
Delineation and Site Characterization Report

July 19, 2019



**Oilfield Water Logistics SWD Operating, LLC
Redhills Pipeline Produced Water Release
Unit Letter A, Section 10, T26S, R35E,
Lea County, New Mexico Case No. 1RP-5470**

J1OF6-190722-C-1410

Prepared For:

Mr. Phillip Sanders
Oilfield Water Logistics SWD Operating, LLC
8201 Preston Road, Suite 520
Dallas, Texas 75225

New Mexico Energy Minerals and Natural Resources Department
Oil Conservation Division
Mr. Dylan Rose-Coss
1220 South Saint Francis Drive
Santa Fe, New Mexico 87505

Prepared By:



500 Moseley Road
Cross Roads, Texas 76227
(940) 387-0805 Phone
(940) 387-0830 Fax



500 Moseley Road | Cross Roads, Texas 76227 | (940) 387-0805

July 19, 2019

Mr. Phillip Sanders
Oilfield Water Logistics SWD Operating, LLC
8201 Preston Road, Suite 520
Dallas, Texas 75225

RE: Delineation and Site Characterization Report: Oilfield Water Logistics (OWL) SWD Operating, LLC, Redhills Pipeline Produced Water Release, Unit Letter A, Section 10, T26S, R35E, Lea County, New Mexico – Case No. 1RP-5470

Dear Mr. Sanders:

KJ Environmental Mgt., Inc. (KJE) is pleased to submit this Delineation and Site Characterization Report for the produced water release located on the Redhills pipeline in Lea County, New Mexico. This report discusses background information, assessment purpose and scope of work, execution of work, and documents the corresponding results.

We appreciate your selection of KJE for this project and look forward to assisting you further on other projects. If you have any questions, please do not hesitate to contact either of the undersigned at 940-387-0805. Thank you for the opportunity to provide professional environmental consulting services. It has been a pleasure working with you.

Best Regards,

William B. Soderstrom
Environmental Project Manager

Dena M. Vandenberg, REM, LEED AP
Director of Environmental Services

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Executive Summary

KJ Environmental Mgt., Inc. (KJE), was retained by Oilfield Water Logistics (OWL) SWD Operating, LLC to complete certain delineation activities for a produced water release on the Redhills pipeline in Lea County, New Mexico.

On April 30, 2019, KJE was notified by Mr. Phillip Sanders, Safety Director with OWL SWD Operating, LLC, regarding a release of produced water at the above referenced location. Following the New Mexico Oil Conservation Division (NMOCD), part of the New Mexico Energy, Minerals, and Natural Resources Department (EMNRD) notification and approval, the release was assigned a remediation case number, 1RP-5470, and delineation and site characterization activities commenced.

Based on conversations with OWL SWD Operating, LLC, the produced water release occurred along the Redhills pipeline and resulted from the discharge hose coming off, causing the release. Pursuant to New Mexico Administrative Code (NMAC) 19.15.29 issued on August 8, 2018, KJE performed delineation and site characterization activities in an attempt to delineate the release horizontally and vertically. KJE advanced 18 soil borings (SB-01 through SB-18) within and outside the spill area, but allowed a minimum 10-foot setback to the OWL saltwater pipeline and a minimum 20-foot setback in regards to the high-pressure gas pipeline, to collect representative soil samples. In addition, KJE advanced one (1) background boring approximately 150 feet north of the produced water release in an attempt to obtain background soil concentrations for comparison.

Based on laboratory results, soil samples were detected at chloride concentrations above the NMAC closure criteria from SB-01 1', SB-02 1', SB-04 1', SB-09 0 – 2', SB-09 2 - 4', SB-10 0 – 2', SB-14 0 – 2', and SB-14 2 – 4'.

Based on the exceedance of chlorides in multiple soil borings above the NMAC closure criteria of 600 mg/kg, KJE proposes to excavate in a 20 by 20 by 4 foot pattern around SB-01, SB-02, SB-04, SB-09, SB-10, and SB-14 (pending location and allowing the minimum setback for the active high-pressure gas and saltwater pipelines). The remaining areas above or within the associated setbacks of the high-pressure and saltwater pipelines will be deferred to a later date until equipment and/or pipelines are removed, plugged, or abandoned; whichever occurs first.

Following remediation activities, KJE will collect confirmation soil samples to confirm the effectiveness of remedial activities. Additionally, KJE will submit a closure report detailing excavation activities including copies of waste manifests, laboratory analytical results, and pertinent site information.



1.0 Introduction

On April 30, 2019, KJE was provided notification by Mr. Phillip Sanders, Safety Director with OWL SWD Operating, LLC, regarding a release of produced water along the Redhills pipeline located approximately 10 miles southwest of Jal, Lea County, New Mexico. According to OWL personnel, the hose from the discharge pump broke free and caused the release. KJE verbally notified the NMOCD and BLM of the release on April 30, 2019, and it was determined approximately 1,200 barrels (BBLs) of produced water was released. According to OWL personnel, the release occurred along the Redhills pipeline and pooled in the pipeline right-of-way. In addition, KJE submitted Form C-141 to the NMOCD on May 2, 2019 for review. A response was received from Mr. Dylan Rose-Coss, with the NMOCD, indicating the incident was assigned remediation case number 1RP-5470. Additionally, based on conversations with Mr. James Amos, with the Bureau of Land Management (BLM), OWL was not required to perform an archeological survey for the Redhills pipeline. The general view of the spill is illustrated in Appendix A on Figure 1.

Pursuant to NMAC 19.15.29 on August 8, 2018, KJE arrived on-site June 11, 2019, to begin delineation and site characterization procedures. The NMOCD approved C-141 form is located in Appendix F of this report.

2.0 Environmental Assessment Activities

2.1 Delineation Activities

On May 13, 2019, KJE personnel were on-site to visually assess the release along the Redhills pipeline and collect Global Positioning System (GPS) coordinates of the extent of the produced water release. Additionally, KJE collected six (6) delineation soil samples at a total depth of one (1) foot bgs utilizing hand tools (hand auger) in an attempt to obtain initial chloride concentrations.

On June 11 and 12, 2019, under the supervision of KJE personnel, JR Drilling, LLC, (JR Drilling) of Edgewood, New Mexico, advanced 18 soil borings (SB-01 through SB-18) within and outside the spill area, but allowed a minimum 10-foot setback to the OWL saltwater pipeline and a minimum 20-foot setback in regards to the high-pressure gas pipeline, to collect representative soil samples. In addition, KJE advanced one (1) background boring approximately 150 feet north of the produced water release in an attempt to obtain background soil concentrations for comparison. The soil borings and background boring were advanced utilizing a Geoprobe 7822DT (direct-push techniques) to total depths ranging from 11 feet bgs in soil boring SB-07 and 18 feet bgs in SB-11. Additionally, groundwater was not encountered during the advancement of the soil borings or background boring; therefore, groundwater was not sampled or considered during the sampling event. The soil boring locations and approximate spill area are included in Appendix A.

Field screening for chloride concentrations and soil conductivity was conducted using a calibrated Hanna HI993310 soil conductivity meter. In addition, field screening for volatile organic



compounds (VOCs) was conducted using a calibrated photoionization detector (PID) (Model RAE MINIRAE Lite 0-5K ppm) to screen for the highest readings from each of the borings. The soil boring logs are included in Appendix C.

2.2 Deviations from the Scope

Soil borings were field adjusted due to the proximity of the saltwater and high-pressure gas pipelines and a minimum 10-foot and 20-foot setbacks set forth to maintain structural integrity and address safety concerns. During the installation of the soil borings, KJE encountered refusal due to caliche between 11 feet bgs and 18 feet bgs in SB-07 and SB-11, respectively. The soil boring locations and approximate spill area are included in Appendix A.

3.0 Soil Sample Collection / Handling Procedures

3.1 Soil Samples

Soil samples were collected based on field indicators or depth of potential impact as noted above, and all samples were collected in four-ounce laboratory supplied glass containers for laboratory analysis. The collected soil samples were placed in laboratory-supplied containers, labeled, placed in an insulated container with ice, providing a 4°C environment for sufficient preservation, until delivery to Xenco Laboratories (a third-party, independent, and licensed environmental laboratory in Midland, Texas) accompanied by completed chain-of-custody. The soil samples were analyzed for benzene, toluene, ethylbenzene, and xylenes (BTEX) via Method 8260, extended range total petroleum hydrocarbons (TPH) via Method 8015 modified, and chlorides via Method EPA 300. The sample collection and handling activities were conducted in accordance with USEPA Standard Operating Procedures and strict chain-of-custody protocols.

The sample results were compared to the NMOCD closure applicable criteria, as detailed below and in Appendix B.

3.2 Groundwater Samples

Groundwater was not encountered in the soil borings advanced, nor was it anticipated to be encountered. According to records obtained from the New Mexico Office of the State Engineer's Office Hydrology Bureau records, the water well located closest to the release area is located approximately 2 miles east of the site in Section 6, Township 26S, Range 36E, labeled under POD number CP01170, and has a recorded total depth of 500 feet bgs. In 2014, the depth to water was reported at 280 feet bgs. As such, and based on analytical data, which explored soil borings to depths five (5) feet below the known areas of impact, potential groundwater impact is not anticipated. Based on the absence of shallow groundwater and lack as a known source of drinking water in the vicinity of the release source, there is no complete exposure pathway to shallow groundwater. No use of groundwater is expected following proposed site remediation. In



addition, proposed site remediation activities are not expected to encounter groundwater due to the depth of the groundwater in the vicinity of the site. As such, KJE does not recommend further action regarding potential groundwater impact. A copy of the New Mexico well log is included in Appendix F.

4.0 Summary of Analytical Results

4.1 NMAC Closure Criteria

The NMOCD required delineation of BTEX, extended range TPH, and chlorides for the release area. Published values for BTEX and TPH were obtained from the document “New Mexico Administrative Code Title 19, Natural Resources and Wildlife, Chapter 15, Oil and Gas, Part 29, Releases, issued August 14, 2018”. Horizontal and vertical delineation concentrations were determined to be 10 mg/kg benzene, 50 mg/kg BTEX, 100 mg/kg TPH and 600 mg/kg chloride based on the potential of groundwater to be within 50 feet of the ground surface. See Figure 1 in Appendix A for soil boring locations.

4.2 Soil Analytical Results

Analytical results for initial soil samples collected on May 13, 2019, did not identify concentrations of BTEX above the laboratory method detection limit. However, analytical results identified TPH concentrations above the NMAC closure criteria of 100 mg/kg in SB-01 1'; which was collected near the release point utilizing hand tools (hand auger). Additionally, initial analytical results indicated chloride concentrations above the NMAC closure criteria of 600 mg/kg in SB-01 1', SB-02 1', and SB-04 1'.

Soil samples collected during delineation and site characterization activities did not indicate concentrations of BTEX or TPH above laboratory method detection limits. However, chloride concentrations exceeded the NMAC closure criteria of 600 mg/kg in soil samples SB-09 0 – 2', SB-09 2 – 4', SB-10 0 – 2', SB-14 0 – 2', and SB-14 2 – 4'. The remaining soil samples submitted for laboratory analysis were either below the NMAC closure criteria or below laboratory reporting limits (non-detect).

A summary table of the analytical results are included in Appendix B and copies of the laboratory analytical reports with chain-of-custody forms are included in Appendix D.

5.0 Photographs

Photo documentation of the sampling activities are included in Appendix C.



6.0 Conclusions/Recommendations

Analytical results for initial soil samples collected on May 13, 2019, did not identify concentrations of BTEX above the laboratory method detection limit. However, analytical results identified TPH concentrations above the NMAC closure criteria of 100 mg/kg in SB-01 1'; which was collected near the release point utilizing hand tools (hand auger). Additionally, initial analytical results indicated chloride concentrations above the NMAC closure criteria of 600 mg/kg in SB-01 1', SB-02 1', and SB-04 1'.

Soil samples collected during delineation and site characterization activities did not indicate concentrations of BTEX or TPH above laboratory method detection limits. However, chloride concentrations exceeded the NMAC closure criteria of 600 mg/kg in soil samples SB-09 0 – 2', SB-09 2 – 4', SB-10 0 – 2', SB-14 0 – 2', and SB-14 2 – 4'. The remaining soil samples submitted for laboratory analysis were either below the NMAC closure criteria or below laboratory reporting limits (non-detect).

Based on laboratory results, soil samples were detected at chloride concentrations above the NMAC closure criteria from SB-01 1', SB-02 1', SB-04 1', SB-09 0 – 2', SB-09 2 - 4', SB-10 0 – 2', SB-14 0 – 2', and SB-14 2 – 4'.

Based on the exceedance of chlorides in multiple soil borings above the NMAC closure criteria of 600 mg/kg, KJE proposes to excavate in a 20 by 20 by 4 foot pattern around SB-01, SB-02, SB-04, SB-09, SB-10, and SB-14 (pending location and allowing the minimum setback for the active high-pressure gas and saltwater pipelines). The remaining areas above or within the associated setbacks of the high-pressure and saltwater pipelines will be deferred to a later date until equipment and/or pipelines are removed, plugged, or abandoned; whichever occurs first.

Following remediation activities, KJE will collect confirmation soil samples to confirm the effectiveness of remedial activities. Additionally, KJE will submit a closure report detailing excavation activities including copies of waste manifests, laboratory analytical results, and pertinent site information.



If we can be of further assistance, please do not hesitate to contact us at 940-387-0805. Thank you for the opportunity to provide professional environmental consulting services. It has been a pleasure working with you.

7.0 Qualifications of Environmental Professional

This is to certify the delineation and site characterization activities completed at the site located along the Redhills pipeline in Lea County, New Mexico; was performed following EPA, NMOCD, and industry-approved standards/protocols. This work was conducted between May 13 and June 12, 2019, for Mr. Phillip Sanders with OWL SWD Operating, LLC, and all field activities were completed under the supervision of Mr. William B. Soderstrom. Mr. Soderstrom's credentials are included in Appendix H.

8.0 Signature of Environmental Professional

A handwritten signature in blue ink that reads "William B. Soderstrom".

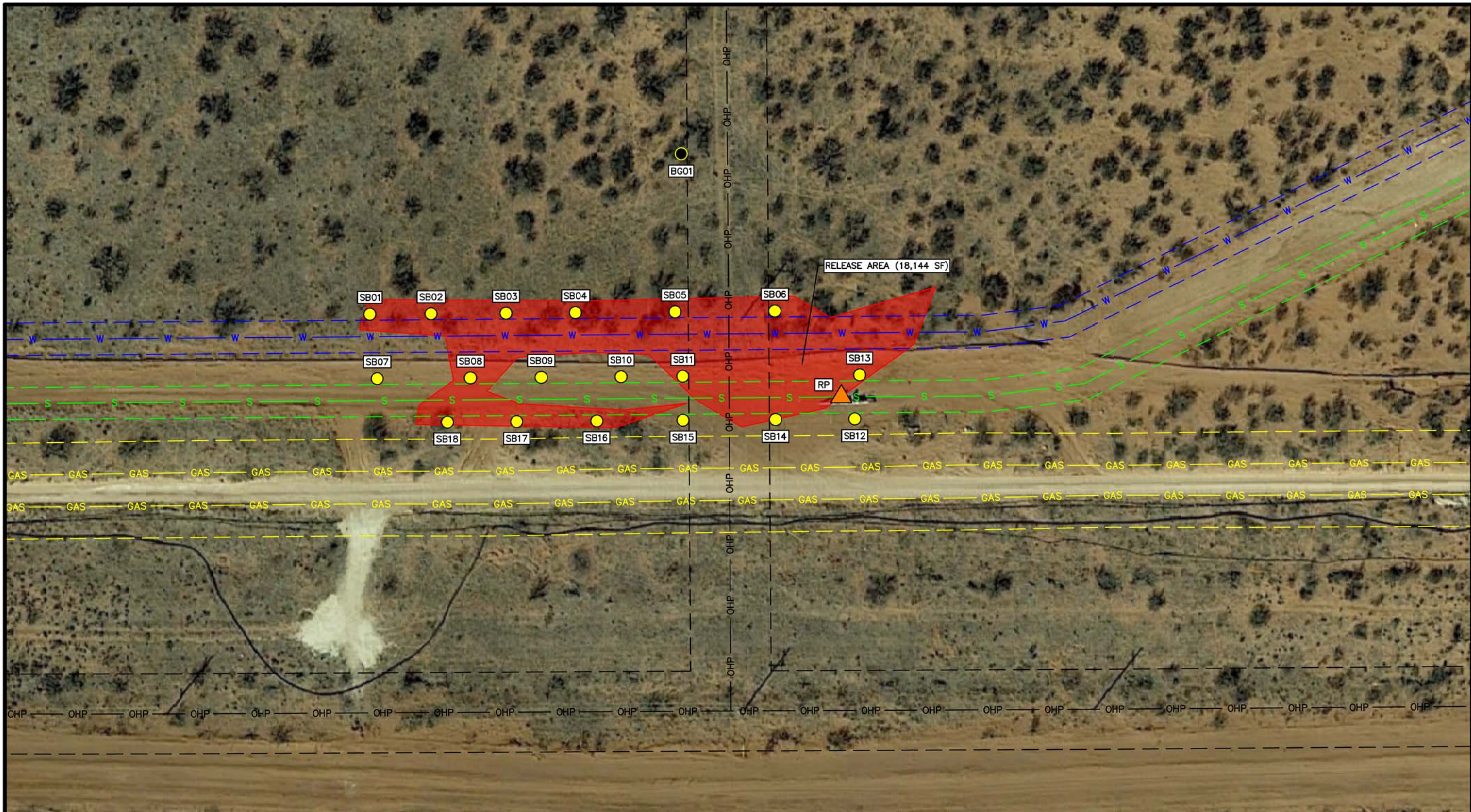
07/19/2019

William B. Soderstrom
Environmental Professional
Environmental Project Manager

Date

APPENDIX A

Figures



REVISIONS:

THIS DRAWING IS TO BE USED FOR PERMIT INFORMATION PURPOSES ONLY.



SOIL BORING & RELEASE AREA LOCATION MAP
OWL SWD OPERATING, LLC
LEA COUNTY, NEW MEXICO
SECTION 2/3/10/11, TOWNSHIP 26S, RANGE 35E
CASE NO. 1RP-5470

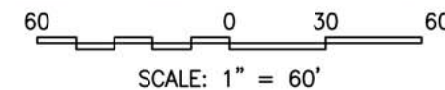
DATE:
7/9/2019

FIGURE:

1

- NOTES:
1. RELEASE AREA DELINEATED BY OPEN RANGE FIELD SERVICES, LLC ON MAY 16, 2019.
 2. GOOGLE EARTH WAS USED AS AN UNDERLAY IMAGE FOR THIS MAP. (<http://google.com/earth>)

- LEGEND
- | | | | |
|-------------------------|---|-------|---|
| RELEASE POINT | ▲ | —W— | RANCH WATER LINE (WITH 10' BUFFER ON EACH SIDE) |
| SOIL BORING (TOTAL: 18) | ● | —S— | OWL SALTWATER LINE (WITH 10' BUFFER ON EACH SIDE) |
| BACKGROUND SAMPLE | ● | —OHP— | OVER HEAD POWER LINE (WITH 25' BUFFER ON EACH SIDE) |
| RELEASE AREA | ■ | —GAS— | HIGH PRESSURE GAS LINE (WITH 20' BUFFER ON EACH SIDE) |



APPENDIX B

Analytical Data



Table 1: Soil Analytical Data
Redhills Pipeline
32.06509621, -103.34662165
Jal, Lea County, New Mexico

Laboratory Sample Designation		Units	NMAC Closure Criteria ¹	624176-001 ⁴	624176-002	624176-003	624176-004	624176-005	624176-006	627724-001 ⁵	627724-002	627724-003	627724-004	627724-005	627724-006	627724-007	627724-008	627724-009		
Sample Designation				SB-01	SB-02	SB-03	SB-04	SB-05	SB-06	SB-01	SB-01	SB-01	SB-01	SB-01	SB-01	SB-01	SB-01	SB-01	SB-02	
Date Collected				5/13/2019	5/13/2019	5/13/2019	5/13/2019	5/13/2019	5/13/2019	6/11/2019	6/11/2019	6/11/2019	6/11/2019	6/11/2019	6/11/2019	6/11/2019	6/11/2019	6/11/2019	6/11/2019	
Sample Depth				1'	1'	1'	1'	1'	1'	0 - 2'	2 - 4'	4 - 6'	6 - 8'	8 - 10'	10 - 12'	12 - 14'	14 - 16'	0 - 2'		
Method	Analyte																			
8015	TPH ²	mg/kg	100	1,400	65.9	<15.0	<15.0	<15.0	<15.0	<15.3	--	--	--	--	--	--	--	<17.2		
8260	BENZENE	mg/kg	10	--	--	--	--	--	--	<0.00103	--	--	--	--	--	--	--	<0.00114		
	ETHYLBENZENE	mg/kg	--	--	--	--	--	--	--	<0.00103	--	--	--	--	--	--	--	<0.00114		
	TOLUENE	mg/kg	--	--	--	--	--	--	--	<0.00103	--	--	--	--	--	--	--	<0.00114		
	XYLENE	mg/kg	--	--	--	--	--	--	--	<0.00103	--	--	--	--	--	--	--	<0.00114		
	TOTAL BTEX ³	mg/kg	50	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00103	--	--	--	--	--	--	--	<0.00114		
300	CHLORIDE	mg/kg	600	1,240	3,820	12.8	2,610	5.22	438	<5.16	<5.08	<5.14	<5.20	<5.33	<5.23	<5.08	<5.17	<5.72		
Laboratory Sample Designation		Units	NMAC Closure Criteria	627724-010	627724-011	627724-012	627724-013	627724-014	627724-015	627724-016	627724-017	627724-018	627724-019	627724-020	627724-021	627724-022	627724-023	627724-024		
Sample Designation				SB-02	SB-02	SB-02	SB-02	SB-02	SB-02	SB-02	SB-02	SB-02	SB-03	SB-03	SB-03	SB-03	SB-03	SB-03	SB-03	SB-04
Date Collected				6/11/2019	6/11/2019	6/11/2019	6/11/2019	6/11/2019	6/11/2019	6/11/2019	6/11/2019	6/11/2019	6/11/2019	6/11/2019	6/11/2019	6/11/2019	6/11/2019	6/11/2019	6/11/2019	6/11/2019
Sample Depth				2 - 4'	4 - 6'	6 - 8'	8 - 10'	10 - 12'	12 - 14'	14 - 16'	0 - 2'	2 - 4'	4 - 6'	6 - 8'	8 - 10'	10 - 12'	12 - 14'	0 - 2		
Method	Analyte																			
8015	TPH	mg/kg	100	--	--	--	--	--	--	--	<15.6	--	--	--	--	--	--	<15.4		
8260	BENZENE	mg/kg	10	--	--	--	--	--	--	--	<0.00104	--	--	--	--	--	--	<0.00102		
	ETHYLBENZENE	mg/kg	--	--	--	--	--	--	--	--	<0.00104	--	--	--	--	--	--	<0.00102		
	TOLUENE	mg/kg	--	--	--	--	--	--	--	--	<0.00104	--	--	--	--	--	--	<0.00102		
	XYLENE	mg/kg	--	--	--	--	--	--	--	--	<0.00104	--	--	--	--	--	--	<0.00102		
	TOTAL BTEX	mg/kg	50	--	--	--	--	--	--	--	<0.00104	--	--	--	--	--	--	<0.00102		
300	CHLORIDE	mg/kg	600	<5.02	<5.11	<5.81	<5.14	<5.10	<5.22	<5.11	<5.18	<5.14	<6.41	<5.34	<5.32	<5.20	<5.31	<5.18		
Laboratory Sample Designation		Units	NMAC Closure Criteria	627724-025	627724-026	627724-027	627724-028	627724-029	627724-030	627724-031	627724-032	627724-033	627724-034	627724-035	627724-036	627724-037	627724-038	627724-039		
Sample Designation				SB-04	SB-04	SB-04	SB-04	SB-04	SB-04	SB-04	SB-04	SB-05	SB-05	SB-05	SB-05	SB-05	SB-05	SB-05	SB-06	SB-06
Date Collected				6/11/2019	6/11/2019	6/11/2019	6/11/2019	6/11/2019	6/11/2019	6/11/2019	6/11/2019	6/11/2019	6/11/2019	6/11/2019	6/11/2019	6/11/2019	6/11/2019	6/11/2019	6/11/2019	6/11/2019
Sample Depth				2 - 4'	4 - 6'	6 - 8'	8 - 10'	10 - 12'	12 - 14'	0 - 2'	2 - 4'	4 - 6'	6 - 8'	8 - 10'	10 - 12'	12 - 14'	0 - 2'	2 - 4'		
Method	Analyte																			
8015	TPH	mg/kg	100	--	--	--	--	--	--	<15.4	--	--	--	--	--	--	<15.5	--		
8260	BENZENE	mg/kg	10	--	--	--	--	--	--	<0.00103	--	--	--	--	--	--	<0.00104	--		
	ETHYLBENZENE	mg/kg	--	--	--	--	--	--	--	<0.00103	--	--	--	--	--	--	<0.00104	--		
	TOLUENE	mg/kg	--	--	--	--	--	--	--	<0.00103	--	--	--	--	--	--	<0.00104	--		
	XYLENE	mg/kg	--	--	--	--	--	--	--	<0.00103	--	--	--	--	--	--	<0.00104	--		
	TOTAL BTEX	mg/kg	50	--	--	--	--	--	--	<0.00103	--	--	--	--	--	--	<0.00104	--		
300	CHLORIDE	mg/kg	600	<5.16	<6.52	<5.62	<5.31	<5.24	<5.25	<5.12	<5.17	<5.26	<5.43	<5.31	<5.30	11.6	<5.20	<5.35		



Table 1: Soil Analytical Data
Redhills Pipeline
32.06509621, -103.34662165
Jal, Lea County, New Mexico

Laboratory Sample Designation		Units	NMAC Closure Criteria	627724-040	627724-041	627724-042	627724-043	627724-044	627724-045	627724-046	627724-047	627724-048	627724-049	627724-050	627724-051	627724-052	627724-053	627724-054		
Sample Designation				SB-06	SB-06	SB-06	SB-06	SB-06	SB-07	SB-07	SB-07	SB-07	SB-07	SB-07	SB-07	SB-08	SB-08	SB-08	SB-08	
Date Collected				6/11/2019	6/11/2019	6/11/2019	6/11/2019	6/11/2019	6/11/2019	6/11/2019	6/11/2019	6/11/2019	6/11/2019	6/11/2019	6/11/2019	6/11/2019	6/11/2019	6/11/2019	6/11/2019	
Sample Depth				4 - 6'	6 - 8'	8 - 10'	10 - 12'	12 - 14'	0 - 2'	2 - 4'	4 - 6'	6 - 8'	8 - 10'	10 - 11'	0 - 2'	2 - 4'	4 - 6'	6 - 8'		
Method	Analyte																			
8015	TPH	mg/kg	100	--	--	--	--	--	<15.5	--	--	--	--	--	<15.6	--	--	--		
8260	BENZENE	mg/kg	10	--	--	--	--	--	<0.00104	--	--	--	--	--	<0.00105	--	--	--		
	ETHYLBENZENE	mg/kg	--	--	--	--	--	--	<0.00104	--	--	--	--	--	<0.00105	--	--	--		
	TOLUENE	mg/kg	--	--	--	--	--	--	<0.00104	--	--	--	--	--	<0.00105	--	--	--		
	XYLENE	mg/kg	--	--	--	--	--	--	<0.00104	--	--	--	--	--	<0.00105	--	--	--		
	TOTAL BTEX	mg/kg	50	--	--	--	--	--	<0.00104	--	--	--	--	--	<0.00105	--	--	--		
300	CHLORIDE	mg/kg	600	<6.76	<5.18	9.69	<5.22	10.3	<5.15	<5.13	<5.43	<5.88	<5.13	<5.95	<5.26	<5.23	<5.50	<5.37		
Laboratory Sample Designation		Units	NMAC Closure Criteria	627724-055	627724-056	627724-057	627724-058	627724-059	627724-060	627724-061	627724-062	627724-063	627724-064	627724-065	627724-066	627724-067	627724-068	627724-069		
Sample Designation				SB-08	SB-08	SB-08	SB-09	SB-09	SB-09	SB-09	SB-09	SB-09	SB-09	SB-09	SB-09	SB-09	SB-10	SB-10	SB-10	SB-10
Date Collected				6/11/2019	6/11/2019	6/11/2019	6/11/2019	6/11/2019	6/11/2019	6/11/2019	6/11/2019	6/11/2019	6/11/2019	6/11/2019	6/11/2019	6/11/2019	6/11/2019	6/11/2019	6/11/2019	6/11/2019
Sample Depth				8 - 10'	10 - 12'	12 - 13'	0 - 2'	2 - 4'	4 - 6'	6 - 8'	8 - 10'	10 - 12'	12 - 14'	14 - 15'	0 - 2'	2 - 4'	4 - 6'	6 - 8'		
Method	Analyte																			
8015	TPH	mg/kg	100	--	--	--	<15.5	--	--	--	--	--	--	--	<15.5	--	--	--		
8260	BENZENE	mg/kg	10	--	--	--	<0.00103	--	--	--	--	--	--	--	<0.00103	--	--	--		
	ETHYLBENZENE	mg/kg	--	--	--	<0.00103	--	--	--	--	--	--	--	--	<0.00103	--	--	--		
	TOLUENE	mg/kg	--	--	--	<0.00103	--	--	--	--	--	--	--	--	<0.00103	--	--	--		
	XYLENE	mg/kg	--	--	--	<0.00103	--	--	--	--	--	--	--	--	<0.00103	--	--	--		
	TOTAL BTEX	mg/kg	50	--	--	<0.00103	--	--	--	--	--	--	--	--	<0.00103	--	--	--		
300	CHLORIDE	mg/kg	600	<5.23	<5.38	<5.32	2,620	826	14.9	<5.14	<5.13	<6.26	<5.63	7.54	2,140	<5.20	<5.40	<5.35		
Laboratory Sample Designation		Units	NMAC Closure Criteria	627724-070	627724-071	627724-072	627724-073	627724-074	627724-075	627724-076	627724-077	627724-078	627724-079	627724-080	627724-081	627724-082	627724-083	627724-084		
Sample Designation				SB-10	SB-10	SB-10	SB-11	SB-11	SB-11	SB-11	SB-11	SB-11	SB-11	SB-11	SB-11	SB-11	SB-11	SB-12	SB-12	SB-12
Date Collected				6/11/2019	6/11/2019	6/11/2019	6/11/2019	6/11/2019	6/11/2019	6/11/2019	6/11/2019	6/11/2019	6/11/2019	6/11/2019	6/11/2019	6/11/2019	6/11/2019	6/11/2019	6/11/2019	6/11/2019
Sample Depth				8 - 10'	10 - 12'	12 - 14'	0 - 2'	2 - 4'	4 - 6'	6 - 8'	8 - 10'	10 - 12'	12 - 14'	14 - 16'	16 - 18'	0 - 2'	2 - 4'	4 - 6'		
Method	Analyte																			
8015	TPH	mg/kg	100	--	--	--	<15.6	--	--	--	--	--	--	--	--	<15.5	--	--		
8260	BENZENE	mg/kg	10	--	--	--	<0.00103	--	--	--	--	--	--	--	--	<0.00103	--	--		
	ETHYLBENZENE	mg/kg	--	--	--	<0.00103	--	--	--	--	--	--	--	--	--	<0.00103	--	--		
	TOLUENE	mg/kg	--	--	--	<0.00103	--	--	--	--	--	--	--	--	--	<0.00103	--	--		
	XYLENE	mg/kg	--	--	--	<0.00103	--	--	--	--	--	--	--	--	--	<0.00103	--	--		
	TOTAL BTEX	mg/kg	50	--	--	<0.00103	--	--	--	--	--	--	--	--	--	<0.00103	--	--		
300	CHLORIDE	mg/kg	600	<5.29	<5.23	11.6	<5.24	<5.23	<5.26	<5.54	<5.32	<5.24	<5.44	<5.39	6.11	21.3	<5.23	<5.27		



Table 1: Soil Analytical Data
Redhills Pipeline
32.06509621, -103.34662165
Jal, Lea County, New Mexico

Laboratory Sample Designation		Units	NMAC Closure Criteria	627724-085	627724-086	627724-087	627724-088	627724-089	627724-090	627724-091	627724-092	627724-093	627724-094	627724-095	627724-096	627724-097	627724-098	627724-099	
Sample Designation				SB-12	SB-12	SB-12	SB-12	SB-12	SB-13	SB-13	SB-13	SB-13	SB-13	SB-13	SB-13	SB-13	SB-13	SB-14	SB-14
Date Collected				6/11/2019	6/11/2019	6/11/2019	6/11/2019	6/11/2019	6/11/2019	6/11/2019	6/11/2019	6/11/2019	6/11/2019	6/11/2019	6/11/2019	6/11/2019	6/11/2019	6/12/2019	6/12/2019
Sample Depth				6 - 8'	8 - 10'	10 - 12'	12 - 14'	14 - 16'	0 - 2'	2 - 4'	4 - 6'	6 - 8'	8 - 10'	10 - 12'	12 - 14'	14 - 16'	0 - 2'	2 - 4'	
Method	Analyte																		
8015	TPH	mg/kg	100	--	--	--	--	--	<15.5	--	--	--	--	--	--	--	<15.5	--	
8260	BENZENE	mg/kg	10	--	--	--	--	--	<0.00103	--	--	--	--	--	--	--	<0.00103	--	
	ETHYLBENZENE	mg/kg	--	--	--	--	--	--	<0.00103	--	--	--	--	--	--	--	<0.00103	--	
	TOLUENE	mg/kg	--	--	--	--	--	--	<0.00103	--	--	--	--	--	--	--	<0.00103	--	
	XYLENE	mg/kg	--	--	--	--	--	--	<0.00103	--	--	--	--	--	--	--	<0.00103	--	
	TOTAL BTEX	mg/kg	50	--	--	--	--	--	<0.00103	--	--	--	--	--	--	--	<0.00103	--	
300	CHLORIDE	mg/kg	600	<5.27	<5.19	<5.13	<5.47	<5.46	13.3	8.44	27.0	<5.13	5.20	<5.23	<5.70	<5.45	1,490	1,440	
Laboratory Sample Designation		Units	NMAC Closure Criteria	627724-100	627724-101	627724-102	627724-103	627724-104	627724-105	627724-106	627724-107	627724-108	627724-109	627724-110	627724-111	627724-112	627724-113	627724-114	
Sample Designation				SB-14	SB-14	SB-14	SB-14	SB-14	SB-14	SB-14	SB-15	SB-15	SB-15	SB-15	SB-15	SB-15	SB-15	SB-15	SB-16
Date Collected				6/12/2019	6/12/2019	6/12/2019	6/12/2019	6/12/2019	6/12/2019	6/12/2019	6/12/2019	6/12/2019	6/12/2019	6/12/2019	6/12/2019	6/12/2019	6/12/2019	6/12/2019	6/12/2019
Sample Depth				4 - 6'	6 - 8'	8 - 10'	10 - 12'	12 - 14'	14 - 16'	0 - 2'	2 - 4'	4 - 6'	6 - 8'	8 - 10'	10 - 12'	12 - 14'	14 - 16'	0 - 2'	
Method	Analyte																		
8015	TPH	mg/kg	100	--	--	--	--	--	--	<15.2	--	--	--	--	--	--	--	<15.1	
8260	BENZENE	mg/kg	10	--	--	--	--	--	--	<0.00102	--	--	--	--	--	--	--	<0.00101	
	ETHYLBENZENE	mg/kg	--	--	--	--	--	--	--	<0.00102	--	--	--	--	--	--	--	<0.00101	
	TOLUENE	mg/kg	--	--	--	--	--	--	--	<0.00102	--	--	--	--	--	--	--	<0.00101	
	XYLENE	mg/kg	--	--	--	--	--	--	--	<0.00102	--	--	--	--	--	--	--	<0.00101	
	TOTAL BTEX	mg/kg	50	--	--	--	--	--	--	<0.00102	--	--	--	--	--	--	--	<0.00101	
300	CHLORIDE	mg/kg	600	<5.46	<5.20	<5.18	<5.12	<5.75	<5.25	<5.11	<5.06	<5.15	<5.35	<5.26	<5.22	<5.30	<5.46	<5.08	
Laboratory Sample Designation		Units	NMAC Closure Criteria	627724-115	627724-116	627724-117	627724-118	627724-119	627724-120	627724-121	627724-122	627724-123	627724-124	627724-125	627724-126	627724-127	627724-128	627724-129	
Sample Designation				SB-16	SB-16	SB-16	SB-16	SB-16	SB-16	SB-16	SB-16	SB-16	SB-17	SB-17	SB-17	SB-17	SB-17	SB-17	SB-17
Date Collected				6/12/2019	6/12/2019	6/12/2019	6/12/2019	6/12/2019	6/12/2019	6/12/2019	6/12/2019	6/12/2019	6/12/2019	6/12/2019	6/12/2019	6/12/2019	6/12/2019	6/12/2019	6/12/2019
Sample Depth				2 - 4'	4 - 6'	6 - 8'	8 - 10'	10 - 12'	12 - 14'	14 - 16'	0 - 2'	2 - 4'	4 - 6'	6 - 8'	8 - 10'	10 - 12'	12 - 14'	14 - 16'	
Method	Analyte																		
8015	TPH	mg/kg	100	--	--	--	--	--	--	--	<15.3	--	--	--	--	--	--	--	
8260	BENZENE	mg/kg	10	--	--	--	--	--	--	--	<0.00103	--	--	--	--	--	--	--	
	ETHYLBENZENE	mg/kg	--	--	--	--	--	--	--	--	<0.00103	--	--	--	--	--	--	--	
	TOLUENE	mg/kg	--	--	--	--	--	--	--	--	<0.00103	--	--	--	--	--	--	--	
	XYLENE	mg/kg	--	--	--	--	--	--	--	--	<0.00103	--	--	--	--	--	--	--	
	TOTAL BTEX	mg/kg	50	--	--	--	--	--	--	--	<0.00103	--	--	--	--	--	--	-	
300	CHLORIDE	mg/kg	600	<5.07	<5.09	<5.09	<5.30	<5.38	<5.29	<5.37	<5.11	<5.04	<5.32	<5.45	<5.41	<5.26	<5.85	<5.83	



Table 1: Soil Analytical Data
Redhills Pipeline
32.06509621, -103.34662165
Jal, Lea County, New Mexico

Laboratory Sample Designation		Units	NMAC Closure Criteria	627724-130	627724-131	627724-132	627724-133	627724-134	627724-135	627724-136	627724-137	627724-138	627724-139	627724-140	627724-141	627724-142	627724-143	627724-144		
Sample Designation				SB-18	SB-18	SB-18	SB-18	SB-18	SB-18	SB-18	SB-18	SB-18	BG-01	BG-01	BG-01	BG-01	BG-01	BG-01	BG-01	
Date Collected				6/12/2019	6/12/2019	6/12/2019	6/12/2019	6/12/2019	6/12/2019	6/12/2019	6/12/2019	6/12/2019	6/12/2019	6/11/2019	6/11/2019	6/11/2019	6/11/2019	6/11/2019	6/11/2019	6/11/2019
Sample Depth				0 - 2'	2 - 4'	4 - 6'	6 - 8'	8 - 10'	10 - 12'	12 - 14'	14 - 16'	0 - 2'	2 - 4'	4 - 6'	6 - 8'	8 - 10'	10 - 12'	12 - 14'		
Method	Analyte																			
8015	TPH	mg/kg	100	<15.1	--	--	--	--	--	--	--	<15.4	--	--	--	--	--	--		
8260	BENZENE	mg/kg	10	<0.00100	--	--	--	--	--	--	--	<0.00103	--	--	--	--	--	--		
	ETHYLBENZENE	mg/kg	--	<0.00100	--	--	--	--	--	--	--	<0.00103	--	--	--	--	--	--		
	TOLUENE	mg/kg	--	<0.00100	--	--	--	--	--	--	--	<0.00103	--	--	--	--	--	--		
	XYLENE	mg/kg	--	<0.00100	--	--	--	--	--	--	--	<0.00103	--	--	--	--	--	--		
	TOTAL BTEX	mg/kg	50	<0.00100	--	--	--	--	--	--	--	<0.00103	--	--	--	--	--	--		
300	CHLORIDE	mg/kg	600	<5.05	<5.07	<5.15	<5.26	<5.06	<5.03	<5.13	<5.12	<5.09	<5.25	<5.37	<5.39	<5.43	<5.25	<5.39		

Notes:

1) New Mexico Administrative Code (NMAC) Title 19, Chapter 15, Part 29, Table 1 Closure Criteria for Soils Impacted by a Release, issued August 8, 2018

2) TPH = Total petroleum hydrocarbons

3) BTEX = Benzene, toluene, ethylbenzene, and xylenes

4) Soil samples were collected for informational purposes and were collected utilizing hand tools (hand auger).

5) Soil samples were collected for delineation (vertical and horizontal) purposes and were collected via direct-push techniques (Geoprobe®)

mg/kg = milligrams per killogram

Bold = Analyte was detected at concentrations above laboratory sample detection limits

Highlighted = Analyte was detected at concentrations above NMAC Closure Criteria

"--" = Not applicable



**Table 2: GPS Coordinantes
Redhills Pipeline
32.06509621, -103.34662165
Jal, Lea County, New Mexico**

Location	Description	Latitude	Longitude
SB01	Soil Boring	32.06522	-103.34763
SB02	Soil Boring	32.06523	-103.34744
SB03	Soil Boring	32.06523	-103.34729
SB04	Soil Boring	32.06523	-103.34715
SB05	Soil Boring	32.06521	-103.34695
SB06	Soil Boring	32.06522	-103.34679
SB07	Soil Boring	32.06513	-103.34755
SB08	Soil Boring	32.06513	-103.34739
SB09	Soil Boring	32.06513	-103.34722
SB10	Soil Boring	32.06512	-103.34706
SB11	Soil Boring	32.06513	-103.34689
SB12	Soil Boring	32.06502	-103.34659
SB13	Soil Boring	32.06513	-103.34654
SB14	Soil Boring	32.06505	-103.34675
SB15	Soil Boring	32.06506	-103.34692
SB16	Soil Boring	32.06505	-103.34711
SB17	Soil Boring	32.06503	-103.34727
SB18	Soil Boring	32.06506	-103.34741
BG01	Background Soil Boring	32.06551	-103.34684

Notes:

GPS coordinates were collected on June 11 and June 12, 2019, by Mr. William B. Soderstrom utilizing Garmin GPSMAP 64sc unit ID 3951309141.

APPENDIX C

Boring Logs



RECORD OF SUBSURFACE EXPLORATION

KJ Environmental & Civil Engineering

500 Moseley Road • Cross Roads, TX 76227
940-387-0805 • FAX 940-387-0830

Client Name:	OWL SWD Operating, LLC			Well/Boring #	SB-01	Date Drilled:	June 11, 2019	
Client Address:	8201 Preston Road, Suite 520, Dallas, Texas 75225			Depth of Boring:	16'	Diameter of Boring:	2.25"	
Project Name:	1RP-5470 - 1,200 BBL Redhills Pipeline			Depth of Well:	N/A	Diameter of Screen:	N/A	
Project Address:	32.0650682, -103.34708316			Length of Screen:	N/A	Diameter of Casing:	N/A	
Driller:	JR Drilling, LLC			Length of Casing:	N/A	Slot Size:	N/A	
Drilling Method:	DP	Sampling Method:	Acetate Sleeve	Logged By:	WS	Well Material:	N/A	
Description / Remarks (Color, Grain Size, Texture, Structure, Consistency, Moisture)				Depth (feet)	Sample Interval (feet)	PID (ppm)	Chloride Screening (ppm)	Well Completion (graphical representation only, not to scale)
SAND (SP), light brown, loose, non-plastic, poorly graded, dry, no odor				-0-	0 – 2	1.0	--	
				-1-			--	
				-2-	2 – 4	0.7	--	
				-3-			--	
				-4-	4 – 6	1.2	--	
				-5-			--	
				-6-	6 – 8	0.9	--	
SAND (SP), light red, loose, non-plastic, poorly graded, dry, no odor				-7-			--	
				-8-	8 – 10	0.9	--	
				-9-			--	
				-10-			10 – 12	
				-11-	--			
				-12-	12 – 14	0.5		
				SAND (SP), loose, yellowish orange, caliche nodules, non-plastic, poorly graded, dry, no odor				
Refusal at 16' due to caliche				-14-			14 – 16	
				-15-	--			
				NOTE: No water was encountered during installation of this boring.				
-17-	--	--	--					
-18-	--	--	--					
-19-	--	--	--					
-20-	--	--	--					

These logs should not be used separately from the original report.



RECORD OF SUBSURFACE EXPLORATION

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Client Name:	OWL SWD Operating, LLC			Well/Boring #	SB-02	Date Drilled:	June 11, 2019	
Client Address:	8201 Preston Road, Suite 520, Dallas, Texas 75225			Depth of Boring:	15.5’	Diameter of Boring:	2.25”	
Project Name:	1RP-5470 - 1,200 BBL Redhills Pipeline			Depth of Well:	N/A	Diameter of Screen:	N/A	
Project Address:	32.0650682, -103.34708316			Length of Screen:	N/A	Diameter of Casing:	N/A	
Driller:	JR Drilling, LLC			Length of Casing:	N/A	Slot Size:	N/A	
Drilling Method:	DP	Sampling Method:	Acetate Sleeve	Logged By:	WS	Well Material:	N/A	
Description / Remarks (Color, Grain Size, Texture, Structure, Consistency, Moisture)				Depth (feet)	Sample Interval (feet)	PID (ppm)	Chloride Screening (ppm)	Well Completion <i>(graphical representation only, not to scale)</i>
SAND (SP), light brown, loose, non-plastic, poorly graded, dry, no odor				-0-	0 – 2	0.7	--	
				-1-			--	
				-2-	2 – 4	0.5	--	
				-3-			--	
				-4-	4 – 6	0.6	--	
SAND (SP), light red, loose, non-plastic, poorly graded, dry, no odor				-5-			--	
				-6-	6 – 8	0.7	--	
				-7-			--	
				-8-	8 – 10	0.9	--	
				-9-			--	
				-10-	10 – 12	1.1	--	
				-11-			--	
SAND (SP), dense, yellowish orange, caliche nodules, non-plastic, poorly graded, dry, no odor Refusal at 15.5’ due to caliche				-12-	12 – 14	0.7	--	
				-13-			--	
				-14-	14 – 15.5	0.6	--	
				-15-			--	
NOTE: No water was encountered during installation of this boring.				-16-	--	--	--	
				-17-	--	--	--	
				-18-	--	--	--	
				-19-	--	--	--	
				-20-	--	--	--	

These logs should not be used separately from the original report.



RECORD OF SUBSURFACE EXPLORATION

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Client Name:	OWL SWD Operating, LLC			Well/Boring #	SB-03	Date Drilled:	June 11, 2019	
Client Address:	8201 Preston Road, Suite 520, Dallas, Texas 75225			Depth of Boring:	14'	Diameter of Boring:	2.25"	
Project Name:	1RP-5470 - 1,200 BBL Redhills Pipeline			Depth of Well:	N/A	Diameter of Screen:	N/A	
Project Address:	32.0650682, -103.34708316			Length of Screen:	N/A	Diameter of Casing:	N/A	
Driller:	JR Drilling, LLC			Length of Casing:	N/A	Slot Size:	N/A	
Drilling Method:	DP	Sampling Method:	Acetate Sleeve	Logged By:	WS	Well Material:	N/A	
Description / Remarks (Color, Grain Size, Texture, Structure, Consistency, Moisture)				Depth (feet)	Sample Interval (feet)	PID (ppm)	Chloride Screening (ppm)	Well Completion (graphical representation only, not to scale)
SAND (SP), light brown, loose, non-plastic, poorly graded, dry, no odor				-0-	0 – 2	0.7	--	
				-1-			--	
				-2-	2 – 4	0.8	--	
				-3-			--	
				-4-	4 – 6	0.7	--	
				-5-			--	
				-6-	6 – 8	0.8	--	
				-7-			--	
SAND (SP), light red, loose, non-plastic, poorly graded, dry, no odor				-8-	8 – 10	0.5	--	
				-9-			--	
				-10-	10 – 12	0.5	--	
				-11-			--	
SAND (SP), loose, yellowish orange, caliche nodules, non-plastic, poorly graded, dry, no odor				-12-	12 – 14	0.6	--	
				-13-			--	
Refusal at 14' due to caliche								
NOTE: No water was encountered during installation of this boring.				-14-	--	--	--	
				-15-	--	--	--	
				-16-	--	--	--	
				-17-	--	--	--	
				-18-	--	--	--	
				-19-	--	--	--	
				-20-	--	--	--	

These logs should not be used separately from the original report.



RECORD OF SUBSURFACE EXPLORATION

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Client Name:	OWL SWD Operating, LLC			Well/Boring #	SB-04	Date Drilled:	June 11, 2019	
Client Address:	8201 Preston Road, Suite 520, Dallas, Texas 75225			Depth of Boring:	14'	Diameter of Boring:	2.25"	
Project Name:	1RP-5470 - 1,200 BBL Redhills Pipeline			Depth of Well:	N/A	Diameter of Screen:	N/A	
Project Address:	32.0650682, -103.34708316			Length of Screen:	N/A	Diameter of Casing:	N/A	
Driller:	JR Drilling, LLC			Length of Casing:	N/A	Slot Size:	N/A	
Drilling Method:	DP	Sampling Method:	Acetate Sleeve	Logged By:	WS	Well Material:	N/A	
Description / Remarks (Color, Grain Size, Texture, Structure, Consistency, Moisture)				Depth (feet)	Sample Interval (feet)	PID (ppm)	Chloride Screening (ppm)	Well Completion <i>(graphical representation only, not to scale)</i>
SAND (SP), light brown, loose, non-plastic, poorly graded, dry, no odor				-0-	0 – 2	0.4	--	
				-1-			--	
				-2-	2 – 4	0.6	--	
				-3-			--	
				-4-	4 – 6	0.3	--	
				-5-			--	
SAND (SP), light red, loose, non-plastic, poorly graded, dry, no odor				-6-	6 – 8	0.4	--	
				-7-			--	
				-8-	8 – 10	0.1	--	
				-9-			--	
SAND (SP), loose, yellowish orange, caliche nodules, non-plastic, poorly graded, dry, no odor				-10-	10 – 12	0.0	--	
				-11-			--	
				Refusal at 14' due to caliche				
-13-	--							
NOTE: No water was encountered during installation of this boring.				-14-	--	--	--	
				-15-	--	--	--	
				-16-	--	--	--	
				-17-	--	--	--	
				-18-	--	--	--	
				-19-	--	--	--	
				-20-	--	--	--	

These logs should not be used separately from the original report.



RECORD OF SUBSURFACE EXPLORATION

KJ Environmental & Civil Engineering

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Client Name:	OWL SWD Operating, LLC			Well/Boring #	SB-05	Date Drilled:	June 11, 2019	
Client Address:	8201 Preston Road, Suite 520, Dallas, Texas 75225			Depth of Boring:	14'	Diameter of Boring:	2.25"	
Project Name:	1RP-5470 - 1,200 BBL Redhills Pipeline			Depth of Well:	N/A	Diameter of Screen:	N/A	
Project Address:	32.0650682, -103.34708316			Length of Screen:	N/A	Diameter of Casing:	N/A	
Driller:	JR Drilling, LLC			Length of Casing:	N/A	Slot Size:	N/A	
Drilling Method:	DP	Sampling Method:	Acetate Sleeve	Logged By:	WS	Well Material:	N/A	
Description / Remarks (Color, Grain Size, Texture, Structure, Consistency, Moisture)				Depth (feet)	Sample Interval (feet)	PID (ppm)	Chloride Screening (ppm)	Well Completion (graphical representation only, not to scale)
SAND (SP), light brown, loose, non-plastic, poorly graded, dry, no odor				-0-	0 – 2	0.0	--	
				-1-			--	
				-2-	2 – 4	0.1	--	
				-3-			--	
				-4-	4 – 6	0.1	--	
				-5-			--	
SAND (SP), light red, loose, non-plastic, poorly graded, dry, no odor				-6-	6 – 8	0.2	--	
				-7-			--	
				-8-	8 – 10	0.0	--	
-9-	--							
SAND (SP), loose, yellowish orange, caliche nodules, non-plastic, poorly graded, dry, no odor Refusal at 14' due to caliche				-10-	10 – 12	0.0	--	
				-11-			--	
				-12-	12 – 14	0.3	--	
				-13-			--	
NOTE: No water was encountered during installation of this boring.				-14-	--	--	--	
				-15-	--	--	--	
				-16-	--	--	--	
				-17-	--	--	--	
				-18-	--	--	--	
				-19-	--	--	--	
				-20-	--	--	--	

These logs should not be used separately from the original report.



