

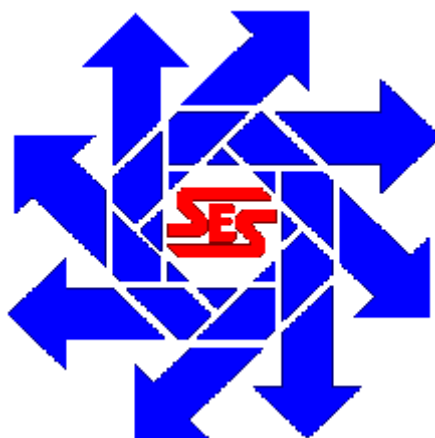
# **Osborn Heirs Company**

## **Mattie Price Tank Battery Delineation Report & Work Plan**

**Section 06, Township 17S, Range 38E  
Lea County, New Mexico**

**1R-421, nAPP2118332198  
1RP-2047, nAPP2118730210  
1RP-5686, nRM1926758725**

**July 6, 2021**



**Prepared for:  
Osborn Heirs Company  
P.O. Box 17968  
San Antonio, TX 78217**

**By:  
Safety & Environmental Solutions, Inc.  
703 East Clinton Street  
Hobbs, New Mexico 88240  
(575) 397-0510**

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## I. Company Contacts

Representative	Company	Telephone	E-mail
Gary Cunningham	Osborn Heirs Co.	210-826-0700	<a href="mailto:garyc@osbornheirs.com">garyc@osbornheirs.com</a>
Bob Allen	SESI	575-397-0510	<a href="mailto:ballen@sesi-nm.com">ballen@sesi-nm.com</a>

## II. Background

Safety and Environmental Solutions, Inc., hereinafter referred to as (SESI) was engaged by Osborn Heirs Company representatives, to assess site impact with the open NMOCD permit of **1RP-421**, an open remediation permit assigned number **1RP-2047**, as well as a recent spill event that has been assigned **1RP-5686**.

According to the site investigation report dated March 2005 and submitted to the NMOCD, Kane Environmental engineering, Inc. was consulted by Osborn Heirs Company to assess and delineate a historical impact to this site (**1RP-421**).

According to a subsequent C-141 and spill notification to the NMOCD dated December 25, 2008, the cone shaped bottom of an oil production tank ruptured without any warning. Upon discovery of the release, production was switched to another tank and a vacuum truck was mobilized. When the tank bottom gave way, oil, paraffin, and sludge traversed the facility location. Some fluid was absorbed into the soil, while soil-paraffin and sludge formed a crust at the surface. Approximately 5bbls of fluid was picked up by the vacuum truck and transported to a certified disposal center. No oil or other material impacted the pasture area. The affected area measured approximately 100 ft. X 25 ft (**1RP-2047**).

According to the most recent event that occurred on April 05, 2019, as was reported on the C-141, the Mattie Price, being an inactive well, began flowing thereby causing the stock tank to overflow. The release was completely contained in the secondary containment area (Figure 2). Approximately 98 square yards of surface area was impacted. The remediation permit number assigned to this event is (**1RP-5686**).

## III. Surface and Ground Water

Research of the New Mexico Office of the State Engineer records indicates the depth to groundwater for Section 6, Township 17S, and Range 38E to be around 75' bgs. However, since there are no wells within ½ mile from the releases and less than 25 years old, the site will need to be remediated to the most stringent NMOCD standards.

## IV. Characterization

The target cleanup levels are determined using the NMAC 19.15.29 revisions dated July 24, 2018. The soil screening criteria presented below, and the applicable Recommended Remediation Action Levels (RRAL) are 10 parts per million (ppm) Benzene, 50 ppm combined Benzene, Toluene, Ethyl Benzene, and Total Xylenes (BTEX), and 100 ppm Total Petroleum Hydrocarbons (TPH). Characterization of vertical extent of chloride concentration should be done to a level below 600 ppm. The soil in this area is characterized as a Simona-Pajarito association that is considered sandy, deep soils, and soils that are shallow to

caliche; from wind-worked deposits.

Table 1 Closure Criteria for Soils Impacted by a Release			
Minimum depth below any point within the horizontal boundary of the release to ground water less than 10,000 mg/l	Constituent	Method*	Limit**
TDS			
<50 feet	Chloride***	EPA 300.0 or SM4500 Cl B	600 mg/kg
	TPH (GRO+DRO+MRO)	EPA SW-846 Method 8015B	100 mg/kg
	BTEX	EPA SW-846 Method 8021B or 8260B	50 mg/kg
	Benzene	EPA SW-846 Method 8021B or 8260B	10 mg/kg
51 feet-100 feet	Chloride***	EPA 300.0 or SM4500 Cl B	10,000 mg/kg
	TPH (GRO+DRO+MRO)	EPA SW-846 Method 8015B	2,500 mg/kg
	BTEX	EPA SW-846 Method 8021B or 8260B	50 mg/kg
	Benzene	EPA SW-846 Method 8021B or 8260B	10 mg/kg
>100 feet	Chloride***	EPA 300.0 or SM4500 Cl B	20,000 mg/kg
	TPH (GRO+DRO+MRO)	EPA SW-846 Method 8015B	2,500 mg/kg
	BTEX	EPA SW-846 Method 8021B or 8260B	50 mg/kg

## V. Work Performed

Site activities for this site commenced in 2005 for Remediation Permit Number 1R-421 by Kane Environmental with the submittal of a work plan to the NMOCD.

The following is a recap of the environmental activities that followed:

June 2005: The subsurface affected material was delineated to below the threshold values for remediation guidelines at that time.

January 2006: Three monitoring wells that were installed in 2006 were sampled. Samples from these wells verified that no groundwater impacts were present. BTEX constituents were not detected at 0.001 mg/L; chlorides ranged from 25 to 188 mg/L. Following sampling the three wells were plugged per previous agreement with the NMOCD.

January 2006: 332 cubic yards of affected material was excavated and properly disposed of at J & L Landfarm of Hobbs, NM (Permit #NM-01-0023) for treatment and disposal.

January 2006: Eleven remediation wells were installed to access the affected vadose zone between 10 and 25 feet. Sparge remediation was initiated using a household compressor at a pressure of 15 psi with an unknown flow rate.

November 2006: Kane environmental directed the installation of four soil borings in order to verify remediation results, using an Air/Rotary drilling rig. Those results are included in the report to NMOCD dated December 01, 2006.

June 2007: The number of active air-injection wells was decreased to six upon verification that the hydrocarbon concentration in the other areas were below the threshold values. June 2008: The subsurface material sampling was completed and RL's verified (Appendix E).

### On April 05, 2019

Subsequent to the third release assigned (1RP-5686), SESI was consulted to

assess and remediate the Mattie Price Tank Battery.

On April 09, 2019 SESI personnel together with personnel from Osborn Heirs Company were on location to assign and flag the area for auger hole installation. The auger holes were advanced to the point of refusal. Soil samples were field tested intermittently for Chloride and Petroleum Hydrocarbons. The field results at Auger Hole #1 for TPH were 40 mg/kg, and chloride levels were <128 mg.kg; therefore, no further sampling was conducted at the sample point. Other soil samples were grabbed at surface, and one-foot increments, field tested, and packaged for laboratory confirmation. All samples were properly packaged, labeled, preserved, and transported to Cardinal Laboratories via Chain of Custody for analyses. The following constituents were analyzed: Chloride (CI Method 300.0 Anions), Total Petroleum Hydrocarbons (TPH Method 8015), and Benzene, Toluene, Ethylbenzene, and Xylenes (BTEX Method 8021B). The table below is a recap and tabulation of the results from the Cardinal Laboratories analyses for ease of reference (Appendix C):

Sample ID	Chloride EPA Method 300 Anions	DRO EPA Method 8015	GRO EPA Method 8015	EXT DRO EPA Method 8015	BTEX EPA Method 8021
AH-2 Surface	768	37500	14200	4600	164
AH-2 1.5 ft	96.0	669	66.9	77.2	2.13
AH-3 Surface	800	12800	37800	4700	153
AH-3 1ft	96.	49.9	453	55.4	1.95
AH-4 Surface	784	11900	34100	5280	157
AH-4 1ft	80.	49.2	418	81.7	2.28

Based on the confirmed laboratory results from Cardinal Laboratories and auger refusal, steps were taken to initiate soil boring activity.

On May 28, 2019 SESI personnel revisited the site in order to flag the location for New Mexico One Call clearance. SESI personnel observed that the air sparging system had been removed. A call was placed to Mr. Cunningham with Osborn Heirs Company to confirm the removal. SESI personnel were told that the lease operator had received a landowner complaint that initiated the removal of the system.

On July 17, 2019 SESI personnel, together with personnel and equipment from Enviro-drill revisited the site in order to extract soil borings for confirmation of vertical extent. Four (4) sites were designated in the proximity of the spill areas (Figure 2). The boring extractions were preserved, packaged, and transported to Cardinal Laboratories via Chain of Custody for analysis of the following constituents: Chloride (CI Method 300.0 Anions), Total Petroleum Hydrocarbons (TPH Method 8015), and Benzene, Toluene, Ethylbenzene, and Xylenes (BTEX Method 8021B). The table below is a recap and tabulation of the results from the Cardinal Laboratories analyses for ease of reference (Appendix C):

All four borings were drilled to a depth of 32 feet to confirm no impacts at depth from this or earlier spills. In addition, B-4 was located as close as possible to the previous air sparging area. Remaining piping prevented direct access to area.

Sample ID	BTEX	Chloride	GRO	DRO	EXT DRO
<b>B-1 0-2'</b>	<b>.056</b>	<b>576</b>	<b>&lt;10.0</b>	<b>1840</b>	<b>460</b>
B-1 BASE	1.39	304	806	6800	647
<b>B-1 5-7'</b>	<b>.585</b>	<b>80</b>	<b>84.7</b>	<b>1210</b>	<b>146</b>
B-1 10-12'	<0.300	48.0	<10.0	<10.0	<10.0
B-1 15-17'	<0.300	48.0	<10.0	12.2	<10.0
B-1 30-32'	<0.300	16.0	<10.0	<10.0	<10.0
<b>B-2 2'</b>	<b>11.1</b>	<b>80.0</b>	<b>496</b>	<b>1050</b>	<b>98.3</b>
B-2 5-7'	<0.300	48.0	<10.0	69.7	<10.0
<b>B-2 10-12'</b>	<b>&lt;0.300</b>	<b>160</b>	<b>&lt;10.0</b>	<b>2570</b>	<b>497</b>
B-2 15-17'	<0.300	176	<10.0	13.7	<10.0
B-2 20-22'	<0.300	160	<10.0	<10.0	<10.0
B-2 25-27'	<0.300	80.0	<10.0	<10.0	<10.0
B-2 30-32'	<0.300	48.0	<10.0	<10.0	<10.0
B-3 0-2'	<0.300	912	<10.0	146	18.7
B-3 2-4'	<0.300	288	<10.0	15.2	<10.0
B-3 5-7'	<0.300	32.0	<10.0	19.7	<10.0
B-3 10-12'	<0.300	48.0	<10.0	20.5	<10.0
B-3 15-17'	<0.300	32.0	<10.0	14.2	<10.0
B-3 25-27'	<0.300	32.0	<10.0	<10.0	<10.0
B-3 30-32'	<0.300	80.0	<10.0	<10.0	<10.0
B-4 0-2'	<0.300	16.0	<10.0	511	178
B-4 2-4'	<0.300	32.0	<10.0	10.4	<10.0
B-4 4-6'	<0.300	32.0	<10.0	725	197
B-4 10-12'	<0.300	16.0	<10.0	142	38.2
B-4 15-17'	<0.300	16.0	<10.0	<10.0	<10.0
B-4 20-22'	<0.300	16.0	<10.0	<10.0	<10.0
B-4 25-27'	<0.300	16.0	<10.0	<10.0	<10.0
B-4 30-32'	<0.300	32.0	<10.0	<10.0	<10.0

## VI. Action Plan

Based upon the return results of the soil bore analyses from Hall Laboratories; Chlorides were not the constituency of concern. Upon further review of the Cane Environmental report dated March 2005 as was submitted to the NMOCD, SESI advanced soil borings labeled B-1 and B-2 respectively, in the same proximity as "Test Point A" in the Cane Environmental analysis. The subsequent spills were in the same proximity, so a further delineation of this area was deemed prudent in order to confirm previous remediation efforts, as well as vertical delineation. SESI proposes to confirm the horizontal remediation through sidewall soil samples, simultaneously through out the removal of impacted soils. Furthermore, SESI proposes the removal of impacted soils to the extent that Petroleum Organics are <100 ppm, as will be confirmed with bottom soil samples, leaving 4 ft. of clean surface material. The battery pad area is comprised of fine grade caliche. Upon, completion of remedial activity, SESI will restore the pad area with comparable material and return to grade. All impacted soil will be transported to an NMOCD approved facility for disposal and confirmed with disposal manifests.

All closure documentation will be drafted and submitted to the proper parties of concern.

