

**Bettis, Boyle & Stovall
Pickett Draw Fed. Saltwater Disposal Line**

Work Plan

**Section 10, T25S, R29E
Eddy County, New Mexico**

January 16, 2019



Prepared for:

**Bettis, Boyle & Stovall
P.O. Box 1240
Graham, TX 76450
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
Kyle Berrend	Bettis, Boyle & Stovall	940-549-0780	kberrend@bbsoil.com
Bob Allen	SESI	575-397-0510	ballen@sesi-nm.com

II. Background

Safety and Environmental Solutions, Inc., hereinafter referred to as (SESI) was engaged by Bettis, Boyle & Stovall to assess and remediate pasture area from a salt water leak that was situated in Eddy Count, Section 10, Township 25S, and Range 29E.

According to the C-141: Less than 15 bbls., of produced water had leaked from a disposal line. The line was struck by an unknown driver, and not reported at the time of incident. The leak was discovered on May 08, 2018 and reported to the NMOCD, and assigned 2RO-4750. Attempts to repair the line by the driver were unsuccessful and ultimately reported to representative cor Bettis, Boyle, and Stovall. Safety & Environmental Solutions was contacted for remediation.

III. Surface and Ground Water

The New Mexico Office of the State Engineer records for indicates no presence of groundwater for the immediate area. However, the average depth to groundwater for Township 25S, Range 29E, indicated the depth to be 43 feet bgs.

IV. Characterization

The target cleanup levels are determined using the *Guidelines for Remediation of Leaks, Spills and Releases* published by the NMOCD (August 13, 1993). Based on the ranking criteria presented below, 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 5,000 ppm Total Petroleum Hydrocarbons (TPH). Characterization of vertical extent of chloride concentration to a level of 250 mg/kg (PPM) is also required.

Depth to Ground Water:			
(Vertical distance from contaminants to seasonal high water elevation of groundwater)	Less than 50 feet	20 points	
	50 feet to 99 feet	10 points	
	>100 feet	0 points	X
Wellhead Protection Area:			
(Less than 200 feet from a private domestic water source; or less than 1000 feet from all other water sources)	Yes	20 points	
	No	0 points	X
Distance to Surface Water:			
(Horizontal distance to perennial lakes, ponds, rivers, streams, creeks, irrigation canals and ditches)	Less than 200 feet	20 points	
	200 feet to 1000 feet	10 points	
	>1000 feet	0 points	X
RANKING SCORE (TOTAL POINTS)			0

V. Work Performed

On November 07, 2018, SESI personnel met with a representative from Bettis, Boyle, & Stovall on site in order to verify the correct location, and conduct a preliminary assessment of the impacted area. Five (5) surface samples were grabbed in order to determine the horizontal area of impact. All Samples were properly packaged, preserved, and transported to Cardinal Laboratories via chain of custody to be analyzed for Benzene, Toluene, Ethylbenzene, Xylenes (BTEX) Method 8021B. Chlorides (Cl) Method SM4500Cl-B, Petroleum Hydrocarbons (GRO), and (DRO) Method TPH 8015M. The following table is a recap of the results:

Soil Sample Results: Cardinal Laboratories 12-4-18								
SAMPLE ID	Benzene	Toluene	Ethyl benzene	Total Xylenes	Total BTEX	TPH GRO	TPH DRO	Chlorides
SP-1	ND	ND	ND	ND	ND	ND	2120	32000
SP-2	ND	ND	ND	ND	ND	ND	<10.0	496
SP-3	ND	ND	ND	ND	ND	ND	<10.0	32
SP-4	ND	ND	ND	ND	ND	ND	<10.0	16
SP-5	ND	ND	ND	ND	ND	ND	6450	17600

On December 31, 2018, SESI personnel were on site, together with operator and equipment from SDR to begin delineation of the impacted area. The leak site is situated immediately East of the lease road, that has moderate traffic, A Test trench was installed at the previous Sample Point 5 position. The Test Trench was advance to 2' bgs. and field tested for Chlorides. The field results at this depth for Chlorides were 20,880 ppm. The Test Trench was advanced to 4' bgs. and the field tests results for Chlorides were 18,595. Due to the depth of the trench the equipment could not advance to depths necessary for proper delineation.

On January 07, 2019, SESI together with operator and equipment from SDR returned to the site in order to complete the delineation efforts. The Trackhoe was utilized to advance the Test Trench to depths of 2, 4, 5, 7, 8, 10, 12, and 17' bgs. respectively. Sidewall samples were retrieved from the Test Trench Northwall, Eastwall, Westwall, and Northwall respectively. The Eastwall sample was retrieved at 3' bgs, as this sidewall ran adjacent to the lease road. All Samples were properly packaged, preserved, and transported to Cardinal Laboratories via chain of custody to be analyzed for Benzene, Toluene, Ethylbenzene, Xylenese (BTEX) Method 8021B. Chlorides (Cl) Method SM4500Cl-B, Petroleum Hydrocarbons (GRO), and (DRO) Method TPH 8015M. The following table is a recap of the results:

Soil Sample Results: Cardinal Laboratories 12-4-18								
SAMPLE ID	Benzene	Toluene	Ethyl benzene	Total Xylenes	Total BTEX	TPH GRO	TPH DRO	Chlorides
TT-1 @ 2ft.	ND	ND	ND	ND	ND	ND	<10.0	3800
TT-1 @ 4ft.	ND	ND	ND	ND	ND	ND	<10.0	42000
TT-1 @ 5ft.	ND	ND	ND	ND	ND	ND	<10.0	1680
TT-1 @ 7ft.	ND	ND	ND	ND	ND	ND	<10.0	448
TT-1 @ 8ft.	ND	ND	ND	ND	ND	ND	<10.0	1390
TT-1 @ 10ft.	ND	ND	ND	ND	ND	ND	<10.0	608
TT-1 @ 12ft.	ND	ND	ND	ND	ND	ND	<10.0	240
TT-1 @ 17ft.	ND	ND	ND	ND	ND	ND	<10.0	240
SP-7 South Wall	ND	ND	ND	ND	ND	ND	<10.0	32
SP-8 West Wall	ND	ND	ND	ND1	ND	ND	<10.0	96
SP-9 East Wall	ND	ND	ND	ND1	ND	ND	<10.0	1800
SP-10 North Wall	ND	ND	ND	ND1	ND	ND	<10.0	32

VI. Action Plan

Based on the sampling results listed above the following action plan is proposed:
 We propose to excavate the East Wall further to the extent that the Chloride levels are below the NMOCD recommended screening levels of <60 mg/kg., then to a depth of four (4) ft., install a 30 mil. Liner, and backfill with fresh top soil. All impacted soil will be transported to an NMOCD approved facility. SESI will revegetate the disturbance associated with the remediation at the release site with a BLM approved seed mixture in the Spring of 2019. Upon completion of all approved remediation activity, all necessary closure documentation will be submitted to the appropriate regulatory agencies, and 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

Figure 1
Vicinity Map



Figure 2
Site Plan

BB Soil-Picket Draw

Sample Point Map 11-7-18

Legend

-  BB Soil Picket Draw
-  Release Point 1
-  SP
-  Spill Area 2



N32.13°

A north arrow pointing upwards with the letter 'N' below it. Below the north arrow is a scale bar labeled '70 ft'.

Appendix A
C-141

RECEIVED

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

MAY 17 2018

Form C-141
Revised August 8, 2011

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

DISTRICT HEADQUARTERS
Submit to Appropriate District Office in
accordance with 19.15.29 NMAC.

Release Notification and Corrective Action

NAB181412A241

OPERATOR

Initial Report Final Report

Name of Company	Bettis, Boyle & Stovall 2175	Contact	Kyle Berend
Address	P.O Box 1240, Graham, TX 76450	Telephone No.	940-549-0780
Facility Name	Pickett Draw Fed Saltwater Disposal Line	Facility Type	Produced Water Transportation Line
Surface Owner	Mineral Owner BLM	API No.	30-015-25867

LOCATION OF RELEASE

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County
N	10	25S	29E	1235	South	1515	West	Eddy

Latitude _____ Longitude _____

NATURE OF RELEASE

Type of Release	Minor Release	Volume of Release	< 15 bbls	Volume Recovered	None
Source of Release	Produced Water	Date and Hour of Occurrence		Date and Hour of Discovery	05/08/18
Was Immediate Notice Given?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Not Required	If YES, To Whom? Robert Kasuboski - New Mexico State Land Office			
By Whom?	Kyle Berend	Date and Hour	05/08/18 @ 12:00 p.m.		
Was a Watercourse Reached?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	If YES, Volume Impacting the Watercourse.			

If a Watercourse was Impacted, Describe Fully.*

Describe Cause of Problem and Remedial Action Taken.*

Produced fluids have leaked from a saltwater disposal line that was struck by an unknown truck/driver. It was not reported to us at the time of the incident. This individual attempted to repair this line but was unsuccessful. He/she still failed to report the incident to Bettis, Boyle & Stovall.

Describe Area Affected and Cleanup Action Taken.*

The release had leaked along the existing road. A small amount of saltwater contaminated an area around leak. We will dig up and replaced contaminated area.

I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to NMOCD 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 NMOCD marked as "Final Report" does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to ground water, surface water, human health or the environment. In addition, NMOCD 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.

Signature:	<i>Kyle Berend</i>	OIL CONSERVATION DIVISION	
Printed Name:	Kyle Berend	Approved by Environmental Specialist:	<i>[Signature]</i>
Title:	Regulatory Analyst	Approval Date:	5/17/18
E-mail Address:	kberend@bhsoll.com	Expiration Date:	N/A
Date:	05/08/18	Conditions of Approval:	See attached
Phone:	(940)549-0780	Attached	<input checked="" type="checkbox"/> 20180517

* Attach Additional Sheets If Necessary

office2@sesi-nm.com 4 x

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	POD Sub-Code	basin	County	Q 64	Q 16	Q 4	Sec	Tws	Rng	X	Y	Depth Well	Depth Water	Water Column
C 01337	C	ED		2	1	30	25S	29E		591926	3552642*	180	30	150
C 01880	C	ED		3	3	2 06	25S	29E		592161	3558605*	85	40	45
C 02371	C	ED		2	3	15	25S	29E		596741	3555106*	200	60	140
C 02459	C	ED		4	4	1 02	25S	29E		598422	3558663*	150		
C 02518	C	ED		3	4	08	25S	29E		593895	3556300*	462		
C 02680	CUB	ED		2	3	15	25S	29E		596741	3555106*	200		

Average Depth to Water: 43 feet
Minimum Depth: 30 feet
Maximum Depth: 60 feet

Record Count: 6

PLSS Search:

Township: 25S Range: 29E

*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.

