EXPLORING WHAT'S POSSIBLE

RECEIVED MAR 2 0 2014 NMOCD ARTES'A

# **APACHE CORPORATION**

P.O.Box 1849 Eunice, NM 88231 Phone 575.394.3159

# Red Lake 29-I State #1 2RP-1875

# **Termination Request**

API No. 3001533579

Release Date: June 11<sup>th</sup>, 2013

Unit Letter I, Section 29, Township 17S, Range 28E

#### Rice Environmental Consulting & Safety

P.O. Box 2948, Hobbs, NM 88241 Phone 575.393.2967

#### February 4<sup>th</sup>, 2014

#### Mike Bratcher

New Mexico Energy, Minerals, & Natural Resources Oil Conservation Division, Environmental Bureau – District 2 811 S. First St. Artesia, NM 88210

#### RE: Termination Request Apache Corporation – Red Lake 29-I State #1 (2RP-1875) UL/I sec. 29 T17S R28E API No. 3001533579

Mr. Bratcher:

Apache Corporation (Apache) has retained Rice Environmental Consulting and Safety (RECS) to address potential environmental concerns at the above-referenced site.

#### **Background and Previous Work**

The site is located approximately 12.5 miles east-southeast of Artesia, New Mexico at UL/I sec. 29 T17S R28E. USGS records indicate that groundwater will likely be encountered at a depth of approximately 78.5 +/- feet.

On June 11<sup>th</sup>, 2013, Apache discovered that the fire tube from a production heater failed releasing 22 barrels of oil over 7,113 sq ft of lease pad and pasture land. The power was turned off to the well heads and a vacuum truck was called to the site. The vacuum truck recovered 20 barrels of oil. The fire tube was pulled and the gasket replaced. An initial C-141 was submitted to NMOCD and was approved on August 27<sup>th</sup>, 2013 (Appendix A).

RECS personnel were on site beginning June 12<sup>th</sup>, 2013. Soil samples were taken at the surface at six points throughout the release (Figure 1). The samples were taken to a commercial laboratory for analysis (Appendix B). The surface samples from all six points showed elevated laboratory chloride, Gasoline Range Organics (GRO) and Diesel Range Organics (DRO) readings.

On August 22<sup>nd</sup>, 2013, three points in the overspray area were sampled at the surface and at six inches to determine the extent of contamination in this area (Figure 2). All the samples were taken to a commercial laboratory for analysis and returned chloride, GRO and DRO values below regulatory standards (Appendix C).

Based on the laboratory analyses and presence of healthy vegetation, the overspray area was not scraped. The remainder of the release area was scraped down 3 to 6 inches and a 5 point composite sample from the base of the scrape was taken to a commercial laboratory for analysis on August 26<sup>th</sup>, 2013 (Figure 2). All constituents returned results

below regulatory standards except for DRO, which had a reading of 1,060 mg/kg (Appendix D). The site then was scraped down to 6 to 9 inches and another 5 point composite sample from the base of the scrape was taken to a commercial laboratory for analysis on September 18<sup>th</sup>, 2013. The 5 point composite returned a GRO result of non-detect and a DRO result of 221 mg/kg (Appendix E). A total of 108 yards of contaminated soil was taken to a NMOCD approved facility for disposal.

On October  $10^{th}$ , 2013, NMOCD approved the site to be backfilled (Appendix F). A total of 120 yards of clean soil was imported to the site to serve as backfill. A sample of the imported soil was taken to a commercial laboratory and returned a chloride value of non-detect (Appendix G). The site was backfilled with the clean, imported soil and contoured to the surrounding location.

Photo documentation of these activities can be found in Appendix H.

Given that the contaminated soil was removed from the site and replaced with clean, imported soil, Apache respectfully requests 'remediation termination' and site closure. A final C-141 can be found in Appendix I.

RECS appreciates the opportunity to work with you on this project. Please call Hack Conder at (575) 393-2967 or me if you have any questions or wish to discuss the site.

Sincerely,

Lara Weinheimer Project Scientist RECS (575) 441-0431

Attachments:

Figure 1 – Initial Sampling Data

Figure 2 – Excavation Data

Appendix A – Initial C-141

Appendix B – Initial Sampling Labs

Appendix C – Overspray Lab

Appendix D – 5 Point Composite Sample Lab 8/27/13

Appendix E – 5 Point Composite Sample Lab 9/18/13

Appendix F – NMOCD Approval to Backfill Site

Appendix G – Imported Soil Lab

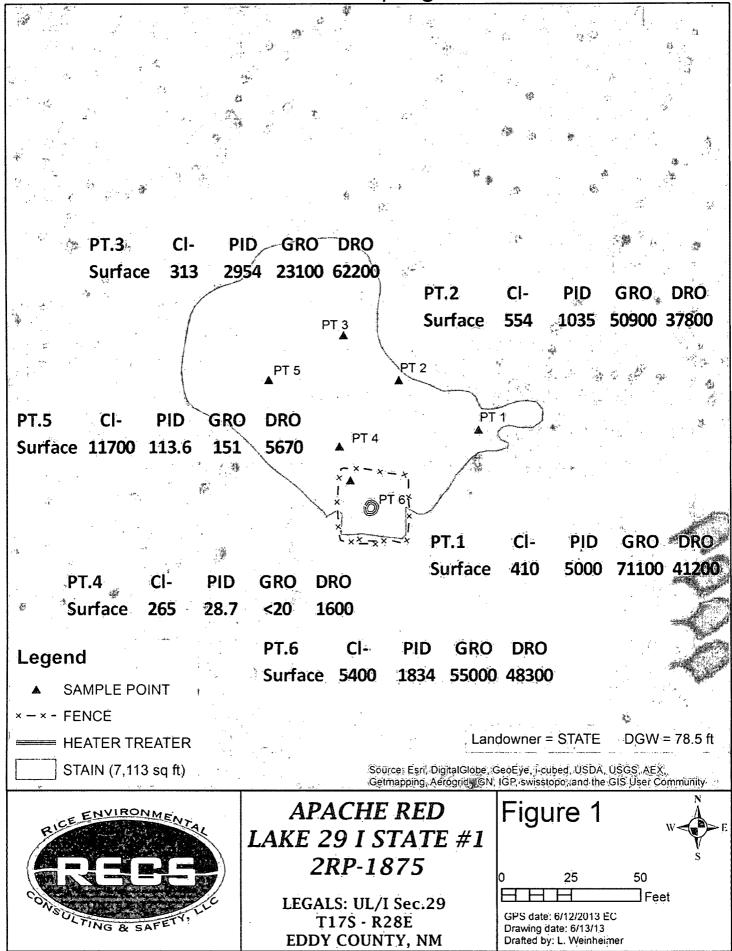
Appendix H – Photo Documentation

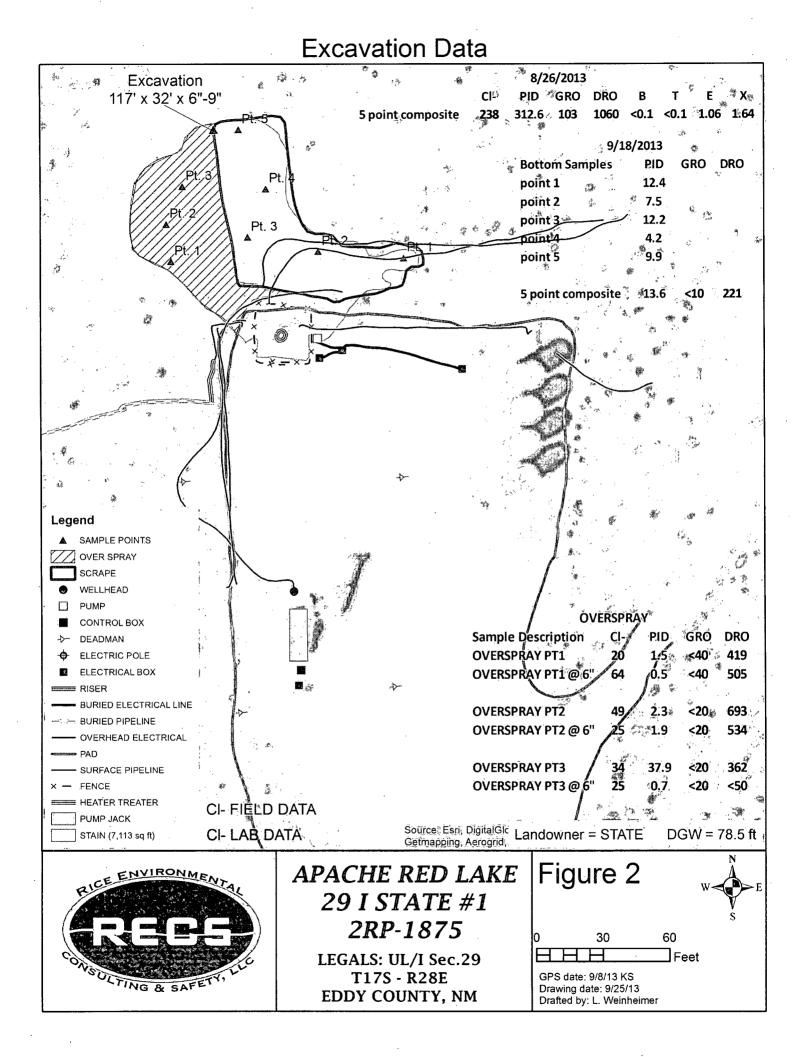
Appendix I – Final C-141

RICE Environmental Consulting and Safety (RECS) P.O. Box 2948, Hobbs, NM 88241 Phone 575.393.2967