## **VII. Figures & Appendices**

Figure 1 - Vicinity Map

Figure 2 - Site Plan

Appendix A – C-141

Appendix B – Groundwater

Appendix C – Analytical Results

Appendix D – Photo Documentation

Appendix E – Correspondence

# **Figure 1 Vicinity Map**



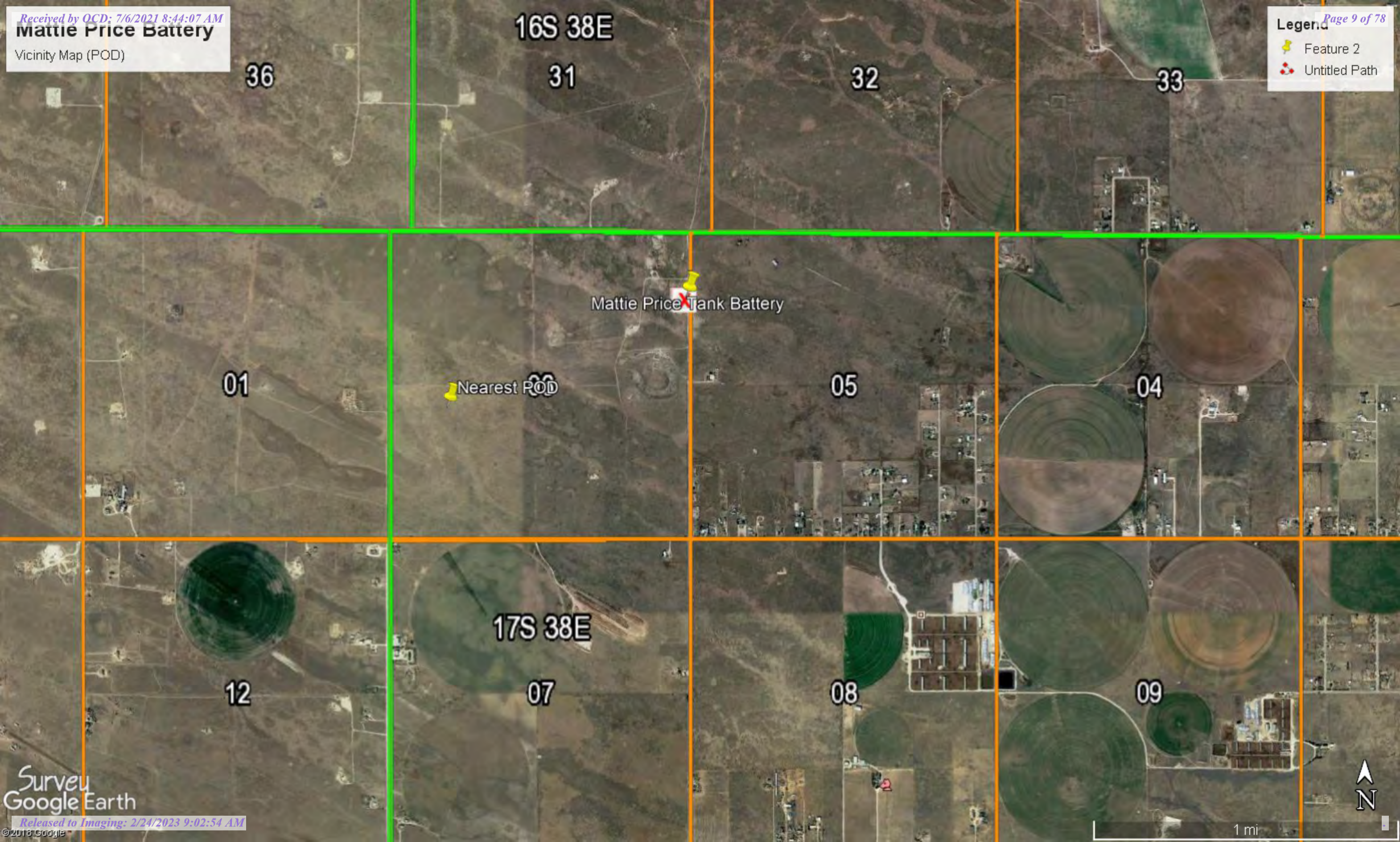
# Mattie Price Battery

Vicinity Map (POD)

Legend

 Feature 2

 Untitled Path





## **Figure 2 Site Plan**







# **Appendix A 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	
District RP	
Facility ID	
Application ID	

## Release Notification

### Responsible Party

Responsible Party: Osborn Heirs Company	OGRID 16616
Contact Name: Gary Cunningham	Contact Telephone (210) 826-0700 ext. 222
Contact email: garyc@osbornheirs.com	Incident # (assigned by OCD)
Contact mailing address: P.O. Box 17968, San Antonio, Texas 78217	

### Location of Release Source

Latitude 32.8675 Longitude 103.1797  
(NAD 83 in decimal degrees to 5 decimal places)

Site Name Mattie Price	Site Type Tank Battery Crude Oil
Date Release Discovered April 5, 2019	API# (if applicable) N/A (tank battery) 30-025-23439

Unit Letter	Section	Township	Range	County
H	06	17S	38E	Lea

Surface Owner: ☐ State ☐ Federal ☐ Tribal ☒ Private (Name: Phillip Berry)

### Nature and Volume of Release

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

<input checked="" type="checkbox"/> Crude	Volume Released (bbls) 7 barrels	Volume Recovered (bbls) 6 barrels
<input type="checkbox"/> Produced Water	Volume Released (bbls)	Volume Recovered (bbls)
	Is the concentration of total dissolved solids (TDS) in the produced water >10,000 mg/l?	<input 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:

The Mattie Price #1, and inactive well, began flowing causing the stock tank to overflow. The release was completely contained within the secondary containment area.

Form C-141

Page 2

State of New Mexico  
Oil Conservation Division

Incident ID	
District RP	1
Facility ID	
Application ID	

Was this a major release as defined by  
19.15.29.7(A) NMAC?

If YES, for what reason(s) does the responsible party consider this a major release?

<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	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*

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

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

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: Gary Cunningham

Title: Superintendent

Signature: Gary D. Cunningham

Date: April 12, 2019

email: garyc@osbornheirs.com

Telephone: (210) 826-0700 ext 222

**OCD Only**

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

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

Incident ID	
District RP	
Facility ID	
Application ID	

## Site Assessment/Characterization

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

What is the shallowest depth to groundwater beneath the area affected by the release?

74 (ft bgs)

Did this release impact groundwater or surface water?

☐ Yes ☒ No

Are the lateral extents of the release within 300 feet of a continuously flowing watercourse or any other significant watercourse?

☐ Yes ☒ No

Are the lateral extents of the release within 200 feet of any lakebed, sinkhole, or playa lake (measured from the ordinary high-water mark)?

☐ Yes ☒ No

Are the lateral extents of the release within 300 feet of an occupied permanent residence, school, hospital, institution, or church?

☐ Yes ☒ No

Are the lateral extents of the release within 500 horizontal feet of a spring or a private domestic fresh water well used by less than five households for domestic or stock watering purposes?

☐ Yes ☒ No

Are the lateral extents of the release within 1000 feet of any other fresh water well or spring?

☒ Yes ☐ No

Are the lateral extents of the release within incorporated municipal boundaries or within a defined municipal fresh water well field?

☐ Yes ☒ No

Are the lateral extents of the release within 300 feet of a wetland?

☐ Yes ☒ No

Are the lateral extents of the release overlying a subsurface mine?

☐ Yes ☒ No

Are the lateral extents of the release overlying an unstable area such as karst geology?

☐ Yes ☒ No

Are the lateral extents of the release within a 100-year floodplain?

☐ Yes ☒ No

Did the release impact areas **not** on an exploration, development, production, or storage site?

☐ Yes ☒ No

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

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

- ☒ Scaled site map showing impacted area, surface features, subsurface features, delineation points, and monitoring wells.
- ☐ Field data
- ☒ Data table of soil contaminant concentration data
- ☒ Depth to water determination
- ☒ Determination of water sources and significant watercourses within 1/2-mile of the lateral extents of the release
- ☐ Boring or excavation logs
- ☐ Photographs including date and GIS information
- ☒ Topographic/Aerial maps
- ☒ Laboratory data including chain of custody

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



Form C-141

State of New Mexico

Page 4

Oil Conservation Division

Incident ID	
District RP	
Facility ID	
Application ID	

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

Printed Name: Gary Cunningham

Signature: Gary O. CunninghamDate: April 12, 2019email: garyc@osbornheirs.comTelephone: (210) 826-0700 ext 222**OCD Only**

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

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



Incident ID	
District RP	
Facility ID	
Application ID	

## Remediation Plan

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

- ☒ Detailed description of proposed remediation technique
- ☒ Scaled sitemap with GPS coordinates showing delineation points
- ☒ Estimated volume of material to be remediated
- ☒ Closure criteria is to Table 1 specifications subject to 19.15.29.12(C)(4) NMAC
- ☒ Proposed schedule for remediation (note if remediation plan timeline is more than 90 days OCD approval is required)

**Deferral Requests Only:** *Each of the following items must be confirmed as part of any request for deferral of remediation.*

- ☐ Contamination must be in areas immediately under or around production equipment where remediation could cause a major facility deconstruction.
- ☐ Extents of contamination must be fully delineated.
- ☐ Contamination does not cause an imminent risk to human health, the environment, or groundwater.

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

Printed Name: Gary Cunningham Title: Superintendent

Signature:  Date: 04/12/2019

email: garyc@osbornheirs.com Telephone: (210) 826-0700 ext 222

**OCD Only**

Received by: OCD Date: 7/6/2021

☒ Approved ☐ Approved with Attached Conditions of Approval ☐ Denied ☐ Deferral Approved

Signature:  Date: 2/24/2023

## **Appendix B**

## **Groundwater**



## New Mexico Office of the State Engineer

# Water Column/Average Depth to Water

(A CLW##### in the POD suffix indicates the POD has been replaced & no longer serves a water right file.)

(R=POD has been replaced,

O=orphaned,

C=the file is closed)

(quarters are 1=NW 2=NE 3=SW 4=SE)

(quarters are smallest to largest)

(NAD83 UTM in meters)

(In feet)

POD Number	Code	POD Sub-basin	County	Q 64	Q 16	Q 4	Sec	Tws	Rng	X	Y	DepthWell	DepthWater	Water Column
<a href="#">L 00904</a>		L	LE	2	1	3	06	17S	38E	669072	3637520*	130	75	55

Average Depth to Water: **75 feet**

Minimum Depth: **75 feet**

Maximum Depth: **75 feet**

**Record Count:** 1

**PLSS Search:**

**Section(s):** 06

**Township:** 17S

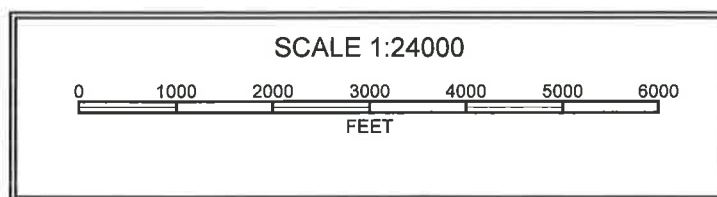
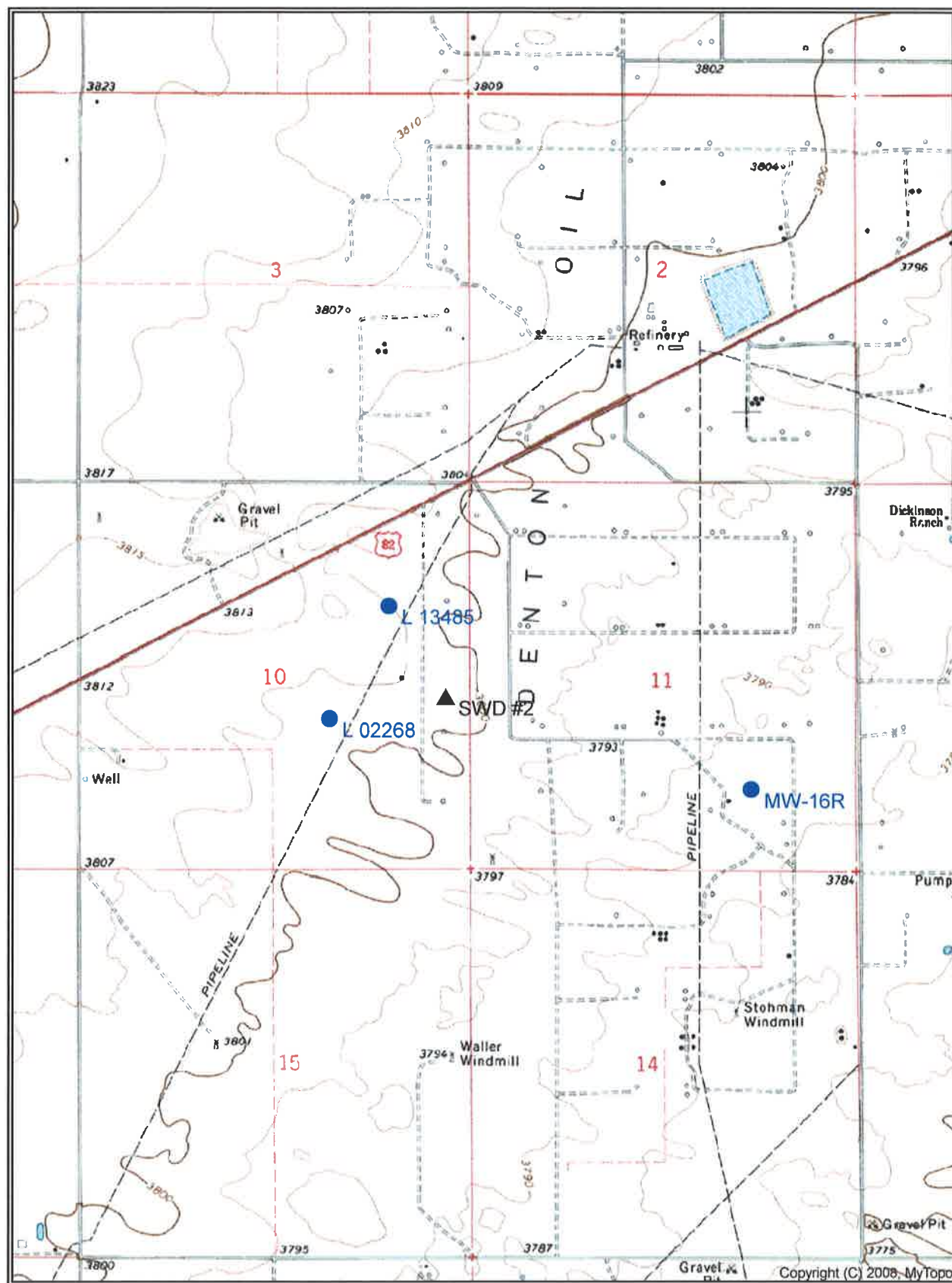
**Range:** 38E

\*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.

