



January 3, 2024

**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  
Vaca West Tank Battery  
Incident Number nAPP2202849030  
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 Vaca West Tank Battery (Site). The purpose of the Site assessment, excavation, and soil sampling activities was to address impacts to soil resulting from a produced water release at the Site. Based on field observations, excavation activities, and soil sample laboratory analytical results, BTA is submitting this *Closure Request*, requesting no further action for Incident Number nAPP2202849030.

**SITE DESCRIPTION AND RELEASE SUMMARY**

The Site is located in Unit M, Section 10, Township 25 South, Range 33 East, in Lea County, New Mexico (32.13802°, -103.56497°) and is associated with oil and gas exploration and production operations on Federal Land managed by the Bureau of Land Management (BLM).

On January 14, 2022, a vessel upset at the tank battery caused the compressor catch tank to overflow. Approximately 15 barrels (bbls) of produced water were released onto the surface of the well pad. No fluids 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 January 28, 2022. The release was assigned Incident Number nAPP2202849030.

**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 between 51 and 100 feet below ground surface (bgs) based on the nearest groundwater well data. The closest permitted groundwater well with depth to groundwater data is New Mexico Office of the State Engineer (NMOSE) well C-4699, located approximately 1 mile southeast of the Site. The well was drilled during January 2023 to a total depth of 80 feet bgs, and no groundwater was encountered. The borehole was properly abandoned using hydrated bentonite chips. All wells used for depth to groundwater determination are presented on Figure 1. The associated well records are included in Appendix A.

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The closest continuously flowing or significant watercourse to the Site is an intermittent stream, located approximately 1,932 feet northeast 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 (low potential karst designation area). Site receptors are identified on Figure 1.

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

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

## SITE ASSESSMENT ACTIVITIES AND LABORATORY ANALYTICAL RESULTS

On June 5, 2023, Ensolum personnel were at the Site to evaluate the release extent based on information provided on the Form C-141, the documented release extent, and visual observations. Eight assessment soil samples (SS01 through SS08) were collected within and around the documented release extent at a depth of approximately 0.5 feet bgs, to assess for the extent of the release. 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 SS04, collected around the release extent, indicated all COC concentrations were compliant with the most stringent Table I Closure Criteria and confirmed the lateral extent of the surface release. Laboratory analytical results for assessment soil samples SS05 through SS08, collected within the release extent, indicated TPH concentrations exceeded the Site Closure Criteria and/or the most stringent Table I Closure Criteria. Laboratory analytical results are summarized in Table 1 and the complete laboratory analytical reports are included as Appendix C. Based on laboratory analytical results, excavation of impacted soil was warranted.

## EXCAVATION ACTIVITIES AND LABORATORY ANALYTICAL RESULTS

Between November 9, 2023, and November 30, 2023, Ensolum personnel oversaw excavation of impacted soil from the release area as indicated by laboratory analytical results for assessment samples SS05 through SS08. The storage tank was relocated in order to access and remove all impacted soil. Excavation activities were performed via hand shoveling and track hoe to depths ranging from 4 feet to

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4.5 feet bgs. To direct excavation activities, soil was field screened for VOCs and chloride as previously described. Photographic documentation is included in Appendix B.

Following removal of impacted soil, 5-point composite soil samples were collected every 200 square feet from the floor and sidewalls of the 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. Composite soil samples FS01 through FS18 were collected from the floor of the excavation at depths ranging from 4 feet to 4.5 feet bgs. Composite soil samples SW01 through SW07 were collected from the sidewalls of the excavation at depths ranging from ground surface to 4 feet bgs. The soil samples were handled and analyzed as previously described. The excavation extent and excavation soil sample locations were mapped utilizing a handheld GPS unit and are depicted on Figure 3.

Laboratory analytical results for excavation floor samples FS01 through FS08, FS12, and sidewall samples SW01 through SW07 indicated all COC concentrations were compliant with the most stringent Table I Closure Criteria. Laboratory analytical results for excavation floor samples FS09 through FS11 and FS13 through FS18 indicated TPH concentrations exceeded the Site Closure Criteria and/or the most stringent Table I Closure Criteria. Additional soil was removed from these areas and subsequent floor samples FS09A through FS11A and FS13A through FS18A were collected from the floor of the excavation at depths ranging from 4.5 feet to 4.75 feet bgs. Laboratory analytical results for floor samples FS09A through FS11A and FS13A through FS18A indicated all COC concentrations were compliant with the most stringent Table I Closure Criteria. Laboratory analytical results are summarized in Table 1 and the complete laboratory analytical reports are included as Appendix C.

The aerial footprint of the excavation measured approximately 3,690 square feet. Approximately 615 cubic yards of soil were removed during excavation activities. The impacted soil was transported and properly disposed of at the R360 Disposal Facility in Hobbs, New Mexico.

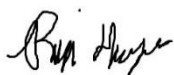
## CLOSURE REQUEST

Site assessment and excavation activities were conducted at the Site to address the impacted soil resulting from the January 14, 2022, release of produced water. Laboratory analytical results for the excavation soil samples, collected from the final excavation extent, indicated all COC concentrations were compliant with the most stringent Table I Closure Criteria. Based on the laboratory analytical results, impacted soil was excavated and no further remediation is required.

Initial response efforts and excavation of impacted soil have mitigated impacts at this Site. Depth to groundwater was estimated to be between 51 feet and 100 feet bgs and no other sensitive receptors were identified near the release extent. BTA believes the remedial actions completed are protective of human health, the environment, and groundwater. As such, BTA respectfully requests closure for Incident Number nAPP2202849030. 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](mailto:tmorrissey@ensolum.com).

Sincerely,  
**Ensolum, LLC**



Ronni Hayes  
Assistant Geologist



Aimee Cole  
Senior Managing Scientist



BTA Oil Producers, LLC  
Closure Request  
Vaca West Tank Battery

cc: Kelton Beaird, BTA  
Bureau of Land Management

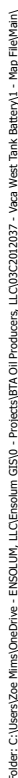
Appendices:

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

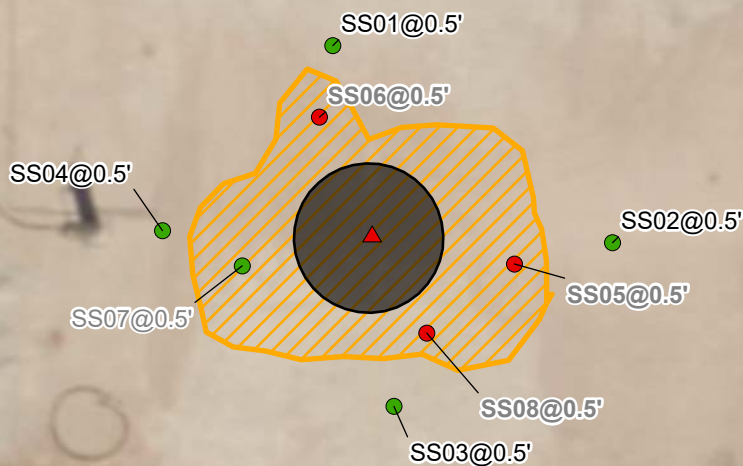




1

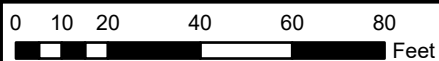
## Legend

- ▲ Release Point
- Assessment Soil Sample in Compliance with NMOCD Closure Criteria
- Assessment Soil Sample with Concentrations Exceeding NMOCD Closure Criteria
- ▨ Release Extent
- Compressor Catch Tank



### Notes:

Sample ID @ Depth Below Ground Surface.  
 Samples in bold indicate sample exceeded applicable closure criteria.  
 Grey text indicate soil sample was removed during excavation activities.



Sources: Environmental Systems Research Institute (ESRI)

## Assessment Soil Sample Locations

BTA Oil Producers, LLC  
 Vaca West Tank Battery  
 Incident Number: nAPP2202849030  
 Unit M, Sec 10, T25S R33E  
 Lea County, New Mexico

FIGURE

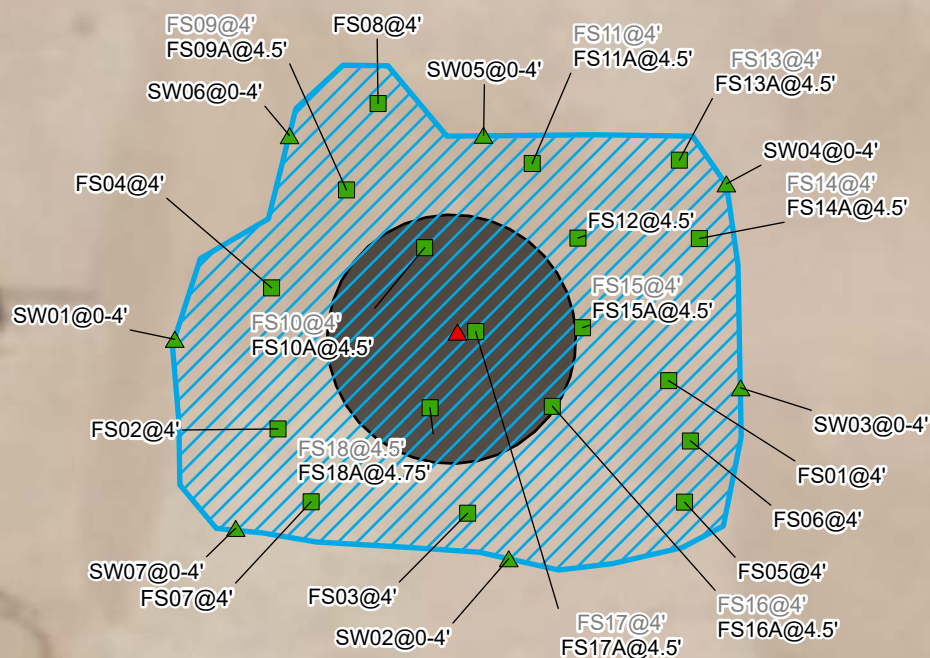
2



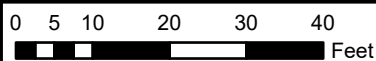


**Legend**

- ▲ Release Point
- Excavation Floor Sample in Compliance with Closure Criteria
- ▲ Excavation Sidewall Sample in Compliance with Closure Criteria
- Excavation Extent
- Compressor Catch Tank



Notes:  
 Sample ID @ Depth Below Ground/Surface.  
 Grey text indicate soil sample was removed during excavation activities



Sources: Environmental Systems Research Institute (ESRI)

**Excavation Soil Sample Locations**

BTA Oil Producers, LLC  
 Vaca West Tank Battery  
 Incident Number: nAPP2202849030  
 Unit M, Sec 10, T25S R33E  
 Lea County, New Mexico

**FIGURE****3**





TABLES

**TABLE 1**  
**SOIL SAMPLE ANALYTICAL RESULTS**

Vaca West Tank Battery  
BTA Oil Producers, LLC  
Lea County, New Mexico

Sample I.D.	Sample Date	Sample Depth (feet bgs)	Benzene (mg/kg)	Total BTEX (mg/kg)	TPH GRO (mg/kg)	TPH DRO (mg/kg)	TPH ORO (mg/kg)	GRO+DRO (mg/kg)	Total TPH (mg/kg)	Chloride (mg/kg)
NMOCB Table I Closure Criteria (NMAC 19.15.29)			10	50	NE	NE	NE	1,000	2,500	10,000
Assessment Soil Samples										
SS01	06/05/2023	0.5	<0.050	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	80.0
SS02	06/05/2023	0.5	<0.050	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	48.0
SS03	06/05/2023	0.5	<0.050	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	<16.0
SS04	06/05/2023	0.5	<0.050	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	32.0
SS05	06/05/2023	0.5	<0.050	8.22	141	2,760	395	2,901	3,296	48.0
SS06	06/05/2023	0.5	<0.050	1.72	83.7	3,510	485	3,594	4,079	16.0
SS07	06/05/2023	0.5	<0.050	15.8	65.9	522	61.7	588	650	16.0
SS08	06/05/2023	0.5	0.063	11.8	231	5,330	844	5,561	6,405	32.0
Excavation Floor Soil Samples										
FS01	11/09/2023	4	<0.050	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	64.0
FS02	11/09/2023	4	<0.050	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	32.0
FS03	11/10/2023	4	<0.050	<0.300	<10.0	74.4	<10.0	74.4	74.4	<16.0
FS04	11/10/2023	4	<0.050	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	16.0
FS05	11/10/2023	4	<0.050	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	<16.0
FS06	11/10/2023	4	<0.050	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	112
FS07	11/10/2023	4	<0.050	<0.300	<10.0	29.8	<10.0	29.8	<10.0	32.0
FS08	11/10/2023	4	<0.050	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	<16.0
FS09	11/10/2023	4	<0.050	0.386	12.0	597	73.2	609	682	64.0
FS09A	11/30/2023	4.5	<0.050	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	32.0
FS10	11/10/2023	4	<0.050	1.00	17.0	376	52.0	393	445	48.0
FS10A	11/30/2023	4.5	<0.050	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	16.0
FS11	11/10/2023	4	<0.050	<0.300	<10.0	144	15.8	144	160	32.0
FS11A	11/30/2023	4.5	<0.050	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	<16.0
FS12	11/13/2023	4.5	<0.050	<0.300	<10.0	18	<10.0	<10.0	17.9	16.0
FS13	11/13/2023	4	<0.050	0.666	20.7	322	29.4	343	372	48.0
FS13A	11/30/2023	4.5	<0.050	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	<16.0
FS14	11/13/2023	4	<0.050	<0.300	<10.0	148	<10.0	148	148	48.0
FS14A	11/30/2023	4.5	<0.050	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	<16.0
FS15	11/13/2023	4	<0.050	0.677	23.9	420	48.1	444	492	32.0
FS15A	11/30/2023	4.5	<0.050	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	<16.0
FS16	11/13/2023	4	<0.050	0.319	16.6	330	45.7	347	392	16.0
FS16A	11/30/2023	4.5	<0.050	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	<16.0

<b>TABLE 1</b> <b>SOIL SAMPLE ANALYTICAL RESULTS</b> Vaca West Tank Battery BTA Oil Producers, LLC Lea County, New Mexico										
Sample I.D.	Sample Date	Sample Depth (feet bgs)	Benzene (mg/kg)	Total BTEX (mg/kg)	TPH GRO (mg/kg)	TPH DRO (mg/kg)	TPH ORO (mg/kg)	GRO+DRO (mg/kg)	Total TPH (mg/kg)	Chloride (mg/kg)
NMOCD Table I Closure Criteria (NMAC 19.15.29)			10	50	NE	NE	NE	1,000	2,500	10,000
FS17	11/13/2023	4	<0.050	4.55	139	1,880	332	2,019	2,351	64.0
FS17A	11/30/2023	4.5	<0.050	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	<16.0
FS18	11/13/2023	4.5	<0.050	4.41	114	1,280	210	1,394	1,604	32.0
FS18A	11/30/2023	4.75	<0.050	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	<16.0
<b>Excavation Sidewall Soil Samples</b>										
SW01	11/09/2023	0-4	<0.050	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	64.0
SW02	11/10/2023	0-4	<0.050	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	64.0
SW03	11/09/2023	0-4	<0.050	<0.300	<10.0	21.0	<10.0	21.0	21.0	48.0
SW04	11/10/2023	0-4	<0.050	<0.300	<10.0	21.3	<10.0	21.3	21.3	48.0
SW05	11/10/2023	0-4	<0.050	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	48.0
SW06	11/10/2023	0-4	<0.050	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	64.0
SW07	11/13/2023	0-4	<0.050	<0.300	<10.0	10.6	<10.0	10.6	10.6	64.0

## Notes:

bgs: below ground surface

mg/kg: milligrams per kilogram

NMOCD: New Mexico Oil Conservation Division

BTEX: Benzene, Toluene, Ethylbenzene, and Xylenes

Concentrations in **bold** exceed the NMOCD Table I Closure Criteria or reclamation standard where applicable.

GRO: Gasoline Range Organics

DRO: Diesel Range Organics

ORO: Oil Range Organics

TPH: Total Petroleum Hydrocarbon

Grey text represents sample has been excavated.