10/4/18 3:04 PM

Page 1 of 1

WATER COLUMN/ AVERAGE
DEPTH TO WATER

Appendix C – Analytical Results

November 14, 2018

Bob Allen

Safety & Environmental Solutions

703 East Clinton

Hobbs, NM 88240

RE: PICKETT

Enclosed are the results of analyses for samples received by the laboratory on 11/07/18 16:30.

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/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,



Celey D. Keene

Lab Director/Quality Manager

Analytical Results For:

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

 Received: 11/07/2018
 Reported: 11/14/2018
 Project Name: PICKETT
 Project Number: BBS-18-002
 Project Location: NOT GIVEN

 Sampling Date: 11/07/2018
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Jodi Henson

Sample ID: SP #1 (H803225-01)

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	11/12/2018	ND	2.32	116	2.00	1.98	
Toluene*	<0.050	0.050	11/12/2018	ND	2.31	115	2.00	0.531	
Ethylbenzene*	<0.050	0.050	11/12/2018	ND	2.29	115	2.00	0.134	
Total Xylenes*	<0.150	0.150	11/12/2018	ND	6.71	112	6.00	0.146	
Total BTEX	<0.300	0.300	11/12/2018	ND					

Surrogate: 4-Bromofluorobenzene (PID) 103 % 69.8-142

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	32000	16.0	11/14/2018	ND	416	104	400	0.00	

TPH 8015M		mg/kg		Analyzed By: MS						S-04
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
GRO C6-C10*	<50.0	50.0	11/12/2018	ND	177	88.6	200	0.0130		
DRO >C10-C28*	2120	50.0	11/12/2018	ND	210	105	200	1.33		
EXT DRO >C28-C36	545	50.0	11/12/2018	ND						

Surrogate: 1-Chlorooctane 73.5 % 41-142

Surrogate: 1-Chlorooctadecane 163 % 37.6-147

Cardinal Laboratories

*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager

Analytical Results For:

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

Received:	11/07/2018	Sampling Date:	11/07/2018
Reported:	11/14/2018	Sampling Type:	Soil
Project Name:	PICKETT	Sampling Condition:	Cool & Intact
Project Number:	BBS-18-002	Sample Received By:	Jodi Henson
Project Location:	NOT GIVEN		

Sample ID: SP #2 (H803225-02)

BTEX 8021B		mg/kg		Analyzed By: MS						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	11/13/2018	ND	2.32	116	2.00	1.98		
Toluene*	<0.050	0.050	11/13/2018	ND	2.31	115	2.00	0.531		
Ethylbenzene*	<0.050	0.050	11/13/2018	ND	2.29	115	2.00	0.134		
Total Xylenes*	<0.150	0.150	11/13/2018	ND	6.71	112	6.00	0.146		
Total BTEX	<0.300	0.300	11/13/2018	ND						

Surrogate: 4-Bromofluorobenzene (PID) 102 % 69.8-142

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	496	16.0	11/14/2018	ND	416	104	400	0.00		

TPH 8015M		mg/kg		Analyzed By: MS						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
GRO C6-C10*	<10.0	10.0	11/12/2018	ND	177	88.6	200	0.0130		
DRO >C10-C28*	<10.0	10.0	11/12/2018	ND	210	105	200	1.33		
EXT DRO >C28-C36	<10.0	10.0	11/12/2018	ND						

Surrogate: 1-Chlorooctane 79.9 % 41-142

Surrogate: 1-Chlorooctadecane 84.4 % 37.6-147

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*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager

Analytical Results For:

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

 Received: 11/07/2018
 Reported: 11/14/2018
 Project Name: PICKETT
 Project Number: BBS-18-002
 Project Location: NOT GIVEN

 Sampling Date: 11/07/2018
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Jodi Henson

Sample ID: SP #3 (H803225-03)

BTEX 8021B		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	11/13/2018	ND	2.32	116	2.00	1.98	
Toluene*	<0.050	0.050	11/13/2018	ND	2.31	115	2.00	0.531	
Ethylbenzene*	<0.050	0.050	11/13/2018	ND	2.29	115	2.00	0.134	
Total Xylenes*	<0.150	0.150	11/13/2018	ND	6.71	112	6.00	0.146	
Total BTEX	<0.300	0.300	11/13/2018	ND					

Surrogate: 4-Bromofluorobenzene (PID) 102 % 69.8-142

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	32.0	16.0	11/14/2018	ND	416	104	400	0.00	

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	11/12/2018	ND	177	88.6	200	0.0130	
DRO >C10-C28*	<10.0	10.0	11/12/2018	ND	210	105	200	1.33	
EXT DRO >C28-C36	<10.0	10.0	11/12/2018	ND					

Surrogate: 1-Chlorooctane 83.4 % 41-142

Surrogate: 1-Chlorooctadecane 87.0 % 37.6-147

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*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager

Analytical Results For:

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

 Received: 11/07/2018
 Reported: 11/14/2018
 Project Name: PICKETT
 Project Number: BBS-18-002
 Project Location: NOT GIVEN

 Sampling Date: 11/07/2018
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Jodi Henson

Sample ID: SP #4 (H803225-04)