RECORD OF SUBSURFACE EXPLORATION

KJ Environmental & Civil Engineering

500 Moseley Road • Cross Roads, TX 76227
940-387-0805 • FAX 940-387-0830

Client Name:	OWL SWD Operating, LLC			Well/Boring #	SB-06	Date Drilled:	June 11, 2019	
Client Address:	8201 Preston Road, Suite 520, Dallas, Texas 75225			Depth of Boring:	14'	Diameter of Boring:	2.25"	
Project Name:	1RP-5470 - 1,200 BBL Redhills Pipeline			Depth of Well:	N/A	Diameter of Screen:	N/A	
Project Address:	32.0650682, -103.34708316			Length of Screen:	N/A	Diameter of Casing:	N/A	
Driller:	JR Drilling, LLC			Length of Casing:	N/A	Slot Size:	N/A	
Drilling Method:	DP	Sampling Method:	Acetate Sleeve	Logged By:	WS	Well Material:	N/A	
Description / Remarks (Color, Grain Size, Texture, Structure, Consistency, Moisture)				Depth (feet)	Sample Interval (feet)	PID (ppm)	Chloride Screening (ppm)	Well Completion (graphical representation only, not to scale)
SAND (SP), light brown, loose, non-plastic, poorly graded, dry, no odor				-0-	0 – 2	0.1	--	
				-1-			--	
				-2-	2 – 4	0.2	--	
				-3-			--	
				-4-	4 – 6	0.0	--	
				-5-			--	
				-6-	6 – 8	0.0	--	
				-7-			--	
SAND (SP), light red, loose, non-plastic, poorly graded, dry, no odor				-8-	8 – 10	0.0	--	
				-9-			--	
				-10-	10 – 12	0.0	--	
SAND (SP), loose, yellowish orange, caliche nodules, non-plastic, poorly graded, dry, no odor				-11-			--	
Refusal at 14' due to caliche				-12-	12 – 14	0.0	--	
				-13-			--	
NOTE: No water was encountered during installation of this boring.				-14-	--	--	--	
				-15-	--	--	--	
				-16-	--	--	--	
				-17-	--	--	--	
				-18-	--	--	--	
				-19-	--	--	--	
				-20-	--	--	--	

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RECORD OF SUBSURFACE EXPLORATION

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Client Name:	OWL SWD Operating, LLC			Well/Boring #	SB-07	Date Drilled:	June 11, 2019	
Client Address:	8201 Preston Road, Suite 520, Dallas, Texas 75225			Depth of Boring:	11’	Diameter of Boring:	2.25”	
Project Name:	1RP-5470 - 1,200 BBL Redhills Pipeline			Depth of Well:	N/A	Diameter of Screen:	N/A	
Project Address:	32.0650682, -103.34708316			Length of Screen:	N/A	Diameter of Casing:	N/A	
Driller:	JR Drilling, LLC			Length of Casing:	N/A	Slot Size:	N/A	
Drilling Method:	DP	Sampling Method:	Acetate Sleeve	Logged By:	WS	Well Material:	N/A	
Description / Remarks (Color, Grain Size, Texture, Structure, Consistency, Moisture)				Depth (feet)	Sample Interval (feet)	PID (ppm)	Chloride Screening (ppm)	Well Completion (graphical representation only, not to scale)
SAND (SP), light brown, loose, non-plastic, poorly graded, dry, no odor				-0-	0 – 2	0.1	--	
				-1-			--	
				-2-	2 – 4	0.1	--	
				-3-			--	
				-4-	4 – 6	0.0	--	
				-5-			--	
SAND (SP), light red, loose, non-plastic, poorly graded, dry, no odor				-6-	6 – 8	0.4	--	
				-7-			--	
				-8-	8 – 10	0.3	--	
SAND (SP), loose, yellowish orange, caliche nodules, non-plastic, poorly graded, dry, no odor				-9-			--	
				-10-	10 – 11	0.4	--	
Refusal at 11’ due to caliche								
NOTE: No water was encountered during installation of this boring.				-11-	--	--	--	
				-12-	--	--	--	
				-13-	--	--	--	
				-14-	--	--	--	
				-15-	--	--	--	
				-16-	--	--	--	
				-17-	--	--	--	
				-18-	--	--	--	
				-19-	--	--	--	
				-20-	--	--	--	

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Client Name:	OWL SWD Operating, LLC			Well/Boring #	SB-08	Date Drilled:	June 11, 2019	
Client Address:	8201 Preston Road, Suite 520, Dallas, Texas 75225			Depth of Boring:	13'	Diameter of Boring:	2.25"	
Project Name:	1RP-5470 - 1,200 BBL Redhills Pipeline			Depth of Well:	N/A	Diameter of Screen:	N/A	
Project Address:	32.0650682, -103.34708316			Length of Screen:	N/A	Diameter of Casing:	N/A	
Driller:	JR Drilling, LLC			Length of Casing:	N/A	Slot Size:	N/A	
Drilling Method:	DP	Sampling Method:	Acetate Sleeve	Logged By:	WS	Well Material:	N/A	
Description / Remarks (Color, Grain Size, Texture, Structure, Consistency, Moisture)				Depth (feet)	Sample Interval (feet)	PID (ppm)	Chloride Screening (ppm)	Well Completion (graphical representation only, not to scale)
SAND (SP), light brown, loose, non-plastic, poorly graded, dry, no odor				-0-	0 – 2	0.1	--	
				-1-			--	
				-2-	2 – 4	0.1	--	
				-3-			--	
				-4-	4 – 6	0.0	--	
				-5-			--	
SAND (SP), light red, loose, non-plastic, poorly graded, dry, no odor				-6-	6 – 8	0.1	--	
				-7-			--	
				-8-	8 – 10	0.4	--	
				-9-			--	
SAND (SP), loose, yellowish orange, caliche nodules, non-plastic, poorly graded, dry, no odor				-10-	10 – 12	0.7	--	
				-11-			--	
				Refusal at 13' due to caliche				
				-13-	--	--	--	
				-14-	--	--	--	
				-15-	--	--	--	
				-16-	--	--	--	
				-17-	--	--	--	
				-18-	--	--	--	
				-19-	--	--	--	
				-20-	--	--	--	

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Client Name:	OWL SWD Operating, LLC			Well/Boring #	SB-09	Date Drilled:	June 11, 2019	
Client Address:	8201 Preston Road, Suite 520, Dallas, Texas 75225			Depth of Boring:	15'	Diameter of Boring:	2.25"	
Project Name:	1RP-5470 - 1,200 BBL Redhills Pipeline			Depth of Well:	N/A	Diameter of Screen:	N/A	
Project Address:	32.0650682, -103.34708316			Length of Screen:	N/A	Diameter of Casing:	N/A	
Driller:	JR Drilling, LLC			Length of Casing:	N/A	Slot Size:	N/A	
Drilling Method:	DP	Sampling Method:	Acetate Sleeve	Logged By:	WS	Well Material:	N/A	
Description / Remarks (Color, Grain Size, Texture, Structure, Consistency, Moisture)				Depth (feet)	Sample Interval (feet)	PID (ppm)	Chloride Screening (ppm)	Well Completion (graphical representation only, not to scale)
SAND (SP), light brown, loose, non-plastic, poorly graded, dry, no odor				-0-	0 – 2	0.1	--	
				-1-			--	
				-2-	2 – 4	0.1	--	
				-3-			--	
				-4-	4 – 6	0.2	--	
				-5-			--	
				-6-	6 – 8	0.1	--	
				-7-			--	
SAND (SP), light red, loose, non-plastic, poorly graded, dry, no odor				-8-	8 – 10	0.9	--	
				-9-			--	
				-10-	10 – 12	0.7	--	
SAND (SP), loose, yellowish orange, caliche nodules, non-plastic, poorly graded, dry, no odor Refusal at 15' due to caliche				-11-			--	
				-12-	12 – 14	0.3	--	
				-13-			--	
				-14-	14 – 15	0.4	--	
NOTE: No water was encountered during installation of this boring.				-15-	--	--	--	
				-16-	--	--	--	
				-17-	--	--	--	
				-18-	--	--	--	
				-19-	--	--	--	
				-20-	--	--	--	

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Client Name:	OWL SWD Operating, LLC			Well/Boring #	SB-10	Date Drilled:	June 11, 2019					
Client Address:	8201 Preston Road, Suite 520, Dallas, Texas 75225			Depth of Boring:	14'	Diameter of Boring:	2.25"					
Project Name:	1RP-5470 - 1,200 BBL Redhills Pipeline			Depth of Well:	N/A	Diameter of Screen:	N/A					
Project Address:	32.0650682, -103.34708316			Length of Screen:	N/A	Diameter of Casing:	N/A					
Driller:	JR Drilling, LLC			Length of Casing:	N/A	Slot Size:	N/A					
Drilling Method:	DP	Sampling Method:	Acetate Sleeve	Logged By:	WS	Well Material:	N/A					
Description / Remarks (Color, Grain Size, Texture, Structure, Consistency, Moisture)				Depth (feet)	Sample Interval (feet)	PID (ppm)	Chloride Screening (ppm)	Well Completion (graphical representation only, not to scale)				
SAND (SP), light brown, loose, non-plastic, poorly graded, dry, no odor				-0-	0 – 2	0.1	--					
				-1-			--					
				-2-	2 – 4	0.0	--					
				-3-			--					
				-4-	4 – 6	0.0	--					
				-5-			--					
SAND (SP), light red, loose, non-plastic, poorly graded, dry, no odor				-6-	6 – 8	0.6	--					
				-7-			--					
				-8-	8 – 10	1.1	--					
				-9-			--					
SAND (SP), loose, yellowish orange, caliche nodules, non-plastic, poorly graded, dry, no odor				-10-	10 – 12	0.7	--					
				-11-			--					
				Refusal at 14' due to caliche					-12-	12 – 14	0.2	--
									-13-			--
NOTE: No water was encountered during installation of this boring.				-14-	--	--	--					
				-15-	--	--	--					
				-16-	--	--	--					
				-17-	--	--	--					
				-18-	--	--	--					
				-19-	--	--	--					
				-20-	--	--	--					

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Client Name:	OWL SWD Operating, LLC			Well/Boring #	SB-11	Date Drilled:	June 11, 2019	
Client Address:	8201 Preston Road, Suite 520, Dallas, Texas 75225			Depth of Boring:	18'	Diameter of Boring:	2.25"	
Project Name:	1RP-5470 - 1,200 BBL Redhills Pipeline			Depth of Well:	N/A	Diameter of Screen:	N/A	
Project Address:	32.0650682, -103.34708316			Length of Screen:	N/A	Diameter of Casing:	N/A	
Driller:	JR Drilling, LLC			Length of Casing:	N/A	Slot Size:	N/A	
Drilling Method:	DP	Sampling Method:	Acetate Sleeve	Logged By:	WS	Well Material:	N/A	
Description / Remarks (Color, Grain Size, Texture, Structure, Consistency, Moisture)				Depth (feet)	Sample Interval (feet)	PID (ppm)	Chloride Screening (ppm)	Well Completion (graphical representation only, not to scale)
SAND (SP), light brown, loose, non-plastic, poorly graded, dry, no odor				-0-	0 – 2	0.1	--	
				-1-			--	
				-2-	2 – 4	0.1	--	
				-3-			--	
				-4-	4 – 6	0.3	--	
				-5-			--	
				-6-	6 – 8	0.4	--	
				-7-			--	
SAND (SP), light red, loose, non-plastic, poorly graded, dry, no odor				-8-	8 – 10	0.1	--	
				-9-			--	
				-10-	10 – 12	0.0	--	
				-11-			--	
				-12-	12 – 14	0.1	--	
				-13-			--	
SAND (SP), loose, yellowish orange, caliche nodules, non-plastic, poorly graded, dry, no odor Refusal at 18’ due to caliche				-14-	14 – 16	0.0	--	
				-15-			--	
				-16-	16 – 18	0.2	--	
				-17-			--	
NOTE: No water was encountered during installation of this boring.				-18-	--	--	--	
				-19-	--	--	--	
				-20-	--	--	--	

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RECORD OF SUBSURFACE EXPLORATION

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Client Name:	OWL SWD Operating, LLC			Well/Boring #	SB-12	Date Drilled:	June 11, 2019	
Client Address:	8201 Preston Road, Suite 520, Dallas, Texas 75225			Depth of Boring:	16'	Diameter of Boring:	2.25"	
Project Name:	1RP-5470 - 1,200 BBL Redhills Pipeline			Depth of Well:	N/A	Diameter of Screen:	N/A	
Project Address:	32.0650682, -103.34708316			Length of Screen:	N/A	Diameter of Casing:	N/A	
Driller:	JR Drilling, LLC			Length of Casing:	N/A	Slot Size:	N/A	
Drilling Method:	DP	Sampling Method:	Acetate Sleeve	Logged By:	WS	Well Material:	N/A	
Description / Remarks (Color, Grain Size, Texture, Structure, Consistency, Moisture)				Depth (feet)	Sample Interval (feet)	PID (ppm)	Chloride Screening (ppm)	Well Completion (graphical representation only, not to scale)
SAND (SP), light brown, loose, non-plastic, poorly graded, dry, no odor				-0-	0 – 2	0.4	--	
				-1-			--	
				-2-	2 – 4	0.8	--	
				-3-			--	
				-4-	4 – 6	0.2	--	
				-5-			--	
SAND (SP), light red, loose, non-plastic, poorly graded, dry, no odor				-6-	6 – 8	0.4	--	
				-7-			--	
				-8-	8 – 10	0.1	--	
				-9-			--	
				-10-	10 – 12	0.2	--	
				-11-			--	
SAND (SP), loose, yellowish orange, caliche nodules, non-plastic, poorly graded, dry, no odor Refusal at 16' due to caliche				-12-	12 – 14	0.3	--	
				-13-			--	
				-14-	14 – 16	0.5	--	
				-15-			--	
NOTE: No water was encountered during installation of this boring.				-16-	--	--	--	
				-17-	--	--	--	
				-18-	--	--	--	
				-19-	--	--	--	
				-20-	--	--	--	

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RECORD OF SUBSURFACE EXPLORATION

KJ Environmental & Civil Engineering

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Client Name:	OWL SWD Operating, LLC			Well/Boring #	SB-13	Date Drilled:	June 11, 2019	
Client Address:	8201 Preston Road, Suite 520, Dallas, Texas 75225			Depth of Boring:	16'	Diameter of Boring:	2.25"	
Project Name:	1RP-5470 - 1,200 BBL Redhills Pipeline			Depth of Well:	N/A	Diameter of Screen:	N/A	
Project Address:	32.0650682, -103.34708316			Length of Screen:	N/A	Diameter of Casing:	N/A	
Driller:	JR Drilling, LLC			Length of Casing:	N/A	Slot Size:	N/A	
Drilling Method:	DP	Sampling Method:	Acetate Sleeve	Logged By:	WS	Well Material:	N/A	
Description / Remarks (Color, Grain Size, Texture, Structure, Consistency, Moisture)				Depth (feet)	Sample Interval (feet)	PID (ppm)	Chloride Screening (ppm)	Well Completion (graphical representation only, not to scale)
SAND (SP), light brown, loose, non-plastic, poorly graded, dry, no odor				-0-	0 – 2	0.1	--	
				-1-			--	
				-2-	2 – 4	0.8	--	
				-3-			--	
				-4-	4 – 6	1.2	--	
				-5-			--	
SAND (SP), light red, loose, non-plastic, poorly graded, dry, no odor				-6-	6 – 8	0.7	--	
				-7-			--	
				-8-	8 – 10	0.4	--	
				-9-			--	
				-10-	10 – 12	0.1	--	
SAND (SP), loose, yellowish orange, caliche nodules, non-plastic, poorly graded, dry, no odor				-11-			--	
Refusal at 16' due to caliche				-12-	12 – 14	0.1	--	
				-13-			--	
				-14-	14 – 16	0.1	--	
				-15-			--	
NOTE: No water was encountered during installation of this boring.				-16-	--	--	--	
				-17-	--	--	--	
				-18-	--	--	--	
				-19-	--	--	--	
				-20-	--	--	--	

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RECORD OF SUBSURFACE EXPLORATION

KJ Environmental & Civil Engineering

500 Moseley Road • Cross Roads, TX 76227
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Client Name:	OWL SWD Operating, LLC			Well/Boring #	SB-14	Date Drilled:	June 12, 2019	
Client Address:	8201 Preston Road, Suite 520, Dallas, Texas 75225			Depth of Boring:	16'	Diameter of Boring:	2.25"	
Project Name:	1RP-5470 - 1,200 BBL Redhills Pipeline			Depth of Well:	N/A	Diameter of Screen:	N/A	
Project Address:	32.0650682, -103.34708316			Length of Screen:	N/A	Diameter of Casing:	N/A	
Driller:	JR Drilling, LLC			Length of Casing:	N/A	Slot Size:	N/A	
Drilling Method:	DP	Sampling Method:	Acetate Sleeve	Logged By:	WS	Well Material:	N/A	
Description / Remarks (Color, Grain Size, Texture, Structure, Consistency, Moisture)				Depth (feet)	Sample Interval (feet)	PID (ppm)	Chloride Screening (ppm)	Well Completion (graphical representation only, not to scale)
SAND (SP), light brown, loose, non-plastic, poorly graded, dry, no odor				-0-	0 – 2	0.1	--	
				-1-			--	
				-2-	2 – 4	0.0	--	
				-3-			--	
				-4-	4 – 6	0.2	--	
				-5-			--	
SAND (SP), light red, loose, non-plastic, poorly graded, dry, no odor				-6-	6 – 8	0.3	--	
				-7-			--	
				-8-	8 – 10	0.1	--	
				-9-			--	
				-10-	10 – 12	0.1	--	
				-11-			--	
SAND (SP), loose, yellowish orange, caliche nodules, non-plastic, poorly graded, dry, no odor				-12-	12 – 14	0.1	--	
				-13-			--	
				Refusal at 16' due to caliche				
-15-	--							
NOTE: No water was encountered during installation of this boring.				-16-	--	--	--	
				-17-	--	--	--	
				-18-	--	--	--	
				-19-	--	--	--	
				-20-	--	--	--	

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Client Name:	OWL SWD Operating, LLC			Well/Boring #	SB-15	Date Drilled:	June 12, 2019	
Client Address:	8201 Preston Road, Suite 520, Dallas, Texas 75225			Depth of Boring:	16'	Diameter of Boring:	2.25"	
Project Name:	1RP-5470 - 1,200 BBL Redhills Pipeline			Depth of Well:	N/A	Diameter of Screen:	N/A	
Project Address:	32.0650682, -103.34708316			Length of Screen:	N/A	Diameter of Casing:	N/A	
Driller:	JR Drilling, LLC			Length of Casing:	N/A	Slot Size:	N/A	
Drilling Method:	DP	Sampling Method:	Acetate Sleeve	Logged By:	WS	Well Material:	N/A	
Description / Remarks (Color, Grain Size, Texture, Structure, Consistency, Moisture)				Depth (feet)	Sample Interval (feet)	PID (ppm)	Chloride Screening (ppm)	Well Completion (graphical representation only, not to scale)
SAND (SP), light brown, loose, non-plastic, poorly graded, dry, no odor				-0-	0 – 2	0.0	--	
				-1-			--	
				-2-	2 – 4	0.1	--	
				-3-			--	
				-4-	4 – 6	0.1	--	
				-5-			--	
				-6-	6 – 8	0.0	--	
				-7-			--	
SAND (SP), light red, loose, non-plastic, poorly graded, dry, no odor				-8-	8 – 10	0.2	--	
				-9-			--	
				-10-	10 – 12	0.3	--	
				-11-			--	
				-12-	12 – 14	0.1	--	
SAND (SP), loose, yellowish orange, caliche nodules, non-plastic, poorly graded, dry, no odor				-13-			--	
Refusal at 16' due to caliche				-14-	14 – 16	0.1	--	
				-15-			--	
NOTE: No water was encountered during installation of this boring.				-16-	--	--	--	
				-17-	--	--	--	
				-18-	--	--	--	
				-19-	--	--	--	
				-20-	--	--	--	

These logs should not be used separately from the original report.



RECORD OF SUBSURFACE EXPLORATION

KJ Environmental & Civil Engineering

500 Moseley Road • Cross Roads, TX 76227
940-387-0805 • FAX 940-387-0830

Client Name:	OWL SWD Operating, LLC			Well/Boring #	SB-16	Date Drilled:	June 12, 2019	
Client Address:	8201 Preston Road, Suite 520, Dallas, Texas 75225			Depth of Boring:	16'	Diameter of Boring:	2.25"	
Project Name:	1RP-5470 - 1,200 BBL Redhills Pipeline			Depth of Well:	N/A	Diameter of Screen:	N/A	
Project Address:	32.0650682, -103.34708316			Length of Screen:	N/A	Diameter of Casing:	N/A	
Driller:	JR Drilling, LLC			Length of Casing:	N/A	Slot Size:	N/A	
Drilling Method:	DP	Sampling Method:	Acetate Sleeve	Logged By:	WS	Well Material:	N/A	
Description / Remarks (Color, Grain Size, Texture, Structure, Consistency, Moisture)				Depth (feet)	Sample Interval (feet)	PID (ppm)	Chloride Screening (ppm)	Well Completion (graphical representation only, not to scale)
SAND (SP), light brown, loose, non-plastic, poorly graded, dry, no odor				-0-	0 – 2	0.1	--	
				-1-			--	
				-2-	2 – 4	0.9	--	
				-3-			--	
				-4-	4 – 6	0.7	--	
				-5-			--	
				-6-	6 – 8	0.2	--	
				-7-			--	
				-8-	8 – 10	0.1	--	
-9-	--							
SAND (SP), light red, loose, non-plastic, poorly graded, dry, no odor				-10-	10 – 12	0.0	--	
				-11-			--	
				-12-	12 – 14	0.1	--	
				-13-			--	
				SAND (SP), loose, yellowish orange, caliche nodules, non-plastic, poorly graded, dry, no odor				
-15-	--							
Refusal at 16' due to caliche				-16-	--	--	--	
NOTE: No water was encountered during installation of this boring.				-17-	--	--	--	
				-18-	--	--	--	
				-19-	--	--	--	
				-20-	--	--	--	

These logs should not be used separately from the original report.



RECORD OF SUBSURFACE EXPLORATION

KJ Environmental & Civil Engineering

500 Moseley Road • Cross Roads, TX 76227
940-387-0805 • FAX 940-387-0830

Client Name:	OWL SWD Operating, LLC			Well/Boring #	SB-17	Date Drilled:	June 12, 2019	
Client Address:	8201 Preston Road, Suite 520, Dallas, Texas 75225			Depth of Boring:	16'	Diameter of Boring:	2.25"	
Project Name:	1RP-5470 - 1,200 BBL Redhills Pipeline			Depth of Well:	N/A	Diameter of Screen:	N/A	
Project Address:	32.0650682, -103.34708316			Length of Screen:	N/A	Diameter of Casing:	N/A	
Driller:	JR Drilling, LLC			Length of Casing:	N/A	Slot Size:	N/A	
Drilling Method:	DP	Sampling Method:	Acetate Sleeve	Logged By:	WS	Well Material:	N/A	
Description / Remarks (Color, Grain Size, Texture, Structure, Consistency, Moisture)				Depth (feet)	Sample Interval (feet)	PID (ppm)	Chloride Screening (ppm)	Well Completion (graphical representation only, not to scale)
SAND (SP), light brown, loose, non-plastic, poorly graded, dry, no odor				-0-	0 – 2	0.0	--	
				-1-			--	
				-2-	2 – 4	0.1	--	
				-3-			--	
				-4-	4 – 6	0.1	--	
				-5-			--	
SAND (SP), light red, loose, non-plastic, poorly graded, dry, no odor				-6-	6 – 8	0.7	--	
				-7-			--	
				-8-	8 – 10	0.6	--	
				-9-			--	
				-10-	10 – 12	0.9	--	
				-11-			--	
SAND (SP), loose, yellowish orange, caliche nodules, non-plastic, poorly graded, dry, no odor Refusal at 16' due to caliche				-12-	12 – 14	0.4	--	
				-13-			--	
				-14-	14 – 16	0.1	--	
				-15-			--	
NOTE: No water was encountered during installation of this boring.				-16-	--	--	--	
				-17-	--	--	--	
				-18-	--	--	--	
				-19-	--	--	--	
				-20-	--	--	--	

These logs should not be used separately from the original report.



RECORD OF SUBSURFACE EXPLORATION

KJ Environmental & Civil Engineering

500 Moseley Road • Cross Roads, TX 76227
940-387-0805 • FAX 940-387-0830

Client Name:	OWL SWD Operating, LLC			Well/Boring #	SB-18	Date Drilled:	June 12, 2019	
Client Address:	8201 Preston Road, Suite 520, Dallas, Texas 75225			Depth of Boring:	16'	Diameter of Boring:	2.25"	
Project Name:	1RP-5470 - 1,200 BBL Redhills Pipeline			Depth of Well:	N/A	Diameter of Screen:	N/A	
Project Address:	32.0650682, -103.34708316			Length of Screen:	N/A	Diameter of Casing:	N/A	
Driller:	JR Drilling, LLC			Length of Casing:	N/A	Slot Size:	N/A	
Drilling Method:	DP	Sampling Method:	Acetate Sleeve	Logged By:	WS	Well Material:	N/A	
Description / Remarks (Color, Grain Size, Texture, Structure, Consistency, Moisture)				Depth (feet)	Sample Interval (feet)	PID (ppm)	Chloride Screening (ppm)	Well Completion <i>(graphical representation only, not to scale)</i>
SAND (SP), light brown, loose, non-plastic, poorly graded, dry, no odor				-0-	0 – 2	0.6	--	
				-1-			--	
				-2-	2 – 4	0.8	--	
				-3-			--	
				-4-	4 – 6	0.4	--	
				-5-			--	
SAND (SP), light red, loose, non-plastic, poorly graded, dry, no odor				-6-	6 – 8	0.5	--	
				-7-			--	
				-8-	8 – 10	0.2	--	
				-9-			--	
				-10-	10 – 12	0.3	--	
				-11-			--	
SAND (SP), loose, yellowish orange, caliche nodules, non-plastic, poorly graded, dry, no odor				-12-	12 – 14	0.2	--	
				-13-			--	
				Refusal at 16' due to caliche				
-15-	--							
NOTE: No water was encountered during installation of this boring.				-16-	--	--	--	
				-17-	--	--	--	
				-18-	--	--	--	
				-19-	--	--	--	
				-20-	--	--	--	

These logs should not be used separately from the original report.



RECORD OF SUBSURFACE EXPLORATION

KJ Environmental & Civil Engineering

500 Moseley Road • Cross Roads, TX 76227
940-387-0805 • FAX 940-387-0830

Client Name:	OWL SWD Operating, LLC			Well/Boring #	BG-01	Date Drilled:	June 11, 2019	
Client Address:	8201 Preston Road, Suite 520, Dallas, Texas 75225			Depth of Boring:	16'	Diameter of Boring:	2.25"	
Project Name:	1RP-5470 - 1,200 BBL Redhills Pipeline			Depth of Well:	N/A	Diameter of Screen:	N/A	
Project Address:	32.0650682, -103.34708316			Length of Screen:	N/A	Diameter of Casing:	N/A	
Driller:	JR Drilling, LLC			Length of Casing:	N/A	Slot Size:	N/A	
Drilling Method:	DP	Sampling Method:	Acetate Sleeve	Logged By:	WS	Well Material:	N/A	
Description / Remarks (Color, Grain Size, Texture, Structure, Consistency, Moisture)				Depth (feet)	Sample Interval (feet)	PID (ppm)	Chloride Screening (ppm)	Well Completion (graphical representation only, not to scale)
SAND (SP), light brown, loose, non-plastic, poorly graded, dry, no odor				-0-	0 – 2	1.2	--	
				-1-			--	
				-2-	2 – 4	0.2	--	
				-3-			--	
				-4-	4 – 6	0.3	--	
				-5-			--	
				-6-	6 – 8	0.5	--	
				-7-			--	
SAND (SP), light red, loose, non-plastic, poorly graded, dry, no odor				-8-	8 – 10	0.4	--	
				-9-			--	
				-10-	10 – 12	0.1	--	
				-11-			--	
				-12-	12 – 14	0.1	--	
SAND (SP), loose, yellowish orange, caliche nodules, non-plastic, poorly graded, dry, no odor				-13-			--	
No recovery between 14 and 16 feet bgs; caliche in sleeve preventing sample collection				-14-	14 – 16	--	--	
				-15-			--	
Refusal at 16' due to caliche								
NOTE: No water was encountered during installation of this boring.				-16-	--	--	--	
				-17-	--	--	--	
				-18-	--	--	--	
				-19-	--	--	--	
				-20-	--	--	--	

These logs should not be used separately from the original report.

APPENDIX D

Photographic Documentation

Site Photographs



1. View of 7822DT Geoprobe rig used to advance soil borings.



2. View of advancement of SB-03, facing north.



3. View of advancement of SB-08 in pipeline right-of-way, facing northeast.



4. View of advancement of SB-12 near release point, facing northwest.



5. View of OWL pipeline right-of-way, facing west.



6. View of high-pressure gas line south of release area, facing east.



APPENDIX E

Laboratory Analytical Reports



Certificate of Analysis Summary 624176

KJ Environmental & Civil Engineering, Aubrey, TX

Project Name: 1200 BBL Red Hills



Project Id: OWL043019D

Contact: Travis Oaks

Project Location:

Date Received in Lab: Tue May-14-19 10:05 am

Report Date: 16-MAY-19

Project Manager: Jessica Kramer

<i>Analysis Requested</i>	<i>Lab Id:</i>	624176-001	624176-002	624176-003	624176-004	624176-005	624176-006
	<i>Field Id:</i>	SB-01	SB-02	SB-03	SB-04	SB-05	SB-06
	<i>Depth:</i>	1- ft	1- ft	1- ft	1- ft	1- ft	1- ft
	<i>Matrix:</i>	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	<i>Sampled:</i>	May-13-19 14:55	May-13-19 14:54	May-13-19 15:10	May-13-19 15:14	May-13-19 15:17	May-13-19 15:20
BTEX by SW 8260B SUB: T104704215-19-29	<i>Extracted:</i>	May-15-19 13:20	May-15-19 13:20	May-15-19 13:20	May-15-19 13:20	May-15-19 13:20	May-15-19 13:20
	<i>Analyzed:</i>	May-15-19 14:46	May-15-19 18:17	May-15-19 15:56	May-15-19 17:54	May-15-19 16:20	May-15-19 16:43
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Benzene		<0.00100 0.00100	<0.00100 0.00100	<0.00100 0.00100	<0.00100 0.00100	<0.00100 0.00100	<0.00100 0.00100
Chloride by EPA 300	<i>Extracted:</i>	May-14-19 15:45	May-14-19 15:45	May-14-19 15:45	May-14-19 15:45	May-14-19 15:45	May-14-19 15:45
	<i>Analyzed:</i>	May-14-19 16:44	May-14-19 16:51	May-14-19 16:58	May-14-19 17:05	May-14-19 17:31	May-14-19 17:38
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Chloride		1240 5.05	3820 24.9	12.8 4.99	2610 25.2	5.22 5.02	438 4.97
TPH by SW8015 Mod	<i>Extracted:</i>	** ** *	** ** *	** ** *	** ** *	** ** *	** ** *
	<i>Analyzed:</i>	May-14-19 13:33	May-14-19 14:34	May-14-19 14:54	May-14-19 15:14	May-14-19 15:33	May-14-19 15:53
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Gasoline Range Hydrocarbons (GRO)		<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0
Diesel Range Organics (DRO)		1090 15.0	50.8 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0
Motor Oil Range Hydrocarbons (MRO)		305 15.0	15.1 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0
Total TPH		1400 15.0	65.9 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0	<15.0 15.0

This analytical report, and the entire data package it represents, has been made for your exclusive and confidential use. The interpretations and results expressed throughout this analytical report represent the best judgment of XENCO Laboratories. XENCO Laboratories assumes no responsibility and makes no warranty to the end use of the data hereby presented. Our liability is limited to the amount invoiced for this work order unless otherwise agreed to in writing.

Houston - Dallas - Midland - Tampa - Phoenix - Lubbock - San Antonio - El Paso - Atlanta - New Mexico

Version: 1.0%

Jessica Kramer

Jessica Kramer
Project Assistant



Certificate of Analysis Summary 624176

KJ Environmental & Civil Engineering, Aubrey, TX

Project Name: 1200 BBL Red Hills



Project Id: OWL043019D

Contact: Travis Oaks

Project Location:

Date Received in Lab: Tue May-14-19 10:05 am

Report Date: 16-MAY-19

Project Manager: Jessica Kramer

Analysis Requested	Lab Id:	624176-007	624176-008	624176-009			
	Field Id:	SB-07	SB-08	SB-BG			
	Depth:	1- ft	1- ft	1- ft			
	Matrix:	SOIL	SOIL	SOIL			
	Sampled:	May-13-19 15:23	May-13-19 15:27	May-13-19 15:40			
BTEX by SW 8260B SUB: T104704215-19-29	Extracted:	May-15-19 13:20	May-15-19 13:20	May-15-19 13:20			
	Analyzed:	May-15-19 18:41	May-15-19 17:07	May-15-19 17:30			
	Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL			
Benzene		<0.000996 0.000996	<0.000998 0.000998	<0.00100 0.00100			
Chloride by EPA 300	Extracted:	May-14-19 15:45	May-14-19 15:45	May-14-19 15:45			
	Analyzed:	May-14-19 17:46	May-14-19 17:53	May-14-19 18:00			
	Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL			
Chloride		2160 24.9	944 5.03	370 4.97			
TPH by SW8015 Mod	Extracted:	** ** *	** ** *	** ** *			
	Analyzed:	May-14-19 16:13	May-14-19 16:33	May-14-19 16:53			
	Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL			
Gasoline Range Hydrocarbons (GRO)		<15.0 15.0	<15.0 15.0	<15.0 15.0			
Diesel Range Organics (DRO)		<15.0 15.0	<15.0 15.0	<15.0 15.0			
Motor Oil Range Hydrocarbons (MRO)		<15.0 15.0	<15.0 15.0	<15.0 15.0			
Total TPH		<15.0 15.0	<15.0 15.0	<15.0 15.0			

This analytical report, and the entire data package it represents, has been made for your exclusive and confidential use. The interpretations and results expressed throughout this analytical report represent the best judgment of XENCO Laboratories. XENCO Laboratories assumes no responsibility and makes no warranty to the end use of the data hereby presented. Our liability is limited to the amount invoiced for this work order unless otherwise agreed to in writing.

Houston - Dallas - Midland - Tampa - Phoenix - Lubbock - San Antonio - El Paso - Atlanta - New Mexico

Version: 1.0%

Jessica Kramer

Jessica Kramer
Project Assistant

Analytical Report 624176

for

KJ Environmental & Civil Engineering

Project Manager: Travis Oaks

1200 BBL Red Hills

OWL043019D

16-MAY-19

Collected By: Client



1211 W. Florida Ave
Midland TX 79701

Xenco-Houston (EPA Lab Code: TX00122):
Texas (T104704215-19-29), Arizona (AZ0765), Florida (E871002-24), Louisiana (03054)
Oklahoma (2017-142)

Xenco-Dallas (EPA Lab Code: TX01468):
Texas (T104704295-19-19), Arizona (AZ0809), Arkansas (17-063-0)

Xenco-El Paso (EPA Lab Code: TX00127): Texas (T104704221-18-14)
Xenco-Lubbock (EPA Lab Code: TX00139): Texas (T104704219-19-20)
Xenco-Midland (EPA Lab Code: TX00158): Texas (T104704400-18-18)
Xenco-San Antonio (EPA Lab Code: TNI02385): Texas (T104704534-18-4)
Xenco Phoenix (EPA Lab Code: AZ00901): Arizona (AZ0757)
Xenco-Atlanta (LELAP Lab ID #04176)
Xenco-Tampa: Florida (E87429), North Carolina (483)



16-MAY-19

Project Manager: **Travis Oaks**
KJ Environmental & Civil Engineering
500 Moseley Rd
Aubrey, TX 76227

Reference: XENCO Report No(s): **624176**
1200 BBL Red Hills
Project Address:

Travis Oaks:

We are reporting to you the results of the analyses performed on the samples received under the project name referenced above and identified with the XENCO Report Number(s) 624176. All results being reported under this Report Number apply to the samples analyzed and properly identified with a Laboratory ID number. Subcontracted analyses are identified in this report with either the NELAC certification number of the subcontract lab in the analyst ID field, or the complete subcontracted report attached to this report.

Unless otherwise noted in a Case Narrative, all data reported in this Analytical Report are in compliance with NELAC standards. The uncertainty of measurement associated with the results of analysis reported is available upon request. Should insufficient sample be provided to the laboratory to meet the method and NELAC Matrix Duplicate and Matrix Spike requirements, then the data will be analyzed, evaluated and reported using all other available quality control measures.

The validity and integrity of this report will remain intact as long as it is accompanied by this letter and reproduced in full, unless written approval is granted by XENCO Laboratories. This report will be filed for at least 5 years in our archives after which time it will be destroyed without further notice, unless otherwise arranged with you. The samples received, and described as recorded in Report No. 624176 will be filed for 45 days, and after that time they will be properly disposed without further notice, unless otherwise arranged with you. We reserve the right to return to you any unused samples, extracts or solutions related to them if we consider so necessary (e.g., samples identified as hazardous waste, sample sizes exceeding analytical standard practices, controlled substances under regulated protocols, etc).

We thank you for selecting XENCO Laboratories to serve your analytical needs. If you have any questions concerning this report, please feel free to contact us at any time.

Respectfully,

Jessica Kramer

Project Assistant

Recipient of the Prestigious Small Business Administration Award of Excellence in 1994.

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Sample Cross Reference 624176



KJ Environmental & Civil Engineering, Aubrey, TX

1200 BBL Red Hills

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
SB-01	S	05-13-19 14:55	1 ft	624176-001
SB-02	S	05-13-19 14:54	1 ft	624176-002
SB-03	S	05-13-19 15:10	1 ft	624176-003
SB-04	S	05-13-19 15:14	1 ft	624176-004
SB-05	S	05-13-19 15:17	1 ft	624176-005
SB-06	S	05-13-19 15:20	1 ft	624176-006
SB-07	S	05-13-19 15:23	1 ft	624176-007
SB-08	S	05-13-19 15:27	1 ft	624176-008
SB-BG	S	05-13-19 15:40	1 ft	624176-009



CASE NARRATIVE

Client Name: KJ Environmental & Civil Engineering

Project Name: 1200 BBL Red Hills

Project ID: OWL043019D
Work Order Number(s): 624176

Report Date: 16-MAY-19
Date Received: 05/14/2019

Sample receipt non conformances and comments:

None

Sample receipt non conformances and comments per sample:

None



Certificate of Analytical Results 624176



KJ Environmental & Civil Engineering, Aubrey, TX 1200 BBL Red Hills

Sample Id: **SB-01** Matrix: Soil Date Received: 05.14.19 10.05
Lab Sample Id: 624176-001 Date Collected: 05.13.19 14.55 Sample Depth: 1 ft
Analytical Method: Chloride by EPA 300 Prep Method: E300P
Tech: CHE % Moisture:
Analyst: CHE Date Prep: 05.14.19 15.45 Basis: Wet Weight
Seq Number: 3089023

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	1240	5.05	mg/kg	05.14.19 16.44		1

Analytical Method: TPH by SW8015 Mod Prep Method: TX1005P
Tech: ARM % Moisture:
Analyst: ARM Date Prep: 05.14.19 10.00 Basis: Wet Weight
Seq Number: 3089069

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	05.14.19 13.33	U	1
Diesel Range Organics (DRO)	C10C28DRO	1090	15.0	mg/kg	05.14.19 13.33		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	305	15.0	mg/kg	05.14.19 13.33		1
Total TPH	PHC635	1400	15.0	mg/kg	05.14.19 13.33		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	109	%	70-135	05.14.19 13.33	
o-Terphenyl	84-15-1	118	%	70-135	05.14.19 13.33	

Analytical Method: BTEX by SW 8260B Prep Method: SW5035A
Tech: HOP % Moisture:
Analyst: HOP Date Prep: 05.15.19 13.20 Basis: Wet Weight
Seq Number: 3089107 SUB: T104704215-19-29

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00100	0.00100	mg/kg	05.15.19 14.46	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
Dibromofluoromethane	1868-53-7	94	%	73-132	05.15.19 14.46	
1,2-Dichloroethane-D4	17060-07-0	106	%	73-124	05.15.19 14.46	
Toluene-D8	2037-26-5	106	%	69-124	05.15.19 14.46	
4-Bromofluorobenzene	460-00-4	96	%	58-152	05.15.19 14.46	



Certificate of Analytical Results 624176



KJ Environmental & Civil Engineering, Aubrey, TX 1200 BBL Red Hills

Sample Id: **SB-02** Matrix: Soil Date Received: 05.14.19 10.05
Lab Sample Id: 624176-002 Date Collected: 05.13.19 14.54 Sample Depth: 1 ft
Analytical Method: Chloride by EPA 300 Prep Method: E300P
Tech: CHE % Moisture:
Analyst: CHE Date Prep: 05.14.19 15.45 Basis: Wet Weight
Seq Number: 3089023

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	3820	24.9	mg/kg	05.14.19 16.51		5

Analytical Method: TPH by SW8015 Mod Prep Method: TX1005P
Tech: ARM % Moisture:
Analyst: ARM Date Prep: 05.14.19 10.00 Basis: Wet Weight
Seq Number: 3089069

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	05.14.19 14.34	U	1
Diesel Range Organics (DRO)	C10C28DRO	50.8	15.0	mg/kg	05.14.19 14.34		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	15.1	15.0	mg/kg	05.14.19 14.34		1
Total TPH	PHC635	65.9	15.0	mg/kg	05.14.19 14.34		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	103	%	70-135	05.14.19 14.34	
o-Terphenyl	84-15-1	104	%	70-135	05.14.19 14.34	

Analytical Method: BTEX by SW 8260B Prep Method: SW5035A
Tech: HOP % Moisture:
Analyst: HOP Date Prep: 05.15.19 13.20 Basis: Wet Weight
Seq Number: 3089107 SUB: T104704215-19-29

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00100	0.00100	mg/kg	05.15.19 18.17	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
Dibromofluoromethane	1868-53-7	95	%	73-132	05.15.19 18.17	
1,2-Dichloroethane-D4	17060-07-0	107	%	73-124	05.15.19 18.17	
Toluene-D8	2037-26-5	106	%	69-124	05.15.19 18.17	
4-Bromofluorobenzene	460-00-4	94	%	58-152	05.15.19 18.17	



Certificate of Analytical Results 624176



KJ Environmental & Civil Engineering, Aubrey, TX 1200 BBL Red Hills

Sample Id: **SB-03** Matrix: Soil Date Received: 05.14.19 10.05
Lab Sample Id: 624176-003 Date Collected: 05.13.19 15.10 Sample Depth: 1 ft
Analytical Method: Chloride by EPA 300 Prep Method: E300P
Tech: CHE % Moisture:
Analyst: CHE Date Prep: 05.14.19 15.45 Basis: Wet Weight
Seq Number: 3089023

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	12.8	4.99	mg/kg	05.14.19 16.58		1

Analytical Method: TPH by SW8015 Mod Prep Method: TX1005P
Tech: ARM % Moisture:
Analyst: ARM Date Prep: 05.14.19 10.00 Basis: Wet Weight
Seq Number: 3089069

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	05.14.19 14.54	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	05.14.19 14.54	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	05.14.19 14.54	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	05.14.19 14.54	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	106	%	70-135	05.14.19 14.54	
o-Terphenyl	84-15-1	105	%	70-135	05.14.19 14.54	

Analytical Method: BTEX by SW 8260B Prep Method: SW5035A
Tech: HOP % Moisture:
Analyst: HOP Date Prep: 05.15.19 13.20 Basis: Wet Weight
Seq Number: 3089107 SUB: T104704215-19-29

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00100	0.00100	mg/kg	05.15.19 15.56	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
Dibromofluoromethane	1868-53-7	96	%	73-132	05.15.19 15.56	
1,2-Dichloroethane-D4	17060-07-0	109	%	73-124	05.15.19 15.56	
Toluene-D8	2037-26-5	108	%	69-124	05.15.19 15.56	
4-Bromofluorobenzene	460-00-4	93	%	58-152	05.15.19 15.56	



Certificate of Analytical Results 624176



KJ Environmental & Civil Engineering, Aubrey, TX 1200 BBL Red Hills

Sample Id: **SB-04** Matrix: Soil Date Received: 05.14.19 10.05
Lab Sample Id: 624176-004 Date Collected: 05.13.19 15.14 Sample Depth: 1 ft
Analytical Method: Chloride by EPA 300 Prep Method: E300P
Tech: CHE % Moisture:
Analyst: CHE Date Prep: 05.14.19 15.45 Basis: Wet Weight
Seq Number: 3089023

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	2610	25.2	mg/kg	05.14.19 17.05		5

Analytical Method: TPH by SW8015 Mod Prep Method: TX1005P
Tech: ARM % Moisture:
Analyst: ARM Date Prep: 05.14.19 10.00 Basis: Wet Weight
Seq Number: 3089069

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	05.14.19 15.14	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	05.14.19 15.14	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	05.14.19 15.14	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	05.14.19 15.14	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	105	%	70-135	05.14.19 15.14	
o-Terphenyl	84-15-1	106	%	70-135	05.14.19 15.14	

Analytical Method: BTEX by SW 8260B Prep Method: SW5035A
Tech: HOP % Moisture:
Analyst: HOP Date Prep: 05.15.19 13.20 Basis: Wet Weight
Seq Number: 3089107 SUB: T104704215-19-29

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00100	0.00100	mg/kg	05.15.19 17.54	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
Dibromofluoromethane	1868-53-7	97	%	73-132	05.15.19 17.54	
1,2-Dichloroethane-D4	17060-07-0	111	%	73-124	05.15.19 17.54	
Toluene-D8	2037-26-5	108	%	69-124	05.15.19 17.54	
4-Bromofluorobenzene	460-00-4	93	%	58-152	05.15.19 17.54	



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KJ Environmental & Civil Engineering, Aubrey, TX 1200 BBL Red Hills

Sample Id: **SB-05** Matrix: Soil Date Received: 05.14.19 10.05
Lab Sample Id: 624176-005 Date Collected: 05.13.19 15.17 Sample Depth: 1 ft
Analytical Method: Chloride by EPA 300 Prep Method: E300P
Tech: CHE % Moisture:
Analyst: CHE Date Prep: 05.14.19 15.45 Basis: Wet Weight
Seq Number: 3089023

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	5.22	5.02	mg/kg	05.14.19 17.31		1

Analytical Method: TPH by SW8015 Mod Prep Method: TX1005P
Tech: ARM % Moisture:
Analyst: ARM Date Prep: 05.14.19 10.00 Basis: Wet Weight
Seq Number: 3089069

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	05.14.19 15.33	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	05.14.19 15.33	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	05.14.19 15.33	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	05.14.19 15.33	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	108	%	70-135	05.14.19 15.33	
o-Terphenyl	84-15-1	108	%	70-135	05.14.19 15.33	

Analytical Method: BTEX by SW 8260B Prep Method: SW5035A
Tech: HOP % Moisture:
Analyst: HOP Date Prep: 05.15.19 13.20 Basis: Wet Weight
Seq Number: 3089107 SUB: T104704215-19-29

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00100	0.00100	mg/kg	05.15.19 16.20	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
Dibromofluoromethane	1868-53-7	94	%	73-132	05.15.19 16.20	
1,2-Dichloroethane-D4	17060-07-0	107	%	73-124	05.15.19 16.20	
Toluene-D8	2037-26-5	109	%	69-124	05.15.19 16.20	
4-Bromofluorobenzene	460-00-4	94	%	58-152	05.15.19 16.20	



Certificate of Analytical Results 624176



KJ Environmental & Civil Engineering, Aubrey, TX 1200 BBL Red Hills

Sample Id: **SB-06** Matrix: Soil Date Received: 05.14.19 10.05
Lab Sample Id: 624176-006 Date Collected: 05.13.19 15.20 Sample Depth: 1 ft
Analytical Method: Chloride by EPA 300 Prep Method: E300P
Tech: CHE % Moisture:
Analyst: CHE Date Prep: 05.14.19 15.45 Basis: Wet Weight
Seq Number: 3089023

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	438	4.97	mg/kg	05.14.19 17.38		1

Analytical Method: TPH by SW8015 Mod Prep Method: TX1005P
Tech: ARM % Moisture:
Analyst: ARM Date Prep: 05.14.19 10.00 Basis: Wet Weight
Seq Number: 3089069

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	05.14.19 15.53	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	05.14.19 15.53	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	05.14.19 15.53	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	05.14.19 15.53	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	106	%	70-135	05.14.19 15.53	
o-Terphenyl	84-15-1	107	%	70-135	05.14.19 15.53	

Analytical Method: BTEX by SW 8260B Prep Method: SW5035A
Tech: HOP % Moisture:
Analyst: HOP Date Prep: 05.15.19 13.20 Basis: Wet Weight
Seq Number: 3089107 SUB: T104704215-19-29

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00100	0.00100	mg/kg	05.15.19 16.43	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
Dibromofluoromethane	1868-53-7	94	%	73-132	05.15.19 16.43	
1,2-Dichloroethane-D4	17060-07-0	110	%	73-124	05.15.19 16.43	
Toluene-D8	2037-26-5	107	%	69-124	05.15.19 16.43	
4-Bromofluorobenzene	460-00-4	95	%	58-152	05.15.19 16.43	



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KJ Environmental & Civil Engineering, Aubrey, TX 1200 BBL Red Hills

Sample Id: **SB-07** Matrix: Soil Date Received: 05.14.19 10.05
Lab Sample Id: 624176-007 Date Collected: 05.13.19 15.23 Sample Depth: 1 ft
Analytical Method: Chloride by EPA 300 Prep Method: E300P
Tech: CHE % Moisture:
Analyst: CHE Date Prep: 05.14.19 15.45 Basis: Wet Weight
Seq Number: 3089023

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	2160	24.9	mg/kg	05.14.19 17.46		5

Analytical Method: TPH by SW8015 Mod Prep Method: TX1005P
Tech: ARM % Moisture:
Analyst: ARM Date Prep: 05.14.19 10.00 Basis: Wet Weight
Seq Number: 3089069

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	05.14.19 16.13	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	05.14.19 16.13	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	05.14.19 16.13	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	05.14.19 16.13	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	104	%	70-135	05.14.19 16.13	
o-Terphenyl	84-15-1	104	%	70-135	05.14.19 16.13	

Analytical Method: BTEX by SW 8260B Prep Method: SW5035A
Tech: HOP % Moisture:
Analyst: HOP Date Prep: 05.15.19 13.20 Basis: Wet Weight
Seq Number: 3089107 SUB: T104704215-19-29

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.000996	0.000996	mg/kg	05.15.19 18.41	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
Dibromofluoromethane	1868-53-7	92	%	73-132	05.15.19 18.41	
1,2-Dichloroethane-D4	17060-07-0	105	%	73-124	05.15.19 18.41	
Toluene-D8	2037-26-5	108	%	69-124	05.15.19 18.41	
4-Bromofluorobenzene	460-00-4	96	%	58-152	05.15.19 18.41	



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KJ Environmental & Civil Engineering, Aubrey, TX 1200 BBL Red Hills

Sample Id: **SB-08** Matrix: Soil Date Received: 05.14.19 10.05
Lab Sample Id: 624176-008 Date Collected: 05.13.19 15.27 Sample Depth: 1 ft
Analytical Method: Chloride by EPA 300 Prep Method: E300P
Tech: CHE % Moisture:
Analyst: CHE Date Prep: 05.14.19 15.45 Basis: Wet Weight
Seq Number: 3089023

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	944	5.03	mg/kg	05.14.19 17.53		1

Analytical Method: TPH by SW8015 Mod Prep Method: TX1005P
Tech: ARM % Moisture:
Analyst: ARM Date Prep: 05.14.19 10.00 Basis: Wet Weight
Seq Number: 3089069

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	05.14.19 16.33	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	05.14.19 16.33	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	05.14.19 16.33	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	05.14.19 16.33	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	104	%	70-135	05.14.19 16.33	
o-Terphenyl	84-15-1	102	%	70-135	05.14.19 16.33	

Analytical Method: BTEX by SW 8260B Prep Method: SW5035A
Tech: HOP % Moisture:
Analyst: HOP Date Prep: 05.15.19 13.20 Basis: Wet Weight
Seq Number: 3089107 SUB: T104704215-19-29

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.000998	0.000998	mg/kg	05.15.19 17.07	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
Dibromofluoromethane	1868-53-7	92	%	73-132	05.15.19 17.07	
1,2-Dichloroethane-D4	17060-07-0	104	%	73-124	05.15.19 17.07	
Toluene-D8	2037-26-5	109	%	69-124	05.15.19 17.07	
4-Bromofluorobenzene	460-00-4	93	%	58-152	05.15.19 17.07	



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KJ Environmental & Civil Engineering, Aubrey, TX 1200 BBL Red Hills

Sample Id: **SB-BG** Matrix: Soil Date Received: 05.14.19 10.05
Lab Sample Id: 624176-009 Date Collected: 05.13.19 15.40 Sample Depth: 1 ft
Analytical Method: Chloride by EPA 300 Prep Method: E300P
Tech: CHE % Moisture:
Analyst: CHE Date Prep: 05.14.19 15.45 Basis: Wet Weight
Seq Number: 3089023

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	370	4.97	mg/kg	05.14.19 18.00		1

Analytical Method: TPH by SW8015 Mod Prep Method: TX1005P
Tech: ARM % Moisture:
Analyst: ARM Date Prep: 05.14.19 10.00 Basis: Wet Weight
Seq Number: 3089069

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	05.14.19 16.53	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	05.14.19 16.53	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.0	15.0	mg/kg	05.14.19 16.53	U	1
Total TPH	PHC635	<15.0	15.0	mg/kg	05.14.19 16.53	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	103	%	70-135	05.14.19 16.53	
o-Terphenyl	84-15-1	102	%	70-135	05.14.19 16.53	

Analytical Method: BTEX by SW 8260B Prep Method: SW5035A
Tech: HOP % Moisture:
Analyst: HOP Date Prep: 05.15.19 13.20 Basis: Wet Weight
Seq Number: 3089107 SUB: T104704215-19-29

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00100	0.00100	mg/kg	05.15.19 17.30	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
Dibromofluoromethane	1868-53-7	101	%	73-132	05.15.19 17.30	
1,2-Dichloroethane-D4	17060-07-0	109	%	73-124	05.15.19 17.30	
Toluene-D8	2037-26-5	107	%	69-124	05.15.19 17.30	
4-Bromofluorobenzene	460-00-4	95	%	58-152	05.15.19 17.30	

- X** In our quality control review of the data a QC deficiency was observed and flagged as noted. MS/MSD recoveries were found to be outside of the laboratory control limits due to possible matrix /chemical interference, or a concentration of target analyte high enough to affect the recovery of the spike concentration. This condition could also affect the relative percent difference in the MS/MSD.
- B** A target analyte or common laboratory contaminant was identified in the method blank. Its presence indicates possible field or laboratory contamination.
- D** The sample(s) were diluted due to targets detected over the highest point of the calibration curve, or due to matrix interference. Dilution factors are included in the final results. The result is from a diluted sample.
- E** The data exceeds the upper calibration limit; therefore, the concentration is reported as estimated.
- F** RPD exceeded lab control limits.
- J** The target analyte was positively identified below the quantitation limit and above the detection limit.
- U** Analyte was not detected.
- L** The LCS data for this analytical batch was reported below the laboratory control limits for this analyte. The department supervisor and QA Director reviewed data. The samples were either reanalyzed or flagged as estimated concentrations.
- H** The LCS data for this analytical batch was reported above the laboratory control limits. Supporting QC Data were reviewed by the Department Supervisor and QA Director. Data were determined to be valid for reporting.
- K** Sample analyzed outside of recommended hold time.
- JN** A combination of the "N" and the "J" qualifier. The analysis indicates that the analyte is "tentatively identified" and the associated numerical value may not be consistent with the amount actually present in the environmental sample.