Figures

# Initial Sampling Data





# Appendix A Initial C-141

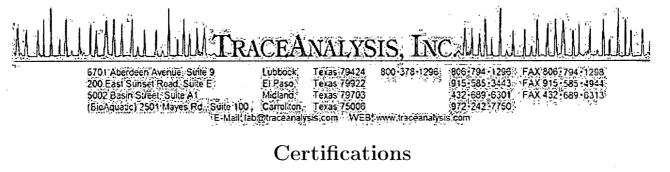
RICE Environmental Consulting and Safety (RECS) P.O. Box 2948 Hobbs, NM 88241 Phone 575.393.2967

Disinici 4. State	RECEIVED
1625 N. French Dr., Hobbs, NM 88240 District II Energy Minera	of New Mexico Is and Natural Resources 406 26 2013 Revised August 8, 2011
1011100-003-4 Co A 4-2375 NXA \$9.9110	servation Division MMOCD ARTES Lever dance with 1915 29 NMAC
District IV T220 SQ	uth St. Francis Dr
	,Fe, NM \$7505
Release Notificati	ion and Corrective Action
Name of Company Apache Corporation 873	OPERATOR Mitial Report I Final Report
Address PO Box 1849; Eunice, NM, 88234	Telephone No. (432) 631-6982
Facility Name Red Lake 29-1 State #1	Facility Type, Production Heater
Surfacé Owner State Mineral Owne	ćr . API N6. 3001533579.
	ON OF RELEASE
129. 17S. 528E - 1636	FSL 995 FEE Eddy
	2. N. Liongituile/04./92630 1.
	RE OF RELEASE
Type of Release: Oil	Volume of Release. (22) bbls Volume Recovered, 20,661s.
Source of Release Production Heater	Unknown
Was Immediate Notice Given?	Cet
By'Whom?	Date and Hour
Wasta Watereourse Reached?: (الله الله الله الله الله الله الله الله	Jf YES, Wolume hippacting the Watercourses
Describe Gause of Problem and Remedial Action Takenet The gasker on the fireduction heater fire tube tailed releasing 22 bbls of The vacuum truck recovered 20 bbls of oit. The fire tube was pulled f	มา อุป. รำกิด กองพุศ พลุร ญากอุป อากาง กับรุงพิษไทยกปร.สึกปะสารสะบบไทยากมะหะพลร อุปไซ้ป. 5.กรุกใลร์ชากิด ชูลรุ่มรู้น
Describe Area Affected and Cleanup Action Taken.*	
Augral of 7, 113 sq frof pad and pasture was affected. The site will be I hereby certify that the information given above is true and complete regulations all operators are required to report and/or file certain relea public health of the environment. The acceptance of a Cr141 report by should their operations have failed to adequately investigate and remo	Edelinented för further, action. To the best of my knowledge and understand that pursuant to NMOCD rules and se notthentions and perform corrective actions for releases which may endanger withe NMOCD marked as "Final Report" does not relieve the operator of hability- diate contamination that pose a firrent to ground water, surface, water, human health in does not relieve the operator of responsibility. for compliance with any other
	OIL CONSERVATION DIVISION
Signiture Lany Bruce Hacher	i and the second s
Minted Name: Lairy Bruce Baker.	Approved by Environmental Specialistigned By
Titlez Environinental Tech.	AUG 2.7.2013 Approval Date:
TErmall Address: Jany baker@apachecorp.com	
Dité: 8 = 26 = 13: (Bhone: (432) 631 6982	Remediation per OCD Rule &
* Anach (Addinonal Sheels) If Necessary	Guidelines SUBMIT REMEDIATION PROPOSAL NO LATER THAN: 2RP-1875

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# Appendix B Initial Sampling Labs

RICE Environmental Consulting and Safety (RECS) P.O. Box 2948 Hobbs, NM 88241 Phone 575.393.2967



WBE HUB NCTRCA DBE NELAP DoD LELAP Kansas Oklahoma ISO 17025

### Analytical and Quality Control Report

Steven Fleming Apache Corp.-Midland 303 Veterans Airpark Lane Suite #3000 Midland, TX, 79705

Report Date: July 2, 2013

Work Order: 13061822

Project Location:Red Lake 29-I Battery, NMProject Name:Apache Red Lake I BatteryProject Number:Apache Red Lake 29-I Battery

Enclosed are the Analytical Report and Quality Control Report for the following sample(s) submitted to TraceAnalysis, Inc.