## APPENDIX A

### Referenced Well Records

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# WELL RECORD & LOG

OFFICE OF THE STATE ENGINEER

[www.ose.state.nm.us](http://www.ose.state.nm.us)

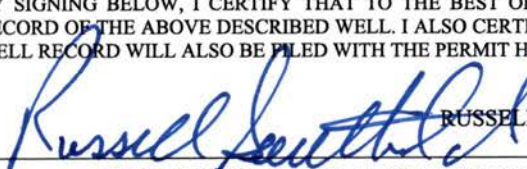
1. GENERAL AND WELL LOCATION	OSE POD NO. (WELL NO.) C-4699-POD 1		WELL TAG ID NO.		OSE FILE NO(S). C-4699			
	WELL OWNER NAME(S) BTA OIL PRODUCERS LLC				PHONE (OPTIONAL) 432-682-3753			
	WELL OWNER MAILING ADDRESS 104 S PECOS STREET				CITY MIDLAND			
					STATE TX			
					ZIP 79701			
WELL LOCATION (FROM GPS)	DEGREES 32		MINUTES 7		SECONDS 22.90		N	
	LONGITUDE -103		33		41.01			W
* ACCURACY REQUIRED: ONE TENTH OF A SECOND * DATUM REQUIRED: WGS 84								
DESCRIPTION RELATING WELL LOCATION TO STREET ADDRESS AND COMMON LANDMARKS - PLSS (SECTION, TOWNSHIP, RANGE) WHERE AVAILABLE ROJO B 7844 JV P# 001H								
2. DRILLING & CASING INFORMATION	LICENSE NO. WD-1184		NAME OF LICENSED DRILLER RUSSELL SOUTHERLAND			NAME OF WELL DRILLING COMPANY WEST TEXAS WATER WELL SERVICE		
	DRILLING STARTED 1/18/2023		DRILLING ENDED 1/18/2023		DEPTH OF COMPLETED WELL (FT) 80		BORE HOLE DEPTH (FT)	
	COMPLETED WELL IS:		<input type="checkbox"/> ARTESIAN <input checked="" type="checkbox"/> DRY HOLE <input type="checkbox"/> SHALLOW (UNCONFINED)				DEPTH WATER FIRST ENCOUNTERED (FT)	
	DRILLING FLUID:		<input checked="" type="checkbox"/> AIR <input type="checkbox"/> MUD    ADDITIVES - SPECIFY:					STATIC WATER LEVEL IN COMPLETED WELL (FT) N/A
	DRILLING METHOD:		<input checked="" type="checkbox"/> ROTARY <input type="checkbox"/> HAMMER <input type="checkbox"/> CABLE TOOL <input type="checkbox"/> OTHER - SPECIFY:					
	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						
				NO CASING IN HOLE				
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						
				N/A				

WR-20 WELL RECORD & LOG (Version 04/30/19)

FOR OSE INTERNAL USE		FILE NO. C-04699		POD NO. 1	TRN NO. 740773
LOCATION 25S. 33E. 27. 224			WELL TAG ID NO.		PAGE 1 OF 2

DEPTH (feet bgl)	THICKNESS (feet)	COLOR AND TYPE OF MATERIAL ENCOUNTERED - INCLUDE WATER-BEARING CAVITIES OR FRACTURE ZONES (attach supplemental sheets to fully describe all units)	WATER BEARING? (YES / NO)	ESTIMATED YIELD FOR WATER-BEARING ZONES (gpm)
0	1	CALICHIE PAD	Y ✓ N	
1	10	SAND	Y ✓ N	
10	20	CALICHIE	Y ✓ N	
20	37	SANDY CALICHIE	Y ✓ N	
37	40	SAND	Y ✓ N	
40	60	SAND	Y ✓ N	
60	80	SAND	Y ✓ N	
			Y N	
			Y N	
			Y N	
			Y N	
			Y N	
			Y N	
			Y N	
			Y N	
			Y N	
			Y N	
			Y N	
			Y N	
			Y N	
METHOD USED TO ESTIMATE YIELD OF WATER-BEARING STRATA: <input type="checkbox"/> PUMP <input type="checkbox"/> AIR LIFT <input type="checkbox"/> BAILER <input checked="" type="checkbox"/> OTHER – SPECIFY: DRY HOLE			TOTAL ESTIMATED WELL YIELD (gpm): 0.00	


WELL TEST	TEST RESULTS - ATTACH A COPY OF DATA COLLECTED DURING WELL TESTING, INCLUDING DISCHARGE METHOD, START TIME, END TIME, AND A TABLE SHOWING DISCHARGE AND DRAWDOWN OVER THE TESTING PERIOD.
MISCELLANEOUS INFORMATION:	
PRINT NAME(S) OF DRILL RIG SUPERVISOR(S) THAT PROVIDED ONSITE SUPERVISION OF WELL CONSTRUCTION OTHER THAN LICENSEE: RUSSELL SOUTHERLAND	

SIGNATURE
BY SIGNING BELOW, I CERTIFY THAT TO THE BEST OF MY KNOWLEDGE AND BELIEF, THE FOREGOING IS A TRUE AND CORRECT RECORD OF THE ABOVE DESCRIBED WELL. I ALSO CERTIFY THAT THE WELL TAG, IF REQUIRED, HAS BEEN INSTALLED AND THAT THIS WELL RECORD WILL ALSO BE FILED WITH THE PERMIT HOLDER WITHIN 30 DAYS AFTER THE COMPLETION OF WELL DRILLING.   RUSSELL SOUTHERLAND SIGNATURE OF DRILLER / PRINT SIGNEE NAME  1/18/2023 DATE



# New Mexico Office of the State Engineer

## Point of Diversion Summary

		(quarters are 1=NW 2=NE 3=SW 4=SE)								(NAD83 UTM in meters)	
		(quarters are smallest to largest)									
Well Tag	POD Number	Q64	Q16	Q4	Sec	Tws	Rng	X	Y		
C	02373 CLW317846	2	1	1	13	25S	33E	638518	3556544*		
x											
Driller License:	421	Driller Company:				GLENN'S WATER WELL SERVICE					
Driller Name:											
Drill Start Date:	09/08/1993	Drill Finish Date:				09/08/1993		Plug Date:			
Log File Date:		PCW Rcv Date:				02/09/1996		Source:		Shallow	
Pump Type:	SUBMER	Pipe Discharge Size:				2		Estimated Yield:		60 GPM	
Casing Size:	6.63	Depth Well:				625 feet		Depth Water:		185 feet	
x											

\*UTM location was derived from PLSS - see Help

The data is furnished by the NMOSE/ISC and is accepted by the recipient with the expressed understanding that the OSE/ISC make no warranties, expressed or implied, concerning the accuracy, completeness, reliability, usability, or suitability for any particular purpose of the data.

5/4/23 11:14 AM

POINT OF DIVERSION SUMMARY



[USGS Home](#)  
[Contact USGS](#)  
[Search USGS](#)

National Water Information System: Web Interface

USGS Water Resources

Data Category:

Groundwater

▼


Geographic Area:

United States


▼

GO

Click to hideNews Bulletins

- 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 the Nation

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

Search Results -- 1 sites found

Agency code = usgs  
site\_no list =

- 320956103353801

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

USGS 320956103353801 25S.33E.05.12122

Lea County, New Mexico  
Latitude 32°09'59.4", Longitude 103°35'47.2" NAD83  
Land-surface elevation 3,473.00 feet above NGVD29  
This well is completed in the Other aquifers (N9999OTHER) national aquifer.  
This well is completed in the Santa Rosa Sandstone (231SNRS) local aquifer.

Output formats

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



Date	Time	? Water-level date-time accuracy	? 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	? Water-level approval status
1981-03-25			D62610		3365.17	NGVD29	1		Z		A
1981-03-25			D62611		3366.84	NAVD88	1		Z		A
1981-03-25			D72019	107.83			1		Z		A
1986-03-12			D62610		3363.66	NGVD29	1		Z		A
1986-03-12			D62611		3365.33	NAVD88	1		Z		A
1986-03-12			D72019	109.34			1		Z		A
1991-06-06			D62610		3365.42	NGVD29	1		Z		A
1991-06-06			D62611		3367.09	NAVD88	1		Z		A
1991-06-06			D72019	107.58			1		Z		A
1996-03-07			D62610		3364.11	NGVD29	P		S		A
1996-03-07			D62611		3365.78	NAVD88	P		S		A
1996-03-07			D72019	108.89			P		S		A
2013-01-17	16:00 UTC	m	62610		3354.19	NGVD29	P		S	USGS	S A
2013-01-17	16:00 UTC	m	62611		3355.86	NAVD88	P		S	USGS	S A
2013-01-17	16:00 UTC	m	72019	118.81			P		S	USGS	S A

Explanation

Section	Code	Description
Water-level date-time accuracy	D	Date is accurate to the Day
Water-level date-time accuracy	m	Date is accurate to the Minute
Parameter code	62610	Groundwater level above NGVD 1929, feet
Parameter code	62611	Groundwater level above NAVD 1988, feet
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	S	Steel-tape measurement.
Method of measurement	Z	Other.

Section	Code	Description
Measuring agency		Not determined
Measuring agency	USGS	U.S. Geological Survey
Source of measurement		Not determined
Source of measurement	S	Measured by personnel of reporting agency.
Water-level approval status	A	Approved for publication -- Processing and review completed.

[Questions about sites/data?](#)  
[Feedback on this web site](#)  
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[Help](#)  
[Data Tips](#)  
[Explanation of terms](#)  
[Subscribe for system changes](#)  
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[Accessibility](#)   [FOIA](#)   [Privacy](#)   [Policies and Notices](#)  
[U.S. Department of the Interior | U.S. Geological Survey](#)  
**Title: Groundwater for USA: Water Levels**  
**URL: <https://nwis.waterdata.usgs.gov/nwis/gwlevels?>**



Page Contact Information: [USGS Water Data Support Team](#)  
Page Last Modified: 2023-05-04 13:03:02 EDT  
0.29 0.25 nadww01



## APPENDIX B

### Photographic Log

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**Photographic Log**

BTA Oil Producers, LLC

Vaca West Tank Battery

Incident Number nAPP2202849030



Photograph: 1 Date: 6/5/2023  
Description: Soil staining during initial assessment  
View: Northwest



Photograph: 2 Date: 6/5/2023  
Description: Soil staining during initial assessment  
View: North



Photograph: 3 Date: 10/25/2023  
Description: Excavation activities  
View: South



Photograph: 4 Date: 11/13/2023  
Description: Excavation activities  
View: Southeast





## APPENDIX C

### Laboratory Analytical Reports & Chain of Custody Documentation

---



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

June 12, 2023

HADLIE GREEN

ENSOLUM

3122 NATIONAL PARKS HWY

CARLSBAD, NM 88220

RE: VACA WEST TANK BATTERY

Enclosed are the results of analyses for samples received by the laboratory on 06/07/23 14:20.

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](http://www.tceq.texas.gov/field/qa/lab_accred_certif.html).

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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 style with a large, stylized 'C' and 'K'.

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: 06/07/2023  
Reported: 06/12/2023  
Project Name: VACA WEST TANK BATTERY  
Project Number: 03C2012019  
Project Location: BTA - ( 32.13802-103.56497 )

Sampling Date: 06/05/2023  
Sampling Type: Soil  
Sampling Condition: Cool & Intact  
Sample Received By: Shalyn Rodriguez

**Sample ID: SS 01 0.5' (H232891-01)**

BTX 8021B		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	06/09/2023	ND	2.22	111	2.00	1.28	
Toluene*	<0.050	0.050	06/09/2023	ND	2.21	111	2.00	0.322	
Ethylbenzene*	<0.050	0.050	06/09/2023	ND	2.26	113	2.00	1.27	
Total Xylenes*	<0.150	0.150	06/09/2023	ND	6.68	111	6.00	1.15	
Total BTX	<0.300	0.300	06/09/2023	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	80.0	16.0	06/08/2023	ND	400	100	400	3.92		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	06/08/2023	ND	173	86.4	200	24.7	
DRO >C10-C28*	<10.0	10.0	06/08/2023	ND	163	81.5	200	19.8	
EXT DRO >C28-C36	<10.0	10.0	06/08/2023	ND					

Surrogate: 1-Chlorooctane 85.1 % 48.2-134

Surrogate: 1-Chlorooctadecane 93.6 % 49.1-148

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\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager



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### Notes and Definitions

QR-04	The RPD for the BS/BSD was outside of historical limits.
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".

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

Company Name: Ensolum, LLC										BILL TO		ANALYSIS REQUEST												
Project Manager: Hadlie Green										P.O. #:														
Address: 3122 National Parks Hwy										Company: BTA Oil														
City: Carlsbad State: NM Zip: 88220										Attn: Kelton Beaird														
Phone #: 432-557-8895 Fax #:										Address: 104 S Pecos St														
Project #: 03C2012037 Project Owner: BTA Oil										City: Midland														
Project Name: Vaca West Tank Battery										State: Texas Zip: 79701														
Project Location: 32.13802, -103.56497										Phone #:														
Sampler Name: Ronni Hayes										Fax #:														
FOR LAB USE ONLY																								
Lab I.D.	Sample I.D.	Depth (feet)	(G/RAB OR (C)OMP.	# CONTAINERS	GROUNDWATER	WASTEWATER	SOIL	OIL	SLUDGE	OTHER :	PRESERV.	SAMPLING												
1032891	5501	0.5'	G	1			X				✓		DATE	TIME	BTEX	TPH	Cl-							
											X		6/5/23	0910	X	X	X							
<div style="position: relative; height: 100px;"> <div style="position: absolute; top: 0; left: 0; right: 0; bottom: 0; background: linear-gradient(to top right, transparent 49%, #ccc 49%, #ccc 51%, transparent 51%); background-size: 10px 10px;"></div> </div>																								

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Relinquished By:	Date: 6/5/23	Received By: S. Rodriguez	Verbal Result: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Add'l Phone #:
	Time: 1430		All Results are emailed. Please provide Email address: hgreen@ensolum.com	
Relinquished By:	Date:	Received By:	REMARKS:	
	Time:			
Delivered By: (Circle One)	Observed Temp. °C: -0.2	Sample Condition: Cool Intact	CHECKED BY: (Initials) SK	Turnaround Time: Standard <input checked="" type="checkbox"/> Rush <input type="checkbox"/>
Sampler - UPS - Bus - Other:	Corrected Temp. °C: -0.8	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No		Bacteria (only) Sample Condition: Cool Intact
		<input type="checkbox"/> Yes <input type="checkbox"/> No		<input type="checkbox"/> Yes <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



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

---

June 12, 2023

HADLIE GREEN

ENSOLUM

3122 NATIONAL PARKS HWY

CARLSBAD, NM 88220

RE: VACA WEST TANK BATTERY

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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.

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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: 06/07/2023  
Reported: 06/12/2023  
Project Name: VACA WEST TANK BATTERY  
Project Number: 03C2012037  
Project Location: BTA - ( 32.13802-103.56497 )

Sampling Date: 06/05/2023  
Sampling Type: Soil  
Sampling Condition: Cool & Intact  
Sample Received By: Shalyn Rodriguez

**Sample ID: SS 02 0.5' (H232892-01)**

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	06/09/2023	ND	2.22	111	2.00	1.28	
Toluene*	<0.050	0.050	06/09/2023	ND	2.21	111	2.00	0.322	
Ethylbenzene*	<0.050	0.050	06/09/2023	ND	2.26	113	2.00	1.27	
Total Xylenes*	<0.150	0.150	06/09/2023	ND	6.68	111	6.00	1.15	
Total BTEX	<0.300	0.300	06/09/2023	ND					

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

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	48.0	16.0	06/08/2023	ND	400	100	400	3.92	

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	06/08/2023	ND	173	86.4	200	24.7	
DRO >C10-C28*	<10.0	10.0	06/08/2023	ND	163	81.5	200	19.8	
EXT DRO >C28-C36	<10.0	10.0	06/08/2023	ND					

Surrogate: 1-Chlorooctane 88.6 % 48.2-134

Surrogate: 1-Chlorooctadecane 94.9 % 49.1-148

Cardinal Laboratories

\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager

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

---

### Notes and Definitions

QR-04	The RPD for the BS/BSD was outside of historical limits.
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.
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---

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---

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]

† Cardinal cannot accept verbal changes. Please email changes to [celey.keene@cardinallabsnm.com](mailto:celey.keene@cardinallabsnm.com)



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

---

June 12, 2023

HADLIE GREEN

ENSOLUM

3122 NATIONAL PARKS HWY

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RE: VACA WEST TANK BATTERY

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Method EPA 524.2	Total Trihalomethanes (TTHM)
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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: 06/07/2023  
Reported: 06/12/2023  
Project Name: VACA WEST TANK BATTERY  
Project Number: 03C2012037  
Project Location: BTA - ( 32.13802-103.56497 )

Sampling Date: 06/05/2023  
Sampling Type: Soil  
Sampling Condition: Cool & Intact  
Sample Received By: Shalyn Rodriguez

**Sample ID: SS 03 0.5' (H232893-01)**

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	06/09/2023	ND	2.22	111	2.00	1.28	
Toluene*	<0.050	0.050	06/09/2023	ND	2.21	111	2.00	0.322	
Ethylbenzene*	<0.050	0.050	06/09/2023	ND	2.26	113	2.00	1.27	
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Total BTEX	<0.300	0.300	06/09/2023	ND					

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

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EXT DRO >C28-C36	<10.0	10.0	06/08/2023	ND					

Surrogate: 1-Chlorooctane 130 % 48.2-134

Surrogate: 1-Chlorooctadecane 130 % 49.1-148

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Celey D. Keene, Lab Director/Quality Manager



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### Notes and Definitions

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ND	Analyte NOT DETECTED at or above the reporting limit
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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]



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

---

June 12, 2023

HADLIE GREEN

ENSOLUM

3122 NATIONAL PARKS HWY

CARLSBAD, NM 88220

RE: VACA WEST TANK BATTERY

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Method EPA 524.2	Total Trihalomethanes (TTHM)
Method EPA 524.4	Regulated VOCs (V1, V2, V3)

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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: 06/07/2023  
Reported: 06/12/2023  
Project Name: VACA WEST TANK BATTERY  
Project Number: 03C2012037  
Project Location: BTA - ( 32.13802-103.56497 )

Sampling Date: 06/05/2023  
Sampling Type: Soil  
Sampling Condition: Cool & Intact  
Sample Received By: Shalyn Rodriguez

**Sample ID: SS 04 0.5' (H232894-01)**

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	06/09/2023	ND	2.22	111	2.00	1.28	
Toluene*	<0.050	0.050	06/09/2023	ND	2.21	111	2.00	0.322	
Ethylbenzene*	<0.050	0.050	06/09/2023	ND	2.26	113	2.00	1.27	
Total Xylenes*	<0.150	0.150	06/09/2023	ND	6.68	111	6.00	1.15	
Total BTEX	<0.300	0.300	06/09/2023	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	32.0	16.0	06/08/2023	ND	400	100	400	3.92	

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	06/08/2023	ND	173	86.4	200	24.7	
DRO >C10-C28*	<10.0	10.0	06/08/2023	ND	163	81.5	200	19.8	
EXT DRO >C28-C36	<10.0	10.0	06/08/2023	ND					

Surrogate: 1-Chlorooctane 122 % 48.2-134

Surrogate: 1-Chlorooctadecane 121 % 49.1-148

Cardinal Laboratories

\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager



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Notes and Definitions

- QR-04            The RPD for the BS/BSD was outside of historical limits.
- 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".