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	11/13/2018	ND	2.32	116	2.00	1.98	
Toluene*	<0.050	0.050	11/13/2018	ND	2.31	115	2.00	0.531	
Ethylbenzene*	<0.050	0.050	11/13/2018	ND	2.29	115	2.00	0.134	
Total Xylenes*	<0.150	0.150	11/13/2018	ND	6.71	112	6.00	0.146	
Total BTEX	<0.300	0.300	11/13/2018	ND					

Surrogate: 4-Bromofluorobenzene (PID) 100 % 69.8-142

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	16.0	16.0	11/14/2018	ND	416	104	400	0.00	

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	11/12/2018	ND	177	88.6	200	0.0130	
DRO >C10-C28*	<10.0	10.0	11/12/2018	ND	210	105	200	1.33	
EXT DRO >C28-C36	<10.0	10.0	11/12/2018	ND					

Surrogate: 1-Chlorooctane 82.6 % 41-142

Surrogate: 1-Chlorooctadecane 86.9 % 37.6-147

Cardinal Laboratories

*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager

Analytical Results For:

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

Received:	11/07/2018	Sampling Date:	11/07/2018
Reported:	11/14/2018	Sampling Type:	Soil
Project Name:	PICKETT	Sampling Condition:	Cool & Intact
Project Number:	BBS-18-002	Sample Received By:	Jodi Henson
Project Location:	NOT GIVEN		

Sample ID: SP #5 (H803225-05)

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	11/13/2018	ND	2.32	116	2.00	1.98	
Toluene*	<0.050	0.050	11/13/2018	ND	2.31	115	2.00	0.531	
Ethylbenzene*	<0.050	0.050	11/13/2018	ND	2.29	115	2.00	0.134	
Total Xylenes*	<0.150	0.150	11/13/2018	ND	6.71	112	6.00	0.146	
Total BTEX	<0.300	0.300	11/13/2018	ND					

Surrogate: 4-Bromofluorobenzene (PID) 101 % 69.8-142

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	17600	16.0	11/14/2018	ND	416	104	400	0.00	

TPH 8015M		mg/kg		Analyzed By: MS						S-06
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
GRO C6-C10*	<50.0	50.0	11/12/2018	ND	177	88.6	200	0.0130		
DRO >C10-C28*	6450	50.0	11/12/2018	ND	210	105	200	1.33		
EXT DRO >C28-C36	1720	50.0	11/12/2018	ND						

Surrogate: 1-Chlorooctane 83.0 % 41-142

Surrogate: 1-Chlorooctadecane 344 % 37.6-147

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Celey D. Keene, Lab Director/Quality Manager

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.
- 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



Celey D. Keene, Lab Director/Quality Manager

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
 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 #: BBS-18-002 Project Owner:
 Project Name: Pickett
 Project Location:
 Sampler Name: Bob Allen
 FOR LAB USE ONLY

P.O. #: **BIL110** Company: Same
 Attn:
 Address:
 City:
 State: zip:
 Phone #:
 Fax #:

Lab I.D.	Sample I.D.	(G)RAB OR (C)OMP.	# CONTAINERS	MATRIX						DATE	TIME	ANALYSIS REQUEST
				GROUNDWATER	WASTEWATER	SOIL	OIL	SLUDGE	OTHER:			
1803225	SD#1		1						11-7-14	11:00	BTEX	
	SD#2		1							11:20	TDH (BOL5 EXT)	
	SD#3		1							11:40	CL	
	SD#4		1							11:50		
	SD#5		1							12:10		

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Relinquished By: *forrell* Date: 11-7-14 Received By: *N. Boyer*
 Relinquished By: *N. Boyer* Date: 11-7-14 Received By: *N. Boyer*
 Date: 11-7-14 Time: 1:30
 Date: 11-7-14 Time: 10:30

Delivered By: (Circle One) UPS Bus Other: *-D.30/#97*
 Sample Condition: Cool Intact Yes No
 CHECKED BY: *[Signature]*
 Phone Result: Yes No Add'l Phone #:
 Fax Result: Yes No Add'l Fax #:
 REMARKS:



January 14, 2019

Bob Allen

Safety & Environmental Solutions

703 East Clinton

Hobbs, NM 88240

RE: BBS PICKETT DRAW

Enclosed are the results of analyses for samples received by the laboratory on 01/08/19 14:55.

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.

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

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

Accreditation applies to public drinking water matrices.

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

Sincerely,

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

Celey D. Keene

Lab Director/Quality Manager

Analytical Results For:

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

 Received: 01/08/2019
 Reported: 01/14/2019
 Project Name: BBS PICKETT DRAW
 Project Number: BBS - 18 - 002
 Project Location: NONE GIVEN

 Sampling Date: 01/07/2019
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Tamara Oldaker

Sample ID: TT - 1 2' (H900045-01)

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	01/11/2019	ND	2.03	102	2.00	3.42	
Toluene*	<0.050	0.050	01/11/2019	ND	2.15	108	2.00	2.89	
Ethylbenzene*	<0.050	0.050	01/11/2019	ND	2.18	109	2.00	2.31	
Total Xylenes*	<0.150	0.150	01/11/2019	ND	6.67	111	6.00	2.50	
Total BTEX	<0.300	0.300	01/11/2019	ND					

Surrogate: 4-Bromofluorobenzene (PID) 97.1 % 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	3800	16.0	01/10/2019	ND	432	108	400	0.00	

