

**Revised Site Investigation Report & Corrective
Action Plan
Onsurez #2
Eddy County, New Mexico**



Prepared for:

Rockcliff Energy LLC
1301 McKinney Street
Suite 1300
Houston, Texas 77010

Prepared by:



Kane Environmental Engineering Inc.
8816 Big View Drive
Austin, Texas 78730
Project: 17-389

October 2017

TABLE OF CONTENTS

SITE INVESTIGATION SUMMARY

SITE EVALUATION SUMMARY

CORRECTIVE ACTION PLAN

FIGURES

Figure 1 Sample Locations

TABLES

Table 1 Field Soil Screening Data
Table 2 Analytical Results Summary

APPENDICES

Appendix A Photographs
Appendix B Analytical Data

Site Investigation Summary

Introduction:

As requested by NMOCD, Rockcliff Operating New Mexico, LLC (**Rockcliff**) retained Kane Environmental to collect additional soil samples from sample sites ES-4 and ES-13 (**Figure 1**).

Site Evaluation Summary

1. Representatives of Kane Environmental (Kane) completed a New Mexico One Call (NM811) to verify clearance any utilities. Rockcliff operating personnel verified that these locations are clear of any underground equipment.
2. Kane personnel, Nathan Harvey and Alan Kane, P.E. began reviewed the site on September 12th, 2017. Photographs were taken to document the installation of the of the stuffing box spill elimination device. (**Appendix A**).
3. Kane personnel, on behalf of Rockcliff, as requested by NMOCD, collected additional soil samples (Sample ES4A- and ES-13A). These samples were collected from the original sample locations ES-4 and ES-13, based identical latitude longitude coordinates (**Figure 1**). Soils from each of the boreholes were collected at depths of 3 ft, 8 ft and 13 ft bgs. The samples were placed in sealable plastic bags, allowed to reach temperature equilibrium and then screened for hydrocarbons using a MiniRae 2000 photoionization detector (PID). The samples were also screened for chlorides using a Spectrum Field Scout electrical conductivity (EC) meter. The results are provided in (**Table 1**) along with a description of the soils encountered.
4. Kane personnel used an auger to collect each sample. After screening, each sample was then placed in appropriate containers, properly labeled, then on ice in a cooler and delivered to the Cardinal Laboratory located in Hobbs, New Mexico for analysis. Sample ES-4A was analyzed for the following constituents:

Total Petroleum Hydrocarbons; Gasoline Rand Organics, Diesel Range Organics, and Oil Range Organics – (EPA Method 8105). Chlorides – (EPA Method 300 or equivalent).
5. Sample ES-13A was analyzed for the following constituent:

Chlorides – (EPA Method 300 or equivalent).