9/19/19 1:32 PM

WATER COLUMN/ AVERAGE DEPTH TO  
WATER



## **Appendix C**

# **Analytical Results**



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

---

April 12, 2019

Bob Allen

Safety & Environmental Solutions

703 East Clinton

Hobbs, NM 88240

RE: OSB - 19 - 001

Enclosed are the results of analyses for samples received by the laboratory on 04/09/19 14:30.

Cardinal Laboratories is accredited through Texas NELAP under certificate number T104704398-18-11. Accreditation applies to drinking water, non-potable water and solid and chemical materials. All accredited analytes are denoted by an asterisk (\*). For a complete list of accredited analytes and matrices visit the TCEQ website at [www.tceq.texas.gov/field/ga/lab\\_accred\\_certif.html](http://www.tceq.texas.gov/field/ga/lab_accred_certif.html).

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

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

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

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

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

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

Sincerely,

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

Celey D. Keene

Lab Director/Quality Manager



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

**Analytical Results For:**

Safety & Environmental Solutions  
703 East Clinton  
Hobbs NM, 88240

Project: OSB - 19 - 001  
Project Number: NONE GIVEN  
Project Manager: Bob Allen  
Fax To: (575) 393-4388

Reported:  
12-Apr-19 14:55

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
AH - 2 SURFACE	H901292-01	Soil	09-Apr-19 00:00	09-Apr-19 14:30
AH - 2 1.5'	H901292-02	Soil	09-Apr-19 00:00	09-Apr-19 14:30
AH - 3 SURFACE	H901292-03	Soil	09-Apr-19 00:00	09-Apr-19 14:30
AH - 3 1'	H901292-04	Soil	09-Apr-19 00:00	09-Apr-19 14:30
AH - 4 SURFACE	H901292-05	Soil	09-Apr-19 00:00	09-Apr-19 14:30
AH - 4 1'	H901292-06	Soil	09-Apr-19 00:00	09-Apr-19 14:30

BTEX 8021 results did not confirm via 8260. Results were about 5x higher via 8021 method vs 8260. This was due to the large amount of interfering compounds present in the samples.

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Celey D. Keene, Lab Director/Quality Manager



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

**Analytical Results For:**

Safety & Environmental Solutions  
703 East Clinton  
Hobbs NM, 88240

Project: OSB - 19 - 001  
Project Number: NONE GIVEN  
Project Manager: Bob Allen  
Fax To: (575) 393-4388

Reported:  
12-Apr-19 14:55

**AH - 2 SURFACE****H901292-01 (Soil)**

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

<b>Chloride</b>	<b>768</b>		16.0	mg/kg	4	9040914	AC	10-Apr-19	4500-Cl-B	
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**Volatile Organic Compounds by EPA Method 8021****S-04**

Benzene*	<1.00		1.00	mg/kg	1000	9041001	MS	11-Apr-19	8021B	QM-07
Toluene*	27.6		1.00	mg/kg	1000	9041001	MS	11-Apr-19	8021B	QM-07
Ethylbenzene*	19.4		1.00	mg/kg	1000	9041001	MS	11-Apr-19	8021B	QM-07
Total Xylenes*	118		3.00	mg/kg	1000	9041001	MS	11-Apr-19	8021B	QM-07
Total BTEX	164		6.00	mg/kg	1000	9041001	MS	11-Apr-19	8021B	

Surrogate: 4-Bromofluorobenzene (PID) 182 % 73.3-129 9041001 MS 11-Apr-19 8021B

**Petroleum Hydrocarbons by GC FID****S-06**

GRO C6-C10*	14200		50.0	mg/kg	5	9040912	MS	09-Apr-19	8015B	
DRO >C10-C28*	37500		50.0	mg/kg	5	9040912	MS	09-Apr-19	8015B	
EXT DRO >C28-C36	4600		50.0	mg/kg	5	9040912	MS	09-Apr-19	8015B	

Surrogate: 1-Chlorooctane 656 % 41-142 9040912 MS 09-Apr-19 8015B

Surrogate: 1-Chlorooctadecane 1090 % 37.6-147 9040912 MS 09-Apr-19 8015B

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Celey D. Keene, Lab Director/Quality Manager





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**Analytical Results For:**

Safety & Environmental Solutions  
703 East Clinton  
Hobbs NM, 88240

Project: OSB - 19 - 001  
Project Number: NONE GIVEN  
Project Manager: Bob Allen  
Fax To: (575) 393-4388

Reported:  
12-Apr-19 14:55

**AH - 2 1.5'**  
**H901292-02 (Soil)**

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

<b>Chloride</b>	<b>96.0</b>		16.0	mg/kg	4	9040914	AC	10-Apr-19	4500-Cl-B	
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**Volatile Organic Compounds by EPA Method 8021****S-04**

Benzene*	<0.050		0.050	mg/kg	50	9041001	MS	10-Apr-19	8021B	
Toluene*	<b>0.105</b>		0.050	mg/kg	50	9041001	MS	10-Apr-19	8021B	
Ethylbenzene*	<b>0.242</b>		0.050	mg/kg	50	9041001	MS	10-Apr-19	8021B	
Total Xylenes*	<b>1.78</b>		0.150	mg/kg	50	9041001	MS	10-Apr-19	8021B	
Total BTEX	<b>2.13</b>		0.300	mg/kg	50	9041001	MS	10-Apr-19	8021B	

Surrogate: 4-Bromofluorobenzene (PID)		151 %		73.3-129		9041001	MS	10-Apr-19	8021B	
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**Petroleum Hydrocarbons by GC FID**

GRO C6-C10*	<b>66.9</b>		10.0	mg/kg	1	9040912	MS	09-Apr-19	8015B	
DRO >C10-C28*	<b>669</b>		10.0	mg/kg	1	9040912	MS	09-Apr-19	8015B	
EXT DRO >C28-C36	<b>77.2</b>		10.0	mg/kg	1	9040912	MS	09-Apr-19	8015B	

Surrogate: 1-Chlorooctane		118 %		41-142		9040912	MS	09-Apr-19	8015B	
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Surrogate: 1-Chlorooctadecane		130 %		37.6-147		9040912	MS	09-Apr-19	8015B	
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Celey D. Keene, Lab Director/Quality Manager



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**Analytical Results For:**

Safety & Environmental Solutions  
703 East Clinton  
Hobbs NM, 88240

Project: OSB - 19 - 001  
Project Number: NONE GIVEN  
Project Manager: Bob Allen  
Fax To: (575) 393-4388

Reported:  
12-Apr-19 14:55

**AH - 3 SURFACE****H901292-03 (Soil)**

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

<b>Chloride</b>	<b>800</b>		16.0	mg/kg	4	9040914	AC	10-Apr-19	4500-Cl-B	
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**Volatile Organic Compounds by EPA Method 8021****S-04**

Benzene*	<1.00		1.00	mg/kg	1000	9041001	MS	11-Apr-19	8021B	
Toluene*	22.7		1.00	mg/kg	1000	9041001	MS	11-Apr-19	8021B	
Ethylbenzene*	18.2		1.00	mg/kg	1000	9041001	MS	11-Apr-19	8021B	
Total Xylenes*	112		3.00	mg/kg	1000	9041001	MS	11-Apr-19	8021B	
Total BTEX	153		6.00	mg/kg	1000	9041001	MS	11-Apr-19	8021B	

Surrogate: 4-Bromofluorobenzene (PID)		181 %		73.3-129		9041001	MS	11-Apr-19	8021B	
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**Petroleum Hydrocarbons by GC FID****S-06**

GRO C6-C10*	12800		50.0	mg/kg	5	9040912	MS	09-Apr-19	8015B	
DRO >C10-C28*	37800		50.0	mg/kg	5	9040912	MS	09-Apr-19	8015B	
EXT DRO >C28-C36	4700		50.0	mg/kg	5	9040912	MS	09-Apr-19	8015B	

Surrogate: 1-Chlorooctane		642 %		41-142		9040912	MS	09-Apr-19	8015B	
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Surrogate: 1-Chlorooctadecane		1090 %		37.6-147		9040912	MS	09-Apr-19	8015B	
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Celey D. Keene, Lab Director/Quality Manager



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**Analytical Results For:**

Safety & Environmental Solutions  
703 East Clinton  
Hobbs NM, 88240

Project: OSB - 19 - 001  
Project Number: NONE GIVEN  
Project Manager: Bob Allen  
Fax To: (575) 393-4388

Reported:  
12-Apr-19 14:55

**AH - 3 1'**  
**H901292-04 (Soil)**

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

<b>Chloride</b>	<b>96.0</b>		16.0	mg/kg	4	9040914	AC	10-Apr-19	4500-Cl-B	
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**Volatile Organic Compounds by EPA Method 8021****S-04**

Benzene*	<0.050		0.050	mg/kg	50	9041001	MS	10-Apr-19	8021B	
Toluene*	<b>0.084</b>		0.050	mg/kg	50	9041001	MS	10-Apr-19	8021B	
Ethylbenzene*	<b>0.234</b>		0.050	mg/kg	50	9041001	MS	10-Apr-19	8021B	
Total Xylenes*	<b>1.63</b>		0.150	mg/kg	50	9041001	MS	10-Apr-19	8021B	
Total BTEX	<b>1.95</b>		0.300	mg/kg	50	9041001	MS	10-Apr-19	8021B	

Surrogate: 4-Bromofluorobenzene (PID)		150 %	73.3-129			9041001	MS	10-Apr-19	8021B	
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**Petroleum Hydrocarbons by GC FID**

GRO C6-C10*	<b>49.9</b>		10.0	mg/kg	1	9041004	MS	10-Apr-19	8015B	
DRO >C10-C28*	<b>453</b>		10.0	mg/kg	1	9041004	MS	10-Apr-19	8015B	
EXT DRO >C28-C36	<b>55.4</b>		10.0	mg/kg	1	9041004	MS	10-Apr-19	8015B	

Surrogate: 1-Chlorooctane		105 %	41-142			9041004	MS	10-Apr-19	8015B	
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Surrogate: 1-Chlorooctadecane		99.9 %	37.6-147			9041004	MS	10-Apr-19	8015B	
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**Analytical Results For:**

Safety & Environmental Solutions  
703 East Clinton  
Hobbs NM, 88240

Project: OSB - 19 - 001  
Project Number: NONE GIVEN  
Project Manager: Bob Allen  
Fax To: (575) 393-4388

Reported:  
12-Apr-19 14:55

**AH - 4 SURFACE****H901292-05 (Soil)**

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

Chloride	784		16.0	mg/kg	4	9040914	AC	10-Apr-19	4500-Cl-B	
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**Volatile Organic Compounds by EPA Method 8021****S-04**

Benzene*	0.508		0.500	mg/kg	1000	9041001	MS	11-Apr-19	8021B	
Toluene*	24.0		1.00	mg/kg	1000	9041001	MS	11-Apr-19	8021B	
Ethylbenzene*	18.8		1.00	mg/kg	1000	9041001	MS	11-Apr-19	8021B	
Total Xylenes*	114		3.00	mg/kg	1000	9041001	MS	11-Apr-19	8021B	
Total BTEX	157		5.50	mg/kg	1000	9041001	MS	11-Apr-19	8021B	

Surrogate: 4-Bromofluorobenzene (PID)	182 %		73.3-129			9041001	MS	11-Apr-19	8021B	
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**Petroleum Hydrocarbons by GC FID****S-06**

GRO C6-C10*	11900		50.0	mg/kg	5	9041004	MS	10-Apr-19	8015B	
DRO >C10-C28*	34100		50.0	mg/kg	5	9041004	MS	10-Apr-19	8015B	
EXT DRO >C28-C36	5280		50.0	mg/kg	5	9041004	MS	10-Apr-19	8015B	

Surrogate: 1-Chlorooctane	1680 %		41-142			9041004	MS	10-Apr-19	8015B	
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Surrogate: 1-Chlorooctadecane	986 %		37.6-147			9041004	MS	10-Apr-19	8015B	
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**Analytical Results For:**

Safety & Environmental Solutions  
703 East Clinton  
Hobbs NM, 88240

Project: OSB - 19 - 001  
Project Number: NONE GIVEN  
Project Manager: Bob Allen  
Fax To: (575) 393-4388

Reported:  
12-Apr-19 14:55

**AH - 4 1'**  
**H901292-06 (Soil)**

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

<b>Chloride</b>	<b>80.0</b>		16.0	mg/kg	4	9040914	AC	10-Apr-19	4500-Cl-B	
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**Volatile Organic Compounds by EPA Method 8021****S-04**

Benzene*	<0.050		0.050	mg/kg	50	9041001	MS	10-Apr-19	8021B	
Toluene*	<b>0.108</b>		0.050	mg/kg	50	9041001	MS	10-Apr-19	8021B	
Ethylbenzene*	<b>0.274</b>		0.050	mg/kg	50	9041001	MS	10-Apr-19	8021B	
Total Xylenes*	<b>1.90</b>		0.150	mg/kg	50	9041001	MS	10-Apr-19	8021B	
Total BTEX	<b>2.28</b>		0.300	mg/kg	50	9041001	MS	10-Apr-19	8021B	

Surrogate: 4-Bromofluorobenzene (PID)		158 %		73.3-129		9041001	MS	10-Apr-19	8021B	
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**Petroleum Hydrocarbons by GC FID**

GRO C6-C10*	<b>49.2</b>		10.0	mg/kg	1	9041004	MS	10-Apr-19	8015B	
DRO >C10-C28*	<b>418</b>		10.0	mg/kg	1	9041004	MS	10-Apr-19	8015B	
EXT DRO >C28-C36	<b>81.7</b>		10.0	mg/kg	1	9041004	MS	10-Apr-19	8015B	