			Date	Time	Date
Sample	Description	Matrix	Taken	Taken	Received
332544	Pt. 1	soil	2013-06-14	11:20	2013-06-17
332545	Pt. 2	soil	2013-06-14	11:25	2013-06-17
332546	Pt. 3	soil	2013-06-14	11:30	2013-06-17
332547	Pt. 4	soil	2013-06-14	11:35	2013-06-17
332548	Pt. 5	soil	2013-06-14	11:40	2013-06-17
332549	Pt. 6	soil	2013-06-14	11:45	2013-06-17

These results represent only the samples received in the laboratory. The Quality Control Report is generated on a batch basis. All information contained in this report is for the analytical batch(es) in which your sample(s) were analyzed.

This report consists of a total of 19 pages and shall not be reproduced except in its entirety, without written approval of TraceAnalysis, Inc.

Miebow Q

Dr. Blair Leftwich, Director Dr. Michael Abel, Project Manager

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### Case Narrative

Samples for project Apache Red Lake I Battery were received by TraceAnalysis, Inc. on 2013-06-17 and assigned to work order 13061822. Samples for work order 13061822 were received intact at a temperature of 3.4 C.

Samples were analyzed for the following tests using their respective methods.

		Prep	Prep	$\rm QC$	Analysis
Test	Method	$\operatorname{Batch}$	Date	$\operatorname{Batch}$	Date
Chloride (Titration)	SM 4500-Cl B	87056	2013-07-02 at $08:30$	102764	2013-07-02 at 11:00
TPH DRO - NEW	S 8015 D	86753	2013-06-18 at 15:00	102416	2013-06-18 at $16:34$
TPH GRO	S 8015 D	86771	2013-06-18 at $16:25$	102434	2013-06-18 at $16:25$

Results for these samples are reported on a wet weight basis unless data package indicates otherwise.

A matrix spike (MS) and matrix spike duplicate (MSD) sample is chosen at random from each preparation batch. The MS and MSD will indicate if a site specific matrix problem is occurring, however, it may not pertain to the samples for work order 13061822 since the sample was chosen at random. Therefore, the validity of the analytical data reported has been determined by the laboratory control sample (LCS) and the method blank (MB). These quality control measures are performed with each preparation batch to ensure data integrity.

All other exceptions associated with this report have been footnoted on the appropriate analytical page to assist in general data comprehension. Please contact the laboratory directly if there are any questions regarding this project.

Report Date: July 2, 2013 Apache Red Lake 29-I Battery Work Order: 13061822 Apache Red Lake I Battery

.

Page Number: 5 of 19 Red Lake 29-I Battery, NM

## **Analytical Report**

#### Sample: 332544 - Pt. 1

Laboratory: Analysis: QC Batch: Prep Batch:	Chloride (Titration) h: 102764		ytical Method: SM 4500-Cl B e Analyzed: 2013-07-02 ple Preparation: 2013-07-02		Prep Method: Analyzed By: Prepared By:	$\mathbf{GS}$
D			RL	<b>T</b> T <b>1</b> .		DI
Parameter	Flag	$\operatorname{Cert}$	$\operatorname{Result}$	Units	Dilution	RL
Chloride	Qs		410	mg/Kg	1	5.00

#### Sample: 332544 - Pt. 1

Laboratory: Analysis: QC Batch: Prep Batch:	s: TPH DRO - NEW ch: 102416				lytical Metho Analyzed: ple Preparat	2013-0	6-18	Prep Me Analyze Prepare	d By: DS
					]	RL			
Parameter			Flag	Cert	Res	ult	Units	Dilution	$\operatorname{RL}$
DRO			Qs	1	412	00	mg/Kg	40	.50.0
Surrogate		Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane	Qsr	Qsr	COL	1660	mg/Kg	40	400	415	35.2 - 240

#### Sample: 332544 - Pt. 1

Laboratory:LubbockAnalysis:TPH GROQC Batch:102434Prep Batch:86771	·	Da	ate Ana	al Method alyzed: Preparatio	2013-0	6-18		Prep Methe Analyzed E Prepared B	By: JS
					RL				
Parameter	Flag		Cert	1	Result	Uni	ts	Dilution	$\operatorname{RL}$
GRO			1	7	71100	mg/k	g	2000	4.00
Surrogate		Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)	Qsr	Qsr		8.70	mg/Kg	2000	2.00	435	69.6 - 124
						contr	nued		

Report Date: July 2, 2013	,	Work Order: 13061822	Page Number: 6 of 19
Apache Red Lake 29-I Battery		Apache Red Lake I Battery	Red Lake 29-I Battery, NM
sample continued			

							Spike	Percent	Recovery
Surrogate		Flag	$\operatorname{Cert}$	Result	Units	Dilution	Amount	Recovery	Limits
4-Bromofluorobenzene (4-BFB)	Qsr	Qsr		2750	mg/Kg	2000	2.00	137500	77.7 - 120