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	01/10/2019	ND	216	108	200	8.17	
DRO >C10-C28*	<10.0	10.0	01/10/2019	ND	204	102	200	11.8	
EXT DRO >C28-C36	<10.0	10.0	01/10/2019	ND					

Surrogate: 1-Chlorooctane 84.6 % 41-142

Surrogate: 1-Chlorooctadecane 76.8 % 37.6-147

Cardinal Laboratories

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Celey D. Keene, Lab Director/Quality Manager

Analytical Results For:

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

 Received: 01/08/2019
 Reported: 01/14/2019
 Project Name: BBS PICKETT DRAW
 Project Number: BBS - 18 - 002
 Project Location: NONE GIVEN

 Sampling Date: 01/07/2019
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Tamara Oldaker

Sample ID: TT - 1 4' (H900045-02)

BTEX 8021B		mg/kg		Analyzed By: ms					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	01/11/2019	ND	2.03	102	2.00	3.42	
Toluene*	<0.050	0.050	01/11/2019	ND	2.15	108	2.00	2.89	
Ethylbenzene*	<0.050	0.050	01/11/2019	ND	2.18	109	2.00	2.31	
Total Xylenes*	<0.150	0.150	01/11/2019	ND	6.67	111	6.00	2.50	
Total BTEX	<0.300	0.300	01/11/2019	ND					

Surrogate: 4-Bromofluorobenzene (PID) 98.1 % 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	42000	16.0	01/10/2019	ND	432	108	400	0.00	

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	01/10/2019	ND	216	108	200	8.17	
DRO >C10-C28*	<10.0	10.0	01/10/2019	ND	204	102	200	11.8	
EXT DRO >C28-C36	<10.0	10.0	01/10/2019	ND					

Surrogate: 1-Chlorooctane 88.5 % 41-142

Surrogate: 1-Chlorooctadecane 80.1 % 37.6-147

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Celey D. Keene, Lab Director/Quality Manager

Analytical Results For:

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

 Received: 01/08/2019
 Reported: 01/14/2019
 Project Name: BBS PICKETT DRAW
 Project Number: BBS - 18 - 002
 Project Location: NONE GIVEN

 Sampling Date: 01/07/2019
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Tamara Oldaker

Sample ID: TT - 1 5' (H900045-03)

BTEX 8021B		mg/kg		Analyzed By: ms					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	01/11/2019	ND	2.03	102	2.00	3.42	
Toluene*	<0.050	0.050	01/11/2019	ND	2.15	108	2.00	2.89	
Ethylbenzene*	<0.050	0.050	01/11/2019	ND	2.18	109	2.00	2.31	
Total Xylenes*	<0.150	0.150	01/11/2019	ND	6.67	111	6.00	2.50	
Total BTEX	<0.300	0.300	01/11/2019	ND					

Surrogate: 4-Bromofluorobenzene (PID) 96.3 % 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	1680	16.0	01/10/2019	ND	432	108	400	0.00	

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	01/10/2019	ND	216	108	200	8.17	
DRO >C10-C28*	<10.0	10.0	01/10/2019	ND	204	102	200	11.8	
EXT DRO >C28-C36	<10.0	10.0	01/10/2019	ND					

Surrogate: 1-Chlorooctane 84.8 % 41-142

Surrogate: 1-Chlorooctadecane 76.9 % 37.6-147

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Celey D. Keene, Lab Director/Quality Manager

Analytical Results For:

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

 Received: 01/08/2019
 Reported: 01/14/2019
 Project Name: BBS PICKETT DRAW
 Project Number: BBS - 18 - 002
 Project Location: NONE GIVEN

 Sampling Date: 01/07/2019
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Tamara Oldaker

Sample ID: TT - 1 7' (H900045-04)

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	01/11/2019	ND	2.03	102	2.00	3.42	
Toluene*	<0.050	0.050	01/11/2019	ND	2.15	108	2.00	2.89	
Ethylbenzene*	<0.050	0.050	01/11/2019	ND	2.18	109	2.00	2.31	
Total Xylenes*	<0.150	0.150	01/11/2019	ND	6.67	111	6.00	2.50	
Total BTEX	<0.300	0.300	01/11/2019	ND					

Surrogate: 4-Bromofluorobenzene (PID) 97.2 % 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	448	16.0	01/10/2019	ND	432	108	400	0.00	

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	01/10/2019	ND	216	108	200	8.17	
DRO >C10-C28*	<10.0	10.0	01/10/2019	ND	204	102	200	11.8	
EXT DRO >C28-C36	<10.0	10.0	01/10/2019	ND					

Surrogate: 1-Chlorooctane 87.2 % 41-142

Surrogate: 1-Chlorooctadecane 77.6 % 37.6-147

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Celey D. Keene, Lab Director/Quality Manager

Analytical Results For:

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

 Received: 01/08/2019
 Reported: 01/14/2019
 Project Name: BBS PICKETT DRAW
 Project Number: BBS - 18 - 002
 Project Location: NONE GIVEN

 Sampling Date: 01/07/2019
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Tamara Oldaker

Sample ID: TT - 1 8' (H900045-05)

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	01/11/2019	ND	2.03	102	2.00	3.42	
Toluene*	<0.050	0.050	01/11/2019	ND	2.15	108	2.00	2.89	
Ethylbenzene*	<0.050	0.050	01/11/2019	ND	2.18	109	2.00	2.31	
Total Xylenes*	<0.150	0.150	01/11/2019	ND	6.67	111	6.00	2.50	
Total BTEX	<0.300	0.300	01/11/2019	ND					

