	15.9	
Ethylbenzene	2.19	0.050	mg/kg	2.00		110	85.9-128	4.68	16	
m,p-Xylene	4.41	0.100	mg/kg	4.00		110	89-129	4.24	16.2	
o-Xylene	2.15	0.050	mg/kg	2.00		108	86.1-125	3.58	16.7	
Total Xylenes	6.57	0.150	mg/kg	6.00		109	88.2-128	4.02	16.3	
Surrogate: 4-Bromofluorobenzene (PID)	0.0519		mg/kg	0.0500		104	71.5-134			

Batch 3062308 - Volatiles**Blank (3062308-BLK1)**

Prepared & Analyzed: 23-Jun-23

Benzene	ND	0.050	mg/kg							
Toluene	ND	0.050	mg/kg							
Ethylbenzene	ND	0.050	mg/kg							
Total Xylenes	ND	0.150	mg/kg							

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Celey D. Keene, Lab Director/Quality Manager



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Analytical Results For:

ENSOLUM
3122 NATIONAL PARKS HWY
CARLSBAD NM, 88220

Project: MESA #16H FLOWLINE BREAK
Project Number: 03C2012030
Project Manager: HADLIE GREEN
Fax To:

Reported:
28-Jun-23 12:01

Volatile Organic Compounds by EPA Method 8021 - Quality Control**Cardinal Laboratories**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch 3062308 - Volatiles**Blank (3062308-BLK1)**

Prepared & Analyzed: 23-Jun-23

Total BTEX	ND	0.300	mg/kg							
Surrogate: 4-Bromofluorobenzene (PID)	0.0522		mg/kg	0.0500		104	71.5-134			

LCS (3062308-BS1)

Prepared & Analyzed: 23-Jun-23

Benzene	2.28	0.050	mg/kg	2.00		114	82.8-130			
Toluene	2.23	0.050	mg/kg	2.00		112	86-128			
Ethylbenzene	2.11	0.050	mg/kg	2.00		105	85.9-128			
m,p-Xylene	4.42	0.100	mg/kg	4.00		110	89-129			
o-Xylene	2.06	0.050	mg/kg	2.00		103	86.1-125			
Total Xylenes	6.48	0.150	mg/kg	6.00		108	88.2-128			
Surrogate: 4-Bromofluorobenzene (PID)	0.0506		mg/kg	0.0500		101	71.5-134			

LCS Dup (3062308-BS1)

Prepared & Analyzed: 23-Jun-23

Benzene	2.23	0.050	mg/kg	2.00		112	82.8-130	2.09	15.8	
Toluene	2.18	0.050	mg/kg	2.00		109	86-128	2.59	15.9	
Ethylbenzene	2.08	0.050	mg/kg	2.00		104	85.9-128	1.07	16	
m,p-Xylene	4.41	0.100	mg/kg	4.00		110	89-129	0.156	16.2	
o-Xylene	2.06	0.050	mg/kg	2.00		103	86.1-125	0.425	16.7	
Total Xylenes	6.46	0.150	mg/kg	6.00		108	88.2-128	0.241	16.3	
Surrogate: 4-Bromofluorobenzene (PID)	0.0522		mg/kg	0.0500		104	71.5-134			

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Celey D. Keene, Lab Director/Quality Manager



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Analytical Results For:

ENSOLUM
3122 NATIONAL PARKS HWY
CARLSBAD NM, 88220

Project: MESA #16H FLOWLINE BREAK
Project Number: 03C2012030
Project Manager: HADLIE GREEN
Fax To:

Reported:
28-Jun-23 12:01

Petroleum Hydrocarbons by GC FID - Quality Control**Cardinal Laboratories**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC Limits	RPD	RPD Limit	Notes
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Batch 3062240 - General Prep - Organics**Blank (3062240-BLK1)**

Prepared: 22-Jun-23 Analyzed: 23-Jun-23

GRO C6-C10	ND	10.0	mg/kg						
DRO >C10-C28	ND	10.0	mg/kg						
EXT DRO >C28-C36	ND	10.0	mg/kg						
Surrogate: 1-Chlorooctane	39.8		mg/kg	49.6		80.2	48.2-134		
Surrogate: 1-Chlorooctadecane	44.3		mg/kg	50.0		88.6	49.1-148		

LCS (3062240-BS1)

