

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

**Closure Report
2RP-4750**

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

February 26, 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 Berend	Bettis, Boyle & Stovall	940-549-0780	kberend@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 2RP-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 aforementioned site has been remediated according to the NMOCD published guidelines (July 24, 2018). The site ranking and soil screening levels as presented in the table below:

Minimum depth below any point within the horizontal boundary of the release to ground water less than 10,000 mg/l	Constituent	Method*	Limit**
<50 feet	TDS		
	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
51 feet-100 feet	Benzene	EPA SW-846 Method 8021B or 8260B	10 mg/kg
	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
>100 feet	Benzene	EPA SW-846 Method 8021B or 8260B	10 mg/kg
	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
	Benzene	EPA SW-846 Method 8021B or 8260B	10 mg/kg

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

Based on the above analytical data and site assessment; a work plan for remediation of the site was submitted to the NMOCD on February 07, 2019 to excavate the East Wall to the extent that Chloride screening levels were <60mg/kg, to a depth of 4 ft. bgs., installing a 30 mil. liner and backfilling with fresh topsoil. Said plan was approved on the same date.

VI. Closure

On February 14th, 2019 SESI personnel together with equipment and personnel from SDR were on location. Further excavation of the East wall commenced with intermittent field sampling, and field results for Cl were <31. The West wall was excavated to the extent that the lease road would be impeded. The North and South Walls were excavated to the extent that Chloride levels were <600 mg/kg. All soil samples were properly packaged, preserved, and transported to Cardinal Laboratories via Chain of Custody. The soil samples were analyzed for Chlorides, GRO C6-C10, DRO >C10-C28, and Ext DRO >C28-C36. The results are recapped in the table as follows:

Soil Sample Results: Cardinal Laboratories 02-25-19				
Sample Point	Chloride	GRO	DRO	EXT DRO
North Wall	128	<10.0	<10.0	<10.0
West Wall	*8660	<10.0	<10.0	<10.0
East Wall	32.0	<10.0	<10.0	<10.0
South Wall	256	<10.0	<10.0	<10.0

*Further excavation of the West Wall was not permissible due to lease road traffic and safety.

A liner was installed at 4' bgs., backfilled, and restored to grade. According to disposal manifests; approximately 190 cubic yards of impacted soil were disposed of at an NMOCD approved facility. Pursuant to BLM guidelines the pasture area will be reseeded in the Spring.