Surrogate: 1-Chlorooctane		103 %		41-142		9041004	MS	10-Apr-19	8015B	
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Surrogate: 1-Chlorooctadecane		94.8 %		37.6-147		9041004	MS	10-Apr-19	8015B	
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**Analytical Results For:**

Safety & Environmental Solutions  
703 East Clinton  
Hobbs NM, 88240

Project: OSB - 19 - 001  
Project Number: NONE GIVEN  
Project Manager: Bob Allen  
Fax To: (575) 393-4388

Reported:  
12-Apr-19 14:55

**Inorganic Compounds - Quality Control****Cardinal Laboratories**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch 9040914 - General Prep - Wet Chem</b>										
<b>Blank (9040914-BLK1)</b>				Prepared & Analyzed: 09-Apr-19						
Chloride	ND	16.0	mg/kg							
<b>LCS (9040914-BS1)</b>				Prepared & Analyzed: 09-Apr-19						
Chloride	400	16.0	mg/kg	400		100	80-120			
<b>LCS Dup (9040914-BSD1)</b>				Prepared & Analyzed: 09-Apr-19						
Chloride	400	16.0	mg/kg	400		100	80-120	0.00	20	

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**Analytical Results For:**

Safety & Environmental Solutions  
703 East Clinton  
Hobbs NM, 88240

Project: OSB - 19 - 001  
Project Number: NONE GIVEN  
Project Manager: Bob Allen  
Fax To: (575) 393-4388

Reported:  
12-Apr-19 14:55

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

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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**Batch 9041001 - Volatiles****Blank (9041001-BLK1)**

Prepared &amp; Analyzed: 10-Apr-19

Benzene	ND	0.050	mg/kg							
Toluene	ND	0.050	mg/kg							
Ethylbenzene	ND	0.050	mg/kg							
Total Xylenes	ND	0.150	mg/kg							
Total BTEX	ND	0.300	mg/kg							
Surrogate: 4-Bromofluorobenzene (PID)	0.0987		mg/kg	0.100		98.7	73.3-129			

**LCS (9041001-BS1)**

Prepared &amp; Analyzed: 10-Apr-19

Benzene	1.93	0.050	mg/kg	2.00		96.4	72.2-131			
Toluene	1.97	0.050	mg/kg	2.00		98.4	71.7-126			
Ethylbenzene	1.98	0.050	mg/kg	2.00		99.1	68.9-126			
Total Xylenes	5.86	0.150	mg/kg	6.00		97.6	71.4-125			
Surrogate: 4-Bromofluorobenzene (PID)	0.106		mg/kg	0.100		106	73.3-129			

**LCS Dup (9041001-BSD1)**

Prepared &amp; Analyzed: 10-Apr-19

Benzene	2.08	0.050	mg/kg	2.00		104	72.2-131	7.46	6.91	QR-02
Toluene	2.14	0.050	mg/kg	2.00		107	71.7-126	8.17	7.12	QR-02
Ethylbenzene	2.19	0.050	mg/kg	2.00		110	68.9-126	9.97	7.88	QR-02
Total Xylenes	6.48	0.150	mg/kg	6.00		108	71.4-125	10.1	7.46	QR-02
Surrogate: 4-Bromofluorobenzene (PID)	0.113		mg/kg	0.100		113	73.3-129			

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Celey D. Keene, Lab Director/Quality Manager



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

**Analytical Results For:**

Safety & Environmental Solutions  
703 East Clinton  
Hobbs NM, 88240

Project: OSB - 19 - 001  
Project Number: NONE GIVEN  
Project Manager: Bob Allen  
Fax To: (575) 393-4388

Reported:  
12-Apr-19 14:55

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

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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**Batch 9040912 - General Prep - Organics****Blank (9040912-BLK1)**

Prepared &amp; Analyzed: 09-Apr-19

GRO C6-C10	ND	10.0	mg/kg							
DRO >C10-C28	ND	10.0	mg/kg							
EXT DRO >C28-C36	ND	10.0	mg/kg							
Surrogate: 1-Chlorooctane	51.3		mg/kg	50.0		103	41-142			
Surrogate: 1-Chlorooctadecane	50.0		mg/kg	50.0		99.9	37.6-147			

**LCS (9040912-BS1)**

Prepared &amp; Analyzed: 09-Apr-19

GRO C6-C10	203	10.0	mg/kg	200		101	76.5-133			
DRO >C10-C28	207	10.0	mg/kg	200		104	72.9-138			
Total TPH C6-C28	410	10.0	mg/kg	400		102	78-132			
Surrogate: 1-Chlorooctane	54.6		mg/kg	50.0		109	41-142			
Surrogate: 1-Chlorooctadecane	52.9		mg/kg	50.0		106	37.6-147			

**LCS Dup (9040912-BS1)**

Prepared &amp; Analyzed: 09-Apr-19

GRO C6-C10	198	10.0	mg/kg	200		99.0	76.5-133	2.39	20.6	
DRO >C10-C28	200	10.0	mg/kg	200		100	72.9-138	3.33	20.6	
Total TPH C6-C28	398	10.0	mg/kg	400		99.6	78-132	2.87	18	
Surrogate: 1-Chlorooctane	53.3		mg/kg	50.0		107	41-142			
Surrogate: 1-Chlorooctadecane	51.7		mg/kg	50.0		103	37.6-147			

**Batch 9041004 - General Prep - Organics****Blank (9041004-BLK1)**

Prepared &amp; Analyzed: 10-Apr-19

GRO C6-C10	ND	10.0	mg/kg							
DRO >C10-C28	ND	10.0	mg/kg							
EXT DRO >C28-C36	ND	10.0	mg/kg							
Surrogate: 1-Chlorooctane	49.3		mg/kg	50.0		98.5	41-142			
Surrogate: 1-Chlorooctadecane	47.6		mg/kg	50.0		95.1	37.6-147			

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Celey D. Keene, Lab Director/Quality Manager





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**Analytical Results For:**

Safety & Environmental Solutions  
703 East Clinton  
Hobbs NM, 88240

Project: OSB - 19 - 001  
Project Number: NONE GIVEN  
Project Manager: Bob Allen  
Fax To: (575) 393-4388

Reported:  
12-Apr-19 14:55

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

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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**Batch 9041004 - General Prep - Organics****LCS (9041004-BS1)**

Prepared &amp; Analyzed: 10-Apr-19

GRO C6-C10	209	10.0	mg/kg	200		104	76.5-133			
DRO >C10-C28	194	10.0	mg/kg	200		97.2	72.9-138			
Total TPH C6-C28	403	10.0	mg/kg	400		101	78-132			
Surrogate: 1-Chlorooctane	55.2		mg/kg	50.0		110	41-142			
Surrogate: 1-Chlorooctadecane	49.1		mg/kg	50.0		98.1	37.6-147			

**LCS Dup (9041004-BS1)**

Prepared &amp; Analyzed: 10-Apr-19

GRO C6-C10	211	10.0	mg/kg	200		105	76.5-133	0.845	20.6	
DRO >C10-C28	202	10.0	mg/kg	200		101	72.9-138	3.96	20.6	
Total TPH C6-C28	413	10.0	mg/kg	400		103	78-132	2.36	18	
Surrogate: 1-Chlorooctane	55.2		mg/kg	50.0		110	41-142			
Surrogate: 1-Chlorooctadecane	52.1		mg/kg	50.0		104	37.6-147			

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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-02	The RPD result exceeded the QC control limits; however, both percent recoveries were acceptable. Sample results for the QC batch were accepted based on percent recoveries and completeness of QC data.
QM-07	The spike recovery was outside acceptance limits for the MS and/or MSD. The batch was accepted based on acceptable LCS recovery.
ND	Analyte NOT DETECTED at or above the reporting limit
RPD	Relative Percent Difference
**	Samples not received at proper temperature of 6°C or below.
***	Insufficient time to reach temperature.
-	Chloride by SM4500Cl-B does not require samples be received at or below 6°C Samples reported on an as received basis (wet) unless otherwise noted on report

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

Celey D. Keene, Lab Director/Quality Manager

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

FOR LAB USE ONLY						Lab I.D.		Sample I.D.					
MATRIX	# CONTAINERS	GROUNDWATER	WASTEWATER	SOIL	OIL	SLUDGE	OTHER :	ACID/BASE:	ICE / COOL	OTHER :	DATE	TIME	
	PRESERV.	SAMPLING											
	H90012808												
	1	Alt-2 Surgeon	G		N				X		04/09		X
	2	Alt-2 1.5 ft	G		X				X		04/09		X
	3	Alt-3 Surgeon	G		X				X		04/09		X
	4	Alt-3 1st	G		X				X		04/09		X
5	Alt-4 Surgeon	G		X				X		04/09		X	
6	Alt-4 1st	G		X				X		04/09		X	
TPH BTEX CHLORIDES													

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Released to Imaging: 2/24/2023 9:02:54 AM



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July 26, 2019

Bob Allen

Safety & Environmental Solutions

703 East Clinton

Hobbs, NM 88240

RE: OSB - 19 - 001

Enclosed are the results of analyses for samples received by the laboratory on 07/19/19 16:40.

Cardinal Laboratories is accredited through Texas NELAP under certificate number T104704398-18-11. Accreditation applies to drinking water, non-potable water and solid and chemical materials. All accredited analytes are denoted by an asterisk (\*). For a complete list of accredited analytes and matrices visit the TCEQ website at [www.tceq.texas.gov/field/qa/lab\\_accred\\_certif.html](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:**

Safety & Environmental Solutions  
 Bob Allen  
 703 East Clinton  
 Hobbs NM, 88240  
 Fax To: (575) 393-4388

Received:	07/19/2019	Sampling Date:	07/17/2019
Reported:	07/26/2019	Sampling Type:	Soil
Project Name:	OSB - 19 - 001	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	LEA CO NM		

**Sample ID: B - 1 0-2' , 1' (H902499-01)**

BTEX 8021B		mg/kg		Analyzed By: ms					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	07/24/2019	ND	1.74	87.0	2.00	2.24	
Toluene*	<0.050	0.050	07/24/2019	ND	1.77	88.6	2.00	2.18	
<b>Ethylbenzene*</b>	<b>0.056</b>	0.050	07/24/2019	ND	1.69	84.3	2.00	2.24	
Total Xylenes*	<0.150	0.150	07/24/2019	ND	5.08	84.7	6.00	2.60	
Total BTEX	<0.300	0.300	07/24/2019	ND					

Surrogate: 4-Bromofluorobenzene (PID) 105 % 73.3-129

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
<b>Chloride</b>	<b>576</b>	16.0	07/22/2019	ND	416	104	400	3.77	

TPH 8015M		mg/kg		Analyzed By: MS						S-04
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
GRO C6-C10*	<10.0	10.0	07/23/2019	ND	203	102	200	0.529		
<b>DRO &gt;C10-C28*</b>	<b>1840</b>	10.0	07/23/2019	ND	193	96.5	200	1.14		
<b>EXT DRO &gt;C28-C36</b>	<b>460</b>	10.0	07/23/2019	ND						

Surrogate: 1-Chlorooctane 109 % 41-142

Surrogate: 1-Chlorooctadecane 152 % 37.6-147

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Celey D. Keene, Lab Director/Quality Manager



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**Analytical Results For:**

Safety & Environmental Solutions  
 Bob Allen  
 703 East Clinton  
 Hobbs NM, 88240  
 Fax To: (575) 393-4388

Received: 07/19/2019  
 Reported: 07/26/2019  
 Project Name: OSB - 19 - 001  
 Project Number: NONE GIVEN  
 Project Location: LEA CO NM

Sampling Date: 07/17/2019  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Tamara Oldaker

**Sample ID: B - 1 0-2' , BASE (H902499-02)**

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	07/24/2019	ND	1.74	87.0	2.00	2.24		
Toluene*	<0.050	0.050	07/24/2019	ND	1.77	88.6	2.00	2.18	GC-NC	
Ethylbenzene*	<0.050	0.050	07/24/2019	ND	1.69	84.3	2.00	2.24		
Total Xylenes*	1.39	0.150	07/24/2019	ND	5.08	84.7	6.00	2.60		
Total BTEX	1.39	0.300	07/24/2019	ND						

Surrogate: 4-Bromofluorobenzene (PID) 194 % 73.3-129

Chloride, SM4500CI-B			mg/kg					Analyzed By: AC	
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
<b>Chloride</b>	<b>304</b>	16.0	07/22/2019	ND	416	104	400	3.77	

TPH 8015M		mg/kg		Analyzed By: MS				S-06	
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	806	50.0	07/23/2019	ND	203	102	200	0.529	
DRO >C10-C28*	6800	50.0	07/23/2019	ND	193	96.5	200	1.14	
EXT DRO >C28-C36	647	50.0	07/23/2019	ND					

Surrogate: 1-Chlorooctane 192 % 41-142

Surrogate: 1-Chlorooctadecane 301 % 37.6-147

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Celey D. Keene, Lab Director/Quality Manager





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

**Analytical Results For:**

Safety & Environmental Solutions  
 Bob Allen  
 703 East Clinton  
 Hobbs NM, 88240  
 Fax To: (575) 393-4388

Received: 07/19/2019  
 Reported: 07/26/2019  
 Project Name: OSB - 19 - 001  
 Project Number: NONE GIVEN  
 Project Location: LEA CO NM

Sampling Date: 07/17/2019  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Tamara Oldaker

**Sample ID: B - 1 5-7' (H902499-03)**

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	07/24/2019	ND	1.74	87.0	2.00	2.24	
Toluene*	<0.050	0.050	07/24/2019	ND	1.77	88.6	2.00	2.18	
Ethylbenzene*	<0.050	0.050	07/24/2019	ND	1.69	84.3	2.00	2.24	
Total Xylenes*	0.585	0.150	07/24/2019	ND	5.08	84.7	6.00	2.60	
Total BTEX	0.585	0.300	07/24/2019	ND					