Prepared: 22-Jun-23 Analyzed: 23-Jun-23

GRO C6-C10	157	10.0	mg/kg	200		78.3	66.4-123		
DRO >C10-C28	172	10.0	mg/kg	200		86.1	66.5-118		
Total TPH C6-C28	329	10.0	mg/kg	400		82.2	77.6-123		
Surrogate: 1-Chlorooctane	43.8		mg/kg	49.6		88.5	48.2-134		
Surrogate: 1-Chlorooctadecane	47.5		mg/kg	50.0		94.9	49.1-148		

LCS Dup (3062240-BS1)

Prepared: 22-Jun-23 Analyzed: 23-Jun-23

GRO C6-C10	210	10.0	mg/kg	200		105	66.4-123	29.2	17.7
DRO >C10-C28	227	10.0	mg/kg	200		113	66.5-118	27.3	21
Total TPH C6-C28	437	10.0	mg/kg	400		109	77.6-123	28.2	18.5
Surrogate: 1-Chlorooctane	59.8		mg/kg	49.6		121	48.2-134		
Surrogate: 1-Chlorooctadecane	65.8		mg/kg	50.0		132	49.1-148		

Batch 3062305 - General Prep - Organics**Blank (3062305-BLK1)**

Prepared & Analyzed: 23-Jun-23

GRO C6-C10	ND	10.0	mg/kg						
DRO >C10-C28	ND	10.0	mg/kg						
EXT DRO >C28-C36	ND	10.0	mg/kg						
Surrogate: 1-Chlorooctane	38.6		mg/kg	49.6		77.8	48.2-134		
Surrogate: 1-Chlorooctadecane	43.5		mg/kg	50.0		87.0	49.1-148		

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Celey D. Keene, Lab Director/Quality Manager



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

Analytical Results For:

ENSOLUM
3122 NATIONAL PARKS HWY
CARLSBAD NM, 88220

Project: MESA #16H FLOWLINE BREAK
Project Number: 03C2012030
Project Manager: HADLIE GREEN
Fax To:

Reported:
28-Jun-23 12:01

Petroleum Hydrocarbons by GC FID - Quality Control**Cardinal Laboratories**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch 3062305 - General Prep - Organics**LCS (3062305-BS1)**

Prepared & Analyzed: 23-Jun-23

GRO C6-C10	171	10.0	mg/kg	200		85.5	66.4-123			
DRO >C10-C28	173	10.0	mg/kg	200		86.6	66.5-118			
Total TPH C6-C28	344	10.0	mg/kg	400		86.0	77.6-123			
Surrogate: 1-Chlorooctane	44.0		mg/kg	49.6		88.9	48.2-134			
Surrogate: 1-Chlorooctadecane	46.2		mg/kg	50.0		92.4	49.1-148			

LCS Dup (3062305-BS1)

Prepared & Analyzed: 23-Jun-23

GRO C6-C10	167	10.0	mg/kg	200		83.3	66.4-123	2.59	17.7	
DRO >C10-C28	167	10.0	mg/kg	200		83.4	66.5-118	3.77	21	
Total TPH C6-C28	333	10.0	mg/kg	400		83.3	77.6-123	3.18	18.5	
Surrogate: 1-Chlorooctane	42.3		mg/kg	49.6		85.3	48.2-134			
Surrogate: 1-Chlorooctadecane	44.9		mg/kg	50.0		89.7	49.1-148			

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Notes and Definitions

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

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*=Accredited Analyte

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A handwritten signature in black ink, appearing to read "Celey D. Keene".