Surrogate: 4-Bromofluorobenzene (PID) 98.5 % 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	1390	16.0	01/10/2019	ND	432	108	400	0.00	

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	01/09/2019	ND	186	93.1	200	5.47	
DRO >C10-C28*	<10.0	10.0	01/09/2019	ND	203	102	200	3.92	
EXT DRO >C28-C36	<10.0	10.0	01/09/2019	ND					

Surrogate: 1-Chlorooctane 87.5 % 41-142

Surrogate: 1-Chlorooctadecane 84.1 % 37.6-147

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Celey D. Keene, Lab Director/Quality Manager

Analytical Results For:

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

Received:	01/08/2019	Sampling Date:	01/07/2019
Reported:	01/14/2019	Sampling Type:	Soil
Project Name:	BBS PICKETT DRAW	Sampling Condition:	Cool & Intact
Project Number:	BBS - 18 - 002	Sample Received By:	Tamara Oldaker
Project Location:	NONE GIVEN		

Sample ID: TT - 1 10' (H900045-06)

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	01/11/2019	ND	2.03	102	2.00	3.42		
Toluene*	<0.050	0.050	01/11/2019	ND	2.15	108	2.00	2.89		
Ethylbenzene*	<0.050	0.050	01/11/2019	ND	2.18	109	2.00	2.31		
Total Xylenes*	<0.150	0.150	01/11/2019	ND	6.67	111	6.00	2.50		
Total BTEX	<0.300	0.300	01/11/2019	ND						

Surrogate: 4-Bromofluorobenzene (PID) 97.3 % 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	608	16.0	01/10/2019	ND	432	108	400	0.00		

TPH 8015M		mg/kg		Analyzed By: MS						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
GRO C6-C10*	<10.0	10.0	01/09/2019	ND	186	93.1	200	5.47		
DRO >C10-C28*	<10.0	10.0	01/09/2019	ND	203	102	200	3.92		
EXT DRO >C28-C36	<10.0	10.0	01/09/2019	ND						

Surrogate: 1-Chlorooctane 89.1 % 41-142

Surrogate: 1-Chlorooctadecane 83.8 % 37.6-147

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Celey D. Keene, Lab Director/Quality Manager

Analytical Results For:

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

 Received: 01/08/2019
 Reported: 01/14/2019
 Project Name: BBS PICKETT DRAW
 Project Number: BBS - 18 - 002
 Project Location: NONE GIVEN

 Sampling Date: 01/07/2019
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Tamara Oldaker

Sample ID: TT - 1 12' (H900045-07)

BTEX 8021B		mg/kg		Analyzed By: ms					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	01/11/2019	ND	2.03	102	2.00	3.42	
Toluene*	<0.050	0.050	01/11/2019	ND	2.15	108	2.00	2.89	
Ethylbenzene*	<0.050	0.050	01/11/2019	ND	2.18	109	2.00	2.31	
Total Xylenes*	<0.150	0.150	01/11/2019	ND	6.67	111	6.00	2.50	
Total BTEX	<0.300	0.300	01/11/2019	ND					

Surrogate: 4-Bromofluorobenzene (PID) 97.5 % 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	240	16.0	01/10/2019	ND	432	108	400	0.00	

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	01/09/2019	ND	186	93.1	200	5.47	
DRO >C10-C28*	<10.0	10.0	01/09/2019	ND	203	102	200	3.92	
EXT DRO >C28-C36	<10.0	10.0	01/09/2019	ND					

Surrogate: 1-Chlorooctane 88.6 % 41-142

Surrogate: 1-Chlorooctadecane 83.4 % 37.6-147

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Celey D. Keene, Lab Director/Quality Manager

Analytical Results For:

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

 Received: 01/08/2019
 Reported: 01/14/2019
 Project Name: BBS PICKETT DRAW
 Project Number: BBS - 18 - 002
 Project Location: NONE GIVEN

 Sampling Date: 01/07/2019
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Tamara Oldaker

Sample ID: TT - 1 17' (H900045-08)

BTEX 8021B		mg/kg		Analyzed By: ms						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	01/11/2019	ND	2.03	102	2.00	3.42		
Toluene*	<0.050	0.050	01/11/2019	ND	2.15	108	2.00	2.89		
Ethylbenzene*	<0.050	0.050	01/11/2019	ND	2.18	109	2.00	2.31		
Total Xylenes*	<0.150	0.150	01/11/2019	ND	6.67	111	6.00	2.50		
Total BTEX	<0.300	0.300	01/11/2019	ND						

Surrogate: 4-Bromofluorobenzene (PID) 96.9 % 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	240	16.0	01/10/2019	ND	432	108	400	0.00		

TPH 8015M		mg/kg		Analyzed By: MS						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
GRO C6-C10*	<10.0	10.0	01/09/2019	ND	186	93.1	200	5.47		
DRO >C10-C28*	<10.0	10.0	01/09/2019	ND	203	102	200	3.92		
EXT DRO >C28-C36	<10.0	10.0	01/09/2019	ND						

Surrogate: 1-Chlorooctane 93.8 % 41-142

Surrogate: 1-Chlorooctadecane 89.9 % 37.6-147

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Celey D. Keene, Lab Director/Quality Manager