6. The boreholes were backfilled.
7. A summary of the analytical results for each sample is provided in (**Table 2**).

Corrective Action Plan

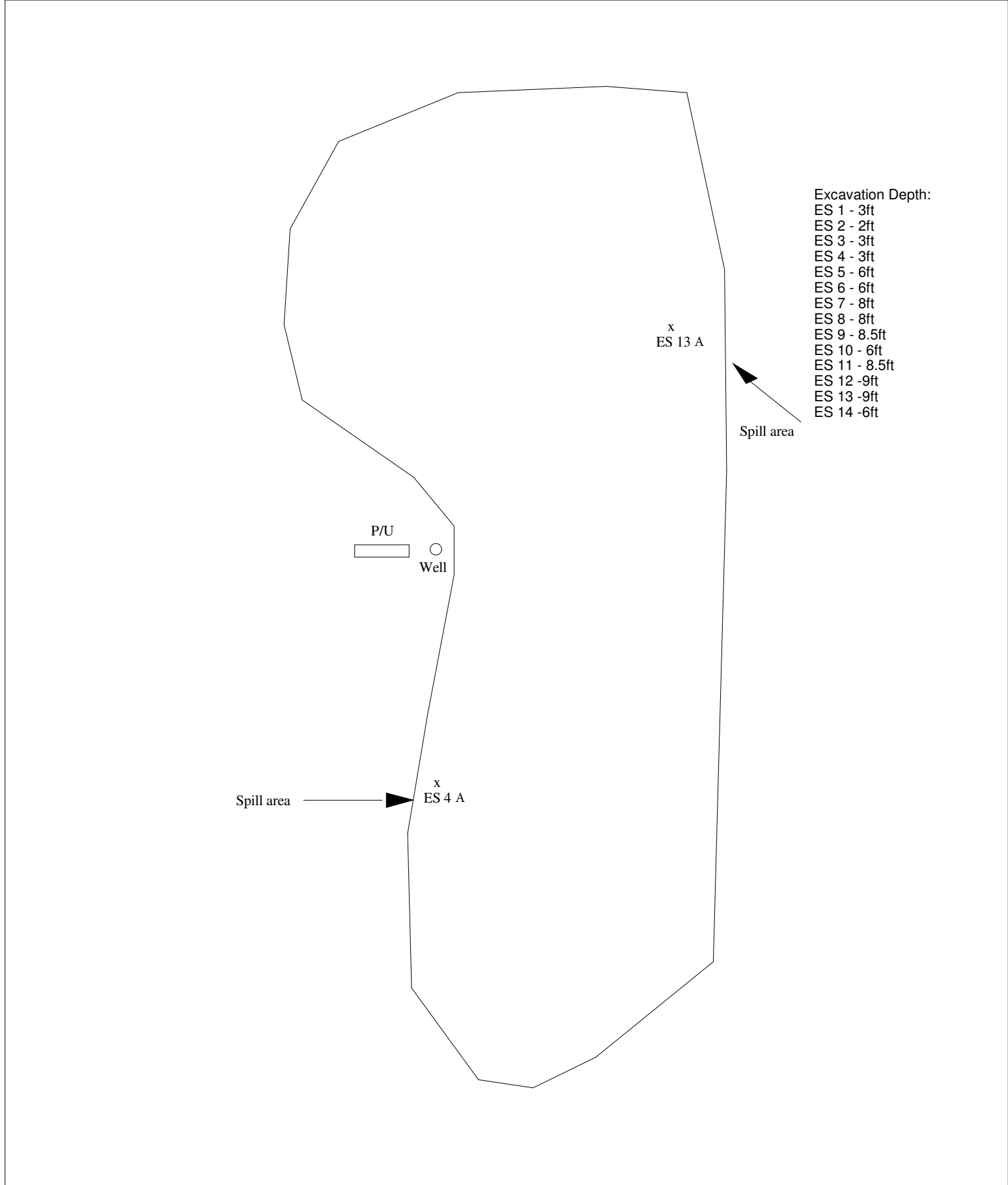
Based on the information obtained from this follow up site investigation and the analytical results of the soil samples the suggested corrective action plan includes the following:

- Remove an additional 3ft of soil from sample sites ES-4A and ES-13A to bring them into compliance.
- Photographs will be taken of the excavated areas and clean soil being backfilled.

A closure report will be prepared and submitted detailing the corrective actions taken as well as to serve as documentation that the proposed actions have been completed.

FIGURE 1

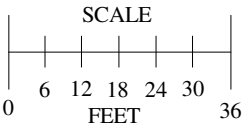
Soil Sample Diagram



- Excavation Depth:
- ES 1 - 3ft
 - ES 2 - 2ft
 - ES 3 - 3ft
 - ES 4 - 3ft
 - ES 5 - 6ft
 - ES 6 - 6ft
 - ES 7 - 8ft
 - ES 8 - 8ft
 - ES 9 - 8.5ft
 - ES 10 - 6ft
 - ES 11 - 8.5ft
 - ES 12 - 9ft
 - ES 13 - 9ft
 - ES 14 - 6ft

Spill area → x
ES 4 A

→ x
ES 13 A
Spill area



Rockcliff Energy, LLC
Houston, Texas

Onsurez #2

Eddy County
New Mexico

TABLE 1

Field Soil Screening Data

Table 1				
Sample Point	Depth (Bgs)	EC (mS/cm)	PID (ppm)	Soil Description
ES-4A	3 ft	0.75	0	Tan/brown silty sand
	8 ft	0.86	0	Brown silty clay
	13 ft	0.8	0	Light tan, silty clay
ES-13A	3 ft	1.7	0	Tan/brown silty sand
	8 ft	0.82	0	Brown silty clay
	13 ft	0.74	0	Light tan, sandy clay