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

Company Name: Ensolum, LLC				<b>BILL TO</b>				<b>ANALYSIS REQUEST</b>													
Project Manager: Hadlie Green				P.O. #:																	
Address: 3122 National Parks Hwy				Company: BTA Oil																	
City: Carlsbad		State: NM		Zip: 88220		Attn: Kelton Beaird															
Phone #: 432-557-8895		Fax #:		Address: 104 S Pecos St																	
Project #: 03C2012037		Project Owner: BTA Oil		City: Midland																	
Project Name: Vaca West Tank Battery				State: Texas Zip: 79701																	
Project Location: 32.13802, -103.56497				Phone #:																	
Sampler Name:				Fax #:																	

FOR LAB USE ONLY		Lab I.D.	Sample I.D.	Depth (feet)	(G)RAB OR (C)OMP.	# CONTAINERS	MATRIX						PRESERV.		SAMPLING		DATE	TIME	BTEX	TPH	CI-
GROUNDWATER	WASTEWATER						SOIL	OIL	SLUDGE	OTHER	ACID/BASE	ICE / COOL	OTHER								
		4232894	5504	0.5'	G	1			X					X		6/5/23	0925	X	X	X	
<div style="position: relative; width: 100%; height: 100%;"> <div style="position: absolute; top: 50%; left: 50%; transform: translate(-50%, -50%) rotate(-45deg); font-size: 2em; font-weight: bold; color: blue;">           RH 6/5/23         </div> </div>																					

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Relinquished By:		Date: 6-7-23 Time: 1430	Received By:		Verbal Result: <input type="checkbox"/> Yes <input type="checkbox"/> No Add'l Phone #:	
Relinquished By:		Date:	Received By:		All Results are emailed. Please provide Email address: hgreen@ensolum.com	
		Time:			REMARKS:	

Delivered By: (Circle One)		Observed Temp. °C: -0.2	Sample Condition: Cool <input checked="" type="checkbox"/> Intact <input checked="" type="checkbox"/>	CHECKED BY:	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: -0.8	Cool <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Intact <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/>		Thermometer ID #113 Correction Factor -0.5°C	Cool <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Intact <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/>

† Cardinal cannot accept verbal changes. Please email changes to [celey.keene@cardinallabsnm.com](mailto:celey.keene@cardinallabsnm.com)





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

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June 14, 2023

HADLIE GREEN

ENSOLUM

3122 NATIONAL PARKS HWY

CARLSBAD, NM 88220

RE: VACA WEST TANK BATTERY

Enclosed are the results of analyses for samples received by the laboratory on 06/07/23 14:20.

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](http://www.tceq.texas.gov/field/qa/lab_accred_certif.html).

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

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

Accreditation applies to public drinking water matrices.

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

Sincerely,

A handwritten signature in black ink that reads "Celey D. Keene". 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: 06/07/2023  
Reported: 06/14/2023  
Project Name: VACA WEST TANK BATTERY  
Project Number: 03C2012037  
Project Location: BTA - ( 32.13802-103.56497 )

Sampling Date: 06/05/2023  
Sampling Type: Soil  
Sampling Condition: Cool & Intact  
Sample Received By: Shalyn Rodriguez

**Sample ID: SS 05 0.5' (H232896-01)**

BTEX 8021B		mg/kg	Analyzed By: MS					S-04	
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	06/09/2023	ND	2.22	111	2.00	1.28	
<b>Toluene*</b>	<b>0.258</b>	0.050	06/09/2023	ND	2.21	111	2.00	0.322	GC-NC1
<b>Ethylbenzene*</b>	<b>0.479</b>	0.050	06/09/2023	ND	2.26	113	2.00	1.27	GC-NC1
<b>Total Xylenes*</b>	<b>7.48</b>	0.150	06/09/2023	ND	6.68	111	6.00	1.15	
<b>Total BTEX</b>	<b>8.22</b>	0.300	06/09/2023	ND					GC-NC1

Surrogate: 4-Bromofluorobenzene (PID) 150 % 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
<b>Chloride</b>	<b>48.0</b>	16.0	06/08/2023	ND	400	100	400	3.92	

TPH 8015M		mg/kg	Analyzed By: MS						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
<b>GRO C6-C10*</b>	<b>141</b>	10.0	06/13/2023	ND	205	103	200	19.8	
<b>DRO &gt;C10-C28*</b>	<b>2760</b>	10.0	06/13/2023	ND	205	103	200	17.3	
<b>EXT DRO &gt;C28-C36</b>	<b>395</b>	10.0	06/13/2023	ND					

Surrogate: 1-Chlorooctane 106 % 48.2-134

Surrogate: 1-Chlorooctadecane 110 % 49.1-148

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\*=Accredited Analyte

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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: 06/07/2023  
Reported: 06/14/2023  
Project Name: VACA WEST TANK BATTERY  
Project Number: 03C2012037  
Project Location: BTA - ( 32.13802-103.56497 )

Sampling Date: 06/05/2023  
Sampling Type: Soil  
Sampling Condition: Cool & Intact  
Sample Received By: Shalyn Rodriguez

**Sample ID: SS 06 0.5' (H232896-02)**

BTEx 8021B		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	06/09/2023	ND	2.22	111	2.00	1.28	
Toluene*	<0.050	0.050	06/09/2023	ND	2.21	111	2.00	0.322	
Ethylbenzene*	0.094	0.050	06/09/2023	ND	2.26	113	2.00	1.27	GC-NC1
Total Xylenes*	1.62	0.150	06/09/2023	ND	6.68	111	6.00	1.15	
Total BTEX	1.72	0.300	06/09/2023	ND					GC-NC1

Surrogate: 4-Bromofluorobenzene (PID) 133 % 71.5-134

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	144	16.0	06/08/2023	ND	400	100	400	3.92		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	83.7	10.0	06/13/2023	ND	205	103	200	19.8	
DRO >C10-C28*	3510	10.0	06/13/2023	ND	205	103	200	17.3	
EXT DRO >C28-C36	485	10.0	06/13/2023	ND					

Surrogate: 1-Chlorooctane 94.3 % 48.2-134

Surrogate: 1-Chlorooctadecane 115 % 49.1-148

Cardinal Laboratories

\*=Accredited Analyte

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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: 06/07/2023  
Reported: 06/14/2023  
Project Name: VACA WEST TANK BATTERY  
Project Number: 03C2012037  
Project Location: BTA - ( 32.13802-103.56497 )

Sampling Date: 06/05/2023  
Sampling Type: Soil  
Sampling Condition: Cool & Intact  
Sample Received By: Shalyn Rodriguez

**Sample ID: SS 07 0.5' (H232896-03)**

BTEX 8021B		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	06/09/2023	ND	2.22	111	2.00	1.28	
Toluene*	0.513	0.050	06/09/2023	ND	2.21	111	2.00	0.322	GC-NC1
Ethylbenzene*	0.825	0.050	06/09/2023	ND	2.26	113	2.00	1.27	GC-NC1
Total Xylenes*	14.5	0.150	06/09/2023	ND	6.68	111	6.00	1.15	
Total BTEX	15.8	0.300	06/09/2023	ND					GC-NC1

Surrogate: 4-Bromofluorobenzene (PID) 134 % 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	06/08/2023	ND	400	100	400	3.92		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	65.9	10.0	06/13/2023	ND	205	103	200	19.8	
DRO >C10-C28*	522	10.0	06/13/2023	ND	205	103	200	17.3	
EXT DRO >C28-C36	61.7	10.0	06/13/2023	ND					

Surrogate: 1-Chlorooctane 81.2 % 48.2-134

Surrogate: 1-Chlorooctadecane 84.5 % 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: 06/07/2023  
Reported: 06/14/2023  
Project Name: VACA WEST TANK BATTERY  
Project Number: 03C2012037  
Project Location: BTA - ( 32.13802-103.56497 )

Sampling Date: 06/05/2023  
Sampling Type: Soil  
Sampling Condition: Cool & Intact  
Sample Received By: Shalyn Rodriguez

**Sample ID: SS 08 0.5' (H232896-04)**

BTEX 8021B		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
<b>Benzene*</b>	<b>0.063</b>	0.050	06/09/2023	ND	2.22	111	2.00	1.28	
<b>Toluene*</b>	<b>1.17</b>	0.050	06/09/2023	ND	2.21	111	2.00	0.322	GC-NC1
<b>Ethylbenzene*</b>	<b>0.842</b>	0.050	06/09/2023	ND	2.26	113	2.00	1.27	GC-NC1
<b>Total Xylenes*</b>	<b>9.76</b>	0.150	06/09/2023	ND	6.68	111	6.00	1.15	
<b>Total BTEX</b>	<b>11.8</b>	0.300	06/09/2023	ND					GC-NC1

Surrogate: 4-Bromofluorobenzene (PID) 120 % 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
<b>Chloride</b>	<b>32.0</b>	16.0	06/08/2023	ND	400	100	400	3.92	

TPH 8015M		mg/kg		Analyzed By: MS						S-04
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
<b>GRO C6-C10*</b>	<b>231</b>	10.0	06/13/2023	ND	205	103	200	19.8		
<b>DRO &gt;C10-C28*</b>	<b>5330</b>	10.0	06/13/2023	ND	205	103	200	17.3		
<b>EXT DRO &gt;C28-C36</b>	<b>844</b>	10.0	06/13/2023	ND						

Surrogate: 1-Chlorooctane 107 % 48.2-134

Surrogate: 1-Chlorooctadecane 198 % 49.1-148

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\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager





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### Notes and Definitions

S-04	The surrogate recovery for this sample is outside of established control limits due to a sample matrix effect.
QR-04	The RPD for the BS/BSD was outside of historical limits.
GC-NC1	8260 confirmation analysis was performed; initial GC results were not supported by GC/MS analysis and are biased high with interfering compounds.
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".

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

Company Name: Ensolum, LLC				<b>BILL TO</b>				<b>ANALYSIS REQUEST</b>																						
Project Manager: Hadlie Green				P.O. #:																										
Address: 3122 National Parks Hwy				Company: BTA Oil																										
City: Carlsbad		State: NM		Zip: 88220		Attn: Kelton Beaird																								
Phone #: 432-557-8895		Fax #:		Address: 104 S Pecos St																										
Project #: 03C2012037		Project Owner: BTA Oil		City: Midland																										
Project Name: Vaca West Tank Battery				State: Texas Zip: 79701																										
Project Location: 32.13802, -103.56497				Phone #:																										
Sampler Name:				Fax #:																										
FOR LAB USE ONLY																														
Lab I.D.	Sample I.D.	Depth (feet)	(G)RAB OR (C)OMP.	# CONTAINERS	GROUNDWATER	WASTEWATER	SOIL	OIL	SLUDGE	OTHER :	ACID/BASE:	ICE / COOL	OTHER :	DATE	TIME															
1233896	5505	0.5'	G				X					X		6/5/23	0930	BTEX	TDH	CI												
2	5506	↓	↓				↓					↓		↓	0935															
3	5507	↓	↓				↓					↓		↓	0940															
4	5508	↓	↓				↓					↓		↓	0945															

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Relinquished By:	Date: 6-1-23	Received By:	Verbal Result: <input type="checkbox"/> Yes <input type="checkbox"/> No	Add'l Phone #:
	Time: 1420		All Results are emailed. Please provide Email address:	
Relinquished By:	Date:	Received By:	REMARKS:	
	Time:		hggreen@ensolum.com	
Delivered By: (Circle One)	Observed Temp. °C: -0.2	Sample Condition	Turnaround Time: Standard <input checked="" type="checkbox"/> Rush <input type="checkbox"/>	Bacteria (only) Sample Condition
Sampler - UPS - Bus - Other:	Corrected Temp. °C: -0.82	Cool Intact <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> No	Thermometer ID #113	Cool Intact <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> No
		CHECKED BY: (Initials) SP	Correction Factor -0.5°C	Observed Temp. °C
				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

November 16, 2023

HADLIE GREEN

ENSOLUM

3122 NATIONAL PARKS HWY

CARLSBAD, NM 88220

RE: VACA WEST TANK BATTERY

Enclosed are the results of analyses for samples received by the laboratory on 11/13/23 15:40.

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](http://www.tceq.texas.gov/field/qa/lab_accred_certif.html).

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

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

Accreditation applies to public drinking water matrices.

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

Sincerely,

A handwritten signature in black ink that reads "Celey D. Keene". The signature is written in a cursive style with a large, stylized 'C' and 'K'.

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: 11/13/2023  
Reported: 11/16/2023  
Project Name: VACA WEST TANK BATTERY  
Project Number: 03C2012037  
Project Location: BTA - ( 32.138089-103.565047 )

Sampling Date: 11/13/2023  
Sampling Type: Soil  
Sampling Condition: Cool & Intact  
Sample Received By: Dionica Hinojos

**Sample ID: FS 12 @ 4.5' (H236204-01)**

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	11/15/2023	ND	2.05	103	2.00	0.688	
Toluene*	<0.050	0.050	11/15/2023	ND	2.08	104	2.00	0.764	
Ethylbenzene*	<0.050	0.050	11/15/2023	ND	2.08	104	2.00	0.765	
Total Xylenes*	<0.150	0.150	11/15/2023	ND	6.54	109	6.00	0.897	
Total BTX	<0.300	0.300	11/15/2023	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	16.0	16.0	11/15/2023	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	11/14/2023	ND	192	96.2	200	1.56	
DRO >C10-C28*	17.9	10.0	11/14/2023	ND	170	84.9	200	3.37	
EXT DRO >C28-C36	<10.0	10.0	11/14/2023	ND					

Surrogate: 1-Chlorooctane 76.6 % 48.2-134

Surrogate: 1-Chlorooctadecane 70.1 % 49.1-148

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\*=Accredited Analyte

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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: 11/13/2023  
Reported: 11/16/2023  
Project Name: VACA WEST TANK BATTERY  
Project Number: 03C2012037  
Project Location: BTA - ( 32.138089-103.565047 )

Sampling Date: 11/13/2023  
Sampling Type: Soil  
Sampling Condition: Cool & Intact  
Sample Received By: Dionica Hinojos

**Sample ID: FS 13 @ 4' (H236204-02)**

BTEx 8021B		mg/kg	Analyzed By: JH					S-04	
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	11/15/2023	ND	2.05	103	2.00	0.688	
Toluene*	<0.050	0.050	11/15/2023	ND	2.08	104	2.00	0.764	
Ethylbenzene*	<0.050	0.050	11/15/2023	ND	2.08	104	2.00	0.765	
<b>Total Xylenes*</b>	<b>0.666</b>	0.150	11/15/2023	ND	6.54	109	6.00	0.897	GC-NC1
<b>Total BTEX</b>	<b>0.666</b>	0.300	11/15/2023	ND					GC-NC1

Surrogate: 4-Bromofluorobenzene (PID) 137 % 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
<b>Chloride</b>	<b>48.0</b>	16.0	11/15/2023	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
<b>GRO C6-C10*</b>	<b>20.7</b>	10.0	11/14/2023	ND	192	96.2	200	1.56	
<b>DRO &gt;C10-C28*</b>	<b>322</b>	10.0	11/14/2023	ND	170	84.9	200	3.37	
<b>EXT DRO &gt;C28-C36</b>	<b>29.4</b>	10.0	11/14/2023	ND					

Surrogate: 1-Chlorooctane 71.3 % 48.2-134

Surrogate: 1-Chlorooctadecane 71.4 % 49.1-148

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\*=Accredited Analyte

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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: 11/13/2023  
Reported: 11/16/2023  
Project Name: VACA WEST TANK BATTERY  
Project Number: 03C2012037  
Project Location: BTA - ( 32.138089-103.565047 )