Analytical Results For:

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

 Received: 01/08/2019
 Reported: 01/14/2019
 Project Name: BBS PICKETT DRAW
 Project Number: BBS - 18 - 002
 Project Location: NONE GIVEN

 Sampling Date: 01/07/2019
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Tamara Oldaker

Sample ID: SP - 7 SOUTH WALL (H900045-09)

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	01/11/2019	ND	2.03	102	2.00	3.42		
Toluene*	<0.050	0.050	01/11/2019	ND	2.15	108	2.00	2.89		
Ethylbenzene*	<0.050	0.050	01/11/2019	ND	2.18	109	2.00	2.31		
Total Xylenes*	<0.150	0.150	01/11/2019	ND	6.67	111	6.00	2.50		
Total BTEX	<0.300	0.300	01/11/2019	ND						

Surrogate: 4-Bromofluorobenzene (PID) 98.1 % 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	01/10/2019	ND	432	108	400	0.00		

TPH 8015M		mg/kg		Analyzed By: MS						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
GRO C6-C10*	<10.0	10.0	01/09/2019	ND	186	93.1	200	5.47		
DRO >C10-C28*	<10.0	10.0	01/09/2019	ND	203	102	200	3.92		
EXT DRO >C28-C36	<10.0	10.0	01/09/2019	ND						

Surrogate: 1-Chlorooctane 76.5 % 41-142

Surrogate: 1-Chlorooctadecane 72.8 % 37.6-147

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Celey D. Keene, Lab Director/Quality Manager

Analytical Results For:

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

 Received: 01/08/2019
 Reported: 01/14/2019
 Project Name: BBS PICKETT DRAW
 Project Number: BBS - 18 - 002
 Project Location: NONE GIVEN

 Sampling Date: 01/07/2019
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Tamara Oldaker

Sample ID: SP - 8 WEST WALL (H900045-10)

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	01/11/2019	ND	2.03	102	2.00	3.42		
Toluene*	<0.050	0.050	01/11/2019	ND	2.15	108	2.00	2.89		
Ethylbenzene*	<0.050	0.050	01/11/2019	ND	2.18	109	2.00	2.31		
Total Xylenes*	<0.150	0.150	01/11/2019	ND	6.67	111	6.00	2.50		
Total BTEX	<0.300	0.300	01/11/2019	ND						

Surrogate: 4-Bromofluorobenzene (PID) 97.4 % 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	96.0	16.0	01/10/2019	ND	432	108	400	0.00		

TPH 8015M		mg/kg		Analyzed By: MS						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
GRO C6-C10*	<10.0	10.0	01/09/2019	ND	186	93.1	200	5.47		
DRO >C10-C28*	<10.0	10.0	01/09/2019	ND	203	102	200	3.92		
EXT DRO >C28-C36	<10.0	10.0	01/09/2019	ND						

Surrogate: 1-Chlorooctane 84.6 % 41-142

Surrogate: 1-Chlorooctadecane 80.2 % 37.6-147

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Celey D. Keene, Lab Director/Quality Manager

Analytical Results For:

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

 Received: 01/08/2019
 Reported: 01/14/2019
 Project Name: BBS PICKETT DRAW
 Project Number: BBS - 18 - 002
 Project Location: NONE GIVEN

 Sampling Date: 01/07/2019
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Tamara Oldaker

Sample ID: SP - 9 EAST WALL (H900045-11)

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	01/11/2019	ND	2.03	102	2.00	3.42	
Toluene*	<0.050	0.050	01/11/2019	ND	2.15	108	2.00	2.89	
Ethylbenzene*	<0.050	0.050	01/11/2019	ND	2.18	109	2.00	2.31	
Total Xylenes*	<0.150	0.150	01/11/2019	ND	6.67	111	6.00	2.50	
Total BTEX	<0.300	0.300	01/11/2019	ND					

Surrogate: 4-Bromofluorobenzene (PID) 97.8 % 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	1800	16.0	01/10/2019	ND	432	108	400	0.00	

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	01/09/2019	ND	186	93.1	200	5.47	
DRO >C10-C28*	<10.0	10.0	01/09/2019	ND	203	102	200	3.92	
EXT DRO >C28-C36	<10.0	10.0	01/09/2019	ND					

Surrogate: 1-Chlorooctane 92.5 % 41-142

Surrogate: 1-Chlorooctadecane 89.2 % 37.6-147

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Celey D. Keene, Lab Director/Quality Manager

Analytical Results For:

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

Received:	01/08/2019	Sampling Date:	01/07/2019
Reported:	01/14/2019	Sampling Type:	Soil
Project Name:	BBS PICKETT DRAW	Sampling Condition:	Cool & Intact
Project Number:	BBS - 18 - 002	Sample Received By:	Tamara Oldaker
Project Location:	NONE GIVEN		

Sample ID: SP - 10 NORTH WALL (H900045-12)

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	01/11/2019	ND	2.03	102	2.00	3.42		
Toluene*	<0.050	0.050	01/11/2019	ND	2.15	108	2.00	2.89		
Ethylbenzene*	<0.050	0.050	01/11/2019	ND	2.18	109	2.00	2.31		
Total Xylenes*	<0.150	0.150	01/11/2019	ND	6.67	111	6.00	2.50		
Total BTEX	<0.300	0.300	01/11/2019	ND						