** Surrogate recovered outside laboratory control limit.

BRL Below Reporting Limit.

RL Reporting Limit

MDL Method Detection Limit **SDL** Sample Detection Limit **LOD** Limit of Detection

PQL Practical Quantitation Limit **MQL** Method Quantitation Limit **LOQ** Limit of Quantitation

DL Method Detection Limit

NC Non-Calculable

SMP Client Sample **BLK** Method Blank

BKS/LCS Blank Spike/Laboratory Control Sample **BKSD/LCSD** Blank Spike Duplicate/Laboratory Control Sample Duplicate

MD/SD Method Duplicate/Sample Duplicate **MS** Matrix Spike **MSD:** Matrix Spike Duplicate

+ NELAC certification not offered for this compound.

* (Next to analyte name or method description) = Outside XENCO's scope of NELAC accreditation

KJ Environmental & Civil Engineering
1200 BBL Red Hills

Analytical Method: Chloride by EPA 300

Seq Number: 3089023

MB Sample Id: 7677847-1-BLK

Matrix: Solid

LCS Sample Id: 7677847-1-BKS

Prep Method: E300P

Date Prep: 05.14.19

LCSD Sample Id: 7677847-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	<5.00	250	247	99	244	98	90-110	1	20	mg/kg	05.14.19 16:08	

Analytical Method: Chloride by EPA 300

Seq Number: 3089023

Parent Sample Id: 624132-001

Matrix: Soil

MS Sample Id: 624132-001 S

Prep Method: E300P

Date Prep: 05.14.19

MSD Sample Id: 624132-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	17.3	251	277	103	275	103	90-110	1	20	mg/kg	05.14.19 16:29	

Analytical Method: Chloride by EPA 300

Seq Number: 3089023

Parent Sample Id: 624177-001

Matrix: Soil

MS Sample Id: 624177-001 S

Prep Method: E300P

Date Prep: 05.14.19

MSD Sample Id: 624177-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	2.93	252	357	141	350	138	90-110	2	20	mg/kg	05.14.19 18:14	X

Analytical Method: TPH by SW8015 Mod

Seq Number: 3089069

MB Sample Id: 7677880-1-BLK

Matrix: Solid

LCS Sample Id: 7677880-1-BKS

Prep Method: TX1005P

Date Prep: 05.14.19

LCSD Sample Id: 7677880-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Gasoline Range Hydrocarbons (GRO)	<8.00	1000	1080	108	1050	105	70-135	3	20	mg/kg	05.14.19 12:54	
Diesel Range Organics (DRO)	<8.13	1000	1050	105	1030	103	70-135	2	20	mg/kg	05.14.19 12:54	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	101		126		116		70-135	%	05.14.19 12:54
o-Terphenyl	102		111		105		70-135	%	05.14.19 12:54

MS/MSD Percent Recovery
Relative Percent Difference
LCS/LCSD Recovery
Log Difference

$[D] = 100 * (C - A) / B$
 $RPD = 200 * |(C - E) / (C + E)|$
 $[D] = 100 * (C) / [B]$
Log Diff. = Log(Sample Duplicate) - Log(Original Sample)

LCS = Laboratory Control Sample
A = Parent Result
C = MS/LCS Result
E = MSD/LCSD Result

MS = Matrix Spike
B = Spike Added
D = MSD/LCSD % Rec



QC Summary 624176

KJ Environmental & Civil Engineering 1200 BBL Red Hills

Analytical Method: TPH by SW8015 Mod

Seq Number: 3089069

Parent Sample Id: 624176-001

Matrix: Soil

MS Sample Id: 624176-001 S

Prep Method: TX1005P

Date Prep: 05.14.19

MSD Sample Id: 624176-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Gasoline Range Hydrocarbons (GRO)	12.8	998	1170	116	1180	117	70-135	1	20	mg/kg	05.14.19 13:54	
Diesel Range Organics (DRO)	1090	998	1930	84	1930	84	70-135	0	20	mg/kg	05.14.19 13:54	

Surrogate

	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	122		120		70-135	%	05.14.19 13:54
o-Terphenyl	120		122		70-135	%	05.14.19 13:54

Analytical Method: BTEX by SW 8260B

Seq Number: 3089107

MB Sample Id: 7677910-1-BLK

Matrix: Solid

LCS Sample Id: 7677910-1-BKS

Prep Method: SW5035A

Date Prep: 05.15.19

LCSD Sample Id: 7677910-1-BSL

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00100	0.0500	0.0565	113	0.0507	101	62-132	11	25	mg/kg	05.15.19 11:39	

Surrogate

	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
Dibromofluoromethane	97		92		94		73-132	%	05.15.19 11:39
1,2-Dichloroethane-D4	109		103		104		73-124	%	05.15.19 11:39
Toluene-D8	109		102		105		69-124	%	05.15.19 11:39
4-Bromofluorobenzene	91		92		96		58-152	%	05.15.19 11:39

Analytical Method: BTEX by SW 8260B

Seq Number: 3089107

Parent Sample Id: 624176-001

Matrix: Soil

MS Sample Id: 624176-001 S

Prep Method: SW5035A

Date Prep: 05.15.19

MSD Sample Id: 624176-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00100	0.0502	0.0514	102	0.0520	104	62-132	1	25	mg/kg	05.15.19 12:26	

Surrogate

	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
Dibromofluoromethane	98		100		73-132	%	05.15.19 12:26
1,2-Dichloroethane-D4	110		107		73-124	%	05.15.19 12:26
Toluene-D8	105		105		69-124	%	05.15.19 12:26
4-Bromofluorobenzene	94		95		58-152	%	05.15.19 12:26

MS/MSD Percent Recovery
Relative Percent Difference
LCS/LCSD Recovery
Log Difference

$[D] = 100 * (C-A) / B$
 $RPD = 200 * |(C-E) / (C+E)|$
 $[D] = 100 * (C) / [B]$
 $\text{Log Diff.} = \text{Log}(\text{Sample Duplicate}) - \text{Log}(\text{Original Sample})$

LCS = Laboratory Control Sample
A = Parent Result
C = MS/LCS Result
E = MSD/LCSD Result

MS = Matrix Spike
B = Spike Added
D = MSD/LCSD % Rec

Houston, TX (281) 240-4200 Dallas, TX (214) 902-0380 San Antonio, TX (210) 509-3333
Midland, TX (432-704-5440) EL Paso, TX (915) 585-3443 Lubbock, TX (806) 794-1296
Hobbs, NM (575-392-7550) Phoenix, AZ (480-355-0900) Atlanta, GA (770-449-8800) Tampa, FL (813)

Page _____ of _____
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Project Manager:	Tavis Oaks		Bill to: (if different)	Phillip Sanders
Company Name:	KJE		Company Name:	Diffield Water Leysites (Owd)
Address:	500 Mosley Road		Address:	8214 Westwester Drive #850
City, State ZIP:	Cross Roads TX 76227		City, State ZIP:	Dallas, TX 75225
Phone:	(940) 387-0805		Email:	tsaks@kje-us.com

Work Order Comments	
Program: UST/PST ☐ PRP ☐ Brownfields ☐ RRC ☐ Superfund ☐	
State of Project:	
Reporting Level II ☐ Level III ☐ PST/UST ☐ TRRP ☐ Level IV ☐	
Deliverables: EDD ☐ ADaPT ☐ Other:	

Project Name:	1200GBL - 02d H115		Turn Around
Project Number:	DWL043019D		Routine ☐
P.O. Number:			Rush: 48 hr
Sampler's Name:	T. Oaks		Due Date: 5.16.19

SAMPLE RECEIPT	Temp Blank:	Yes	No	Wet Ice:	Yes	No
Temperature (°C):	32.3			Thermometer ID		
Received Intact:	Yes	No				
Cooler Custody Seals:	Yes	No	N/A	Correction Factor:	0.1	
Sample Custody Seals:	Yes	No	N/A	Total Containers:		

ANALYSIS REQUEST						Work Order Notes
r of Containers						
order EPA 300						
(Leot PKO+MRO) Method 8015						
Method 8260B						
ene 8260B						
						TAT starts the day received by the lab, if received by 4:30pm

Sample Identification	Matrix	Date Sampled	Time Sampled	Depth	Number	Chloro	TPH	BTEX	Benz	Sample Comments
SB-01	Soil	5.13.14	1455	1 ft	1	X	X	X	X	
SB-02			1454		1					
SB-03			1510		1					
SB-04			1514		1					
SB-05			1517		1					
SB-06			1520		1					
SB-07			1523		1					
SB-08			1527		1					
SB-BG			1540		1					

Total	200.7 / 6010	200.8 / 6020:	
<i>Circle Method(s) and Metal(s) to be analyzed</i>	8RCRA TCLP / SPLP 6010:	Al Sb As Ba Be B Cd Ca Cr Co Cu Fe Pb Mg Mn Mo Ni K Se Ag SiO ₂ Na Sr Ti Sn U V Zn	13PPM Texas 11 Sb As Ba Be B Cd Ca Cr Co Cu Fe Pb Mg Mn Mo Ni K Se Ag SiO ₂ Na Sr Ti Sn U V Zn
		8RCRA Sb As Ba Be Cd Cr Co Cu Pb Mn Mo Ni Se Ag Ti U	1631 / 245.1 / 7470 / 7471 : Hg

Notice: Signature of this document and relinquishment of samples constitutes a valid purchase order from client company to Xenco, its affiliates and subcontractors. It assigns standard terms and conditions of service. Xenco will be liable only for the cost of samples and shall not assume any responsibility for any losses or expenses incurred by the client if such losses are due to circumstances beyond the control of Xenco. A minimum charge of \$75.00 will be applied to each project and a charge of \$3 for each sample submitted to Xenco, but not analyzed. These terms will be enforced unless previously negotiated.

Relinquished by: (Signature)	Received by: (Signature)	Date/Time	Relinquished by: (Signature)	Received by: (Signature)	Date/Time
		5.14.19 / 1005			

Inter-Office Shipment

IOS Number : 39084

Date/Time: 05.14.2019 10:24 Created by: Brianna Teel
 Lab# From: **Midland** Delivery Priority:
 Lab# To: **Houston** Air Bill No.: 775219214849

Please send report to: Jessica Kramer
 Address: 1211 W. Florida Ave
 E-Mail: jessica.kramer@xenco.com

Sample Id	Matrix	Client Sample Id	Sample Collection	Method	Method Name	Lab Due	HT Due	PM	Analytes	Sign
624176-001	S	SB-01	05.13.2019 14:55	SW8260BTX	BTEX by SW 8260B	05.16.2019	05.27.2019	JKR	BZ	
624176-002	S	SB-02	05.13.2019 14:54	SW8260BTX	BTEX by SW 8260B	05.16.2019	05.27.2019	JKR	BZ	
624176-003	S	SB-03	05.13.2019 15:10	SW8260BTX	BTEX by SW 8260B	05.16.2019	05.27.2019	JKR	BZ	
624176-004	S	SB-04	05.13.2019 15:14	SW8260BTX	BTEX by SW 8260B	05.16.2019	05.27.2019	JKR	BZ	
624176-005	S	SB-05	05.13.2019 15:17	SW8260BTX	BTEX by SW 8260B	05.16.2019	05.27.2019	JKR	BZ	
624176-006	S	SB-06	05.13.2019 15:20	SW8260BTX	BTEX by SW 8260B	05.16.2019	05.27.2019	JKR	BZ	
624176-007	S	SB-07	05.13.2019 15:23	SW8260BTX	BTEX by SW 8260B	05.16.2019	05.27.2019	JKR	BZ	
624176-008	S	SB-08	05.13.2019 15:27	SW8260BTX	BTEX by SW 8260B	05.16.2019	05.27.2019	JKR	BZ	
624176-009	S	SB-BG	05.13.2019 15:40	SW8260BTX	BTEX by SW 8260B	05.16.2019	05.27.2019	JKR	BZ	

Inter Office Shipment or Sample Comments:

Relinquished By: 
 Brianna Teel

Date Relinquished: 05.14.2019

Received By: 
 Travis Simmons

Date Received: 05.15.2019 09:30

Cooler Temperature: 1.6



XENCO Laboratories



Inter Office Report- Sample Receipt Checklist

Sent To: Houston

IOS #: 39084

Acceptable Temperature Range: 0 - 6 degC

Air and Metal samples Acceptable Range: Ambient

Temperature Measuring device used : HOU-068

Sent By: Brianna Teel

Date Sent: 05/14/2019 10:24 AM

Received By: Travis Simmons

Date Received: 05/15/2019 09:30 AM

Sample Receipt Checklist

Comments

#1 *Temperature of cooler(s)?	1.6
#2 *Shipping container in good condition?	Yes
#3 *Samples received with appropriate temperature?	Yes
#4 *Custody Seals intact on shipping container/ cooler?	Yes
#5 *Custody Seals Signed and dated for Containers/coolers	Yes
#6 *IOS present?	Yes
#7 Any missing/extra samples?	No
#8 IOS agrees with sample label(s)/matrix?	Yes
#9 Sample matrix/ properties agree with IOS?	Yes
#10 Samples in proper container/ bottle?	Yes
#11 Samples properly preserved?	Yes
#12 Sample container(s) intact?	Yes
#13 Sufficient sample amount for indicated test(s)?	Yes
#14 All samples received within hold time?	Yes

* Must be completed for after-hours delivery of samples prior to placing in the refrigerator

NonConformance:

Corrective Action Taken:

Nonconformance Documentation

Contact: _____ Contacted by : _____ Date: _____

Checklist reviewed by:

Travis Simmons

Date: 05/15/2019



XENCO Laboratories
Prelogin/Nonconformance Report- Sample Log-In



Client: KJ Environmental & Civil Engineering

Date/ Time Received: 05/14/2019 10:05:00 AM

Work Order #: 624176

Acceptable Temperature Range: 0 - 6 degC

Air and Metal samples Acceptable Range: Ambient

Temperature Measuring device used : R8

Sample Receipt Checklist	Comments
#1 *Temperature of cooler(s)?	3.4
#2 *Shipping container in good condition?	Yes
#3 *Samples received on ice?	Yes
#4 *Custody Seals intact on shipping container/ cooler?	N/A
#5 Custody Seals intact on sample bottles?	N/A
#6 *Custody Seals Signed and dated?	N/A
#7 *Chain of Custody present?	Yes
#8 Any missing/extra samples?	No
#9 Chain of Custody signed when relinquished/ received?	Yes
#10 Chain of Custody agrees with sample labels/matrix?	Yes
#11 Container label(s) legible and intact?	Yes
#12 Samples in proper container/ bottle?	Yes
#13 Samples properly preserved?	Yes
#14 Sample container(s) intact?	Yes
#15 Sufficient sample amount for indicated test(s)?	Yes
#16 All samples received within hold time?	Yes
#17 Subcontract of sample(s)?	Yes
#18 Water VOC samples have zero headspace?	N/A

Xenco Stafford-BTEX8260

*** Must be completed for after-hours delivery of samples prior to placing in the refrigerator**

Analyst:

PH Device/Lot#:

Checklist completed by:

Brianna Teel

Brianna Teel

Date: 05/14/2019

Checklist reviewed by:

Jessica Kramer

Jessica Kramer

Date: 05/14/2019



Certificate of Analysis Summary 627724

KJ Environmental & Civil Engineering, Aubrey, TX

Project Name: Redhills Pipeline 1RP-5470



Project Id: OWL043019D-1

Contact: Will Soderstrom

Project Location:

Date Received in Lab: Thu Jun-13-19 06:40 pm

Report Date: 20-JUN-19

Project Manager: Jessica Kramer

<i>Analysis Requested</i>	<i>Lab Id:</i>	627724-001	627724-002	627724-003	627724-004	627724-005	627724-006
	<i>Field Id:</i>	SB-01 0-2'	SB-01 2-4'	SB-01 4-6'	SB-01 6-8'	SB-01 8-10'	SB-01 10-12'
	<i>Depth:</i>	0-2	2-4	4-6	6-8	8-10	10-12
	<i>Matrix:</i>	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	<i>Sampled:</i>	Jun-11-19 10:50	Jun-11-19 10:53	Jun-11-19 10:58	Jun-11-19 11:01	Jun-11-19 11:03	Jun-11-19 11:06
BTEX by SW 8260C SUB: T104704215-19-29	<i>Extracted:</i>	Jun-18-19 16:10					
	<i>Analyzed:</i>	Jun-19-19 04:29					
	<i>Units/RL:</i>	mg/kg RL					
Benzene		<0.00103 0.00103					
Toluene		<0.00103 0.00103					
Ethylbenzene		<0.00103 0.00103					
m,p-Xylenes		<0.00206 0.00206					
o-Xylene		<0.00103 0.00103					
Total Xylenes		<0.00103 0.00103					
Total BTEX		<0.00103 0.00103					
Chloride by EPA 300	<i>Extracted:</i>	Jun-17-19 10:55	Jun-17-19 10:55	Jun-17-19 10:55	Jun-17-19 10:55	Jun-17-19 10:55	Jun-17-19 10:55
	<i>Analyzed:</i>	Jun-17-19 12:25	Jun-17-19 12:30	Jun-17-19 12:35	Jun-17-19 12:40	Jun-17-19 12:44	Jun-17-19 12:59
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Chloride		<5.16 5.16	<5.08 5.08	<5.14 5.14	<5.20 5.20	<5.33 5.33	<5.23 5.23
Percent Moisture	<i>Extracted:</i>						
	<i>Analyzed:</i>	Jun-14-19 17:35	Jun-14-19 17:35	Jun-14-19 17:35	Jun-14-19 17:35	Jun-14-19 17:35	Jun-14-19 17:35
	<i>Units/RL:</i>	% RL	% RL	% RL	% RL	% RL	% RL
Percent Moisture		2.27	2.28	3.72	4.81	5.61	3.50
TPH by SW8015 Mod	<i>Extracted:</i>	Jun-15-19 15:00					
	<i>Analyzed:</i>	Jun-17-19 02:37					
	<i>Units/RL:</i>	mg/kg RL					
Gasoline Range Hydrocarbons (GRO)		<15.3 15.3					
Diesel Range Organics (DRO)		<15.3 15.3					
Motor Oil Range Hydrocarbons (MRO)		<15.3 15.3					
Total TPH		<15.3 15.3					

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Jessica Kramer

Jessica Kramer
Project Assistant



Certificate of Analysis Summary 627724

KJ Environmental & Civil Engineering, Aubrey, TX

Project Name: Redhills Pipeline 1RP-5470



Project Id: OWL043019D-1

Contact: Will Soderstrom

Project Location:

Date Received in Lab: Thu Jun-13-19 06:40 pm

Report Date: 20-JUN-19

Project Manager: Jessica Kramer

<i>Analysis Requested</i>	<i>Lab Id:</i>	627724-007	627724-008	627724-009	627724-010	627724-011	627724-012
	<i>Field Id:</i>	SB-01 12-14'	SB-01 14-16'	SB-02 0-2'	SB-02 2-4'	SB-02 4-6'	SB-02 6-8'
	<i>Depth:</i>	12-14	14-16	0-2	2-4	4-6	6-8
	<i>Matrix:</i>	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	<i>Sampled:</i>	Jun-11-19 11:09	Jun-11-19 11:13	Jun-11-19 11:30	Jun-11-19 11:33	Jun-11-19 11:35	Jun-11-19 11:38
BTEX by SW 8260C SUB: T104704215-19-29	<i>Extracted:</i>			Jun-18-19 16:10			
	<i>Analyzed:</i>			Jun-19-19 04:48			
	<i>Units/RL:</i>			mg/kg RL			
Benzene				<0.00114 0.00114			
Toluene				<0.00114 0.00114			
Ethylbenzene				<0.00114 0.00114			
m,p-Xylenes				<0.00229 0.00229			
o-Xylene				<0.00114 0.00114			
Total Xylenes				<0.00114 0.00114			
Total BTEX				<0.00114 0.00114			
Chloride by EPA 300	<i>Extracted:</i>	Jun-17-19 10:55	Jun-17-19 10:55	Jun-17-19 10:55	Jun-17-19 10:55	Jun-17-19 10:55	Jun-17-19 10:55
	<i>Analyzed:</i>	Jun-17-19 13:04	Jun-17-19 13:18	Jun-17-19 13:23	Jun-17-19 13:28	Jun-17-19 13:33	Jun-17-19 13:38
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Chloride		<5.08 5.08	<5.17 5.17	<5.72 5.72	<5.02 5.02	<5.11 5.11	<5.81 5.81
Percent Moisture	<i>Extracted:</i>						
	<i>Analyzed:</i>	Jun-14-19 17:35	Jun-14-19 17:35	Jun-14-19 17:35	Jun-14-19 17:35	Jun-14-19 17:35	Jun-14-19 17:35
	<i>Units/RL:</i>	% RL	% RL	% RL	% RL	% RL	% RL
Percent Moisture		0.530	2.48	13.3	1.22	2.81	14.8
TPH by SW8015 Mod	<i>Extracted:</i>			Jun-15-19 15:00			
	<i>Analyzed:</i>			Jun-17-19 03:50			
	<i>Units/RL:</i>			mg/kg RL			
Gasoline Range Hydrocarbons (GRO)				<17.2 17.2			
Diesel Range Organics (DRO)				<17.2 17.2			
Motor Oil Range Hydrocarbons (MRO)				<17.2 17.2			
Total TPH				<17.2 17.2			

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Jessica Kramer

Jessica Kramer
Project Assistant



Certificate of Analysis Summary 627724

KJ Environmental & Civil Engineering, Aubrey, TX

Project Name: Redhills Pipeline 1RP-5470



Project Id: OWL043019D-1

Contact: Will Soderstrom

Project Location:

Date Received in Lab: Thu Jun-13-19 06:40 pm

Report Date: 20-JUN-19

Project Manager: Jessica Kramer

<i>Analysis Requested</i>	<i>Lab Id:</i>	627724-013	627724-014	627724-015	627724-016	627724-017	627724-018
	<i>Field Id:</i>	SB-02 8-10'	SB-02 10-12'	SB-02 12-14'	SB-02 14-15.5'	SB-03 0-2'	SB-03 2-4'
	<i>Depth:</i>	8-10	10-12	12-14	14-15.5	0-2	2-4
	<i>Matrix:</i>	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	<i>Sampled:</i>	Jun-11-19 11:40	Jun-11-19 11:42	Jun-11-19 11:45	Jun-11-19 11:47	Jun-11-19 11:57	Jun-11-19 11:59
BTEX by SW 8260C SUB: T104704215-19-29	<i>Extracted:</i>					Jun-19-19 11:40	
	<i>Analyzed:</i>					Jun-19-19 17:15	
	<i>Units/RL:</i>					mg/kg RL	
Benzene						<0.00104 0.00104	
Toluene						<0.00104 0.00104	
Ethylbenzene						<0.00104 0.00104	
m,p-Xylenes						<0.00208 0.00208	
o-Xylene						<0.00104 0.00104	
Total Xylenes						<0.00104 0.00104	
Total BTEX						<0.00104 0.00104	
Chloride by EPA 300	<i>Extracted:</i>	Jun-17-19 10:55	Jun-17-19 10:55	Jun-17-19 11:20	Jun-17-19 11:20	Jun-17-19 11:20	Jun-17-19 11:20
	<i>Analyzed:</i>	Jun-17-19 13:43	Jun-17-19 13:47	Jun-17-19 14:16	Jun-17-19 14:31	Jun-17-19 14:36	Jun-17-19 14:41
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Chloride		<5.14 5.14	<5.10 5.10	<5.22 5.22	<5.11 5.11	<5.18 5.18	<5.14 5.14
Percent Moisture	<i>Extracted:</i>						
	<i>Analyzed:</i>	Jun-14-19 17:35	Jun-14-19 17:35	Jun-14-19 17:35	Jun-14-19 17:35	Jun-14-19 17:35	Jun-14-19 17:35
	<i>Units/RL:</i>	% RL	% RL	% RL	% RL	% RL	% RL
Percent Moisture		3.52	2.98	3.60	2.00	4.05	3.57
TPH by SW8015 Mod	<i>Extracted:</i>					Jun-15-19 15:00	
	<i>Analyzed:</i>					Jun-17-19 04:14	
	<i>Units/RL:</i>					mg/kg RL	
Gasoline Range Hydrocarbons (GRO)						<15.6 15.6	
Diesel Range Organics (DRO)						<15.6 15.6	
Motor Oil Range Hydrocarbons (MRO)						<15.6 15.6	
Total TPH						<15.6 15.6	

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Version: 1.9%

Jessica Kramer

Jessica Kramer
Project Assistant



Certificate of Analysis Summary 627724

KJ Environmental & Civil Engineering, Aubrey, TX

Project Name: Redhills Pipeline 1RP-5470



Project Id: OWL043019D-1

Contact: Will Soderstrom

Project Location:

Date Received in Lab: Thu Jun-13-19 06:40 pm

Report Date: 20-JUN-19

Project Manager: Jessica Kramer

<i>Analysis Requested</i>	<i>Lab Id:</i>	627724-019	627724-020	627724-021	627724-022	627724-023	627724-024
	<i>Field Id:</i>	SB-03 4-6'	SB-03 6-8'	SB-03 8-10'	SB-03 10-12'	SB-03 12-14'	SB-04 0-2'
	<i>Depth:</i>	4-6	6-8	8-10	10-12	12-14	0-2
	<i>Matrix:</i>	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	<i>Sampled:</i>	Jun-11-19 12:06	Jun-11-19 12:08	Jun-11-19 12:10	Jun-11-19 12:13	Jun-11-19 12:15	Jun-11-19 12:26
BTEX by SW 8260C SUB: T104704215-19-29	<i>Extracted:</i>						Jun-19-19 11:40
	<i>Analyzed:</i>						Jun-19-19 17:35
	<i>Units/RL:</i>						mg/kg RL
Benzene							<0.00102 0.00102
Toluene							<0.00102 0.00102
Ethylbenzene							<0.00102 0.00102
m,p-Xylenes							<0.00205 0.00205
o-Xylene							<0.00102 0.00102
Total Xylenes							<0.00102 0.00102
Total BTEX							<0.00102 0.00102
Chloride by EPA 300	<i>Extracted:</i>	Jun-17-19 11:20	Jun-17-19 11:20	Jun-17-19 11:20	Jun-17-19 11:20	Jun-17-19 11:20	Jun-17-19 11:20
	<i>Analyzed:</i>	Jun-17-19 14:46	Jun-17-19 15:00	Jun-17-19 15:05	Jun-17-19 15:10	Jun-17-19 15:15	Jun-17-19 15:19
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Chloride		<6.41 6.41	<5.34 5.34	<5.32 5.32	<5.20 5.20	<5.31 5.31	<5.18 5.18
Percent Moisture	<i>Extracted:</i>						
	<i>Analyzed:</i>	Jun-14-19 17:35	Jun-14-19 17:35	Jun-14-19 17:35	Jun-14-19 17:35	Jun-14-19 17:35	Jun-14-19 17:35
	<i>Units/RL:</i>	% RL	% RL	% RL	% RL	% RL	% RL
Percent Moisture		22.5	6.98	6.25	4.70	6.09	2.63
TPH by SW8015 Mod	<i>Extracted:</i>						Jun-15-19 15:00
	<i>Analyzed:</i>						Jun-17-19 04:38
	<i>Units/RL:</i>						mg/kg RL
Gasoline Range Hydrocarbons (GRO)							<15.4 15.4
Diesel Range Organics (DRO)							<15.4 15.4
Motor Oil Range Hydrocarbons (MRO)							<15.4 15.4
Total TPH							<15.4 15.4

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Version: 1.9%

Jessica Kramer

Jessica Kramer
Project Assistant



Certificate of Analysis Summary 627724

KJ Environmental & Civil Engineering, Aubrey, TX

Project Name: Redhills Pipeline 1RP-5470



Project Id: OWL043019D-1

Contact: Will Soderstrom

Project Location:

Date Received in Lab: Thu Jun-13-19 06:40 pm

Report Date: 20-JUN-19

Project Manager: Jessica Kramer

<i>Analysis Requested</i>	<i>Lab Id:</i>	627724-025	627724-026	627724-027	627724-028	627724-029	627724-030
	<i>Field Id:</i>	SB-04 2-4'	SB-04 4-6'	SB-04 6-8'	SB-04 8-10'	SB-04 10-12'	SB-05 12-14'
	<i>Depth:</i>	2-4	4-6	6-8	8-10	10-12	12-14
	<i>Matrix:</i>	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	<i>Sampled:</i>	Jun-11-19 12:28	Jun-11-19 12:30	Jun-11-19 12:33	Jun-11-19 12:35	Jun-11-19 12:38	Jun-11-19 12:40
Chloride by EPA 300	<i>Extracted:</i>	Jun-17-19 11:20	Jun-17-19 11:20	Jun-17-19 11:20	Jun-17-19 11:20	Jun-17-19 11:20	Jun-17-19 11:20
	<i>Analyzed:</i>	Jun-17-19 15:24	Jun-17-19 15:39	Jun-17-19 15:44	Jun-17-19 15:58	Jun-17-19 16:03	Jun-17-19 16:08
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Chloride		<5.16 5.16	<6.52 6.52	<5.62 5.62	<5.31 5.31	<5.24 5.24	<5.25 5.25
Percent Moisture	<i>Extracted:</i>	Jun-19-19 14:39	Jun-19-19 14:39	Jun-19-19 14:39	Jun-19-19 14:39	Jun-19-19 14:39	Jun-19-19 14:39
	<i>Analyzed:</i>	Jun-19-19 14:39	Jun-19-19 14:39	Jun-19-19 14:39	Jun-19-19 14:39	Jun-19-19 14:39	Jun-19-19 14:39
	<i>Units/RL:</i>	% RL	% RL	% RL	% RL	% RL	% RL
Percent Moisture		2.23	22.7	10.2	5.03	3.70	5.44

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Jessica Kramer

Jessica Kramer
Project Assistant



Certificate of Analysis Summary 627724

KJ Environmental & Civil Engineering, Aubrey, TX

Project Name: Redhills Pipeline 1RP-5470



Project Id: OWL043019D-1

Contact: Will Soderstrom

Project Location:

Date Received in Lab: Thu Jun-13-19 06:40 pm

Report Date: 20-JUN-19

Project Manager: Jessica Kramer

<i>Analysis Requested</i>	<i>Lab Id:</i>	627724-031	627724-032	627724-033	627724-034	627724-035	627724-036
	<i>Field Id:</i>	SB-05 0-2'	SB-05 2-4'	SB-05 4-6'	SB-05 6-8'	SB-05 8-12'	SB-05 10-12'
	<i>Depth:</i>	0-2	2-4	4-6	6-8	8-12	10-12
	<i>Matrix:</i>	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	<i>Sampled:</i>	Jun-11-19 13:35	Jun-11-19 13:28	Jun-11-19 13:30	Jun-11-19 13:33	Jun-11-19 13:35	Jun-11-19 13:38
BTEX by SW 8260C SUB: T104704215-19-29	<i>Extracted:</i>	Jun-19-19 16:10					
	<i>Analyzed:</i>	Jun-20-19 02:33					
	<i>Units/RL:</i>	mg/kg RL					
Benzene		<0.00103 0.00103					
Toluene		<0.00103 0.00103					
Ethylbenzene		<0.00103 0.00103					
m,p-Xylenes		<0.00206 0.00206					
o-Xylene		<0.00103 0.00103					
Total Xylenes		<0.00103 0.00103					
Total BTEX		<0.00103 0.00103					
Chloride by EPA 300	<i>Extracted:</i>	Jun-17-19 11:20	Jun-17-19 11:20	Jun-17-19 11:20	Jun-17-19 11:20	Jun-17-19 12:05	Jun-17-19 12:05
	<i>Analyzed:</i>	Jun-17-19 16:13	Jun-17-19 16:17	Jun-17-19 16:22	Jun-17-19 16:27	Jun-17-19 14:33	Jun-17-19 14:50
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Chloride		<5.12 5.12	<5.17 5.17	<5.26 5.26	<5.43 5.43	<5.31 5.31	<5.30 5.30
Percent Moisture	<i>Extracted:</i>						
	<i>Analyzed:</i>	Jun-17-19 17:00	Jun-17-19 17:00	Jun-17-19 17:00	Jun-17-19 17:00	Jun-17-19 17:00	Jun-17-19 17:00
	<i>Units/RL:</i>	% RL	% RL	% RL	% RL	% RL	% RL
Percent Moisture		2.90	4.17	5.81	8.58	4.91	5.13
TPH by SW8015 Mod	<i>Extracted:</i>	Jun-15-19 15:00					
	<i>Analyzed:</i>	Jun-17-19 05:02					
	<i>Units/RL:</i>	mg/kg RL					
Gasoline Range Hydrocarbons (GRO)		<15.4 15.4					
Diesel Range Organics (DRO)		<15.4 15.4					
Motor Oil Range Hydrocarbons (MRO)		<15.4 15.4					
Total TPH		<15.4 15.4					

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Project Assistant



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Project Location:

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Report Date: 20-JUN-19

Project Manager: Jessica Kramer

<i>Analysis Requested</i>	<i>Lab Id:</i>	627724-037	627724-038	627724-039	627724-040	627724-041	627724-042
	<i>Field Id:</i>	SB-05 12-14'	SB-06 0-2'	SB-06 2-4'	SB-06 4-6'	SB-06 6-8'	SB-06 8-10'
	<i>Depth:</i>	12-14	0-2	2-4	4-6	6-8	8-10
	<i>Matrix:</i>	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	<i>Sampled:</i>	Jun-11-19 13:42	Jun-11-19 13:55	Jun-11-19 13:58	Jun-11-19 14:01	Jun-11-19 14:04	Jun-11-19 14:07
BTEX by SW 8260C SUB: T104704215-19-29	<i>Extracted:</i>		Jun-19-19 16:10				
	<i>Analyzed:</i>		Jun-20-19 06:53				
	<i>Units/RL:</i>		mg/kg RL				
Benzene			<0.00104 0.00104				
Toluene			<0.00104 0.00104				
Ethylbenzene			<0.00104 0.00104				
m,p-Xylenes			<0.00207 0.00207				
o-Xylene			<0.00104 0.00104				
Total Xylenes			<0.00104 0.00104				
Total BTEX			<0.00104 0.00104				
Chloride by EPA 300	<i>Extracted:</i>	Jun-17-19 12:05	Jun-17-19 12:05	Jun-17-19 12:05	Jun-17-19 12:05	Jun-17-19 12:05	Jun-17-19 12:05
	<i>Analyzed:</i>	Jun-17-19 14:55	Jun-17-19 15:01	Jun-17-19 15:07	Jun-17-19 15:23	Jun-17-19 15:29	Jun-17-19 15:35
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Chloride		11.6 5.36	<5.20 5.20	<5.35 5.35	<6.76 6.76	<5.18 5.18	9.69 5.29
Percent Moisture	<i>Extracted:</i>						
	<i>Analyzed:</i>	Jun-17-19 17:00	Jun-17-19 17:00	Jun-17-19 17:00	Jun-17-19 17:00	Jun-17-19 17:00	Jun-17-19 17:00
	<i>Units/RL:</i>	% RL	% RL	% RL	% RL	% RL	% RL
Percent Moisture		6.50	3.41	5.56	26.0	4.16	5.93
TPH by SW8015 Mod	<i>Extracted:</i>		Jun-15-19 15:00				
	<i>Analyzed:</i>		Jun-17-19 05:26				
	<i>Units/RL:</i>		mg/kg RL				
Gasoline Range Hydrocarbons (GRO)			<15.5 15.5				
Diesel Range Organics (DRO)			<15.5 15.5				
Motor Oil Range Hydrocarbons (MRO)			<15.5 15.5				
Total TPH			<15.5 15.5				

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Jessica Kramer
Project Assistant



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KJ Environmental & Civil Engineering, Aubrey, TX

Project Name: Redhills Pipeline 1RP-5470



Project Id: OWL043019D-1

Contact: Will Soderstrom

Project Location:

Date Received in Lab: Thu Jun-13-19 06:40 pm

Report Date: 20-JUN-19

Project Manager: Jessica Kramer

<i>Analysis Requested</i>	<i>Lab Id:</i>	627724-043	627724-044	627724-045	627724-046	627724-047	627724-048
	<i>Field Id:</i>	SB-06 10-12'	SB-06 12-14'	SB-07 0-2'	SB-07 2-4'	SB-07 4-6'	SB-07 6-8'
	<i>Depth:</i>	10-12	12-14	0-2	2-4	4-6	6-8
	<i>Matrix:</i>	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	<i>Sampled:</i>	Jun-11-19 14:10	Jun-11-19 14:13	Jun-11-19 15:10	Jun-11-19 15:12	Jun-11-19 15:15	Jun-11-19 15:18
BTEX by SW 8260C SUB: T104704215-19-29	<i>Extracted:</i>			Jun-19-19 16:10			
	<i>Analyzed:</i>			Jun-20-19 01:14			
	<i>Units/RL:</i>			mg/kg RL			
Benzene				<0.00104 0.00104			
Toluene				<0.00104 0.00104			
Ethylbenzene				<0.00104 0.00104			
m,p-Xylenes				<0.00208 0.00208			
o-Xylene				<0.00104 0.00104			
Total Xylenes				<0.00104 0.00104			
Total BTEX				<0.00104 0.00104			
Chloride by EPA 300	<i>Extracted:</i>	Jun-17-19 12:05	Jun-17-19 12:05	Jun-17-19 12:05	Jun-17-19 12:05	Jun-17-19 12:05	Jun-17-19 12:05
	<i>Analyzed:</i>	Jun-17-19 15:40	Jun-17-19 15:46	Jun-17-19 15:52	Jun-17-19 16:08	Jun-17-19 16:14	Jun-17-19 16:31
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Chloride		<5.22 5.22	10.3 5.48	<5.15 5.15	<5.13 5.13	<5.43 5.43	<5.88 5.88
Percent Moisture	<i>Extracted:</i>						
	<i>Analyzed:</i>	Jun-17-19 17:00	Jun-17-19 17:00	Jun-17-19 17:00	Jun-17-19 17:00	Jun-17-19 17:00	Jun-17-19 17:00
	<i>Units/RL:</i>	% RL	% RL	% RL	% RL	% RL	% RL
Percent Moisture		3.38	7.78	3.71	3.15	7.12	14.3
TPH by SW8015 Mod	<i>Extracted:</i>			Jun-15-19 15:00			
	<i>Analyzed:</i>			Jun-17-19 05:50			
	<i>Units/RL:</i>			mg/kg RL			
Gasoline Range Hydrocarbons (GRO)				<15.5 15.5			
Diesel Range Organics (DRO)				<15.5 15.5			
Motor Oil Range Hydrocarbons (MRO)				<15.5 15.5			
Total TPH				<15.5 15.5			

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Jessica Kramer
Project Assistant



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Project Id: OWL043019D-1

Contact: Will Soderstrom

Project Location:

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Report Date: 20-JUN-19

Project Manager: Jessica Kramer

<i>Analysis Requested</i>	<i>Lab Id:</i>	627724-049	627724-050	627724-051	627724-052	627724-053	627724-054
	<i>Field Id:</i>	SB-07 8-10'	SB-07 10-11'	SB-08 0-2'	SB-08 2-4'	SB-08 4-6'	SB-08 6-8'
	<i>Depth:</i>	8-10	10-11	0-2	2-4	4-6	6-8
	<i>Matrix:</i>	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	<i>Sampled:</i>	Jun-11-19 15:20	Jun-11-19 15:23	Jun-11-19 15:33	Jun-11-19 15:36	Jun-11-19 15:39	Jun-11-19 15:43
BTEX by SW 8260C SUB: T104704215-19-29	<i>Extracted:</i>			Jun-19-19 16:10			
	<i>Analyzed:</i>			Jun-20-19 01:34			
	<i>Units/RL:</i>			mg/kg RL			
Benzene				<0.00105 0.00105			
Toluene				<0.00105 0.00105			
Ethylbenzene				<0.00105 0.00105			
m,p-Xylenes				<0.00209 0.00209			
o-Xylene				<0.00105 0.00105			
Total Xylenes				<0.00105 0.00105			
Total BTEX				<0.00105 0.00105			
Chloride by EPA 300	<i>Extracted:</i>	Jun-17-19 12:05	Jun-17-19 12:05	Jun-17-19 12:05	Jun-17-19 12:05	Jun-17-19 12:05	Jun-17-19 12:05
	<i>Analyzed:</i>	Jun-17-19 16:37	Jun-17-19 16:42	Jun-17-19 16:48	Jun-17-19 16:53	Jun-17-19 16:59	Jun-17-19 17:05
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Chloride		<5.13 5.13	<5.95 5.95	<5.26 5.26	<5.23 5.23	<5.50 5.50	<5.37 5.37
Percent Moisture	<i>Extracted:</i>						
	<i>Analyzed:</i>	Jun-17-19 17:00	Jun-17-19 17:00	Jun-17-19 17:00	Jun-17-19 17:00	Jun-17-19 17:00	Jun-17-19 17:00
	<i>Units/RL:</i>	% RL	% RL	% RL	% RL	% RL	% RL
Percent Moisture		3.42	16.5	4.19	3.66	8.21	6.86
TPH by SW8015 Mod	<i>Extracted:</i>			Jun-15-19 15:00			
	<i>Analyzed:</i>			Jun-17-19 06:14			
	<i>Units/RL:</i>			mg/kg RL			
Gasoline Range Hydrocarbons (GRO)				<15.6 15.6			
Diesel Range Organics (DRO)				<15.6 15.6			
Motor Oil Range Hydrocarbons (MRO)				<15.6 15.6			
Total TPH				<15.6 15.6			

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Jessica Kramer

Jessica Kramer
Project Assistant



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KJ Environmental & Civil Engineering, Aubrey, TX

Project Name: Redhills Pipeline 1RP-5470



Project Id: OWL043019D-1

Contact: Will Soderstrom

Project Location:

Date Received in Lab: Thu Jun-13-19 06:40 pm

Report Date: 20-JUN-19

Project Manager: Jessica Kramer

<i>Analysis Requested</i>	<i>Lab Id:</i>	627724-055	627724-056	627724-057	627724-058	627724-059	627724-060
	<i>Field Id:</i>	SB-08 8-10'	SB-08 10-12'	SB-08 12-13'	SB-09 0-2'	SB-09 2-4'	SB-09 4-6'
	<i>Depth:</i>	8-10	10-12	12-13	0-2	2-4	4-6
	<i>Matrix:</i>	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	<i>Sampled:</i>	Jun-11-19 15:45	Jun-11-19 15:48	Jun-11-19 15:50	Jun-11-19 15:59	Jun-11-19 16:03	Jun-11-19 16:06
BTEX by SW 8260C SUB: T104704215-19-29	<i>Extracted:</i>				Jun-19-19 16:10		
	<i>Analyzed:</i>				Jun-20-19 05:32		
	<i>Units/RL:</i>				mg/kg RL		
Benzene					<0.00103 0.00103		
Toluene					<0.00103 0.00103		
Ethylbenzene					<0.00103 0.00103		
m,p-Xylenes					<0.00206 0.00206		
o-Xylene					<0.00103 0.00103		
Total Xylenes					<0.00103 0.00103		
Total BTEX					<0.00103 0.00103		
Chloride by EPA 300	<i>Extracted:</i>	Jun-17-19 12:25	Jun-17-19 12:25	Jun-17-19 12:25	Jun-17-19 12:25	Jun-17-19 12:25	Jun-17-19 12:25
	<i>Analyzed:</i>	Jun-17-19 17:38	Jun-17-19 17:55	Jun-17-19 18:01	Jun-17-19 18:06	Jun-17-19 18:12	Jun-17-19 18:29
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Chloride		<5.23 5.23	<5.38 5.38	<5.32 5.32	2620 25.8	826 5.22	14.9 6.37
Percent Moisture	<i>Extracted:</i>						
	<i>Analyzed:</i>	Jun-17-19 17:00	Jun-17-19 17:00	Jun-17-19 17:00	Jun-17-19 17:00	Jun-17-19 17:00	Jun-17-19 17:00
	<i>Units/RL:</i>	% RL	% RL	% RL	% RL	% RL	% RL
Percent Moisture		4.95	6.53	6.46	3.39	4.09	21.7
TPH by SW8015 Mod	<i>Extracted:</i>				Jun-15-19 15:00		
	<i>Analyzed:</i>				Jun-17-19 06:38		
	<i>Units/RL:</i>				mg/kg RL		
Gasoline Range Hydrocarbons (GRO)					<15.5 15.5		
Diesel Range Organics (DRO)					<15.5 15.5		
Motor Oil Range Hydrocarbons (MRO)					<15.5 15.5		
Total TPH					<15.5 15.5		

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Jessica Kramer
Project Assistant



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Project Name: Redhills Pipeline 1RP-5470



Project Id: OWL043019D-1

Contact: Will Soderstrom

Project Location:

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Report Date: 20-JUN-19

Project Manager: Jessica Kramer

<i>Analysis Requested</i>	<i>Lab Id:</i>	627724-061	627724-062	627724-063	627724-064	627724-065	627724-066
	<i>Field Id:</i>	SB-09 6-8'	SB-09 8-10'	SB-09 10-12'	SB-09 12-14'	SB-09 14-15'	SB-10 0-2'
	<i>Depth:</i>	6-8	8-10	10-12	12-14	14-15	0-2
	<i>Matrix:</i>	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	<i>Sampled:</i>	Jun-11-19 16:09	Jun-11-19 16:13	Jun-11-19 16:17	Jun-11-19 16:20	Jun-11-19 16:23	Jun-11-19 16:30
BTEX by SW 8260C SUB: T104704215-19-29	<i>Extracted:</i>						Jun-19-19 16:10
	<i>Analyzed:</i>						Jun-20-19 05:53
	<i>Units/RL:</i>						mg/kg RL
Benzene							<0.00103 0.00103
Toluene							<0.00103 0.00103
Ethylbenzene							<0.00103 0.00103
m,p-Xylenes							<0.00206 0.00206
o-Xylene							<0.00103 0.00103
Total Xylenes							<0.00103 0.00103
Total BTEX							<0.00103 0.00103
Chloride by EPA 300	<i>Extracted:</i>	Jun-17-19 12:25	Jun-17-19 12:25	Jun-17-19 12:25	Jun-17-19 12:25	Jun-17-19 12:25	Jun-17-19 12:25
	<i>Analyzed:</i>	Jun-17-19 18:35	Jun-17-19 18:40	Jun-17-19 18:46	Jun-17-19 18:51	Jun-17-19 18:57	Jun-17-19 19:14
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Chloride		<5.14 5.14	<5.13 5.13	<6.26 6.26	<5.63 5.63	7.54 5.53	2140 25.7
Percent Moisture	<i>Extracted:</i>						
	<i>Analyzed:</i>	Jun-17-19 17:00	Jun-17-19 17:00	Jun-17-19 17:00	Jun-17-19 17:00	Jun-17-19 17:00	Jun-17-19 17:00
	<i>Units/RL:</i>	% RL	% RL	% RL	% RL	% RL	% RL
Percent Moisture		2.80	3.34	19.3	10.5	9.84	3.55
TPH by SW8015 Mod	<i>Extracted:</i>						Jun-15-19 15:00
	<i>Analyzed:</i>						Jun-17-19 07:03
	<i>Units/RL:</i>						mg/kg RL
Gasoline Range Hydrocarbons (GRO)							<15.5 15.5
Diesel Range Organics (DRO)							<15.5 15.5
Motor Oil Range Hydrocarbons (MRO)							<15.5 15.5
Total TPH							<15.5 15.5

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Jessica Kramer
Project Assistant



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Report Date: 20-JUN-19

Project Manager: Jessica Kramer

<i>Analysis Requested</i>	<i>Lab Id:</i>	627724-067	627724-068	627724-069	627724-070	627724-071	627724-072
	<i>Field Id:</i>	SB-10 2-4'	SB-10 4-6'	SB-10 6-8'	SB-10 8-10'	SB-10 10-12'	SB-10 12-14'
	<i>Depth:</i>	2-4	4-6	6-8	8-10	10-12	12-14
	<i>Matrix:</i>	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	<i>Sampled:</i>	Jun-11-19 16:33	Jun-11-19 16:35	Jun-11-19 16:37	Jun-11-19 16:40	Jun-11-19 16:43	Jun-11-19 16:45
Chloride by EPA 300	<i>Extracted:</i>	Jun-17-19 12:25	Jun-17-19 12:25	Jun-17-19 12:25	Jun-17-19 12:25	Jun-17-19 12:25	Jun-17-19 12:25
	<i>Analyzed:</i>	Jun-17-19 19:19	Jun-17-19 19:36	Jun-17-19 19:42	Jun-17-19 19:48	Jun-17-19 19:53	Jun-17-19 19:59
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Chloride		<5.20 5.20	<5.40 5.40	<5.35 5.35	<5.29 5.29	<5.23 5.23	11.6 5.32
Percent Moisture	<i>Extracted:</i>	Jun-17-19 17:00	Jun-17-19 17:00	Jun-17-19 17:00	Jun-17-19 17:00	Jun-17-19 17:00	Jun-17-19 17:00
	<i>Analyzed:</i>	Jun-17-19 17:00	Jun-17-19 17:00	Jun-17-19 17:00	Jun-17-19 17:00	Jun-17-19 17:00	Jun-17-19 17:00
	<i>Units/RL:</i>	% RL	% RL	% RL	% RL	% RL	% RL
Percent Moisture		3.98	7.30	5.84	5.73	3.87	6.05

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Jessica Kramer

Jessica Kramer
Project Assistant



Certificate of Analysis Summary 627724

KJ Environmental & Civil Engineering, Aubrey, TX

Project Name: Redhills Pipeline 1RP-5470



Project Id: OWL043019D-1

Contact: Will Soderstrom

Project Location:

Date Received in Lab: Thu Jun-13-19 06:40 pm

Report Date: 20-JUN-19

Project Manager: Jessica Kramer

<i>Analysis Requested</i>	<i>Lab Id:</i>	627724-073	627724-074	627724-075	627724-076	627724-077	627724-078
	<i>Field Id:</i>	SB-11 0-2'	SB-11 2-4'	SB-11 4-6'	SB-11 6-8'	SB-11 8-10'	SB-11 10-12'
	<i>Depth:</i>	0-2	2-4	4-6	6-8	8-10	10-12
	<i>Matrix:</i>	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	<i>Sampled:</i>	Jun-11-19 16:50	Jun-11-19 16:53	Jun-11-19 16:55	Jun-11-19 15:58	Jun-11-19 17:01	Jun-11-19 17:04
BTEX by SW 8260C SUB: T104704215-19-29	<i>Extracted:</i>	Jun-19-19 16:10					
	<i>Analyzed:</i>	Jun-20-19 01:54					
	<i>Units/RL:</i>	mg/kg RL					
Benzene		<0.00103 0.00103					
Toluene		<0.00103 0.00103					
Ethylbenzene		<0.00103 0.00103					
m,p-Xylenes		<0.00206 0.00206					
o-Xylene		<0.00103 0.00103					
Total Xylenes		<0.00103 0.00103					
Total BTEX		<0.00103 0.00103					
Chloride by EPA 300	<i>Extracted:</i>	Jun-17-19 12:25	Jun-17-19 12:25	Jun-17-19 16:40	Jun-17-19 16:40	Jun-17-19 16:40	Jun-17-19 16:40
	<i>Analyzed:</i>	Jun-17-19 20:05	Jun-17-19 20:10	Jun-17-19 17:01	Jun-17-19 17:15	Jun-17-19 17:20	Jun-17-19 17:25
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Chloride		<5.24 5.24	<5.23 5.23	<5.26 5.26	<5.54 5.54	<5.32 5.32	<5.24 5.24
Percent Moisture	<i>Extracted:</i>						
	<i>Analyzed:</i>	Jun-17-19 17:00	Jun-17-19 17:00	Jun-17-19 17:00	Jun-17-19 17:00	Jun-17-19 17:00	Jun-17-19 17:00
	<i>Units/RL:</i>	% RL	% RL	% RL	% RL	% RL	% RL
Percent Moisture		3.87	3.77	5.15	9.56	6.37	3.59
TPH by SW8015 Mod	<i>Extracted:</i>	Jun-15-19 15:00					
	<i>Analyzed:</i>	Jun-17-19 07:51					
	<i>Units/RL:</i>	mg/kg RL					
Gasoline Range Hydrocarbons (GRO)		<15.6 15.6					
Diesel Range Organics (DRO)		<15.6 15.6					
Motor Oil Range Hydrocarbons (MRO)		<15.6 15.6					
Total TPH		<15.6 15.6					

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Jessica Kramer

Jessica Kramer
Project Assistant



Certificate of Analysis Summary 627724

KJ Environmental & Civil Engineering, Aubrey, TX

Project Name: Redhills Pipeline 1RP-5470



Project Id: OWL043019D-1

Contact: Will Soderstrom

Project Location:

Date Received in Lab: Thu Jun-13-19 06:40 pm

Report Date: 20-JUN-19

Project Manager: Jessica Kramer

<i>Analysis Requested</i>	<i>Lab Id:</i>	627724-079	627724-080	627724-081	627724-082	627724-083	627724-084
	<i>Field Id:</i>	SB-11 12-14	SB-11 14-16'	SB-11 16-18'	SB-12 0-2'	SB-12 2-4'	SB-12 4-8'
	<i>Depth:</i>	12-14	14-16	16-18	0-2	2-4	4-8
	<i>Matrix:</i>	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	<i>Sampled:</i>	Jun-11-19 17:07	Jun-11-19 17:10	Jun-11-19 17:13	Jun-11-19 17:20	Jun-11-19 17:23	Jun-11-19 17:26
BTEX by SW 8260C SUB: T104704215-19-29	<i>Extracted:</i>				Jun-19-19 16:10		
	<i>Analyzed:</i>				Jun-20-19 02:13		
	<i>Units/RL:</i>				mg/kg RL		
Benzene					<0.00103 0.00103		
Toluene					<0.00103 0.00103		
Ethylbenzene					<0.00103 0.00103		
m,p-Xylenes					<0.00206 0.00206		
o-Xylene					<0.00103 0.00103		
Total Xylenes					<0.00103 0.00103		
Total BTEX					<0.00103 0.00103		
Chloride by EPA 300	<i>Extracted:</i>	Jun-17-19 16:40	Jun-17-19 16:40	Jun-17-19 16:40	Jun-17-19 16:40	Jun-17-19 16:40	Jun-17-19 16:40
	<i>Analyzed:</i>	Jun-17-19 17:30	Jun-17-19 17:44	Jun-17-19 17:49	Jun-17-19 17:54	Jun-17-19 17:59	Jun-17-19 18:04
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Chloride		<5.44 5.44	<5.39 5.39	6.11 5.51	21.3 5.15	<5.23 5.23	<5.27 5.27
Percent Moisture	<i>Extracted:</i>						
	<i>Analyzed:</i>	Jun-17-19 17:00	Jun-17-19 17:00	Jun-17-19 17:00	Jun-17-19 17:00	Jun-17-19 17:00	Jun-17-19 17:00
	<i>Units/RL:</i>	% RL	% RL	% RL	% RL	% RL	% RL
Percent Moisture		9.00	6.53	9.24	3.53	3.47	5.43
TPH by SW8015 Mod	<i>Extracted:</i>				Jun-15-19 15:00		
	<i>Analyzed:</i>				Jun-17-19 08:15		
	<i>Units/RL:</i>				mg/kg RL		
Gasoline Range Hydrocarbons (GRO)					<15.5 15.5		
Diesel Range Organics (DRO)					<15.5 15.5		
Motor Oil Range Hydrocarbons (MRO)					<15.5 15.5		
Total TPH					<15.5 15.5		

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Project Assistant



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Project Name: Redhills Pipeline 1RP-5470



Project Id: OWL043019D-1

Contact: Will Soderstrom

Project Location:

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Report Date: 20-JUN-19

Project Manager: Jessica Kramer

<i>Analysis Requested</i>	<i>Lab Id:</i>	627724-085	627724-086	627724-087	627724-088	627724-089	627724-090
	<i>Field Id:</i>	SB-12 6-8'	SB-12 8-10'	SB-12 10-12'	SB-12 12-14'	SB-12 14-16'	SB-13 0-2'
	<i>Depth:</i>	68	8-10	10-12	12-14	14-16	0-2
	<i>Matrix:</i>	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	<i>Sampled:</i>	Jun-11-19 17:29	Jun-11-19 17:32	Jun-11-19 17:35	Jun-11-19 17:38	Jun-11-19 17:42	Jun-11-19 17:55
BTEX by SW 8260C SUB: T104704215-19-29	<i>Extracted:</i>						Jun-19-19 16:10
	<i>Analyzed:</i>						Jun-20-19 02:53
	<i>Units/RL:</i>						mg/kg RL
Benzene							<0.00103 0.00103
Toluene							<0.00103 0.00103
Ethylbenzene							<0.00103 0.00103
m,p-Xylenes							<0.00206 0.00206
o-Xylene							<0.00103 0.00103
Total Xylenes							<0.00103 0.00103
Total BTEX							<0.00103 0.00103
Chloride by EPA 300	<i>Extracted:</i>	Jun-17-19 16:40	Jun-17-19 16:40	Jun-17-19 16:40	Jun-17-19 16:40	Jun-17-19 16:40	Jun-17-19 16:40
	<i>Analyzed:</i>	Jun-17-19 18:08	Jun-17-19 18:23	Jun-17-19 18:28	Jun-17-19 18:42	Jun-17-19 18:47	Jun-17-19 18:52
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Chloride		<5.27 5.27	<5.19 5.19	<5.13 5.13	<5.47 5.47	<5.46 5.46	13.3 5.22
Percent Moisture	<i>Extracted:</i>						
	<i>Analyzed:</i>	Jun-17-19 17:00	Jun-17-19 17:00	Jun-17-19 17:00	Jun-17-19 17:00	Jun-17-19 17:00	Jun-17-19 17:00
	<i>Units/RL:</i>	% RL	% RL	% RL	% RL	% RL	% RL
Percent Moisture		4.74	3.57	3.45	8.11	8.30	3.29
TPH by SW8015 Mod	<i>Extracted:</i>						Jun-15-19 15:00
	<i>Analyzed:</i>						Jun-17-19 08:40
	<i>Units/RL:</i>						mg/kg RL
Gasoline Range Hydrocarbons (GRO)							<15.5 15.5
Diesel Range Organics (DRO)							<15.5 15.5
Motor Oil Range Hydrocarbons (MRO)							<15.5 15.5
Total TPH							<15.5 15.5

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Project Name: Redhills Pipeline 1RP-5470



Project Id: OWL043019D-1

Contact: Will Soderstrom

Project Location:

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Report Date: 20-JUN-19

Project Manager: Jessica Kramer

<i>Analysis Requested</i>	<i>Lab Id:</i>	627724-091	627724-092	627724-093	627724-094	627724-095	627724-096
	<i>Field Id:</i>	SB-13 2-4'	SB-13 4-6'	SB-13 6-8'	SB-13 8-10'	SB-13 10-12'	SB-13 12-14'
	<i>Depth:</i>	2-4	4-6	6-8	8-10	10-12	12-14
	<i>Matrix:</i>	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	<i>Sampled:</i>	Jun-11-19 17:58	Jun-11-19 18:02	Jun-11-19 18:05	Jun-11-19 18:09	Jun-11-19 18:13	Jun-11-19 18:17
Chloride by EPA 300	<i>Extracted:</i>	Jun-17-19 16:40	Jun-17-19 16:40	Jun-17-19 16:40	Jun-17-19 16:40	Jun-17-19 16:55	Jun-17-19 16:55
	<i>Analyzed:</i>	Jun-17-19 18:57	Jun-17-19 19:02	Jun-17-19 19:07	Jun-17-19 19:11	Jun-17-19 19:41	Jun-17-19 19:55
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Chloride		8.44 5.12	27.0 5.25	<5.13 5.13	5.20 5.17	<5.23 5.23	<5.70 5.70
Percent Moisture	<i>Extracted:</i>	Jun-17-19 17:00	Jun-17-19 17:00	Jun-17-19 17:00	Jun-17-19 17:00	Jun-17-19 17:00	Jun-17-19 17:00
	<i>Analyzed:</i>	Jun-17-19 17:00	Jun-17-19 17:00	Jun-17-19 17:00	Jun-17-19 17:00	Jun-17-19 17:00	Jun-17-19 17:00
	<i>Units/RL:</i>	% RL	% RL	% RL	% RL	% RL	% RL
Percent Moisture		2.33	5.09	3.31	3.37	4.32	13.1

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Project Assistant



Certificate of Analysis Summary 627724

KJ Environmental & Civil Engineering, Aubrey, TX

Project Name: Redhills Pipeline 1RP-5470



Project Id: OWL043019D-1

Contact: Will Soderstrom

Project Location:

Date Received in Lab: Thu Jun-13-19 06:40 pm

Report Date: 20-JUN-19

Project Manager: Jessica Kramer

<i>Analysis Requested</i>	<i>Lab Id:</i>	627724-097	627724-098	627724-099	627724-100	627724-101	627724-102
	<i>Field Id:</i>	SB-13 14-16'	SB-14 0-2'	SB-14 2-4'	SB-14-4-6'	SB-14 6-8'	SB-14 8-10'
	<i>Depth:</i>	14-16	0-2	2-4	4-6	6-8	8-10
	<i>Matrix:</i>	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	<i>Sampled:</i>	Jun-11-19 18:20	Jun-12-19 09:39	Jun-12-19 09:42	Jun-12-19 09:45	Jun-12-19 09:48	Jun-12-19 09:51
BTEX by SW 8260C SUB: T104704215-19-29	<i>Extracted:</i>		Jun-19-19 16:10				
	<i>Analyzed:</i>		Jun-20-19 03:12				
	<i>Units/RL:</i>		mg/kg RL				
Benzene			<0.00103 0.00103				
Toluene			<0.00103 0.00103				
Ethylbenzene			<0.00103 0.00103				
m,p-Xylenes			<0.00207 0.00207				
o-Xylene			<0.00103 0.00103				
Total Xylenes			<0.00103 0.00103				
Total BTEX			<0.00103 0.00103				
Chloride by EPA 300	<i>Extracted:</i>	Jun-17-19 16:55	Jun-17-19 16:55	Jun-17-19 16:55	Jun-17-19 16:55	Jun-17-19 16:55	Jun-17-19 16:55
	<i>Analyzed:</i>	Jun-17-19 20:00	Jun-18-19 08:45	Jun-17-19 20:10	Jun-17-19 20:24	Jun-17-19 20:29	Jun-17-19 20:34
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Chloride		<5.45 5.45	1490 26.0	1440 5.19	<5.46 5.46	<5.20 5.20	<5.18 5.18
Percent Moisture	<i>Extracted:</i>						
	<i>Analyzed:</i>	Jun-17-19 17:00	Jun-17-19 17:00	Jun-17-19 17:00	Jun-17-19 17:00	Jun-17-19 17:00	Jun-17-19 17:00
	<i>Units/RL:</i>	% RL	% RL	% RL	% RL	% RL	% RL
Percent Moisture		7.54	3.71	3.30	7.50	4.11	4.04
TPH by SW8015 Mod	<i>Extracted:</i>		Jun-15-19 15:00				
	<i>Analyzed:</i>		Jun-17-19 09:04				
	<i>Units/RL:</i>		mg/kg RL				
Gasoline Range Hydrocarbons (GRO)			<15.5 15.5				
Diesel Range Organics (DRO)			<15.5 15.5				
Motor Oil Range Hydrocarbons (MRO)			<15.5 15.5				
Total TPH			<15.5 15.5				

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Jessica Kramer

Jessica Kramer
Project Assistant



Certificate of Analysis Summary 627724

KJ Environmental & Civil Engineering, Aubrey, TX

Project Name: Redhills Pipeline 1RP-5470



Project Id: OWL043019D-1

Contact: Will Soderstrom

Project Location:

Date Received in Lab: Thu Jun-13-19 06:40 pm

Report Date: 20-JUN-19

Project Manager: Jessica Kramer

<i>Analysis Requested</i>	<i>Lab Id:</i>	627724-103	627724-104	627724-105	627724-106	627724-107	627724-108
	<i>Field Id:</i>	SB-14 10-12'	SB-14 12-14'	SB-14 14-16'	SB-15 0-2'	SB-15 2-4'	SB-15 4-6'
	<i>Depth:</i>	10-12	12-14	14-16	0-2	2-4	4-6
	<i>Matrix:</i>	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	<i>Sampled:</i>	Jun-12-19 09:54	Jun-12-19 09:57	Jun-12-19 10:00	Jun-12-19 10:07	Jun-12-19 10:10	Jun-12-19 10:13
BTEX by SW 8260C SUB: T104704215-19-29	<i>Extracted:</i>				Jun-19-19 16:10		
	<i>Analyzed:</i>				Jun-20-19 03:32		
	<i>Units/RL:</i>				mg/kg RL		
Benzene					<0.00102 0.00102		
Toluene					<0.00102 0.00102		
Ethylbenzene					<0.00102 0.00102		
m,p-Xylenes					<0.00204 0.00204		
o-Xylene					<0.00102 0.00102		
Total Xylenes					<0.00102 0.00102		
Total BTEX					<0.00102 0.00102		
Chloride by EPA 300	<i>Extracted:</i>	Jun-17-19 16:55	Jun-17-19 16:55	Jun-17-19 16:55	Jun-17-19 16:55	Jun-17-19 16:55	Jun-17-19 16:55
	<i>Analyzed:</i>	Jun-17-19 20:39	Jun-17-19 20:43	Jun-17-19 20:48	Jun-17-19 21:03	Jun-17-19 21:08	Jun-17-19 21:22
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Chloride		<5.12 5.12	<5.75 5.75	<5.25 5.25	<5.11 5.11	<5.06 5.06	<5.15 5.15
Percent Moisture	<i>Extracted:</i>						
	<i>Analyzed:</i>	Jun-17-19 17:00	Jun-17-19 17:00	Jun-17-19 17:00	Jun-17-19 17:00	Jun-17-19 17:00	Jun-17-19 17:00
	<i>Units/RL:</i>	% RL	% RL	% RL	% RL	% RL	% RL
Percent Moisture		3.35	13.9	5.73	1.82	1.12	2.38
TPH by SW8015 Mod	<i>Extracted:</i>				Jun-15-19 15:00		
	<i>Analyzed:</i>				Jun-17-19 09:28		
	<i>Units/RL:</i>				mg/kg RL		
Gasoline Range Hydrocarbons (GRO)					<15.2 15.2		
Diesel Range Organics (DRO)					<15.2 15.2		
Motor Oil Range Hydrocarbons (MRO)					<15.2 15.2		
Total TPH					<15.2 15.2		

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Jessica Kramer

Jessica Kramer
Project Assistant



Certificate of Analysis Summary 627724

KJ Environmental & Civil Engineering, Aubrey, TX

Project Name: Redhills Pipeline 1RP-5470



Project Id: OWL043019D-1

Contact: Will Soderstrom

Project Location:

Date Received in Lab: Thu Jun-13-19 06:40 pm

Report Date: 20-JUN-19

Project Manager: Jessica Kramer

<i>Analysis Requested</i>	<i>Lab Id:</i>	627724-109	627724-110	627724-111	627724-112	627724-113	627724-114
	<i>Field Id:</i>	SB-15 6-8'	SB-15 8-10'	SB-15 10-12'	SB-15 12-14'	SB-15 14-16'	SB-16 0-2'
	<i>Depth:</i>	6-8	8-10	10-12	12-14	14-16	0-2
	<i>Matrix:</i>	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	<i>Sampled:</i>	Jun-12-19 10:17	Jun-12-19 10:20	Jun-12-19 10:23	Jun-12-19 10:27	Jun-12-19 10:30	Jun-12-19 10:42
BTEX by SW 8260C SUB: T104704215-19-29	<i>Extracted:</i>						Jun-19-19 16:10
	<i>Analyzed:</i>						Jun-20-19 04:12
	<i>Units/RL:</i>						mg/kg RL
Benzene							<0.00101 0.00101
Toluene							<0.00101 0.00101
Ethylbenzene							<0.00101 0.00101
m,p-Xylenes							<0.00201 0.00201
o-Xylene							<0.00101 0.00101
Total Xylenes							<0.00101 0.00101
Total BTEX							<0.00101 0.00101
Chloride by EPA 300	<i>Extracted:</i>	Jun-17-19 16:55	Jun-17-19 16:55	Jun-17-19 16:55	Jun-17-19 16:55	Jun-17-19 16:55	Jun-17-19 16:55
	<i>Analyzed:</i>	Jun-17-19 21:27	Jun-17-19 21:32	Jun-17-19 21:37	Jun-17-19 21:42	Jun-17-19 21:46	Jun-17-19 21:51
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Chloride		<5.35 5.35	<5.26 5.26	<5.22 5.22	<5.30 5.30	<5.46 5.46	<5.08 5.08
Percent Moisture	<i>Extracted:</i>						
	<i>Analyzed:</i>	Jun-17-19 17:00	Jun-17-19 17:00	Jun-17-19 17:00	Jun-17-19 17:00	Jun-17-19 17:00	Jun-17-19 17:00
	<i>Units/RL:</i>	% RL	% RL	% RL	% RL	% RL	% RL
Percent Moisture		5.56	5.15	4.80	4.98	7.44	0.640
TPH by SW8015 Mod	<i>Extracted:</i>						Jun-15-19 15:00
	<i>Analyzed:</i>						Jun-17-19 09:52
	<i>Units/RL:</i>						mg/kg RL
Gasoline Range Hydrocarbons (GRO)							<15.1 15.1
Diesel Range Organics (DRO)							<15.1 15.1
Motor Oil Range Hydrocarbons (MRO)							<15.1 15.1
Total TPH							<15.1 15.1

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Jessica Kramer

Jessica Kramer
Project Assistant



Certificate of Analysis Summary 627724

KJ Environmental & Civil Engineering, Aubrey, TX

Project Name: Redhills Pipeline 1RP-5470



Project Id: OWL043019D-1

Contact: Will Soderstrom

Project Location:

Date Received in Lab: Thu Jun-13-19 06:40 pm

Report Date: 20-JUN-19

Project Manager: Jessica Kramer

Analysis Requested	Lab Id:	627724-115	627724-116	627724-117	627724-118	627724-119	627724-120
	Field Id:	SB-16 2-4'	SB-16 4-6'	SB-16 6-8'	SB-16 8-10'	SB-16 10-12'	SB-16 12-14'
	Depth:	2-4	4-6	6-8	8-10	10-12	12-14
	Matrix:	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	Sampled:	Jun-12-19 10:45	Jun-12-19 10:48	Jun-12-19 10:52	Jun-12-19 10:56	Jun-12-19 11:00	Jun-12-19 11:03
Chloride by EPA 300	Extracted:	Jun-17-19 17:30	Jun-17-19 17:30	Jun-17-19 17:30	Jun-17-19 17:30	Jun-17-19 17:30	Jun-17-19 17:30
	Analyzed:	Jun-17-19 20:44	Jun-17-19 21:01	Jun-17-19 21:07	Jun-17-19 21:12	Jun-17-19 21:18	Jun-17-19 21:35
	Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Chloride		<5.07 5.07	<5.09 5.09	<5.09 5.09	<5.30 5.30	<5.38 5.38	<5.29 5.29
Percent Moisture	Extracted:	Jun-17-19 17:00	Jun-17-19 17:00	Jun-17-19 17:00	Jun-17-19 17:00	Jun-17-19 17:00	Jun-17-19 17:00
	Analyzed:	Jun-17-19 17:00	Jun-17-19 17:00	Jun-17-19 17:00	Jun-17-19 17:00	Jun-17-19 17:00	Jun-17-19 17:00
	Units/RL:	% RL	% RL	% RL	% RL	% RL	% RL
Percent Moisture		0.910	1.23	2.06	5.12	6.33	4.70

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Certificate of Analysis Summary 627724

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Project Name: Redhills Pipeline 1RP-5470



Project Id: OWL043019D-1

Contact: Will Soderstrom

Project Location:

Date Received in Lab: Thu Jun-13-19 06:40 pm

Report Date: 20-JUN-19

Project Manager: Jessica Kramer

<i>Analysis Requested</i>	<i>Lab Id:</i>	627724-121	627724-122	627724-123	627724-124	627724-125	627724-126
	<i>Field Id:</i>	SB-16 14-16'	SB-17 0-2'	SB-17 2-4'	SB-17 4-6'	SB-17 6-8'	SB-17 8-10'
	<i>Depth:</i>	14-16	0-2	2-4	4-6	6-8	8-10
	<i>Matrix:</i>	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	<i>Sampled:</i>	Jun-12-19 11:06	Jun-12-19 11:15	Jun-12-19 11:18	Jun-12-19 11:21	Jun-12-19 11:24	Jun-12-19 11:27
BTEX by SW 8260C SUB: T104704215-19-29	<i>Extracted:</i>		Jun-19-19 16:10				
	<i>Analyzed:</i>		Jun-20-19 06:13				
	<i>Units/RL:</i>		mg/kg RL				
Benzene			<0.00103 0.00103				
Toluene			<0.00103 0.00103				
Ethylbenzene			<0.00103 0.00103				
m,p-Xylenes			<0.00205 0.00205				
o-Xylene			<0.00103 0.00103				
Total Xylenes			<0.00103 0.00103				
Total BTEX			<0.00103 0.00103				
Chloride by EPA 300	<i>Extracted:</i>	Jun-17-19 17:30	Jun-17-19 17:30	Jun-17-19 17:30	Jun-17-19 17:30	Jun-17-19 17:30	Jun-17-19 17:30
	<i>Analyzed:</i>	Jun-17-19 21:40	Jun-17-19 21:46	Jun-17-19 21:52	Jun-17-19 21:57	Jun-17-19 22:03	Jun-17-19 22:20
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Chloride		<5.37 5.37	<5.11 5.11	<5.04 5.04	<5.32 5.32	<5.45 5.45	<5.41 5.41
Percent Moisture	<i>Extracted:</i>						
	<i>Analyzed:</i>	Jun-17-19 17:00	Jun-17-19 17:00	Jun-17-19 17:00	Jun-17-19 17:00	Jun-17-19 17:00	Jun-17-19 17:00
	<i>Units/RL:</i>	% RL	% RL	% RL	% RL	% RL	% RL
Percent Moisture		7.40	1.89	1.61	5.62	7.78	6.91
TPH by SW8015 Mod	<i>Extracted:</i>		Jun-15-19 15:00				
	<i>Analyzed:</i>		Jun-17-19 10:17				
	<i>Units/RL:</i>		mg/kg RL				
Gasoline Range Hydrocarbons (GRO)			<15.3 15.3				
Diesel Range Organics (DRO)			<15.3 15.3				
Motor Oil Range Hydrocarbons (MRO)			<15.3 15.3				
Total TPH			<15.3 15.3				

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Jessica Kramer

Jessica Kramer
Project Assistant



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KJ Environmental & Civil Engineering, Aubrey, TX

Project Name: Redhills Pipeline 1RP-5470



Project Id: OWL043019D-1

Contact: Will Soderstrom

Project Location:

Date Received in Lab: Thu Jun-13-19 06:40 pm

Report Date: 20-JUN-19

Project Manager: Jessica Kramer

<i>Analysis Requested</i>	<i>Lab Id:</i>	627724-127	627724-128	627724-129	627724-130	627724-131	627724-132
	<i>Field Id:</i>	SB-17 10-12'	SB-17 12-14'	SB-17 14-16'	SB-18 0-2'	SB-18 2-4'	SB-18 4-6'
	<i>Depth:</i>	10-12	12-14	14-16	0-2	2-4	4-6
	<i>Matrix:</i>	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	<i>Sampled:</i>	Jun-12-19 11:30	Jun-12-19 11:33	Jun-12-19 11:36	Jun-12-19 11:47	Jun-12-19 11:50	Jun-12-19 11:53
BTEX by SW 8260C SUB: T104704215-19-29	<i>Extracted:</i>				Jun-19-19 16:10		
	<i>Analyzed:</i>				Jun-20-19 04:32		
	<i>Units/RL:</i>				mg/kg RL		
Benzene					<0.00100 0.00100		
Toluene					<0.00100 0.00100		
Ethylbenzene					<0.00100 0.00100		
m,p-Xylenes					<0.00200 0.00200		
o-Xylene					<0.00100 0.00100		
Total Xylenes					<0.00100 0.00100		
Total BTEX					<0.00100 0.00100		
Chloride by EPA 300	<i>Extracted:</i>	Jun-17-19 17:30	Jun-17-19 17:30	Jun-17-19 17:30	Jun-17-19 17:30	Jun-17-19 17:30	Jun-17-19 17:30
	<i>Analyzed:</i>	Jun-17-19 22:25	Jun-17-19 22:42	Jun-17-19 22:48	Jun-17-19 22:53	Jun-17-19 22:59	Jun-17-19 23:05
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Chloride		<5.26 5.26	<5.85 5.85	<5.83 5.83	<5.05 5.05	<5.07 5.07	<5.15 5.15
Percent Moisture	<i>Extracted:</i>						
	<i>Analyzed:</i>	Jun-17-19 17:00	Jun-17-19 17:00	Jun-17-19 17:00	Jun-17-19 17:00	Jun-17-19 17:00	Jun-17-19 17:00
	<i>Units/RL:</i>	% RL	% RL	% RL	% RL	% RL	% RL
Percent Moisture		4.02	14.4	14.3	0.750	0.960	2.59
TPH by SW8015 Mod	<i>Extracted:</i>				Jun-15-19 15:00		
	<i>Analyzed:</i>				Jun-17-19 10:41		
	<i>Units/RL:</i>				mg/kg RL		
Gasoline Range Hydrocarbons (GRO)					<15.1 15.1		
Diesel Range Organics (DRO)					<15.1 15.1		
Motor Oil Range Hydrocarbons (MRO)					<15.1 15.1		
Total TPH					<15.1 15.1		

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Jessica Kramer

Jessica Kramer
Project Assistant



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Project Name: Redhills Pipeline 1RP-5470



Project Id: OWL043019D-1

Contact: Will Soderstrom

Project Location:

Date Received in Lab: Thu Jun-13-19 06:40 pm

Report Date: 20-JUN-19

Project Manager: Jessica Kramer

<i>Analysis Requested</i>	<i>Lab Id:</i>	627724-133	627724-134	627724-135	627724-136	627724-137	627724-138
	<i>Field Id:</i>	SB-18 6-8'	SB-18 8-10'	SB-18 10-12'	SB-18 12-14'	SB-18 14-16'	BG-01 0-2'
	<i>Depth:</i>	6-8	8-10	10-12	12-14	14-16	0-2
	<i>Matrix:</i>	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	<i>Sampled:</i>	Jun-12-19 11:56	Jun-12-19 12:00	Jun-12-19 12:03	Jun-12-19 12:06	Jun-12-19 12:10	Jun-11-19 14:27
BTEX by SW 8260C SUB: T104704215-19-29	<i>Extracted:</i>						Jun-19-19 16:10
	<i>Analyzed:</i>						Jun-20-19 04:52
	<i>Units/RL:</i>						mg/kg RL
Benzene							<0.00103 0.00103
Toluene							<0.00103 0.00103
Ethylbenzene							<0.00103 0.00103
m,p-Xylenes							<0.00206 0.00206
o-Xylene							<0.00103 0.00103
Total Xylenes							<0.00103 0.00103
Total BTEX							<0.00103 0.00103
Chloride by EPA 300	<i>Extracted:</i>	Jun-17-19 17:30	Jun-17-19 17:30	Jun-17-19 17:40	Jun-17-19 17:40	Jun-17-19 17:40	Jun-17-19 17:40
	<i>Analyzed:</i>	Jun-17-19 23:10	Jun-17-19 23:16	Jun-18-19 10:24	Jun-18-19 10:41	Jun-18-19 10:47	Jun-18-19 10:52
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Chloride		<5.26 5.26	<5.06 5.06	<5.03 5.03	<5.13 5.13	<5.12 5.12	<5.09 5.09
Percent Moisture	<i>Extracted:</i>						
	<i>Analyzed:</i>	Jun-17-19 17:00	Jun-17-19 17:00	Jun-17-19 17:00	Jun-17-19 17:00	Jun-17-19 17:00	Jun-17-19 17:00
	<i>Units/RL:</i>	% RL	% RL	% RL	% RL	% RL	% RL
Percent Moisture		4.23	1.77	1.48	1.51	2.56	2.75
TPH by SW8015 Mod	<i>Extracted:</i>						Jun-15-19 15:00
	<i>Analyzed:</i>						Jun-17-19 11:05
	<i>Units/RL:</i>						mg/kg RL
Gasoline Range Hydrocarbons (GRO)							<15.4 15.4
Diesel Range Organics (DRO)							<15.4 15.4
Motor Oil Range Hydrocarbons (MRO)							<15.4 15.4
Total TPH							<15.4 15.4

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Jessica Kramer

Jessica Kramer
Project Assistant



Certificate of Analysis Summary 627724

KJ Environmental & Civil Engineering, Aubrey, TX

Project Name: Redhills Pipeline 1RP-5470



Project Id: OWL043019D-1

Contact: Will Soderstrom

Project Location:

Date Received in Lab: Thu Jun-13-19 06:40 pm

Report Date: 20-JUN-19

Project Manager: Jessica Kramer

Analysis Requested	Lab Id:	627724-139	627724-140	627724-141	627724-142	627724-143	627724-144
	Field Id:	BG-01 2-4'	BG-01 4-6'	BG-01 6-8'	BG-01 8-10'	BG-01 10-12'	BG 12-14'
	Depth:	2-4	4-6	6-8	8-10	10-12	12-14
	Matrix:	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	Sampled:	Jun-11-19 14:30	Jun-11-19 14:32	Jun-11-19 14:35	Jun-11-19 14:38	Jun-11-19 14:42	Jun-11-19 14:45
Chloride by EPA 300	Extracted:	Jun-17-19 17:40	Jun-17-19 17:40	Jun-17-19 17:40	Jun-17-19 17:40	Jun-17-19 17:40	Jun-17-19 17:40
	Analyzed:	Jun-18-19 10:58	Jun-18-19 11:15	Jun-18-19 11:21	Jun-18-19 11:26	Jun-18-19 11:32	Jun-18-19 11:37
	Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Chloride		<5.25 5.25	<5.37 5.37	<5.39 5.39	<5.43 5.43	<5.25 5.25	<5.39 5.39
Percent Moisture	Extracted:	Jun-17-19 17:00	Jun-17-19 17:00	Jun-17-19 17:00	Jun-17-19 17:00	Jun-17-19 17:00	Jun-17-19 17:00
	Analyzed:	Jun-17-19 17:00	Jun-17-19 17:00	Jun-17-19 17:00	Jun-17-19 17:00	Jun-17-19 17:00	Jun-17-19 17:00
	Units/RL:	% RL	% RL	% RL	% RL	% RL	% RL
Percent Moisture		5.76	6.64	6.56	6.96	3.78	6.83

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Jessica Kramer

Jessica Kramer
Project Assistant

Analytical Report 627724
for
KJ Environmental & Civil Engineering

Project Manager: Will Soderstrom

Redhills Pipeline 1RP-5470

OWL043019D-1

20-JUN-19

Collected By: Client



1211 W. Florida Ave
Midland TX 79701

Xenco-Houston (EPA Lab Code: TX00122):
Texas (T104704215-19-29), Arizona (AZ0765), Florida (E871002-24), Louisiana (03054)
Oklahoma (2017-142)

Xenco-Dallas (EPA Lab Code: TX01468):
Texas (T104704295-19-19), Arizona (AZ0809), Arkansas (17-063-0)

Xenco-El Paso (EPA Lab Code: TX00127): Texas (T104704221-18-14)
Xenco-Lubbock (EPA Lab Code: TX00139): Texas (T104704219-19-20)
Xenco-Midland (EPA Lab Code: TX00158): Texas (T104704400-18-18)
Xenco-San Antonio (EPA Lab Code: TNI02385): Texas (T104704534-18-4)
Xenco Phoenix (EPA Lab Code: AZ00901): Arizona (AZ0757)
Xenco-Atlanta (LELAP Lab ID #04176)
Xenco-Tampa: Florida (E87429), North Carolina (483)



20-JUN-19

Project Manager: **Will Soderstrom**
KJ Environmental & Civil Engineering
500 Moseley Rd
Aubrey, TX 76227

Reference: XENCO Report No(s): **627724**
Redhills Pipeline 1RP-5470
Project Address:

Will Soderstrom:

We are reporting to you the results of the analyses performed on the samples received under the project name referenced above and identified with the XENCO Report Number(s) 627724. All results being reported under this Report Number apply to the samples analyzed and properly identified with a Laboratory ID number. Subcontracted analyses are identified in this report with either the NELAC certification number of the subcontract lab in the analyst ID field, or the complete subcontracted report attached to this report.

Unless otherwise noted in a Case Narrative, all data reported in this Analytical Report are in compliance with NELAC standards. The uncertainty of measurement associated with the results of analysis reported is available upon request. Should insufficient sample be provided to the laboratory to meet the method and NELAC Matrix Duplicate and Matrix Spike requirements, then the data will be analyzed, evaluated and reported using all other available quality control measures.

The validity and integrity of this report will remain intact as long as it is accompanied by this letter and reproduced in full, unless written approval is granted by XENCO Laboratories. This report will be filed for at least 5 years in our archives after which time it will be destroyed without further notice, unless otherwise arranged with you. The samples received, and described as recorded in Report No. 627724 will be filed for 45 days, and after that time they will be properly disposed without further notice, unless otherwise arranged with you. We reserve the right to return to you any unused samples, extracts or solutions related to them if we consider so necessary (e.g., samples identified as hazardous waste, sample sizes exceeding analytical standard practices, controlled substances under regulated protocols, etc).

We thank you for selecting XENCO Laboratories to serve your analytical needs. If you have any questions concerning this report, please feel free to contact us at any time.

Respectfully,

Jessica Kramer

Project Assistant

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Redhills Pipeline 1RP-5470

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
SB-01 0-2'	S	06-11-19 10:50	0 - 2	627724-001
SB-01 2-4'	S	06-11-19 10:53	2 - 4	627724-002
SB-01 4-6'	S	06-11-19 10:58	4 - 6	627724-003
SB-01 6-8'	S	06-11-19 11:01	6 - 8	627724-004
SB-01 8-10'	S	06-11-19 11:03	8 - 10	627724-005
SB-01 10-12'	S	06-11-19 11:06	10 - 12	627724-006
SB-01 12-14'	S	06-11-19 11:09	12 - 14	627724-007
SB-01 14-16'	S	06-11-19 11:13	14 - 16	627724-008
SB-02 0-2'	S	06-11-19 11:30	0 - 2	627724-009
SB-02 2-4'	S	06-11-19 11:33	2 - 4	627724-010
SB-02 4-6'	S	06-11-19 11:35	4 - 6	627724-011
SB-02 6-8'	S	06-11-19 11:38	6 - 8	627724-012
SB-02 8-10'	S	06-11-19 11:40	8 - 10	627724-013
SB-02 10-12'	S	06-11-19 11:42	10 - 12	627724-014
SB-02 12-14'	S	06-11-19 11:45	12 - 14	627724-015
SB-02 14-15.5'	S	06-11-19 11:47	14 - 15.5	627724-016
SB-03 0-2'	S	06-11-19 11:57	0 - 2	627724-017
SB-03 2-4'	S	06-11-19 11:59	2 - 4	627724-018
SB-03 4-6'	S	06-11-19 12:06	4 - 6	627724-019
SB-03 6-8'	S	06-11-19 12:08	6 - 8	627724-020
SB-03 8-10'	S	06-11-19 12:10	8 - 10	627724-021
SB-03 10-12'	S	06-11-19 12:13	10 - 12	627724-022
SB-03 12-14'	S	06-11-19 12:15	12 - 14	627724-023
SB-04 0-2'	S	06-11-19 12:26	0 - 2	627724-024
SB-04 2-4'	S	06-11-19 12:28	2 - 4	627724-025
SB-04 4-6'	S	06-11-19 12:30	4 - 6	627724-026
SB-04 6-8'	S	06-11-19 12:33	6 - 8	627724-027
SB-04 8-10'	S	06-11-19 12:35	8 - 10	627724-028
SB-04 10-12'	S	06-11-19 12:38	10 - 12	627724-029
SB-05 12-14'	S	06-11-19 12:40	12 - 14	627724-030
SB-05 0-2'	S	06-11-19 13:35	0 - 2	627724-031
SB-05 2-4'	S	06-11-19 13:28	2 - 4	627724-032
SB-05 4-6'	S	06-11-19 13:30	4 - 6	627724-033
SB-05 6-8'	S	06-11-19 13:33	6 - 8	627724-034
SB-05 8-12'	S	06-11-19 13:35	8 - 12	627724-035
SB-05 10-12'	S	06-11-19 13:38	10 - 12	627724-036
SB-05 12-14'	S	06-11-19 13:42	12 - 14	627724-037
SB-06 0-2'	S	06-11-19 13:55	0 - 2	627724-038
SB-06 2-4'	S	06-11-19 13:58	2 - 4	627724-039
SB-06 4-6'	S	06-11-19 14:01	4 - 6	627724-040
SB-06 6-8'	S	06-11-19 14:04	6 - 8	627724-041
SB-06 8-10'	S	06-11-19 14:07	8 - 10	627724-042
SB-06 10-12'	S	06-11-19 14:10	10 - 12	627724-043

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Redhills Pipeline 1RP-5470

SB-06 12-14'	S	06-11-19 14:13	12 - 14	627724-044
SB-07 0-2'	S	06-11-19 15:10	0 - 2	627724-045
SB-07 2-4'	S	06-11-19 15:12	2 - 4	627724-046
SB-07 4-6'	S	06-11-19 15:15	4 - 6	627724-047
SB-07 6-8'	S	06-11-19 15:18	6 - 8	627724-048
SB-07 8-10'	S	06-11-19 15:20	8 - 10	627724-049
SB-07 10-11'	S	06-11-19 15:23	10 - 11	627724-050
SB-08 0-2'	S	06-11-19 15:33	0 - 2	627724-051
SB-08 2-4'	S	06-11-19 15:36	2 - 4	627724-052
SB-08 4-6'	S	06-11-19 15:39	4 - 6	627724-053
SB-08 6-8'	S	06-11-19 15:43	6 - 8	627724-054
SB-08 8-10'	S	06-11-19 15:45	8 - 10	627724-055
SB-08 10-12'	S	06-11-19 15:48	10 - 12	627724-056
SB-08 12-13'	S	06-11-19 15:50	12 - 13	627724-057
SB-09 0-2'	S	06-11-19 15:59	0 - 2	627724-058
SB-09 2-4'	S	06-11-19 16:03	2 - 4	627724-059
SB-09 4-6'	S	06-11-19 16:06	4 - 6	627724-060
SB-09 6-8'	S	06-11-19 16:09	6 - 8	627724-061
SB-09 8-10'	S	06-11-19 16:13	8 - 10	627724-062
SB-09 10-12'	S	06-11-19 16:17	10 - 12	627724-063
SB-09 12-14'	S	06-11-19 16:20	12 - 14	627724-064
SB-09 14-15'	S	06-11-19 16:23	14 - 15	627724-065
SB-10 0-2'	S	06-11-19 16:30	0 - 2	627724-066
SB-10 2-4'	S	06-11-19 16:33	2 - 4	627724-067
SB-10 4-6'	S	06-11-19 16:35	4 - 6	627724-068
SB-10 6-8'	S	06-11-19 16:37	6 - 8	627724-069
SB-10 8-10'	S	06-11-19 16:40	8 - 10	627724-070
SB-10 10-12'	S	06-11-19 16:43	10 - 12	627724-071
SB-10 12-14'	S	06-11-19 16:45	12 - 14	627724-072
SB-11 0-2'	S	06-11-19 16:50	0 - 2	627724-073
SB-11 2-4'	S	06-11-19 16:53	2 - 4	627724-074
SB-11 4-6'	S	06-11-19 16:55	4 - 6	627724-075
SB-11 6-8'	S	06-11-19 15:58	6 - 8	627724-076
SB-11 8-10'	S	06-11-19 17:01	8 - 10	627724-077
SB-11 10-12'	S	06-11-19 17:04	10 - 12	627724-078
SB-11 12-14	S	06-11-19 17:07	12 - 14	627724-079
SB-11 14-16'	S	06-11-19 17:10	14 - 16	627724-080
SB-11 16-18'	S	06-11-19 17:13	16 - 18	627724-081
SB-12 0-2'	S	06-11-19 17:20	0 - 2	627724-082
SB-12 2-4'	S	06-11-19 17:23	2 - 4	627724-083
SB-12 4-8'	S	06-11-19 17:26	4 - 8	627724-084
SB-12 6-8'	S	06-11-19 17:29	- 68	627724-085
SB-12 8-10'	S	06-11-19 17:32	8 - 10	627724-086
SB-12 10-12'	S	06-11-19 17:35	10 - 12	627724-087

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Redhills Pipeline 1RP-5470

SB-12 12-14'	S	06-11-19 17:38	12 - 14	627724-088
SB-12 14-16'	S	06-11-19 17:42	14 - 16	627724-089
SB-13 0-2'	S	06-11-19 17:55	0 - 2	627724-090
SB-13 2-4'	S	06-11-19 17:58	2 - 4	627724-091
SB-13 4-6'	S	06-11-19 18:02	4 - 6	627724-092
SB-13 6-8'	S	06-11-19 18:05	6 - 8	627724-093
SB-13 8-10'	S	06-11-19 18:09	8 - 10	627724-094
SB-13 10-12'	S	06-11-19 18:13	10 - 12	627724-095
SB-13 12-14'	S	06-11-19 18:17	12 - 14	627724-096
SB-13 14-16'	S	06-11-19 18:20	14 - 16	627724-097
SB-14 0-2'	S	06-12-19 09:39	0 - 2	627724-098
SB-14 2-4'	S	06-12-19 09:42	2 - 4	627724-099
SB-14 4-6'	S	06-12-19 09:45	4 - 6	627724-100
SB-14 6-8'	S	06-12-19 09:48	6 - 8	627724-101
SB-14 8-10'	S	06-12-19 09:51	8 - 10	627724-102
SB-14 10-12'	S	06-12-19 09:54	10 - 12	627724-103
SB-14 12-14'	S	06-12-19 09:57	12 - 14	627724-104
SB-14 14-16'	S	06-12-19 10:00	14 - 16	627724-105
SB-15 0-2'	S	06-12-19 10:07	0 - 2	627724-106
SB-15 2-4'	S	06-12-19 10:10	2 - 4	627724-107
SB-15 4-6'	S	06-12-19 10:13	4 - 6	627724-108
SB-15 6-8'	S	06-12-19 10:17	6 - 8	627724-109
SB-15 8-10'	S	06-12-19 10:20	8 - 10	627724-110
SB-15 10-12'	S	06-12-19 10:23	10 - 12	627724-111
SB-15 12-14'	S	06-12-19 10:27	12 - 14	627724-112
SB-15 14-16'	S	06-12-19 10:30	14 - 16	627724-113
SB-16 0-2'	S	06-12-19 10:42	0 - 2	627724-114
SB-16 2-4'	S	06-12-19 10:45	2 - 4	627724-115
SB-16 4-6'	S	06-12-19 10:48	4 - 6	627724-116
SB-16 6-8'	S	06-12-19 10:52	6 - 8	627724-117
SB-16 8-10'	S	06-12-19 10:56	8 - 10	627724-118
SB-16 10-12'	S	06-12-19 11:00	10 - 12	627724-119
SB-16 12-14'	S	06-12-19 11:03	12 - 14	627724-120
SB-16 14-16'	S	06-12-19 11:06	14 - 16	627724-121
SB-17 0-2'	S	06-12-19 11:15	0 - 2	627724-122
SB-17 2-4'	S	06-12-19 11:18	2 - 4	627724-123
SB-17 4-6'	S	06-12-19 11:21	4 - 6	627724-124
SB-17 6-8'	S	06-12-19 11:24	6 - 8	627724-125
SB-17 8-10'	S	06-12-19 11:27	8 - 10	627724-126
SB-17 10-12'	S	06-12-19 11:30	10 - 12	627724-127
SB-17 12-14'	S	06-12-19 11:33	12 - 14	627724-128
SB-17 14-16'	S	06-12-19 11:36	14 - 16	627724-129
SB-18 0-2'	S	06-12-19 11:47	0 - 2	627724-130
SB-18 2-4'	S	06-12-19 11:50	2 - 4	627724-131



Sample Cross Reference 627724



KJ Environmental & Civil Engineering, Aubrey, TX

Redhills Pipeline 1RP-5470

SB-18 4-6'	S	06-12-19 11:53	4 - 6	627724-132
SB-18 6-8'	S	06-12-19 11:56	6 - 8	627724-133
SB-18 8-10'	S	06-12-19 12:00	8 - 10	627724-134
SB-18 10-12'	S	06-12-19 12:03	10 - 12	627724-135
SB-18 12-14'	S	06-12-19 12:06	12 - 14	627724-136
SB-18 14-16'	S	06-12-19 12:10	14 - 16	627724-137
BG-01 0-2'	S	06-11-19 14:27	0 - 2	627724-138
BG-01 2-4'	S	06-11-19 14:30	2 - 4	627724-139
BG-01 4-6'	S	06-11-19 14:32	4 - 6	627724-140
BG-01 6-8'	S	06-11-19 14:35	6 - 8	627724-141
BG-01 8-10'	S	06-11-19 14:38	8 - 10	627724-142
BG-01 10-12'	S	06-11-19 14:42	10 - 12	627724-143
BG 12-14'	S	06-11-19 14:45	12 - 14	627724-144



CASE NARRATIVE

Client Name: *KJ Environmental & Civil Engineering*

Project Name: *Redhills Pipeline 1RP-5470*

Project ID: OWL043019D-1
Work Order Number(s): 627724

Report Date: 20-JUN-19
Date Received: 06/13/2019

Sample receipt non conformances and comments:

None

Sample receipt non conformances and comments per sample:

None

Analytical non conformances and comments:

Batch: LBA-3092645 TPH by SW8015 Mod

Surrogate o-Terphenyl recovered below QC limits. Matrix interferences is suspected.

Samples affected are: 627724-130.



Certificate of Analytical Results 627724



KJ Environmental & Civil Engineering, Aubrey, TX

Redhills Pipeline 1RP-5470

Sample Id: **SB-01 0-2'**

Matrix: Soil

Date Received: 06.13.19 18.40

Lab Sample Id: 627724-001

Date Collected: 06.11.19 10.50

Sample Depth: 0 - 2

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: CHE

% Moisture: 2.27

Analyst: CHE

Date Prep: 06.17.19 10.55

Basis: Dry Weight

Seq Number: 3092611

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<5.16	5.16	mg/kg	06.17.19 12.25	U	1

Analytical Method: TPH by SW8015 Mod

Prep Method: TX1005P

Tech: ARM

% Moisture: 2.27

Analyst: ARM

Date Prep: 06.15.19 15.00

Basis: Dry Weight

Seq Number: 3092645

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.3	15.3	mg/kg	06.17.19 02.37	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.3	15.3	mg/kg	06.17.19 02.37	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.3	15.3	mg/kg	06.17.19 02.37	U	1
Total TPH	PHC635	<15.3	15.3	mg/kg	06.17.19 02.37	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	106	%	70-135	06.17.19 02.37	
o-Terphenyl	84-15-1	76	%	70-135	06.17.19 02.37	



Certificate of Analytical Results 627724



KJ Environmental & Civil Engineering, Aubrey, TX

Redhills Pipeline 1RP-5470

Sample Id: **SB-01 0-2'**

Matrix: Soil

Date Received: 06.13.19 18.40

Lab Sample Id: 627724-001

Date Collected: 06.11.19 10.50

Sample Depth: 0 - 2

Analytical Method: BTEX by SW 8260C

Prep Method: SW5035A

Tech: HOP

% Moisture: 2.27

Analyst: HOP

Date Prep: 06.18.19 16.10

Basis: Dry Weight

Seq Number: 3092727

SUB: T104704215-19-29

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00103	0.00103	mg/kg	06.19.19 04.29	U	1
Toluene	108-88-3	<0.00103	0.00103	mg/kg	06.19.19 04.29	U	1
Ethylbenzene	100-41-4	<0.00103	0.00103	mg/kg	06.19.19 04.29	U	1
m,p-Xylenes	179601-23-1	<0.00206	0.00206	mg/kg	06.19.19 04.29	U	1
o-Xylene	95-47-6	<0.00103	0.00103	mg/kg	06.19.19 04.29	U	1
Total Xylenes	1330-20-7	<0.00103	0.00103	mg/kg	06.19.19 04.29	U	1
Total BTEX		<0.00103	0.00103	mg/kg	06.19.19 04.29	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
Dibromofluoromethane	1868-53-7	110	%	74-126	06.19.19 04.29		
1,2-Dichloroethane-D4	17060-07-0	105	%	80-120	06.19.19 04.29		
Toluene-D8	2037-26-5	93	%	73-132	06.19.19 04.29		
4-Bromofluorobenzene	460-00-4	92	%	58-152	06.19.19 04.29		



Certificate of Analytical Results 627724



KJ Environmental & Civil Engineering, Aubrey, TX Redhills Pipeline 1RP-5470

Sample Id: SB-01 2-4'	Matrix: Soil	Date Received: 06.13.19 18.40
Lab Sample Id: 627724-002	Date Collected: 06.11.19 10.53	Sample Depth: 2 - 4
Analytical Method: Chloride by EPA 300		Prep Method: E300P
Tech: CHE		% Moisture: 2.28
Analyst: CHE	Date Prep: 06.17.19 10.55	Basis: Dry Weight
Seq Number: 3092611		

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<5.08	5.08	mg/kg	06.17.19 12.30	U	1



Certificate of Analytical Results 627724



KJ Environmental & Civil Engineering, Aubrey, TX Redhills Pipeline 1RP-5470

Sample Id: SB-01 4-6'	Matrix: Soil	Date Received: 06.13.19 18.40
Lab Sample Id: 627724-003	Date Collected: 06.11.19 10.58	Sample Depth: 4 - 6
Analytical Method: Chloride by EPA 300		Prep Method: E300P
Tech: CHE		% Moisture: 3.72
Analyst: CHE	Date Prep: 06.17.19 10.55	Basis: Dry Weight
Seq Number: 3092611		

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<5.14	5.14	mg/kg	06.17.19 12.35	U	1



Certificate of Analytical Results 627724



KJ Environmental & Civil Engineering, Aubrey, TX Redhills Pipeline 1RP-5470

Sample Id: SB-01 6-8'	Matrix: Soil	Date Received: 06.13.19 18.40
Lab Sample Id: 627724-004	Date Collected: 06.11.19 11.01	Sample Depth: 6 - 8
Analytical Method: Chloride by EPA 300		Prep Method: E300P
Tech: CHE		% Moisture: 4.81
Analyst: CHE	Date Prep: 06.17.19 10.55	Basis: Dry Weight
Seq Number: 3092611		

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<5.20	5.20	mg/kg	06.17.19 12.40	U	1



Certificate of Analytical Results 627724



KJ Environmental & Civil Engineering, Aubrey, TX Redhills Pipeline 1RP-5470

Sample Id: SB-01 8-10'	Matrix: Soil	Date Received: 06.13.19 18.40
Lab Sample Id: 627724-005	Date Collected: 06.11.19 11.03	Sample Depth: 8 - 10
Analytical Method: Chloride by EPA 300		Prep Method: E300P
Tech: CHE		% Moisture: 5.61
Analyst: CHE	Date Prep: 06.17.19 10.55	Basis: Dry Weight
Seq Number: 3092611		

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<5.33	5.33	mg/kg	06.17.19 12.44	U	1



Certificate of Analytical Results 627724



KJ Environmental & Civil Engineering, Aubrey, TX Redhills Pipeline 1RP-5470

Sample Id: SB-01 10-12'	Matrix: Soil	Date Received: 06.13.19 18.40
Lab Sample Id: 627724-006	Date Collected: 06.11.19 11.06	Sample Depth: 10 - 12
Analytical Method: Chloride by EPA 300		Prep Method: E300P
Tech: CHE		% Moisture: 3.5
Analyst: CHE	Date Prep: 06.17.19 10.55	Basis: Dry Weight
Seq Number: 3092611		

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<5.23	5.23	mg/kg	06.17.19 12.59	U	1



Certificate of Analytical Results 627724



KJ Environmental & Civil Engineering, Aubrey, TX Redhills Pipeline 1RP-5470

Sample Id: SB-01 12-14'	Matrix: Soil	Date Received: 06.13.19 18.40
Lab Sample Id: 627724-007	Date Collected: 06.11.19 11.09	Sample Depth: 12 - 14
Analytical Method: Chloride by EPA 300		Prep Method: E300P
Tech: CHE		% Moisture: .53
Analyst: CHE	Date Prep: 06.17.19 10.55	Basis: Dry Weight
Seq Number: 3092611		

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<5.08	5.08	mg/kg	06.17.19 13.04	U	1



Certificate of Analytical Results 627724



KJ Environmental & Civil Engineering, Aubrey, TX Redhills Pipeline 1RP-5470

Sample Id: SB-01 14-16'	Matrix: Soil	Date Received: 06.13.19 18.40
Lab Sample Id: 627724-008	Date Collected: 06.11.19 11.13	Sample Depth: 14 - 16
Analytical Method: Chloride by EPA 300		Prep Method: E300P
Tech: CHE		% Moisture: 2.48
Analyst: CHE	Date Prep: 06.17.19 10.55	Basis: Dry Weight
Seq Number: 3092611		

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<5.17	5.17	mg/kg	06.17.19 13.18	U	1



Certificate of Analytical Results 627724



KJ Environmental & Civil Engineering, Aubrey, TX

Redhills Pipeline 1RP-5470

Sample Id: **SB-02 0-2'**

Matrix: Soil

Date Received: 06.13.19 18.40

Lab Sample Id: 627724-009

Date Collected: 06.11.19 11.30

Sample Depth: 0 - 2

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: CHE

% Moisture: 13.25

Analyst: CHE

Date Prep: 06.17.19 10.55

Basis: Dry Weight

Seq Number: 3092611

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<5.72	5.72	mg/kg	06.17.19 13.23	U	1

Analytical Method: TPH by SW8015 Mod

Prep Method: TX1005P

Tech: ARM

% Moisture: 13.25

Analyst: ARM

Date Prep: 06.15.19 15.00

Basis: Dry Weight

Seq Number: 3092645

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<17.2	17.2	mg/kg	06.17.19 03.50	U	1
Diesel Range Organics (DRO)	C10C28DRO	<17.2	17.2	mg/kg	06.17.19 03.50	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<17.2	17.2	mg/kg	06.17.19 03.50	U	1
Total TPH	PHC635	<17.2	17.2	mg/kg	06.17.19 03.50	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	119	%	70-135	06.17.19 03.50	
o-Terphenyl	84-15-1	97	%	70-135	06.17.19 03.50	