#### Sample: 332545 - Pt. 2

Laboratory: Analysis: QC Batch: Prep Batch:	vsis: Chloride (Titration) Batch: 102764		alytical Method: te Analyzed: nple Preparation:	SM 4500-Cl B 2013-07-02 2013-07-02	Prep Method: Analyzed By: Prepared By:	
			$\operatorname{RL}$			
Parameter	Fla	g Cert	Result	Units	Dilution	$\operatorname{RL}$
Chloride	Qs		. 554	mg/Kg	1	5.00

#### Sample: 332545 - Pt. 2

Laboratory: Analysis: QC Batch: Prep Batch:	Analysis: TPH DRO - NEW QC Batch: 102416			Date	lytical Metho e Analyzed: ple Preparat	2013-00	S 8015 D         Prep Method           2013-06-18         Analyzed E           : 2013-06-18         Prepared B		
Description			ורד	C I	-	RL	<b>T</b> T 14		DI
Parameter			Flag	Cert	Res	ult	Units	Dilution	RL
DRO			Qs	1	378	00	m mg/Kg	40	50.0
Surrogate	٠.	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane	Qar	Qsr		1540	mg/Kg	40	400	385	35.2 - 240

#### Sample: 332545 - Pt. 2

Laboratory: Analysis: QC Batch: Prep Batch:	Lubbock TPH GRO 102434 86771		Date Analyz	lethod: S 8015 ed: 2013-06 aration: 2013-06	-18	Prep Method: Analyzed By: Prepared By:	
				$\operatorname{RL}$			
Parameter		Flag	$\operatorname{Cert}$	Result	Units	Dilution	$\mathbf{RL}$
GRO			1	50900	mg/Kg	2000	4.00

Report Date: July 2, 2013 Apache Red Lake 29-I Battery.		Work Order: 13061822 Apache Red Lake I Battery					Page Number: 7 of 19 Red Lake 29-I Battery, NM		
Surrogate		Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)	Qsr	Qsr		8.71	mg/Kg	2000	2.00	436	69.6 - 124
4-Bromofluorobenzene (4-BFB)	$\mathbf{Q}\mathbf{sr}$	Qsr		2040	mg/Kg	2000	2.00	102000	77.7 - 120

#### Sample: 332546 - Pt. 3

Laboratory: Analysis: QC Batch: Prep Batch:	Lubbock Chloride (Titration) 102764 87056	Date A1	cal Method: aalyzed: Preparatiou:	SM 4500-Cl B 2013-07-02 2013-07-02	Prep Method: Analyzed By: Prepared By:	GS
			" RL			
Parameter	Flag	$\operatorname{Cert}$	$\operatorname{Result}$	Units	Dilution	$\operatorname{RL}$
Chloride	Qs		313	mg/Kg	1	5.00

#### Sample: 332546 - Pt. 3

Laboratory:	Lubbock								
Analysis:	TPH DR	O - NEV	V	Ana	lytical Method	l: S 8015	D	Prep Me	thod: N/A
QC Batch:	102416			Date	e Analyzed:	2013-0	6-18	Analyze	d By: DS
Prep Batch:	86753			Sam	ple Preparatio	on: 2013-0	6-18	Prepareo	l By: DS
					R	L			
Parameter			Flag	$\operatorname{Cert}$	Resu	lt	Units	Dilution	$\operatorname{RL}$
DRO			Qs	1	6220	0	mg/Kg	80	50.0
, ,							Spike	Percent	Recovery
Surrogate		Flag	Cert	$\operatorname{Result}$	Units .	Dilution	$\operatorname{Amount}$	Recovery	$\operatorname{Limits}$
n-Tricosane	$\mathbf{Q}_{\mathbf{ST}}$	Qsr		2120	$\mathrm{mg/Kg}$	.80	400	530	35.2 - 240

#### Sample: 332546 - Pt. 3

Laboratory:	Lubbock						
Analysis:	TPH GRO		Analytical M	[ethod: S 8015 ]	D	Prep Method:	S 5035
QC Batch:	102434		Date Analyz	ed: 2013-06	-18	Analyzed By:	$_{ m JS}$
Prep Batch:	86771		Sample Prep	aration: 2013-06	-18	Prepared By:	$_{ m JS}$
				$\operatorname{RL}$			
Parameter		Flag	Cert	Result	Units	Dilution	$\operatorname{RL}$
GRO			1	23100	mg/Kg	5000	4.00

Report Date: July 2, 2013 Apache Red Lake 29-I Battery			Work Order: 13061822 Apache Red Lake I Battery					Page Number: 8 of 19 Red Lake 29-I Battery, NM		
Surrogate		Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits	
Trifluorotoluene (TFT)	Qsr	Qsr		5.33	mg/Kg	5000	2.00	266	69.6 - 124	
4-Bromofluorobenzene (4-BFB)	Qsr	Qsr		1050	mg/Kg	5000	2.00	52500	77.7 - 120	

#### Sample: 332547 - Pt. 4

.