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



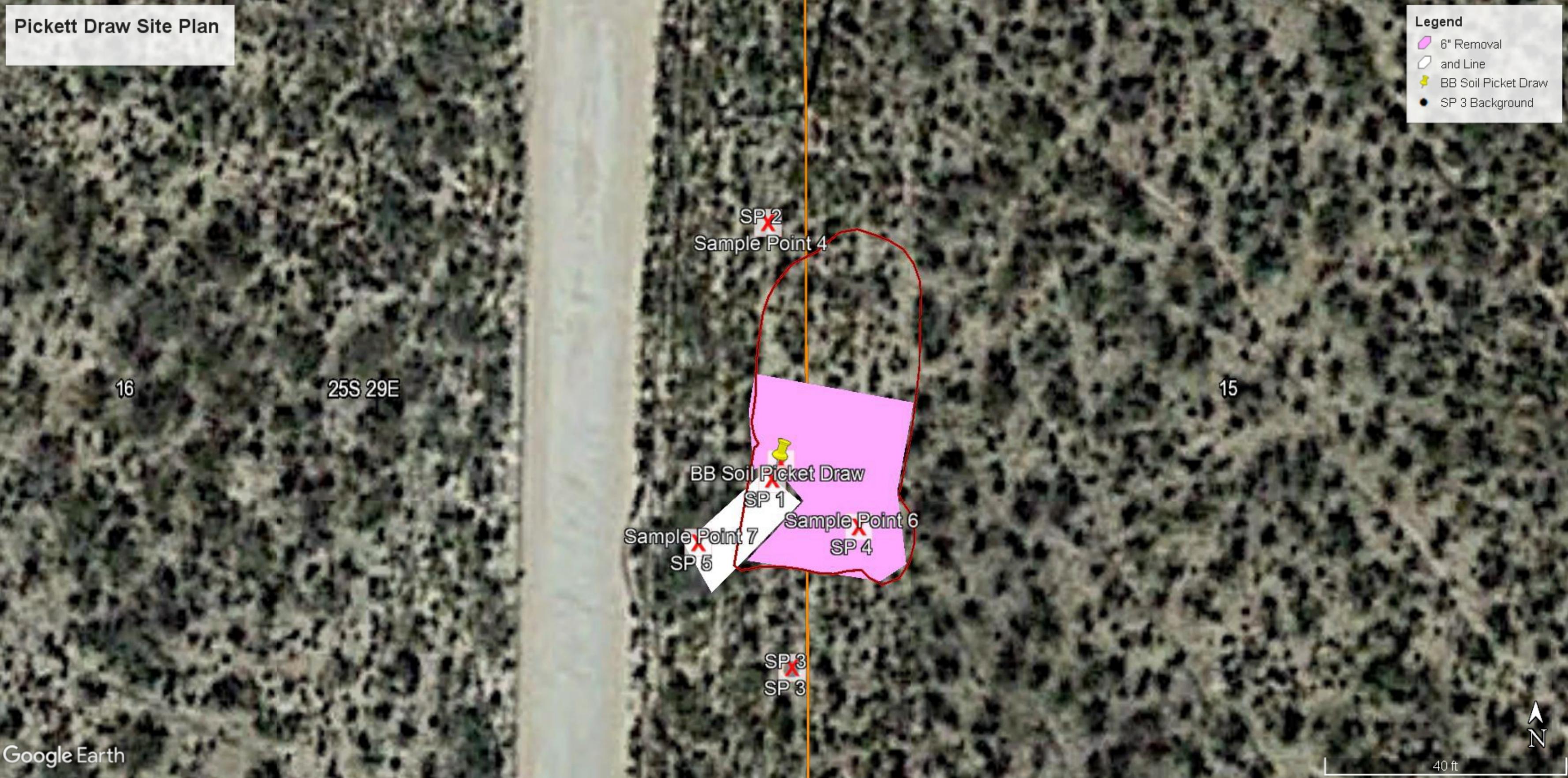
Figure 2

Site Plan

Pickett Draw Site Plan

Legend

- 6" Removal
- and Line
- BB Soil Picket Draw
- SP 3 Background



16

25S 29E

15

SP 2
Sample Point 4

BB Soil Picket Draw

SP 1

Sample Point 7

SP 5

Sample Point 6

SP 4

SP 3

SP 3



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	2
Facility ID	
Application ID	

Release Notification

Responsible Party

Responsible Party Bettis Boyle & Stovall	OGRID
Contact Name Kyle Berend	Contact Telephone 940-549-0780
Contact email Kberend@bbsoil.com	Incident # (assigned by OCD) 2RP-4757
Contact mailing address PO Box 1240. Graham. TX 76450	

Location of Release Source

Latitude 32.130219 Longitude -103.980862
(NAD 83 in decimal degrees to 5 decimal places)

Site Name Pickett Draw Fed Saltwater Disposal Line	Site Type Pipeline
Date Release Discovered 05/08/18	API# (if applicable) 30-015-25867

Unit Letter	Section	Township	Range	County
N	10	25S	29E	Eddy

Surface Owner: State Federal Tribal Private (Name: _____)

Nature and Volume of Release

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

<input type="checkbox"/> Crude	Volume Released (bbls)	Volume Recovered (bbls)
<input checked="" type="checkbox"/> Produced Water	Volume Released (bbls) <15 bbls	Volume Recovered (bbls) None
	Is the concentration of total dissolved solids (TDS) in the produced water >10,000 mg/l?	<input type="checkbox"/> Yes <input checked="" 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: Produced fluids leaked from a saltwater disposal line that was struck by an unknown driver truck/auto. It was not reported to us at the time of the incident. This individual attempted to repair this line but was unsuccessful. He/she did not report the incident to Bettis. Boyle & Stovall

State of New Mexico
Oil Conservation Division

Incident ID	
District RP	
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 Kyle Berend Title: Regulatory Analyst

Signature:  Date 02/07/19

email: Kberend@bbsoil.com Telephone: 940-549-0780

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?