Celey D. Keene, Lab Director/Quality Manager



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

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

Pg 1 of 2

Company Name: Ensolum, LLC				BILL TO				ANALYSIS REQUEST													
Project Manager: Hadlie Green				P.O. #:																	
Address: 3122 Nat'l Parks Hwy				Company: BTA Oil																	
City: Carlsbad		State: NM		Zip: 88220		Attn: Keston Beaird															
Phone #: 432-557-8895		Fax #:		Address: 1045 Pecos St		City: Midland															
Project #: 03C2012030		Project Owner:		State: TX		Zip: 79701															
Project Name: Mesa #16H Flowline Break				Phone #:																	
Project Location: 32.06611, -103.63649				Fax #:																	
Sampler Name: Meredith Roberts																					
FOR LAB USE ONLY																					
Lab I.D.	Sample I.D.	Depth (feet)	(G)RAB OR (C)OMP.	# CONTAINERS	MATRIX	PRESERV.	SAMPLING														
					GROUNDWATER	WASTEWATER	SOIL	OIL	SLUDGE	OTHER:	ACID/BASE:	ICE / COOL	OTHER:	DATE	TIME	BTEX	Chlorides	TPH			
H233349																					
1	FS01	1'	C	1			X					X		6/29/23	1120	X	X	X			
2	FS02	* 0.5'												↓	0950						
3	FS03													6/22/23	0815						
4	FS04														0820						
5	FS05														0825						
6	FS06														0830						
7	FS07														0835						
8	FS08														0840						
9	FS09														0845						
10	FS10														0850						

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: 6/23/23	Received By:	Verbal Result: <input type="checkbox"/> Yes <input type="checkbox"/> No	Add'l Phone #:
<i>[Signature]</i>	Time: 0929	<i>[Signature]</i>	All Results are emailed. Please provide Email address:	
Relinquished By:	Date:	Received By:	hgren@ensolum.com	mroberts@ensolum.com
	Time:		tmorrissey@ensolum.com	
Delivered By: (Circle One)	Observed Temp. °C	Sample Condition	CHECKED BY: (Initials)	Turnaround Time: Standard <input checked="" type="checkbox"/> Rush <input type="checkbox"/>
Sampler - UPS - Bus - Other:	Corrected Temp. °C	Cool Intact <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> No	<i>[Signature]</i>	Bacteria (only) Sample Condition
				Cool Intact <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> No
				Observed Temp. °C
				Corrected Temp. °C
				Thermometer ID #113
				Correction Factor -0.5°C

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



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(575) 393-2326 FAX (575) 393-2476

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

Pg 2 of 2

Company Name: Ensolum, LLC				BILL TO				ANALYSIS REQUEST													
Project Manager: <u>See pg 1</u>				P.O. #:																	
Address:				Company: <u>BTA Oil</u>																	
City:		State:		Zip:		Attn: <u>See pg 1</u>															
Phone #:		Fax #:		Address:																	
Project #: <u>03C2012030</u>		Project Owner:		City:																	
Project Name: <u>Mesa #16H Flowline Break</u>				State: <u>↓</u> Zip: <u>↓</u>																	
Project Location: <u>32.06611, -103.63649</u>				Phone #:																	
Sampler Name: <u>Meredith Roberts</u>				Fax #:																	
FOR LAB USE ONLY																					
Lab I.D.	Sample I.D.	Depth (feet)	(GRAB OR COMPO.) # CONTAINERS	MATRIX					PRESERV.		SAMPLING		BTEX Chlorides TPH								
				GROUNDWATER	WASTEWATER	SOIL	OIL	SLUDGE	OTHER:	ACID/BASE:	ICE / COOL	OTHER:				DATE	TIME				
<u>H23 3249</u>																					
<u>11</u>	<u>FS11</u>	<u>1'</u>	<u>C</u>			<u>X</u>				<u>X</u>			<u>6/22/23</u>	<u>0955</u>	<u>X</u>						
<u>12</u>	<u>FS12</u>	<u>↓</u>	<u>↓</u>			<u>↓</u>				<u>↓</u>			<u>↓</u>	<u>1000</u>	<u>↓</u>						
<u>13</u>	<u>FS13</u>	<u>↓</u>	<u>↓</u>			<u>↓</u>				<u>↓</u>			<u>↓</u>	<u>1025</u>	<u>↓</u>						
<u>14</u>	<u>FS14</u>	<u>↓</u>	<u>↓</u>			<u>↓</u>				<u>↓</u>			<u>↓</u>	<u>1225</u>	<u>↓</u>						
<u>mc</u>																					

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Relinquished By: <u>Keene</u>	Date: <u>6/23/23</u> Time: <u>0909</u>	Received By: <u>Rodriguez</u>	Verbal Result: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No Add'l Phone #:
Relinquished By:	Date:	Received By:	REMARKS:
Delivered By: (Circle One) Sampler - UPS - Bus - Other:	Observed Temp. °C: <u>0.4</u> Corrected Temp. °C: <u>-0.2</u>	Sample Condition Cool Intact <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> No <input type="checkbox"/> No	Turnaround Time: Standard <input checked="" type="checkbox"/> Rush <input type="checkbox"/> Thermometer ID #113 Correction Factor -0.5°C
		CHECKED BY: (Initials) <u>SK</u>	Bacteria (only) Sample Condition Cool Intact Observed Temp. °C <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> No <input type="checkbox"/> No Corrected Temp. °C

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



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

July 26, 2023

HADLIE GREEN

ENSOLUM

3122 NATIONAL PARKS HWY

CARLSBAD, NM 88220

RE: MESA #16H FLOWLINE BREAK

Enclosed are the results of analyses for samples received by the laboratory on 07/20/23 12:13.