Certificate of Analytical Results 627724



KJ Environmental & Civil Engineering, Aubrey, TX Redhills Pipeline 1RP-5470

Sample Id: **SB-02 0-2'**
Lab Sample Id: 627724-009

Matrix: Soil
Date Collected: 06.11.19 11.30

Date Received: 06.13.19 18.40
Sample Depth: 0 - 2

Analytical Method: BTEX by SW 8260C
Tech: HOP
Analyst: HOP
Seq Number: 3092727

Prep Method: SW5035A
% Moisture: 13.25
Basis: Dry Weight
SUB: T104704215-19-29

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00114	0.00114	mg/kg	06.19.19 04.48	U	1
Toluene	108-88-3	<0.00114	0.00114	mg/kg	06.19.19 04.48	U	1
Ethylbenzene	100-41-4	<0.00114	0.00114	mg/kg	06.19.19 04.48	U	1
m,p-Xylenes	179601-23-1	<0.00229	0.00229	mg/kg	06.19.19 04.48	U	1
o-Xylene	95-47-6	<0.00114	0.00114	mg/kg	06.19.19 04.48	U	1
Total Xylenes	1330-20-7	<0.00114	0.00114	mg/kg	06.19.19 04.48	U	1
Total BTEX		<0.00114	0.00114	mg/kg	06.19.19 04.48	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
Dibromofluoromethane	1868-53-7	114	%	74-126	06.19.19 04.48		
1,2-Dichloroethane-D4	17060-07-0	105	%	80-120	06.19.19 04.48		
Toluene-D8	2037-26-5	96	%	73-132	06.19.19 04.48		
4-Bromofluorobenzene	460-00-4	88	%	58-152	06.19.19 04.48		



Certificate of Analytical Results 627724



KJ Environmental & Civil Engineering, Aubrey, TX Redhills Pipeline 1RP-5470

Sample Id: SB-02 2-4'	Matrix: Soil	Date Received: 06.13.19 18.40
Lab Sample Id: 627724-010	Date Collected: 06.11.19 11.33	Sample Depth: 2 - 4
Analytical Method: Chloride by EPA 300		Prep Method: E300P
Tech: CHE		% Moisture: 1.22
Analyst: CHE	Date Prep: 06.17.19 10.55	Basis: Dry Weight
Seq Number: 3092611		

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<5.02	5.02	mg/kg	06.17.19 13.28	U	1



Certificate of Analytical Results 627724



KJ Environmental & Civil Engineering, Aubrey, TX Redhills Pipeline 1RP-5470

Sample Id: SB-02 4-6'	Matrix: Soil	Date Received: 06.13.19 18.40
Lab Sample Id: 627724-011	Date Collected: 06.11.19 11.35	Sample Depth: 4 - 6
Analytical Method: Chloride by EPA 300		Prep Method: E300P
Tech: CHE		% Moisture: 2.81
Analyst: CHE	Date Prep: 06.17.19 10.55	Basis: Dry Weight
Seq Number: 3092611		

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<5.11	5.11	mg/kg	06.17.19 13.33	U	1



Certificate of Analytical Results 627724



KJ Environmental & Civil Engineering, Aubrey, TX

Redhills Pipeline 1RP-5470

Sample Id: **SB-02 6-8'**

Matrix: Soil

Date Received: 06.13.19 18.40

Lab Sample Id: 627724-012

Date Collected: 06.11.19 11.38

Sample Depth: 6 - 8

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: CHE

% Moisture: 14.78

Analyst: CHE

Date Prep: 06.17.19 10.55

Basis: Dry Weight

Seq Number: 3092611

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<5.81	5.81	mg/kg	06.17.19 13.38	U	1



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KJ Environmental & Civil Engineering, Aubrey, TX Redhills Pipeline 1RP-5470

Sample Id: SB-02 8-10'	Matrix: Soil	Date Received: 06.13.19 18.40
Lab Sample Id: 627724-013	Date Collected: 06.11.19 11.40	Sample Depth: 8 - 10
Analytical Method: Chloride by EPA 300		Prep Method: E300P
Tech: CHE		% Moisture: 3.52
Analyst: CHE	Date Prep: 06.17.19 10.55	Basis: Dry Weight
Seq Number: 3092611		

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<5.14	5.14	mg/kg	06.17.19 13.43	U	1



Certificate of Analytical Results 627724



KJ Environmental & Civil Engineering, Aubrey, TX Redhills Pipeline 1RP-5470

Sample Id: SB-02 10-12'	Matrix: Soil	Date Received: 06.13.19 18.40
Lab Sample Id: 627724-014	Date Collected: 06.11.19 11.42	Sample Depth: 10 - 12
Analytical Method: Chloride by EPA 300		Prep Method: E300P
Tech: CHE		% Moisture: 2.98
Analyst: CHE	Date Prep: 06.17.19 10.55	Basis: Dry Weight
Seq Number: 3092611		

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<5.10	5.10	mg/kg	06.17.19 13.47	U	1



Certificate of Analytical Results 627724



KJ Environmental & Civil Engineering, Aubrey, TX Redhills Pipeline 1RP-5470

Sample Id: SB-02 12-14'	Matrix: Soil	Date Received: 06.13.19 18.40
Lab Sample Id: 627724-015	Date Collected: 06.11.19 11.45	Sample Depth: 12 - 14
Analytical Method: Chloride by EPA 300		Prep Method: E300P
Tech: CHE		% Moisture: 3.6
Analyst: SPC	Date Prep: 06.17.19 11.20	Basis: Dry Weight
Seq Number: 3092614		

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<5.22	5.22	mg/kg	06.17.19 14.16	U	1



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KJ Environmental & Civil Engineering, Aubrey, TX

Redhills Pipeline 1RP-5470

Sample Id: **SB-02 14-15.5'**

Matrix: Soil

Date Received: 06.13.19 18.40

Lab Sample Id: 627724-016

Date Collected: 06.11.19 11.47

Sample Depth: 14 - 15.5

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: CHE

% Moisture: 2

Analyst: SPC

Date Prep: 06.17.19 11.20

Basis: Dry Weight

Seq Number: 3092614

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<5.11	5.11	mg/kg	06.17.19 14.31	U	1



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KJ Environmental & Civil Engineering, Aubrey, TX

Redhills Pipeline 1RP-5470

Sample Id: **SB-03 0-2'**

Matrix: Soil

Date Received: 06.13.19 18.40

Lab Sample Id: 627724-017

Date Collected: 06.11.19 11.57

Sample Depth: 0 - 2

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: CHE

% Moisture: 4.05

Analyst: SPC

Date Prep: 06.17.19 11.20

Basis: Dry Weight

Seq Number: 3092614

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<5.18	5.18	mg/kg	06.17.19 14.36	U	1

Analytical Method: TPH by SW8015 Mod

Prep Method: TX1005P

Tech: ARM

% Moisture: 4.05

Analyst: ARM

Date Prep: 06.15.19 15.00

Basis: Dry Weight

Seq Number: 3092645

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.6	15.6	mg/kg	06.17.19 04.14	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.6	15.6	mg/kg	06.17.19 04.14	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.6	15.6	mg/kg	06.17.19 04.14	U	1
Total TPH	PHC635	<15.6	15.6	mg/kg	06.17.19 04.14	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1-Chlorooctane	111-85-3	112	%	70-135	06.17.19 04.14		
o-Terphenyl	84-15-1	95	%	70-135	06.17.19 04.14		



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KJ Environmental & Civil Engineering, Aubrey, TX

Redhills Pipeline 1RP-5470

Sample Id: **SB-03 0-2'**

Matrix: Soil

Date Received: 06.13.19 18.40

Lab Sample Id: 627724-017

Date Collected: 06.11.19 11.57

Sample Depth: 0 - 2

Analytical Method: BTEX by SW 8260C

Prep Method: SW5035A

Tech: HOP

% Moisture: 4.05

Analyst: HOP

Date Prep: 06.19.19 11.40

Basis: Dry Weight

Seq Number: 3092809

SUB: T104704215-19-29

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00104	0.00104	mg/kg	06.19.19 17.15	U	1
Toluene	108-88-3	<0.00104	0.00104	mg/kg	06.19.19 17.15	U	1
Ethylbenzene	100-41-4	<0.00104	0.00104	mg/kg	06.19.19 17.15	U	1
m,p-Xylenes	179601-23-1	<0.00208	0.00208	mg/kg	06.19.19 17.15	U	1
o-Xylene	95-47-6	<0.00104	0.00104	mg/kg	06.19.19 17.15	U	1
Total Xylenes	1330-20-7	<0.00104	0.00104	mg/kg	06.19.19 17.15	U	1
Total BTEX		<0.00104	0.00104	mg/kg	06.19.19 17.15	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
Dibromofluoromethane	1868-53-7	115	%	74-126	06.19.19 17.15		
1,2-Dichloroethane-D4	17060-07-0	112	%	80-120	06.19.19 17.15		
Toluene-D8	2037-26-5	94	%	73-132	06.19.19 17.15		
4-Bromofluorobenzene	460-00-4	94	%	58-152	06.19.19 17.15		



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KJ Environmental & Civil Engineering, Aubrey, TX

Redhills Pipeline 1RP-5470

Sample Id: **SB-03 2-4'**

Matrix: Soil

Date Received: 06.13.19 18.40

Lab Sample Id: 627724-018

Date Collected: 06.11.19 11.59

Sample Depth: 2 - 4

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: CHE

% Moisture: 3.57

Analyst: SPC

Date Prep: 06.17.19 11.20

Basis: Dry Weight

Seq Number: 3092614

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<5.14	5.14	mg/kg	06.17.19 14.41	U	1



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KJ Environmental & Civil Engineering, Aubrey, TX Redhills Pipeline 1RP-5470

Sample Id: SB-03 4-6'	Matrix: Soil	Date Received: 06.13.19 18.40
Lab Sample Id: 627724-019	Date Collected: 06.11.19 12.06	Sample Depth: 4 - 6
Analytical Method: Chloride by EPA 300		Prep Method: E300P
Tech: CHE		% Moisture: 22.52
Analyst: SPC	Date Prep: 06.17.19 11.20	Basis: Dry Weight
Seq Number: 3092614		

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<6.41	6.41	mg/kg	06.17.19 14.46	U	1



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KJ Environmental & Civil Engineering, Aubrey, TX Redhills Pipeline 1RP-5470

Sample Id: SB-03 6-8'	Matrix: Soil	Date Received: 06.13.19 18.40
Lab Sample Id: 627724-020	Date Collected: 06.11.19 12.08	Sample Depth: 6 - 8
Analytical Method: Chloride by EPA 300		Prep Method: E300P
Tech: CHE		% Moisture: 6.98
Analyst: SPC	Date Prep: 06.17.19 11.20	Basis: Dry Weight
Seq Number: 3092614		

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<5.34	5.34	mg/kg	06.17.19 15.00	U	1



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KJ Environmental & Civil Engineering, Aubrey, TX Redhills Pipeline 1RP-5470

Sample Id: SB-03 8-10'	Matrix: Soil	Date Received: 06.13.19 18.40
Lab Sample Id: 627724-021	Date Collected: 06.11.19 12.10	Sample Depth: 8 - 10
Analytical Method: Chloride by EPA 300		Prep Method: E300P
Tech: CHE		% Moisture: 6.25
Analyst: SPC	Date Prep: 06.17.19 11.20	Basis: Dry Weight
Seq Number: 3092614		

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<5.32	5.32	mg/kg	06.17.19 15.05	U	1



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KJ Environmental & Civil Engineering, Aubrey, TX

Redhills Pipeline 1RP-5470

Sample Id: **SB-03 10-12'**

Matrix: Soil

Date Received: 06.13.19 18.40

Lab Sample Id: 627724-022

Date Collected: 06.11.19 12.13

Sample Depth: 10 - 12

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: CHE

% Moisture: 4.7

Analyst: SPC

Date Prep: 06.17.19 11.20

Basis: Dry Weight

Seq Number: 3092614

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<5.20	5.20	mg/kg	06.17.19 15.10	U	1



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KJ Environmental & Civil Engineering, Aubrey, TX

Redhills Pipeline 1RP-5470

Sample Id: **SB-03 12-14'**

Matrix: Soil

Date Received: 06.13.19 18.40

Lab Sample Id: 627724-023

Date Collected: 06.11.19 12.15

Sample Depth: 12 - 14

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: CHE

% Moisture: 6.09

Analyst: SPC

Date Prep: 06.17.19 11.20

Basis: Dry Weight

Seq Number: 3092614

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<5.31	5.31	mg/kg	06.17.19 15.15	U	1



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KJ Environmental & Civil Engineering, Aubrey, TX

Redhills Pipeline 1RP-5470

Sample Id: **SB-04 0-2'**

Matrix: Soil

Date Received: 06.13.19 18.40

Lab Sample Id: 627724-024

Date Collected: 06.11.19 12.26

Sample Depth: 0 - 2

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: CHE

% Moisture: 2.63

Analyst: SPC

Date Prep: 06.17.19 11.20

Basis: Dry Weight

Seq Number: 3092614

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<5.18	5.18	mg/kg	06.17.19 15.19	U	1

Analytical Method: TPH by SW8015 Mod

Prep Method: TX1005P

Tech: ARM

% Moisture: 2.63

Analyst: ARM

Date Prep: 06.15.19 15.00

Basis: Dry Weight

Seq Number: 3092645

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.4	15.4	mg/kg	06.17.19 04.38	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.4	15.4	mg/kg	06.17.19 04.38	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.4	15.4	mg/kg	06.17.19 04.38	U	1
Total TPH	PHC635	<15.4	15.4	mg/kg	06.17.19 04.38	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	106	%	70-135	06.17.19 04.38	
o-Terphenyl	84-15-1	81	%	70-135	06.17.19 04.38	



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KJ Environmental & Civil Engineering, Aubrey, TX

Redhills Pipeline 1RP-5470

Sample Id: **SB-04 0-2'**

Matrix: Soil

Date Received: 06.13.19 18.40

Lab Sample Id: 627724-024

Date Collected: 06.11.19 12.26

Sample Depth: 0 - 2

Analytical Method: BTEX by SW 8260C

Prep Method: SW5035A

Tech: HOP

% Moisture: 2.63

Analyst: HOP

Date Prep: 06.19.19 11.40

Basis: Dry Weight

Seq Number: 3092809

SUB: T104704215-19-29

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00102	0.00102	mg/kg	06.19.19 17.35	U	1
Toluene	108-88-3	<0.00102	0.00102	mg/kg	06.19.19 17.35	U	1
Ethylbenzene	100-41-4	<0.00102	0.00102	mg/kg	06.19.19 17.35	U	1
m,p-Xylenes	179601-23-1	<0.00205	0.00205	mg/kg	06.19.19 17.35	U	1
o-Xylene	95-47-6	<0.00102	0.00102	mg/kg	06.19.19 17.35	U	1
Total Xylenes	1330-20-7	<0.00102	0.00102	mg/kg	06.19.19 17.35	U	1
Total BTEX		<0.00102	0.00102	mg/kg	06.19.19 17.35	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
Dibromofluoromethane	1868-53-7	115	%	74-126	06.19.19 17.35		
1,2-Dichloroethane-D4	17060-07-0	106	%	80-120	06.19.19 17.35		
Toluene-D8	2037-26-5	91	%	73-132	06.19.19 17.35		
4-Bromofluorobenzene	460-00-4	91	%	58-152	06.19.19 17.35		



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KJ Environmental & Civil Engineering, Aubrey, TX

Redhills Pipeline 1RP-5470

Sample Id: **SB-04 2-4'**

Matrix: Soil

Date Received: 06.13.19 18.40

Lab Sample Id: 627724-025

Date Collected: 06.11.19 12.28

Sample Depth: 2 - 4

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: CHE

% Moisture: 2.23

Analyst: SPC

Date Prep: 06.17.19 11.20

Basis: Dry Weight

Seq Number: 3092614

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<5.16	5.16	mg/kg	06.17.19 15.24	U	1



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KJ Environmental & Civil Engineering, Aubrey, TX Redhills Pipeline 1RP-5470

Sample Id: SB-04 4-6'	Matrix: Soil	Date Received: 06.13.19 18.40
Lab Sample Id: 627724-026	Date Collected: 06.11.19 12.30	Sample Depth: 4 - 6
Analytical Method: Chloride by EPA 300		Prep Method: E300P
Tech: CHE		% Moisture: 22.68
Analyst: SPC	Date Prep: 06.17.19 11.20	Basis: Dry Weight
Seq Number: 3092614		

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<6.52	6.52	mg/kg	06.17.19 15.39	U	1



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KJ Environmental & Civil Engineering, Aubrey, TX Redhills Pipeline 1RP-5470

Sample Id: SB-04 6-8'	Matrix: Soil	Date Received: 06.13.19 18.40
Lab Sample Id: 627724-027	Date Collected: 06.11.19 12.33	Sample Depth: 6 - 8
Analytical Method: Chloride by EPA 300		Prep Method: E300P
Tech: CHE		% Moisture: 10.2
Analyst: SPC	Date Prep: 06.17.19 11.20	Basis: Dry Weight
Seq Number: 3092614		

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<5.62	5.62	mg/kg	06.17.19 15.44	U	1



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KJ Environmental & Civil Engineering, Aubrey, TX Redhills Pipeline 1RP-5470

Sample Id: SB-04 8-10'	Matrix: Soil	Date Received: 06.13.19 18.40
Lab Sample Id: 627724-028	Date Collected: 06.11.19 12.35	Sample Depth: 8 - 10
Analytical Method: Chloride by EPA 300		Prep Method: E300P
Tech: CHE		% Moisture: 5.03
Analyst: SPC	Date Prep: 06.17.19 11.20	Basis: Dry Weight
Seq Number: 3092614		

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<5.31	5.31	mg/kg	06.17.19 15.58	U	1



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KJ Environmental & Civil Engineering, Aubrey, TX

Redhills Pipeline 1RP-5470

Sample Id: **SB-04 10-12'**

Matrix: Soil

Date Received: 06.13.19 18.40

Lab Sample Id: 627724-029

Date Collected: 06.11.19 12.38

Sample Depth: 10 - 12

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: CHE

% Moisture: 3.7

Analyst: SPC

Date Prep: 06.17.19 11.20

Basis: Dry Weight

Seq Number: 3092614

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<5.24	5.24	mg/kg	06.17.19 16.03	U	1



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KJ Environmental & Civil Engineering, Aubrey, TX Redhills Pipeline 1RP-5470

Sample Id: SB-05 12-14'	Matrix: Soil	Date Received: 06.13.19 18.40
Lab Sample Id: 627724-030	Date Collected: 06.11.19 12.40	Sample Depth: 12 - 14
Analytical Method: Chloride by EPA 300		Prep Method: E300P
Tech: CHE		% Moisture: 5.44
Analyst: SPC	Date Prep: 06.17.19 11.20	Basis: Dry Weight
Seq Number: 3092614		

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<5.25	5.25	mg/kg	06.17.19 16.08	U	1



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KJ Environmental & Civil Engineering, Aubrey, TX

Redhills Pipeline 1RP-5470

Sample Id: **SB-05 0-2'**

Matrix: Soil

Date Received: 06.13.19 18.40

Lab Sample Id: 627724-031

Date Collected: 06.11.19 13.35

Sample Depth: 0 - 2

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: CHE

% Moisture: 2.9

Analyst: SPC

Date Prep: 06.17.19 11.20

Basis: Dry Weight

Seq Number: 3092614

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<5.12	5.12	mg/kg	06.17.19 16.13	U	1

Analytical Method: TPH by SW8015 Mod

Prep Method: TX1005P

Tech: ARM

% Moisture: 2.9

Analyst: ARM

Date Prep: 06.15.19 15.00

Basis: Dry Weight

Seq Number: 3092645

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.4	15.4	mg/kg	06.17.19 05.02	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.4	15.4	mg/kg	06.17.19 05.02	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.4	15.4	mg/kg	06.17.19 05.02	U	1
Total TPH	PHC635	<15.4	15.4	mg/kg	06.17.19 05.02	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	105	%	70-135	06.17.19 05.02	
o-Terphenyl	84-15-1	82	%	70-135	06.17.19 05.02	



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KJ Environmental & Civil Engineering, Aubrey, TX

Redhills Pipeline 1RP-5470

Sample Id: **SB-05 0-2'**

Matrix: Soil

Date Received: 06.13.19 18.40

Lab Sample Id: 627724-031

Date Collected: 06.11.19 13.35

Sample Depth: 0 - 2

Analytical Method: BTEX by SW 8260C

Prep Method: SW5035A

Tech: HOP

% Moisture: 2.9

Analyst: HOP

Date Prep: 06.19.19 16.10

Basis: Dry Weight

Seq Number: 3092875

SUB: T104704215-19-29

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00103	0.00103	mg/kg	06.20.19 02.33	U	1
Toluene	108-88-3	<0.00103	0.00103	mg/kg	06.20.19 02.33	U	1
Ethylbenzene	100-41-4	<0.00103	0.00103	mg/kg	06.20.19 02.33	U	1
m,p-Xylenes	179601-23-1	<0.00206	0.00206	mg/kg	06.20.19 02.33	U	1
o-Xylene	95-47-6	<0.00103	0.00103	mg/kg	06.20.19 02.33	U	1
Total Xylenes	1330-20-7	<0.00103	0.00103	mg/kg	06.20.19 02.33	U	1
Total BTEX		<0.00103	0.00103	mg/kg	06.20.19 02.33	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
Dibromofluoromethane	1868-53-7	111	%	74-126	06.20.19 02.33		
1,2-Dichloroethane-D4	17060-07-0	109	%	80-120	06.20.19 02.33		
Toluene-D8	2037-26-5	103	%	73-132	06.20.19 02.33		
4-Bromofluorobenzene	460-00-4	89	%	58-152	06.20.19 02.33		



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KJ Environmental & Civil Engineering, Aubrey, TX

Redhills Pipeline 1RP-5470

Sample Id: **SB-05 2-4'**

Matrix: Soil

Date Received: 06.13.19 18.40

Lab Sample Id: 627724-032

Date Collected: 06.11.19 13.28

Sample Depth: 2 - 4

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: CHE

% Moisture: 4.17

Analyst: SPC

Date Prep: 06.17.19 11.20

Basis: Dry Weight

Seq Number: 3092614

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<5.17	5.17	mg/kg	06.17.19 16.17	U	1



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KJ Environmental & Civil Engineering, Aubrey, TX Redhills Pipeline 1RP-5470

Sample Id: SB-05 4-6'	Matrix: Soil	Date Received: 06.13.19 18.40
Lab Sample Id: 627724-033	Date Collected: 06.11.19 13.30	Sample Depth: 4 - 6
Analytical Method: Chloride by EPA 300		Prep Method: E300P
Tech: CHE		% Moisture: 5.81
Analyst: SPC	Date Prep: 06.17.19 11.20	Basis: Dry Weight
Seq Number: 3092614		

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<5.26	5.26	mg/kg	06.17.19 16.22	U	1



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KJ Environmental & Civil Engineering, Aubrey, TX

Redhills Pipeline 1RP-5470

Sample Id: **SB-05 6-8'**

Matrix: Soil

Date Received: 06.13.19 18.40

Lab Sample Id: 627724-034

Date Collected: 06.11.19 13.33

Sample Depth: 6 - 8

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: CHE

% Moisture: 8.58

Analyst: SPC

Date Prep: 06.17.19 11.20

Basis: Dry Weight

Seq Number: 3092614

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<5.43	5.43	mg/kg	06.17.19 16.27	U	1



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KJ Environmental & Civil Engineering, Aubrey, TX Redhills Pipeline 1RP-5470

Sample Id: SB-05 8-12'	Matrix: Soil	Date Received: 06.13.19 18.40
Lab Sample Id: 627724-035	Date Collected: 06.11.19 13.35	Sample Depth: 8 - 12
Analytical Method: Chloride by EPA 300		Prep Method: E300P
Tech: CHE		% Moisture: 4.91
Analyst: SPC	Date Prep: 06.17.19 12.05	Basis: Dry Weight
Seq Number: 3092617		

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<5.31	5.31	mg/kg	06.17.19 14.33	U	1



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Redhills Pipeline 1RP-5470

Sample Id: **SB-05 10-12'**

Matrix: Soil

Date Received: 06.13.19 18.40

Lab Sample Id: 627724-036

Date Collected: 06.11.19 13.38

Sample Depth: 10 - 12

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: CHE

% Moisture: 5.13

Analyst: SPC

Date Prep: 06.17.19 12.05

Basis: Dry Weight

Seq Number: 3092617

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<5.30	5.30	mg/kg	06.17.19 14.50	U	1



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KJ Environmental & Civil Engineering, Aubrey, TX

Redhills Pipeline 1RP-5470

Sample Id: **SB-05 12-14'**

Matrix: Soil

Date Received: 06.13.19 18.40

Lab Sample Id: 627724-037

Date Collected: 06.11.19 13.42

Sample Depth: 12 - 14

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: CHE

% Moisture: 6.5

Analyst: SPC

Date Prep: 06.17.19 12.05

Basis: Dry Weight

Seq Number: 3092617

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	11.6	5.36	mg/kg	06.17.19 14.55		1



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KJ Environmental & Civil Engineering, Aubrey, TX

Redhills Pipeline 1RP-5470

Sample Id: **SB-06 0-2'**

Matrix: Soil

Date Received: 06.13.19 18.40

Lab Sample Id: 627724-038

Date Collected: 06.11.19 13.55

Sample Depth: 0 - 2

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: CHE

% Moisture: 3.41

Analyst: SPC

Date Prep: 06.17.19 12.05

Basis: Dry Weight

Seq Number: 3092617

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<5.20	5.20	mg/kg	06.17.19 15.01	U	1

Analytical Method: TPH by SW8015 Mod

Prep Method: TX1005P

Tech: ARM

% Moisture: 3.41

Analyst: ARM

Date Prep: 06.15.19 15.00

Basis: Dry Weight

Seq Number: 3092645

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.5	15.5	mg/kg	06.17.19 05.26	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.5	15.5	mg/kg	06.17.19 05.26	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.5	15.5	mg/kg	06.17.19 05.26	U	1
Total TPH	PHC635	<15.5	15.5	mg/kg	06.17.19 05.26	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	105	%	70-135	06.17.19 05.26	
o-Terphenyl	84-15-1	93	%	70-135	06.17.19 05.26	



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KJ Environmental & Civil Engineering, Aubrey, TX

Redhills Pipeline 1RP-5470

Sample Id: **SB-06 0-2'**

Matrix: Soil

Date Received: 06.13.19 18.40

Lab Sample Id: 627724-038

Date Collected: 06.11.19 13.55

Sample Depth: 0 - 2

Analytical Method: BTEX by SW 8260C

Prep Method: SW5035A

Tech: HOP

% Moisture: 3.41

Analyst: HOP

Date Prep: 06.19.19 16.10

Basis: Dry Weight

Seq Number: 3092875

SUB: T104704215-19-29

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00104	0.00104	mg/kg	06.20.19 06.53	U	1
Toluene	108-88-3	<0.00104	0.00104	mg/kg	06.20.19 06.53	U	1
Ethylbenzene	100-41-4	<0.00104	0.00104	mg/kg	06.20.19 06.53	U	1
m,p-Xylenes	179601-23-1	<0.00207	0.00207	mg/kg	06.20.19 06.53	U	1
o-Xylene	95-47-6	<0.00104	0.00104	mg/kg	06.20.19 06.53	U	1
Total Xylenes	1330-20-7	<0.00104	0.00104	mg/kg	06.20.19 06.53	U	1
Total BTEX		<0.00104	0.00104	mg/kg	06.20.19 06.53	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
Dibromofluoromethane	1868-53-7	122	%	74-126	06.20.19 06.53		
1,2-Dichloroethane-D4	17060-07-0	115	%	80-120	06.20.19 06.53		
Toluene-D8	2037-26-5	97	%	73-132	06.20.19 06.53		
4-Bromofluorobenzene	460-00-4	84	%	58-152	06.20.19 06.53		



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KJ Environmental & Civil Engineering, Aubrey, TX Redhills Pipeline 1RP-5470

Sample Id: SB-06 2-4'	Matrix: Soil	Date Received: 06.13.19 18.40
Lab Sample Id: 627724-039	Date Collected: 06.11.19 13.58	Sample Depth: 2 - 4
Analytical Method: Chloride by EPA 300		Prep Method: E300P
Tech: CHE		% Moisture: 5.56
Analyst: SPC	Date Prep: 06.17.19 12.05	Basis: Dry Weight
Seq Number: 3092617		

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<5.35	5.35	mg/kg	06.17.19 15.07	U	1



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KJ Environmental & Civil Engineering, Aubrey, TX

Redhills Pipeline 1RP-5470

Sample Id: **SB-06 4-6'**

Matrix: Soil

Date Received: 06.13.19 18.40

Lab Sample Id: 627724-040

Date Collected: 06.11.19 14.01

Sample Depth: 4 - 6

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: CHE

% Moisture: 25.99

Analyst: SPC

Date Prep: 06.17.19 12.05

Basis: Dry Weight

Seq Number: 3092617

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<6.76	6.76	mg/kg	06.17.19 15.23	U	1



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KJ Environmental & Civil Engineering, Aubrey, TX Redhills Pipeline 1RP-5470

Sample Id: SB-06 6-8'	Matrix: Soil	Date Received: 06.13.19 18.40
Lab Sample Id: 627724-041	Date Collected: 06.11.19 14.04	Sample Depth: 6 - 8
Analytical Method: Chloride by EPA 300		Prep Method: E300P
Tech: CHE		% Moisture: 4.16
Analyst: SPC	Date Prep: 06.17.19 12.05	Basis: Dry Weight
Seq Number: 3092617		

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<5.18	5.18	mg/kg	06.17.19 15.29	U	1



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KJ Environmental & Civil Engineering, Aubrey, TX Redhills Pipeline 1RP-5470

Sample Id: SB-06 8-10'	Matrix: Soil	Date Received: 06.13.19 18.40
Lab Sample Id: 627724-042	Date Collected: 06.11.19 14.07	Sample Depth: 8 - 10
Analytical Method: Chloride by EPA 300		Prep Method: E300P
Tech: CHE		% Moisture: 5.93
Analyst: SPC	Date Prep: 06.17.19 12.05	Basis: Dry Weight
Seq Number: 3092617		

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	9.69	5.29	mg/kg	06.17.19 15.35		1



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KJ Environmental & Civil Engineering, Aubrey, TX Redhills Pipeline 1RP-5470

Sample Id: SB-06 10-12'	Matrix: Soil	Date Received: 06.13.19 18.40
Lab Sample Id: 627724-043	Date Collected: 06.11.19 14.10	Sample Depth: 10 - 12
Analytical Method: Chloride by EPA 300		Prep Method: E300P
Tech: CHE		% Moisture: 3.38
Analyst: SPC	Date Prep: 06.17.19 12.05	Basis: Dry Weight
Seq Number: 3092617		

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<5.22	5.22	mg/kg	06.17.19 15.40	U	1



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KJ Environmental & Civil Engineering, Aubrey, TX Redhills Pipeline 1RP-5470

Sample Id: SB-06 12-14'	Matrix: Soil	Date Received: 06.13.19 18.40
Lab Sample Id: 627724-044	Date Collected: 06.11.19 14.13	Sample Depth: 12 - 14
Analytical Method: Chloride by EPA 300		Prep Method: E300P
Tech: CHE		% Moisture: 7.78
Analyst: SPC	Date Prep: 06.17.19 12.05	Basis: Dry Weight
Seq Number: 3092617		

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	10.3	5.48	mg/kg	06.17.19 15.46		1



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Redhills Pipeline 1RP-5470

Sample Id: **SB-07 0-2'**

Matrix: Soil

Date Received: 06.13.19 18.40

Lab Sample Id: 627724-045

Date Collected: 06.11.19 15.10

Sample Depth: 0 - 2

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: CHE

% Moisture: 3.71

Analyst: SPC

Date Prep: 06.17.19 12.05

Basis: Dry Weight

Seq Number: 3092617

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<5.15	5.15	mg/kg	06.17.19 15.52	U	1

Analytical Method: TPH by SW8015 Mod

Prep Method: TX1005P

Tech: ARM

% Moisture: 3.71

Analyst: ARM

Date Prep: 06.15.19 15.00

Basis: Dry Weight

Seq Number: 3092645

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.5	15.5	mg/kg	06.17.19 05.50	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.5	15.5	mg/kg	06.17.19 05.50	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.5	15.5	mg/kg	06.17.19 05.50	U	1
Total TPH	PHC635	<15.5	15.5	mg/kg	06.17.19 05.50	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	102	%	70-135	06.17.19 05.50	
o-Terphenyl	84-15-1	80	%	70-135	06.17.19 05.50	



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Redhills Pipeline 1RP-5470

Sample Id: **SB-07 0-2'**

Matrix: Soil

Date Received: 06.13.19 18.40

Lab Sample Id: 627724-045

Date Collected: 06.11.19 15.10

Sample Depth: 0 - 2

Analytical Method: BTEX by SW 8260C

Prep Method: SW5035A

Tech: HOP

% Moisture: 3.71

Analyst: HOP

Date Prep: 06.19.19 16.10

Basis: Dry Weight

Seq Number: 3092875

SUB: T104704215-19-29

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00104	0.00104	mg/kg	06.20.19 01.14	U	1
Toluene	108-88-3	<0.00104	0.00104	mg/kg	06.20.19 01.14	U	1
Ethylbenzene	100-41-4	<0.00104	0.00104	mg/kg	06.20.19 01.14	U	1
m,p-Xylenes	179601-23-1	<0.00208	0.00208	mg/kg	06.20.19 01.14	U	1
o-Xylene	95-47-6	<0.00104	0.00104	mg/kg	06.20.19 01.14	U	1
Total Xylenes	1330-20-7	<0.00104	0.00104	mg/kg	06.20.19 01.14	U	1
Total BTEX		<0.00104	0.00104	mg/kg	06.20.19 01.14	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
Dibromofluoromethane	1868-53-7	109	%	74-126	06.20.19 01.14		
1,2-Dichloroethane-D4	17060-07-0	109	%	80-120	06.20.19 01.14		
Toluene-D8	2037-26-5	103	%	73-132	06.20.19 01.14		
4-Bromofluorobenzene	460-00-4	86	%	58-152	06.20.19 01.14		



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Redhills Pipeline 1RP-5470

Sample Id: **SB-07 2-4'**

Matrix: Soil

Date Received: 06.13.19 18.40

Lab Sample Id: 627724-046

Date Collected: 06.11.19 15.12

Sample Depth: 2 - 4

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: CHE

% Moisture: 3.15

Analyst: SPC

Date Prep: 06.17.19 12.05

Basis: Dry Weight

Seq Number: 3092617

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<5.13	5.13	mg/kg	06.17.19 16.08	U	1



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KJ Environmental & Civil Engineering, Aubrey, TX

Redhills Pipeline 1RP-5470

Sample Id: **SB-07 4-6'**

Matrix: Soil

Date Received: 06.13.19 18.40

Lab Sample Id: 627724-047

Date Collected: 06.11.19 15.15

Sample Depth: 4 - 6

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: CHE

% Moisture: 7.12

Analyst: SPC

Date Prep: 06.17.19 12.05

Basis: Dry Weight

Seq Number: 3092617

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<5.43	5.43	mg/kg	06.17.19 16.14	U	1



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KJ Environmental & Civil Engineering, Aubrey, TX

Redhills Pipeline 1RP-5470

Sample Id: **SB-07 6-8'**

Matrix: Soil

Date Received: 06.13.19 18.40

Lab Sample Id: 627724-048

Date Collected: 06.11.19 15.18

Sample Depth: 6 - 8

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: CHE

% Moisture: 14.28

Analyst: SPC

Date Prep: 06.17.19 12.05

Basis: Dry Weight

Seq Number: 3092617

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<5.88	5.88	mg/kg	06.17.19 16.31	U	1



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KJ Environmental & Civil Engineering, Aubrey, TX Redhills Pipeline 1RP-5470

Sample Id: SB-07 8-10'	Matrix: Soil	Date Received: 06.13.19 18.40
Lab Sample Id: 627724-049	Date Collected: 06.11.19 15.20	Sample Depth: 8 - 10
Analytical Method: Chloride by EPA 300		Prep Method: E300P
Tech: CHE		% Moisture: 3.42
Analyst: SPC	Date Prep: 06.17.19 12.05	Basis: Dry Weight
Seq Number: 3092617		

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<5.13	5.13	mg/kg	06.17.19 16.37	U	1



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KJ Environmental & Civil Engineering, Aubrey, TX

Redhills Pipeline 1RP-5470

Sample Id: **SB-07 10-11'**

Matrix: Soil

Date Received: 06.13.19 18.40

Lab Sample Id: 627724-050

Date Collected: 06.11.19 15.23

Sample Depth: 10 - 11

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: CHE

% Moisture: 16.51

Analyst: SPC

Date Prep: 06.17.19 12.05

Basis: Dry Weight

Seq Number: 3092617

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<5.95	5.95	mg/kg	06.17.19 16.42	U	1



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KJ Environmental & Civil Engineering, Aubrey, TX Redhills Pipeline 1RP-5470

Sample Id: **SB-08 0-2'** Matrix: Soil Date Received: 06.13.19 18.40
Lab Sample Id: 627724-051 Date Collected: 06.11.19 15.33 Sample Depth: 0 - 2
Analytical Method: Chloride by EPA 300 Prep Method: E300P
Tech: CHE % Moisture: 4.19
Analyst: SPC Date Prep: 06.17.19 12.05 Basis: Dry Weight
Seq Number: 3092617

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<5.26	5.26	mg/kg	06.17.19 16.48	U	1

Analytical Method: TPH by SW8015 Mod Prep Method: TX1005P
Tech: ARM % Moisture: 4.19
Analyst: ARM Date Prep: 06.15.19 15.00 Basis: Dry Weight
Seq Number: 3092645

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.6	15.6	mg/kg	06.17.19 06.14	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.6	15.6	mg/kg	06.17.19 06.14	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.6	15.6	mg/kg	06.17.19 06.14	U	1
Total TPH	PHC635	<15.6	15.6	mg/kg	06.17.19 06.14	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	108	%	70-135	06.17.19 06.14	
o-Terphenyl	84-15-1	88	%	70-135	06.17.19 06.14	



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Redhills Pipeline 1RP-5470

Sample Id: **SB-08 0-2'**

Matrix: Soil

Date Received: 06.13.19 18.40

Lab Sample Id: 627724-051

Date Collected: 06.11.19 15.33

Sample Depth: 0 - 2

Analytical Method: BTEX by SW 8260C

Prep Method: SW5035A

Tech: HOP

% Moisture: 4.19

Analyst: HOP

Date Prep: 06.19.19 16.10

Basis: Dry Weight

Seq Number: 3092875

SUB: T104704215-19-29

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00105	0.00105	mg/kg	06.20.19 01.34	U	1
Toluene	108-88-3	<0.00105	0.00105	mg/kg	06.20.19 01.34	U	1
Ethylbenzene	100-41-4	<0.00105	0.00105	mg/kg	06.20.19 01.34	U	1
m,p-Xylenes	179601-23-1	<0.00209	0.00209	mg/kg	06.20.19 01.34	U	1
o-Xylene	95-47-6	<0.00105	0.00105	mg/kg	06.20.19 01.34	U	1
Total Xylenes	1330-20-7	<0.00105	0.00105	mg/kg	06.20.19 01.34	U	1
Total BTEX		<0.00105	0.00105	mg/kg	06.20.19 01.34	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
Dibromofluoromethane	1868-53-7	107	%	74-126	06.20.19 01.34		
1,2-Dichloroethane-D4	17060-07-0	107	%	80-120	06.20.19 01.34		
Toluene-D8	2037-26-5	99	%	73-132	06.20.19 01.34		
4-Bromofluorobenzene	460-00-4	89	%	58-152	06.20.19 01.34		



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KJ Environmental & Civil Engineering, Aubrey, TX Redhills Pipeline 1RP-5470

Sample Id: SB-08 2-4'	Matrix: Soil	Date Received: 06.13.19 18.40
Lab Sample Id: 627724-052	Date Collected: 06.11.19 15.36	Sample Depth: 2 - 4
Analytical Method: Chloride by EPA 300		Prep Method: E300P
Tech: CHE		% Moisture: 3.66
Analyst: SPC	Date Prep: 06.17.19 12.05	Basis: Dry Weight
Seq Number: 3092617		

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<5.23	5.23	mg/kg	06.17.19 16.53	U	1



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KJ Environmental & Civil Engineering, Aubrey, TX

Redhills Pipeline 1RP-5470

Sample Id: **SB-08 4-6'**

Matrix: Soil

Date Received: 06.13.19 18.40

Lab Sample Id: 627724-053

Date Collected: 06.11.19 15.39

Sample Depth: 4 - 6

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: CHE

% Moisture: 8.21

Analyst: SPC

Date Prep: 06.17.19 12.05

Basis: Dry Weight

Seq Number: 3092617

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<5.50	5.50	mg/kg	06.17.19 16.59	U	1



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KJ Environmental & Civil Engineering, Aubrey, TX Redhills Pipeline 1RP-5470

Sample Id: SB-08 6-8'	Matrix: Soil	Date Received: 06.13.19 18.40
Lab Sample Id: 627724-054	Date Collected: 06.11.19 15.43	Sample Depth: 6 - 8
Analytical Method: Chloride by EPA 300		Prep Method: E300P
Tech: CHE		% Moisture: 6.86
Analyst: SPC	Date Prep: 06.17.19 12.05	Basis: Dry Weight
Seq Number: 3092617		

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<5.37	5.37	mg/kg	06.17.19 17.05	U	1



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KJ Environmental & Civil Engineering, Aubrey, TX Redhills Pipeline 1RP-5470

Sample Id: SB-08 8-10'	Matrix: Soil	Date Received: 06.13.19 18.40
Lab Sample Id: 627724-055	Date Collected: 06.11.19 15.45	Sample Depth: 8 - 10
Analytical Method: Chloride by EPA 300		Prep Method: E300P
Tech: CHE		% Moisture: 4.95
Analyst: CHE	Date Prep: 06.17.19 12.25	Basis: Dry Weight
Seq Number: 3092621		

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<5.23	5.23	mg/kg	06.17.19 17.38	U	1



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KJ Environmental & Civil Engineering, Aubrey, TX Redhills Pipeline 1RP-5470

Sample Id: SB-08 10-12'	Matrix: Soil	Date Received: 06.13.19 18.40
Lab Sample Id: 627724-056	Date Collected: 06.11.19 15.48	Sample Depth: 10 - 12
Analytical Method: Chloride by EPA 300		Prep Method: E300P
Tech: CHE		% Moisture: 6.53
Analyst: CHE	Date Prep: 06.17.19 12.25	Basis: Dry Weight
Seq Number: 3092621		

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<5.38	5.38	mg/kg	06.17.19 17.55	U	1



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Redhills Pipeline 1RP-5470

Sample Id: **SB-08 12-13'**

Matrix: Soil

Date Received: 06.13.19 18.40

Lab Sample Id: 627724-057

Date Collected: 06.11.19 15.50

Sample Depth: 12 - 13

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: CHE

% Moisture: 6.46

Analyst: CHE

Date Prep: 06.17.19 12.25

Basis: Dry Weight

Seq Number: 3092621

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<5.32	5.32	mg/kg	06.17.19 18.01	U	1



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KJ Environmental & Civil Engineering, Aubrey, TX

Redhills Pipeline 1RP-5470

Sample Id: **SB-09 0-2'**

Matrix: Soil

Date Received: 06.13.19 18.40

Lab Sample Id: 627724-058

Date Collected: 06.11.19 15.59

Sample Depth: 0 - 2

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: CHE

% Moisture: 3.39

Analyst: CHE

Date Prep: 06.17.19 12.25

Basis: Dry Weight

Seq Number: 3092621

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	2620	25.8	mg/kg	06.17.19 18.06		5

Analytical Method: TPH by SW8015 Mod

Prep Method: TX1005P

Tech: ARM

% Moisture: 3.39

Analyst: ARM

Date Prep: 06.15.19 15.00

Basis: Dry Weight

Seq Number: 3092645

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.5	15.5	mg/kg	06.17.19 06.38	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.5	15.5	mg/kg	06.17.19 06.38	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.5	15.5	mg/kg	06.17.19 06.38	U	1
Total TPH	PHC635	<15.5	15.5	mg/kg	06.17.19 06.38	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	106	%	70-135	06.17.19 06.38	
o-Terphenyl	84-15-1	83	%	70-135	06.17.19 06.38	



Certificate of Analytical Results 627724



KJ Environmental & Civil Engineering, Aubrey, TX

Redhills Pipeline 1RP-5470

Sample Id: **SB-09 0-2'**

Matrix: Soil

Date Received: 06.13.19 18.40

Lab Sample Id: 627724-058

Date Collected: 06.11.19 15.59

Sample Depth: 0 - 2

Analytical Method: BTEX by SW 8260C

Prep Method: SW5035A

Tech: HOP

% Moisture: 3.39

Analyst: HOP

Date Prep: 06.19.19 16.10

Basis: Dry Weight

Seq Number: 3092875

SUB: T104704215-19-29

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00103	0.00103	mg/kg	06.20.19 05.32	U	1
Toluene	108-88-3	<0.00103	0.00103	mg/kg	06.20.19 05.32	U	1
Ethylbenzene	100-41-4	<0.00103	0.00103	mg/kg	06.20.19 05.32	U	1
m,p-Xylenes	179601-23-1	<0.00206	0.00206	mg/kg	06.20.19 05.32	U	1
o-Xylene	95-47-6	<0.00103	0.00103	mg/kg	06.20.19 05.32	U	1
Total Xylenes	1330-20-7	<0.00103	0.00103	mg/kg	06.20.19 05.32	U	1
Total BTEX		<0.00103	0.00103	mg/kg	06.20.19 05.32	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
Dibromofluoromethane	1868-53-7	118	%	74-126	06.20.19 05.32		
1,2-Dichloroethane-D4	17060-07-0	119	%	80-120	06.20.19 05.32		
Toluene-D8	2037-26-5	99	%	73-132	06.20.19 05.32		
4-Bromofluorobenzene	460-00-4	88	%	58-152	06.20.19 05.32		



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KJ Environmental & Civil Engineering, Aubrey, TX

Redhills Pipeline 1RP-5470

Sample Id: **SB-09 2-4'**

Matrix: Soil

Date Received: 06.13.19 18.40

Lab Sample Id: 627724-059

Date Collected: 06.11.19 16.03

Sample Depth: 2 - 4

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: CHE

% Moisture: 4.09

Analyst: CHE

Date Prep: 06.17.19 12.25

Basis: Dry Weight

Seq Number: 3092621

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	826	5.22	mg/kg	06.17.19 18.12		1



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KJ Environmental & Civil Engineering, Aubrey, TX Redhills Pipeline 1RP-5470

Sample Id: SB-09 4-6'	Matrix: Soil	Date Received: 06.13.19 18.40
Lab Sample Id: 627724-060	Date Collected: 06.11.19 16.06	Sample Depth: 4 - 6
Analytical Method: Chloride by EPA 300		Prep Method: E300P
Tech: CHE		% Moisture: 21.65
Analyst: CHE	Date Prep: 06.17.19 12.25	Basis: Dry Weight
Seq Number: 3092621		

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	14.9	6.37	mg/kg	06.17.19 18.29		1



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KJ Environmental & Civil Engineering, Aubrey, TX Redhills Pipeline 1RP-5470

Sample Id: SB-09 6-8'	Matrix: Soil	Date Received: 06.13.19 18.40
Lab Sample Id: 627724-061	Date Collected: 06.11.19 16.09	Sample Depth: 6 - 8
Analytical Method: Chloride by EPA 300		Prep Method: E300P
Tech: CHE		% Moisture: 2.8
Analyst: CHE	Date Prep: 06.17.19 12.25	Basis: Dry Weight
Seq Number: 3092621		

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<5.14	5.14	mg/kg	06.17.19 18.35	U	1



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KJ Environmental & Civil Engineering, Aubrey, TX Redhills Pipeline 1RP-5470

Sample Id: SB-09 8-10'	Matrix: Soil	Date Received: 06.13.19 18.40
Lab Sample Id: 627724-062	Date Collected: 06.11.19 16.13	Sample Depth: 8 - 10
Analytical Method: Chloride by EPA 300		Prep Method: E300P
Tech: CHE		% Moisture: 3.34
Analyst: CHE	Date Prep: 06.17.19 12.25	Basis: Dry Weight
Seq Number: 3092621		

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<5.13	5.13	mg/kg	06.17.19 18.40	U	1



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KJ Environmental & Civil Engineering, Aubrey, TX Redhills Pipeline 1RP-5470

Sample Id: SB-09 10-12'	Matrix: Soil	Date Received: 06.13.19 18.40
Lab Sample Id: 627724-063	Date Collected: 06.11.19 16.17	Sample Depth: 10 - 12
Analytical Method: Chloride by EPA 300		Prep Method: E300P
Tech: CHE		% Moisture: 19.34
Analyst: CHE	Date Prep: 06.17.19 12.25	Basis: Dry Weight
Seq Number: 3092621		

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<6.26	6.26	mg/kg	06.17.19 18.46	U	1



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KJ Environmental & Civil Engineering, Aubrey, TX Redhills Pipeline 1RP-5470

Sample Id: SB-09 12-14'	Matrix: Soil	Date Received: 06.13.19 18.40
Lab Sample Id: 627724-064	Date Collected: 06.11.19 16.20	Sample Depth: 12 - 14
Analytical Method: Chloride by EPA 300		Prep Method: E300P
Tech: CHE		% Moisture: 10.54
Analyst: CHE	Date Prep: 06.17.19 12.25	Basis: Dry Weight
Seq Number: 3092621		

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<5.63	5.63	mg/kg	06.17.19 18.51	U	1



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KJ Environmental & Civil Engineering, Aubrey, TX Redhills Pipeline 1RP-5470

Sample Id: **SB-09 14-15'** Matrix: Soil Date Received: 06.13.19 18.40
Lab Sample Id: 627724-065 Date Collected: 06.11.19 16.23 Sample Depth: 14 - 15
Analytical Method: Chloride by EPA 300 Prep Method: E300P
Tech: CHE % Moisture: 9.84
Analyst: CHE Date Prep: 06.17.19 12.25 Basis: Dry Weight
Seq Number: 3092621

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	7.54	5.53	mg/kg	06.17.19 18.57		1



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KJ Environmental & Civil Engineering, Aubrey, TX

Redhills Pipeline 1RP-5470

Sample Id: **SB-10 0-2'**

Matrix: Soil

Date Received: 06.13.19 18.40

Lab Sample Id: 627724-066

Date Collected: 06.11.19 16.30

Sample Depth: 0 - 2

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: CHE

% Moisture: 3.55

Analyst: CHE

Date Prep: 06.17.19 12.25

Basis: Dry Weight

Seq Number: 3092621

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	2140	25.7	mg/kg	06.17.19 19.14		5

Analytical Method: TPH by SW8015 Mod

Prep Method: TX1005P

Tech: ARM

% Moisture: 3.55

Analyst: ARM

Date Prep: 06.15.19 15.00

Basis: Dry Weight

Seq Number: 3092645

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.5	15.5	mg/kg	06.17.19 07.03	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.5	15.5	mg/kg	06.17.19 07.03	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.5	15.5	mg/kg	06.17.19 07.03	U	1
Total TPH	PHC635	<15.5	15.5	mg/kg	06.17.19 07.03	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	100	%	70-135	06.17.19 07.03	
o-Terphenyl	84-15-1	78	%	70-135	06.17.19 07.03	



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KJ Environmental & Civil Engineering, Aubrey, TX

Redhills Pipeline 1RP-5470

Sample Id: **SB-10 0-2'**

Matrix: Soil

Date Received: 06.13.19 18.40

Lab Sample Id: 627724-066

Date Collected: 06.11.19 16.30

Sample Depth: 0 - 2

Analytical Method: BTEX by SW 8260C

Prep Method: SW5035A

Tech: HOP

% Moisture: 3.55

Analyst: HOP

Date Prep: 06.19.19 16.10

Basis: Dry Weight

Seq Number: 3092875

SUB: T104704215-19-29

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00103	0.00103	mg/kg	06.20.19 05.53	U	1
Toluene	108-88-3	<0.00103	0.00103	mg/kg	06.20.19 05.53	U	1
Ethylbenzene	100-41-4	<0.00103	0.00103	mg/kg	06.20.19 05.53	U	1
m,p-Xylenes	179601-23-1	<0.00206	0.00206	mg/kg	06.20.19 05.53	U	1
o-Xylene	95-47-6	<0.00103	0.00103	mg/kg	06.20.19 05.53	U	1
Total Xylenes	1330-20-7	<0.00103	0.00103	mg/kg	06.20.19 05.53	U	1
Total BTEX		<0.00103	0.00103	mg/kg	06.20.19 05.53	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
Dibromofluoromethane	1868-53-7	119	%	74-126	06.20.19 05.53		
1,2-Dichloroethane-D4	17060-07-0	118	%	80-120	06.20.19 05.53		
Toluene-D8	2037-26-5	102	%	73-132	06.20.19 05.53		
4-Bromofluorobenzene	460-00-4	83	%	58-152	06.20.19 05.53		



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KJ Environmental & Civil Engineering, Aubrey, TX Redhills Pipeline 1RP-5470

Sample Id: SB-10 2-4'	Matrix: Soil	Date Received: 06.13.19 18.40
Lab Sample Id: 627724-067	Date Collected: 06.11.19 16.33	Sample Depth: 2 - 4
Analytical Method: Chloride by EPA 300		Prep Method: E300P
Tech: CHE		% Moisture: 3.98
Analyst: CHE	Date Prep: 06.17.19 12.25	Basis: Dry Weight
Seq Number: 3092621		

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<5.20	5.20	mg/kg	06.17.19 19.19	U	1



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KJ Environmental & Civil Engineering, Aubrey, TX Redhills Pipeline 1RP-5470

Sample Id: SB-10 4-6'	Matrix: Soil	Date Received: 06.13.19 18.40
Lab Sample Id: 627724-068	Date Collected: 06.11.19 16.35	Sample Depth: 4 - 6
Analytical Method: Chloride by EPA 300		Prep Method: E300P
Tech: CHE		% Moisture: 7.3
Analyst: CHE	Date Prep: 06.17.19 12.25	Basis: Dry Weight
Seq Number: 3092621		

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<5.40	5.40	mg/kg	06.17.19 19.36	U	1



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KJ Environmental & Civil Engineering, Aubrey, TX