TABLE 2

Analytical Results Summary

Table 2				
Sample	Chlorides	TPH-GRO	TPH-DRO	TPH-ORO
ES-4A 3 ft	336	<10.0	<10.0	<10.0
ES-4A 8 ft	272	<10.0	<10.0	16.7
ES-4A 13 ft	304	<10.0	<10.0	<10.0
ES-13A 3 ft	224			
ES-13A 8 ft	368			
ES-13A 13 ft	352			

APPENDIX A

Photographs



APPENDIX B

Analytical Data

September 20, 2017

ALAN KANE

KANE ENVIROMENTAL

8816 BIG VIEW DRIVE

AUSTIN, TX 78730

RE: ONSUREZ #2

Enclosed are the results of analyses for samples received by the laboratory on 09/12/17 16:15.

Cardinal Laboratories is accredited through Texas NELAP under certificate number T104704398-16-8. Accreditation applies to drinking water, non-potable water and solid and chemical materials. All accredited analytes are denoted by an asterisk (*). For a complete list of accredited analytes and matrices visit the TCEQ website at www.tceq.texas.gov/field/qa/lab_accred_certif.html.

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

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

Accreditation applies to public drinking water matrices.

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

Sincerely,



Celey D. Keene

Lab Director/Quality Manager

Analytical Results For:

KANE ENVIROMENTAL
ALAN KANE
8816 BIG VIEW DRIVE
AUSTIN TX, 78730
Fax To:

Received:	09/12/2017	Sampling Date:	09/12/2017
Reported:	09/20/2017	Sampling Type:	Soil
Project Name:	ONSUREZ #2	Sampling Condition:	Cool & Intact
Project Number:	17-389	Sample Received By:	Tamara Oldaker
Project Location:	ROCKCLIFF OPERATING EDDY CO. NM		

Sample ID: ES 4A 3' (H702456-01)

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	336	16.0	09/15/2017	ND	400	100	400	3.92	
TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	09/15/2017	ND	196	97.9	200	6.06	
DRO >C10-C28	<10.0	10.0	09/15/2017	ND	188	93.9	200	16.9	
EXT DRO >C28-C36	<10.0	10.0	09/15/2017	ND					
Surrogate: 1-Chlorooctane		108 %	28.3-164						
Surrogate: 1-Chlorooctadecane		108 %	34.7-157						

Sample ID: ES 4A 8' (H702456-02)

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	272	16.0	09/15/2017	ND	400	100	400	3.92		
TPH 8015M		mg/kg		Analyzed By: MS						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
GRO C6-C10	<10.0	10.0	09/15/2017	ND	198	99.1	200	2.68		
DRO >C10-C28	<10.0	10.0	09/15/2017	ND	209	105	200	0.235		
EXT DRO >C28-C36	16.7	10.0	09/15/2017	ND						
Surrogate: 1-Chlorooctane		100 %	28.3-164							
Surrogate: 1-Chlorooctadecane		106 %	34.7-157							

Cardinal Laboratories

*=Accredited Analyte

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



Celey D. Keene, Lab Director/Quality Manager

Analytical Results For:

KANE ENVIROMENTAL
ALAN KANE
8816 BIG VIEW DRIVE
AUSTIN TX, 78730
Fax To:

Received: 09/12/2017
Reported: 09/20/2017
Project Name: ONSUREZ #2
Project Number: 17-389
Project Location: ROCKCLIFF OPERATING EDDY CO. NM

Sampling Date: 09/12/2017
Sampling Type: Soil
Sampling Condition: Cool & Intact
Sample Received By: Tamara Oldaker

Sample ID: ES 4A 13' (H702456-03)

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	304	16.0	09/15/2017	ND	400	100	400	3.92	
TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	09/15/2017	ND	198	99.1	200	2.68	
DRO >C10-C28	<10.0	10.0	09/15/2017	ND	209	105	200	0.235	
EXT DRO >C28-C36	<10.0	10.0	09/15/2017	ND					
Surrogate: 1-Chlorooctane	101 %	28.3-164							
Surrogate: 1-Chlorooctadecane	108 %	34.7-157							

Sample ID: ES 13A 3' (H702456-04)

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	224	16.0	09/15/2017	ND	400	100	400	3.92	

Sample ID: ES 13A 8' (H702456-05)