43 (ft bgs)

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

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

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

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

State of New Mexico
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: Kyle Berend Title: Regulatory Analyst

Signature:  Date: 02/07/19

email: kberend@bbsoil.com Telephone: 940-549-0780

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: Kyle Berend Title: Regulatory Analyst

Signature:  Date: 02/07/19

email: kberend@bbsoil.com Telephone: 940-549-0780

OCD Only

Received by: _____ Date: _____

- Approved
 Approved with Attached Conditions of Approval
 Denied
 Deferral Approved

Signature: _____ Date: _____

Incident ID	
District RP	
Facility ID	
Application ID	

Closure

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

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

- A scaled site and sampling diagram as described in 19.15.29.11 NMAC
- Photographs of the remediated site prior to backfill or photos of the liner integrity if applicable (Note: appropriate OCD District office must be notified 2 days prior to liner inspection)
- Laboratory analyses of final sampling (Note: appropriate ODC District office must be notified 2 days prior to final sampling)
- Description of remediation activities

I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to OCD rules and regulations all operators are required to report and/or file certain release notifications and perform corrective actions for releases which may endanger public health or the environment. The acceptance of a C-141 report by the OCD does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to groundwater, surface water, human health or the environment. In addition, OCD acceptance of a C-141 report does not relieve the operator of responsibility for compliance with any other federal, state, or local laws and/or regulations. The responsible party acknowledges they must substantially restore, reclaim, and re-vegetate the impacted surface area to the conditions that existed prior to the release or their final land use in accordance with 19.15.29.13 NMAC including notification to the OCD when reclamation and re-vegetation are complete.

Printed Name: KYLE BEREND Title: REGULATORY ANALYST
 Signature: *Kyle Berend* Date: 02/07/19
 email: kberend@bbsoil.com Telephone: 940-549-0780

OCD Only

Received by: _____ Date: _____

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

Closure Approved by: _____ Date: _____

Printed Name: _____ Title: _____

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)

(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		501928	3552642*	180	30	150
C 01880	C	ED		3	3	2 06	25S	29E		502161	3558605*	85	40	45
C 02371	C	ED		2	3	15	25S	29E		506741	3555106*	200	60	140
C 02450	C	ED		4	4	1 02	25S	29E		508422	3558663*	150		
C 02518	C	ED		3	4	08	25S	29E		503895	3556300*	462		
C 02680	CUB	ED		2	3	15	25S	29E		506741	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.

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,

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

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

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



Celey D. Keene, Lab Director/Quality Manager

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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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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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

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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 #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



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 (BOIS 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) *N. Boyer*
 Sampler - 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	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 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

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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, SM4500Cl-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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Analytical Results For:

 Safety & Environmental Solutions
 Bob Allen
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 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 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, SM4500Cl-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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 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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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 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, SM4500CI-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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 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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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 - 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, SM4500CI-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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Analytical Results For:

 Safety & Environmental Solutions
 Bob Allen
 703 East Clinton
 Hobbs NM, 88240
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 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, SM4500CI-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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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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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 - 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, SM4500CI-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

Cardinal Laboratories

*=Accredited Analyte

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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

Cardinal Laboratories

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Celey D. Keene, Lab Director/Quality Manager

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

BILL TO

ANALYSIS REQUEST

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 Raton 4th

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

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

TPH (8015 EXT)
 BTEX
 Chloride (4500)

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Relinquished By: *[Signature]*

Received By: *[Signature]*

Relinquished By: *[Signature]*

Date: 01/08/19
 Time: 0800

Received By: *[Signature]*

Date: 01/08/19
 Time: 2:55 PM

Delivered By: (Circle One)

Sampler - UPS - Bus - Other:

200 #97

Sample Condition
 Cool Intact
 Pres Intact
 No No

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

February 25, 2019

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 02/19/19 9:15.

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.