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

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

Accreditation applies to public drinking water matrices.

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

Sincerely,

A handwritten signature in black ink that reads "Celey D. Keene". The signature is fluid and cursive, with the first name "Celey" and last name "Keene" clearly distinguishable.

Celey D. Keene

Lab Director/Quality Manager



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

Analytical Results For:

ENSOLUM
HADLIE GREEN
3122 NATIONAL PARKS HWY
CARLSBAD NM, 88220
Fax To:

Received: 07/20/2023
Reported: 07/26/2023
Project Name: MESA #16H FLOWLINE BREAK
Project Number: 03C2012030
Project Location: (32.06611,-103.63649)

Sampling Date: 07/18/2023
Sampling Type: Soil
Sampling Condition: Cool & Intact
Sample Received By: Shalyn Rodriguez

Sample ID: FS 02A 1' (H233782-01)

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	07/25/2023	ND	2.10	105	2.00	1.88	
Toluene*	<0.050	0.050	07/25/2023	ND	2.03	102	2.00	3.20	
Ethylbenzene*	<0.050	0.050	07/25/2023	ND	2.09	104	2.00	1.96	
Total Xylenes*	<0.150	0.150	07/25/2023	ND	6.33	106	6.00	2.63	
Total BTEX	<0.300	0.300	07/25/2023	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	3440	16.0	07/25/2023	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	07/24/2023	ND	193	96.5	200	2.42	
DRO >C10-C28*	60.5	10.0	07/24/2023	ND	196	98.2	200	3.16	
EXT DRO >C28-C36	11.0	10.0	07/24/2023	ND					

Surrogate: 1-Chlorooctane 97.4 % 48.2-134

Surrogate: 1-Chlorooctadecane 109 % 49.1-148

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Celey D. Keene, Lab Director/Quality Manager

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

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

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A handwritten signature in black ink, appearing to read "Celey D. Keene", written over a horizontal line.

Celey D. Keene, Lab Director/Quality Manager



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

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

[illegible]



APPENDIX D

NMOCD Notifications

From: [Enviro, OCD, EMNRD](#)
To: [Hadlie Green](#); [Bratcher, Michael, EMNRD](#)
Cc: [Bratcher, Michael, EMNRD](#); [Velez, Nelson, EMNRD](#)
Subject: RE: [EXTERNAL] BTA - Sampling Notification - Week of 06/19/2023
Date: Friday, June 16, 2023 3:39:46 PM
Attachments: [image005.jpg](#)
[image006.png](#)
[image007.png](#)
[image008.png](#)
[image009.png](#)

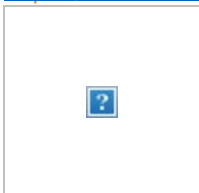
[**EXTERNAL EMAIL**]

Hadlie,

Please be aware that notification requirements are **two business days**, per rule. You may proceed on your schedule. This, and all correspondence, should be included in the closure report to ensure inclusion in the project file.

JH

Jocelyn Harimon • Environmental Specialist
Environmental Bureau
EMNRD - Oil Conservation Division
1220 South St. Francis Drive | Santa Fe, NM 87505
(505)469-2821 | Jocelyn.Harimon@emnrd.nm.gov
<http://www.emnrd.nm.gov>



From: Hadlie Green <hgreen@ensolum.com>
Sent: Friday, June 16, 2023 10:54 AM
To: Enviro, OCD, EMNRD <OCD.Enviro@emnrd.nm.gov>
Cc: Tacoma Morrissey <tmorrissey@ensolum.com>; Kelton Beaird <KBeaird@btaoil.com>
Subject: [EXTERNAL] BTA - Sampling Notification - Week of 06/19/2023

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 June 19, 2023.