Sampling Date: 11/13/2023  
Sampling Type: Soil  
Sampling Condition: Cool & Intact  
Sample Received By: Dionica Hinojos

**Sample ID: FS 14 @ 4' (H236204-03)**

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	11/15/2023	ND	2.05	103	2.00	0.688		
Toluene*	<0.050	0.050	11/15/2023	ND	2.08	104	2.00	0.764		
Ethylbenzene*	<0.050	0.050	11/15/2023	ND	2.08	104	2.00	0.765		
Total Xylenes*	<0.150	0.150	11/15/2023	ND	6.54	109	6.00	0.897		
Total BTEX	<0.300	0.300	11/15/2023	ND						

Surrogate: 4-Bromofluorobenzene (PID) 112 % 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	48.0	16.0	11/15/2023	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	11/14/2023	ND	192	96.2	200	1.56	
DRO >C10-C28*	148	10.0	11/14/2023	ND	170	84.9	200	3.37	
EXT DRO >C28-C36	<10.0	10.0	11/14/2023	ND					

Surrogate: 1-Chlorooctane 80.4 % 48.2-134

Surrogate: 1-Chlorooctadecane 76.2 % 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: 11/13/2023  
Reported: 11/16/2023  
Project Name: VACA WEST TANK BATTERY  
Project Number: 03C2012037  
Project Location: BTA - ( 32.138089-103.565047 )

Sampling Date: 11/13/2023  
Sampling Type: Soil  
Sampling Condition: Cool & Intact  
Sample Received By: Dionica Hinojos

**Sample ID: FS 15 @ 4' (H236204-04)**

BTEx 8021B		mg/kg	Analyzed By: JH					S-04	
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	11/15/2023	ND	2.05	103	2.00	0.688	
Toluene*	<0.050	0.050	11/15/2023	ND	2.08	104	2.00	0.764	
Ethylbenzene*	<0.050	0.050	11/15/2023	ND	2.08	104	2.00	0.765	
<b>Total Xylenes*</b>	<b>0.677</b>	0.150	11/15/2023	ND	6.54	109	6.00	0.897	GC-NC1
<b>Total BTEX</b>	<b>0.677</b>	0.300	11/15/2023	ND					GC-NC1

Surrogate: 4-Bromofluorobenzene (PID) 138 % 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
<b>Chloride</b>	<b>32.0</b>	16.0	11/15/2023	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
<b>GRO C6-C10*</b>	<b>23.9</b>	10.0	11/14/2023	ND	192	96.2	200	1.56	
<b>DRO &gt;C10-C28*</b>	<b>420</b>	10.0	11/14/2023	ND	170	84.9	200	3.37	
<b>EXT DRO &gt;C28-C36</b>	<b>48.1</b>	10.0	11/14/2023	ND					

Surrogate: 1-Chlorooctane 77.8 % 48.2-134

Surrogate: 1-Chlorooctadecane 74.6 % 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: 11/13/2023  
Reported: 11/16/2023  
Project Name: VACA WEST TANK BATTERY  
Project Number: 03C2012037  
Project Location: BTA - ( 32.138089-103.565047 )

Sampling Date: 11/13/2023  
Sampling Type: Soil  
Sampling Condition: Cool & Intact  
Sample Received By: Dionica Hinojos

**Sample ID: FS 16 @ 4' (H236204-05)**

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	11/15/2023	ND	2.05	103	2.00	0.688		
Toluene*	<0.050	0.050	11/15/2023	ND	2.08	104	2.00	0.764		
Ethylbenzene*	<0.050	0.050	11/15/2023	ND	2.08	104	2.00	0.765		
Total Xylenes*	0.319	0.150	11/15/2023	ND	6.54	109	6.00	0.897	GC-NC1	
Total BTEX	0.319	0.300	11/15/2023	ND					GC-NC1	

Surrogate: 4-Bromofluorobenzene (PID) 123 % 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	
<b>Chloride</b>	<b>16.0</b>	16.0	11/15/2023	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*	16.6	10.0	11/14/2023	ND	192	96.2	200	1.56	
DRO >C10-C28*	330	10.0	11/14/2023	ND	170	84.9	200	3.37	
EXT DRO >C28-C36	45.7	10.0	11/14/2023	ND					

Surrogate: 1-Chlorooctane 78.6 % 48.2-134

Surrogate: 1-Chlorooctadecane 73.1 % 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: 11/13/2023  
Reported: 11/16/2023  
Project Name: VACA WEST TANK BATTERY  
Project Number: 03C2012037  
Project Location: BTA - ( 32.138089-103.565047 )

Sampling Date: 11/13/2023  
Sampling Type: Soil  
Sampling Condition: Cool & Intact  
Sample Received By: Dionica Hinojos

**Sample ID: FS 17 @ 4' (H236204-06)**

BTEx 8021B		mg/kg	Analyzed By: JH					S-04	
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	11/15/2023	ND	2.05	103	2.00	0.688	
<b>Toluene*</b>	<b>0.289</b>	0.050	11/15/2023	ND	2.08	104	2.00	0.764	GC-NC1
Ethylbenzene*	<0.050	0.050	11/15/2023	ND	2.08	104	2.00	0.765	
<b>Total Xylenes*</b>	<b>4.26</b>	0.150	11/15/2023	ND	6.54	109	6.00	0.897	GC-NC1
<b>Total BTEX</b>	<b>4.55</b>	0.300	11/15/2023	ND					GC-NC1

Surrogate: 4-Bromofluorobenzene (PID) 184 % 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
<b>Chloride</b>	<b>64.0</b>	16.0	11/15/2023	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
<b>GRO C6-C10*</b>	<b>139</b>	10.0	11/14/2023	ND	192	96.2	200	1.56	
<b>DRO &gt;C10-C28*</b>	<b>1880</b>	10.0	11/14/2023	ND	170	84.9	200	3.37	
<b>EXT DRO &gt;C28-C36</b>	<b>332</b>	10.0	11/14/2023	ND					

Surrogate: 1-Chlorooctane 87.1 % 48.2-134

Surrogate: 1-Chlorooctadecane 116 % 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: 11/13/2023  
Reported: 11/16/2023  
Project Name: VACA WEST TANK BATTERY  
Project Number: 03C2012037  
Project Location: BTA - ( 32.138089-103.565047 )

Sampling Date: 11/13/2023  
Sampling Type: Soil  
Sampling Condition: Cool & Intact  
Sample Received By: Dionica Hinojos

**Sample ID: FS 18 @ 4.5' (H236204-07)**

BTEx 8021B		mg/kg	Analyzed By: JH					S-04	
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	11/15/2023	ND	2.05	103	2.00	0.688	
Toluene*	<b>0.273</b>	0.050	11/15/2023	ND	2.08	104	2.00	0.764	GC-NC1
Ethylbenzene*	<b>0.209</b>	0.050	11/15/2023	ND	2.08	104	2.00	0.765	GC-NC1
Total Xylenes*	<b>3.93</b>	0.150	11/15/2023	ND	6.54	109	6.00	0.897	GC-NC1
Total BTEX	<b>4.41</b>	0.300	11/15/2023	ND					GC-NC1

Surrogate: 4-Bromofluorobenzene (PID) 159 % 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	<b>32.0</b>	16.0	11/15/2023	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*	<b>114</b>	10.0	11/14/2023	ND	192	96.2	200	1.56	
DRO >C10-C28*	<b>1280</b>	10.0	11/14/2023	ND	170	84.9	200	3.37	
EXT DRO >C28-C36	<b>210</b>	10.0	11/14/2023	ND					

Surrogate: 1-Chlorooctane 82.4 % 48.2-134

Surrogate: 1-Chlorooctadecane 96.2 % 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: 11/13/2023  
Reported: 11/16/2023  
Project Name: VACA WEST TANK BATTERY  
Project Number: 03C2012037  
Project Location: BTA - ( 32.138089-103.565047 )

Sampling Date: 11/13/2023  
Sampling Type: Soil  
Sampling Condition: Cool & Intact  
Sample Received By: Dionica Hinojos

**Sample ID: SW 07 @ 0-4' (H236204-08)**

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	11/15/2023	ND	2.05	103	2.00	0.688		
Toluene*	<0.050	0.050	11/15/2023	ND	2.08	104	2.00	0.764		
Ethylbenzene*	<0.050	0.050	11/15/2023	ND	2.08	104	2.00	0.765		
Total Xylenes*	<0.150	0.150	11/15/2023	ND	6.54	109	6.00	0.897		
Total BTEX	<0.300	0.300	11/15/2023	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	64.0	16.0	11/15/2023	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	11/14/2023	ND	192	96.2	200	1.56	
DRO >C10-C28*	10.6	10.0	11/14/2023	ND	170	84.9	200	3.37	
EXT DRO >C28-C36	<10.0	10.0	11/14/2023	ND					

Surrogate: 1-Chlorooctane 63.4 % 48.2-134

Surrogate: 1-Chlorooctadecane 58.5 % 49.1-148

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\*=Accredited Analyte

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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.
- QR-03           The RPD value for the sample duplicate or MS/MSD was outside of QC acceptance limits due to matrix interference. QC batch accepted based on LCS and/or LCSD recovery and/or RPD values.
- QM-07           The spike recovery was outside acceptance limits for the MS and/or MSD. The batch was accepted based on acceptable LCS recovery.
- GC-NC1           8260 confirmation analysis was performed; initial GC results were not supported by GC/MS analysis and are biased high with interfering compounds.
- ND            Analyte NOT DETECTED at or above the reporting limit
- RPD            Relative Percent Difference
- \*\*            Samples not received at proper temperature of 6°C or below.
- \*\*\*            Insufficient time to reach temperature.
- Chloride by SM4500Cl-B does not require samples be received at or below 6°C
- Samples reported on an as received basis (wet) unless otherwise noted on report

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\_\_\_\_\_  
Celey D. Keene, Lab Director/Quality Manager





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

# CHAIN-OF CUSTODY AND ANALYSIS REQUEST

Company Name: <u>Ensolum LLC</u>				<b>BILL TO</b>				<b>ANALYSIS REQUEST</b>															
Project Manager: <u>Hadiwe Green</u>				P.O. #:																			
Address: <u>31822 National Parks Hwy</u>				Company: <u>BTA O.I</u>																			
City: <u>Carlsbad</u> State: <u>NM</u> Zip: <u>88220</u>				Attn: <u>Kelvin Beard</u>																			
Phone #: <u>432-557-8895</u> Fax #:				Address: <u>104 S. Pease St</u>																			
Project #: <u>03C2012037</u> Project Owner: <u>BTA O.I</u>				City: <u>Midland</u>																			
Project Name: <u>Vaca West Tank Battery</u>				State: <u>TX</u> Zip: <u>79701</u>																			
Project Location: <u>32.138089, -103.565047</u>				Phone #:																			
Sampler Name: <u>Bonnie Hayes</u>				Fax #:																			
FOR LAB USE ONLY				MATRIX		PRESERV.		SAMPLING															
Lab I.D.	Sample I.D.	(GRAB OR C)OMP.	# CONTAINERS	GROUNDWATER	WASTEWATER	SOIL	OIL	SLUDGE	OTHER:	ACID/BASE:	ICE / COOL	OTHER:	DATE	TIME									
<u>H236204</u>																							
1	FS12 @ 4.5'	C	1			X					X		11/13/23	1332	X	X	X						
2	FS13 @ 4'	C	1											1312									
3	FS14 @ 4'	C	1											1320									
4	FS15 @ 4'	C	1											1323									
5	FS16 @ 4'	C	1											1325									
6	FS17 @ 4'	C	1											1328									
7	FS18 @ 4.5'	C	1											1330									
8	SL07 @ 4'	C	1											1345									

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Relinquished By: <u>[Signature]</u>	Date: <u>11-13-23</u>	Received By: <u>[Signature]</u>	Verbal Result: <input type="checkbox"/> Yes <input type="checkbox"/> No Add'l Phone #:
	Time: <u>15:40</u>		All Results are emailed. Please provide Email address:
			<u>hageer@ensolum.com</u>
Relinquished By:	Date:	Received By:	REMARKS:
	Time:		
Delivered By: (Circle One)	Observed Temp. °C <u>3.1</u>	Sample Condition	Turnaround Time: <input checked="" type="checkbox"/> Standard <input type="checkbox"/> Rush
Sampler - UPS - Bus - Other:	Corrected Temp. °C	Cool <input checked="" type="checkbox"/> Intact <input checked="" type="checkbox"/> <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Yes <input type="checkbox"/> No	Bacteria (only) Sample Condition Cool <input type="checkbox"/> Intact <input type="checkbox"/> <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Yes <input type="checkbox"/> No
		CHECKED BY: (Initials) <u>[Signature]</u>	Thermometer ID #140 Correction Factor 0°C
			Observed Temp. °C Corrected Temp. °C

FORM 606-R 3-4-07/11/23

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



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

November 21, 2023

HADLIE GREEN

ENSOLUM

3122 NATIONAL PARKS HWY

CARLSBAD, NM 88220

RE: VACA WEST TANK BATTERY

Enclosed are the results of analyses for samples received by the laboratory on 11/16/23 9:13.

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](http://www.tceq.texas.gov/field/qa/lab_accred_certif.html).

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

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

Accreditation applies to public drinking water matrices.

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

Sincerely,

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

Mike Snyder For 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: 11/16/2023  
Reported: 11/21/2023  
Project Name: VACA WEST TANK BATTERY  
Project Number: 03C2012037  
Project Location: BTA - ( 32.138089-103.565047 )

Sampling Date: 11/09/2023  
Sampling Type: Soil  
Sampling Condition: Cool & Intact  
Sample Received By: Shalyn Rodriguez

**Sample ID: FS 01 4' (H236267-01)**

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	11/17/2023	ND	2.07	103	2.00	3.94	
Toluene*	<0.050	0.050	11/17/2023	ND	2.08	104	2.00	1.21	
Ethylbenzene*	<0.050	0.050	11/17/2023	ND	2.07	104	2.00	1.27	
Total Xylenes*	<0.150	0.150	11/17/2023	ND	6.14	102	6.00	0.643	
Total BTX	<0.300	0.300	11/17/2023	ND					

Surrogate: 4-Bromofluorobenzene (PID) 113 % 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	11/17/2023	ND	416	104	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	11/17/2023	ND	208	104	200	1.42	
DRO >C10-C28*	<10.0	10.0	11/17/2023	ND	219	110	200	0.831	
EXT DRO >C28-C36	<10.0	10.0	11/17/2023	ND					

Surrogate: 1-Chlorooctane 105 % 48.2-134

Surrogate: 1-Chlorooctadecane 123 % 49.1-148

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\*=Accredited Analyte

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Mike Snyder For 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: 11/16/2023  
Reported: 11/21/2023  
Project Name: VACA WEST TANK BATTERY  
Project Number: 03C2012037  
Project Location: BTA - ( 32.138089-103.565047 )

Sampling Date: 11/09/2023  
Sampling Type: Soil  
Sampling Condition: Cool & Intact  
Sample Received By: Shalyn Rodriguez

**Sample ID: FS 02 4' (H236267-02)**

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	11/17/2023	ND	2.07	103	2.00	3.94		
Toluene*	<0.050	0.050	11/17/2023	ND	2.08	104	2.00	1.21		
Ethylbenzene*	<0.050	0.050	11/17/2023	ND	2.07	104	2.00	1.27		
Total Xylenes*	<0.150	0.150	11/17/2023	ND	6.14	102	6.00	0.643		
Total BTEX	<0.300	0.300	11/17/2023	ND						

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

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	32.0	16.0	11/17/2023	ND	416	104	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	11/17/2023	ND	208	104	200	1.42	
DRO >C10-C28*	25.5	10.0	11/17/2023	ND	219	110	200	0.831	
EXT DRO >C28-C36	<10.0	10.0	11/17/2023	ND					

Surrogate: 1-Chlorooctane 106 % 48.2-134

Surrogate: 1-Chlorooctadecane 125 % 49.1-148

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\*=Accredited Analyte

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Mike Snyder For 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: 11/16/2023  
Reported: 11/21/2023  
Project Name: VACA WEST TANK BATTERY  
Project Number: 03C2012037  
Project Location: BTA - ( 32.138089-103.565047 )

Sampling Date: 11/10/2023  
Sampling Type: Soil  
Sampling Condition: Cool & Intact  
Sample Received By: Shalyn Rodriguez

**Sample ID: FS 03 4' (H236267-03)**

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	11/17/2023	ND	2.21	111	2.00	1.51	
Toluene*	<0.050	0.050	11/17/2023	ND	2.19	110	2.00	1.88	
Ethylbenzene*	<0.050	0.050	11/17/2023	ND	2.16	108	2.00	1.77	
Total Xylenes*	<0.150	0.150	11/17/2023	ND	6.75	112	6.00	1.18	
Total BTEX	<0.300	0.300	11/17/2023	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	<16.0	16.0	11/17/2023	ND	464	116	400	10.9		

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	11/17/2023	ND	208	104	200	1.42	
DRO >C10-C28*	74.4	10.0	11/17/2023	ND	219	110	200	0.831	
EXT DRO >C28-C36	<10.0	10.0	11/17/2023	ND					