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

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

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

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

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

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

Sincerely,



Celey D. Keene

Lab Director/Quality Manager

Analytical Results For:Safety & Environmental Solutions
703 East Clinton
Hobbs NM, 88240Project: PICKETT
Project Number: PICKETT DRAW
Project Manager: Bob Allen
Fax To: (575) 393-4388Reported:
25-Feb-19 10:21

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
NORTHWALL	H900644-01	Soil	14-Feb-19 13:00	19-Feb-19 09:15
WESTWALL	H900644-02	Soil	14-Feb-19 13:25	19-Feb-19 09:15
EASTWALL	H900644-03	Soil	14-Feb-19 13:40	19-Feb-19 09:15
SOUTHWALL	H900644-04	Soil	14-Feb-19 14:15	19-Feb-19 09:15
BOTTOM	H900644-05	Soil	14-Feb-19 14:25	19-Feb-19 09:15

Sample IDs for -02 and -04 changed as per Rebecca 02/25/19. This is the revised report and will replace the one sent on 02/22/19.

Cardinal Laboratories

* = Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager

Analytical Results For:

 Safety & Environmental Solutions
 703 East Clinton
 Hobbs NM, 88240

 Project: PICKETT
 Project Number: PICKETT DRAW
 Project Manager: Bob Allen
 Fax To: (575) 393-4388

 Reported:
 25-Feb-19 10:21

NORTHWALL
H900644-01 (Soil)

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

Cardinal Laboratories
Inorganic Compounds

Chloride	128		16.0	mg/kg	4	9022008	AC	21-Feb-19	4500-Cl-B	
-----------------	------------	--	------	-------	---	---------	----	-----------	-----------	--

Petroleum Hydrocarbons by GC FID

GRO C6-C10*	<10.0		10.0	mg/kg	1	9022012	MS	20-Feb-19	8015B	
DRO >C10-C28*	<10.0		10.0	mg/kg	1	9022012	MS	20-Feb-19	8015B	
EXT DRO >C28-C36	<10.0		10.0	mg/kg	1	9022012	MS	20-Feb-19	8015B	
<i>Surrogate: 1-Chlorooctane</i>			88.4 %		41-142	9022012	MS	20-Feb-19	8015B	
<i>Surrogate: 1-Chlorooctadecane</i>			88.1 %		37.6-147	9022012	MS	20-Feb-19	8015B	

Cardinal Laboratories

* = Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager

Analytical Results For:

 Safety & Environmental Solutions
 703 East Clinton
 Hobbs NM, 88240

 Project: PICKETT
 Project Number: PICKETT DRAW
 Project Manager: Bob Allen
 Fax To: (575) 393-4388

 Reported:
 25-Feb-19 10:21

WESTWALL
H900644-02 (Soil)

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

Chloride	8660		16.0	mg/kg	4	9022008	AC	21-Feb-19	4500-CI-B	
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Petroleum Hydrocarbons by GC FID

GRO C6-C10*	<10.0		10.0	mg/kg	1	9022012	MS	21-Feb-19	8015B	
DRO >C10-C28*	<10.0		10.0	mg/kg	1	9022012	MS	21-Feb-19	8015B	
EXT DRO >C28-C36	<10.0		10.0	mg/kg	1	9022012	MS	21-Feb-19	8015B	
<i>Surrogate: 1-Chlorooctane</i>			<i>90.0 %</i>	<i>41-142</i>		<i>9022012</i>	<i>MS</i>	<i>21-Feb-19</i>	<i>8015B</i>	
<i>Surrogate: 1-Chlorooctadecane</i>			<i>89.7 %</i>	<i>37.6-147</i>		<i>9022012</i>	<i>MS</i>	<i>21-Feb-19</i>	<i>8015B</i>	

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Celey D. Keene, Lab Director/Quality Manager

Analytical Results For:

 Safety & Environmental Solutions
 703 East Clinton
 Hobbs NM, 88240

 Project: PICKETT
 Project Number: PICKETT DRAW
 Project Manager: Bob Allen
 Fax To: (575) 393-4388

 Reported:
 25-Feb-19 10:21

EASTWALL
H900644-03 (Soil)

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

Chloride	32.0		16.0	mg/kg	4	9022008	AC	21-Feb-19	4500-CI-B	
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Petroleum Hydrocarbons by GC FID