- Mesa 30 31 Tank Battery / nAPP2106930621

- Sampling Date: 6/19/2023 @ 9:00 AM MST
- Mesa 8105 JVP #3 Produced Water Line / nRM2016045357
 - Sampling Date: 6/19-20/2023 @ 9:00 AM MST
- Mesa #16H Flowline / nAPP2123156473
 - Sampling Date: 6/21-22/2023 @ 9:00 AM MST
- Harroun Ranch #005 / nAPP2200455573
 - Sampling Date: 6/21/2023 @ 9:00 AM MST

Thank you,



Hadlie Green

Project Geologist

432-557-8895

hgreen@ensolum.com

Ensolum, LLC



From: [Enviro, OCD, EMNRD](#)
To: [Hadlie Green](#)
Cc: [Bratcher, Michael, EMNRD](#); [Velez, Nelson, EMNRD](#)
Subject: RE: [EXTERNAL] BTA - Sampling Notification - Week of 07/3/2023
Date: Thursday, June 29, 2023 3:47:47 PM
Attachments: [image005.jpg](#)
[image006.png](#)
[image007.png](#)
[image008.png](#)
[image009.png](#)

[**EXTERNAL EMAIL**]

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.

JH

Jocelyn Harimon • Environmental Specialist
Environmental Bureau
EMNRD - Oil Conservation Division
1220 South St. Francis Drive | Santa Fe, NM 87505
(505)469-2821 | Jocelyn.Harimon@emnrd.nm.gov
[http:// www.emnrd.nm.gov](http://www.emnrd.nm.gov)



From: Hadlie Green <hgreen@ensolum.com>
Sent: Thursday, June 29, 2023 8:18 AM
To: Enviro, OCD, EMNRD <OCD.Enviro@emnrd.nm.gov>
Cc: Tacoma Morrissey <tmorrissey@ensolum.com>; Kelton Beird <KBeird@btaoil.com>; Peter Van Patten <pvanpatten@ensolum.com>
Subject: [EXTERNAL] BTA - Sampling Notification - Week of 07/3/2023

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 July 3, 2023.

- Vacuum SWD H 35 Pipeline / nAPP2313058428
 - Sampling Date: 7/5/2023 @ 9:00 AM MST

- Chiso 14 State Jet Pump Excavation / nAPP2205837214
 - Sampling Date: 7/6/2023 @ 9:00 AM MST
- Mesa B #25 / nAPP2112744758
 - Sampling Date: 7/6-7/2023 @ 9:00 AM MST
- Mesa #16H Flowline / nAPP2123156473
 - Sampling Date: 7/7/2023 @ 9:00 AM MST

Thank you,



Hadlie Green

Project Geologist

432-557-8895

hgreen@ensolum.com

Ensolum, LLC



From: [Enviro, OCD, EMNRD](#)
To: [Hadlie Green](#)
Cc: [Bratcher, Michael, EMNRD](#); [Velez, Nelson, EMNRD](#)
Subject: RE: [EXTERNAL] BTA - Sampling Notification - Week of 07/17/2023
Date: Thursday, July 13, 2023 2:19:31 PM
Attachments: [image005.jpg](#)
[image006.png](#)
[image007.png](#)
[image008.png](#)
[image009.png](#)

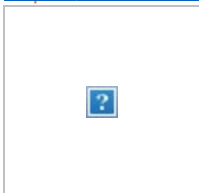
[**EXTERNAL EMAIL**]

Hadlie,

Notification requirements are **two business days**, per rule. You may proceed on your schedule. This, and all correspondence, should be included in the closure report to ensure inclusion in the project file.

JH

Jocelyn Harimon • Environmental Specialist
Environmental Bureau
EMNRD - Oil Conservation Division
1220 South St. Francis Drive | Santa Fe, NM 87505
(505)469-2821 | Jocelyn.Harimon@emnrd.nm.gov
<http://www.emnrd.nm.gov>



From: Hadlie Green <hgreen@ensolum.com>
Sent: Thursday, July 13, 2023 9:03 AM
To: Enviro, OCD, EMNRD <OCD.Enviro@emnrd.nm.gov>
Cc: Tacoma Morrissey <tmorrissey@ensolum.com>; Kelton Beaird <KBeaird@btaoil.com>
Subject: [EXTERNAL] BTA - Sampling Notification - Week of 07/17/2023

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 location the week of July 17, 2023.