Laboratory: Analysis: QC Batch: Prep Batch:	Lubbock Chloride (Titration) 102764 87056	Date	lytical Method: e Analyzed: ple Preparation:	SM 4500-Cl B 2013-07-02 2013-07-02		J J	N/A GS GS
			RL				
Parameter	Flag	$\operatorname{Cert}$	Result		Units	Dilution	$\operatorname{RL}$
Chloride	Qs		265	n	ng/Kg	1	5.00

#### Sample: 332547 - Pt. 4

Laboratory:	Lubbock							
Analysis:	TPH DRO - N	EW	Ana	lytical Metl	nod: S 801	5 D	. Prep Me	ethod: N/A
QC Batch:	102416		$\operatorname{Dat}$	e Analyzed:	2013-	06-18	Analyze	d By: DS
Prep Batch:	86753		Sample Preparation: 2013-06-18				Prepare	l By: DS
					RL			
Parameter		$\mathbf{F}$ lag	$\operatorname{Cert}$	· Re	sult	Units	Dilution	$\operatorname{RL}$
DRO		Qs	1	1	600	mg/Kg	1	. 50.0
C	Eler	Gart	, Description	T:4-	Dibatian	Spike	Percent	Recovery
Surrogate	Flag	Cert	Result	Units	Dilution	Amount	Recovery	Limits
n-Tricosane			189	mg/Kg	1	100	189	35.2 - 240

#### Sample: 332547 - Pt. 4

Laboratory: Analysis: QC Batch: Prep Batch:	Lubbock TPH GRO 102434 86771		Analytical Methe Date Analyzed: Sample Preparat	2013-06-	-18	Prep Method: Analyzed By: Prepared By:	JS
				$\mathbf{RL}$			
Parameter		$\mathbf{F}$ lag	Cert	Result	Units	Dilution	RL
GRO	1		1	<20.0	mg/Kg	5	4.00

Report Date: July 2, 2013 Apache Red Lake 29-I Battery				13061822 ake I Batte	Page Number: 9 of 19 Red Lake 29-I Battery, NM				
Surrogate		Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT) 4-Bromofluorobenzene (4-BFB)	Qsr	Qsr		$2.04 \\ 2.52$	mg/Kg mg/Kg	5 5	$2.00 \\ 2.00$	$\frac{102}{126}$	69.6 - 124 77.7 - 120

#### Sample: 332548 - Pt. 5

Laboratory: Analysis: QC Batch: Prep Batch:	Lubbock Chloride (Titration) 102764 87056	Date Ar	cal Method: alyzed: Preparation:	SM 4500-Cl B . 2013-07-02 2013-07-02	Prep Method: Analyzed By: Prepared By:	GS
D d			RL	TT		DI
Parameter	Flag	Cert	. Result	Units	Dilution	$^{\circ}$ RL
Chloride	Qs		11700	$\mathrm{mg/Kg}$	1	5.00

#### Sample: 332548 - Pt. 5

Laboratory: Analysis: QC Batch: Prep Batch:	Lubbock TPH DR 102416 86753		W	. Date	lytical Metho 2 Analyzed: ple Preparat	2013-0	)6-18	Prep Me Analyze Prepared	d By: DS
					]	RL			
Parameter			Flag	Cert	Res	ult .	Units	Dilution	RL
DRO			Qs	1	56	70	mg/Kg	10	50.0
Surrogate		Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane	Qsr	Qar		315	$\mathrm{mg/Kg}$	10	100	315	35.2 - 240

#### Sample: 332548 - Pt. 5

GRO			1	151	mg/Kg	20	4.00
Parameter		Flag	Cert	$\operatorname{RL}$ Result	Units	Dilution	RL
Prep Batch:	86771		Sample Prep	aration: 2013-0	6-18	Prepared By:	$_{ m JS}$
QC Batch:	102434		Date Analyz	ed: 2013-0	6-18	Analyzed By:	$_{\rm JS}$
Analysis:	TPH GRO		Analytical M	lethod: S 8015	D	Prep Method:	S 5035
Laboratory:	Lubbock						

Report Date: July 2, 2013 Apache Red Lake 29-I Battery					13061822 ike I Batte	Page Number: 10 of 19 Red Lake 29-I Battery, NM			
Surrogate		Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT) 4-Bromofluorobenzene (4-BFB)	Qsr	Qsr		$\begin{array}{c} 1.72 \\ 6.61 \end{array}$	mg/Kg mg/Kg	20 20	$2.00 \\ 2.00$	86 330	69.6 - 124 77.7 - 120

#### Sample: 332549 - Pt. 6

.