Surrogate: 4-Bromofluorobenzene (PID) 140 % 73.3-129

Chloride, SM4500Cl-B			mg/kg					Analyzed By: AC	
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
<b>Chloride</b>	<b>80.0</b>	16.0	07/22/2019	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
<b>GRO C6-C10*</b>	<b>84.7</b>	10.0	07/23/2019	ND	203	102	200	0.529	
<b>DRO &gt;C10-C28*</b>	<b>1210</b>	10.0	07/23/2019	ND	193	96.5	200	1.14	
<b>EXT DRO &gt;C28-C36</b>	<b>146</b>	10.0	07/23/2019	ND					

Surrogate: 1-Chlorooctane 123 % 41-142

Surrogate: 1-Chlorooctadecane 144 % 37.6-147

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Celey D. Keene, Lab Director/Quality Manager



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**Analytical Results For:**

Safety & Environmental Solutions  
 Bob Allen  
 703 East Clinton  
 Hobbs NM, 88240  
 Fax To: (575) 393-4388

Received: 07/19/2019  
 Reported: 07/26/2019  
 Project Name: OSB - 19 - 001  
 Project Number: NONE GIVEN  
 Project Location: LEA CO NM

Sampling Date: 07/17/2019  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Tamara Oldaker

**Sample ID: B - 1 10-12' (H902499-04)**

BTEx 8021B		mg/kg		Analyzed By: ms					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	07/24/2019	ND	1.74	87.0	2.00	2.24	
Toluene*	<0.050	0.050	07/24/2019	ND	1.77	88.6	2.00	2.18	
Ethylbenzene*	<0.050	0.050	07/24/2019	ND	1.69	84.3	2.00	2.24	
Total Xylenes*	<0.150	0.150	07/24/2019	ND	5.08	84.7	6.00	2.60	
Total BTEX	<0.300	0.300	07/24/2019	ND					

Surrogate: 4-Bromofluorobenzene (PID) 103 % 73.3-129

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	48.0	16.0	07/22/2019	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	07/23/2019	ND	203	102	200	0.529	
DRO >C10-C28*	<10.0	10.0	07/23/2019	ND	193	96.5	200	1.14	
EXT DRO >C28-C36	<10.0	10.0	07/23/2019	ND					

Surrogate: 1-Chlorooctane 104 % 41-142

Surrogate: 1-Chlorooctadecane 108 % 37.6-147

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Celey D. Keene, Lab Director/Quality Manager





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**Analytical Results For:**

Safety & Environmental Solutions  
 Bob Allen  
 703 East Clinton  
 Hobbs NM, 88240  
 Fax To: (575) 393-4388

Received: 07/19/2019  
 Reported: 07/26/2019  
 Project Name: OSB - 19 - 001  
 Project Number: NONE GIVEN  
 Project Location: LEA CO NM

Sampling Date: 07/17/2019  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Tamara Oldaker

**Sample ID: B - 1 15-17' (H902499-05)**

BTEx 8021B		mg/kg		Analyzed By: ms						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	07/24/2019	ND	1.74	87.0	2.00	2.24		
Toluene*	<0.050	0.050	07/24/2019	ND	1.77	88.6	2.00	2.18		
Ethylbenzene*	<0.050	0.050	07/24/2019	ND	1.69	84.3	2.00	2.24		
Total Xylenes*	<0.150	0.150	07/24/2019	ND	5.08	84.7	6.00	2.60		
Total BTEx	<0.300	0.300	07/24/2019	ND						

Surrogate: 4-Bromofluorobenzene (PID) 103 % 73.3-129

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	48.0	16.0	07/22/2019	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	07/23/2019	ND	203	102	200	0.529	
DRO >C10-C28*	12.2	10.0	07/23/2019	ND	193	96.5	200	1.14	
EXT DRO >C28-C36	<10.0	10.0	07/23/2019	ND					

Surrogate: 1-Chlorooctane 108 % 41-142

Surrogate: 1-Chlorooctadecane 113 % 37.6-147

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\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager



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

**Analytical Results For:**

Safety & Environmental Solutions  
 Bob Allen  
 703 East Clinton  
 Hobbs NM, 88240  
 Fax To: (575) 393-4388

Received: 07/19/2019  
 Reported: 07/26/2019  
 Project Name: OSB - 19 - 001  
 Project Number: NONE GIVEN  
 Project Location: LEA CO NM

Sampling Date: 07/17/2019  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Tamara Oldaker

**Sample ID: B - 1 30-32' (H902499-06)**

BTEx 8021B		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	07/25/2019	ND	2.00	100	2.00	1.33	
Toluene*	<0.050	0.050	07/25/2019	ND	2.06	103	2.00	1.17	
Ethylbenzene*	<0.050	0.050	07/25/2019	ND	1.94	96.8	2.00	1.58	
Total Xylenes*	<0.150	0.150	07/25/2019	ND	6.18	103	6.00	2.04	
Total BTEx	<0.300	0.300	07/25/2019	ND					

Surrogate: 4-Bromofluorobenzene (PID) 103 % 73.3-129

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	16.0	16.0	07/22/2019	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	07/23/2019	ND	203	102	200	0.529	
DRO >C10-C28*	<10.0	10.0	07/23/2019	ND	193	96.5	200	1.14	
EXT DRO >C28-C36	<10.0	10.0	07/23/2019	ND					

Surrogate: 1-Chlorooctane 104 % 41-142

Surrogate: 1-Chlorooctadecane 109 % 37.6-147

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Celey D. Keene, Lab Director/Quality Manager



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**Analytical Results For:**

Safety & Environmental Solutions  
 Bob Allen  
 703 East Clinton  
 Hobbs NM, 88240  
 Fax To: (575) 393-4388

Received: 07/19/2019  
 Reported: 07/26/2019  
 Project Name: OSB - 19 - 001  
 Project Number: NONE GIVEN  
 Project Location: LEA CO NM

Sampling Date: 07/17/2019  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Tamara Oldaker

**Sample ID: B - 2 2' (H902499-07)**

BTX 8021B		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	0.349	0.050	07/25/2019	ND	2.00	100	2.00	1.33	
Toluene*	3.31	0.050	07/25/2019	ND	2.06	103	2.00	1.17	
Ethylbenzene*	3.41	0.050	07/25/2019	ND	1.94	96.8	2.00	1.58	
Total Xylenes*	4.07	0.150	07/25/2019	ND	6.18	103	6.00	2.04	
Total BTX	11.1	0.300	07/25/2019	ND					

Surrogate: 4-Bromofluorobenzene (PID) 87.3 % 73.3-129

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	80.0	16.0	07/22/2019	ND	416	104	400	3.77	
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>496</b>	10.0	07/24/2019	ND	203	102	200	0.529	
<b>DRO &gt;C10-C28*</b>	<b>1050</b>	10.0	07/24/2019	ND	193	96.5	200	1.14	
<b>EXT DRO &gt;C28-C36</b>	<b>98.3</b>	10.0	07/24/2019	ND					

Surrogate: 1-Chlorooctane 149 % 41-142

Surrogate: 1-Chlorooctadecane 136 % 37.6-147

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Celey D. Keene, Lab Director/Quality Manager



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

**Analytical Results For:**

Safety & Environmental Solutions  
 Bob Allen  
 703 East Clinton  
 Hobbs NM, 88240  
 Fax To: (575) 393-4388

Received: 07/19/2019  
 Reported: 07/26/2019  
 Project Name: OSB - 19 - 001  
 Project Number: NONE GIVEN  
 Project Location: LEA CO NM

Sampling Date: 07/17/2019  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Tamara Oldaker

**Sample ID: B - 2 5-7' (H902499-08)**

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	07/25/2019	ND	2.00	100	2.00	1.33	
Toluene*	<0.050	0.050	07/25/2019	ND	2.06	103	2.00	1.17	
Ethylbenzene*	<0.050	0.050	07/25/2019	ND	1.94	96.8	2.00	1.58	
Total Xylenes*	<0.150	0.150	07/25/2019	ND	6.18	103	6.00	2.04	
Total BTX	<0.300	0.300	07/25/2019	ND					

Surrogate: 4-Bromofluorobenzene (PID) 109 % 73.3-129

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	48.0	16.0	07/22/2019	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	07/24/2019	ND	203	102	200	0.529	
DRO >C10-C28*	69.7	10.0	07/24/2019	ND	193	96.5	200	1.14	
EXT DRO >C28-C36	<10.0	10.0	07/24/2019	ND					

Surrogate: 1-Chlorooctane 108 % 41-142

Surrogate: 1-Chlorooctadecane 117 % 37.6-147

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**Analytical Results For:**

Safety & Environmental Solutions  
 Bob Allen  
 703 East Clinton  
 Hobbs NM, 88240  
 Fax To: (575) 393-4388

Received: 07/19/2019  
 Reported: 07/26/2019  
 Project Name: OSB - 19 - 001  
 Project Number: NONE GIVEN  
 Project Location: LEA CO NM

Sampling Date: 07/17/2019  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Tamara Oldaker

**Sample ID: B - 2 10-12' (H902499-09)**

BTEx 8021B		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	07/25/2019	ND	2.00	100	2.00	1.33	
Toluene*	<0.050	0.050	07/25/2019	ND	2.06	103	2.00	1.17	
Ethylbenzene*	<0.050	0.050	07/25/2019	ND	1.94	96.8	2.00	1.58	
Total Xylenes*	<0.150	0.150	07/25/2019	ND	6.18	103	6.00	2.04	
Total BTEx	<0.300	0.300	07/25/2019	ND					

Surrogate: 4-Bromofluorobenzene (PID) 104 % 73.3-129

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	160	16.0	07/22/2019	ND	416	104	400	3.77		

TPH 8015M		mg/kg		Analyzed By: MS				S-04	
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	07/24/2019	ND	203	102	200	0.529	
DRO >C10-C28*	2570	10.0	07/24/2019	ND	193	96.5	200	1.14	
EXT DRO >C28-C36	497	10.0	07/24/2019	ND					

Surrogate: 1-Chlorooctane 115 % 41-142

Surrogate: 1-Chlorooctadecane 167 % 37.6-147

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Celey D. Keene, Lab Director/Quality Manager



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**Analytical Results For:**

Safety & Environmental Solutions  
 Bob Allen  
 703 East Clinton  
 Hobbs NM, 88240  
 Fax To: (575) 393-4388

Received: 07/19/2019  
 Reported: 07/26/2019  
 Project Name: OSB - 19 - 001  
 Project Number: NONE GIVEN  
 Project Location: LEA CO NM

Sampling Date: 07/17/2019  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Tamara Oldaker

**Sample ID: B - 2 15-17' (H902499-10)**

BTEx 8021B		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	07/25/2019	ND	2.00	100	2.00	1.33	
Toluene*	<0.050	0.050	07/25/2019	ND	2.06	103	2.00	1.17	
Ethylbenzene*	<0.050	0.050	07/25/2019	ND	1.94	96.8	2.00	1.58	
Total Xylenes*	<0.150	0.150	07/25/2019	ND	6.18	103	6.00	2.04	
Total BTEx	<0.300	0.300	07/25/2019	ND					

Surrogate: 4-Bromofluorobenzene (PID) 107 % 73.3-129

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	176	16.0	07/22/2019	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	07/24/2019	ND	203	102	200	0.529	
DRO >C10-C28*	13.7	10.0	07/24/2019	ND	193	96.5	200	1.14	
EXT DRO >C28-C36	<10.0	10.0	07/24/2019	ND					

Surrogate: 1-Chlorooctane 101 % 41-142

Surrogate: 1-Chlorooctadecane 106 % 37.6-147

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Celey D. Keene, Lab Director/Quality Manager



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**Analytical Results For:**

Safety & Environmental Solutions  
 Bob Allen  
 703 East Clinton  
 Hobbs NM, 88240  
 Fax To: (575) 393-4388

Received: 07/19/2019  
 Reported: 07/26/2019  
 Project Name: OSB - 19 - 001  
 Project Number: NONE GIVEN  
 Project Location: LEA CO NM

Sampling Date: 07/17/2019  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Tamara Oldaker

**Sample ID: B - 2 20-22' (H902499-11)**

BTEx 8021B		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	07/25/2019	ND	2.00	100	2.00	1.33	
Toluene*	<0.050	0.050	07/25/2019	ND	2.06	103	2.00	1.17	
Ethylbenzene*	<0.050	0.050	07/25/2019	ND	1.94	96.8	2.00	1.58	
Total Xylenes*	<0.150	0.150	07/25/2019	ND	6.18	103	6.00	2.04	
Total BTEx	<0.300	0.300	07/25/2019	ND					

Surrogate: 4-Bromofluorobenzene (PID) 105 % 73.3-129

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	160	16.0	07/22/2019	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	07/24/2019	ND	203	102	200	0.529	
DRO >C10-C28*	<10.0	10.0	07/24/2019	ND	193	96.5	200	1.14	
EXT DRO >C28-C36	<10.0	10.0	07/24/2019	ND					

Surrogate: 1-Chlorooctane 102 % 41-142

Surrogate: 1-Chlorooctadecane 107 % 37.6-147

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**Analytical Results For:**

Safety & Environmental Solutions  
 Bob Allen  
 703 East Clinton  
 Hobbs NM, 88240  
 Fax To: (575) 393-4388

Received: 07/19/2019  
 Reported: 07/26/2019  
 Project Name: OSB - 19 - 001  
 Project Number: NONE GIVEN  
 Project Location: LEA CO NM

Sampling Date: 07/17/2019  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Tamara Oldaker

**Sample ID: B - 2 25-27' (H902499-12)**

BTEx 8021B		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	07/25/2019	ND	2.00	100	2.00	1.33	
Toluene*	<0.050	0.050	07/25/2019	ND	2.06	103	2.00	1.17	
Ethylbenzene*	<0.050	0.050	07/25/2019	ND	1.94	96.8	2.00	1.58	
Total Xylenes*	<0.150	0.150	07/25/2019	ND	6.18	103	6.00	2.04	
Total BTEx	<0.300	0.300	07/25/2019	ND					