- Mesa #16H Flowline Break / nAPP2123156473
 - Sampling Date: 7/18/2023 @ 9:00 AM MST

Thank you,



Hadlie Green

Project Geologist

432-557-8895

hgreen@ensolum.com

Ensolum, LLC





APPENDIX E

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	nAPP2123156473
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: 32.06611 Longitude: -103.63649°

(NAD 83 in decimal degrees to 5 decimal places)

Site Name: Mesa #16H Flowline Break	Site Type: Flowline
Date Release Discovered: 7/22/2021	API# (if applicable) Nearest well: Mesa #3H API #30-025-41290

Unit Letter	Section	Township	Range	County
M	1	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)

<input type="checkbox"/> Crude Oil	Volume Released (bbls)	Volume Recovered (bbls)
<input checked="" type="checkbox"/> Produced Water	Volume Released (bbls) 11 BBL	Volume Recovered (bbls) 7 BBL
	Is the concentration of dissolved chloride in the produced water >10,000 mg/l?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
<input type="checkbox"/> Condensate	Volume Released (bbls)	Volume Recovered (bbls)
<input type="checkbox"/> Natural Gas	Volume Released (Mcf)	Volume Recovered (Mcf)
<input type="checkbox"/> Other (describe)	Volume/Weight Released (provide units)	Volume/Weight Recovered (provide units)

Cause of Release
Flowline Failure

The flowline for the Mesa 16H well developed a leak and released produced water on the pad of the Mesa 3H Tank Battery. The leak was entirely contained on the pad. A vacuum truck was dispatched to the spill site and recovered 7 BW. A preliminary site assessment was conducted at the spill site on 7/23/2021. There will be more details in a regular report format.


State of New Mexico
Oil Conservation Division

Incident ID	nAPP2123156473
District RP	
Facility ID	
Application ID	

<p>Was this a major release as defined by 19.15.29.7(A) NMAC?</p> <p><input type="checkbox"/> Yes <input checked="" type="checkbox"/> No</p>	<p>If YES, for what reason(s) does the responsible party consider this a major release?</p>
<p>If YES, was immediate notice given to the OCD? By whom? To whom? When and by what means (phone, email, etc)?</p>	

Initial Response

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

<div style="border-bottom: 1px solid black; padding-bottom: 5px;"><div style="display: flex; flex-direction: column; gap: 10px;"><div><input checked="" type="checkbox"/> The source of the release has been stopped.</div><div><input checked="" type="checkbox"/> The impacted area has been secured to protect human health and the environment.</div><div><input checked="" type="checkbox"/> Released materials have been contained via the use of berms or dikes, absorbent pads, or other containment devices.</div><div><input checked="" type="checkbox"/> All free liquids and recoverable materials have been removed and managed appropriately.</div></div></div>	
<div style="border-bottom: 1px solid black; padding-bottom: 5px;">If all the actions described above have <u>not</u> been undertaken, explain why:</div> <div style="padding: 10px 0 0 20px;">Remediation of the area by removal of the produced water impacted soil is nearly complete as of the date of this filing (6/5/2020).</div>	
<div style="border-bottom: 1px solid black; padding-bottom: 5px;">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.</div>	
<div style="border-bottom: 1px solid black; padding-bottom: 5px;">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.</div>	
<div style="border-bottom: 1px solid black; padding-bottom: 5px;">Printed Name: Bob Hall Title: Environmental Manager</div>	
<div style="border-bottom: 1px solid black; padding-bottom: 5px;">Signature: </div>	<div style="border-bottom: 1px solid black; padding-bottom: 5px;">Date: 8/19/2021</div>
<div style="border-bottom: 1px solid black; padding-bottom: 5px;">email: bhall@btaoil.com Telephone: 432-682-3753</div>	
<div style="border-bottom: 1px solid black; padding-bottom: 5px;"><div style="display: flex; justify-content: space-between;"><div><u>OCD Only</u></div><div>Received by: Ramona Marcus</div></div></div>	
<div style="border-bottom: 1px solid black; padding-bottom: 5px;"><div style="display: flex; justify-content: space-between;"><div></div><div>Date: 8/20/2021</div></div></div>	