GRO C6-C10*	<10.0		10.0	mg/kg	1	9022012	MS	21-Feb-19	8015B	
DRO >C10-C28*	<10.0		10.0	mg/kg	1	9022012	MS	21-Feb-19	8015B	
EXT DRO >C28-C36	<10.0		10.0	mg/kg	1	9022012	MS	21-Feb-19	8015B	
<i>Surrogate: 1-Chlorooctane</i>			<i>93.9 %</i>	<i>41-142</i>		<i>9022012</i>	<i>MS</i>	<i>21-Feb-19</i>	<i>8015B</i>	
<i>Surrogate: 1-Chlorooctadecane</i>			<i>93.6 %</i>	<i>37.6-147</i>		<i>9022012</i>	<i>MS</i>	<i>21-Feb-19</i>	<i>8015B</i>	

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Celey D. Keene, Lab Director/Quality Manager

Analytical Results For:

 Safety & Environmental Solutions
 703 East Clinton
 Hobbs NM, 88240

 Project: PICKETT
 Project Number: PICKETT DRAW
 Project Manager: Bob Allen
 Fax To: (575) 393-4388

 Reported:
 25-Feb-19 10:21

SOUTHWALL
H900644-04 (Soil)

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

Chloride	256		16.0	mg/kg	4	9022008	AC	21-Feb-19	4500-CI-B	
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Petroleum Hydrocarbons by GC FID

GRO C6-C10*	<10.0		10.0	mg/kg	1	9022012	MS	21-Feb-19	8015B	
DRO >C10-C28*	<10.0		10.0	mg/kg	1	9022012	MS	21-Feb-19	8015B	
EXT DRO >C28-C36	<10.0		10.0	mg/kg	1	9022012	MS	21-Feb-19	8015B	
Surrogate: 1-Chlorooctane			84.7 %	41-142		9022012	MS	21-Feb-19	8015B	
Surrogate: 1-Chlorooctadecane			85.0 %	37.6-147		9022012	MS	21-Feb-19	8015B	

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Celey D. Keene, Lab Director/Quality Manager

Analytical Results For:

 Safety & Environmental Solutions
 703 East Clinton
 Hobbs NM, 88240

 Project: PICKETT
 Project Number: PICKETT DRAW
 Project Manager: Bob Allen
 Fax To: (575) 393-4388

 Reported:
 25-Feb-19 10:21

BOTTOM
H900644-05 (Soil)

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

Chloride	704		16.0	mg/kg	4	9022114	AC	21-Feb-19	4500-CI-B	
-----------------	------------	--	------	-------	---	---------	----	-----------	-----------	--

Petroleum Hydrocarbons by GC FID

GRO C6-C10*	<10.0		10.0	mg/kg	1	9022012	MS	21-Feb-19	8015B	
DRO >C10-C28*	<10.0		10.0	mg/kg	1	9022012	MS	21-Feb-19	8015B	
EXT DRO >C28-C36	<10.0		10.0	mg/kg	1	9022012	MS	21-Feb-19	8015B	
Surrogate: 1-Chlorooctane			94.4 %	41-142		9022012	MS	21-Feb-19	8015B	
Surrogate: 1-Chlorooctadecane			93.8 %	37.6-147		9022012	MS	21-Feb-19	8015B	

Cardinal Laboratories

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Celey D. Keene, Lab Director/Quality Manager

Analytical Results For:

 Safety & Environmental Solutions
 703 East Clinton
 Hobbs NM, 88240

 Project: PICKETT
 Project Number: PICKETT DRAW
 Project Manager: Bob Allen
 Fax To: (575) 393-4388