Surrogate: 1-Chlorooctane 96.4 % 48.2-134

Surrogate: 1-Chlorooctadecane 112 % 49.1-148

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Mike Snyder For 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: 11/16/2023  
Reported: 11/21/2023  
Project Name: VACA WEST TANK BATTERY  
Project Number: 03C2012037  
Project Location: BTA - ( 32.138089-103.565047 )

Sampling Date: 11/10/2023  
Sampling Type: Soil  
Sampling Condition: Cool & Intact  
Sample Received By: Shalyn Rodriguez

**Sample ID: FS 04 4' (H236267-04)**

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	11/17/2023	ND	2.21	111	2.00	1.51	
Toluene*	<0.050	0.050	11/17/2023	ND	2.19	110	2.00	1.88	
Ethylbenzene*	<0.050	0.050	11/17/2023	ND	2.16	108	2.00	1.77	
Total Xylenes*	<0.150	0.150	11/17/2023	ND	6.75	112	6.00	1.18	
Total BTEX	<0.300	0.300	11/17/2023	ND					

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

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	16.0	16.0	11/17/2023	ND	464	116	400	10.9		

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	11/17/2023	ND	208	104	200	1.42	
DRO >C10-C28*	<10.0	10.0	11/17/2023	ND	219	110	200	0.831	
EXT DRO >C28-C36	<10.0	10.0	11/17/2023	ND					

Surrogate: 1-Chlorooctane 99.5 % 48.2-134

Surrogate: 1-Chlorooctadecane 116 % 49.1-148

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Mike Snyder For 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: 11/16/2023  
Reported: 11/21/2023  
Project Name: VACA WEST TANK BATTERY  
Project Number: 03C2012037  
Project Location: BTA - ( 32.138089-103.565047 )

Sampling Date: 11/10/2023  
Sampling Type: Soil  
Sampling Condition: Cool & Intact  
Sample Received By: Shalyn Rodriguez

**Sample ID: FS 05 4' (H236267-05)**

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	11/17/2023	ND	2.21	111	2.00	1.51	
Toluene*	<0.050	0.050	11/17/2023	ND	2.19	110	2.00	1.88	
Ethylbenzene*	<0.050	0.050	11/17/2023	ND	2.16	108	2.00	1.77	
Total Xylenes*	<0.150	0.150	11/17/2023	ND	6.75	112	6.00	1.18	
Total BTEX	<0.300	0.300	11/17/2023	ND					

Surrogate: 4-Bromofluorobenzene (PID) 102 % 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	<16.0	16.0	11/17/2023	ND	464	116	400	10.9		

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	11/17/2023	ND	208	104	200	1.42	
DRO >C10-C28*	<10.0	10.0	11/17/2023	ND	219	110	200	0.831	
EXT DRO >C28-C36	<10.0	10.0	11/17/2023	ND					

Surrogate: 1-Chlorooctane 103 % 48.2-134

Surrogate: 1-Chlorooctadecane 120 % 49.1-148

Cardinal Laboratories

\*=Accredited Analyte

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Mike Snyder For 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: 11/16/2023  
Reported: 11/21/2023  
Project Name: VACA WEST TANK BATTERY  
Project Number: 03C2012037  
Project Location: BTA - ( 32.138089-103.565047 )

Sampling Date: 11/10/2023  
Sampling Type: Soil  
Sampling Condition: Cool & Intact  
Sample Received By: Shalyn Rodriguez

**Sample ID: FS 06 4' (H236267-06)**

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	11/17/2023	ND	2.21	111	2.00	1.51		
Toluene*	<0.050	0.050	11/17/2023	ND	2.19	110	2.00	1.88		
Ethylbenzene*	<0.050	0.050	11/17/2023	ND	2.16	108	2.00	1.77		
Total Xylenes*	<0.150	0.150	11/17/2023	ND	6.75	112	6.00	1.18		
Total BTEX	<0.300	0.300	11/17/2023	ND						

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

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	112	16.0	11/17/2023	ND	464	116	400	10.9		

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	11/17/2023	ND	208	104	200	1.42	
DRO >C10-C28*	<10.0	10.0	11/17/2023	ND	219	110	200	0.831	
EXT DRO >C28-C36	<10.0	10.0	11/17/2023	ND					

Surrogate: 1-Chlorooctane 121 % 48.2-134

Surrogate: 1-Chlorooctadecane 141 % 49.1-148

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Mike Snyder For 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: 11/16/2023  
Reported: 11/21/2023  
Project Name: VACA WEST TANK BATTERY  
Project Number: 03C2012037  
Project Location: BTA - ( 32.138089-103.565047 )

Sampling Date: 11/10/2023  
Sampling Type: Soil  
Sampling Condition: Cool & Intact  
Sample Received By: Shalyn Rodriguez

**Sample ID: FS 07 4' (H236267-07)**

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	11/17/2023	ND	2.21	111	2.00	1.51	
Toluene*	<0.050	0.050	11/17/2023	ND	2.19	110	2.00	1.88	
Ethylbenzene*	<0.050	0.050	11/17/2023	ND	2.16	108	2.00	1.77	
Total Xylenes*	<0.150	0.150	11/17/2023	ND	6.75	112	6.00	1.18	
Total BTEX	<0.300	0.300	11/17/2023	ND					

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

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	32.0	16.0	11/17/2023	ND	464	116	400	10.9	

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	11/17/2023	ND	208	104	200	1.42	
DRO >C10-C28*	29.8	10.0	11/17/2023	ND	219	110	200	0.831	
EXT DRO >C28-C36	<10.0	10.0	11/17/2023	ND					

Surrogate: 1-Chlorooctane 102 % 48.2-134

Surrogate: 1-Chlorooctadecane 120 % 49.1-148

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Mike Snyder For 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: 11/16/2023  
Reported: 11/21/2023  
Project Name: VACA WEST TANK BATTERY  
Project Number: 03C2012037  
Project Location: BTA - ( 32.138089-103.565047 )

Sampling Date: 11/10/2023  
Sampling Type: Soil  
Sampling Condition: Cool & Intact  
Sample Received By: Shalyn Rodriguez

**Sample ID: FS 08 4' (H236267-08)**

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	11/17/2023	ND	2.21	111	2.00	1.51		
Toluene*	<0.050	0.050	11/17/2023	ND	2.19	110	2.00	1.88		
Ethylbenzene*	<0.050	0.050	11/17/2023	ND	2.16	108	2.00	1.77		
Total Xylenes*	<0.150	0.150	11/17/2023	ND	6.75	112	6.00	1.18		
Total BTEX	<0.300	0.300	11/17/2023	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	<16.0	16.0	11/17/2023	ND	464	116	400	10.9		

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	11/17/2023	ND	208	104	200	1.42	
DRO >C10-C28*	<10.0	10.0	11/17/2023	ND	219	110	200	0.831	
EXT DRO >C28-C36	<10.0	10.0	11/17/2023	ND					

Surrogate: 1-Chlorooctane 104 % 48.2-134

Surrogate: 1-Chlorooctadecane 122 % 49.1-148

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Mike Snyder For 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: 11/16/2023  
Reported: 11/21/2023  
Project Name: VACA WEST TANK BATTERY  
Project Number: 03C2012037  
Project Location: BTA - ( 32.138089-103.565047 )

Sampling Date: 11/10/2023  
Sampling Type: Soil  
Sampling Condition: Cool & Intact  
Sample Received By: Shalyn Rodriguez

**Sample ID: FS 09 4' (H236267-09)**

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	11/17/2023	ND	2.21	111	2.00	1.51		
Toluene*	<0.050	0.050	11/17/2023	ND	2.19	110	2.00	1.88		
Ethylbenzene*	<0.050	0.050	11/17/2023	ND	2.16	108	2.00	1.77		
<b>Total Xylenes*</b>	<b>0.386</b>	0.150	11/17/2023	ND	6.75	112	6.00	1.18	GC-NC1	
<b>Total BTEX</b>	<b>0.386</b>	0.300	11/17/2023	ND					GC-NC1	

Surrogate: 4-Bromofluorobenzene (PID) 127 % 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	64.0	16.0	11/17/2023	ND	464	116	400	10.9		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	12.0	10.0	11/17/2023	ND	208	104	200	1.42	
DRO >C10-C28*	597	10.0	11/17/2023	ND	219	110	200	0.831	
EXT DRO >C28-C36	73.2	10.0	11/17/2023	ND					

Surrogate: 1-Chlorooctane 105 % 48.2-134

Surrogate: 1-Chlorooctadecane 122 % 49.1-148

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Mike Snyder For 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: 11/16/2023  
Reported: 11/21/2023  
Project Name: VACA WEST TANK BATTERY  
Project Number: 03C2012037  
Project Location: BTA - ( 32.138089-103.565047 )

Sampling Date: 11/10/2023  
Sampling Type: Soil  
Sampling Condition: Cool & Intact  
Sample Received By: Shalyn Rodriguez

**Sample ID: FS 10 4' (H236267-10)**

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	11/17/2023	ND	2.21	111	2.00	1.51	
Toluene*	<0.050	0.050	11/17/2023	ND	2.19	110	2.00	1.88	
Ethylbenzene*	<0.050	0.050	11/17/2023	ND	2.16	108	2.00	1.77	
<b>Total Xylenes*</b>	<b>1.00</b>	0.150	11/17/2023	ND	6.75	112	6.00	1.18	GC-NC1
<b>Total BTEX</b>	<b>1.00</b>	0.300	11/17/2023	ND					GC-NC1

Surrogate: 4-Bromofluorobenzene (PID) 133 % 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	48.0	16.0	11/17/2023	ND	464	116	400	10.9		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	17.0	10.0	11/17/2023	ND	208	104	200	1.42	
DRO >C10-C28*	376	10.0	11/17/2023	ND	219	110	200	0.831	
EXT DRO >C28-C36	52.0	10.0	11/17/2023	ND					

Surrogate: 1-Chlorooctane 107 % 48.2-134

Surrogate: 1-Chlorooctadecane 125 % 49.1-148

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Mike Snyder For 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: 11/16/2023  
Reported: 11/21/2023  
Project Name: VACA WEST TANK BATTERY  
Project Number: 03C2012037  
Project Location: BTA - ( 32.138089-103.565047 )

Sampling Date: 11/10/2023  
Sampling Type: Soil  
Sampling Condition: Cool & Intact  
Sample Received By: Shalyn Rodriguez

**Sample ID: FS 11 4' (H236267-11)**

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	11/17/2023	ND	2.21	111	2.00	1.51		
Toluene*	<0.050	0.050	11/17/2023	ND	2.19	110	2.00	1.88		
Ethylbenzene*	<0.050	0.050	11/17/2023	ND	2.16	108	2.00	1.77		
Total Xylenes*	<0.150	0.150	11/17/2023	ND	6.75	112	6.00	1.18		
Total BTEX	<0.300	0.300	11/17/2023	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	32.0	16.0	11/17/2023	ND	464	116	400	10.9		

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	11/17/2023	ND	208	104	200	1.42	
DRO >C10-C28*	144	10.0	11/17/2023	ND	219	110	200	0.831	
EXT DRO >C28-C36	15.8	10.0	11/17/2023	ND					

Surrogate: 1-Chlorooctane 103 % 48.2-134

Surrogate: 1-Chlorooctadecane 123 % 49.1-148

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Mike Snyder For 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: 11/16/2023  
Reported: 11/21/2023  
Project Name: VACA WEST TANK BATTERY  
Project Number: 03C2012037  
Project Location: BTA - ( 32.138089-103.565047 )

Sampling Date: 11/09/2023  
Sampling Type: Soil  
Sampling Condition: Cool & Intact  
Sample Received By: Shalyn Rodriguez

**Sample ID: SW 01 0-4 (H236267-12)**

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	11/17/2023	ND	2.21	111	2.00	1.51	
Toluene*	<0.050	0.050	11/17/2023	ND	2.19	110	2.00	1.88	
Ethylbenzene*	<0.050	0.050	11/17/2023	ND	2.16	108	2.00	1.77	
Total Xylenes*	<0.150	0.150	11/17/2023	ND	6.75	112	6.00	1.18	
Total BTEX	<0.300	0.300	11/17/2023	ND					

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

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	64.0	16.0	11/17/2023	ND	464	116	400	10.9		

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	11/17/2023	ND	208	104	200	1.42	
DRO >C10-C28*	<10.0	10.0	11/17/2023	ND	219	110	200	0.831	
EXT DRO >C28-C36	<10.0	10.0	11/17/2023	ND					

Surrogate: 1-Chlorooctane 107 % 48.2-134

Surrogate: 1-Chlorooctadecane 127 % 49.1-148

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Mike Snyder For 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: 11/16/2023  
Reported: 11/21/2023  
Project Name: VACA WEST TANK BATTERY  
Project Number: 03C2012037  
Project Location: BTA - ( 32.138089-103.565047 )

Sampling Date: 11/10/2023  
Sampling Type: Soil  
Sampling Condition: Cool & Intact  
Sample Received By: Shalyn Rodriguez

**Sample ID: SW 02 0-4 (H236267-13)**

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	11/17/2023	ND	2.21	111	2.00	1.51		
Toluene*	<0.050	0.050	11/17/2023	ND	2.19	110	2.00	1.88		
Ethylbenzene*	<0.050	0.050	11/17/2023	ND	2.16	108	2.00	1.77		
Total Xylenes*	<0.150	0.150	11/17/2023	ND	6.75	112	6.00	1.18		
Total BTEX	<0.300	0.300	11/17/2023	ND						

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

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	64.0	16.0	11/17/2023	ND	464	116	400	10.9		

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	11/17/2023	ND	208	104	200	1.42	
DRO >C10-C28*	<10.0	10.0	11/17/2023	ND	219	110	200	0.831	
EXT DRO >C28-C36	<10.0	10.0	11/17/2023	ND					

Surrogate: 1-Chlorooctane 122 % 48.2-134

Surrogate: 1-Chlorooctadecane 139 % 49.1-148

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Mike Snyder For 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: 11/16/2023  
Reported: 11/21/2023  
Project Name: VACA WEST TANK BATTERY  
Project Number: 03C2012037  
Project Location: BTA - ( 32.138089-103.565047 )

Sampling Date: 11/09/2023  
Sampling Type: Soil  
Sampling Condition: Cool & Intact  
Sample Received By: Shalyn Rodriguez

**Sample ID: SW 03 0-4 (H236267-14)**

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	11/17/2023	ND	2.21	111	2.00	1.51		
Toluene*	<0.050	0.050	11/17/2023	ND	2.19	110	2.00	1.88		
Ethylbenzene*	<0.050	0.050	11/17/2023	ND	2.16	108	2.00	1.77		
Total Xylenes*	<0.150	0.150	11/17/2023	ND	6.75	112	6.00	1.18		
Total BTEX	<0.300	0.300	11/17/2023	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	48.0	16.0	11/17/2023	ND	464	116	400	10.9		

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	11/17/2023	ND	208	104	200	1.42	
DRO >C10-C28*	21.0	10.0	11/17/2023	ND	219	110	200	0.831	
EXT DRO >C28-C36	<10.0	10.0	11/17/2023	ND					

Surrogate: 1-Chlorooctane 116 % 48.2-134

Surrogate: 1-Chlorooctadecane 137 % 49.1-148

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\*=Accredited Analyte

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Mike Snyder For 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: 11/16/2023  
Reported: 11/21/2023  
Project Name: VACA WEST TANK BATTERY  
Project Number: 03C2012037  
Project Location: BTA - ( 32.138089-103.565047 )

Sampling Date: 11/10/2023  
Sampling Type: Soil  
Sampling Condition: Cool & Intact  
Sample Received By: Shalyn Rodriguez

**Sample ID: SW 04 0-4 (H236267-15)**

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	11/17/2023	ND	2.21	111	2.00	1.51		
Toluene*	<0.050	0.050	11/17/2023	ND	2.19	110	2.00	1.88		
Ethylbenzene*	<0.050	0.050	11/17/2023	ND	2.16	108	2.00	1.77		
Total Xylenes*	<0.150	0.150	11/17/2023	ND	6.75	112	6.00	1.18		
Total BTEX	<0.300	0.300	11/17/2023	ND						

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

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	48.0	16.0	11/17/2023	ND	464	116	400	10.9		

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	11/17/2023	ND	208	104	200	1.42	
DRO >C10-C28*	21.3	10.0	11/17/2023	ND	219	110	200	0.831	
EXT DRO >C28-C36	<10.0	10.0	11/17/2023	ND					

Surrogate: 1-Chlorooctane 93.5 % 48.2-134

Surrogate: 1-Chlorooctadecane 111 % 49.1-148

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Mike Snyder For 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: 11/16/2023  
Reported: 11/21/2023  
Project Name: VACA WEST TANK BATTERY  
Project Number: 03C2012037  
Project Location: BTA - ( 32.138089-103.565047 )

Sampling Date: 11/10/2023  
Sampling Type: Soil  
Sampling Condition: Cool & Intact  
Sample Received By: Shalyn Rodriguez

**Sample ID: SW 05 0-4 (H236267-16)**

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	11/17/2023	ND	2.21	111	2.00	1.51		
Toluene*	<0.050	0.050	11/17/2023	ND	2.19	110	2.00	1.88		
Ethylbenzene*	<0.050	0.050	11/17/2023	ND	2.16	108	2.00	1.77		
Total Xylenes*	<0.150	0.150	11/17/2023	ND	6.75	112	6.00	1.18		
Total BTEX	<0.300	0.300	11/17/2023	ND						

Surrogate: 4-Bromofluorobenzene (PID) 102 % 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	48.0	16.0	11/17/2023	ND	464	116	400	10.9		

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	11/17/2023	ND	189	94.6	200	1.32	
DRO >C10-C28*	<10.0	10.0	11/17/2023	ND	181	90.6	200	0.629	
EXT DRO >C28-C36	<10.0	10.0	11/17/2023	ND					

Surrogate: 1-Chlorooctane 96.8 % 48.2-134

Surrogate: 1-Chlorooctadecane 102 % 49.1-148

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Mike Snyder For 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: 11/16/2023  
Reported: 11/21/2023  
Project Name: VACA WEST TANK BATTERY  
Project Number: 03C2012037  
Project Location: BTA - ( 32.138089-103.565047 )

Sampling Date: 11/10/2023  
Sampling Type: Soil  
Sampling Condition: Cool & Intact  
Sample Received By: Shalyn Rodriguez

**Sample ID: SW 06 0-4 (H236267-17)**

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	11/17/2023	ND	2.21	111	2.00	1.51		
Toluene*	<0.050	0.050	11/17/2023	ND	2.19	110	2.00	1.88		
Ethylbenzene*	<0.050	0.050	11/17/2023	ND	2.16	108	2.00	1.77		
Total Xylenes*	<0.150	0.150	11/17/2023	ND	6.75	112	6.00	1.18		
Total BTEx	<0.300	0.300	11/17/2023	ND						

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

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	64.0	16.0	11/17/2023	ND	464	116	400	10.9		

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	11/17/2023	ND	189	94.6	200	1.32	
DRO >C10-C28*	<10.0	10.0	11/17/2023	ND	181	90.6	200	0.629	
EXT DRO >C28-C36	<10.0	10.0	11/17/2023	ND					

Surrogate: 1-Chlorooctane 84.3 % 48.2-134

Surrogate: 1-Chlorooctadecane 90.4 % 49.1-148

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





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### Notes and Definitions

QM-07	The spike recovery was outside acceptance limits for the MS and/or MSD. The batch was accepted based on acceptable LCS recovery.
GC-NC1	8260 confirmation analysis was performed; initial GC results were not supported by GC/MS analysis and are biased high with interfering compounds.
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 "Mike Snyder", is written over a horizontal line.