NAPP2123156473

Location Mesa 3H Tank Battery (Mesa 16H Flowline Break)**API #** 30-025-41290 Mesa #003H**Spill Date** 7/22/2021**Spill Dimensions****ENTER** - Length of Spill feet**ENTER** - Width of Spill feet**ENTER** - Saturation Depth of Spill inches**ENTER** - Porosity Factor decimal**Oil Cut - Well Test / Vessel Throughput or Contents**

Oil

Water

Calculated Oil Cut

Volume Recovered in Truck / Containment**ENTER** - Recovered Oil BBL**ENTER** - Recovered Water BBL**Calculated Values**

Release of Oil in Soil - Unrecovered

calculated
 BBL

Release of Water in Soil - Unrecovered

 BBL

Unrecovered Total Release

 BBL**Calculated Values**

Total Release of Oil

calculated
 BBL

Total Release of Water

 BBL

Total Release

 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

(Length X Width X Depth X 1 ft/12 in) X Porosity5.615 ft³ / BBL

X

Oil Cut
(or Water Cut)

Mesa 3H Tank Battery
(Mesa 16H Flowline Release – 7/22/2021)

NAPP2123156473



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 43399

CONDITIONS

Operator: BTA OIL PRODUCERS, LLC 104 S Pecos Midland, TX 79701	OGRID: 260297
	Action Number: 43399
	Action Type: [C-141] Release Corrective Action (C-141)

CONDITIONS

Created By	Condition	Condition Date
marcus	None	8/20/2021

Incident ID	nAPP2123156473
District RP	
Facility ID	
Application ID	

Site Assessment/Characterization

This information must be provided to the appropriate district office no later than 90 days after the release discovery date.

What is the shallowest depth to groundwater beneath the area affected by the release?	<u>>55</u> (ft bgs)
Did this release impact groundwater or surface water?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release within 300 feet of a continuously flowing watercourse or any other significant watercourse?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release within 200 feet of any lakebed, sinkhole, or playa lake (measured from the ordinary high-water mark)?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release within 300 feet of an occupied permanent residence, school, hospital, institution, or church?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release within 500 horizontal feet of a spring or a private domestic fresh water well used by less than five households for domestic or stock watering purposes?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release within 1000 feet of any other fresh water well or spring?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release within incorporated municipal boundaries or within a defined municipal fresh water well field?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release within 300 feet of a wetland?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release overlying a subsurface mine?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release overlying an unstable area such as karst geology?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release within a 100-year floodplain?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Did the release impact areas not on an exploration, development, production, or storage site?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No

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

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

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

State of New Mexico
Oil Conservation Division

Incident ID	nAPP2123156473
District RP	
Facility ID	
Application ID	

I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to OCD rules and regulations all operators are required to report and/or file certain release notifications and perform corrective actions for releases which may endanger public health or the environment. The acceptance of a C-141 report by the OCD does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to groundwater, surface water, human health or the environment. In addition, OCD acceptance of a C-141 report does not relieve the operator of responsibility for compliance with any other federal, state, or local laws and/or regulations.

Printed Name: Kelton Beaird Title: Environmental ManagerSignature:  Date: 8/29/2023email: KBeaird@btaoil.com Telephone: 432-312-2203**OCD Only**Received by: Shelly Wells Date: 8/30/2023

Incident ID	nAPP2123156473
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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: 8/29/2023

email: KBeaird@btaoil.com

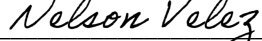
Telephone: 432-312-2203

OCD Only

Received by: Shelly Wells

Date: 8/30/2023

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:  Date: 12/28/2023

Printed Name: Nelson Velez

Title: Environmental Specialist – Adv

Remediation has met 19.15.29 NMAC requirements. Soil impacts exceeding the reclamation standards have been left in place and are required to meet 19.15.29.13D (1) NMAC once the site is no longer reasonably needed for production or subsequent drilling ops.

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CONDITIONS

Action 258886

CONDITIONS

Operator: BTA OIL PRODUCERS, LLC 104 S Pecos Midland, TX 79701	OGRID: 260297
	Action Number: 258886
	Action Type: [C-141] Release Corrective Action (C-141)

CONDITIONS

Created By	Condition	Condition Date
nvelez	Remediation has met 19.15.29 NMAC requirements. Soil impacts exceeding the reclamation standards have been left in place and are required to meet 19.15.29.13D (1) NMAC once the site is no longer reasonably needed for production or subsequent drilling ops.	12/28/2023