Laboratory:	Lubbock							
Analysis:	Chloride (Titration)		Analytica	al Method:	SM 4500-Cl B	Prep Method:	N/A	
QC Batch:	102764		Date Ana	alyzed:	2013-07-02	Analyzed By:	GS	,
Prep Batch:	87056		Sample F	Preparation:	2013-07-02	Prepared By:	$\mathbf{GS}$	
				DI				
				$\operatorname{RL}$				
Parameter	$\mathbf{Fl}$	ıg	$\operatorname{Cert}$	$\operatorname{Result}$	Units	Dilution	RL	
Chloride	Q	8		5400	mg/Kg	1	5.00	

#### Sample: 332549 - Pt. 6

Laboratory: Analysis: QC Batch: Prep Batch:	nalysis: TPH DRO - N C Batch: 102416		W	Date	lytical Methe e Analyzed: ple Preparat	2013-0	06-18	Prep Me Analyze Prepare	•/
						RL			
Parameter			Flag	$\operatorname{Cert}$	Res	sult	Units	Dilution	$\operatorname{RL}$
DRO			Qs	1	483	800	mg/Kg	40	50.0
Surrogate		Flag	$\operatorname{Cert}$	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane	Qsr	Qsr		2000	mg/Kg	40	200	1000	35.2 - 240

#### Sample: 332549 - Pt. 6

Laboratory: Lubbock Analysis: TPH GR: QC Batch: 102434 Prep Batch: 86771	0	Analytical M Date Analyz Sample Prep	ed: 2013-06	-18	Prep Method Analyzed By: Prepared By:	JS
<b>、</b>			$\operatorname{RL}$			
Parameter	Flag	$\operatorname{Cert}$	Result	Units	Dilution	RL
GRO		1	55000	mg/Kg	2000	4.00

Report Date: July 2, 2013 Apache Red Lake 29-I Battery					: 13061822 ake I Batte		Page Number: 11 of 19 Red Lake 29-I Battery, NM			
<u> </u>					<b>T</b> T 1.		Spike	Percent	Recovery	
Surrogate		Flag	$\operatorname{Cert}$	$\operatorname{Result}$	Units	Dilution	$\operatorname{Amount}$	Recovery	Limits	
Trifluorotoluene (TFT)	Qsr	Qsr		5.53	mg/Kg	2000	2.00	276	69.6 - 124	
4-Bromofluorobenzene (4-BFB)	Qsr	Qsr		1440	mg/Kg	2000	2.00	72000	77.7 - 120	

Report Date: July 2, 2013 Apache Red Lake 29-I Battery

#### Work Order: 13061822 Apache Red Lake I Battery

Page Number: 12 of 19 Red Lake 29-I Battery, NM

## Method Blanks

Method Blank (1)	QC Bat	ch: 102416								
QC Batch: 102416			Date 4	Analyzed:	2013-06-1	18		Analyzo	ed By:	DS
Prep Batch: 86753			QC P	reparation:	2013-06-1	18		Prepare	ed By:	DS
						MDL				
Parameter		Flag		Cert		· Result		Units		RL
DRO				1		<15.3		mg/Kg		50
						S	pike	Percent	Reco	ovėry
Surrogate	Flag	Cert · I	Result	Units	$\operatorname{Dilut}$		nount	Recovery	Lin	
n-Tricosane			94.0	mg/Kg	. 1		100	94	35.2	- 240
Method Blank (1)	QC Bat	ch: 102434								
QC Batch: 102434			Date	Analyzed:	2013-06-			Analyz	od Bw	$_{ m JS}$
Prep Batch: 86771				reparation:	2013-00-			Prepar		JS
1			·	*			•	1	U	
Demonster		Flor		Cert		MDL Description		Units		DI
Parameter GRO		Flag				Result <0.230		mg/Kg		RL 4
				1		(0.200		<u>116/116</u>		
_				_			Spike	Percent		overy
Surrogate .		Flag	Cert	Result	Units	Dilution	Amount	Recovery	Lin	
Trifluorotoluene (TFT) 4-Bromofluorobenzene (	4-BFB)			$2.16 \\ 2.17$	mg/Kg mg/Kg	1 1	$\begin{array}{c} 2.00 \\ 2.00 \end{array}$	$\frac{108}{108}$	69.6	- 124 - 120
	TDID)_			2.11	mg/ rrg ·	L	2.00	100		- 120
	• ,						· .			
Method Blank (1)	QC Bat	ch: 102764								
QC Batch: 102764			Date .	Analyzed:	2013-07-0	)2		Analyz	ed Bv:	GS
Prep Batch: 87056				reparation:	2013-07-0			Prepare		GS
•					•					
						NALM				
Parameter		Flag		Cert		MDL Result		Units		RL