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	368	16.0	09/15/2017	ND	400	100	400	3.92		

Cardinal Laboratories

*=Accredited Analyte

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



Celey D. Keene, Lab Director/Quality Manager

Analytical Results For:

KANE ENVIROMENTAL
ALAN KANE
8816 BIG VIEW DRIVE
AUSTIN TX, 78730
Fax To:

Received: 09/12/2017
Reported: 09/20/2017
Project Name: ONSUREZ #2
Project Number: 17-389
Project Location: ROCKCLIFF OPERATING EDDY CO. NM

Sampling Date: 09/12/2017
Sampling Type: Soil
Sampling Condition: Cool & Intact
Sample Received By: Tamara Oldaker

Sample ID: ES 13A 13' (H702456-06)

Chloride, SM4500Cl-B		mg/kg	Analyzed By: AC							
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	352	16.0	09/15/2017	ND	400	100	400	3.92		

Cardinal Laboratories

*=Accredited Analyte

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



Celey D. Keene, Lab Director/Quality Manager

Notes and Definitions

QR-04	The RPD for the BS/BSD was outside of historical limits.
QM-07	The spike recovery was outside acceptance limits for the MS and/or MSD. The batch was accepted based on acceptable LCS recovery.
ND	Analyte NOT DETECTED at or above the reporting limit
RPD	Relative Percent Difference
**	Samples not received at proper temperature of 6°C or below.
***	Insufficient time to reach temperature.
-	Chloride by SM4500Cl-B does not require samples be received at or below 6°C Samples reported on an as received basis (wet) unless otherwise noted on report



Celey D. Keene, Lab Director/Quality Manager



CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

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

Company Name: Kane Environmental		P.O. #:		BILL TO																					
Project Manager: Kevin Elrod		Company: Kane		ANALYSIS REQUEST																					
Address: 8816 Big View Drive		Attn:																							
City: Austin State: TX zip: 78730		Address: 8816 Big View Dr.																							
Phone #: 979 450 8307 Fax #: NA		City: Austin																							
Project #: 17-389 Project Owner:		State: TX zip: 78736																							
Project Name: Onsite		Phone #: 281 370 6580																							
Project Location: Onsite #2		Fax #:																							
Sampler Name: Nathan Hickey																									
FOR LAB USE ONLY																									
Lab I.D.	Sample I.D.	(G)RAB OR (C)OMP.	# CONTAINERS	MATRIX				PRESERV.	SAMPLING																
		GROUNDWATER	WASTEWATER	SOIL	OIL	SLUDGE	OTHER :	ACID/BASE:	ICE / COOL	OTHER :	DATE	TIME													
1	ES 4A 3'	0	1	1							9-12	930	✓												
2	ES 4A 8'	0	1	1							9-12	945	✓												
3	ES 4A 13'	0	1	1							9-12	1000	✓												
4	ES 13A 3'	0	1	1							9-12	1015	✓												
5	ES 13A 8'	0	1	1							9-12	1030	✓												
6	ES 13A 13'	0	1	1							9-12	1045	✓												
PLEASE NOTE: Liability and Damages, Cardinal's liability and client's exclusive remedy for any claim arising whether based in contract or tort, shall be limited to the amount paid by the client for the analyses. All claims including those for negligence and any other cause whatsoever shall be deemed waived unless made in writing and received by Cardinal within 30 days after completion of the applicable service. In no event shall Cardinal be liable for incidental or consequential damages, including without limitation, business interruptions, loss of use, or loss of profits incurred by client, its subsidiaries, affiliates or successors arising out of or related to the performance of services hereunder by Cardinal, regardless of whether such claim is based upon any of the above stated reasons or otherwise.																									
Relinquished By: Nathan Hickey		Date: 9-12-17		Received By: [Signature]		Date: 9-12-17		Time: 5:15		Sample Condition: Cool Intact <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No		CHECKED BY: [Signature]													
Relinquished By:		Date:		Received By:		Date:		Time:		Sample Condition:		CHECKED BY:													
Delivered By: (Circle One) S.42		Cool Intact <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No		CHECKED BY: [Signature]																					
Sampler - UPS - Bus - Other: Connected Site		Cool Intact <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No		CHECKED BY: [Signature]																					
REMARKS:																									

APPENDIX C

Field Notes