Mike Snyder For 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

Company Name: Ensolum, LLC				<b>BILL TO</b>				<b>ANALYSIS REQUEST</b>																				
Project Manager: Hadlie Green				P.O. #:																								
Address: 3122 National Parks Hwy				Company: BTA Oil																								
City: Carlsbad State: NM Zip: 88220				Attn: Kelton Beaird																								
Phone #: 432-557-8895 Fax #:				Address: 104 S Pecos St.																								
Project #: 03C2012037 Project Owner: BTA Oil				City: Midland																								
Project Name: Vaca West Tank Battery				State: Texas Zip: 79701																								
Project Location: 32.138089, -103.565047				Phone #:																								
Sampler Name: Ronni Hayes				Fax #:																								
FOR LAB USE ONLY																												
Lab I.D.	Sample I.D.	Depth (feet)	(G)RAB OR (C)OMP.	# CONTAINERS	MATRIX					PRESERV.		SAMPLING																
					GROUNDWATER	WASTEWATER	SOIL	OIL	SLUDGE	OTHER :	ACID/BASE:	ICE / COOL	OTHER :	DATE	TIME													
H23102307	FS01	4'	C	1			X				X			11/9/23	1417	TPH	CI-	BTEX										
1	FS02	4'	C	1			X				X			11/9/23	1415													
2	FS03	4'	C	1			X				X			11/10/23	1156													
3	FS04	4'	C	1			X				X			11/10/23	1154													
4	FS05	4'	C	1			X				X			11/10/23	1150													
5	FS06	4'	C	1			X				X			11/10/23	1148													
6	FS07	4'	C	1			X				X			11/10/23	1159													
7	FS08	1'	C	1			X				X			11/16/23	1306													
8	FS09	4'	C	1			X				X			11/10/23	1315													
9	FS10	4'	C	1			X				X			11/10/23	1310													
10																												

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Relinquished By:		Date: 11-16-23	Received By:		Verbal Result: <input type="checkbox"/> Yes <input type="checkbox"/> No Add'l Phone #:	
Time: 0913		Time:		All Results are emailed. Please provide Email address:		
Relinquished By:		Date:	Received By:		REMARKS:	
Time:						
Delivered By: (Circle One)		Observed Temp. °C	Sample Condition		CHECKED BY: (Initials)	
Sampler - UPS - Bus - Other:		Corrected Temp. °C	Cool Intact		Turnaround Time: Standard <input checked="" type="checkbox"/> Rush <input type="checkbox"/>	
			<input type="checkbox"/> Yes <input type="checkbox"/> No		Thermometer ID: #113	
			<input type="checkbox"/> No <input type="checkbox"/> Yes		Correction Factor: -0.5 °C	
					Bacteria (only) Sample Condition	
					Cool Intact Observed Temp. °C	
					<input type="checkbox"/> Yes <input type="checkbox"/> No	
					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

Company Name: Ensolum, LLC				<b>BILL TO</b>				<b>ANALYSIS REQUEST</b>													
Project Manager: Hadlie Green				P.O. #:																	
Address: 3122 National Parks Hwy				Company: BTA Oil																	
City: Carlsbad		State: NM		Zip: 88220		Attn: Kelton Beard															
Phone #: 432-557-8895		Fax #:		Address: 104 S Pecos St.																	
Project #: 03C2012037		Project Owner: BTA Oil		City: Midland																	
Project Name: Vaca West Tank Battery				State: Texas Zip: 79701																	
Project Location: 32.138089, -103.565047				Phone #:																	
Sampler Name: Ronni Hayes				Fax #:																	
FOR LAB USE ONLY																					
Lab I.D.	Sample I.D.	Depth (feet)	(GRAB OR C/COMP.) # CONTAINERS	MATRIX					PRESERV.		SAMPLING		DATE	TIME	CI-	TPH	BTEx				
				GROUNDWATER	WASTEWATER	SOIL	OIL	SLUDGE	OTHER :	ACID/BASE:	ICE / COOL	OTHER :									
H23023107	FS11	4'	C 1				X			X			11/10/23	1308	X	X	X				
12	SW01	0-4	C 1				X			X			11/9/23	1430							
13	SW02	0-4	C 1				X			X			11/10/23	1125							
14	SW03	0-4	C 1				X			X			11/9/23	1427							
15	SW04	0-4	C 1				X			X			11/10/23	0946							
16	SW05	0-4	C 1				X			X			11/10/23	0941							
17	SW06	0-1	C 1				X			X			11/10/23	0942							

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Relinquished By:		Date: 11-16-23	Received By:		Verbal Result: <input type="checkbox"/> Yes <input type="checkbox"/> No Add'l Phone #:	
Time: 0913		Time:		All Results are emailed. Please provide Email address: hgreen@ensolum.com		
Relinquished By:		Date:	Received By:		REMARKS:	
Time:		Time:				
Delivered By: (Circle One)		Observed Temp. °C: 17.2	Sample Condition Cool Intact <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No		Turnaround Time: Standard <input checked="" type="checkbox"/> Rush <input type="checkbox"/>	
Sampler - UPS - Bus - Other:		Corrected Temp. °C:	CHECKED BY: (Initials)		Bacteria (only) Sample Condition Cool Intact <input type="checkbox"/> Yes <input type="checkbox"/> No Observed Temp. °C	
					<input type="checkbox"/> Yes <input type="checkbox"/> No Corrected Temp. °C	
					Thermometer ID: #113 Correction Factor: -0.5°C #140	

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



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December 05, 2023

HADLIE GREEN

ENSOLUM, LLC

705 W WADLEY AVE.

MIDLAND, TX 79705

RE: VACA WEST TANK BATTERY

Enclosed are the results of analyses for samples received by the laboratory on 11/30/23 11:48.

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](http://www.tceq.texas.gov/field/qa/lab_accred_certif.html).

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

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

Accreditation applies to public drinking water matrices.

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

Sincerely,

A handwritten signature in black ink that reads "Celey D. Keene". The signature is written in a cursive style with a large, stylized 'C' and 'K'.

Celey D. Keene

Lab Director/Quality Manager





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

**Analytical Results For:**

ENSOLUM, LLC  
 HADLIE GREEN  
 705 W WADLEY AVE.  
 MIDLAND TX, 79705  
 Fax To:

Received: 11/30/2023  
 Reported: 12/05/2023  
 Project Name: VACA WEST TANK BATTERY  
 Project Number: 03C2012037  
 Project Location: BTA - ( 32.13802-103.56497 )

Sampling Date: 11/30/2023  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Dionica Hinojos

**Sample ID: FS09A 4.5' (H236447-01)**

BTEX 8021B		mg/kg		Analyzed By: JH/					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	11/30/2023	ND	2.23	111	2.00	5.29	
Toluene*	<0.050	0.050	11/30/2023	ND	2.20	110	2.00	5.72	
Ethylbenzene*	<0.050	0.050	11/30/2023	ND	2.17	109	2.00	5.55	
Total Xylenes*	<0.150	0.150	11/30/2023	ND	6.93	115	6.00	4.74	
Total BTEX	<0.300	0.300	11/30/2023	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	32.0	16.0	11/30/2023	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	11/30/2023	ND	217	108	200	8.07	
DRO >C10-C28*	<10.0	10.0	11/30/2023	ND	183	91.3	200	0.435	
EXT DRO >C28-C36	<10.0	10.0	11/30/2023	ND					

Surrogate: 1-Chlorooctane 72.2 % 48.2-134

Surrogate: 1-Chlorooctadecane 65.6 % 49.1-148

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Celey D. Keene, Lab Director/Quality Manager



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**Analytical Results For:**

ENSOLUM, LLC  
 HADLIE GREEN  
 705 W WADLEY AVE.  
 MIDLAND TX, 79705  
 Fax To:

Received: 11/30/2023  
 Reported: 12/05/2023  
 Project Name: VACA WEST TANK BATTERY  
 Project Number: 03C2012037  
 Project Location: BTA - ( 32.13802-103.56497 )

Sampling Date: 11/30/2023  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Dionica Hinojos

**Sample ID: FS10A 4.5' (H236447-02)**

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	11/30/2023	ND	2.23	111	2.00	5.29		
Toluene*	<0.050	0.050	11/30/2023	ND	2.20	110	2.00	5.72		
Ethylbenzene*	<0.050	0.050	11/30/2023	ND	2.17	109	2.00	5.55		
Total Xylenes*	<0.150	0.150	11/30/2023	ND	6.93	115	6.00	4.74		
Total BTEx	<0.300	0.300	11/30/2023	ND						

Surrogate: 4-Bromofluorobenzene (PID) 105 % 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	16.0	16.0	11/30/2023	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	11/30/2023	ND	217	108	200	8.07	
DRO >C10-C28*	<10.0	10.0	11/30/2023	ND	183	91.3	200	0.435	
EXT DRO >C28-C36	<10.0	10.0	11/30/2023	ND					

Surrogate: 1-Chlorooctane 75.4 % 48.2-134

Surrogate: 1-Chlorooctadecane 68.6 % 49.1-148

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\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager



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

**Analytical Results For:**

ENSOLUM, LLC  
 HADLIE GREEN  
 705 W WADLEY AVE.  
 MIDLAND TX, 79705  
 Fax To:

Received: 11/30/2023  
 Reported: 12/05/2023  
 Project Name: VACA WEST TANK BATTERY  
 Project Number: 03C2012037  
 Project Location: BTA - ( 32.13802-103.56497 )

Sampling Date: 11/30/2023  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Dionica Hinojos

**Sample ID: FS11A 4.5' (H236447-03)**

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	11/30/2023	ND	2.23	111	2.00	5.29		
Toluene*	<0.050	0.050	11/30/2023	ND	2.20	110	2.00	5.72		
Ethylbenzene*	<0.050	0.050	11/30/2023	ND	2.17	109	2.00	5.55		
Total Xylenes*	<0.150	0.150	11/30/2023	ND	6.93	115	6.00	4.74		
Total BTEx	<0.300	0.300	11/30/2023	ND						

Surrogate: 4-Bromofluorobenzene (PID) 105 % 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	<16.0	16.0	11/30/2023	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	11/30/2023	ND	217	108	200	8.07	
DRO >C10-C28*	<10.0	10.0	11/30/2023	ND	183	91.3	200	0.435	
EXT DRO >C28-C36	<10.0	10.0	11/30/2023	ND					

Surrogate: 1-Chlorooctane 65.5 % 48.2-134

Surrogate: 1-Chlorooctadecane 59.8 % 49.1-148

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Celey D. Keene, Lab Director/Quality Manager





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**Analytical Results For:**

ENSOLUM, LLC  
 HADLIE GREEN  
 705 W WADLEY AVE.  
 MIDLAND TX, 79705  
 Fax To:

Received: 11/30/2023  
 Reported: 12/05/2023  
 Project Name: VACA WEST TANK BATTERY  
 Project Number: 03C2012037  
 Project Location: BTA - ( 32.13802-103.56497 )

Sampling Date: 11/30/2023  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Dionica Hinojos

**Sample ID: FS13A 4.5' (H236447-04)**

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	12/01/2023	ND	2.06	103	2.00	11.9	
Toluene*	<0.050	0.050	12/01/2023	ND	2.17	108	2.00	13.0	
Ethylbenzene*	<0.050	0.050	12/01/2023	ND	2.19	110	2.00	12.7	
Total Xylenes*	<0.150	0.150	12/01/2023	ND	6.59	110	6.00	12.3	
Total BTEX	<0.300	0.300	12/01/2023	ND					

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

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	<16.0	16.0	11/30/2023	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	11/30/2023	ND	217	108	200	8.07	
DRO >C10-C28*	<10.0	10.0	11/30/2023	ND	183	91.3	200	0.435	
EXT DRO >C28-C36	<10.0	10.0	11/30/2023	ND					

Surrogate: 1-Chlorooctane 72.6 % 48.2-134

Surrogate: 1-Chlorooctadecane 66.5 % 49.1-148

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Celey D. Keene, Lab Director/Quality Manager



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**Analytical Results For:**

ENSOLUM, LLC  
 HADLIE GREEN  
 705 W WADLEY AVE.  
 MIDLAND TX, 79705  
 Fax To:

Received: 11/30/2023  
 Reported: 12/05/2023  
 Project Name: VACA WEST TANK BATTERY  
 Project Number: 03C2012037  
 Project Location: BTA - ( 32.13802-103.56497 )

Sampling Date: 11/30/2023  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Dionica Hinojos

**Sample ID: FS14A 4.5' (H236447-05)**

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	12/01/2023	ND	2.06	103	2.00	11.9		
Toluene*	<0.050	0.050	12/01/2023	ND	2.17	108	2.00	13.0		
Ethylbenzene*	<0.050	0.050	12/01/2023	ND	2.19	110	2.00	12.7		
Total Xylenes*	<0.150	0.150	12/01/2023	ND	6.59	110	6.00	12.3		
Total BTEX	<0.300	0.300	12/01/2023	ND						

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

Chloride, SM4500Cl-B		mg/kg		Analyzed By: HM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	<16.0	16.0	11/30/2023	ND	416	104	400	3.92		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	11/30/2023	ND	217	108	200	8.07	
DRO >C10-C28*	<10.0	10.0	11/30/2023	ND	183	91.3	200	0.435	
EXT DRO >C28-C36	<10.0	10.0	11/30/2023	ND					

Surrogate: 1-Chlorooctane 64.8 % 48.2-134

Surrogate: 1-Chlorooctadecane 59.1 % 49.1-148

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Celey D. Keene, Lab Director/Quality Manager



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**Analytical Results For:**

ENSOLUM, LLC  
 HADLIE GREEN  
 705 W WADLEY AVE.  
 MIDLAND TX, 79705  
 Fax To:

Received: 11/30/2023  
 Reported: 12/05/2023  
 Project Name: VACA WEST TANK BATTERY  
 Project Number: 03C2012037  
 Project Location: BTA - ( 32.13802-103.56497 )

Sampling Date: 11/30/2023  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Dionica Hinojos

**Sample ID: FS15A 4.5' (H236447-06)**

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	11/30/2023	ND	1.81	90.6	2.00	11.0		
Toluene*	<0.050	0.050	11/30/2023	ND	1.82	91.1	2.00	10.9		
Ethylbenzene*	<0.050	0.050	11/30/2023	ND	1.84	92.0	2.00	9.94		
Total Xylenes*	<0.150	0.150	11/30/2023	ND	5.44	90.7	6.00	9.91		
Total BTEX	<0.300	0.300	11/30/2023	ND						