Surrogate: 4-Bromofluorobenzene (PID) 103 % 73.3-129

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	80.0	16.0	07/22/2019	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	07/24/2019	ND	203	102	200	0.529	
DRO >C10-C28*	<10.0	10.0	07/24/2019	ND	193	96.5	200	1.14	
EXT DRO >C28-C36	<10.0	10.0	07/24/2019	ND					

Surrogate: 1-Chlorooctane 113 % 41-142

Surrogate: 1-Chlorooctadecane 117 % 37.6-147

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Celey D. Keene, Lab Director/Quality Manager





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**Analytical Results For:**

Safety & Environmental Solutions  
 Bob Allen  
 703 East Clinton  
 Hobbs NM, 88240  
 Fax To: (575) 393-4388

Received: 07/19/2019  
 Reported: 07/26/2019  
 Project Name: OSB - 19 - 001  
 Project Number: NONE GIVEN  
 Project Location: LEA CO NM

Sampling Date: 07/17/2019  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Tamara Oldaker

**Sample ID: B - 2 30-32' (H902499-13)**

BTEx 8021B		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	07/25/2019	ND	2.00	100	2.00	1.33	
Toluene*	<0.050	0.050	07/25/2019	ND	2.06	103	2.00	1.17	
Ethylbenzene*	<0.050	0.050	07/25/2019	ND	1.94	96.8	2.00	1.58	
Total Xylenes*	<0.150	0.150	07/25/2019	ND	6.18	103	6.00	2.04	
Total BTEx	<0.300	0.300	07/25/2019	ND					

Surrogate: 4-Bromofluorobenzene (PID) 102 % 73.3-129

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	48.0	16.0	07/22/2019	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	07/23/2019	ND	190	95.2	200	1.01	
DRO >C10-C28*	<10.0	10.0	07/23/2019	ND	182	91.2	200	2.94	
EXT DRO >C28-C36	<10.0	10.0	07/23/2019	ND					

Surrogate: 1-Chlorooctane 141 % 41-142

Surrogate: 1-Chlorooctadecane 141 % 37.6-147

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Celey D. Keene, Lab Director/Quality Manager



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**Analytical Results For:**

Safety & Environmental Solutions  
 Bob Allen  
 703 East Clinton  
 Hobbs NM, 88240  
 Fax To: (575) 393-4388

Received: 07/19/2019  
 Reported: 07/26/2019  
 Project Name: OSB - 19 - 001  
 Project Number: NONE GIVEN  
 Project Location: LEA CO NM

Sampling Date: 07/17/2019  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Tamara Oldaker

**Sample ID: B - 3 0-2' (H902499-14)**

BTEx 8021B		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	07/25/2019	ND	2.00	100	2.00	1.33	
Toluene*	<0.050	0.050	07/25/2019	ND	2.06	103	2.00	1.17	
Ethylbenzene*	<0.050	0.050	07/25/2019	ND	1.94	96.8	2.00	1.58	
Total Xylenes*	<0.150	0.150	07/25/2019	ND	6.18	103	6.00	2.04	
Total BTEx	<0.300	0.300	07/25/2019	ND					

Surrogate: 4-Bromofluorobenzene (PID) 111 % 73.3-129

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	912	16.0	07/22/2019	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	07/23/2019	ND	190	95.2	200	1.01	
DRO >C10-C28*	146	10.0	07/23/2019	ND	182	91.2	200	2.94	
EXT DRO >C28-C36	18.7	10.0	07/23/2019	ND					

Surrogate: 1-Chlorooctane 99.9 % 41-142

Surrogate: 1-Chlorooctadecane 108 % 37.6-147

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\*=Accredited Analyte

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

**Analytical Results For:**

Safety & Environmental Solutions  
 Bob Allen  
 703 East Clinton  
 Hobbs NM, 88240  
 Fax To: (575) 393-4388

Received: 07/19/2019  
 Reported: 07/26/2019  
 Project Name: OSB - 19 - 001  
 Project Number: NONE GIVEN  
 Project Location: LEA CO NM

Sampling Date: 07/17/2019  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Tamara Oldaker

**Sample ID: B - 3 2-4' (H902499-15)**

BTEx 8021B		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	07/25/2019	ND	2.00	100	2.00	1.33	
Toluene*	<0.050	0.050	07/25/2019	ND	2.06	103	2.00	1.17	
Ethylbenzene*	<0.050	0.050	07/25/2019	ND	1.94	96.8	2.00	1.58	
Total Xylenes*	<0.150	0.150	07/25/2019	ND	6.18	103	6.00	2.04	
Total BTEx	<0.300	0.300	07/25/2019	ND					

Surrogate: 4-Bromofluorobenzene (PID) 104 % 73.3-129

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	288	16.0	07/22/2019	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	07/23/2019	ND	190	95.2	200	1.01	
DRO >C10-C28*	15.2	10.0	07/23/2019	ND	182	91.2	200	2.94	
EXT DRO >C28-C36	<10.0	10.0	07/23/2019	ND					

Surrogate: 1-Chlorooctane 107 % 41-142

Surrogate: 1-Chlorooctadecane 107 % 37.6-147

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**Analytical Results For:**

Safety & Environmental Solutions  
 Bob Allen  
 703 East Clinton  
 Hobbs NM, 88240  
 Fax To: (575) 393-4388

Received: 07/19/2019  
 Reported: 07/26/2019  
 Project Name: OSB - 19 - 001  
 Project Number: NONE GIVEN  
 Project Location: LEA CO NM

Sampling Date: 07/17/2019  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Tamara Oldaker

**Sample ID: B - 3 5-7' (H902499-16)**

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	07/25/2019	ND	2.00	100	2.00	1.33	
Toluene*	<0.050	0.050	07/25/2019	ND	2.06	103	2.00	1.17	
Ethylbenzene*	<0.050	0.050	07/25/2019	ND	1.94	96.8	2.00	1.58	
Total Xylenes*	<0.150	0.150	07/25/2019	ND	6.18	103	6.00	2.04	
Total BTX	<0.300	0.300	07/25/2019	ND					

Surrogate: 4-Bromofluorobenzene (PID) 104 % 73.3-129

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	32.0	16.0	07/22/2019	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	07/23/2019	ND	190	95.2	200	1.01	
DRO >C10-C28*	19.7	10.0	07/23/2019	ND	182	91.2	200	2.94	
EXT DRO >C28-C36	<10.0	10.0	07/23/2019	ND					

Surrogate: 1-Chlorooctane 104 % 41-142

Surrogate: 1-Chlorooctadecane 103 % 37.6-147

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Celey D. Keene, Lab Director/Quality Manager



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**Analytical Results For:**

Safety & Environmental Solutions  
 Bob Allen  
 703 East Clinton  
 Hobbs NM, 88240  
 Fax To: (575) 393-4388

Received: 07/19/2019  
 Reported: 07/26/2019  
 Project Name: OSB - 19 - 001  
 Project Number: NONE GIVEN  
 Project Location: LEA CO NM

Sampling Date: 07/17/2019  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Tamara Oldaker

**Sample ID: B - 3 10-12' (H902499-17)**

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	07/25/2019	ND	2.00	100	2.00	1.33	
Toluene*	<0.050	0.050	07/25/2019	ND	2.06	103	2.00	1.17	
Ethylbenzene*	<0.050	0.050	07/25/2019	ND	1.94	96.8	2.00	1.58	
Total Xylenes*	<0.150	0.150	07/25/2019	ND	6.18	103	6.00	2.04	
Total BTX	<0.300	0.300	07/25/2019	ND					

Surrogate: 4-Bromofluorobenzene (PID) 104 % 73.3-129

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	48.0	16.0	07/22/2019	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	07/23/2019	ND	190	95.2	200	1.01	
DRO >C10-C28*	20.5	10.0	07/23/2019	ND	182	91.2	200	2.94	
EXT DRO >C28-C36	<10.0	10.0	07/23/2019	ND					

Surrogate: 1-Chlorooctane 98.0 % 41-142

Surrogate: 1-Chlorooctadecane 96.1 % 37.6-147

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Celey D. Keene, Lab Director/Quality Manager



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**Analytical Results For:**

Safety & Environmental Solutions  
 Bob Allen  
 703 East Clinton  
 Hobbs NM, 88240  
 Fax To: (575) 393-4388

Received: 07/19/2019  
 Reported: 07/26/2019  
 Project Name: OSB - 19 - 001  
 Project Number: NONE GIVEN  
 Project Location: LEA CO NM

Sampling Date: 07/17/2019  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Tamara Oldaker

**Sample ID: B - 3 15-17' (H902499-18)**

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	07/25/2019	ND	2.00	100	2.00	1.33	
Toluene*	<0.050	0.050	07/25/2019	ND	2.06	103	2.00	1.17	
Ethylbenzene*	<0.050	0.050	07/25/2019	ND	1.94	96.8	2.00	1.58	
Total Xylenes*	<0.150	0.150	07/25/2019	ND	6.18	103	6.00	2.04	
Total BTX	<0.300	0.300	07/25/2019	ND					

Surrogate: 4-Bromofluorobenzene (PID) 104 % 73.3-129

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	32.0	16.0	07/22/2019	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	07/23/2019	ND	185	92.3	200	4.28	
DRO >C10-C28*	14.2	10.0	07/23/2019	ND	178	89.0	200	4.70	
EXT DRO >C28-C36	<10.0	10.0	07/23/2019	ND					

Surrogate: 1-Chlorooctane 80.4 % 41-142

Surrogate: 1-Chlorooctadecane 83.6 % 37.6-147

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Celey D. Keene, Lab Director/Quality Manager



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**Analytical Results For:**

Safety & Environmental Solutions  
 Bob Allen  
 703 East Clinton  
 Hobbs NM, 88240  
 Fax To: (575) 393-4388

Received: 07/19/2019  
 Reported: 07/26/2019  
 Project Name: OSB - 19 - 001  
 Project Number: NONE GIVEN  
 Project Location: LEA CO NM

Sampling Date: 07/17/2019  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Tamara Oldaker

**Sample ID: B - 3 25-27' (H902499-19)**

BTEx 8021B		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	07/25/2019	ND	1.70	84.8	2.00	2.64	
Toluene*	<0.050	0.050	07/25/2019	ND	1.68	84.1	2.00	4.45	
Ethylbenzene*	<0.050	0.050	07/25/2019	ND	1.56	78.2	2.00	6.27	
<b>Total Xylenes*</b>	<b>0.206</b>	0.150	07/25/2019	ND	5.02	83.6	6.00	6.25	
Total BTEx	<0.300	0.300	07/25/2019	ND					

Surrogate: 4-Bromofluorobenzene (PID) 102 % 73.3-129

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	32.0	16.0	07/22/2019	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	07/23/2019	ND	185	92.3	200	4.28	
DRO >C10-C28*	<10.0	10.0	07/23/2019	ND	178	89.0	200	4.70	
EXT DRO >C28-C36	<10.0	10.0	07/23/2019	ND					

Surrogate: 1-Chlorooctane 71.3 % 41-142

Surrogate: 1-Chlorooctadecane 75.4 % 37.6-147

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Celey D. Keene, Lab Director/Quality Manager



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**Analytical Results For:**

Safety & Environmental Solutions  
 Bob Allen  
 703 East Clinton  
 Hobbs NM, 88240  
 Fax To: (575) 393-4388

Received: 07/19/2019  
 Reported: 07/26/2019  
 Project Name: OSB - 19 - 001  
 Project Number: NONE GIVEN  
 Project Location: LEA CO NM

Sampling Date: 07/17/2019  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Tamara Oldaker

**Sample ID: B - 3 30-32' (H902499-20)**

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	07/25/2019	ND	1.70	84.8	2.00	2.64		
Toluene*	<0.050	0.050	07/25/2019	ND	1.68	84.1	2.00	4.45		
Ethylbenzene*	<0.050	0.050	07/25/2019	ND	1.56	78.2	2.00	6.27		
Total Xylenes*	<0.150	0.150	07/25/2019	ND	5.02	83.6	6.00	6.25		
Total BTX	<0.300	0.300	07/25/2019	ND						

Surrogate: 4-Bromofluorobenzene (PID) 99.3 % 73.3-129

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	80.0	16.0	07/22/2019	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	07/23/2019	ND	185	92.3	200	4.28	
DRO >C10-C28*	<10.0	10.0	07/23/2019	ND	178	89.0	200	4.70	
EXT DRO >C28-C36	<10.0	10.0	07/23/2019	ND					

Surrogate: 1-Chlorooctane 72.7 % 41-142

Surrogate: 1-Chlorooctadecane 76.3 % 37.6-147

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**Analytical Results For:**

Safety & Environmental Solutions  
 Bob Allen  
 703 East Clinton  
 Hobbs NM, 88240  
 Fax To: (575) 393-4388

Received: 07/19/2019  
 Reported: 07/26/2019  
 Project Name: OSB - 19 - 001  
 Project Number: NONE GIVEN  
 Project Location: LEA CO NM

Sampling Date: 07/17/2019  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Tamara Oldaker

**Sample ID: B - 4, 0-2' (H902499-21)**

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	07/25/2019	ND	1.70	84.8	2.00	2.64		
Toluene*	<0.050	0.050	07/25/2019	ND	1.68	84.1	2.00	4.45		
Ethylbenzene*	<0.050	0.050	07/25/2019	ND	1.56	78.2	2.00	6.27		
Total Xylenes*	<0.150	0.150	07/25/2019	ND	5.02	83.6	6.00	6.25		
Total BTX	<0.300	0.300	07/25/2019	ND						

Surrogate: 4-Bromofluorobenzene (PID) 101 % 73.3-129

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	16.0	16.0	07/22/2019	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	07/23/2019	ND	185	92.3	200	4.28	
DRO >C10-C28*	511	10.0	07/23/2019	ND	178	89.0	200	4.70	
EXT DRO >C28-C36	178	10.0	07/23/2019	ND					