 Reported:
 25-Feb-19 10:21

Inorganic Compounds - Quality Control
Cardinal Laboratories

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 9022008 - General Prep - Wet Chem										
Blank (9022008-BLK1)										
Prepared & Analyzed: 20-Feb-19										
Chloride	ND	16.0	mg/kg							
LCS (9022008-BS1)										
Prepared & Analyzed: 20-Feb-19										
Chloride	416	16.0	mg/kg	400		104	80-120			
LCS Dup (9022008-BSD1)										
Prepared & Analyzed: 20-Feb-19										
Chloride	416	16.0	mg/kg	400		104	80-120	0.00	20	
Batch 9022114 - General Prep - Wet Chem										
Blank (9022114-BLK1)										
Prepared & Analyzed: 21-Feb-19										
Chloride	ND	16.0	mg/kg							
LCS (9022114-BS1)										
Prepared & Analyzed: 21-Feb-19										
Chloride	400	16.0	mg/kg	400		100	80-120			
LCS Dup (9022114-BSD1)										
Prepared & Analyzed: 21-Feb-19										
Chloride	416	16.0	mg/kg	400		104	80-120	3.92	20	

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Celey D. Keene, Lab Director/Quality Manager

Analytical Results For:

 Safety & Environmental Solutions
 703 East Clinton
 Hobbs NM, 88240

 Project: PICKETT
 Project Number: PICKETT DRAW
 Project Manager: Bob Allen
 Fax To: (575) 393-4388

 Reported:
 25-Feb-19 10:21

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 9022012 - General Prep - Organics
Blank (9022012-BLK1)

Prepared & Analyzed: 20-Feb-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							
<i>Surrogate: 1-Chlorooctane</i>	51.3		mg/kg	50.0		103	41-142			
<i>Surrogate: 1-Chlorooctadecane</i>	56.2		mg/kg	50.0		112	37.6-147			

LCS (9022012-BS1)

Prepared & Analyzed: 20-Feb-19

GRO C6-C10	220	10.0	mg/kg	200		110	76.5-133			
DRO >C10-C28	215	10.0	mg/kg	200		107	72.9-138			
Total TPH C6-C28	435	10.0	mg/kg	400		109	78-132			
<i>Surrogate: 1-Chlorooctane</i>	52.7		mg/kg	50.0		105	41-142			
<i>Surrogate: 1-Chlorooctadecane</i>	54.7		mg/kg	50.0		109	37.6-147			

LCS Dup (9022012-BSD1)

Prepared & Analyzed: 20-Feb-19

GRO C6-C10	230	10.0	mg/kg	200		115	76.5-133	4.12	20.6	
DRO >C10-C28	225	10.0	mg/kg	200		112	72.9-138	4.57	20.6	
Total TPH C6-C28	454	10.0	mg/kg	400		114	78-132	4.34	18	
<i>Surrogate: 1-Chlorooctane</i>	56.1		mg/kg	50.0		112	41-142			
<i>Surrogate: 1-Chlorooctadecane</i>	55.1		mg/kg	50.0		110	37.6-147			

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*=Accredited Analyte

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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

Cardinal Laboratories

*=Accredited Analyte

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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

BILL TO

ANALYSIS REQUEST

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 #: 1 Project Owner:
 Project Name: ~~BB~~ Pickett Drac
 Project Location: Pickett Drac
 Sampler Name: J. Zaragoza
 P.O. #: Company: Same
 Attn: Address:
 City: State: Zip:
 Phone #: Fax #:

Lab I.D.	Sample I.D.	(G)RAB OR (C)OMP.	# CONTAINERS	MATRIX							PRESERV	SAMPLING	DATE	TIME	REMARKS
				GROUNDWATER	WASTEWATER	SOIL	OIL	SLUDGE	OTHER :	ACID/BASE:					
H900144	1 North wall	G										2019	1:00	(1 X 518) EXT. CHL.	
	2 South wall West wall	G										2-14	1:25		
	3 East wall	G										2-14	1:40		
	4 West wall - back wall	G										2-14	2:15		
	5 BOTTOM	G										2-14	2:35		

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Relinquished By: *J. Zaragoza* Date: 2-19-19
 Received By: *Jimena Salazar* Date: 2-19-19
 Delivered By: (Circle One) UPS - Bus - Other: 2.8c #97
 Sample Condition: Cool Intact
 Checked By: (Initials) JS
 Phone Result: Yes No Add'l Phone #:
 Fax Result: Yes No Add'l Fax #:
 REMARKS: * Sample IDs changed as per Rebecca 2/25/19 cde

Appendix D

Site Photographs