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

Chloride, SM4500CI-B		mg/kg		Analyzed By: HM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	<16.0	16.0	11/30/2023	ND	416	104	400	3.92		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	11/30/2023	ND	217	108	200	8.07	
DRO >C10-C28*	<10.0	10.0	11/30/2023	ND	183	91.3	200	0.435	
EXT DRO >C28-C36	<10.0	10.0	11/30/2023	ND					

Surrogate: 1-Chlorooctane 68.4 % 48.2-134

Surrogate: 1-Chlorooctadecane 61.1 % 49.1-148

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Celey D. Keene, Lab Director/Quality Manager



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**Analytical Results For:**

ENSOLUM, LLC  
 HADLIE GREEN  
 705 W WADLEY AVE.  
 MIDLAND TX, 79705  
 Fax To:

Received: 11/30/2023  
 Reported: 12/05/2023  
 Project Name: VACA WEST TANK BATTERY  
 Project Number: 03C2012037  
 Project Location: BTA - ( 32.13802-103.56497 )

Sampling Date: 11/30/2023  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Dionica Hinojos

**Sample ID: FS16A 4.5' (H236447-07)**

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	12/01/2023	ND	2.06	103	2.00	11.9	
Toluene*	<0.050	0.050	12/01/2023	ND	2.17	108	2.00	13.0	
Ethylbenzene*	<0.050	0.050	12/01/2023	ND	2.19	110	2.00	12.7	
Total Xylenes*	<0.150	0.150	12/01/2023	ND	6.59	110	6.00	12.3	
Total BTEx	<0.300	0.300	12/01/2023	ND					

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

Chloride, SM4500CI-B		mg/kg		Analyzed By: HM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	<16.0	16.0	11/30/2023	ND	416	104	400	3.92		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	11/30/2023	ND	217	108	200	8.07	
DRO >C10-C28*	<10.0	10.0	11/30/2023	ND	183	91.3	200	0.435	
EXT DRO >C28-C36	<10.0	10.0	11/30/2023	ND					

Surrogate: 1-Chlorooctane 70.6 % 48.2-134

Surrogate: 1-Chlorooctadecane 63.8 % 49.1-148

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Celey D. Keene, Lab Director/Quality Manager



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**Analytical Results For:**

ENSOLUM, LLC  
 HADLIE GREEN  
 705 W WADLEY AVE.  
 MIDLAND TX, 79705  
 Fax To:

Received: 11/30/2023  
 Reported: 12/05/2023  
 Project Name: VACA WEST TANK BATTERY  
 Project Number: 03C2012037  
 Project Location: BTA - ( 32.13802-103.56497 )

Sampling Date: 11/30/2023  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Dionica Hinojos

**Sample ID: FS17A 4.5' (H236447-08)**

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	12/01/2023	ND	2.06	103	2.00	11.9	
Toluene*	<0.050	0.050	12/01/2023	ND	2.17	108	2.00	13.0	
Ethylbenzene*	<0.050	0.050	12/01/2023	ND	2.19	110	2.00	12.7	
Total Xylenes*	<0.150	0.150	12/01/2023	ND	6.59	110	6.00	12.3	
Total BTX	<0.300	0.300	12/01/2023	ND					

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

Chloride, SM4500CI-B		mg/kg		Analyzed By: HM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	<16.0	16.0	11/30/2023	ND	416	104	400	3.92		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	11/30/2023	ND	217	108	200	8.07	
DRO >C10-C28*	<10.0	10.0	11/30/2023	ND	183	91.3	200	0.435	
EXT DRO >C28-C36	<10.0	10.0	11/30/2023	ND					

Surrogate: 1-Chlorooctane 59.6 % 48.2-134

Surrogate: 1-Chlorooctadecane 53.7 % 49.1-148

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Celey D. Keene, Lab Director/Quality Manager



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**Analytical Results For:**

ENSOLUM, LLC  
 HADLIE GREEN  
 705 W WADLEY AVE.  
 MIDLAND TX, 79705  
 Fax To:

Received: 11/30/2023  
 Reported: 12/05/2023  
 Project Name: VACA WEST TANK BATTERY  
 Project Number: 03C2012037  
 Project Location: BTA - ( 32.13802-103.56497 )

Sampling Date: 11/30/2023  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Dionica Hinojos

**Sample ID: FS18A 4.75' (H236447-09)**

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	12/01/2023	ND	2.06	103	2.00	11.9		
Toluene*	<0.050	0.050	12/01/2023	ND	2.17	108	2.00	13.0		
Ethylbenzene*	<0.050	0.050	12/01/2023	ND	2.19	110	2.00	12.7		
Total Xylenes*	<0.150	0.150	12/01/2023	ND	6.59	110	6.00	12.3		
Total BTEx	<0.300	0.300	12/01/2023	ND						

Surrogate: 4-Bromofluorobenzene (PID) 121 % 71.5-134

Chloride, SM4500CI-B		mg/kg		Analyzed By: HM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	<16.0	16.0	11/30/2023	ND	416	104	400	3.92		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	11/30/2023	ND	217	108	200	8.07	
DRO >C10-C28*	<10.0	10.0	11/30/2023	ND	183	91.3	200	0.435	
EXT DRO >C28-C36	<10.0	10.0	11/30/2023	ND					

Surrogate: 1-Chlorooctane 86.2 % 48.2-134

Surrogate: 1-Chlorooctadecane 77.4 % 49.1-148

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Celey D. Keene, Lab Director/Quality Manager



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Notes and Definitions

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

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A handwritten signature in black ink, appearing to read "C. 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

Company Name: <u>Ensolum</u>				<b>BILL TO</b>				<b>ANALYSIS REQUEST</b>																											
Project Manager: <u>Hadlie Green</u>				P.O. #:				<div style="display: flex; justify-content: space-between;"> <div style="width: 30%;"> TPH (8015) BTEX (8021) Chlorides (4500) </div> <div style="width: 65%;"></div> </div>																											
Address: <u>601 N. Marienfeld St. #400</u>				Company: <u>BTA Oil</u>																															
City: <u>Midland</u> State: <u>TX</u> Zip: <u>79701</u>				Attn: <u>Kelton Beard</u>																															
Phone #: <u>432-557-8895</u> Fax #:				Address: <u>104 S. Pecos St</u>																															
Project #: <u>03C2012037</u> Project Owner:				City: <u>Midland</u>																															
Project Name: <u>Vaca West Tank Battery</u>				State: <u>TX</u> Zip: <u>79701</u>																															
Project Location: <u>32.13802, -103.56497</u>				Phone #: <u>432-312-2203</u>																															
Sampler Name: <u>Peter Van Patten</u>				Fax #:																															
FOR LAB USE ONLY																																			
Lab I.D.	Sample I.D.	Depth	(G)RAB OR (C)OMP.	# CONTAINERS	GROUNDWATER	WASTEWATER	SOIL	OIL	SLUDGE	OTHER	ACID/BASE	ICE / COOL	OTHER	DATE	TIME																				
<u>H236447</u>																																			
1	FS09A	4.5	C	1			✓				✓	✓		11-30-23	940	✓	✓	✓																	
2	FS10A		C	1			✓				✓	✓			945	✓	✓	✓																	
3	FS11A		C	1			✓				✓	✓			950	✓	✓	✓																	
4	FS13A		C	1			✓				✓	✓			955	✓	✓	✓																	
5	FS14A		C	1			✓				✓	✓			1000	✓	✓	✓																	
6	FS15A		C	1			✓				✓	✓			1005	✓	✓	✓																	
7	FS16A		C	1			✓				✓	✓			1010	✓	✓	✓																	
8	FS17A		C	1			✓				✓	✓			1015	✓	✓	✓																	
9	FS18A		C	1			✓				✓	✓			1020	✓	✓	✓																	

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: <u>Peter Van Patten</u>	Date: <u>11-30-23</u>	Received By: <u>[Signature]</u>	Verbal Result: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Add'l Phone #:
	Time: <u>1145</u>		All Results are emailed. Please provide Email address:	
			<u>hgreen@ensolum.com</u>	
Relinquished By:	Date: <u>11-30-23</u>	Received By:	REMARKS:	
	Time: <u>11:48</u>		<u>Incident #: NAPP2202 849030</u>	
Delivered By: (Circle One)	Observed Temp. °C <u>5.20C</u>	Sample Condition	CHECKED BY: (Initials)	Turnaround Time: <input checked="" type="checkbox"/> Standard <input type="checkbox"/> Rush
Sampler - UPS - Bus - Other:	Corrected Temp. °C <u>#140</u>	Cool Intact <input type="checkbox"/> Yes <input type="checkbox"/> No		Bacteria (only) Sample Condition
				Cool Intact <input type="checkbox"/> Yes <input type="checkbox"/> No
				Observed Temp. °C
				Corrected Temp. °C

FORM-000 R 3.4 07/11/23

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



## APPENDIX D

### NMOCD Notifications

---

**From:** [Wells, Shelly, EMNRD](#)  
**To:** [Hadlie Green](#)  
**Cc:** [Kelton Beaird](#); [Tacoma Morrissey](#); [Aimee Cole](#); [Velez, Nelson, EMNRD](#); [Bratcher, Michael, EMNRD](#)  
**Subject:** RE: [EXTERNAL] BTA - Sampling Notification - Vaca West Tank Battery (Incident Number nAPP2202849030)  
**Date:** Wednesday, November 8, 2023 4:16:31 PM  
**Attachments:** [image001.png](#)  
[image002.png](#)  
[image003.png](#)  
[image004.png](#)

---

[ \*\*EXTERNAL EMAIL\*\* ]

Hi Hadlie,

The OCD has received your notification. Notification requirements are **two full 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.

Thank you,

*Shelly*

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

---

**From:** Hadlie Green <[hgreen@ensolum.com](mailto:hgreen@ensolum.com)>  
**Sent:** Wednesday, November 8, 2023 3:58 PM  
**To:** Enviro, OCD, EMNRD <[OCD.Enviro@emnrd.nm.gov](mailto:OCD.Enviro@emnrd.nm.gov)>  
**Cc:** Kelton Beaird <[KBeaird@btaoil.com](mailto:KBeaird@btaoil.com)>; Tacoma Morrissey <[tmorrissey@ensolum.com](mailto:tmorrissey@ensolum.com)>; Aimee Cole <[acole@ensolum.com](mailto:acole@ensolum.com)>  
**Subject:** [EXTERNAL] BTA - Sampling Notification - Vaca West Tank Battery (Incident Number nAPP2202849030)

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 on Friday, November 10, 2023.

- Vaca West Tank Battery / nAPP2202849030
  - Sampling Date: 11/10/2023 @ 9:00 AM MST
  - GPS: 32.138135, -103.565044

Thank you,



**Hadlie Green**

Project Geologist

432-557-8895

[hgreen@ensolum.com](mailto:hgreen@ensolum.com)

**Ensolum, LLC**



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

---

[ \*\*EXTERNAL EMAIL\*\* ]

Good morning Hadlie,

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

Thank you,

Shelly

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

---

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

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

All,

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

- RGA #1 / nAPP2228347919

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

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

Thank you,



**Hadlie Green**

Project Geologist

432-557-8895

[hgreen@ensolum.com](mailto:hgreen@ensolum.com)

**Ensolum, LLC**



**From:** [Wells, Shelly, EMNRD](#)  
**To:** [Hadlie Green](#)  
**Cc:** [Kelton Beaird](#); [Tacoma Morrissey](#); [Aimee Cole](#); [Hamlet, Robert, EMNRD](#); [Bratcher, Michael, EMNRD](#); [Velez, Nelson, EMNRD](#)  
**Subject:** RE: [EXTERNAL] BTA - Sampling Notification - Week of 11/6/2023  
**Date:** Thursday, November 2, 2023 2:41:20 PM  
**Attachments:** [image001.png](#)  
[image002.png](#)  
[image003.png](#)  
[image004.png](#)

---

[ \*\*EXTERNAL EMAIL\*\* ]

Hi Hadlie,

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

Thank you,

*Shelly*

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

---

**From:** Hadlie Green <hgreen@ensolum.com>  
**Sent:** Thursday, November 2, 2023 2:21 PM  
**To:** Enviro, OCD, EMNRD <OCD.Enviro@emnrd.nm.gov>  
**Cc:** Kelton Beaird <KBeaird@btaoil.com>; Tacoma Morrissey <tmorrissey@ensolum.com>; Aimee Cole <acole@ensolum.com>  
**Subject:** [EXTERNAL] BTA - Sampling Notification - Week of 11/6/2023

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 November 6, 2023.

- Ogden Substation Tank Overflow / NAPP2230983706



Sampling Date: 11/7-8/2023 @ 9:00 AM MST

- Vaca West Tank Battery / nAPP2202849030
  - Sampling Date: 11/9/2023 @ 9:00 AM MST

Thank you,



**Hadlie Green**

Project Geologist

432-557-8895

[hgreen@ensolum.com](mailto:hgreen@ensolum.com)

**Ensolum, LLC**



**From:** [Wells, Shelly, EMNRD](#)  
**To:** [Hadlie Green](#)  
**Cc:** [Kelton Beaird](#); [Tacoma Morrissey](#); [Aimee Cole](#); [Velez, Nelson, EMNRD](#); [Bratcher, Michael, EMNRD](#)  
**Subject:** RE: [EXTERNAL] BTA - Sampling Notification - Vaca West Tank Battery (Incident Number nAPP2202849030)  
**Date:** Wednesday, November 8, 2023 4:16:31 PM  
**Attachments:** [image001.png](#)  
[image002.png](#)  
[image003.png](#)  
[image004.png](#)

---

[ \*\*EXTERNAL EMAIL\*\* ]

Hi Hadlie,

The OCD has received your notification. Notification requirements are **two full 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.

Thank you,

*Shelly*

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

---

**From:** Hadlie Green <[hgreen@ensolum.com](mailto:hgreen@ensolum.com)>  
**Sent:** Wednesday, November 8, 2023 3:58 PM  
**To:** Enviro, OCD, EMNRD <[OCD.Enviro@emnrd.nm.gov](mailto:OCD.Enviro@emnrd.nm.gov)>  
**Cc:** Kelton Beaird <[KBeaird@btaoil.com](mailto:KBeaird@btaoil.com)>; Tacoma Morrissey <[tmorrissey@ensolum.com](mailto:tmorrissey@ensolum.com)>; Aimee Cole <[acole@ensolum.com](mailto:acole@ensolum.com)>  
**Subject:** [EXTERNAL] BTA - Sampling Notification - Vaca West Tank Battery (Incident Number nAPP2202849030)

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 on Friday, November 10, 2023.

- Vaca West Tank Battery / nAPP2202849030
  - Sampling Date: 11/10/2023 @ 9:00 AM MST
  - GPS: 32.138135, -103.565044

Thank you,



**Hadlie Green**

Project Geologist

432-557-8895

[hgreen@ensolum.com](mailto:hgreen@ensolum.com)

**Ensolum, LLC**



**From:** [Wells, Shelly, EMNRD](#)  
**To:** [Hadlie Green](#)  
**Cc:** [Velez, Nelson, EMNRD](#); [Bratcher, Michael, EMNRD](#)  
**Subject:** RE: [EXTERNAL] BTA - Sampling Notification - Vaca West Tank Battery (Incident Number nAPP2202849030)  
**Date:** Tuesday, November 28, 2023 2:38:21 PM  
**Attachments:** [image001.png](#)  
[image002.png](#)  
[image003.png](#)  
[image004.png](#)

---

[ \*\*EXTERNAL EMAIL\*\* ]

Hi Hadlie,

The OCD has received your notification. Notification requirements are **two full 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.

Thank you,

*Shelly*

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

---

**From:** Hadlie Green <[hgreen@ensolum.com](mailto:hgreen@ensolum.com)>  
**Sent:** Tuesday, November 28, 2023 1:35 PM  
**To:** Enviro, OCD, EMNRD <[OCD.Enviro@emnrd.nm.gov](mailto:OCD.Enviro@emnrd.nm.gov)>  
**Subject:** [EXTERNAL] BTA - Sampling Notification - Vaca West Tank Battery (Incident Number nAPP2202849030)

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 on Thursday, November 30, 2023.

- Vaca West Tank Battery / nAPP2202849030
  - Sampling Date: 11/30/2023 @ 9:00 AM MST
  - GPS: 32.13802, -103.56497

Thank you,



**Hadlie Green**

Project Geologist

432-557-8895

[hgreen@ensolum.com](mailto:hgreen@ensolum.com)

**Ensolum, LLC**

in f 



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	nAPP2202849030
District RP	
Facility ID	fAPP2135654568
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) nAPP2202849030
Contact mailing address: 104 S. Pecos St., Midland, TX 79701	

Location of Release Source

Latitude: 32.13802 Longitude: -103.56497  
(NAD 83 in decimal degrees to 5 decimal places)

Site Name: Vaca West Tank Battery	Site Type: Tank Battery
Date Release Discovered: 1/14/2022	API# (if applicable) Nearest well:

Unit Letter	Section	Township	Range	County
M	10	25S	33E	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) 15 BBL	Volume Recovered (bbls) 0 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

Overflowed catch tank for compressor with produced water due to vessel upset at tank battery.

(Spill Calculation Spreadsheet attached.)