Surrogate: 4-Bromofluorobenzene (PID) 96.2 % 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	01/10/2019	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	01/09/2019	ND	186	93.1	200	5.47		
DRO >C10-C28*	<10.0	10.0	01/09/2019	ND	203	102	200	3.92		
EXT DRO >C28-C36	<10.0	10.0	01/09/2019	ND						

Surrogate: 1-Chlorooctane 83.5 % 41-142

Surrogate: 1-Chlorooctadecane 80.0 % 37.6-147

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Celey D. Keene, Lab Director/Quality Manager

Analytical Results For:

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

 Received: 01/08/2019
 Reported: 01/14/2019
 Project Name: BBS PICKETT DRAW
 Project Number: BBS - 18 - 002
 Project Location: NONE GIVEN

 Sampling Date: 01/07/2019
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Tamara Oldaker

Sample ID: SP - 11 BOTTOM 4' (H900045-13)

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	01/11/2019	ND	2.03	102	2.00	3.42	
Toluene*	<0.050	0.050	01/11/2019	ND	2.15	108	2.00	2.89	
Ethylbenzene*	<0.050	0.050	01/11/2019	ND	2.18	109	2.00	2.31	
Total Xylenes*	<0.150	0.150	01/11/2019	ND	6.67	111	6.00	2.50	
Total BTEX	<0.300	0.300	01/11/2019	ND					

Surrogate: 4-Bromofluorobenzene (PID) 98.0 % 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	22400	16.0	01/10/2019	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	01/09/2019	ND	186	93.1	200	5.47	
DRO >C10-C28*	<10.0	10.0	01/09/2019	ND	203	102	200	3.92	
EXT DRO >C28-C36	<10.0	10.0	01/09/2019	ND					

Surrogate: 1-Chlorooctane 91.3 % 41-142

Surrogate: 1-Chlorooctadecane 87.2 % 37.6-147

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Celey D. Keene, Lab Director/Quality Manager

Notes and Definitions

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

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Celey D. Keene, Lab Director/Quality Manager

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

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

Company Name: Safety and Environmental Solutions		P.O. #:		BILL TO		ANALYSIS REQUEST					
Project Manager: Bob Allen		Company: Same									
Address: 703 East Clinton, PO Box 1613		Attn:									
City: Hobbs		State: NM		Zip: 88240							
Phone #: 575 397-0510		Fax #: 575 393-4388		Address:							
Project #: BBS-18-002		Project Owner:		City:							
Project Name: BBS PULVER DRAW		State:		Zip:							
Project Location:		Phone #:		Fax #:							
Sampler Name:		FOR LAB USE ONLY		PRESERV:		SAMPLING					
Lab I.D.		Sample I.D.		MATRIX							
		(G)RAB OR (C)OMP.		# CONTAINERS							
		GROUNDWATER		WASTEWATER							
		SOIL		OIL							
		SLUDGE		OTHER :							
		ACID/BASE:		ICE / COOL							
		OTHER :		DATE		TIME					
Hobbs		7-1		255							
		7-1		455							
		7-1		555							
		7-1		755							
		7-1		855							
		7-1		1055							
		7-1		1255							
		7-1		1755							
		SP-7		SOUTHWEST							
		SP-8		WEST WARD							

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Relinquished By: *[Signature]*
 Date: 01/08/19
 Time: 0800

Received By: *[Signature]*
 Date: 01/08/19
 Time: 2:55 PM

Phone Result: Yes No
 Fax Result: Yes No
 Add'l Phone #: _____
 Add'l Fax #: _____

Delivered By: (Circle One)
 UPS Bus Other: 2.0e kg
 Sample Condition: Cool Intact
 Checked By: *[Signature]*
 (Initials) *VB*

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

BILL TO

ANALYSIS REQUEST

P.O. #:

Company: Same

Attn:

Address:

City:

State:

Phone #:

Fax #:

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 #: RB5-18-002 Project Owner:

Project Name: RRS River Draw

Project Location:

Sampler Name:

FOR LAB USE ONLY

Lab I.D. Sample I.D.

Handouts

11 58-9 Emswail
 12 58-10 Wessington North #9
 13 58-11 Boston 4th

(G)RAB OR (C)OMP.	# CONTAINERS	GROUNDWATER	WASTEWATER	SOIL	OIL	SLUDGE	OTHER:	ACID/BASE:	ICE / COOL	OTHER:
	1			X						
	1			X						
	1			X						

DATE	TIME
01/07	0135
01/07	0210
01/07	0200

TPH (8015 EXT)	BTEX	Chlorides (4500)
X	X	X
X	X	X
X	X	X

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Relinquished By: *[Signature]*

Received By: *[Signature]*

Date: 01/08/19

Time: 0800

Date: 01/08/19

Time: 0855 AM

Relinquished By: *[Signature]*

Date: 01/08/19

Received By: *[Signature]*

Time: 0855 AM

Delivered By: (Circle One)

UPS Bus Other:

Sample Condition

CHECKED BY: *[Signature]*

Sampler - UPS - Bus - Other:

2.02 #97

Sample Condition

CHECKED BY: *[Signature]*

Phone Result: Yes No

REMARKS: * Revised as per Dave. 1/9/19 *[Signature]*

Appendix D

Site Photographs

**Bettis, Boyle, & Stovall
Pickett Draw Federal Saltwater Disposal Line**



Lease Road traveling East from site



Impacted area