Surrogate: 1-Chlorooctane 64.2 % 41-142

Surrogate: 1-Chlorooctadecane 75.6 % 37.6-147

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**Analytical Results For:**

Safety & Environmental Solutions  
 Bob Allen  
 703 East Clinton  
 Hobbs NM, 88240  
 Fax To: (575) 393-4388

Received: 07/19/2019  
 Reported: 07/26/2019  
 Project Name: OSB - 19 - 001  
 Project Number: NONE GIVEN  
 Project Location: LEA CO NM

Sampling Date: 07/17/2019  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Tamara Oldaker

**Sample ID: B - 4, 2-4' (H902499-22)**

BTEX 8021B		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	07/25/2019	ND	1.70	84.8	2.00	2.64	
Toluene*	<0.050	0.050	07/25/2019	ND	1.68	84.1	2.00	4.45	
Ethylbenzene*	<0.050	0.050	07/25/2019	ND	1.56	78.2	2.00	6.27	
Total Xylenes*	<0.150	0.150	07/25/2019	ND	5.02	83.6	6.00	6.25	
Total BTEX	<0.300	0.300	07/25/2019	ND					

Surrogate: 4-Bromofluorobenzene (PID) 103 % 73.3-129

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	32.0	16.0	07/22/2019	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	07/23/2019	ND	185	92.3	200	4.28	
DRO >C10-C28*	10.4	10.0	07/23/2019	ND	178	89.0	200	4.70	
EXT DRO >C28-C36	<10.0	10.0	07/23/2019	ND					

Surrogate: 1-Chlorooctane 61.7 % 41-142

Surrogate: 1-Chlorooctadecane 64.1 % 37.6-147

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Celey D. Keene, Lab Director/Quality Manager



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

**Analytical Results For:**

Safety & Environmental Solutions  
 Bob Allen  
 703 East Clinton  
 Hobbs NM, 88240  
 Fax To: (575) 393-4388

Received: 07/19/2019  
 Reported: 07/26/2019  
 Project Name: OSB - 19 - 001  
 Project Number: NONE GIVEN  
 Project Location: LEA CO NM

Sampling Date: 07/17/2019  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Tamara Oldaker

**Sample ID: B - 4, 4-6' (H902499-23)**

BTEx 8021B		mg/kg		Analyzed By: MS						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	07/25/2019	ND	1.70	84.8	2.00	2.64		
Toluene*	<0.050	0.050	07/25/2019	ND	1.68	84.1	2.00	4.45		
Ethylbenzene*	<0.050	0.050	07/25/2019	ND	1.56	78.2	2.00	6.27		
Total Xylenes*	<0.150	0.150	07/25/2019	ND	5.02	83.6	6.00	6.25		
Total BTEx	<0.300	0.300	07/25/2019	ND						

Surrogate: 4-Bromofluorobenzene (PID) 106 % 73.3-129

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	32.0	16.0	07/22/2019	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	07/23/2019	ND	185	92.3	200	4.28	
DRO >C10-C28*	725	10.0	07/23/2019	ND	178	89.0	200	4.70	
EXT DRO >C28-C36	197	10.0	07/23/2019	ND					

Surrogate: 1-Chlorooctane 69.1 % 41-142

Surrogate: 1-Chlorooctadecane 83.5 % 37.6-147

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Celey D. Keene, Lab Director/Quality Manager



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**Analytical Results For:**

Safety & Environmental Solutions  
 Bob Allen  
 703 East Clinton  
 Hobbs NM, 88240  
 Fax To: (575) 393-4388

Received: 07/19/2019  
 Reported: 07/26/2019  
 Project Name: OSB - 19 - 001  
 Project Number: NONE GIVEN  
 Project Location: LEA CO NM

Sampling Date: 07/17/2019  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Tamara Oldaker

**Sample ID: B - 4, 10-12' (H902499-24)**

BTEx 8021B		mg/kg		Analyzed By: MS						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	07/25/2019	ND	1.70	84.8	2.00	2.64		
Toluene*	<0.050	0.050	07/25/2019	ND	1.68	84.1	2.00	4.45		
Ethylbenzene*	<0.050	0.050	07/25/2019	ND	1.56	78.2	2.00	6.27		
Total Xylenes*	<0.150	0.150	07/25/2019	ND	5.02	83.6	6.00	6.25		
Total BTEx	<0.300	0.300	07/25/2019	ND						

Surrogate: 4-Bromofluorobenzene (PID) 101 % 73.3-129

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	16.0	16.0	07/22/2019	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	07/23/2019	ND	185	92.3	200	4.28	
DRO >C10-C28*	142	10.0	07/23/2019	ND	178	89.0	200	4.70	
EXT DRO >C28-C36	38.2	10.0	07/23/2019	ND					

Surrogate: 1-Chlorooctane 64.1 % 41-142

Surrogate: 1-Chlorooctadecane 69.8 % 37.6-147

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Celey D. Keene, Lab Director/Quality Manager



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**Analytical Results For:**

Safety & Environmental Solutions  
 Bob Allen  
 703 East Clinton  
 Hobbs NM, 88240  
 Fax To: (575) 393-4388

Received: 07/19/2019  
 Reported: 07/26/2019  
 Project Name: OSB - 19 - 001  
 Project Number: NONE GIVEN  
 Project Location: LEA CO NM

Sampling Date: 07/17/2019  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Tamara Oldaker

**Sample ID: B - 4, 15-17' (H902499-25)**

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	07/25/2019	ND	1.70	84.8	2.00	2.64		
Toluene*	<0.050	0.050	07/25/2019	ND	1.68	84.1	2.00	4.45		
Ethylbenzene*	<0.050	0.050	07/25/2019	ND	1.56	78.2	2.00	6.27		
Total Xylenes*	<0.150	0.150	07/25/2019	ND	5.02	83.6	6.00	6.25		
Total BTX	<0.300	0.300	07/25/2019	ND						

Surrogate: 4-Bromofluorobenzene (PID) 99.9 % 73.3-129

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	16.0	16.0	07/22/2019	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	07/23/2019	ND	185	92.3	200	4.28	
DRO >C10-C28*	<10.0	10.0	07/23/2019	ND	178	89.0	200	4.70	
EXT DRO >C28-C36	<10.0	10.0	07/23/2019	ND					

Surrogate: 1-Chlorooctane 65.8 % 41-142

Surrogate: 1-Chlorooctadecane 68.8 % 37.6-147

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Celey D. Keene, Lab Director/Quality Manager



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**Analytical Results For:**

Safety & Environmental Solutions  
 Bob Allen  
 703 East Clinton  
 Hobbs NM, 88240  
 Fax To: (575) 393-4388

Received: 07/19/2019  
 Reported: 07/26/2019  
 Project Name: OSB - 19 - 001  
 Project Number: NONE GIVEN  
 Project Location: LEA CO NM

Sampling Date: 07/17/2019  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Tamara Oldaker

**Sample ID: B - 4, 20-22' (H902499-26)**

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	07/25/2019	ND	1.70	84.8	2.00	2.64		
Toluene*	<0.050	0.050	07/25/2019	ND	1.68	84.1	2.00	4.45		
Ethylbenzene*	<0.050	0.050	07/25/2019	ND	1.56	78.2	2.00	6.27		
Total Xylenes*	<0.150	0.150	07/25/2019	ND	5.02	83.6	6.00	6.25		
Total BTX	<0.300	0.300	07/25/2019	ND						

Surrogate: 4-Bromofluorobenzene (PID) 99.6 % 73.3-129

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	16.0	16.0	07/22/2019	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	07/23/2019	ND	185	92.3	200	4.28	
DRO >C10-C28*	<10.0	10.0	07/23/2019	ND	178	89.0	200	4.70	
EXT DRO >C28-C36	<10.0	10.0	07/23/2019	ND					

Surrogate: 1-Chlorooctane 65.9 % 41-142

Surrogate: 1-Chlorooctadecane 69.3 % 37.6-147

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Celey D. Keene, Lab Director/Quality Manager



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**Analytical Results For:**

Safety & Environmental Solutions  
 Bob Allen  
 703 East Clinton  
 Hobbs NM, 88240  
 Fax To: (575) 393-4388

Received: 07/19/2019  
 Reported: 07/26/2019  
 Project Name: OSB - 19 - 001  
 Project Number: NONE GIVEN  
 Project Location: LEA CO NM

Sampling Date: 07/17/2019  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Tamara Oldaker

**Sample ID: B - 4, 25-27' (H902499-27)**

BTEX 8021B		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	07/25/2019	ND	1.70	84.8	2.00	2.64	
Toluene*	<0.050	0.050	07/25/2019	ND	1.68	84.1	2.00	4.45	
Ethylbenzene*	<0.050	0.050	07/25/2019	ND	1.56	78.2	2.00	6.27	
Total Xylenes*	<0.150	0.150	07/25/2019	ND	5.02	83.6	6.00	6.25	
Total BTEX	<0.300	0.300	07/25/2019	ND					

Surrogate: 4-Bromofluorobenzene (PID) 102 % 73.3-129

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	16.0	16.0	07/22/2019	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	07/23/2019	ND	185	92.3	200	4.28	
DRO >C10-C28*	<10.0	10.0	07/23/2019	ND	178	89.0	200	4.70	
EXT DRO >C28-C36	<10.0	10.0	07/23/2019	ND					

Surrogate: 1-Chlorooctane 66.5 % 41-142

Surrogate: 1-Chlorooctadecane 68.8 % 37.6-147

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Celey D. Keene, Lab Director/Quality Manager



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**Analytical Results For:**

Safety & Environmental Solutions  
 Bob Allen  
 703 East Clinton  
 Hobbs NM, 88240  
 Fax To: (575) 393-4388

Received: 07/19/2019  
 Reported: 07/26/2019  
 Project Name: OSB - 19 - 001  
 Project Number: NONE GIVEN  
 Project Location: LEA CO NM

Sampling Date: 07/17/2019  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Tamara Oldaker

**Sample ID: B - 4, 30-32' (H902499-28)**

BTEx 8021B		mg/kg		Analyzed By: MS						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	07/25/2019	ND	1.70	84.8	2.00	2.64		
Toluene*	<0.050	0.050	07/25/2019	ND	1.68	84.1	2.00	4.45		
Ethylbenzene*	<0.050	0.050	07/25/2019	ND	1.56	78.2	2.00	6.27		
Total Xylenes*	<0.150	0.150	07/25/2019	ND	5.02	83.6	6.00	6.25		
Total BTEX	<0.300	0.300	07/25/2019	ND						

Surrogate: 4-Bromofluorobenzene (PID) 104 % 73.3-129

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	32.0	16.0	07/22/2019	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	07/23/2019	ND	185	92.3	200	4.28	
DRO >C10-C28*	<10.0	10.0	07/23/2019	ND	178	89.0	200	4.70	
EXT DRO >C28-C36	<10.0	10.0	07/23/2019	ND					

Surrogate: 1-Chlorooctane 66.3 % 41-142

Surrogate: 1-Chlorooctadecane 69.1 % 37.6-147

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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.
GC-NC	8260 confirmation analysis was performed; initial GC results were not supported by GC/MS analysis and are reported as ND.
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

# CARDINAL Laboratories

## CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

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

Company Name: Safety and Environmental Solutions		P.O. #:		BILTO		ANALYSIS REQUEST	
Project Manager: Bob Allen		Company: Same					
Address: 703 East Clinton, PO Box 1613		Attn:					
City: Hobbs		Address:					
Phone #: 575 397-0510		Fax #: 575 393-4388					
Project #: OSB-19-001		Project Owner:					
Project Name:		City:					
Project Location: Livingston		State:		Zip:			
Sampler Name: David Boyer		Phone #:					
FOR LAB USE ONLY		Fax #:					
MATRIX		PRESERV		SAMPLING			
3015 (EXT)							
V							
Ride							

Page 1 of 3

**Sample I.D.**

H/902499

Lab I.D.	Sample I.D.	(G)RAB OR (C)OMP.	# CONTAINERS	GROUNDWATER	WASTEWATER	SOIL	OIL	SLUDGE	OTHER :	ACID/BASE:	ICE / COOL	OTHER :	DATE	TIME	TPH (Y)	BTE	Chlor
H902499	B-1 0-2', 1 FT	(G)	1			X				X			7/17	1047	X	X	X
1	B-1 0-2', 1 FT																
2	R-1 D-2', Bare																
3	5-7'																
4	10-12'																
5	15-17'																
6	B-1 20-32'																
7	R-2 2'																
8	5-7'																
9	10-12'																
10	R-2 15-17'	(G)	1			X				X			7/17	1333	X	X	X

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Relinquished By:

Date: 10/10

Received By:

Relinquished By:

Date:

Received By:

Delivered By: (Circle One)

3.4.2

677

Sample Condition

CHECKED BY:  
(Initials)

Sampler - UPS - Bus - Other:

Estimated 4100

<input checked="" type="checkbox"/>	Yes	<input checked="" type="checkbox"/>	Yes
<input type="checkbox"/>	No	<input type="checkbox"/>	No

4.