State of New Mexico  
Oil Conservation Division

Incident ID	nAPP2202849030
District RP	
Facility ID	fAPP2135654568
Application ID	

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

### Initial Response

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

<input checked="" type="checkbox"/> The source of the release has been stopped.	
<input checked="" type="checkbox"/> The impacted area has been secured to protect human health and the environment.	
<input checked="" type="checkbox"/> Released materials have been contained via the use of berms or dikes, absorbent pads, or other containment devices.	
<input checked="" type="checkbox"/> All free liquids and recoverable materials have been removed and managed appropriately.	
If all the actions described above have <u>not</u> been undertaken, explain why:          	
Per 19.15.29.8 B. (4) NMAC the responsible party may commence remediation immediately after discovery of a release. If remediation has begun, please attach a narrative of actions to date. If remedial efforts have been successfully completed or if the release occurred within a lined containment area (see 19.15.29.11(A)(5)(a) NMAC), please attach all information needed for closure evaluation.	
I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to OCD rules and regulations all operators are required to report and/or file certain release notifications and perform corrective actions for releases which may endanger public health or the environment. The acceptance of a C-141 report by the OCD does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to groundwater, surface water, human health or the environment. In addition, OCD acceptance of a C-141 report does not relieve the operator of responsibility for compliance with any other federal, state, or local laws and/or regulations.	
Printed Name: Bob Hall Title: Environmental Manager	
Signature: <u>Bob Hall</u>	Date: 1/28/2022
email: bhall@btaoil.com Telephone: 432-682-3753	
<b><u>OCD Only</u></b>	
Received by: <u>Ramona Marcus</u>	Date: <u>2/8/2022</u>

Location Vaca West TB

NAPP2202849030

API #

Spill Date 1/14/2022

**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 ft<sup>3</sup> / BBL

X

Oil Cut  
(or Water Cut)

**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 76586

CONDITIONS

Operator: BTA OIL PRODUCERS, LLC 104 S Pecos Midland, TX 79701	OGRID: 260297
	Action Number: 76586
	Action Type: [C-141] Release Corrective Action (C-141)

CONDITIONS

Created By	Condition	Condition Date
rmarcus	None	2/8/2022

Incident ID	nAPP2202849030
District RP	
Facility ID	fAPP2135654568
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?	51-100 ft bgs
Did this release impact groundwater or surface water?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release within 300 feet of a continuously flowing watercourse or any other significant watercourse?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release within 200 feet of any lakebed, sinkhole, or playa lake (measured from the ordinary high-water mark)?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release within 300 feet of an occupied permanent residence, school, hospital, institution, or church?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release within 500 horizontal feet of a spring or a private domestic fresh water well used by less than five households for domestic or stock watering purposes?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release within 1000 feet of any other fresh water well or spring?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release within incorporated municipal boundaries or within a defined municipal fresh water well field?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release within 300 feet of a wetland?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release overlying a subsurface mine?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release overlying an unstable area such as karst geology?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release within a 100-year floodplain?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Did the release impact areas <b>not</b> on an exploration, development, production, or storage site?	<input 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.

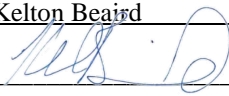
State of New Mexico  
Oil Conservation Division

Page 4

Incident ID	nAPP2202849030
District RP	
Facility ID	fAPP2135654568
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 Manager

Signature:  Date: 1/3/2024

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

**OCD Only**

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

Incident ID	nAPP2202849030
District RP	
Facility ID	fAPP2135654568
Application ID	

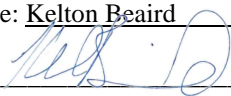
## Closure

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: 1/3/2024  
email: KBeaird@btaoil Telephone: 432-312-2203

**OCD Only**

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

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: \_\_\_\_\_

Printed Name: \_\_\_\_\_ Title: \_\_\_\_\_

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Energy, Minerals and Natural Resources  
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Santa Fe, NM 87505

QUESTIONS

Action 301428

QUESTIONS

Operator: BTA OIL PRODUCERS, LLC 104 S Pecos Midland, TX 79701	OGRID:	260297
	Action Number:	301428
	Action Type:	[C-141] Remediation Closure Request C-141 (C-141-v-Closure)

QUESTIONS

Prerequisites	
Incident ID (n#)	nAPP2202849030
Incident Name	NAPP2202849030 VACA WEST TANK BATTERY @ 0
Incident Type	Produced Water Release
Incident Status	Remediation Closure Report Received
Incident Facility	[fAPP2135654568] Vaca West

Location of Release Source	
Please answer all the questions in this group.	
Site Name	VACA WEST TANK BATTERY
Date Release Discovered	01/14/2022
Surface Owner	Federal

Incident Details	
Please answer all the questions in this group.	
Incident Type	Produced Water Release
Did this release result in a fire or is the result of a fire	No
Did this release result in any injuries	No
Has this release reached or does it have a reasonable probability of reaching a watercourse	No
Has this release endangered or does it have a reasonable probability of endangering public health	No
Has this release substantially damaged or will it substantially damage property or the environment	No
Is this release of a volume that is or may with reasonable probability be detrimental to fresh water	No

Nature and Volume of Release	
Material(s) released, please answer all that apply below. Any calculations or specific justifications for the volumes provided should be attached to the follow-up C-141 submission.	
Crude Oil Released (bbls) Details	Not answered.
Produced Water Released (bbls) Details	Cause: Overflow - Tank, Pit, Etc.   Production Tank   Produced Water   Released: 15 BBL   Recovered: 0 BBL   Lost: 15 BBL.
Is the concentration of chloride in the produced water >10,000 mg/l	Yes
Condensate Released (bbls) Details	Not answered.
Natural Gas Vented (Mcf) Details	Not answered.
Natural Gas Flared (Mcf) Details	Not answered.
Other Released Details	Not answered.
Are there additional details for the questions above (i.e. any answer containing Other, Specify, Unknown, and/or Fire, or any negative lost amounts)	Overflowed catch tank for compressor with produced water due to vessel upset at tank battery.



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QUESTIONS, Page 2

Action 301428

**QUESTIONS (continued)**

Operator: BTA OIL PRODUCERS, LLC 104 S Pecos Midland, TX 79701	OGRID:	260297
	Action Number:	301428
	Action Type:	[C-141] Remediation Closure Request C-141 (C-141-v-Closure)

**QUESTIONS**

<b>Nature and Volume of Release (continued)</b>	
Is this a gas only submission (i.e. only significant Mcf values reported)	No, according to supplied volumes this does not appear to be a "gas only" report.
Was this a major release as defined by Subsection A of 19.15.29.7 NMAC	No
Reasons why this would be considered a submission for a notification of a major release	Unavailable.
With the implementation of the 19.15.27 NMAC (05/25/2021), venting and/or flaring of natural gas (i.e. gas only) are to be submitted on the C-129 form.	

**Initial Response**

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

The source of the release has been stopped	True
The impacted area has been secured to protect human health and the environment	True
Released materials have been contained via the use of berms or dikes, absorbent pads, or other containment devices	True
All free liquids and recoverable materials have been removed and managed appropriately	True
If all the actions described above have not been undertaken, explain why	Not answered.

Per Paragraph (4) of Subsection B of 19.15.29.8 NMAC the responsible party may commence remediation immediately after discovery of a release. If remediation has begun, please prepare and attach a narrative of actions to date in the follow-up C-141 submission. If remedial efforts have been successfully completed or if the release occurred within a lined containment area (see Subparagraph (a) of Paragraph (5) of Subsection A of 19.15.29.11 NMAC), please prepare and attach all information needed for closure evaluation in the follow-up C-141 submission.

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.

I hereby agree and sign off to the above statement	Name: BTA ENSOLUM Title: Environmental Manager Email: kbeaird@btaoil.com Date: 01/09/2024
--	--

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QUESTIONS, Page 3

Action 301428

**QUESTIONS (continued)**

Operator: BTA OIL PRODUCERS, LLC 104 S Pecos Midland, TX 79701	OGRID:
	260297
	Action Number:
	301428
Action Type:	
[C-141] Remediation Closure Request C-141 (C-141-v-Closure)	

**QUESTIONS****Site Characterization**

Please answer all the questions in this group (only required when seeking remediation plan approval and beyond). 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 in feet below ground surface (ft bgs)	Between 75 and 100 (ft.)
What method was used to determine the depth to ground water	NM OSE iWaters Database Search
Did this release impact groundwater or surface water	No
<b>What is the minimum distance, between the closest lateral extents of the release and the following surface areas:</b>	
A continuously flowing watercourse or any other significant watercourse	Between 1000 (ft.) and ½ (mi.)
Any lakebed, sinkhole, or playa lake (measured from the ordinary high-water mark)	Greater than 5 (mi.)
An occupied permanent residence, school, hospital, institution, or church	Greater than 5 (mi.)
A spring or a private domestic fresh water well used by less than five households for domestic or stock watering purposes	Between 1 and 5 (mi.)
Any other fresh water well or spring	Between 1 and 5 (mi.)
Incorporated municipal boundaries or a defined municipal fresh water well field	Greater than 5 (mi.)
A wetland	Between 1 and 5 (mi.)
A subsurface mine	Greater than 5 (mi.)
An (non-karst) unstable area	Greater than 5 (mi.)
Categorize the risk of this well / site being in a karst geology	Low
A 100-year floodplain	Greater than 5 (mi.)
Did the release impact areas not on an exploration, development, production, or storage site	No

**Remediation Plan**

Please answer all the questions that apply or are indicated. This information must be provided to the appropriate district office no later than 90 days after the release discovery date.

Requesting a remediation plan approval with this submission	Yes
Attach a comprehensive report demonstrating the lateral and vertical extents of soil contamination associated with the release have been determined, pursuant to 19.15.29.11 NMAC and 19.15.29.13 NMAC.	
Have the lateral and vertical extents of contamination been fully delineated	Yes
Was this release entirely contained within a lined containment area	No

**Soil Contamination Sampling:** (Provide the highest observable value for each, in milligrams per kilograms.)

Chloride (EPA 300.0 or SM4500 Cl B)	112
TPH (GRO+DRO+MRO) (EPA SW-846 Method 8015M)	6405
GRO+DRO (EPA SW-846 Method 8015M)	5561
BTEX (EPA SW-846 Method 8021B or 8260B)	15.8
Benzene (EPA SW-846 Method 8021B or 8260B)	0.1

Per Subsection B of 19.15.29.11 NMAC unless the site characterization report includes completed efforts at remediation, the report must include a proposed remediation plan in accordance with 19.15.29.12 NMAC, which includes the anticipated timelines for beginning and completing the remediation.

On what estimated date will the remediation commence	06/05/2023
On what date will (or did) the final sampling or liner inspection occur	11/30/2023
On what date will (or was) the remediation complete(d)	11/30/2023
What is the estimated surface area (in square feet) that will be reclaimed	3690
What is the estimated volume (in cubic yards) that will be reclaimed	615
What is the estimated surface area (in square feet) that will be remediated	3690
What is the estimated volume (in cubic yards) that will be remediated	615

These estimated dates and measurements are recognized to be the best guess or calculation at the time of submission and may (be) change(d) over time as more remediation efforts are completed.

The OCD recognizes that proposed remediation measures may have to be minimally adjusted in accordance with the physical realities encountered during remediation. If the responsible party has any need to significantly deviate from the remediation plan proposed, then it should consult with the division to determine if another remediation plan submission is required.

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QUESTIONS, Page 4

Action 301428

**QUESTIONS (continued)**

Operator: BTA OIL PRODUCERS, LLC 104 S Pecos Midland, TX 79701	OGRID:	260297
	Action Number:	301428
	Action Type:	[C-141] Remediation Closure Request C-141 (C-141-v-Closure)

**QUESTIONS**

<b>Remediation Plan (continued)</b>	
<i>Please answer all the questions that apply or are indicated. This information must be provided to the appropriate district office no later than 90 days after the release discovery date.</i>	
<b>This remediation will (or is expected to) utilize the following processes to remediate / reduce contaminants:</b>	
<i>(Select all answers below that apply.)</i>	
(Ex Situ) Excavation and <b>off-site</b> disposal (i.e. dig and haul, hydrovac, etc.)	Yes
Which OCD approved facility will be used for <b>off-site</b> disposal	R360 Artesia LLC LANDFARM [FEEM0112340644]
<b>OR</b> which OCD approved well (API) will be used for <b>off-site</b> disposal	Not answered.
<b>OR</b> is the <b>off-site</b> disposal site, to be used, out-of-state	Not answered.
<b>OR</b> is the <b>off-site</b> disposal site, to be used, an NMED facility	Not answered.
(Ex Situ) Excavation and <b>on-site</b> remediation (i.e. On-Site Land Farms)	Not answered.
(In Situ) Soil Vapor Extraction	Not answered.
(In Situ) Chemical processing (i.e. Soil Shredding, Potassium Permanganate, etc.)	Not answered.
(In Situ) Biological processing (i.e. Microbes / Fertilizer, etc.)	Not answered.
(In Situ) Physical processing (i.e. Soil Washing, Gypsum, Disking, etc.)	Not answered.
Ground Water Abatement pursuant to 19.15.30 NMAC	Not answered.
OTHER (Non-listed remedial process)	Not answered.
<i>Per Subsection B of 19.15.29.11 NMAC unless the site characterization report includes completed efforts at remediation, the report must include a proposed remediation plan in accordance with 19.15.29.12 NMAC, which includes the anticipated timelines for beginning and completing the remediation.</i>	
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.	
I hereby agree and sign off to the above statement	Name: BTA ENSOLUM Title: Environmental Manager Email: kbeaird@btaoil.com Date: 01/09/2024
<i>The OCD recognizes that proposed remediation measures may have to be minimally adjusted in accordance with the physical realities encountered during remediation. If the responsible party has any need to significantly deviate from the remediation plan proposed, then it should consult with the division to determine if another remediation plan submission is required.</i>	

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QUESTIONS, Page 5  
  
Action 301428

QUESTIONS (continued)

Operator:  BTA OIL PRODUCERS, LLC 104 S Pecos Midland, TX 79701	OGRID:  260297
	Action Number:  301428
	Action Type:  [C-141] Remediation Closure Request C-141 (C-141-v-Closure)

QUESTIONS

Deferral Requests Only	
Only answer the questions in this group if seeking a deferral upon approval this submission. Each of the following items must be confirmed as part of any request for deferral of remediation.	
Requesting a deferral of the remediation closure due date with the approval of this submission	No

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QUESTIONS, Page 6

Action 301428

**QUESTIONS (continued)**

Operator: BTA OIL PRODUCERS, LLC 104 S Pecos Midland, TX 79701	OGRID:	260297
	Action Number:	301428
	Action Type:	[C-141] Remediation Closure Request C-141 (C-141-v-Closure)

**QUESTIONS**

Sampling Event Information	
Last sampling notification (C-141N) recorded	301421
Sampling date pursuant to Subparagraph (a) of Paragraph (1) of Subsection D of 19.15.29.12 NMAC	11/10/2023
What was the (estimated) number of samples that were to be gathered	12
What was the sampling surface area in square feet	3690

**Remediation Closure Request**

*Only answer the questions in this group if seeking remediation closure for this release because all remediation steps have been completed.*

Requesting a remediation closure approval with this submission	Yes
Have the lateral and vertical extents of contamination been fully delineated	Yes
Was this release entirely contained within a lined containment area	No
All areas reasonably needed for production or subsequent drilling operations have been stabilized, returned to the sites existing grade, and have a soil cover that prevents ponding of water, minimizing dust and erosion	Yes
What was the total surface area (in square feet) remediated	3690
What was the total volume (cubic yards) remediated	615
All areas not reasonably needed for production or subsequent drilling operations have been reclaimed to contain a minimum of four feet of non-waste contain earthen material with concentrations less than 600 mg/kg chlorides, 100 mg/kg TPH, 50 mg/kg BTEX, and 10 mg/kg Benzene	Yes
What was the total surface area (in square feet) reclaimed	3690
What was the total volume (in cubic yards) reclaimed	615
Summarize any additional remediation activities not included by answers (above)	release excavated to most stringent Table I Closure Criteria

*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 (in .pdf format) 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.*

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.

I hereby agree and sign off to the above statement	Name: BTA ENSOLUM Title: Environmental Manager Email: kbeaird@btaoil.com Date: 01/09/2024
--	--

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QUESTIONS, Page 7  
  
Action 301428

QUESTIONS (continued)

Operator: BTA OIL PRODUCERS, LLC 104 S Pecos Midland, TX 79701	OGRID: 260297
	Action Number: 301428
	Action Type: [C-141] Remediation Closure Request C-141 (C-141-v-Closure)

QUESTIONS

Reclamation Report	
Only answer the questions in this group if all reclamation steps have been completed.	
Requesting a reclamation approval with this submission	No

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CONDITIONS  
  
Action 301428

CONDITIONS

Operator: BTA OIL PRODUCERS, LLC 104 S Pecos Midland, TX 79701	OGRID:
	260297
	Action Number:
	301428
Action Type:	
[C-141] Remediation Closure Request C-141 (C-141-v-Closure)	

CONDITIONS

Created By	Condition	Condition Date
nvelez	None	3/21/2024