Redhills Pipeline 1RP-5470

Sample Id: **SB-10 6-8'**

Matrix: Soil

Date Received: 06.13.19 18.40

Lab Sample Id: 627724-069

Date Collected: 06.11.19 16.37

Sample Depth: 6 - 8

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: CHE

% Moisture: 5.84

Analyst: CHE

Date Prep: 06.17.19 12.25

Basis: Dry Weight

Seq Number: 3092621

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<5.35	5.35	mg/kg	06.17.19 19.42	U	1



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KJ Environmental & Civil Engineering, Aubrey, TX Redhills Pipeline 1RP-5470

Sample Id: SB-10 8-10'	Matrix: Soil	Date Received: 06.13.19 18.40
Lab Sample Id: 627724-070	Date Collected: 06.11.19 16.40	Sample Depth: 8 - 10
Analytical Method: Chloride by EPA 300		Prep Method: E300P
Tech: CHE		% Moisture: 5.73
Analyst: CHE	Date Prep: 06.17.19 12.25	Basis: Dry Weight
Seq Number: 3092621		

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<5.29	5.29	mg/kg	06.17.19 19.48	U	1



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KJ Environmental & Civil Engineering, Aubrey, TX

Redhills Pipeline 1RP-5470

Sample Id: **SB-10 10-12'**

Matrix: Soil

Date Received: 06.13.19 18.40

Lab Sample Id: 627724-071

Date Collected: 06.11.19 16.43

Sample Depth: 10 - 12

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: CHE

% Moisture: 3.87

Analyst: CHE

Date Prep: 06.17.19 12.25

Basis: Dry Weight

Seq Number: 3092621

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<5.23	5.23	mg/kg	06.17.19 19.53	U	1



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KJ Environmental & Civil Engineering, Aubrey, TX

Redhills Pipeline 1RP-5470

Sample Id: **SB-10 12-14'**

Matrix: Soil

Date Received: 06.13.19 18.40

Lab Sample Id: 627724-072

Date Collected: 06.11.19 16.45

Sample Depth: 12 - 14

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: CHE

% Moisture: 6.05

Analyst: CHE

Date Prep: 06.17.19 12.25

Basis: Dry Weight

Seq Number: 3092621

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	11.6	5.32	mg/kg	06.17.19 19.59		1



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KJ Environmental & Civil Engineering, Aubrey, TX

Redhills Pipeline 1RP-5470

Sample Id: **SB-11 0-2'**

Matrix: Soil

Date Received: 06.13.19 18.40

Lab Sample Id: 627724-073

Date Collected: 06.11.19 16.50

Sample Depth: 0 - 2

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: CHE

% Moisture: 3.87

Analyst: CHE

Date Prep: 06.17.19 12.25

Basis: Dry Weight

Seq Number: 3092621

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<5.24	5.24	mg/kg	06.17.19 20.05	U	1

Analytical Method: TPH by SW8015 Mod

Prep Method: TX1005P

Tech: ARM

% Moisture: 3.87

Analyst: ARM

Date Prep: 06.15.19 15.00

Basis: Dry Weight

Seq Number: 3092645

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.6	15.6	mg/kg	06.17.19 07.51	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.6	15.6	mg/kg	06.17.19 07.51	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.6	15.6	mg/kg	06.17.19 07.51	U	1
Total TPH	PHC635	<15.6	15.6	mg/kg	06.17.19 07.51	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	116	%	70-135	06.17.19 07.51	
o-Terphenyl	84-15-1	99	%	70-135	06.17.19 07.51	



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KJ Environmental & Civil Engineering, Aubrey, TX

Redhills Pipeline 1RP-5470

Sample Id: **SB-11 0-2'**

Matrix: Soil

Date Received: 06.13.19 18.40

Lab Sample Id: 627724-073

Date Collected: 06.11.19 16.50

Sample Depth: 0 - 2

Analytical Method: BTEX by SW 8260C

Prep Method: SW5035A

Tech: HOP

% Moisture: 3.87

Analyst: HOP

Date Prep: 06.19.19 16.10

Basis: Dry Weight

Seq Number: 3092875

SUB: T104704215-19-29

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00103	0.00103	mg/kg	06.20.19 01.54	U	1
Toluene	108-88-3	<0.00103	0.00103	mg/kg	06.20.19 01.54	U	1
Ethylbenzene	100-41-4	<0.00103	0.00103	mg/kg	06.20.19 01.54	U	1
m,p-Xylenes	179601-23-1	<0.00206	0.00206	mg/kg	06.20.19 01.54	U	1
o-Xylene	95-47-6	<0.00103	0.00103	mg/kg	06.20.19 01.54	U	1
Total Xylenes	1330-20-7	<0.00103	0.00103	mg/kg	06.20.19 01.54	U	1
Total BTEX		<0.00103	0.00103	mg/kg	06.20.19 01.54	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
Dibromofluoromethane	1868-53-7	110	%	74-126	06.20.19 01.54		
1,2-Dichloroethane-D4	17060-07-0	104	%	80-120	06.20.19 01.54		
Toluene-D8	2037-26-5	106	%	73-132	06.20.19 01.54		
4-Bromofluorobenzene	460-00-4	89	%	58-152	06.20.19 01.54		



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KJ Environmental & Civil Engineering, Aubrey, TX

Redhills Pipeline 1RP-5470

Sample Id: **SB-11 2-4'**

Matrix: Soil

Date Received: 06.13.19 18.40

Lab Sample Id: 627724-074

Date Collected: 06.11.19 16.53

Sample Depth: 2 - 4

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: CHE

% Moisture: 3.77

Analyst: CHE

Date Prep: 06.17.19 12.25

Basis: Dry Weight

Seq Number: 3092621

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<5.23	5.23	mg/kg	06.17.19 20.10	U	1



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KJ Environmental & Civil Engineering, Aubrey, TX Redhills Pipeline 1RP-5470

Sample Id: SB-11 4-6'	Matrix: Soil	Date Received: 06.13.19 18.40
Lab Sample Id: 627724-075	Date Collected: 06.11.19 16.55	Sample Depth: 4 - 6
Analytical Method: Chloride by EPA 300		Prep Method: E300P
Tech: CHE		% Moisture: 5.15
Analyst: CHE	Date Prep: 06.17.19 16.40	Basis: Dry Weight
Seq Number: 3092626		

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<5.26	5.26	mg/kg	06.17.19 17.01	U	1



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KJ Environmental & Civil Engineering, Aubrey, TX

Redhills Pipeline 1RP-5470

Sample Id: **SB-11 6-8'**

Matrix: Soil

Date Received: 06.13.19 18.40

Lab Sample Id: 627724-076

Date Collected: 06.11.19 15.58

Sample Depth: 6 - 8

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: CHE

% Moisture: 9.56

Analyst: CHE

Date Prep: 06.17.19 16.40

Basis: Dry Weight

Seq Number: 3092626

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<5.54	5.54	mg/kg	06.17.19 17.15	U	1



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KJ Environmental & Civil Engineering, Aubrey, TX Redhills Pipeline 1RP-5470

Sample Id: SB-11 8-10'	Matrix: Soil	Date Received: 06.13.19 18.40
Lab Sample Id: 627724-077	Date Collected: 06.11.19 17.01	Sample Depth: 8 - 10
Analytical Method: Chloride by EPA 300		Prep Method: E300P
Tech: CHE		% Moisture: 6.37
Analyst: CHE	Date Prep: 06.17.19 16.40	Basis: Dry Weight
Seq Number: 3092626		

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<5.32	5.32	mg/kg	06.17.19 17.20	U	1



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KJ Environmental & Civil Engineering, Aubrey, TX Redhills Pipeline 1RP-5470

Sample Id: SB-11 10-12'	Matrix: Soil	Date Received: 06.13.19 18.40
Lab Sample Id: 627724-078	Date Collected: 06.11.19 17.04	Sample Depth: 10 - 12
Analytical Method: Chloride by EPA 300		Prep Method: E300P
Tech: CHE		% Moisture: 3.59
Analyst: CHE	Date Prep: 06.17.19 16.40	Basis: Dry Weight
Seq Number: 3092626		

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<5.24	5.24	mg/kg	06.17.19 17.25	U	1



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KJ Environmental & Civil Engineering, Aubrey, TX

Redhills Pipeline 1RP-5470

Sample Id: **SB-11 12-14**

Matrix: Soil

Date Received: 06.13.19 18.40

Lab Sample Id: 627724-079

Date Collected: 06.11.19 17.07

Sample Depth: 12 - 14

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: CHE

% Moisture: 9

Analyst: CHE

Date Prep: 06.17.19 16.40

Basis: Dry Weight

Seq Number: 3092626

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<5.44	5.44	mg/kg	06.17.19 17.30	U	1



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KJ Environmental & Civil Engineering, Aubrey, TX

Redhills Pipeline 1RP-5470

Sample Id: **SB-11 14-16'**

Matrix: Soil

Date Received: 06.13.19 18.40

Lab Sample Id: 627724-080

Date Collected: 06.11.19 17.10

Sample Depth: 14 - 16

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: CHE

% Moisture: 6.53

Analyst: CHE

Date Prep: 06.17.19 16.40

Basis: Dry Weight

Seq Number: 3092626

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<5.39	5.39	mg/kg	06.17.19 17.44	U	1



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KJ Environmental & Civil Engineering, Aubrey, TX Redhills Pipeline 1RP-5470

Sample Id: SB-11 16-18'	Matrix: Soil	Date Received: 06.13.19 18.40
Lab Sample Id: 627724-081	Date Collected: 06.11.19 17.13	Sample Depth: 16 - 18
Analytical Method: Chloride by EPA 300		Prep Method: E300P
Tech: CHE		% Moisture: 9.24
Analyst: CHE	Date Prep: 06.17.19 16.40	Basis: Dry Weight
Seq Number: 3092626		

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	6.11	5.51	mg/kg	06.17.19 17.49		1



Certificate of Analytical Results 627724



KJ Environmental & Civil Engineering, Aubrey, TX

Redhills Pipeline 1RP-5470

Sample Id: **SB-12 0-2'**

Matrix: Soil

Date Received: 06.13.19 18.40

Lab Sample Id: 627724-082

Date Collected: 06.11.19 17.20

Sample Depth: 0 - 2

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: CHE

% Moisture: 3.53

Analyst: CHE

Date Prep: 06.17.19 16.40

Basis: Dry Weight

Seq Number: 3092626

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	21.3	5.15	mg/kg	06.17.19 17.54		1

Analytical Method: TPH by SW8015 Mod

Prep Method: TX1005P

Tech: ARM

% Moisture: 3.53

Analyst: ARM

Date Prep: 06.15.19 15.00

Basis: Dry Weight

Seq Number: 3092645

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.5	15.5	mg/kg	06.17.19 08.15	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.5	15.5	mg/kg	06.17.19 08.15	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.5	15.5	mg/kg	06.17.19 08.15	U	1
Total TPH	PHC635	<15.5	15.5	mg/kg	06.17.19 08.15	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	100	%	70-135	06.17.19 08.15	
o-Terphenyl	84-15-1	84	%	70-135	06.17.19 08.15	



Certificate of Analytical Results 627724



KJ Environmental & Civil Engineering, Aubrey, TX

Redhills Pipeline 1RP-5470

Sample Id: **SB-12 0-2'**

Matrix: Soil

Date Received: 06.13.19 18.40

Lab Sample Id: 627724-082

Date Collected: 06.11.19 17.20

Sample Depth: 0 - 2

Analytical Method: BTEX by SW 8260C

Prep Method: SW5035A

Tech: HOP

% Moisture: 3.53

Analyst: HOP

Date Prep: 06.19.19 16.10

Basis: Dry Weight

Seq Number: 3092875

SUB: T104704215-19-29

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00103	0.00103	mg/kg	06.20.19 02.13	U	1
Toluene	108-88-3	<0.00103	0.00103	mg/kg	06.20.19 02.13	U	1
Ethylbenzene	100-41-4	<0.00103	0.00103	mg/kg	06.20.19 02.13	U	1
m,p-Xylenes	179601-23-1	<0.00206	0.00206	mg/kg	06.20.19 02.13	U	1
o-Xylene	95-47-6	<0.00103	0.00103	mg/kg	06.20.19 02.13	U	1
Total Xylenes	1330-20-7	<0.00103	0.00103	mg/kg	06.20.19 02.13	U	1
Total BTEX		<0.00103	0.00103	mg/kg	06.20.19 02.13	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
Dibromofluoromethane	1868-53-7	112	%	74-126	06.20.19 02.13		
1,2-Dichloroethane-D4	17060-07-0	114	%	80-120	06.20.19 02.13		
Toluene-D8	2037-26-5	102	%	73-132	06.20.19 02.13		
4-Bromofluorobenzene	460-00-4	91	%	58-152	06.20.19 02.13		



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KJ Environmental & Civil Engineering, Aubrey, TX

Redhills Pipeline 1RP-5470

Sample Id: **SB-12 2-4'**

Matrix: Soil

Date Received: 06.13.19 18.40

Lab Sample Id: 627724-083

Date Collected: 06.11.19 17.23

Sample Depth: 2 - 4

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: CHE

% Moisture: 3.47

Analyst: CHE

Date Prep: 06.17.19 16.40

Basis: Dry Weight

Seq Number: 3092626

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<5.23	5.23	mg/kg	06.17.19 17.59	U	1



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KJ Environmental & Civil Engineering, Aubrey, TX Redhills Pipeline 1RP-5470

Sample Id: SB-12 4-8'	Matrix: Soil	Date Received: 06.13.19 18.40
Lab Sample Id: 627724-084	Date Collected: 06.11.19 17.26	Sample Depth: 4 - 8
Analytical Method: Chloride by EPA 300		Prep Method: E300P
Tech: CHE		% Moisture: 5.43
Analyst: CHE	Date Prep: 06.17.19 16.40	Basis: Dry Weight
Seq Number: 3092626		

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<5.27	5.27	mg/kg	06.17.19 18.04	U	1



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KJ Environmental & Civil Engineering, Aubrey, TX Redhills Pipeline 1RP-5470

Sample Id: SB-12 6-8'	Matrix: Soil	Date Received: 06.13.19 18.40
Lab Sample Id: 627724-085	Date Collected: 06.11.19 17.29	Sample Depth: 68
Analytical Method: Chloride by EPA 300		Prep Method: E300P
Tech: CHE		% Moisture: 4.74
Analyst: CHE	Date Prep: 06.17.19 16.40	Basis: Dry Weight
Seq Number: 3092626		

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<5.27	5.27	mg/kg	06.17.19 18.08	U	1



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KJ Environmental & Civil Engineering, Aubrey, TX

Redhills Pipeline 1RP-5470

Sample Id: **SB-12 8-10'**

Matrix: Soil

Date Received: 06.13.19 18.40

Lab Sample Id: 627724-086

Date Collected: 06.11.19 17.32

Sample Depth: 8 - 10

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: CHE

% Moisture: 3.57

Analyst: CHE

Date Prep: 06.17.19 16.40

Basis: Dry Weight

Seq Number: 3092626

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<5.19	5.19	mg/kg	06.17.19 18.23	U	1



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KJ Environmental & Civil Engineering, Aubrey, TX Redhills Pipeline 1RP-5470

Sample Id: SB-12 10-12'	Matrix: Soil	Date Received: 06.13.19 18.40
Lab Sample Id: 627724-087	Date Collected: 06.11.19 17.35	Sample Depth: 10 - 12
Analytical Method: Chloride by EPA 300		Prep Method: E300P
Tech: CHE		% Moisture: 3.45
Analyst: CHE	Date Prep: 06.17.19 16.40	Basis: Dry Weight
Seq Number: 3092626		

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<5.13	5.13	mg/kg	06.17.19 18.28	U	1



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KJ Environmental & Civil Engineering, Aubrey, TX

Redhills Pipeline 1RP-5470

Sample Id: **SB-12 12-14'**

Matrix: Soil

Date Received: 06.13.19 18.40

Lab Sample Id: 627724-088

Date Collected: 06.11.19 17.38

Sample Depth: 12 - 14

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: CHE

% Moisture: 8.11

Analyst: CHE

Date Prep: 06.17.19 16.40

Basis: Dry Weight

Seq Number: 3092626

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<5.47	5.47	mg/kg	06.17.19 18.42	U	1



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KJ Environmental & Civil Engineering, Aubrey, TX Redhills Pipeline 1RP-5470

Sample Id: SB-12 14-16'	Matrix: Soil	Date Received: 06.13.19 18.40
Lab Sample Id: 627724-089	Date Collected: 06.11.19 17.42	Sample Depth: 14 - 16
Analytical Method: Chloride by EPA 300		Prep Method: E300P
Tech: CHE		% Moisture: 8.3
Analyst: CHE	Date Prep: 06.17.19 16.40	Basis: Dry Weight
Seq Number: 3092626		

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<5.46	5.46	mg/kg	06.17.19 18.47	U	1



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KJ Environmental & Civil Engineering, Aubrey, TX

Redhills Pipeline 1RP-5470

Sample Id: **SB-13 0-2'**

Matrix: Soil

Date Received: 06.13.19 18.40

Lab Sample Id: 627724-090

Date Collected: 06.11.19 17.55

Sample Depth: 0 - 2

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: CHE

% Moisture: 3.29

Analyst: CHE

Date Prep: 06.17.19 16.40

Basis: Dry Weight

Seq Number: 3092626

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	13.3	5.22	mg/kg	06.17.19 18.52		1

Analytical Method: TPH by SW8015 Mod

Prep Method: TX1005P

Tech: ARM

% Moisture: 3.29

Analyst: ARM

Date Prep: 06.15.19 15.00

Basis: Dry Weight

Seq Number: 3092645

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.5	15.5	mg/kg	06.17.19 08.40	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.5	15.5	mg/kg	06.17.19 08.40	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.5	15.5	mg/kg	06.17.19 08.40	U	1
Total TPH	PHC635	<15.5	15.5	mg/kg	06.17.19 08.40	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1-Chlorooctane	111-85-3	107	%	70-135	06.17.19 08.40		
o-Terphenyl	84-15-1	84	%	70-135	06.17.19 08.40		



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KJ Environmental & Civil Engineering, Aubrey, TX

Redhills Pipeline 1RP-5470

Sample Id: **SB-13 0-2'**

Matrix: Soil

Date Received: 06.13.19 18.40

Lab Sample Id: 627724-090

Date Collected: 06.11.19 17.55

Sample Depth: 0 - 2

Analytical Method: BTEX by SW 8260C

Prep Method: SW5035A

Tech: HOP

% Moisture: 3.29

Analyst: HOP

Date Prep: 06.19.19 16.10

Basis: Dry Weight

Seq Number: 3092875

SUB: T104704215-19-29

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00103	0.00103	mg/kg	06.20.19 02.53	U	1
Toluene	108-88-3	<0.00103	0.00103	mg/kg	06.20.19 02.53	U	1
Ethylbenzene	100-41-4	<0.00103	0.00103	mg/kg	06.20.19 02.53	U	1
m,p-Xylenes	179601-23-1	<0.00206	0.00206	mg/kg	06.20.19 02.53	U	1
o-Xylene	95-47-6	<0.00103	0.00103	mg/kg	06.20.19 02.53	U	1
Total Xylenes	1330-20-7	<0.00103	0.00103	mg/kg	06.20.19 02.53	U	1
Total BTEX		<0.00103	0.00103	mg/kg	06.20.19 02.53	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
Dibromofluoromethane	1868-53-7	114	%	74-126	06.20.19 02.53		
1,2-Dichloroethane-D4	17060-07-0	105	%	80-120	06.20.19 02.53		
Toluene-D8	2037-26-5	98	%	73-132	06.20.19 02.53		
4-Bromofluorobenzene	460-00-4	93	%	58-152	06.20.19 02.53		



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KJ Environmental & Civil Engineering, Aubrey, TX

Redhills Pipeline 1RP-5470

Sample Id: **SB-13 2-4'**

Matrix: Soil

Date Received: 06.13.19 18.40

Lab Sample Id: 627724-091

Date Collected: 06.11.19 17.58

Sample Depth: 2 - 4

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: CHE

% Moisture: 2.33

Analyst: CHE

Date Prep: 06.17.19 16.40

Basis: Dry Weight

Seq Number: 3092626

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	8.44	5.12	mg/kg	06.17.19 18.57		1



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KJ Environmental & Civil Engineering, Aubrey, TX Redhills Pipeline 1RP-5470

Sample Id: SB-13 4-6'	Matrix: Soil	Date Received: 06.13.19 18.40
Lab Sample Id: 627724-092	Date Collected: 06.11.19 18.02	Sample Depth: 4 - 6
Analytical Method: Chloride by EPA 300		Prep Method: E300P
Tech: CHE		% Moisture: 5.09
Analyst: CHE	Date Prep: 06.17.19 16.40	Basis: Dry Weight
Seq Number: 3092626		

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	27.0	5.25	mg/kg	06.17.19 19.02		1



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KJ Environmental & Civil Engineering, Aubrey, TX

Redhills Pipeline 1RP-5470

Sample Id: **SB-13 6-8'**

Matrix: Soil

Date Received: 06.13.19 18.40

Lab Sample Id: 627724-093

Date Collected: 06.11.19 18.05

Sample Depth: 6 - 8

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: CHE

% Moisture: 3.31

Analyst: CHE

Date Prep: 06.17.19 16.40

Basis: Dry Weight

Seq Number: 3092626

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<5.13	5.13	mg/kg	06.17.19 19.07	U	1



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KJ Environmental & Civil Engineering, Aubrey, TX

Redhills Pipeline 1RP-5470

Sample Id: **SB-13 8-10'**

Matrix: Soil

Date Received: 06.13.19 18.40

Lab Sample Id: 627724-094

Date Collected: 06.11.19 18.09

Sample Depth: 8 - 10

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: CHE

% Moisture: 3.37

Analyst: CHE

Date Prep: 06.17.19 16.40

Basis: Dry Weight

Seq Number: 3092626

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	5.20	5.17	mg/kg	06.17.19 19.11		1



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KJ Environmental & Civil Engineering, Aubrey, TX Redhills Pipeline 1RP-5470

Sample Id: SB-13 10-12'	Matrix: Soil	Date Received: 06.13.19 18.40
Lab Sample Id: 627724-095	Date Collected: 06.11.19 18.13	Sample Depth: 10 - 12
Analytical Method: Chloride by EPA 300		Prep Method: E300P
Tech: CHE		% Moisture: 4.32
Analyst: CHE	Date Prep: 06.17.19 16.55	Basis: Dry Weight
Seq Number: 3092631		

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<5.23	5.23	mg/kg	06.17.19 19.41	U	1



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KJ Environmental & Civil Engineering, Aubrey, TX

Redhills Pipeline 1RP-5470

Sample Id: **SB-13 12-14'**

Matrix: Soil

Date Received: 06.13.19 18.40

Lab Sample Id: 627724-096

Date Collected: 06.11.19 18.17

Sample Depth: 12 - 14

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: CHE

% Moisture: 13.09

Analyst: CHE

Date Prep: 06.17.19 16.55

Basis: Dry Weight

Seq Number: 3092631

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<5.70	5.70	mg/kg	06.17.19 19.55	U	1



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KJ Environmental & Civil Engineering, Aubrey, TX

Redhills Pipeline 1RP-5470

Sample Id: **SB-13 14-16'**

Matrix: Soil

Date Received: 06.13.19 18.40

Lab Sample Id: 627724-097

Date Collected: 06.11.19 18.20

Sample Depth: 14 - 16

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: CHE

% Moisture: 7.54

Analyst: CHE

Date Prep: 06.17.19 16.55

Basis: Dry Weight

Seq Number: 3092631

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<5.45	5.45	mg/kg	06.17.19 20.00	U	1



Certificate of Analytical Results 627724



KJ Environmental & Civil Engineering, Aubrey, TX

Redhills Pipeline 1RP-5470

Sample Id: **SB-14 0-2'**

Matrix: Soil

Date Received: 06.13.19 18.40

Lab Sample Id: 627724-098

Date Collected: 06.12.19 09.39

Sample Depth: 0 - 2

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: CHE

% Moisture: 3.71

Analyst: CHE

Date Prep: 06.17.19 16.55

Basis: Dry Weight

Seq Number: 3092631

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	1490	26.0	mg/kg	06.18.19 08.45		5

Analytical Method: TPH by SW8015 Mod

Prep Method: TX1005P

Tech: ARM

% Moisture: 3.71

Analyst: ARM

Date Prep: 06.15.19 15.00

Basis: Dry Weight

Seq Number: 3092645

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.5	15.5	mg/kg	06.17.19 09.04	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.5	15.5	mg/kg	06.17.19 09.04	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.5	15.5	mg/kg	06.17.19 09.04	U	1
Total TPH	PHC635	<15.5	15.5	mg/kg	06.17.19 09.04	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	108	%	70-135	06.17.19 09.04	
o-Terphenyl	84-15-1	88	%	70-135	06.17.19 09.04	



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KJ Environmental & Civil Engineering, Aubrey, TX

Redhills Pipeline 1RP-5470

Sample Id: **SB-14 0-2'**

Matrix: Soil

Date Received: 06.13.19 18.40

Lab Sample Id: 627724-098

Date Collected: 06.12.19 09.39

Sample Depth: 0 - 2

Analytical Method: BTEX by SW 8260C

Prep Method: SW5035A

Tech: HOP

% Moisture: 3.71

Analyst: HOP

Date Prep: 06.19.19 16.10

Basis: Dry Weight

Seq Number: 3092875

SUB: T104704215-19-29

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00103	0.00103	mg/kg	06.20.19 03.12	U	1
Toluene	108-88-3	<0.00103	0.00103	mg/kg	06.20.19 03.12	U	1
Ethylbenzene	100-41-4	<0.00103	0.00103	mg/kg	06.20.19 03.12	U	1
m,p-Xylenes	179601-23-1	<0.00207	0.00207	mg/kg	06.20.19 03.12	U	1
o-Xylene	95-47-6	<0.00103	0.00103	mg/kg	06.20.19 03.12	U	1
Total Xylenes	1330-20-7	<0.00103	0.00103	mg/kg	06.20.19 03.12	U	1
Total BTEX		<0.00103	0.00103	mg/kg	06.20.19 03.12	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
Dibromofluoromethane	1868-53-7	113	%	74-126	06.20.19 03.12		
1,2-Dichloroethane-D4	17060-07-0	114	%	80-120	06.20.19 03.12		
Toluene-D8	2037-26-5	99	%	73-132	06.20.19 03.12		
4-Bromofluorobenzene	460-00-4	92	%	58-152	06.20.19 03.12		



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KJ Environmental & Civil Engineering, Aubrey, TX Redhills Pipeline 1RP-5470

Sample Id: SB-14 2-4'	Matrix: Soil	Date Received: 06.13.19 18.40
Lab Sample Id: 627724-099	Date Collected: 06.12.19 09.42	Sample Depth: 2 - 4
Analytical Method: Chloride by EPA 300		Prep Method: E300P
Tech: CHE		% Moisture: 3.3
Analyst: CHE	Date Prep: 06.17.19 16.55	Basis: Dry Weight
Seq Number: 3092631		

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	1440	5.19	mg/kg	06.17.19 20.10		1



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KJ Environmental & Civil Engineering, Aubrey, TX Redhills Pipeline 1RP-5470

Sample Id: SB-14-4-6'	Matrix: Soil	Date Received: 06.13.19 18.40
Lab Sample Id: 627724-100	Date Collected: 06.12.19 09.45	Sample Depth: 4 - 6
Analytical Method: Chloride by EPA 300		Prep Method: E300P
Tech: CHE		% Moisture: 7.5
Analyst: CHE	Date Prep: 06.17.19 16.55	Basis: Dry Weight
Seq Number: 3092631		

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<5.46	5.46	mg/kg	06.17.19 20.24	U	1



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KJ Environmental & Civil Engineering, Aubrey, TX

Redhills Pipeline 1RP-5470

Sample Id: **SB-14 6-8'**

Matrix: Soil

Date Received: 06.13.19 18.40

Lab Sample Id: 627724-101

Date Collected: 06.12.19 09.48

Sample Depth: 6 - 8

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: CHE

% Moisture: 4.11

Analyst: CHE

Date Prep: 06.17.19 16.55

Basis: Dry Weight

Seq Number: 3092631

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<5.20	5.20	mg/kg	06.17.19 20.29	U	1



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KJ Environmental & Civil Engineering, Aubrey, TX Redhills Pipeline 1RP-5470

Sample Id: SB-14 8-10'	Matrix: Soil	Date Received: 06.13.19 18.40
Lab Sample Id: 627724-102	Date Collected: 06.12.19 09.51	Sample Depth: 8 - 10
Analytical Method: Chloride by EPA 300		Prep Method: E300P
Tech: CHE		% Moisture: 4.04
Analyst: CHE	Date Prep: 06.17.19 16.55	Basis: Dry Weight
Seq Number: 3092631		

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<5.18	5.18	mg/kg	06.17.19 20.34	U	1



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KJ Environmental & Civil Engineering, Aubrey, TX

Redhills Pipeline 1RP-5470

Sample Id: **SB-14 10-12'**

Matrix: Soil

Date Received: 06.13.19 18.40

Lab Sample Id: 627724-103

Date Collected: 06.12.19 09.54

Sample Depth: 10 - 12

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: CHE

% Moisture: 3.35

Analyst: CHE

Date Prep: 06.17.19 16.55

Basis: Dry Weight

Seq Number: 3092631

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<5.12	5.12	mg/kg	06.17.19 20.39	U	1



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KJ Environmental & Civil Engineering, Aubrey, TX

Redhills Pipeline 1RP-5470

Sample Id: **SB-14 12-14'**

Matrix: Soil

Date Received: 06.13.19 18.40

Lab Sample Id: 627724-104

Date Collected: 06.12.19 09.57

Sample Depth: 12 - 14

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: CHE

% Moisture: 13.86

Analyst: CHE

Date Prep: 06.17.19 16.55

Basis: Dry Weight

Seq Number: 3092631

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<5.75	5.75	mg/kg	06.17.19 20.43	U	1



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KJ Environmental & Civil Engineering, Aubrey, TX

Redhills Pipeline 1RP-5470

Sample Id: **SB-14 14-16'**

Matrix: Soil

Date Received: 06.13.19 18.40

Lab Sample Id: 627724-105

Date Collected: 06.12.19 10.00

Sample Depth: 14 - 16

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: CHE

% Moisture: 5.73

Analyst: CHE

Date Prep: 06.17.19 16.55

Basis: Dry Weight

Seq Number: 3092631

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<5.25	5.25	mg/kg	06.17.19 20.48	U	1



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KJ Environmental & Civil Engineering, Aubrey, TX

Redhills Pipeline 1RP-5470

Sample Id: **SB-15 0-2'**

Matrix: Soil

Date Received: 06.13.19 18.40

Lab Sample Id: 627724-106

Date Collected: 06.12.19 10.07

Sample Depth: 0 - 2

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: CHE

% Moisture: 1.82

Analyst: CHE

Date Prep: 06.17.19 16.55

Basis: Dry Weight

Seq Number: 3092631

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<5.11	5.11	mg/kg	06.17.19 21.03	U	1

Analytical Method: TPH by SW8015 Mod

Prep Method: TX1005P

Tech: ARM

% Moisture: 1.82

Analyst: ARM

Date Prep: 06.15.19 15.00

Basis: Dry Weight

Seq Number: 3092645

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.2	15.2	mg/kg	06.17.19 09.28	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.2	15.2	mg/kg	06.17.19 09.28	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.2	15.2	mg/kg	06.17.19 09.28	U	1
Total TPH	PHC635	<15.2	15.2	mg/kg	06.17.19 09.28	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	104	%	70-135	06.17.19 09.28	
o-Terphenyl	84-15-1	80	%	70-135	06.17.19 09.28	



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Redhills Pipeline 1RP-5470

Sample Id: **SB-15 0-2'**

Matrix: Soil

Date Received: 06.13.19 18.40

Lab Sample Id: 627724-106

Date Collected: 06.12.19 10.07

Sample Depth: 0 - 2

Analytical Method: BTEX by SW 8260C

Prep Method: SW5035A

Tech: HOP

% Moisture: 1.82

Analyst: HOP

Date Prep: 06.19.19 16.10

Basis: Dry Weight

Seq Number: 3092875

SUB: T104704215-19-29

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00102	0.00102	mg/kg	06.20.19 03.32	U	1
Toluene	108-88-3	<0.00102	0.00102	mg/kg	06.20.19 03.32	U	1
Ethylbenzene	100-41-4	<0.00102	0.00102	mg/kg	06.20.19 03.32	U	1
m,p-Xylenes	179601-23-1	<0.00204	0.00204	mg/kg	06.20.19 03.32	U	1
o-Xylene	95-47-6	<0.00102	0.00102	mg/kg	06.20.19 03.32	U	1
Total Xylenes	1330-20-7	<0.00102	0.00102	mg/kg	06.20.19 03.32	U	1
Total BTEX		<0.00102	0.00102	mg/kg	06.20.19 03.32	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
Dibromofluoromethane	1868-53-7	115	%	74-126	06.20.19 03.32		
1,2-Dichloroethane-D4	17060-07-0	108	%	80-120	06.20.19 03.32		
Toluene-D8	2037-26-5	100	%	73-132	06.20.19 03.32		
4-Bromofluorobenzene	460-00-4	92	%	58-152	06.20.19 03.32		



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KJ Environmental & Civil Engineering, Aubrey, TX

Redhills Pipeline 1RP-5470

Sample Id: **SB-15 2-4'**

Matrix: Soil

Date Received: 06.13.19 18.40

Lab Sample Id: 627724-107

Date Collected: 06.12.19 10.10

Sample Depth: 2 - 4

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: CHE

% Moisture: 1.12

Analyst: CHE

Date Prep: 06.17.19 16.55

Basis: Dry Weight

Seq Number: 3092631

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<5.06	5.06	mg/kg	06.17.19 21.08	U	1



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KJ Environmental & Civil Engineering, Aubrey, TX Redhills Pipeline 1RP-5470

Sample Id: SB-15 4-6'	Matrix: Soil	Date Received: 06.13.19 18.40
Lab Sample Id: 627724-108	Date Collected: 06.12.19 10.13	Sample Depth: 4 - 6
Analytical Method: Chloride by EPA 300		Prep Method: E300P
Tech: CHE		% Moisture: 2.38
Analyst: CHE	Date Prep: 06.17.19 16.55	Basis: Dry Weight
Seq Number: 3092631		

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<5.15	5.15	mg/kg	06.17.19 21.22	U	1



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KJ Environmental & Civil Engineering, Aubrey, TX

Redhills Pipeline 1RP-5470

Sample Id: **SB-15 6-8'**

Matrix: Soil

Date Received: 06.13.19 18.40

Lab Sample Id: 627724-109

Date Collected: 06.12.19 10.17

Sample Depth: 6 - 8

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: CHE

% Moisture: 5.56

Analyst: CHE

Date Prep: 06.17.19 16.55

Basis: Dry Weight

Seq Number: 3092631

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<5.35	5.35	mg/kg	06.17.19 21.27	U	1



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KJ Environmental & Civil Engineering, Aubrey, TX Redhills Pipeline 1RP-5470

Sample Id: SB-15 8-10'	Matrix: Soil	Date Received: 06.13.19 18.40
Lab Sample Id: 627724-110	Date Collected: 06.12.19 10.20	Sample Depth: 8 - 10
Analytical Method: Chloride by EPA 300		Prep Method: E300P
Tech: CHE		% Moisture: 5.15
Analyst: CHE	Date Prep: 06.17.19 16.55	Basis: Dry Weight
Seq Number: 3092631		

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<5.26	5.26	mg/kg	06.17.19 21.32	U	1



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KJ Environmental & Civil Engineering, Aubrey, TX

Redhills Pipeline 1RP-5470

Sample Id: **SB-15 10-12'**

Matrix: Soil

Date Received: 06.13.19 18.40

Lab Sample Id: 627724-111

Date Collected: 06.12.19 10.23

Sample Depth: 10 - 12

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: CHE

% Moisture: 4.8

Analyst: CHE

Date Prep: 06.17.19 16.55

Basis: Dry Weight

Seq Number: 3092631

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<5.22	5.22	mg/kg	06.17.19 21.37	U	1



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KJ Environmental & Civil Engineering, Aubrey, TX

Redhills Pipeline 1RP-5470

Sample Id: **SB-15 12-14'**

Matrix: Soil

Date Received: 06.13.19 18.40

Lab Sample Id: 627724-112

Date Collected: 06.12.19 10.27

Sample Depth: 12 - 14

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: CHE

% Moisture: 4.98

Analyst: CHE

Date Prep: 06.17.19 16.55

Basis: Dry Weight

Seq Number: 3092631

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<5.30	5.30	mg/kg	06.17.19 21.42	U	1



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KJ Environmental & Civil Engineering, Aubrey, TX Redhills Pipeline 1RP-5470

Sample Id: SB-15 14-16'	Matrix: Soil	Date Received: 06.13.19 18.40
Lab Sample Id: 627724-113	Date Collected: 06.12.19 10.30	Sample Depth: 14 - 16
Analytical Method: Chloride by EPA 300		Prep Method: E300P
Tech: CHE		% Moisture: 7.44
Analyst: CHE	Date Prep: 06.17.19 16.55	Basis: Dry Weight
Seq Number: 3092631		

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<5.46	5.46	mg/kg	06.17.19 21.46	U	1



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Redhills Pipeline 1RP-5470

Sample Id: **SB-16 0-2'**

Matrix: Soil

Date Received: 06.13.19 18.40

Lab Sample Id: 627724-114

Date Collected: 06.12.19 10.42

Sample Depth: 0 - 2

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: CHE

% Moisture: .64

Analyst: CHE

Date Prep: 06.17.19 16.55

Basis: Dry Weight

Seq Number: 3092631

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<5.08	5.08	mg/kg	06.17.19 21.51	U	1

Analytical Method: TPH by SW8015 Mod

Prep Method: TX1005P

Tech: ARM

% Moisture: .64

Analyst: ARM

Date Prep: 06.15.19 15.00

Basis: Dry Weight

Seq Number: 3092645

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.1	15.1	mg/kg	06.17.19 09.52	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.1	15.1	mg/kg	06.17.19 09.52	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.1	15.1	mg/kg	06.17.19 09.52	U	1
Total TPH	PHC635	<15.1	15.1	mg/kg	06.17.19 09.52	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	97	%	70-135	06.17.19 09.52	
o-Terphenyl	84-15-1	74	%	70-135	06.17.19 09.52	



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Redhills Pipeline 1RP-5470

Sample Id: **SB-16 0-2'**

Matrix: Soil

Date Received: 06.13.19 18.40

Lab Sample Id: 627724-114

Date Collected: 06.12.19 10.42

Sample Depth: 0 - 2

Analytical Method: BTEX by SW 8260C

Prep Method: SW5035A

Tech: HOP

% Moisture: .64

Analyst: HOP

Date Prep: 06.19.19 16.10

Basis: Dry Weight

Seq Number: 3092875

SUB: T104704215-19-29

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00101	0.00101	mg/kg	06.20.19 04.12	U	1
Toluene	108-88-3	<0.00101	0.00101	mg/kg	06.20.19 04.12	U	1
Ethylbenzene	100-41-4	<0.00101	0.00101	mg/kg	06.20.19 04.12	U	1
m,p-Xylenes	179601-23-1	<0.00201	0.00201	mg/kg	06.20.19 04.12	U	1
o-Xylene	95-47-6	<0.00101	0.00101	mg/kg	06.20.19 04.12	U	1
Total Xylenes	1330-20-7	<0.00101	0.00101	mg/kg	06.20.19 04.12	U	1
Total BTEX		<0.00101	0.00101	mg/kg	06.20.19 04.12	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
Dibromofluoromethane	1868-53-7	117	%	74-126	06.20.19 04.12		
1,2-Dichloroethane-D4	17060-07-0	108	%	80-120	06.20.19 04.12		
Toluene-D8	2037-26-5	104	%	73-132	06.20.19 04.12		
4-Bromofluorobenzene	460-00-4	87	%	58-152	06.20.19 04.12		



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Redhills Pipeline 1RP-5470

Sample Id: **SB-16 2-4'**

Matrix: Soil

Date Received: 06.13.19 18.40

Lab Sample Id: 627724-115

Date Collected: 06.12.19 10.45

Sample Depth: 2 - 4

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: CHE

% Moisture: .91

Analyst: CHE

Date Prep: 06.17.19 17.30

Basis: Dry Weight

Seq Number: 3092632

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<5.07	5.07	mg/kg	06.17.19 20.44	U	1



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KJ Environmental & Civil Engineering, Aubrey, TX

Redhills Pipeline 1RP-5470

Sample Id: **SB-16 4-6'**

Matrix: Soil

Date Received: 06.13.19 18.40

Lab Sample Id: 627724-116

Date Collected: 06.12.19 10.48

Sample Depth: 4 - 6

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: CHE

% Moisture: 1.23

Analyst: CHE

Date Prep: 06.17.19 17.30

Basis: Dry Weight

Seq Number: 3092632

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<5.09	5.09	mg/kg	06.17.19 21.01	U	1



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KJ Environmental & Civil Engineering, Aubrey, TX Redhills Pipeline 1RP-5470

Sample Id: SB-16 6-8'	Matrix: Soil	Date Received: 06.13.19 18.40
Lab Sample Id: 627724-117	Date Collected: 06.12.19 10.52	Sample Depth: 6 - 8
Analytical Method: Chloride by EPA 300		Prep Method: E300P
Tech: CHE		% Moisture: 2.06
Analyst: CHE	Date Prep: 06.17.19 17.30	Basis: Dry Weight
Seq Number: 3092632		

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<5.09	5.09	mg/kg	06.17.19 21.07	U	1



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KJ Environmental & Civil Engineering, Aubrey, TX

Redhills Pipeline 1RP-5470

Sample Id: **SB-16 8-10'**

Matrix: Soil

Date Received: 06.13.19 18.40

Lab Sample Id: 627724-118

Date Collected: 06.12.19 10.56

Sample Depth: 8 - 10

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: CHE

% Moisture: 5.12

Analyst: CHE

Date Prep: 06.17.19 17.30

Basis: Dry Weight

Seq Number: 3092632

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<5.30	5.30	mg/kg	06.17.19 21.12	U	1



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KJ Environmental & Civil Engineering, Aubrey, TX Redhills Pipeline 1RP-5470

Sample Id: SB-16 10-12'	Matrix: Soil	Date Received: 06.13.19 18.40
Lab Sample Id: 627724-119	Date Collected: 06.12.19 11.00	Sample Depth: 10 - 12
Analytical Method: Chloride by EPA 300		Prep Method: E300P
Tech: CHE		% Moisture: 6.33
Analyst: CHE	Date Prep: 06.17.19 17.30	Basis: Dry Weight
Seq Number: 3092632		

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<5.38	5.38	mg/kg	06.17.19 21.18	U	1



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KJ Environmental & Civil Engineering, Aubrey, TX

Redhills Pipeline 1RP-5470

Sample Id: **SB-16 12-14'**

Matrix: Soil

Date Received: 06.13.19 18.40

Lab Sample Id: 627724-120

Date Collected: 06.12.19 11.03

Sample Depth: 12 - 14

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: CHE

% Moisture: 4.7

Analyst: CHE

Date Prep: 06.17.19 17.30

Basis: Dry Weight

Seq Number: 3092632

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<5.29	5.29	mg/kg	06.17.19 21.35	U	1



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Redhills Pipeline 1RP-5470

Sample Id: **SB-16 14-16'**

Matrix: Soil

Date Received: 06.13.19 18.40

Lab Sample Id: 627724-121

Date Collected: 06.12.19 11.06

Sample Depth: 14 - 16

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: CHE

% Moisture: 7.4

Analyst: CHE

Date Prep: 06.17.19 17.30

Basis: Dry Weight

Seq Number: 3092632

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<5.37	5.37	mg/kg	06.17.19 21.40	U	1



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KJ Environmental & Civil Engineering, Aubrey, TX

Redhills Pipeline 1RP-5470

Sample Id: **SB-17 0-2'**

Matrix: Soil

Date Received: 06.13.19 18.40

Lab Sample Id: 627724-122

Date Collected: 06.12.19 11.15

Sample Depth: 0 - 2

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: CHE

% Moisture: 1.89

Analyst: CHE

Date Prep: 06.17.19 17.30

Basis: Dry Weight

Seq Number: 3092632

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<5.11	5.11	mg/kg	06.17.19 21.46	U	1

Analytical Method: TPH by SW8015 Mod

Prep Method: TX1005P

Tech: ARM

% Moisture: 1.89

Analyst: ARM

Date Prep: 06.15.19 15.00

Basis: Dry Weight

Seq Number: 3092645

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.3	15.3	mg/kg	06.17.19 10.17	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.3	15.3	mg/kg	06.17.19 10.17	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.3	15.3	mg/kg	06.17.19 10.17	U	1
Total TPH	PHC635	<15.3	15.3	mg/kg	06.17.19 10.17	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	105	%	70-135	06.17.19 10.17	
o-Terphenyl	84-15-1	84	%	70-135	06.17.19 10.17	



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Redhills Pipeline 1RP-5470

Sample Id: **SB-17 0-2'**

Matrix: Soil

Date Received: 06.13.19 18.40

Lab Sample Id: 627724-122

Date Collected: 06.12.19 11.15

Sample Depth: 0 - 2

Analytical Method: BTEX by SW 8260C

Prep Method: SW5035A

Tech: HOP

% Moisture: 1.89

Analyst: HOP

Date Prep: 06.19.19 16.10

Basis: Dry Weight

Seq Number: 3092875

SUB: T104704215-19-29

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00103	0.00103	mg/kg	06.20.19 06.13	U	1
Toluene	108-88-3	<0.00103	0.00103	mg/kg	06.20.19 06.13	U	1
Ethylbenzene	100-41-4	<0.00103	0.00103	mg/kg	06.20.19 06.13	U	1
m,p-Xylenes	179601-23-1	<0.00205	0.00205	mg/kg	06.20.19 06.13	U	1
o-Xylene	95-47-6	<0.00103	0.00103	mg/kg	06.20.19 06.13	U	1
Total Xylenes	1330-20-7	<0.00103	0.00103	mg/kg	06.20.19 06.13	U	1
Total BTEX		<0.00103	0.00103	mg/kg	06.20.19 06.13	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
Dibromofluoromethane	1868-53-7	119	%	74-126	06.20.19 06.13		
1,2-Dichloroethane-D4	17060-07-0	113	%	80-120	06.20.19 06.13		
Toluene-D8	2037-26-5	99	%	73-132	06.20.19 06.13		
4-Bromofluorobenzene	460-00-4	86	%	58-152	06.20.19 06.13		



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Redhills Pipeline 1RP-5470

Sample Id: **SB-17 2-4'**

Matrix: Soil

Date Received: 06.13.19 18.40

Lab Sample Id: 627724-123

Date Collected: 06.12.19 11.18

Sample Depth: 2 - 4

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: CHE

% Moisture: 1.61

Analyst: CHE

Date Prep: 06.17.19 17.30

Basis: Dry Weight

Seq Number: 3092632

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<5.04	5.04	mg/kg	06.17.19 21.52	U	1



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KJ Environmental & Civil Engineering, Aubrey, TX

Redhills Pipeline 1RP-5470

Sample Id: **SB-17 4-6'**

Matrix: Soil

Date Received: 06.13.19 18.40

Lab Sample Id: 627724-124

Date Collected: 06.12.19 11.21

Sample Depth: 4 - 6

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: CHE

% Moisture: 5.62

Analyst: CHE

Date Prep: 06.17.19 17.30

Basis: Dry Weight

Seq Number: 3092632

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<5.32	5.32	mg/kg	06.17.19 21.57	U	1



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KJ Environmental & Civil Engineering, Aubrey, TX

Redhills Pipeline 1RP-5470

Sample Id: **SB-17 6-8'**

Matrix: Soil

Date Received: 06.13.19 18.40

Lab Sample Id: 627724-125

Date Collected: 06.12.19 11.24

Sample Depth: 6 - 8

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: CHE

% Moisture: 7.78

Analyst: CHE

Date Prep: 06.17.19 17.30

Basis: Dry Weight

Seq Number: 3092632

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<5.45	5.45	mg/kg	06.17.19 22.03	U	1



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KJ Environmental & Civil Engineering, Aubrey, TX Redhills Pipeline 1RP-5470

Sample Id: SB-17 8-10'	Matrix: Soil	Date Received: 06.13.19 18.40
Lab Sample Id: 627724-126	Date Collected: 06.12.19 11.27	Sample Depth: 8 - 10
Analytical Method: Chloride by EPA 300		Prep Method: E300P
Tech: CHE		% Moisture: 6.91
Analyst: CHE	Date Prep: 06.17.19 17.30	Basis: Dry Weight
Seq Number: 3092632		

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<5.41	5.41	mg/kg	06.17.19 22.20	U	1



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KJ Environmental & Civil Engineering, Aubrey, TX Redhills Pipeline 1RP-5470

Sample Id: SB-17 10-12'	Matrix: Soil	Date Received: 06.13.19 18.40
Lab Sample Id: 627724-127	Date Collected: 06.12.19 11.30	Sample Depth: 10 - 12
Analytical Method: Chloride by EPA 300		Prep Method: E300P
Tech: CHE		% Moisture: 4.02
Analyst: CHE	Date Prep: 06.17.19 17.30	Basis: Dry Weight
Seq Number: 3092632		

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<5.26	5.26	mg/kg	06.17.19 22.25	U	1



Certificate of Analytical Results 627724



KJ Environmental & Civil Engineering, Aubrey, TX

Redhills Pipeline 1RP-5470

Sample Id: **SB-17 12-14'**

Matrix: Soil

Date Received: 06.13.19 18.40

Lab Sample Id: 627724-128

Date Collected: 06.12.19 11.33

Sample Depth: 12 - 14

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: CHE

% Moisture: 14.42

Analyst: CHE

Date Prep: 06.17.19 17.30

Basis: Dry Weight

Seq Number: 3092632

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<5.85	5.85	mg/kg	06.17.19 22.42	U	1



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KJ Environmental & Civil Engineering, Aubrey, TX

Redhills Pipeline 1RP-5470

Sample Id: **SB-17 14-16'** Matrix: Soil Date Received: 06.13.19 18.40
Lab Sample Id: 627724-129 Date Collected: 06.12.19 11.36 Sample Depth: 14 - 16
Analytical Method: Chloride by EPA 300 Prep Method: E300P
Tech: CHE % Moisture: 14.31
Analyst: CHE Date Prep: 06.17.19 17.30 Basis: Dry Weight
Seq Number: 3092632

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<5.83	5.83	mg/kg	06.17.19 22.48	U	1



Certificate of Analytical Results 627724



KJ Environmental & Civil Engineering, Aubrey, TX

Redhills Pipeline 1RP-5470

Sample Id: **SB-18 0-2'**

Matrix: Soil

Date Received: 06.13.19 18.40

Lab Sample Id: 627724-130

Date Collected: 06.12.19 11.47

Sample Depth: 0 - 2

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: CHE

% Moisture: .75

Analyst: CHE

Date Prep: 06.17.19 17.30

Basis: Dry Weight

Seq Number: 3092632

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<5.05	5.05	mg/kg	06.17.19 22.53	U	1

Analytical Method: TPH by SW8015 Mod

Prep Method: TX1005P

Tech: ARM

% Moisture: .75

Analyst: ARM

Date Prep: 06.15.19 15.00

Basis: Dry Weight

Seq Number: 3092645

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.1	15.1	mg/kg	06.17.19 10.41	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.1	15.1	mg/kg	06.17.19 10.41	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.1	15.1	mg/kg	06.17.19 10.41	U	1
Total TPH	PHC635	<15.1	15.1	mg/kg	06.17.19 10.41	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	95	%	70-135	06.17.19 10.41	
o-Terphenyl	84-15-1	68	%	70-135	06.17.19 10.41	**



Certificate of Analytical Results 627724



KJ Environmental & Civil Engineering, Aubrey, TX

Redhills Pipeline 1RP-5470

Sample Id: **SB-18 0-2'**

Matrix: Soil

Date Received: 06.13.19 18.40

Lab Sample Id: 627724-130

Date Collected: 06.12.19 11.47

Sample Depth: 0 - 2

Analytical Method: BTEX by SW 8260C

Prep Method: SW5035A

Tech: HOP

% Moisture: .75

Analyst: HOP

Date Prep: 06.19.19 16.10

Basis: Dry Weight

Seq Number: 3092875

SUB: T104704215-19-29

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00100	0.00100	mg/kg	06.20.19 04.32	U	1
Toluene	108-88-3	<0.00100	0.00100	mg/kg	06.20.19 04.32	U	1
Ethylbenzene	100-41-4	<0.00100	0.00100	mg/kg	06.20.19 04.32	U	1
m,p-Xylenes	179601-23-1	<0.00200	0.00200	mg/kg	06.20.19 04.32	U	1
o-Xylene	95-47-6	<0.00100	0.00100	mg/kg	06.20.19 04.32	U	1
Total Xylenes	1330-20-7	<0.00100	0.00100	mg/kg	06.20.19 04.32	U	1
Total BTEX		<0.00100	0.00100	mg/kg	06.20.19 04.32	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
Dibromofluoromethane	1868-53-7	114	%	74-126	06.20.19 04.32		
1,2-Dichloroethane-D4	17060-07-0	113	%	80-120	06.20.19 04.32		
Toluene-D8	2037-26-5	100	%	73-132	06.20.19 04.32		
4-Bromofluorobenzene	460-00-4	86	%	58-152	06.20.19 04.32		



Certificate of Analytical Results 627724



KJ Environmental & Civil Engineering, Aubrey, TX

Redhills Pipeline 1RP-5470

Sample Id: **SB-18 2-4'**

Matrix: Soil

Date Received: 06.13.19 18.40

Lab Sample Id: 627724-131

Date Collected: 06.12.19 11.50

Sample Depth: 2 - 4

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: CHE

% Moisture: .96

Analyst: CHE

Date Prep: 06.17.19 17.30

Basis: Dry Weight

Seq Number: 3092632

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<5.07	5.07	mg/kg	06.17.19 22.59	U	1