Phone Result:	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	Add'l Phone #:
Fax Result:	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	Add'l Fax #:
REMARKS:			



# CARDINAL Laboratories

## CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

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

<b>Company Name:</b> Safety and Environmental Solutions				<b>P.O. #:</b>		<b>ANALYSIS REQUEST</b>	
<b>Project Manager:</b> Bob Allen							
<b>Address:</b> 703 East Clinton, PO Box 1613				<b>Company:</b> Same			
<b>City:</b> Hobbs				<b>Attn:</b>			
<b>Phone #:</b> 575 397-0510 <b>Fax #:</b> 575 393-4388				<b>Address:</b>			
<b>Project #:</b> 05B-19-001 <b>Project Owner:</b>				<b>City:</b>			
<b>Project Name:</b>				<b>State:</b> <b>Zip:</b>			
<b>Project Location:</b> Hollington				<b>Phone #:</b>			
<b>Sampler Name:</b> David Boyer				<b>Fax #:</b>			
<b>FOR LAB USE ONLY</b>				<b>MATRIX</b>		<b>PRESERV.</b> <b>SAMPLING</b>	
				<input type="checkbox"/> GROUNDWATER <input type="checkbox"/> WASTEWATER <input type="checkbox"/> SOIL <input type="checkbox"/> OIL <input type="checkbox"/> SLUDGE <input type="checkbox"/> OTHER :			
				<input type="checkbox"/> ACID/BASE: <input type="checkbox"/> ICE / COOL <input type="checkbox"/> OTHER :			
				<b>DATE</b>		<b>TIME</b>	
<b>Lab I.D.</b>							
<b>Sample I.D.</b>							
H902499				R-2 2D-22'		X X X	
11				R-2 25-27'		X X X	
12				R-2 28-32'		X X X	
13				R-2 32-36'		X X X	
14				R-2 36-40'		X X X	
15				R-2 40-44'		X X X	
16				R-2 44-48'		X X X	
17				R-2 48-52'		X X X	
18				R-2 52-56'		X X X	
19				R-2 56-60'		X X X	
20				R-2 60-64'		X X X	

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<b>Relinquished By:</b>		<b>Date:</b> 7/19/19		<b>Received By:</b>		<b>Phone Result:</b> <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No		<b>Add'l Phone #:</b>	
<b>Time:</b> 11:40				<b>Signature:</b>		<b>Fax Result:</b> <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No		<b>Add'l Fax #:</b>	
<b>Relinquished By:</b>		<b>Date:</b>		<b>Received By:</b>		<b>REMARKS:</b>			
<b>Time:</b>									
<b>Delivered By:</b> (Circle One) 3.6c #97		<b>Sample Condition</b>		<b>CHECKED BY:</b>					
<b>Sampler - UPS - Bus - Other:</b> Pumped 410c		<input type="checkbox"/> Cool <input checked="" type="checkbox"/> Intact <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No		<b>(Initials)</b>					



cc jo cc e pag

**CARDINAL**  
LaboratoriesCHAIN-OF-CUSTODY AND ANALYSIS REQUEST101 East Marland, Hobbs, NM 88240  
(575) 393-2326 FAX (575) 393-2476**ANALYSIS REQUEST****BILL TO**Company Name: Safety and Environmental Solutions  
Project Manager: Bob Allen

Address: 703 East Clinton, PO Box 1613

City: Hobbs State: NM Zip: 88240

Phone #: 575 397-0510 Fax #: 575 393-4388

Project #: 058-19-001 Project Owner:

Project Name:

Project Location:

Sample Name:

FOR LAB USE ONLY

Lab I.D. Sample I.D.  
H902499  
13-4, 0-21  
22 2-4  
23 4-6  
24 10-12  
25 15-17  
26 20-22  
27 25-27  
28 R-4, 30-32

MATRIX

GROUNDWATER  
WASTEWATER  
SOIL  
OIL  
SLUDGE  
OTHER :

ACID/BASE:

ICE / COOL

OTHER :

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## **Appendix D Site Photos**

OSBORN HEIRS COMPANY  
MATTIE PRICE TANK BATTERY



Spill 3-19-14

Source



Impact Looking East (Same as 04/19/19 Incident)



OSBORN HEIRS COMPANY  
MATTIE PRICE TANK BATTERY



5-6-14 test trenches



Impacted soil removal



Excavation 5-6-14



Stockpile 5-6-14

OSBORN HEIRS COMPANY  
MATTIE PRICE TANK BATTERY



Spill Source 04-05-19



Spill Area



Impacted Area Looking East



Drill Rig- Soil Bore at source



## **Appendix E Correspondence**



October 22, 2008

VIA Email

Wayne Price  
Oil Conservation Division  
1220 South St. Francis Drive  
Sante Fe, NM 87505

RE: Summary of June 2008 Soil Sampling and Recommended Remediation Activities at the  
Mattie Price Tank Battery, (Unit A, Section 6, Township 17 South, Range 38 East), Lea  
County New Mexico

Dear Mr. Price:

This letter summarizes the June 2008 soil sampling activities and changes in the remediation program at the Mattie Price tank battery. The facility is owned and operated by Osborn Heirs Company (Osborn). The site is located in Section 6, Township 17S Range 38E, Lea County, New Mexico, at a global position of North 32° 52' 3.9'', West 103° 10' 47.4''.

Site activities began December 2004. Important milestones completed during the project include:

- June 2005: The subsurface affected materials were delineated to below the threshold values.
- January 2006: Three monitoring wells that were installed in January 2006. Samples from the these wells verified that no groundwater impacts were present. The remediation threshold values of 10,000 mg/kg total petroleum hydrobons (TPH), 10 mg/kg benzene and 50 mg/kg total benzene, toluene, ethylbenzene and xylenes (BTEX) were also finalized.
- January 2006: 332 cubic yards of affected materials were excavated and properly disposed of at an off-site location.
- January 2006: Eleven remediation wells were installed to access the affected zone between 10 and 25 feet. Sparge remediation was initiated using a household compressor at a pressure of 15 psi and an unknown flow rate.
- June 2007: The number of active air-injection wells was decreased to six upon verification that the hydrocarbon concentrations in the other areas were below the threshold values.
- June 2008: The subsurface material sampling activities described in this letter were completed.

Previous sampling had established that the location did not have benzene or the BTEX (benzene, toluene, ethylbenzene and toluene) constituents above the threshold values. Two confirmatory subsurface samples were collected from the 12.5-to-15 and 17.5-to-20-foot intervals at the

Mr Wayne Price  
October 22, 2008  
Page 2

location shown on Figure 1. The location, and the two intervals from it, were selected because it had historically contained hydrocarbons above the threshold values.

The boring was advanced to a total depth of 20 feet using hollow-stem auger. The materials encountered were generally hard caliche. Drilling became very difficult below 10 feet. The materials in the affected zone did not exhibit substantial hydrocarbon effects based upon visual and olfactory evidence.

The two samples were analyzed for total petroleum hydrocarbons in the gasoline, diesel and oil ranges using method TX 1005. The results are summarized in Table 1 along with the historical samples from the same location. The results indicate that the residual TPH remains above the threshold values and, in fact, the concentrations have not declined since the system was installed.

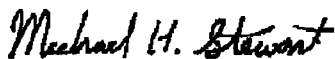
Kane will convert the system from a low-pressure, low-volume pressure to a mid-vacuum, high-volume soil vapor extraction (SVE) system. This conversion will be accomplished by replacing the household compressor with a commercial blower that is capable of a much higher flow volume at a vacuum of 30 to 60 inches of water. This system will come on-line within the next 30 days.

The system will be run until March 2009 when the additional samples will be collected from the same intervals at the same approximate location and analyzed for TPH using the TX 1005 methodology. The site will be closed if the residual concentrations are below the 1,000 mg/kg NMOCD standard.

Do not hesitate to contact me at (303) 638-0001, or at [stewartmike@yahoo.com](mailto:stewartmike@yahoo.com) if you have any questions or comments. Please forward all written correspondence for this site investigation plan to me at the following address:

Michael Stewart  
264 Blue Spruce Drive  
Evergreen, Colorado 80439  
303.638-0001  
[stewartmike@yahoo.com](mailto:stewartmike@yahoo.com)

Sincerely,



Michael H. Stewart, PE, CPG

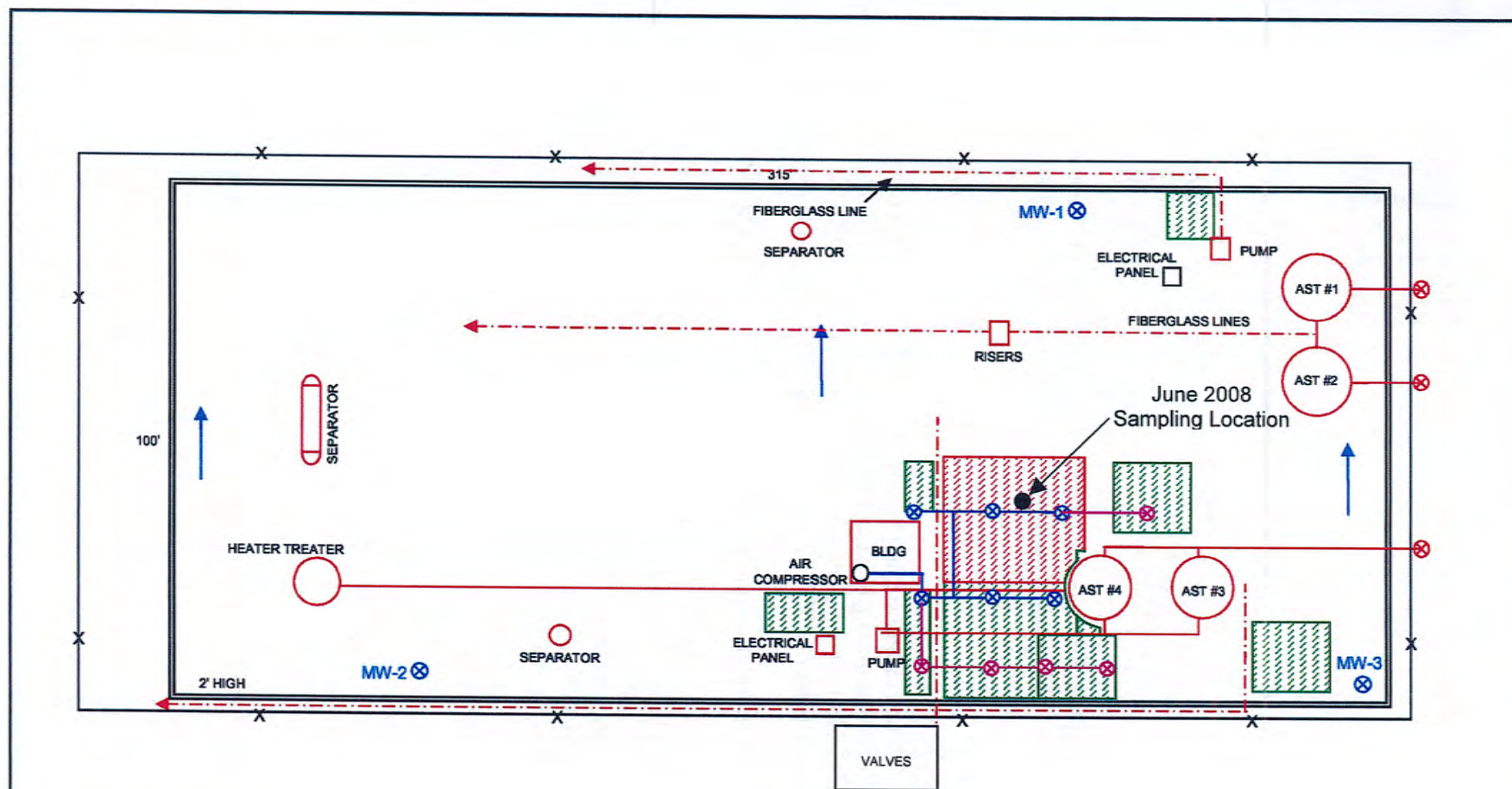
CC: Larry Johnson, NMOCD, Hobbs New Mexico  
Joyce Swayze, Osborn Heirs Company

TABLE 1  
MATTIE PRICE TANK BATTERY  
MPB-10 SAMPLE RESULTS FROM THE 12.5-15 AND 17.5-20 FOOT INTERVALS



	Date	TPH GRO C6-C12	TPH-DRO C12-C28	TPH-ORO C28-C35	TPH C6-C35
Threshold Standards		1,000			1,000
Sample ID					
MPB-10 12.5-15	11/06	<b>1550</b>	3310	92.4	<b>4950</b>
MPB-10 12.5-15.0	6/08	<b>1920</b>	3150	350	<b>5420</b>
MPB-10 17.5-20.0	12/04	<b>771</b>			<b>2250</b>
MPB-10 17.5-20	11/06	<b>534</b>	1250	36.7	<b>1820</b>
MPB-10 17.5-20.0	6/08	<b>1030</b>	2230	245	<b>3510</b>

Bold values exceed the applicable threshold standard.

Previous sampling established the these materials were below the benzene and BTEX threshold standards.



BERM DIMENSIONS REFLECT TOP OF BERM

TANK LEGEND	NOTES	  	
<ul style="list-style-type: none"> <li> SURFACE DRAINAGE</li> <li> FENCE</li> <li> EARTHEN BERM</li> <li> REMEDIATION COMPLETED</li> <li> REMEDIATION INCOMPLETE</li> <li> AIR SPARGE WELL/PIPING</li> <li> AIR SPARGE BORING/PIPING TO BE DISCONNECTED</li> <li> SURFACE PIPING</li> </ul>	<ol style="list-style-type: none"> <li>Air compressor to be replaced with a commercial blower.</li> <li>Blower will be attached to the six existing wells using the existing header.</li> <li>System settings and cycling will be set based upon site specific conditions encountered</li> <li>System will run until March 2009.</li> </ol>		
		<b>Figure 1</b> <b>June 2008 Sampling Location, and Air Sparge System Modifications</b> Mattie Price Tank Battery Lea County, New Mexico	
		DRAWN BY: SMJ w/MHS revisions	PROJECT: 04-631
		DATE: 10/08	
		REVISED:	NOT TO SCALE

**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 34901

CONDITIONS

Operator: Safety & Environmental Solutions, Inc. PO Box 1613 Hobbs, NM 88240	OGRID: 329088
	Action Number: 34901
	Action Type: [C-141] Release Corrective Action (C-141)

CONDITIONS

Created By	Condition	Condition Date
amaxwell	Submit closure report via the OCD permitting portal by 6/2/2023.	2/24/2023
amaxwell	The work plan was submitted by a third party, SESI. The closure report will need to be submitted by the operator with an approved OGRID.	2/24/2023