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KJ Environmental & Civil Engineering, Aubrey, TX Redhills Pipeline 1RP-5470

Sample Id: SB-18 4-6'	Matrix: Soil	Date Received: 06.13.19 18.40
Lab Sample Id: 627724-132	Date Collected: 06.12.19 11.53	Sample Depth: 4 - 6
Analytical Method: Chloride by EPA 300		Prep Method: E300P
Tech: CHE		% Moisture: 2.59
Analyst: CHE	Date Prep: 06.17.19 17.30	Basis: Dry Weight
Seq Number: 3092632		

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<5.15	5.15	mg/kg	06.17.19 23.05	U	1



Certificate of Analytical Results 627724



KJ Environmental & Civil Engineering, Aubrey, TX

Redhills Pipeline 1RP-5470

Sample Id: **SB-18 6-8'**

Matrix: Soil

Date Received: 06.13.19 18.40

Lab Sample Id: 627724-133

Date Collected: 06.12.19 11.56

Sample Depth: 6 - 8

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: CHE

% Moisture: 4.23

Analyst: CHE

Date Prep: 06.17.19 17.30

Basis: Dry Weight

Seq Number: 3092632

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<5.26	5.26	mg/kg	06.17.19 23.10	U	1



Certificate of Analytical Results 627724



KJ Environmental & Civil Engineering, Aubrey, TX Redhills Pipeline 1RP-5470

Sample Id: SB-18 8-10'	Matrix: Soil	Date Received: 06.13.19 18.40
Lab Sample Id: 627724-134	Date Collected: 06.12.19 12.00	Sample Depth: 8 - 10
Analytical Method: Chloride by EPA 300		Prep Method: E300P
Tech: CHE		% Moisture: 1.77
Analyst: CHE	Date Prep: 06.17.19 17.30	Basis: Dry Weight
Seq Number: 3092632		

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<5.06	5.06	mg/kg	06.17.19 23.16	U	1



Certificate of Analytical Results 627724



KJ Environmental & Civil Engineering, Aubrey, TX Redhills Pipeline 1RP-5470

Sample Id: SB-18 10-12'	Matrix: Soil	Date Received: 06.13.19 18.40
Lab Sample Id: 627724-135	Date Collected: 06.12.19 12.03	Sample Depth: 10 - 12
Analytical Method: Chloride by EPA 300		Prep Method: E300P
Tech: CHE		% Moisture: 1.48
Analyst: CHE	Date Prep: 06.17.19 17.40	Basis: Dry Weight
Seq Number: 3092652		

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<5.03	5.03	mg/kg	06.18.19 10.24	U	1



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KJ Environmental & Civil Engineering, Aubrey, TX

Redhills Pipeline 1RP-5470

Sample Id: **SB-18 12-14'**

Matrix: Soil

Date Received: 06.13.19 18.40

Lab Sample Id: 627724-136

Date Collected: 06.12.19 12.06

Sample Depth: 12 - 14

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: CHE

% Moisture: 1.51

Analyst: CHE

Date Prep: 06.17.19 17.40

Basis: Dry Weight

Seq Number: 3092652

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<5.13	5.13	mg/kg	06.18.19 10.41	U	1



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KJ Environmental & Civil Engineering, Aubrey, TX Redhills Pipeline 1RP-5470

Sample Id: SB-18 14-16'	Matrix: Soil	Date Received: 06.13.19 18.40
Lab Sample Id: 627724-137	Date Collected: 06.12.19 12.10	Sample Depth: 14 - 16
Analytical Method: Chloride by EPA 300		Prep Method: E300P
Tech: CHE		% Moisture: 2.56
Analyst: CHE	Date Prep: 06.17.19 17.40	Basis: Dry Weight
Seq Number: 3092652		

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<5.12	5.12	mg/kg	06.18.19 10.47	U	1



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KJ Environmental & Civil Engineering, Aubrey, TX

Redhills Pipeline 1RP-5470

Sample Id: **BG-01 0-2'**

Matrix: Soil

Date Received: 06.13.19 18.40

Lab Sample Id: 627724-138

Date Collected: 06.11.19 14.27

Sample Depth: 0 - 2

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: CHE

% Moisture: 2.75

Analyst: CHE

Date Prep: 06.17.19 17.40

Basis: Dry Weight

Seq Number: 3092652

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<5.09	5.09	mg/kg	06.18.19 10.52	U	1

Analytical Method: TPH by SW8015 Mod

Prep Method: TX1005P

Tech: ARM

% Moisture: 2.75

Analyst: ARM

Date Prep: 06.15.19 15.00

Basis: Dry Weight

Seq Number: 3092645

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.4	15.4	mg/kg	06.17.19 11.05	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.4	15.4	mg/kg	06.17.19 11.05	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<15.4	15.4	mg/kg	06.17.19 11.05	U	1
Total TPH	PHC635	<15.4	15.4	mg/kg	06.17.19 11.05	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	115	%	70-135	06.17.19 11.05	
o-Terphenyl	84-15-1	106	%	70-135	06.17.19 11.05	



Certificate of Analytical Results 627724



KJ Environmental & Civil Engineering, Aubrey, TX

Redhills Pipeline 1RP-5470

Sample Id: **BG-01 0-2'**

Matrix: Soil

Date Received: 06.13.19 18.40

Lab Sample Id: 627724-138

Date Collected: 06.11.19 14.27

Sample Depth: 0 - 2

Analytical Method: BTEX by SW 8260C

Prep Method: SW5035A

Tech: HOP

% Moisture: 2.75

Analyst: HOP

Date Prep: 06.19.19 16.10

Basis: Dry Weight

Seq Number: 3092875

SUB: T104704215-19-29

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00103	0.00103	mg/kg	06.20.19 04.52	U	1
Toluene	108-88-3	<0.00103	0.00103	mg/kg	06.20.19 04.52	U	1
Ethylbenzene	100-41-4	<0.00103	0.00103	mg/kg	06.20.19 04.52	U	1
m,p-Xylenes	179601-23-1	<0.00206	0.00206	mg/kg	06.20.19 04.52	U	1
o-Xylene	95-47-6	<0.00103	0.00103	mg/kg	06.20.19 04.52	U	1
Total Xylenes	1330-20-7	<0.00103	0.00103	mg/kg	06.20.19 04.52	U	1
Total BTEX		<0.00103	0.00103	mg/kg	06.20.19 04.52	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
Dibromofluoromethane	1868-53-7	114	%	74-126	06.20.19 04.52		
1,2-Dichloroethane-D4	17060-07-0	113	%	80-120	06.20.19 04.52		
Toluene-D8	2037-26-5	100	%	73-132	06.20.19 04.52		
4-Bromofluorobenzene	460-00-4	85	%	58-152	06.20.19 04.52		



Certificate of Analytical Results 627724



KJ Environmental & Civil Engineering, Aubrey, TX

Redhills Pipeline 1RP-5470

Sample Id: **BG-01 2-4'**

Matrix: Soil

Date Received: 06.13.19 18.40

Lab Sample Id: 627724-139

Date Collected: 06.11.19 14.30

Sample Depth: 2 - 4

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: CHE

% Moisture: 5.76

Analyst: CHE

Date Prep: 06.17.19 17.40

Basis: Dry Weight

Seq Number: 3092652

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<5.25	5.25	mg/kg	06.18.19 10.58	U	1



Certificate of Analytical Results 627724



KJ Environmental & Civil Engineering, Aubrey, TX

Redhills Pipeline 1RP-5470

Sample Id: **BG-01 4-6'**

Matrix: Soil

Date Received: 06.13.19 18.40

Lab Sample Id: 627724-140

Date Collected: 06.11.19 14.32

Sample Depth: 4 - 6

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: CHE

% Moisture: 6.64

Analyst: CHE

Date Prep: 06.17.19 17.40

Basis: Dry Weight

Seq Number: 3092652

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<5.37	5.37	mg/kg	06.18.19 11.15	U	1



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KJ Environmental & Civil Engineering, Aubrey, TX

Redhills Pipeline 1RP-5470

Sample Id: **BG-01 6-8'**

Matrix: Soil

Date Received: 06.13.19 18.40

Lab Sample Id: 627724-141

Date Collected: 06.11.19 14.35

Sample Depth: 6 - 8

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: CHE

% Moisture: 6.56

Analyst: CHE

Date Prep: 06.17.19 17.40

Basis: Dry Weight

Seq Number: 3092652

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<5.39	5.39	mg/kg	06.18.19 11.21	U	1



Certificate of Analytical Results 627724



KJ Environmental & Civil Engineering, Aubrey, TX

Redhills Pipeline 1RP-5470

Sample Id: **BG-01 8-10'**

Matrix: Soil

Date Received: 06.13.19 18.40

Lab Sample Id: 627724-142

Date Collected: 06.11.19 14.38

Sample Depth: 8 - 10

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: CHE

% Moisture: 6.96

Analyst: CHE

Date Prep: 06.17.19 17.40

Basis: Dry Weight

Seq Number: 3092652

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<5.43	5.43	mg/kg	06.18.19 11.26	U	1



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KJ Environmental & Civil Engineering, Aubrey, TX

Redhills Pipeline 1RP-5470

Sample Id: **BG-01 10-12'**

Matrix: Soil

Date Received: 06.13.19 18.40

Lab Sample Id: 627724-143

Date Collected: 06.11.19 14.42

Sample Depth: 10 - 12

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: CHE

% Moisture: 3.78

Analyst: CHE

Date Prep: 06.17.19 17.40

Basis: Dry Weight

Seq Number: 3092652

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<5.25	5.25	mg/kg	06.18.19 11.32	U	1



Certificate of Analytical Results 627724



KJ Environmental & Civil Engineering, Aubrey, TX

Redhills Pipeline 1RP-5470

Sample Id: **BG 12-14'**

Matrix: Soil

Date Received: 06.13.19 18.40

Lab Sample Id: 627724-144

Date Collected: 06.11.19 14.45

Sample Depth: 12 - 14

Analytical Method: Chloride by EPA 300

Prep Method: E300P

Tech: CHE

% Moisture: 6.83

Analyst: CHE

Date Prep: 06.17.19 17.40

Basis: Dry Weight

Seq Number: 3092652

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<5.39	5.39	mg/kg	06.18.19 11.37	U	1

- X** In our quality control review of the data a QC deficiency was observed and flagged as noted. MS/MSD recoveries were found to be outside of the laboratory control limits due to possible matrix /chemical interference, or a concentration of target analyte high enough to affect the recovery of the spike concentration. This condition could also affect the relative percent difference in the MS/MSD.
- B** A target analyte or common laboratory contaminant was identified in the method blank. Its presence indicates possible field or laboratory contamination.
- D** The sample(s) were diluted due to targets detected over the highest point of the calibration curve, or due to matrix interference. Dilution factors are included in the final results. The result is from a diluted sample.
- E** The data exceeds the upper calibration limit; therefore, the concentration is reported as estimated.
- F** RPD exceeded lab control limits.
- J** The target analyte was positively identified below the quantitation limit and above the detection limit.
- U** Analyte was not detected.
- L** The LCS data for this analytical batch was reported below the laboratory control limits for this analyte. The department supervisor and QA Director reviewed data. The samples were either reanalyzed or flagged as estimated concentrations.
- H** The LCS data for this analytical batch was reported above the laboratory control limits. Supporting QC Data were reviewed by the Department Supervisor and QA Director. Data were determined to be valid for reporting.
- K** Sample analyzed outside of recommended hold time.
- JN** A combination of the "N" and the "J" qualifier. The analysis indicates that the analyte is "tentatively identified" and the associated numerical value may not be consistent with the amount actually present in the environmental sample.

** Surrogate recovered outside laboratory control limit.

BRL Below Reporting Limit.

RL Reporting Limit

MDL Method Detection Limit

SDL Sample Detection Limit

LOD Limit of Detection

PQL Practical Quantitation Limit

MQL Method Quantitation Limit

LOQ Limit of Quantitation

DL Method Detection Limit

NC Non-Calculable

SMP Client Sample

BLK

Method Blank

BKS/LCS Blank Spike/Laboratory Control Sample

BKSD/LCSD

Blank Spike Duplicate/Laboratory Control Sample Duplicate

MD/SD Method Duplicate/Sample Duplicate

MS

Matrix Spike

MSD: Matrix Spike Duplicate

+ NELAC certification not offered for this compound.

* (Next to analyte name or method description) = Outside XENCO's scope of NELAC accreditation

KJ Environmental & Civil Engineering
Redhills Pipeline 1RP-5470

Analytical Method: Chloride by EPA 300

Seq Number: 3092611

MB Sample Id: 7680064-1-BLK

Matrix: Solid

LCS Sample Id: 7680064-1-BKS

Prep Method: E300P

Date Prep: 06.17.19

LCSD Sample Id: 7680064-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	<5.00	250	245	98	246	98	90-110	0	20	mg/kg	06.17.19 11:27	

Analytical Method: Chloride by EPA 300

Seq Number: 3092614

MB Sample Id: 7680065-1-BLK

Matrix: Solid

LCS Sample Id: 7680065-1-BKS

Prep Method: E300P

Date Prep: 06.17.19

LCSD Sample Id: 7680065-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	<5.00	250	249	100	250	100	90-110	0	20	mg/kg	06.17.19 14:07	

Analytical Method: Chloride by EPA 300

Seq Number: 3092617

MB Sample Id: 7680066-1-BLK

Matrix: Solid

LCS Sample Id: 7680066-1-BKS

Prep Method: E300P

Date Prep: 06.17.19

LCSD Sample Id: 7680066-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	<5.00	250	244	98	244	98	90-110	0	20	mg/kg	06.17.19 14:22	

Analytical Method: Chloride by EPA 300

Seq Number: 3092621

MB Sample Id: 7680067-1-BLK

Matrix: Solid

LCS Sample Id: 7680067-1-BKS

Prep Method: E300P

Date Prep: 06.17.19

LCSD Sample Id: 7680067-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	<5.00	250	246	98	247	99	90-110	0	20	mg/kg	06.17.19 17:27	

Analytical Method: Chloride by EPA 300

Seq Number: 3092626

MB Sample Id: 7680084-1-BLK

Matrix: Solid

LCS Sample Id: 7680084-1-BKS

Prep Method: E300P

Date Prep: 06.17.19

LCSD Sample Id: 7680084-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	<5.00	250	252	101	253	101	90-110	0	20	mg/kg	06.17.19 16:51	

MS/MSD Percent Recovery
Relative Percent Difference
LCS/LCSD Recovery
Log Difference $[D] = 100 * (C - A) / B$
 $RPD = 200 * |(C - E) / (C + E)|$
 $[D] = 100 * (C) / [B]$
 $\text{Log Diff.} = \text{Log}(\text{Sample Duplicate}) - \text{Log}(\text{Original Sample})$ LCS = Laboratory Control Sample
A = Parent Result
C = MS/LCS Result
E = MSD/LCSD ResultMS = Matrix Spike
B = Spike Added
D = MSD/LCSD % Rec

KJ Environmental & Civil Engineering
Redhills Pipeline 1RP-5470

Analytical Method: Chloride by EPA 300

Seq Number: 3092631

MB Sample Id: 7680085-1-BLK

Matrix: Solid

LCS Sample Id: 7680085-1-BKS

Prep Method: E300P

Date Prep: 06.17.19

LCSD Sample Id: 7680085-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	<5.00	250	256	102	256	102	90-110	0	20	mg/kg	06.17.19 19:31	

Analytical Method: Chloride by EPA 300

Seq Number: 3092632

MB Sample Id: 7680129-1-BLK

Matrix: Solid

LCS Sample Id: 7680129-1-BKS

Prep Method: E300P

Date Prep: 06.17.19

LCSD Sample Id: 7680129-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	<5.00	250	249	100	248	99	90-110	0	20	mg/kg	06.17.19 20:33	

Analytical Method: Chloride by EPA 300

Seq Number: 3092652

MB Sample Id: 7680130-1-BLK

Matrix: Solid

LCS Sample Id: 7680130-1-BKS

Prep Method: E300P

Date Prep: 06.17.19

LCSD Sample Id: 7680130-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	<5.00	250	252	101	253	101	90-110	0	20	mg/kg	06.18.19 10:13	

Analytical Method: Chloride by EPA 300

Seq Number: 3092611

Parent Sample Id: 627724-005

Matrix: Soil

MS Sample Id: 627724-005 S

Prep Method: E300P

Date Prep: 06.17.19

MSD Sample Id: 627724-005 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	<5.33	266	264	99	264	99	90-110	0	20	mg/kg	06.17.19 12:49	

Analytical Method: Chloride by EPA 300

Seq Number: 3092611

Parent Sample Id: 627725-029

Matrix: Soil

MS Sample Id: 627725-029 S

Prep Method: E300P

Date Prep: 06.17.19

MSD Sample Id: 627725-029 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	<5.03	252	243	96	243	96	90-110	0	20	mg/kg	06.17.19 11:41	

MS/MSD Percent Recovery
Relative Percent Difference
LCS/LCSD Recovery
Log Difference $[D] = 100 * (C - A) / B$
 $RPD = 200 * |(C - E) / (C + E)|$
 $[D] = 100 * (C) / [B]$
Log Diff. = Log(Sample Duplicate) - Log(Original Sample)LCS = Laboratory Control Sample
A = Parent Result
C = MS/LCS Result
E = MSD/LCSD ResultMS = Matrix Spike
B = Spike Added
D = MSD/LCSD % Rec

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Redhills Pipeline 1RP-5470

Analytical Method: Chloride by EPA 300

Seq Number: 3092614

Parent Sample Id: 627724-015

Matrix: Soil

MS Sample Id: 627724-015 S

Prep Method: E300P

Date Prep: 06.17.19

MSD Sample Id: 627724-015 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	<5.22	261	268	103	267	102	90-110	0	20	mg/kg	06.17.19 14:21	

Analytical Method: Chloride by EPA 300

Seq Number: 3092614

Parent Sample Id: 627724-025

Matrix: Soil

MS Sample Id: 627724-025 S

Prep Method: E300P

Date Prep: 06.17.19

MSD Sample Id: 627724-025 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	<5.16	258	254	98	255	99	90-110	0	20	mg/kg	06.17.19 15:29	

Analytical Method: Chloride by EPA 300

Seq Number: 3092617

Parent Sample Id: 627724-035

Matrix: Soil

MS Sample Id: 627724-035 S

Prep Method: E300P

Date Prep: 06.17.19

MSD Sample Id: 627724-035 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	2.78	266	256	95	257	96	90-110	0	20	mg/kg	06.17.19 14:38	

Analytical Method: Chloride by EPA 300

Seq Number: 3092617

Parent Sample Id: 627724-045

Matrix: Soil

MS Sample Id: 627724-045 S

Prep Method: E300P

Date Prep: 06.17.19

MSD Sample Id: 627724-045 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	<5.15	258	267	103	269	104	90-110	1	20	mg/kg	06.17.19 15:57	

Analytical Method: Chloride by EPA 300

Seq Number: 3092621

Parent Sample Id: 627724-055

Matrix: Soil

MS Sample Id: 627724-055 S

Prep Method: E300P

Date Prep: 06.17.19

MSD Sample Id: 627724-055 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	<5.23	261	261	100	262	100	90-110	0	20	mg/kg	06.17.19 17:44	

MS/MSD Percent Recovery
Relative Percent Difference
LCS/LCSD Recovery
Log Difference $[D] = 100 * (C - A) / B$
 $RPD = 200 * |(C - E) / (C + E)|$
 $[D] = 100 * (C) / [B]$
Log Diff. = Log(Sample Duplicate) - Log(Original Sample)LCS = Laboratory Control Sample
A = Parent Result
C = MS/LCS Result
E = MSD/LCSD ResultMS = Matrix Spike
B = Spike Added
D = MSD/LCSD % Rec

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Analytical Method: Chloride by EPA 300

Seq Number: 3092621

Parent Sample Id: 627724-065

Matrix: Soil

MS Sample Id: 627724-065 S

Prep Method: E300P

Date Prep: 06.17.19

MSD Sample Id: 627724-065 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	7.54	277	289	102	290	102	90-110	0	20	mg/kg	06.17.19 19:03	

Analytical Method: Chloride by EPA 300

Seq Number: 3092626

Parent Sample Id: 627724-075

Matrix: Soil

MS Sample Id: 627724-075 S

Prep Method: E300P

Date Prep: 06.17.19

MSD Sample Id: 627724-075 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	<5.26	263	274	104	274	104	90-110	0	20	mg/kg	06.17.19 17:06	

Analytical Method: Chloride by EPA 300

Seq Number: 3092626

Parent Sample Id: 627724-085

Matrix: Soil

MS Sample Id: 627724-085 S

Prep Method: E300P

Date Prep: 06.17.19

MSD Sample Id: 627724-085 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	<5.27	263	272	103	273	104	90-110	0	20	mg/kg	06.17.19 18:13	

Analytical Method: Chloride by EPA 300

Seq Number: 3092631

Parent Sample Id: 627724-095

Matrix: Soil

MS Sample Id: 627724-095 S

Prep Method: E300P

Date Prep: 06.17.19

MSD Sample Id: 627724-095 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	<5.23	261	272	104	272	104	90-110	0	20	mg/kg	06.17.19 19:45	

Analytical Method: Chloride by EPA 300

Seq Number: 3092631

Parent Sample Id: 627724-105

Matrix: Soil

MS Sample Id: 627724-105 S

Prep Method: E300P

Date Prep: 06.17.19

MSD Sample Id: 627724-105 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	<5.25	263	272	103	273	104	90-110	0	20	mg/kg	06.17.19 20:53	

MS/MSD Percent Recovery
Relative Percent Difference
LCS/LCSD Recovery
Log Difference $[D] = 100 * (C - A) / B$
 $RPD = 200 * |(C - E) / (C + E)|$
 $[D] = 100 * (C) / [B]$
Log Diff. = Log(Sample Duplicate) - Log(Original Sample)LCS = Laboratory Control Sample
A = Parent Result
C = MS/LCS Result
E = MSD/LCSD ResultMS = Matrix Spike
B = Spike Added
D = MSD/LCSD % Rec



QC Summary 627724

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Analytical Method: Chloride by EPA 300

Seq Number: 3092632

Parent Sample Id: 627724-115

Matrix: Soil

MS Sample Id: 627724-115 S

Prep Method: E300P

Date Prep: 06.17.19

MSD Sample Id: 627724-115 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	<5.07	253	254	100	255	101	90-110	0	20	mg/kg	06.17.19 20:50	

Analytical Method: Chloride by EPA 300

Seq Number: 3092632

Parent Sample Id: 627724-125

Matrix: Soil

MS Sample Id: 627724-125 S

Prep Method: E300P

Date Prep: 06.17.19

MSD Sample Id: 627724-125 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	<5.45	273	276	101	276	101	90-110	0	20	mg/kg	06.17.19 22:08	

Analytical Method: Chloride by EPA 300

Seq Number: 3092652

Parent Sample Id: 627724-135

Matrix: Soil

MS Sample Id: 627724-135 S

Prep Method: E300P

Date Prep: 06.17.19

MSD Sample Id: 627724-135 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	<5.03	252	245	97	247	98	90-110	1	20	mg/kg	06.18.19 10:30	

Analytical Method: Chloride by EPA 300

Seq Number: 3092652

Parent Sample Id: 627896-006

Matrix: Soil

MS Sample Id: 627896-006 S

Prep Method: E300P

Date Prep: 06.17.19

MSD Sample Id: 627896-006 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	30.5	248	274	98	273	98	90-110	0	20	mg/kg	06.18.19 11:49	

Analytical Method: Percent Moisture

Seq Number: 3092421

Matrix: Solid

MB Sample Id: 3092421-1-BLK

Parameter	MB Result	Units	Analysis Date	Flag
Percent Moisture	<	%	06.14.19 17:35	

MS/MSD Percent Recovery
Relative Percent Difference
LCS/LCSD Recovery
Log Difference

$[D] = 100 * (C - A) / B$
 $RPD = 200 * |(C - E) / (C + E)|$
 $[D] = 100 * (C) / [B]$
Log Diff. = Log(Sample Duplicate) - Log(Original Sample)

LCS = Laboratory Control Sample
A = Parent Result
C = MS/LCS Result
E = MSD/LCSD Result

MS = Matrix Spike
B = Spike Added
D = MSD/LCSD % Rec

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Redhills Pipeline 1RP-5470

Analytical Method: Percent Moisture

Seq Number: 3092422

Matrix: Solid

MB Sample Id: 3092422-1-BLK

Parameter	MB Result	Units	Analysis Date	Flag
Percent Moisture	<	%	06.14.19 17:35	

Analytical Method: Percent Moisture

Seq Number: 3092600

Matrix: Solid

MB Sample Id: 3092600-1-BLK

Parameter	MB Result	Units	Analysis Date	Flag
Percent Moisture	<	%	06.17.19 17:00	

Analytical Method: Percent Moisture

Seq Number: 3092602

Matrix: Solid

MB Sample Id: 3092602-1-BLK

Parameter	MB Result	Units	Analysis Date	Flag
Percent Moisture	<	%	06.17.19 17:00	

Analytical Method: Percent Moisture

Seq Number: 3092606

Matrix: Solid

MB Sample Id: 3092606-1-BLK

Parameter	MB Result	Units	Analysis Date	Flag
Percent Moisture	<	%	06.17.19 17:00	

Analytical Method: Percent Moisture

Seq Number: 3092607

Matrix: Solid

MB Sample Id: 3092607-1-BLK

Parameter	MB Result	Units	Analysis Date	Flag
Percent Moisture	<	%	06.17.19 17:00	

MS/MSD Percent Recovery
Relative Percent Difference
LCS/LCSD Recovery
Log Difference $[D] = 100 * (C - A) / B$
 $RPD = 200 * |(C - E) / (C + E)|$
 $[D] = 100 * (C) / [B]$
Log Diff. = Log(Sample Duplicate) - Log(Original Sample)LCS = Laboratory Control Sample
A = Parent Result
C = MS/LCS Result
E = MSD/LCSD ResultMS = Matrix Spike
B = Spike Added
D = MSD/LCSD % Rec

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Analytical Method: Percent Moisture

Seq Number: 3092608

Matrix: Solid

MB Sample Id: 3092608-1-BLK

Parameter	MB Result	Units	Analysis Date	Flag
Percent Moisture	<	%	06.17.19 17:00	

Analytical Method: Percent Moisture

Seq Number: 3092610

Matrix: Solid

MB Sample Id: 3092610-1-BLK

Parameter	MB Result	Units	Analysis Date	Flag
Percent Moisture	<	%	06.17.19 17:00	

Analytical Method: Percent Moisture

Seq Number: 3092820

Matrix: Solid

MB Sample Id: 3092820-1-BLK

Parameter	MB Result	Units	Analysis Date	Flag
Percent Moisture	<	%	06.19.19 14:39	

Analytical Method: Percent Moisture

Seq Number: 3092421

Matrix: Soil

Parent Sample Id: 627724-007

MD Sample Id: 627724-007 D

Parameter	Parent Result	MD Result	%RPD	RPD Limit	Units	Analysis Date	Flag
Percent Moisture	0.530	0.590	11	20	%	06.14.19 17:35	

Analytical Method: Percent Moisture

Seq Number: 3092421

Matrix: Soil

Parent Sample Id: 627725-018

MD Sample Id: 627725-018 D

Parameter	Parent Result	MD Result	%RPD	RPD Limit	Units	Analysis Date	Flag
Percent Moisture	5.34	5.19	3	20	%	06.14.19 17:35	

MS/MSD Percent Recovery
Relative Percent Difference
LCS/LCSD Recovery
Log Difference $[D] = 100 * (C - A) / B$
 $RPD = 200 * |(C - E) / (C + E)|$
 $[D] = 100 * (C) / [B]$
Log Diff. = Log(Sample Duplicate) - Log(Original Sample)LCS = Laboratory Control Sample
A = Parent Result
C = MS/LCS Result
E = MSD/LCSD ResultMS = Matrix Spike
B = Spike Added
D = MSD/LCSD % Rec

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Redhills Pipeline 1RP-5470**Analytical Method: Percent Moisture**

Seq Number: 3092422

Parent Sample Id: 627725-019

Matrix: Soil

MD Sample Id: 627725-019 D

Parameter	Parent Result	MD Result	%RPD	RPD Limit	Units	Analysis Date	Flag
Percent Moisture	7.72	7.40	4	20	%	06.14.19 17:35	

Analytical Method: Percent Moisture

Seq Number: 3092422

Parent Sample Id: 627725-029

Matrix: Soil

MD Sample Id: 627725-029 D

Parameter	Parent Result	MD Result	%RPD	RPD Limit	Units	Analysis Date	Flag
Percent Moisture	0.800	0.910	13	20	%	06.14.19 17:35	

Analytical Method: Percent Moisture

Seq Number: 3092600

Parent Sample Id: 627724-031

Matrix: Soil

MD Sample Id: 627724-031 D

Parameter	Parent Result	MD Result	%RPD	RPD Limit	Units	Analysis Date	Flag
Percent Moisture	2.90	2.95	2	20	%	06.17.19 17:00	

Analytical Method: Percent Moisture

Seq Number: 3092600

Parent Sample Id: 627724-041

Matrix: Soil

MD Sample Id: 627724-041 D

Parameter	Parent Result	MD Result	%RPD	RPD Limit	Units	Analysis Date	Flag
Percent Moisture	4.16	4.26	2	20	%	06.17.19 17:00	

Analytical Method: Percent Moisture

Seq Number: 3092602

Parent Sample Id: 627724-051

Matrix: Soil

MD Sample Id: 627724-051 D

Parameter	Parent Result	MD Result	%RPD	RPD Limit	Units	Analysis Date	Flag
Percent Moisture	4.19	4.08	3	20	%	06.17.19 17:00	

MS/MSD Percent Recovery
Relative Percent Difference
LCS/LCSD Recovery
Log Difference $[D] = 100 * (C - A) / B$
 $RPD = 200 * |(C - E) / (C + E)|$
 $[D] = 100 * (C) / [B]$
Log Diff. = Log(Sample Duplicate) - Log(Original Sample)LCS = Laboratory Control Sample
A = Parent Result
C = MS/LCS Result
E = MSD/LCSD ResultMS = Matrix Spike
B = Spike Added
D = MSD/LCSD % Rec



QC Summary 627724

KJ Environmental & Civil Engineering Redhills Pipeline 1RP-5470

Analytical Method: Percent Moisture

Seq Number: 3092602

Parent Sample Id: 627724-061

Matrix: Soil

MD Sample Id: 627724-061 D

Parameter	Parent Result	MD Result	%RPD	RPD Limit	Units	Analysis Date	Flag
Percent Moisture	2.80	3.13	11	20	%	06.17.19 17:00	

Analytical Method: Percent Moisture

Seq Number: 3092606

Parent Sample Id: 627724-071

Matrix: Soil

MD Sample Id: 627724-071 D

Parameter	Parent Result	MD Result	%RPD	RPD Limit	Units	Analysis Date	Flag
Percent Moisture	3.87	3.82	1	20	%	06.17.19 17:00	

Analytical Method: Percent Moisture

Seq Number: 3092606

Parent Sample Id: 627724-081

Matrix: Soil

MD Sample Id: 627724-081 D

Parameter	Parent Result	MD Result	%RPD	RPD Limit	Units	Analysis Date	Flag
Percent Moisture	9.24	9.31	1	20	%	06.17.19 17:00	

Analytical Method: Percent Moisture

Seq Number: 3092607

Parent Sample Id: 627724-091

Matrix: Soil

MD Sample Id: 627724-091 D

Parameter	Parent Result	MD Result	%RPD	RPD Limit	Units	Analysis Date	Flag
Percent Moisture	2.33	2.46	5	20	%	06.17.19 17:00	

Analytical Method: Percent Moisture

Seq Number: 3092607

Parent Sample Id: 627724-101

Matrix: Soil

MD Sample Id: 627724-101 D

Parameter	Parent Result	MD Result	%RPD	RPD Limit	Units	Analysis Date	Flag
Percent Moisture	4.11	4.32	5	20	%	06.17.19 17:00	

MS/MSD Percent Recovery
Relative Percent Difference
LCS/LCSD Recovery
Log Difference

$[D] = 100 * (C - A) / B$
 $RPD = 200 * |(C - E) / (C + E)|$
 $[D] = 100 * (C) / [B]$
Log Diff. = Log(Sample Duplicate) - Log(Original Sample)

LCS = Laboratory Control Sample
A = Parent Result
C = MS/LCS Result
E = MSD/LCSD Result

MS = Matrix Spike
B = Spike Added
D = MSD/LCSD % Rec

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Redhills Pipeline 1RP-5470**Analytical Method: Percent Moisture**

Seq Number: 3092608

Parent Sample Id: 627724-111

Matrix: Soil

MD Sample Id: 627724-111 D

Parameter	Parent Result	MD Result	%RPD	RPD Limit	Units	Analysis Date	Flag
Percent Moisture	4.80	4.74	1	20	%	06.17.19 17:00	

Analytical Method: Percent Moisture

Seq Number: 3092610

Parent Sample Id: 627724-131

Matrix: Soil

MD Sample Id: 627724-131 D

Parameter	Parent Result	MD Result	%RPD	RPD Limit	Units	Analysis Date	Flag
Percent Moisture	0.960	0.850	12	20	%	06.17.19 17:00	

Analytical Method: Percent Moisture

Seq Number: 3092610

Parent Sample Id: 627724-141

Matrix: Soil

MD Sample Id: 627724-141 D

Parameter	Parent Result	MD Result	%RPD	RPD Limit	Units	Analysis Date	Flag
Percent Moisture	6.56	6.65	1	20	%	06.17.19 17:00	

Analytical Method: Percent Moisture

Seq Number: 3092820

Parent Sample Id: 627724-025

Matrix: Soil

MD Sample Id: 627724-025 D

Parameter	Parent Result	MD Result	%RPD	RPD Limit	Units	Analysis Date	Flag
Percent Moisture	2.23	2.35	5	20	%	06.19.19 14:39	

Analytical Method: Percent Moisture

Seq Number: 3092820

Parent Sample Id: 628026-005

Matrix: Soil

MD Sample Id: 628026-005 D

Parameter	Parent Result	MD Result	%RPD	RPD Limit	Units	Analysis Date	Flag
Percent Moisture	17.4	17.4	0	20	%	06.19.19 14:39	

MS/MSD Percent Recovery
Relative Percent Difference
LCS/LCSD Recovery
Log Difference $[D] = 100 * (C - A) / B$
 $RPD = 200 * |(C - E) / (C + E)|$
 $[D] = 100 * (C) / [B]$
Log Diff. = Log(Sample Duplicate) - Log(Original Sample)LCS = Laboratory Control Sample
A = Parent Result
C = MS/LCS Result
E = MSD/LCSD ResultMS = Matrix Spike
B = Spike Added
D = MSD/LCSD % Rec



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Analytical Method: TPH by SW8015 Mod

Seq Number: 3092645

MB Sample Id: 7680012-1-BLK

Matrix: Solid

LCS Sample Id: 7680012-1-BKS

Prep Method: TX1005P

Date Prep: 06.15.19

LCSD Sample Id: 7680012-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Gasoline Range Hydrocarbons (GRO)	10.1	1000	900	90	976	98	70-135	8	20	mg/kg	06.17.19 01:50	
Diesel Range Organics (DRO)	<8.13	1000	866	87	943	94	70-135	9	20	mg/kg	06.17.19 01:50	
Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date			
1-Chlorooctane	112		96		103		70-135	%	06.17.19 01:50			
o-Terphenyl	97		84		91		70-135	%	06.17.19 01:50			

Analytical Method: TPH by SW8015 Mod

Seq Number: 3092645

Parent Sample Id: 627724-001

Matrix: Soil

MS Sample Id: 627724-001 S

Prep Method: TX1005P

Date Prep: 06.15.19

MSD Sample Id: 627724-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Gasoline Range Hydrocarbons (GRO)	<15.3	1020	800	78	857	84	70-135	7	20	mg/kg	06.17.19 03:02	
Diesel Range Organics (DRO)	9.64	1020	786	76	834	81	70-135	6	20	mg/kg	06.17.19 03:02	
Surrogate			MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date			
1-Chlorooctane			88		94		70-135	%	06.17.19 03:02			
o-Terphenyl			82		82		70-135	%	06.17.19 03:02			

Analytical Method: BTEX by SW 8260C

Seq Number: 3092727

MB Sample Id: 7680208-1-BLK

Matrix: Solid

LCS Sample Id: 7680208-1-BKS

Prep Method: SW5035A

Date Prep: 06.18.19

LCSD Sample Id: 7680208-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00100	0.0500	0.0468	94	0.0513	103	62-132	9	25	mg/kg	06.18.19 23:35	
Toluene	<0.00100	0.0500	0.0496	99	0.0525	105	66-124	6	25	mg/kg	06.18.19 23:35	
Ethylbenzene	<0.00100	0.0500	0.0511	102	0.0526	105	71-134	3	25	mg/kg	06.18.19 23:35	
m,p-Xylenes	<0.00200	0.100	0.0995	100	0.105	105	69-128	5	25	mg/kg	06.18.19 23:35	
o-Xylene	<0.00100	0.0500	0.0483	97	0.0509	102	72-131	5	25	mg/kg	06.18.19 23:35	
Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date			
Dibromofluoromethane	102		99		103		74-126	%	06.18.19 23:35			
1,2-Dichloroethane-D4	105		99		97		80-120	%	06.18.19 23:35			
Toluene-D8	101		99		96		73-132	%	06.18.19 23:35			
4-Bromofluorobenzene	85		105		107		58-152	%	06.18.19 23:35			

MS/MSD Percent Recovery
Relative Percent Difference
LCS/LCSD Recovery
Log Difference

$[D] = 100 * (C-A) / B$
 $RPD = 200 * |(C-E) / (C+E)|$
 $[D] = 100 * (C) / [B]$
 $\text{Log Diff.} = \text{Log}(\text{Sample Duplicate}) - \text{Log}(\text{Original Sample})$

LCS = Laboratory Control Sample
A = Parent Result
C = MS/LCS Result
E = MSD/LCSD Result

MS = Matrix Spike
B = Spike Added
D = MSD/LCSD % Rec

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Redhills Pipeline 1RP-5470

Analytical Method: BTEX by SW 8260C

Seq Number: 3092809

MB Sample Id: 7680260-1-BLK

Matrix: Solid

LCS Sample Id: 7680260-1-BKS

Prep Method: SW5035A

Date Prep: 06.19.19

LCSD Sample Id: 7680260-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00100	0.0500	0.0486	97	0.0539	108	62-132	10	25	mg/kg	06.19.19 11:34	
Toluene	<0.00100	0.0500	0.0498	100	0.0563	113	66-124	12	25	mg/kg	06.19.19 11:34	
Ethylbenzene	<0.00100	0.0500	0.0534	107	0.0590	118	71-134	10	25	mg/kg	06.19.19 11:34	
m,p-Xylenes	<0.00200	0.100	0.106	106	0.117	117	69-128	10	25	mg/kg	06.19.19 11:34	
o-Xylene	<0.00100	0.0500	0.0504	101	0.0565	113	72-131	11	25	mg/kg	06.19.19 11:34	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
Dibromofluoromethane	105		103		102		74-126	%	06.19.19 11:34
1,2-Dichloroethane-D4	107		100		102		80-120	%	06.19.19 11:34
Toluene-D8	103		98		98		73-132	%	06.19.19 11:34
4-Bromofluorobenzene	87		102		105		58-152	%	06.19.19 11:34

Analytical Method: BTEX by SW 8260C

Seq Number: 3092875

MB Sample Id: 7680297-1-BLK

Matrix: Solid

LCS Sample Id: 7680297-1-BKS

Prep Method: SW5035A

Date Prep: 06.19.19

LCSD Sample Id: 7680297-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00100	0.0500	0.0483	97	0.0537	107	62-132	11	25	mg/kg	06.19.19 22:56	
Toluene	<0.00100	0.0500	0.0511	102	0.0538	108	66-124	5	25	mg/kg	06.19.19 22:56	
Ethylbenzene	<0.00100	0.0500	0.0530	106	0.0550	110	71-134	4	25	mg/kg	06.19.19 22:56	
m,p-Xylenes	<0.00200	0.100	0.106	106	0.109	109	69-128	3	25	mg/kg	06.19.19 22:56	
o-Xylene	<0.00100	0.0500	0.0505	101	0.0563	113	72-131	11	25	mg/kg	06.19.19 22:56	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
Dibromofluoromethane	105		99		104		74-126	%	06.19.19 22:56
1,2-Dichloroethane-D4	109		100		101		80-120	%	06.19.19 22:56
Toluene-D8	96		99		100		73-132	%	06.19.19 22:56
4-Bromofluorobenzene	89		105		106		58-152	%	06.19.19 22:56

MS/MSD Percent Recovery
Relative Percent Difference
LCS/LCSD Recovery
Log Difference $[D] = 100 * (C - A) / B$
 $RPD = 200 * |(C - E) / (C + E)|$
 $[D] = 100 * (C) / [B]$
Log Diff. = Log(Sample Duplicate) - Log(Original Sample)LCS = Laboratory Control Sample
A = Parent Result
C = MS/LCS Result
E = MSD/LCSD ResultMS = Matrix Spike
B = Spike Added
D = MSD/LCSD % Rec

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Redhills Pipeline 1RP-5470

Analytical Method: BTEX by SW 8260C

Seq Number: 3092727

Parent Sample Id: 627725-001

Matrix: Soil

MS Sample Id: 627725-001 S

Prep Method: SW5035A

Date Prep: 06.18.19

MSD Sample Id: 627725-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00105	0.0523	0.0500	96	0.0504	97	62-132	1	25	mg/kg	06.19.19 00:15	
Toluene	<0.00105	0.0523	0.0522	100	0.0526	101	66-124	1	25	mg/kg	06.19.19 00:15	
Ethylbenzene	<0.00105	0.0523	0.0518	99	0.0529	101	71-134	2	25	mg/kg	06.19.19 00:15	
m,p-Xylenes	<0.00209	0.105	0.101	96	0.104	100	69-128	3	25	mg/kg	06.19.19 00:15	
o-Xylene	<0.00105	0.0523	0.0513	98	0.0530	102	72-131	3	25	mg/kg	06.19.19 00:15	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
Dibromofluoromethane	101		103		74-126	%	06.19.19 00:15
1,2-Dichloroethane-D4	96		102		80-120	%	06.19.19 00:15
Toluene-D8	102		104		73-132	%	06.19.19 00:15
4-Bromofluorobenzene	104		99		58-152	%	06.19.19 00:15

Analytical Method: BTEX by SW 8260C

Seq Number: 3092875

Parent Sample Id: 627724-045

Matrix: Soil

MS Sample Id: 627724-045 S

Prep Method: SW5035A

Date Prep: 06.19.19

MSD Sample Id: 627724-045 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00104	0.0519	0.0501	97	0.0436	84	62-132	14	25	mg/kg	06.19.19 23:35	
Toluene	<0.00104	0.0519	0.0512	99	0.0463	89	66-124	10	25	mg/kg	06.19.19 23:35	
Ethylbenzene	<0.00104	0.0519	0.0526	101	0.0467	90	71-134	12	25	mg/kg	06.19.19 23:35	
m,p-Xylenes	<0.00208	0.104	0.103	99	0.0926	89	69-128	11	25	mg/kg	06.19.19 23:35	
o-Xylene	<0.00104	0.0519	0.0514	99	0.0459	88	72-131	11	25	mg/kg	06.19.19 23:35	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
Dibromofluoromethane	105		101		74-126	%	06.19.19 23:35
1,2-Dichloroethane-D4	98		101		80-120	%	06.19.19 23:35
Toluene-D8	100		103		73-132	%	06.19.19 23:35
4-Bromofluorobenzene	105		103		58-152	%	06.19.19 23:35

MS/MSD Percent Recovery
Relative Percent Difference
LCS/LCSD Recovery
Log Difference $[D] = 100 * (C - A) / B$
 $RPD = 200 * |(C - E) / (C + E)|$
 $[D] = 100 * (C) / [B]$
Log Diff. = Log(Sample Duplicate) - Log(Original Sample)LCS = Laboratory Control Sample
A = Parent Result
C = MS/LCS Result
E = MSD/LCSD ResultMS = Matrix Spike
B = Spike Added
D = MSD/LCSD % Rec



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Redhills Pipeline 1RP-5470

Analytical Method: BTEX by SW 8260C

Seq Number: 3092809

Parent Sample Id: 627877-001

Matrix: Soil

MS Sample Id: 627877-001 S

Prep Method: SW5035A

Date Prep: 06.19.19

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	Limits	Units	Analysis Date	Flag
Benzene	<0.000915	0.0458	0.0376	82	62-132	mg/kg	06.19.19 12:14	
Toluene	<0.000915	0.0458	0.0400	87	66-124	mg/kg	06.19.19 12:14	
Ethylbenzene	<0.000915	0.0458	0.0395	86	71-134	mg/kg	06.19.19 12:14	
m,p-Xylenes	<0.00183	0.0915	0.0777	85	69-128	mg/kg	06.19.19 12:14	
o-Xylene	<0.000915	0.0458	0.0369	81	72-131	mg/kg	06.19.19 12:14	

Surrogate	MS %Rec	MS Flag	Limits	Units	Analysis Date
Dibromofluoromethane	104		74-126	%	06.19.19 12:14
1,2-Dichloroethane-D4	102		80-120	%	06.19.19 12:14
Toluene-D8	97		73-132	%	06.19.19 12:14
4-Bromofluorobenzene	109		58-152	%	06.19.19 12:14

MS/MSD Percent Recovery
Relative Percent Difference
LCS/LCSD Recovery
Log Difference

$[D] = 100 * (C - A) / B$
 $RPD = 200 * |(C - E) / (C + E)|$
 $[D] = 100 * (C) / [B]$
Log Diff. = Log(Sample Duplicate) - Log(Original Sample)

LCS = Laboratory Control Sample
A = Parent Result
C = MS/LCS Result
E = MSD/LCSD Result

MS = Matrix Spike
B = Spike Added
D = MSD/LCSD % Rec

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Midland, Texas (432-704-5251)

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Phoenix: Arizona (480-355-0900)

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Xenco Job #

Matrix Codes

[illegible]

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Phoenix, Arizona (480-355-0900)

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Xenco Quote #

Xenco Job #

U27729

Client / Reporting Information						Project Information								Analytical Information													
Company Name / Branch: KJ Environmental & Civil Engineering Company Address: 500 Moseley Rd Cross Road TX 76227 Email: WSoderstrom@kjc-us.com Project Contact:						Project Number: OWL043019D-1 Project Name/Local Redfills Pipeline IIRP-S470 Invoice To: Will Soderstrom PO Number:																					
Samplers's Name						Matrix Codes																					
No.	Field ID / Point of Collection					Collection		Number of preserved bottles						TPH (GRO, DRO, MRO) by 8015M													
	Sample Depth	Date	Time	Matrix	# of bottles	HCl	NaOH/Zn Acetate	HNO ₃	H ₂ SO ₄	NaOH	NaHSO ₄	MEOH	NONE	BTEX by 8260C	E300 (Chloride)	Field Comments											
1	S-B-OZ 4-6'	4-6	6/11	1135	S	I							X														
2	S-B-OZ 6-8'	6-8		1138																							
3	S-A-OZ 8-10'	8-10		1140																							
4	S-B-OZ 10-12'	10-12		1142																							
5	S-B-OZ 12-14'	12-14		1145																							
6	S-B-OZ 14-15.5'	14-15.5		1147																							
7	S-B-OZ 0-2'	0-2		1157																							
8	S-B-OZ 2-4'	2-4		1159																							
9	S-B-OZ 4-6'	4-6		1206																							
10	S-B-OZ 6-8'	6-8		1208																							
Turnaround Time (Business days)																		Data Deliverable Information					Notes:				
Same Day TAT						☐ Same Day TAT						☐ Level II Std QC						☐ Level IV (Full Data Pkg/raw date)									
Next Day EMERGENCY						☒ Next Day TAT						☐ Level III Std QC+Forms						☐ TRRP Level IV									
2 Day EMERGENCY						☐ Contract TAT						☐ Level 3 (CLP Forms)						☐ UST / RG -411									
3 Day EMERGENCY						☐						☐ TRRP Checklist															
TAT Starts Day received by Lab, if received by 5:00 pm																		FED-EX / UPS Tracking #									
SAMPLE CUSTODY MUST BE DOCUMENTED BELOW EACH TIME SAMPLES CHANGE POSSESSION, INCLUDING COURIER DELIVERY																											
Relinquished By: [Signature] Date Time: 6/13/14 Received By: [Signature]																		Date Time:					Received By:				
Relinquished By: [Signature] Date Time: 6/14/14 Received By: [Signature]																		Date Time:					Received By:				
Relinquished By: [Signature] Date Time: 6/14/14 Received By: [Signature]																		Date Time:					Received By:				
On Ice Cooler Temp 0°C/32°F Thermo Corr Factor																											

CHAIN OF CUSTODY

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Xenco Quote #

Xenco Job #

1877

Client / Reporting Information				Project Information				Analytical Information				Matrix Codes					
Company Name / Branch: KJ Environmental & Civil Engineering				Project Number: 0VWLO43019D-1													
Company Address: 500 Moseley Rd Cross Road TX 76227				Project Name/Local Redhills Pipeline 1RP-5470													
Email: Wsdodstron@kje-us.com				Invoice To:													
Project Contact: Will Soderstrom				Phone No: 940-387-0805													
Sample's Name				Po Number:													
Field ID / Point of Collection				Collection				Number of preserved bottles									
No.	Sample Depth	Date	Time	Matrix	# of bottles	HCl	NaOH/Zn Acetate	HNO3	H2SO4	NaOH	NaHSO4	MeOH	NONE				
1	SB-05 0-2'	0-2	6/11	1325	S	1								TPH (GRO, DRO, MRO) by 8015M			
2	SB-05 2-4'	2-4		1328										BTEX by 8260C			
3	SB-05 4-6'	4-6		1330										Benzene by 8260C			
4	SB-05 6-8'	6-8		1333										E300 (Chloride)			
5	SB-05 8-10'	8-10		1335													
6	SB-05 10-12'	10-12		1338													
7	SB-05 12-14'	12-14		1342													
8	SB-06 0-2'	0-2		1355													
9	SB-06 2-4'	2-4		1358													
10	SB-06 4-6'	4-6		1401													
Turnaround Time (Business days)				Data Deliverable Information				Notes:									
☐ Same Day TAT				☐ Level II Std QC				☐ Level IV (Full Data Pkg / raw data)									
☐ Next Day EMERGENCY				☒ 2 Day TAT				☐ Level III Std QC+ Forms				☐ TRRP Level IV					
☐ 2 Day EMERGENCY				☐ Contract TAT				☐ Level 3 (CLP Forms)				☐ UST / RG -411					
☐ 3 Day EMERGENCY								☐ TRRP Checklist									
TAT Starts Day received by Lab, if received by 5:00 pm																	
Relinquished by Sample				Date/Time:				Received By:				Date/Time:					
Relinquished by:				4/13/11				John Burg				2					
Relinquished by:				1840								3					
Relinquished by:				Date/Time:				Received By:				Date/Time:					
Relinquished by:				1840								4					
Relinquished by:				Date/Time:				Received By:				Date/Time:					
Relinquished by:				5								5					
FED-EX / UPS: Tracking #																	
On Ice				Copper Temp.				Therm. Corr. Factor									
0.8/0.3																	

CHAIN OF CUSTODY

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Xenco Quote #

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Matrix Codes

[illegible]

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CHAIN OF CUSTODY

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Xenco Quote #

Xenco Job #

627724

Matrix Codes

W = Water
S = Soil/Sed/Solid
GW = Ground Water
DW = Drinking Water
P = Product
SW = Surface water
SL = Sludge
OW = Ocean/Sea Water
WI = Wipe
O = Oil
WW = Waste Water
A = Air

Field Comments

Project Information

Client / Reporting Information
Company Name / Branch: KJ Environmental & Civil Engineering
Company Address: 500 Moseley Rd Cross Road TX 76227
Email: Wsoderstrom@kje-us.com
Phone No: 940 387-0905
Project Contact: Will Soderstrom

Project Number: OWM-043019D-1
Project Name/Local: Redhills Pipeline 1RP-5470
Invoice To: Redhills Pipeline 1RP-5470
PO Number:

Collection

No.	Field ID / Point of Collection	Sample Depth	Date	Time	Matrix	# of bottles	HCl	NaOH/Zn Acetate	HNO3	H2SO4	NaOH	NaHSO4	MEOH	NONE	TPH (GRO, DRO, MRO) by 8015M	BTEX by 8260C	Benzene by 8260C	E300 (Chloride)
1	SB-09 6-8'	6-8'	6/11	1609	S	1									X			
2	SB-09 8-10'	8-10'													X			
3	SB-09 10-12'	10-12'													X			
4	SB-09 12-14'	12-14'													X			
5	SB-09 14-15'	14-15'													X			
6	SB-10 0-2	0-2													X			
7	SB-10 2-4	2-4													X			
8	SB-10 4-6	4-6													X			
9	SB-10 6-8	6-8													X			
10	SB-10 8-10	8-10													X			

Data Deliverable Information

Notes:

☐ Same Day TAT	☐ 5 Day TAT	☐ Level II Std QC	☐ Level IV (Full Data Pkg /raw data)
☐ Next Day EMERGENCY	☒ 7 Day TAT	☐ Level III Std QC+ Forms	☐ TRRP Level IV
☐ 2 Day EMERGENCY	☐ Contract TAT	☐ Level 3 (CLP Forms)	☐ UST / RG-411
☐ 3 Day EMERGENCY		☐ TRRP Checklist	

TAT Starts Day received by Lab, if received by 5:00 pm

SAMPLE CUSTODY MUST BE DOCUMENTED BELOW EACH TIME SAMPLES CHANGE POSSESSION, INCLUDING COURIER DELIVERY

Relinquished By Sample	Date Time: 6/13/19	Received By: 1 John Burke	Relinquished By:	Date Time:	Received By:
Relinquished By:	Date Time: 6/13/19	Received By: 3	Relinquished By:	Date Time:	Received By:
Relinquished By:	Date Time: 6/13/19	Received By: 4	Relinquished By:	Date Time:	Received By:

Preserved where applicable

On Ice

Cooler Temp.

Thermo. Corr. Factor

Notice: Notice: Signature of this document and relinquishment of samples constitutes a valid purchase order from client company to Xenco. Its affiliates and subcontractors. It assigns standard terms and conditions of service. Xenco will be liable only for the cost of samples and shall not assume any responsibility for any losses or expenses incurred by the client if such losses are due to circumstances beyond the control of Xenco. A minimum charge of \$75 will be applied to each project. Xenco's liability will be limited to the cost of samples. Any samples received by Xenco but not analyzed will be invoiced at \$5 per sample. These terms will be enforced unless previously negotiated under a fully executed client contract.

CHAIN OF CUSTODY

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San Antonio, Texas (210-509-3334)
 Midland, Texas (432-704-5251)

Phoenix, Arizona (480-355-0900)

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Client / Reporting Information		Project Information		Xenco Quote #		Xenco Job #	
Company Name / Branch: KJ Environmental & Civil Engineering		Project Number: 00VL043019D-1		Matrix Codes		6027724	
Company Address: 500 Moseley Rd Cross Road TX 76227		Project Name/Local: Redhills Pipeline 1RP-5470					
Email: Wsoedstrom@kile-us.com		Phone No: 940-387-0805					
Project Contact: Will Soderstrom		Invoice To:					
Sampler's Name		PO Number:					

No.	Field ID / Point of Collection	Sample Depth	Date	Time	Matrix	# of bottles	HCl	Number of preserved bottles								TPH (GRO, DRO, MRO) by 8015M	BTEX by 8260C	Benzene by 8260C	E300 (Chloride)	Notes	Field Comments
								NaOH/Zn Acetate	HNO3	H2SO4	NaOH	NaHSO4	MEOH	NONE							
1	SB-10	10-12'	10-12	6/11	1643	5	1														
2	SB-10	12-14'	12-14	1645	1																
3	SB-11	0-2'	0-2	1650	1																
4	SB-11	2-4'	2-4	1653	1																
5	SB-11	4-6'	4-6	1655	1																
6	SB-11	6-8'	6-8	1658	1																
7	SB-11	8-10'	8-10	1701	1																
8	SB-11	10-12'	10-12	1704	1																
9	SB-11	12-14'	12-14	1707	1																
10	SB-11	14-16'	14-16	1710	1																

TAT Starts Day received by Lab, if received by 5:00 pm		FED-EX / UPS: Tracking #	
☐ Same Day TAT ☐ Next Day EMERGENCY ☐ 2 Day EMERGENCY ☐ 3 Day EMERGENCY	☐ 5 Day TAT ☒ 7 Day TAT ☐ Contract TAT	☐ Level II Std QC ☐ Level III Std QC+ Forms ☐ Level 3 (CLP Forms) ☐ TRRP Checklist	☐ Level IV (Full Data Pkg / raw data) ☐ TRRP Level IV ☐ UST / RG -411

Relinquished by Sampler		Relinquished By:		Date Time:	
Relinquished by:		Relinquished By:		Date Time:	
Relinquished by:		Relinquished By:		Date Time:	
Relinquished by:		Relinquished By:		Date Time:	

On Ice		Cooler Temp.		Thermo. Corr. Factor	
Cooler Temp.		Thermo. Corr. Factor			

CHAIN OF CUSTODY

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Setting the Standard since 1990
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San Antonio, Texas (210-509-3334)
Midland, Texas (432-704-5251)

Phoenix, Arizona (480-355-0900)

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Client / Reporting Information						Project Information						Analytical Information						Matrix Codes							
Company Name / Branch: KJ Environmental & Civil Engineering						Project Number: 0WLD043019D-1						Xenco Quote #						Xenco Job #							
Company Address: 500 Moseley Rd Cross Road TX 76227						Project Name/Local Redhills Pipeline 1RP-5470																			
Email: Wsoderstrom@kie-us.com						Invoice To:																			
Project Contact: Will Soderstrom						PO Number:																			
Samplers Name																									
No.	Field ID / Point of Collection					Collection		Number of preserved bottles								Notes:									
						Sample Depth	Date	Time	Matrix	# of bottles	HCl	NaOH/Zn Acetate	HNO3	H2SO4	NaOH	NaHSO4	MeOH	NONE	TPH (GRO, DRO, MRO) by 8015M						
1	SB-11 16-18'					6-18'	6/11	1713	S	1									X	BTEX by 8260C					
2	SB-12 0-2'					0-2		1720											X	Benzene by 8260C					
3	SB-12 2-4'					2-4		1723											X	E300 (Chloride)					
4	SB-12 4-6'					4-6		1726											X						
5	SB-12 6-8'					6-8		1729											X						
6	SB-12 8-10'					8-10		1732											X						
7	SB-12 10-12'					10-12		1735											X						
8	SB-12 12-14'					12-14		1738											X						
9	SB-12 14-16'					14-16		1742											X						
10	SB-13 0-2'					0-2		1755											X						
Turnaround Time (Business days)						Data Deliverable Information						Notes:													
☐ Same Day TAT						☐ 5 Day TAT						☐ Level II Std QC						☐ Level IV (Full Data Pkg /raw data)							
☐ Next Day EMERGENCY						☒ Day TAT						☐ Level III Std QC+ Forms						☐ TRRP Level IV							
☐ 2 Day EMERGENCY						☐ Contract TAT						☐ Level 3 (CLP Forms)						☐ UST / RG -411							
☐ 3 Day EMERGENCY												☐ TRRP Checklist													
TAT Starts Day received by Lab, if received by 5:00 pm												FED-EX / UPS: Tracking #													
Relinquished by Sampler												SAMPLE CUSTODY MUST BE DOCUMENTED BELOW EACH TIME SAMPLES CHANGE POSSESSION, INCLUDING COURIER DELIVERY													
Date Time: 6/13/14						Received By: [Signature]						Relinquished By: 2						Received By: 2							
Date Time: 6/13/14						Received By: [Signature]						Relinquished By: 3						Received By: 4							
Date Time: 6/13/14						Received By: [Signature]						Relinquished By: 5						Received By: 5							
On Ice						Cooler Temp						Thermo, Corr. Factor													

Setting the Standard since 1990
Stafford, Texas (281-240-4200)
Dallas Texas (214-902-0300)

San Antonio, Texas (210-509-3334)
Midland, Texas (432-704-5251)

Phoenix, Arizona (480-355-0900)

www.xerico.com

[illegible]

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[illegible]

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Midland, Texas (432-704-5251)

Phoenix, Arizona (480-355-0900)

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Client / Reporting Information Company Name / Branch: KJ Environmental & Civil Engineering Company Address: 500 Moseley Rd Cross Road TX 76227 Email: W.soderstrom@kjc-us.com Project Contact: Will Soderstrom Samplers's Name		Project Information Project Number: 0WML043019D-1 Project Name/Local: Redhills Pipeline 1RP-5470 Invoice To:		Analytical Information DRO, MRO) by 8015M 60C 8260C de)		Matrix Codes W = Water S = Soil/Seed/Solid GW = Ground Water DW = Drinking Water P = Product SW = Surface water SL = Sludge OW = Ocean/Sea Water WI = Wipe O = Oil	
--	--	--	--	--	--	---	--

No.	Field ID / Point of Collection	Collection			Matrix	# of bottles	Number of preserved bottles								TPH (GRO,	BTEX by 821	Benzene by	E300 (Chlori				Field Comments			
		Sample Depth	Date	Time			HCl	NaOH/Zn Acetate	HNO3	H2SO4	NaOH	NaHSO4	MEOH	NONE											
1	SB-16	14-16'	14-16	6/12	1106	S	1																		
2	SB-17	0-2'	0-2		1115																				
3	SB-17	2-4'	2-4		1118																				
4	SB-17	4-6'	4-6		1121																				
5	SB-17	6-8'	6-8		1124																				
6	SB-17	8-10'	8-10		1127																				
7	SB-17	10-12'	10-12		1130																				
8	SB-17	12-14'	12-14		1133																				
9	SB-17	14-16'	14-16		1136																				
10	SB-18	0-2'	0-2		1147																				
Turnaround Time (Business days)						Data Deliverable information																			
																					WW= Waste Water A = Air				

☐ Same Day TAT	☐ 5 Day TAT	☐ Level II Std QC	☐ Level IV (Full Data Pkg /raw data)		Notes:
☐ Next Day EMERGENCY	☒ 7 Day TAT	☐ Level III Std QC+ Forms	☐ TRRP Level IV		
☐ 2 Day EMERGENCY	☐ Contract TAT	☐ Level 3 (CLP Forms)	☐ UST / RG 411		
☐ 3 Day EMERGENCY		☐ TRRP Checklist			

TAT Starts Day received by Lab, if received by 5:00 pm						FED-EX / UPS: Tracking #
SAMPLE CUSTODY MUST BE DOCUMENTED BELOW EACH TIME SAMPLES CHANGE POSSESSION, INCLUDING COURIER DELIVERY						
Relinquished by Sample:	Date Time:	Received By:	Relinquished By:	Date Time:	Received By:	
<i>[Signature]</i>	6/13/19	<i>[Signature]</i>				
Relinquished by:	Date Time:	Received By:	Relinquished By:	Date Time:	Received By:	
	1840					
Relinquished by:	Date Time:	Received By:	Custody Seal #	Preserved where applicable	On Ice	Cooler Temp
5		5			☒	Thermo. Corr. Factor E1C13

will be enforced unless previously negotiated under a fully executed client contract.



Setting the Standard since 1990
Stafford, Texas (281-240-4200)
Dallas, Texas (214-902-0300)

CHAIN OF CUSTODY

Page 14 of 15

San Antonio, Texas (210-509-3334)
Midland, Texas (432-704-5251)

Phoenix, Arizona (480-355-0900)

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Xenco Quote #

Xenco Job #

6097724

Client / Reporting Information

Company Name / Branch: **KJ Environmental & Civil Engineering**
Company Address: **500 Waseley Rd Cross Road TX 76227**
Email: **W.Soderstrom@kjc-us.com**
Phone No: **940-640-387-0805**
Project Contact: **Will Soderstrom**

Project Information

Project Number: **OWI 043019D-1**
Project Name/Local: **Red Hills Pipeline 1RP-5470**
Invoice To: **Red Hills Pipeline 1RP-5470**
PO Number:

Matrix Codes

W = Water
S = Soil/Sediment
GW = Ground Water
DW = Drinking Water
P = Product
SW = Surface water
SL = Sludge
OW = Ocean/Sea Water
WI = Wipe
O = Oil
WW = Waste Water
A = Air

TPH (GRO, DRO, MRO) by 8015M
BTEX by 8260C
Benzene by 8260C
E300 (Chloride)

Field Comments

No.	Field ID / Point of Collection	Sample Depth	Date	Time	Matrix	# of bottles	HCl	NaOH/Zn Acetate	HNO3	H2SO4	NaOH	NaHSO4	MeOH	NONE	Notes
1	SB-18	2-4'	2-4	6/12	1150	5	1								
2	SB-18	4-6'			1153										
3	SB-18	6-8'			1156										
4	SB-18	8-10'			1200										
5	SB-18	10-12'			1203										
6	SB-18	12-14'			1206										
7	SB-18	14-16'			1210										
8	SB-01	0-2'			1427										
9	SB-01	2-4'			1430										
10	SB-01	4-6'			1432										

Data Deliverable Information

☐ Same Day TAT	☐ 5 Day TAT	☐ Level II Std QC	☐ Level IV (Full Data Pkg/raw data)
☐ Next Day EMERGENCY	☒ 7 Day TAT	☐ Level III Std QC+ Forms	☐ TRRP Level IV
☐ 2 Day EMERGENCY	☐ Contract TAT	☐ Level 3 (CLP Forms)	☐ UST / RG-411
☐ 3 Day EMERGENCY		☐ TRRP Checklist	

TAT Starts Day received by Lab, if received by 5:00 pm

SAMPLES TODAY MUST BE DOCUMENTED BELOW EACH TIME SAMPLES CHANGE POSSESSION, INCLUDING COURIER DELIVERY

Relinquished by: Will Soderstrom	Received By: 1	Date Time: 6/13/14	Relinquished By: 2	Date Time:
Relinquished by: 	Received By: 3	Date Time: 1840	Relinquished By: 4	Date Time:
Relinquished by: 	Received By: 5	Date Time: 	Relinquished By: 	Date Time:

Preserved where applicable

On Ice ☒ Cooler Temp **0-5/0-5** Thermo. Corr. Factor

Notice: Notice: Signature of this document and relinquishment of samples constitutes a valid purchase order from client company to Xenco, its affiliates and subcontractors. It assigns standard terms and conditions of service. Xenco will be liable only for the cost of samples and shall not assume any responsibility for any losses or expenses incurred by the Client if such losses are due to circumstances beyond the control of Xenco. A minimum charge of \$75 will be applied to each project. Xenco's liability will be limited to the cost of samples. Any samples received by Xenco but not analyzed will be invoiced at \$5 per sample. These terms will be enforced unless previously negotiated under a fully executed client contract.



Sitting the Standard since 1990
Safford, Texas (281-240-4200)
Dallas Texas (214-902-0300)

CHAIN OF CUSTODY

Page 15 of 15

San Antonio, Texas (210-509-3334)
Midland, Texas (432-704-5251)

Phoenix, Arizona (480-355-0900)

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Xenco Quote #

Xenco Job #

Matrix Codes

Client / Reporting Information

Company Name / Branch:

KJ Environmental & Civil Engineering

Company Address:

500 Moseley Rd Cross Road TX 76227

Email:

W.Soderstrom@kje-us.com

Project Contact:

Will Soderstrom

Samples Name

Field ID / Point of Collection

No.

Sample Depth

Date

Time

Matrix

of bottles

HCl

NaOH/Zn Acetate

HNO3

H2SO4

NaOH

NaHSO4

MeOH

NONE

TPH (GRO, DRO, MRO) by 8015M

BTEX by 8260C

Benzene by 8260C

E300 (Chloride)

Field Comments

Turnaround Time (Business days)

Data Deliverable Information

Notes

TAT Starts Day received by Lab if received by 5:00 pm

Relinquished by:

Relinquished by:

Relinquished by:

Relinquished by:

Relinquished by:

Relinquished by:

Relinquished by:

Relinquished by:

W = Water

S = Soil/Sed/Solid

GW = Ground Water

DW = Drinking Water

P = Product

SW = Surface water

SL = Sludge

OW = Ocean/Sea Water

WI = Wipe

O = Oil

WW = Waste Water

A = Air

Inter-Office Shipment

IOS Number : 41460

Date/Time: 06.14.2019 12:26 Created by: Jessica Kramer
 Lab# From: **Midland** Delivery Priority:
 Lab# To: **Houston** Air Bill No.: 775481660596

Please send report to: Jessica Kramer
 Address: 1211 W. Florida Ave
 E-Mail: jessica.kramer@xenco.com

Sample Id	Matrix	Client Sample Id	Sample Collection	Method	Method Name	Lab Due	HT Due	PM	Analytes	Sign
627724-001	S	SB-01 0-2'	06.11.2019 10:50	SW8260CBTEX	BTEX by SW 8260C	06.21.2019	06.25.2019	JKR	BZ BZME EBZ XYLENE	
627724-009	S	SB-02 0-2'	06.11.2019 11:30	SW8260CBTEX	BTEX by SW 8260C	06.21.2019	06.25.2019	JKR	BZ BZME EBZ XYLENE	
627724-017	S	SB-03 0-2'	06.11.2019 11:57	SW8260CBTEX	BTEX by SW 8260C	06.21.2019	06.25.2019	JKR	BZ BZME EBZ XYLENE	
627724-024	S	SB-04 0-2'	06.11.2019 12:26	SW8260CBTEX	BTEX by SW 8260C	06.21.2019	06.25.2019	JKR	BZ BZME EBZ XYLENE	
627724-031	S	SB-05 0-2'	06.11.2019 13:35	SW8260CBTEX	BTEX by SW 8260C	06.21.2019	06.25.2019	JKR	BZ BZME EBZ XYLENE	
627724-038	S	SB-06 0-2'	06.11.2019 13:55	SW8260CBTEX	BTEX by SW 8260C	06.21.2019	06.25.2019	JKR	BZ BZME EBZ XYLENE	
627724-045	S	SB-07 0-2'	06.11.2019 15:10	SW8260CBTEX	BTEX by SW 8260C	06.21.2019	06.25.2019	JKR	BZ BZME EBZ XYLENE	
627724-051	S	SB-08 0-2'	06.11.2019 15:33	SW8260CBTEX	BTEX by SW 8260C	06.21.2019	06.25.2019	JKR	BZ BZME EBZ XYLENE	
627724-058	S	SB-09 0-2'	06.11.2019 15:59	SW8260CBTEX	BTEX by SW 8260C	06.21.2019	06.25.2019	JKR	BZ BZME EBZ XYLENE	
627724-066	S	SB-10 0-2'	06.11.2019 16:30	SW8260CBTEX	BTEX by SW 8260C	06.21.2019	06.25.2019	JKR	BZ BZME EBZ XYLENE	
627724-073	S	SB-11 0-2'	06.11.2019 16:50	SW8260CBTEX	BTEX by SW 8260C	06.21.2019	06.25.2019	JKR	BZ BZME EBZ XYLENE	
627724-082	S	SB-12 0-2'	06.11.2019 17:20	SW8260CBTEX	BTEX by SW 8260C	06.21.2019	06.25.2019	JKR	BZ BZME EBZ XYLENE	
627724-090	S	SB-13 0-2'	06.11.2019 17:55	SW8260CBTEX	BTEX by SW 8260C	06.21.2019	06.25.2019	JKR	BZ BZME EBZ XYLENE	
627724-098	S	SB-14 0-2'	06.12.2019 09:39	SW8260CBTEX	BTEX by SW 8260C	06.21.2019	06.26.2019	JKR	BZ BZME EBZ XYLENE	
627724-106	S	SB-15 0-2'	06.12.2019 10:07	SW8260CBTEX	BTEX by SW 8260C	06.21.2019	06.26.2019	JKR	BZ BZME EBZ XYLENE	
627724-114	S	SB-16 0-2'	06.12.2019 10:42	SW8260CBTEX	BTEX by SW 8260C	06.21.2019	06.26.2019	JKR	BZ BZME EBZ XYLENE	
627724-122	S	SB-17 0-2'	06.12.2019 11:15	SW8260CBTEX	BTEX by SW 8260C	06.21.2019	06.26.2019	JKR	BZ BZME EBZ XYLENE	
627724-130	S	SB-18 0-2'	06.12.2019 11:47	SW8260CBTEX	BTEX by SW 8260C	06.21.2019	06.26.2019	JKR	BZ BZME EBZ XYLENE	
627724-138	S	BG-01 0-2'	06.11.2019 14:27	SW8260CBTEX	BTEX by SW 8260C	06.21.2019	06.25.2019	JKR	BZ BZME EBZ XYLENE	

Inter Office Shipment or Sample Comments:

DUE TO QUANTITY OF SAMPLES, DID NOT SPLIT SAMPLES ON HOLD. WILL SHIP IF/WHEN TAKES OFF HOLD

Relinquished By: Jessica Kramer
 Jessica Kramer

Date Relinquished: 06.14.2019

Received By: Ashly Kowalski
 Ashly Kowalski

Date Received: 06.15.2019 10:00

Cooler Temperature: 0.2



XENCO Laboratories



Inter Office Report- Sample Receipt Checklist

Sent To: Houston

IOS #: 41460

Acceptable Temperature Range: 0 - 6 degC

Air and Metal samples Acceptable Range: Ambient

Temperature Measuring device used : HOU-068

Sent By: Jessica Kramer

Date Sent: 06.14.2019 12.26 PM

Received By: Ashly Kowalski

Date Received: 06.15.2019 10.00 AM

Sample Receipt Checklist

Comments

#1 *Temperature of cooler(s)?	.2
#2 *Shipping container in good condition?	Yes
#3 *Samples received with appropriate temperature?	Yes
#4 *Custody Seals intact on shipping container/ cooler?	Yes
#5 *Custody Seals Signed and dated for Containers/coolers	Yes
#6 *IOS present?	Yes
#7 Any missing/extra samples?	No
#8 IOS agrees with sample label(s)/matrix?	Yes
#9 Sample matrix/ properties agree with IOS?	Yes
#10 Samples in proper container/ bottle?	Yes
#11 Samples properly preserved?	Yes
#12 Sample container(s) intact?	Yes
#13 Sufficient sample amount for indicated test(s)?	Yes
#14 All samples received within hold time?	Yes

*** Must be completed for after-hours delivery of samples prior to placing in the refrigerator**

NonConformance:

DUE TO QUANTITY OF SAMPLES, DID NOT SPLIT SAMPLES ON HOLD. WILL SHIP IF/WHEN TAKES OFF HOLD

Corrective Action Taken:

Nonconformance Documentation

Contact: _____ Contacted by : _____ Date: _____

Checklist reviewed by:

Ashly Kowalski

Date: 06.15.2019



XENCO Laboratories

Prelogin/Nonconformance Report- Sample Log-In



Client: KJ Environmental & Civil Engineering

Date/ Time Received: 06/13/2019 06:40:00 PM

Work Order #: 627724

Acceptable Temperature Range: 0 - 6 degC

Air and Metal samples Acceptable Range: Ambient

Temperature Measuring device used : R8

Sample Receipt Checklist

Comments

#1 *Temperature of cooler(s)?	.3	
#2 *Shipping container in good condition?	Yes	
#3 *Samples received on ice?	Yes	
#4 *Custody Seals intact on shipping container/ cooler?	N/A	
#5 Custody Seals intact on sample bottles?	N/A	
#6 *Custody Seals Signed and dated?	Yes	
#7 *Chain of Custody present?	Yes	
#8 Any missing/extra samples?	No	
#9 Chain of Custody signed when relinquished/ received?	Yes	
#10 Chain of Custody agrees with sample labels/matrix?	Yes	
#11 Container label(s) legible and intact?	Yes	
#12 Samples in proper container/ bottle?	Yes	
#13 Samples properly preserved?	Yes	
#14 Sample container(s) intact?	Yes	
#15 Sufficient sample amount for indicated test(s)?	Yes	
#16 All samples received within hold time?	Yes	
#17 Subcontract of sample(s)?	Yes	Xenco Stafford-BTEX
#18 Water VOC samples have zero headspace?	N/A	

*** Must be completed for after-hours delivery of samples prior to placing in the refrigerator**

Analyst:

PH Device/Lot#:

Checklist completed by:

Brianna Teel

Brianna Teel

Date: 06/14/2019

Checklist reviewed by:

Jessica Kramer

Jessica Kramer

Date: 06/14/2019

APPENDIX F

NMOCD Approved C-141 Form

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	nDHR1912948727
District RP	1RP-5470
Facility ID	fDHR1912947444
Application ID	pDHR1912947494

Release Notification

Responsible Party

Responsible Party	OWL SWD Operating, LLC	OGRID
Contact Name	Mr. Phillip Sanders	Contact Telephone 210-906-3551
Contact email	psanders@oilfieldwaterlogistics.com	Incident # (assigned by OCD) nDHR1912948727
Contact mailing address	8201 Preston Road, Suite 520, Dallas, Texas 75225	

Location of Release Source

Latitude 32.0650682 Longitude -103.34708316
(NAD 83 in decimal degrees to 5 decimal places)

Site Name	Red Hills	Site Type	Produced water pipeline
Date Release Discovered	04/30/19 11:00 AM	API# (if applicable)	

Unit Letter	Section	Township	Range	County
A	10	26S	35E	Lea

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

BLM

Nature and Volume of Release

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

☐ Crude Oil	Volume Released (bbls)	Volume Recovered (bbls)
☒ Produced Water	Volume Released (bbls) 1,200 BBLs	Volume Recovered (bbls) 60 BBLs
	Is the concentration of dissolved chloride in the produced water >10,000 mg/l?	☐ Yes ☒ No
☐ Condensate	Volume Released (bbls)	Volume Recovered (bbls)
☐ Natural Gas	Volume Released (Mcf)	Volume Recovered (Mcf)
☐ Other (describe)	Volume/Weight Released (provide units)	Volume/Weight Recovered (provide units)

Cause of Release

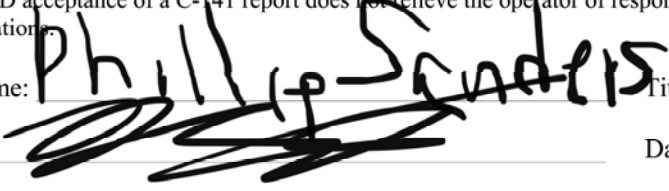
The hose from the pump on the discharge came off and caused the release.

Incident ID	nDHR1912948727
District RP	1RP-5470
Facility ID	fDHR1912947444
Application ID	pDHR1912947494

Was this a major release as defined by 19.15.29.7(A) NMAC? ☒ Yes ☐ No	If YES, for what reason(s) does the responsible party consider this a major release? It was greater than 25 BBLs of produced water.
If YES, was immediate notice given to the OCD? By whom? To whom? When and by what means (phone, email, etc)? Yes, William Soderstrom, with KJ Environmental, notified Jim Griswold, with the OCD, and Jim Amos, with the BLM, via telephone and voicemail.	

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 <u>not</u> been undertaken, explain why: 	
Per 19.15.29.8 B. (4) NMAC the responsible party may commence remediation immediately after discovery of a release. If remediation has begun, please attach a narrative of actions to date. If remedial efforts have been successfully completed or if the release occurred within a lined containment area (see 19.15.29.11(A)(5)(a) NMAC), please attach all information needed for closure evaluation.	
I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to OCD rules and regulations all operators are required to report and/or file certain release notifications and perform corrective actions for releases which may endanger public health or the environment. The acceptance of a C-141 report by the OCD does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to groundwater, surface water, human health or the environment. In addition, OCD acceptance of a C-141 report does not relieve the operator of responsibility for compliance with any other federal, state, or local laws and/or regulations.	
Printed Name: <u>Phillip Sanders</u>	Title: <u>Safety Director</u>
Signature: 	Date: <u>5/1/19</u>
email: <u>psanders@oilfieldwaterlogistics.com</u>	Telephone: <u>210-906-3551</u>
<u>OCD Only</u> Received by: <u>Dylan Rose-Coss</u> Date: <u>05/09/2019</u>	

APPENDIX G

New Mexico Well Logs



New Mexico Office of the State Engineer

Point of Diversion Summary

		(quarters are 1=NW 2=NE 3=SW 4=SE)				(NAD83 UTM in meters)			
		(quarters are smallest to largest)							
Well Tag	POD Number	Q64	Q16	Q4	Sec	Tws	Rng	X	Y
	CP 01170 POD1	3	3	3	06	26S	36E	659282	3548984 

Driller License:	1682	Driller Company:	HUNGRY HORSE, LLC.	
Driller Name:	JOHN NORRIES			
Drill Start Date:	10/21/2013	Drill Finish Date:	11/11/2013	Plug Date:
Log File Date:	12/12/2013	PCW Rev Date:	02/26/2014	Source: Shallow
Pump Type:	SUBMER	Pipe Discharge Size:		Estimated Yield: 250 GPM
Casing Size:	12.00	Depth Well:	500 feet	Depth Water: 280 feet

Water Bearing Stratifications:	Top	Bottom	Description
	330	420	Sandstone/Gravel/Conglomerate
	473	495	Sandstone/Gravel/Conglomerate

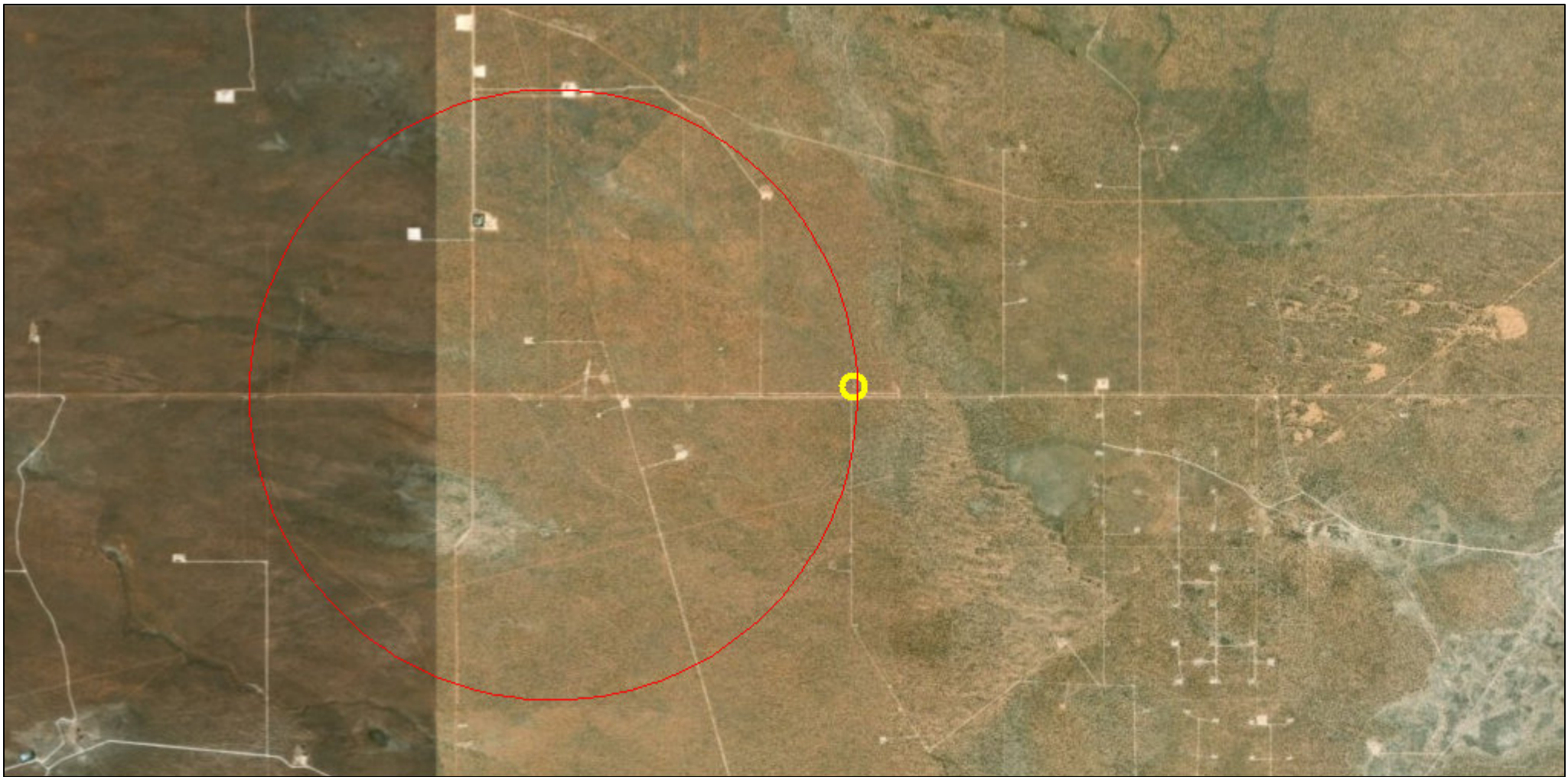
Casing Perforations:	Top	Bottom
	0	500

Meter Number:	17865	Meter Make:	MASTERMETER
Meter Serial Number:	336502	Meter Multiplier:	1.0000
Number of Dials:	9	Meter Type:	Diversion
Unit of Measure:	Gallons	Return Flow Percent:	
Usage Multiplier:		Reading Frequency:	Monthly

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.

7/17/19 1:46 PM

POINT OF DIVERSION SUMMARY



Coordinates

UTM - NAD 83 (m) - Zone 13

Easting 659281.600

Northing 3548984.500

State Plane - NAD 83 (f) - Zone E

Easting 857538.812

Northing 389203.523

Degrees Minutes Seconds

Latitude 32 : 3 : 57.220756

Longitude -103 : 18 : 45.331132

Location pulled from POD Search

Image Information
Source: DigitalGlobe
Date: 8/4/2016
Resolution (m): 0.31
Accuracy (m): 10.16

NEW MEXICO OFFICE OF THE STATE ENGINEER

POD Information

File Number: CP-01170-POD1

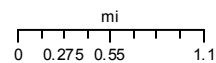
Owner: BECKHAM RANCH INC

Permit Use: EXPLORATION

POD Status: ACT

Permit Status: CLS

1:72,224



Author:

Purpose: EXPLORATION

7/17/2019



2 Miles Buffer



Selected POD

OSE District
Boundary

Spatial Information

OSE Administrative Area: District 2

County: Lea

Groundwater Basin: Capitan

Abstract Area: Capitan

Sub-Basin: Landreth-Monumnet Draws

Land Grant: Not in Land Grant

Restrictions:

NA

PLSS Description

NW SW SW SW Qtr of Sec 6 of 26S 36E

Derived from Projected PLSS - Qtr Sec. locations
are calculated and are only approximations

APPENDIX H

Metes and Bounds Survey

LEGEND	LEGEND
SPILL LIMITS	S.O.N.M. STATE OF NEW MEXICO
EXISTING PIPELINE	BLM BUREAU OF LAND MANAGEMENT
FENCE	SWD SALT WATER DISPOSAL
F.O. FIBER OPTIC	POB POINT OF BEGINNING
O.H.P. OVERHEAD POWERLINE	CALC. CALCULATED
ROAD WAY	O.H.E. OVERHEAD ELECTRIC
SURVEY LINE	
SUBJECT TRACT	
U.G.E. UNDERGROUND ELECTRIC	
WATER LINE	

RED HILLS 6
GROUND CONTAMINATION AREA
LEA COUNTY, NM
T-26-S R-35-E

LINE TABLE			
LINE	BEARING	DISTANCE	RODS
1	S89°35'12"E	132.06	8.00
2	N88°42'18"E	132.60	8.03
3	S59°57'23"E	26.66	1.62
4	N73°46'58"E	67.94	4.18
5	S21°02'52"W	37.93	2.30
6	S53°56'44"W	67.87	4.11
7	S77°26'09"W	53.74	3.26
8	N58°58'09"W	33.44	2.03
9	N46°08'06"W	40.41	2.45
10	N87°55'09"W	36.05	2.18
11	S86°04'15"W	45.81	2.78
12	S42°17'09"W	28.63	1.74
13	S69°22'02"E	22.10	1.34
14	S86°31'35"E	64.45	3.91
15	N83°52'19"E	40.11	2.43
16	S71°07'32"W	47.41	2.87
17	N89°03'22"W	123.67	7.50
18	N08°38'08"E	12.17	.074
19	N53°54'01"E	26.22	1.59
20	N10°49'38"W	28.24	1.71
21	N85°47'12"W	53.67	3.25
22	N15°18'14"E	23.59	1.43

0 100' 200' 300'



METES AND BOUNDS DESCRIPTION

DESCRIPTION OF A 0.43 ACRES (18529 SQUARE FEET), MORE OR LESS, BEING AN IRREGULAR SHAPED SURFACE SITE IDENTIFIED AS A GROUND CONTAMINATION AREA, BEING SITUATED IN LEA COUNTY, NEW MEXICO, IN THE SOUTHEAST QUARTER OF THE SOUTHEAST QUARTER OF SECTION 3, THE SOUTHWEST QUARTER OF THE SOUTHWEST QUARTER OF SECTION 2, THE NORTHWEST QUARTER OF THE NORTHWEST QUARTER OF SECTION 11, THE NORTHEAST QUARTER OF THE NORTHEAST QUARTER OF SECTION 10, T-26-S, R-35-E OF THE NEW MEXICO PRINCIPAL MERIDIAN (N.M.P.M.), OWNERSHIP BEING VESTED IN THE BUREAU OF LAND MANAGEMENT, SAID SURFACE SITE BEING MORE PARTICULARLY DESCRIBED AS FOLLOWS:

BEGINNING (P.O.B., X:846715.64, Y:388838.14) at a point in said Section 3, being the northwest corner of said Containment Area from which the common Corner for Section 3, Section 10 and Section 11, bears South 80°03'21" East 213.19'

THENCE, South 89°35'12" East, a distance of 132.06 feet to a corner of said site (X:846847.70, Y:388837.21);
THENCE, North 88°42'18" East, a distance of 132.60 feet to a corner of said site (X:846980.27, Y:388840.20);
THENCE, South 59°57'23" East, a distance of 26.66 feet to a corner of said site (X:847003.35, Y:388826.86);
THENCE, North 73°46'58" East, a distance of 67.94 feet to a corner of said site (X:847068.58, Y:388845.83);
THENCE, South 21°02'52" West, a distance of 37.93 feet to a corner of said site (X:847054.96, Y:388810.43);
THENCE, South 53°56'44" West, a distance of 67.87 feet to a corner of said site (X:847000.09, Y:388770.49);
THENCE, South 77°26'09" West, a distance of 53.74 feet to a corner of said site (X:846947.63, Y:388758.80);
THENCE, North 58°58'09" West, a distance of 33.44 feet to a corner of said site (X:846918.98, Y:388776.03);
THENCE, North 46°08'06" West, a distance of 40.41 feet to a corner of said site (X:846889.84, Y:388804.04);
THENCE, North 87°55'09" West, a distance of 36.05 feet to a corner of said site (X:846853.81, Y:388805.35);
THENCE, South 86°04'15" West, a distance of 45.81 feet to a corner of said site (X:846808.11, Y:388802.21);
THENCE, South 42°17'09" West, a distance of 28.63 feet to a corner of said site (X:846788.85, Y:388781.03);
THENCE, South 69°22'02" East, a distance of 22.10 feet to a corner of said site (X:846809.53, Y:388773.24);
THENCE, South 86°31'35" East, a distance of 64.45 feet to a corner of said site (X:846873.87, Y:388769.34);
THENCE, North 83°52'19" East, a distance of 40.11 feet to a corner of said site (X:846913.75, Y:388773.62);
THENCE, South 71°07'32" West, a distance of 47.41 feet to a corner of said site (X:846868.89, Y:388758.28);
THENCE, South 89°03'22" West, a distance of 123.67 feet to a corner of said site (X:846745.23, Y:388756.24);
THENCE, North 08°38'08" East, a distance of 12.17 feet to a corner of said site (X:846747.06, Y:388768.27);
THENCE, North 53°54'01" East, a distance of 26.22 feet to a corner of said site (X:846768.25, Y:388783.72);
THENCE, North 10°49'38" West, a distance of 28.24 feet to a corner of said site (X:846762.94, Y:388811.46);
THENCE, North 85°47'12" West, a distance of 28.24 feet to a corner of said site (X:846762.94, Y:388811.46);

THENCE, North 15°18'14" East, a distance of 23.59 feet, to the **POINT OF BEGINNING**.

Containing: 0.43 acres (18,529 square feet) of land, more or less.

SECTION 3
BLM

TOTAL SPILL COVERAGE
SECTION 3
.16 ACRE
6980 Sq. FEET

FND. MON.
W/BRASS CAP
X: 846925.63
Y:388801.35

TOTAL SPILL COVERAGE
SECTION 2
.11 ACRE
4640 Sq. FEET

SECTION 2
BLM

SECTION 10
BLM

TOTAL SPILL COVERAGE
SECTION 10
.08 ACRE
3485 Sq. FEET

SECTION 11
BLM

TOTAL SPILL COVERAGE
SECTION 11
.08 ACRE
3424 Sq. FEET

EXISTING
O.H.E.



W. Andrew McLaughlin 05/16/2019
W. ANDREW MCLAUGHLIN, NEW MEXICO P.S. NO. 23385
SURVEYED ON GROUND: APRIL 11, 2019

- I, ANDREW MCLAUGHLIN, NEW MEXICO PROFESSIONAL SURVEYOR NO. 23385, DO HEREBY CERTIFY THAT THIS EASEMENT EXHIBIT AND THE ACTUAL SURVEY ON THE GROUND UPON WHICH IT IS BASED WAS PERFORMED BY ME OR UNDER MY DIRECT SUPERVISION; THAT I AM RESPONSIBLE FOR THIS SURVEY; THAT THIS SURVEY MEETS THE MINIMUM STANDARDS FOR SURVEYING IN NEW MEXICO AND THAT IT IS TRUE AND CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF. I FURTHER CERTIFY THAT THIS SURVEY IS NOT A LAND DIVISION OR SUBDIVISION AS DEFINED IN THE NEW MEXICO SUBDIVISION ACT. THIS CERTIFICATION IS LIMITED TO THOSE PERSONS OR ENTITIES SHOWN ON THE FACE OF THIS EXHIBIT, IN NON-TRANSFERABLE AND MADE FOR THIS TRANSACTION ONLY.
- TITLE INFORMATION HAS BEEN PROVIDED BY THE CLIENT; AS SUCH, OPEN RANGE FIELD SERVICES DOES NOT WARRANT OR GUARANTEE THAT ALL CONFLICTS, EASEMENTS OR ENCUMBRANCES ARE SHOWN. ADJOINER INFORMATION SHOWN OR DESCRIBED IS FOR INFORMATIONAL PURPOSES ONLY.
- ALL BEARINGS, DISTANCES AND COORDINATES DESCRIBED HEREIN ARE GRID BASED UPON A TRANSVERSE MERCATOR PROJECTION AND CONFORM TO THE NEW MEXICO COORDINATE SYSTEM ("NEW MEXICO EAST ZONE"), OF THE NORTH AMERICAN DATUM OF 1983 (NAD83) IN U.S. SURVEY FEET.
- FIELD NOTES AND RELATED INFORMATION IS FILED IN THE OFFICE OF THIS SURVEYOR AND FURTHER DESCRIBES THE RECONSTRUCTION OF THE RESPECTIVE BOUNDARY.
- LOCATION OF THE GROUND CONTAMINATION AREA WAS MARKED IN THE FIELD BY CLIENT WHICH WAS SUBSEQUENTLY SURVEYED BY OPEN RANGE FIELD SERVICES, LLC (ORFS). ORFS TAKES NO RESPONSIBILITY FOR THE METHOD USED IN DETERMINING THE LIMITS OF THE DESCRIBED AREA.
- UNLESS OTHERWISE NOTED, MONUMENTS WITH BRASS CAPS ARE STAMPED "USGLO" WITH SECTION CORNER OR QUARTER CORNER INFORMATION ALSO STAMPED ON CAP.

PIPELINE, STATION, OR ACCOUNT NUMBER		SCALE		CONST. YR.	
RED HILLS 6		1" = 100'		N/A	
FILENUMBER	CADD FILENAME	DRAWN		DATE	
N/A	RED_HILLS_6_SPILL	JG		05-16-2019	
REV. NO.	DESCRIPTION	BY	DATE	APP.	
-	-	-	-	-	

5023 PRINCETON AVE., SUITE 17
MIDLAND, TX 79703
TSP/LS No.: 10194343
OFFICE: 817-456-8587

PROJECT NO. ORFS-300-15
AFE NO. AFE_XXXX
DWG. NO. RED_HILL_6_SPILL_050919
SHT. 01 OF 01

APPENDIX I

Environmental Professional's Credentials

William Soderstrom

500 Moseley Road
Cross Roads, Texas 76225
(405) 258-8623
WSoderstrom@kje-us.com

WORK EXPERIENCE

Remediation Project Manager –Environmental Department KJ Environmental Management, Inc. – Denton, TX

07/2018 – Present

- Managed and reviewed Phase I Environmental Site Assessments (ESAs) and Limited Phase II ESAs for active and historical service stations, dry cleaners, commercial and retail properties, and vacant or undeveloped land throughout New Mexico, Oklahoma and Texas utilizing hand auger equipment, truck-mounted hollow-stem augers (HSA), and direct-push technologies (Geoprobe).
- Provided professional environmental consulting services to individual businesses, real estate developers (commercial, industrial, and multi-family residential), financial institutions, manufacturing facilities and corporate representatives to ensure compliance with the United States Environmental Protection Agency (USEPA), Oklahoma Corporation Commission (OCC), Oklahoma Department of Environmental Quality (ODEQ) and Texas Commission on Environmental Quality (TCEQ) rules and regulations.
- Supervised and coordinated the remediation of various produced water releases ranging from 95 barrels to 12,000 barrels in conjunction with state regulatory agencies including the Railroad Commission of Texas, TCEQ Emergency Response, New Mexico Oil Conservation Division, New Mexico Bureau of Land Management, New Mexico State Land Office, and the United States Army Corps of Engineers.
- Enrolled and managed chemical manufacturing and industrial facilities into the TCEQ Voluntary Cleanup Program (VCP), Corrective Action (CA) and Municipal Setting Designation (MSD) regulatory programs throughout north Texas.
- Managed the characterization and remediation of exploration and production (E&P) exempt waste for multiple oil and gas companies in south and west Texas.

Assistant Project Manager –Remediation Division The VERTEX Companies, Inc. – Irving, TX

07/2015 – 07/2018

- Conducted Phase I ESAs and Limited Phase II ESAs for active and historical service stations, dry cleaners, commercial and retail properties, and vacant or undeveloped land throughout Alabama, Arizona, Arkansas, California, Georgia, Kansas, Louisiana, Mississippi, Missouri, New Mexico, Oklahoma, Oregon, Tennessee, and Texas utilizing hand auger equipment, truck-mounted HSAs, and direct push technologies (Geoprobe).
- Performed a Phase II ESA at an active bulk petroleum storage facility in Alabama to delineate impacted soils for a potential real estate transaction.
- Provided consulting services to individual businesses, real estate developers (commercial, industrial, and multi-family residential), financial institutions, and corporate representatives to ensure compliance with Alabama Department of Environmental Management (ADEM), Arkansas Department of Environmental Quality (ADEQ), Kansas Department of Health and Environment (KDHE), Missouri Department of Natural Resources (MDNR), OCC, ODEQ, Oregon Department of Environmental Quality (Oregon DEQ), and TCEQ rules and regulations.
- Screened impacted soils within Operable Unit 1 (OU-1) and coordinated the characterization, transportation, and disposal of approximately 7,500 cubic yards of soil to approved Class I and Class II landfill.
- Provided technical support for the VCP, MSD, and TCEQ Subchapter T: Use of Land Over Closed Municipal Solid Waste (MSW) Landfills throughout the Dallas-Fort Worth Metroplex.
- Installed and sampled soil vapor probes to adhere to TCEQ Subchapter T reporting limits for MSW Landfills in Dallas.
- Operated as team leader for the removal, disposal, characterization, and transportation of ghost storage tanks, aboveground storage tanks (ASTs), underground storage tanks (USTs) and stockpiled backfill at former and current gas stations, tank batteries, and manufacturing facilities throughout the Dallas-Fort Worth Metroplex and Oklahoma.
- Provided construction oversight for the installation and verification of a low-profile ventilation system and vapor mitigation system at various multi-family complexes for sub-grade areas and first floor living spaces.

Staff Scientist – Real Estate Division W&M Environmental Group, LLC – Plano, TX

09/2013 – 07/2015

- Conducted Phase I ESAs and Limited Phase II Investigations for active and historical manufacturing facilities, active and historical service stations, commercial and retail properties, dry cleaners, and vacant or undeveloped land throughout Texas utilizing hand auger equipment, truck-mounted HSA, and direct push technologies (Geoprobe).
- Provided consulting services to real estate developers (commercial and multi-family residential), financial institutions, and corporate representatives to ensure compliance with the ODEQ, OCC, and TCEQ.
- Provided technical support for MSD, VCP, Affected Property Assessment Report (APAR), and Innocent Owner/Operator Program (IOP) applications for a former service station and auto repair shop.
- Provided emergency response to multiple pipeline and tank battery spills in Texas and Oklahoma and collected confirmation soil samples to delineate vertical and horizontal extent.

- Acted as field team leader for the removal, disposal, and transportation of underground storage tanks at various sites throughout the Dallas-Fort Worth Metroplex.
- Acted as field team leader for the collection of pond sediment samples to delineate heavy metals and polychlorinated biphenyls (PCBs) at a former Naval Air Station.
- Installed and sampled soil vapor probes at historical dry cleaners, leaking petroleum storage tank sites, auto body repair shops and commercial properties throughout Texas.
- Performed Stormwater Pollution Prevention Plan (SWPPP) site reconnaissance for various manufacturing facilities in the Dallas-Fort Worth Metroplex.

**Staff Environmental Scientist –Environmental Department
Terracon Consultants, Inc – Oklahoma City, OK**

06/2010 – 09/2013

- Conducted Limited Phase II Environmental Site Assessments for active manufacturing facilities, historical dry cleaners, service stations, and vacant or undeveloped land throughout Oklahoma utilizing hand auger equipment, air-rotary drilling, and truck-mounted HSA.
- Provided emergency response to brine water spill and screened approximately 2,000 cubic yards of soil for off-site disposal.
- Provided consulting services to real estate developers, financial institutions, and corporate representatives to ensure compliance with the ODEQ and OCC.
- Acted as field team leader for screening impacted soils and coordinating the management, transportation, and disposal of approximately 28,000 cubic yards of impacted soil to land-farm for treatment.
- Served as field team professional on the investigation and plume delineation of two dry-cleaner sites within the ODEQ VCP and Brownfields program.
- Provided support for state environmental regulatory activities regarding Concentrated Animal Feeding Operation (CAFO) permits of numerous swine facilities in Oklahoma and Texas.
- Completed due diligence services for Oklahoma based oil/gas company to assess the potential impact to threatened or endangered species, wetlands, and potential locations of archeological or cultural significance throughout Oklahoma.

PROFESSIONAL DEVELOPMENT

- | | |
|--|---------|
| • 40-Hour HAZWOPER | 05/2010 |
| • 10-Hour OSHA Outreach Training Program – Construction | 08/2015 |
| • Geo-Seal Vapor Intrusion Barrier - Certified Inspector | 03/2018 |
| • First AID CPR – AED – American Heart Association | 04/2018 |
| • 8-Hour WAZWOPER Refresher Training | 08/2018 |

EDUCATIONAL BACKGROUND

Bachelor of Science, Environmental Sciences
Option: Natural Resources
Minor: Soil Science
 Oklahoma State University, Stillwater, OK

May 2010

Dena Marie Vandenberg, REM, LEED AP

ENVIRONMENTAL PROFESSIONAL

WORK HISTORY

Director of Environmental Services

KJ Environmental Management, Inc.

June 2011 – Present (8 years)

I am currently working as the Director of Environmental Services at KJ Environmental. I have fifteen years of experience as an environmental professional in consulting. I lead a team of Engineers and Scientists to complete projects for a variety of industries, while ensuring the delivery of the highest quality work product, customer service, and professionalism.

Project Manager

KJ Environmental Management, Inc.

April 2010 – June 2011 (1 year 3 months)

When I began working at KJ Environmental in Denton, Texas as a Project Manager, I provided regulatory compliance services for various industries including oil and gas storage and trucking facilities, sand and cement handling facilities, manufacturing facilities, and municipal agencies. My areas of expertise included project management, construction and industrial storm water pollution prevention plans (SWPPP), NPDES/TPDES permit applications, management of PST tank pulls, oil pollution prevention compliance (SPCC), Permit-By-Rule (PBR) Applications, New Source Review (NSR) Applications, Barnett Shale Phase I & Phase II Special Emissions Inventories, Saltwater Disposal Well Permitting, Underground Injection Control Permitting, TCEQ Public Water System compliance, drinking water, storm water, ground water, and waste sampling, asbestos sampling, mold assessments, radon testing, lead-based paint sampling, lead in drinking water sampling, Phase I Environmental Site Assessments, Limited Phase II Environmental Site Assessments, noise monitoring, and brownfield redevelopment. I have also served as the Environmental Professional on record and designated expert for oil & gas production and commercial saltwater disposal clients in handling multiple produced water spill investigations and remediation activities completed under the jurisdiction of the Railroad Commission of Texas.

Environmental Scientist

Terracon

Privately Held; 1001-5000 employees; Civil Engineering industry

April 2006 – February 2010 (3 years 11 months)

At Terracon, I conducted hundreds of Phase I ESAs for various types of properties from vacant land to industrial/manufacturing facilities and gas stations. I also did regulatory compliance consulting for oil & gas clients, industrial/manufacturing facilities, and municipalities. I completed SWPPPs and SPCCs, conducted storm water sampling, and operated a public water system on behalf of a municipality. I became a licensed Asbestos Inspector, Mold Assessment Technician, and LEED Accredited Professional.

Environmental Geologist

Cirrus Associates

March 2006 – March 2006 (1 month)

At Cirrus Associates, I acted as a contract employee on a VCP project for a client in Odessa, Texas. I conducted sampling of groundwater monitoring wells using low-flow sampling techniques.

Environmental Scientist

Delta Environmental

August 2004 – December 2005 (1 year 5 months)

At Delta Environmental, I performed public drinking water sampling under the TCEQ contract. I collected over 3,000 drinking water samples. I was recognized as one of the top 5 samplers in the state for productivity and was trusted with the responsibility of training other samplers associated with the project. In addition, I conducted several ESAs to obtain more experience, when time would allow.

EDUCATION

University of North Texas

Bachelor of Science in Geography with a focus in Earth Science, Geology Minor

1999 – 2004

Activities and Societies:

Vice Chairman of the Planning & Zoning Commission for the Town of Providence Village, Texas

Delta Zeta Sorority

ADDITIONAL INFORMATION

Professional Education & Certifications:

National Registry of Environmental Professionals (NREP) Registered Environmental Manager (REM) No. 832509140161111

OSHA 29 CFR 1910.120 HAZWOPER 40 HR Certification

EPA Accredited Asbestos Inspector

TDSHS License Asbestos Inspector (License No. 602837)

TDSHS Licensed Mold Assessment Technician (License No. MAT1011)

TCEQ Class C Water Distribution Operator (License No. WD0007445)

Leadership in Energy and Environmental Design (LEED) Accredited Professional

Texas Commission on Environmental Quality (TCEQ) Certified Water Sampler under the Safe Drinking Water Act and State Regulations (ID No. 2005-006)

ORIS-Enviromod University- AERMOD Modeling For Permits Certification

Certified NORM Surveyor

Affiliations:

The North Texas Association of Environmental Professionals

Society of Texas Environmental Professionals

Association of American Geographers

U.S. Green Building Council

CONTACT INFORMATION

Email: denavandenberg@yahoo.com

Phone: (214) 364-7627