Report Date: July 2, 2013 Apache Red Lake 29-I Battery

# Laboratory Control Spikes

#### Laboratory Control Spike (LCS-1)

QC Batch: 102416 Prep Batch: 86753			-	2013-06-18 2013-06-18				rzed By: DS red By: DS
Param DRO	F	C R	LCS esult Unit 250 mg/H		Spike Amount 250	Matriz Result <15.3	t Rec.	Rec. Limit 64.8 - 138
Percent recovery is based on the	spike re	sult. RPD			spike dupli			<u>.</u>
	-1			-				
Param	F (	LCSD Result	Units Dil	Spike . Amount	Matrix Result	Rec.	Rec. Limit	RPD RPD Limit
DRO		0.10	mg/Kg 1	250	<15.3		.8 - 138	$\frac{10}{3}$ $\frac{10}{20}$
Percent recovery is based on the	spike ro							
				o opino jana				_
G	LCS	LCSE		Dil	Spike	LCS	LCSD	Rec.
Surrogate n-Tricosane	Resul 86.8	Resul 87.6	t Units mg/Kg	Dil1	Amount 100	Rec. 87	Rec. 88	Limit 35.2 - 240
LaboratoryControl Spike (LQC Batch:102434Prep Batch:86771	CS-1)			2013-06-18 2013-06-18				yzed By: JS ared By: JS
		I	LCS		Spike	Matrix	ĸ	Rec.
Param	F		esult Unit		Amount	Result		Limit
GRO			l5.1 mg/ŀ	~~	20.0	< 0.230		66.9 - 120
Percent recovery is based on the	spike ro	sult. RPD	is based on the	e spike and	spike dupli	cate result	•	
		LCSD		Spike	Matrix		Rec.	RPD
Param	F (	C Result	Units Dil			Rec.	Limit	RPD Limit
GRO		16.2	mg/Kg 1	20.0	< 0.230	81 66	5.9 - 120	7 20
Percent recovery is based on the	spike ro	sult. RPD	is based on the	e spike and	spike dupli	cate result		
		LCS	S LCSD		Spi	ke LCS	S LCSI	) Rec.
Surrogate		Resu		Units I	Dil. Amo			Limit
T (1 ) (1 ) (T )								1.111110
Trifluorotoluene (TFT) 4-Bromofluorobenzene (4-BFB)		1.84	1 1.87	mg/Kg mg/Kg	$\begin{array}{ccc} 1 & 2.0 \\ 1 & 2.0 \end{array}$	0 92		69.6 - 124

Report Date: July 2, 2013 Apache Red Lake 29-I Battery	7			Work Orc pache Red				Page Number: 14 of Red Lake 29-I Battery, N				
Laboratory Control Spike	(LCS-1)	)										
QC Batch: 102764 Prep Batch: 87056				e Analyzeo Preparatio		.3-07-02 .3-07-02					vzed By ared By	
Danam		F		LCS Result	Units	Dil	Spike Amount		atrix	De		Rec. Limit
Param Chloride	-	г		100	mg/Kg		100		esult 3.05	Rec 10		$\frac{11111}{55 - 115}$
Percent recovery is based on the	le snike i	regul	It RPD		0, 0					10		
reitent recovery is based on th	ne spine i	10501		15 54500 0				att its				
_	-	~	LCSD	·· .		Spike	Matrix	_	Ree			RPD
Param Chloride	F	С	Result	Units	Dil.	Amount	Result	Rec.	Lim		RPD	Limit
Chloride			101	mg/Kg	1	100	<3.05	101	85 - 1	115	1	20
Percent recovery is based on the	he spike i iked San			is based o	m the sp		ріке ацрис	ate res				
Percent recovery is based on th Matrix Spike (MS-1) Sp QC Batch: 102416	-		332585 Date	is based o e Analyzeo Preparatio	l: 201		pike duplic				vzed By wred By	
Percent recovery is based on th Matrix Spike (MS-1) Sp QC Batch: 102416	-		332585 Date	e Analyzeo Preparatio	l: 201	.3-06-18					ured By	r: DS
Percent recovery is based on the Matrix Spike (MS-1) Sp QC Batch: 102416 Prep Batch: 86753	iked San		332585 Date QC 1	e Analyzeo Preparatio MS	l: 201	.3-06-18 3-06-18	Spike	Ma	trix	Prepa	ured By	r: DS Rec.
Percent recovery is based on th Matrix Spike (MS-1) Sp QC Batch: 102416 Prep Batch: 86753 Param	iked San	ıple:	332585 Date QC 1 C H	e Analyzec Preparatic MS Result	l: 201 on: 201	.3-06-18		Ma			ured By	r: DS Rec. Limit
Percent recovery is based on the Matrix Spike (MS-1) Sp QC Batch: 102416 Prep Batch: 86753 Param DRO	iked San <sub>Qs</sub>	nple: F	332585 Date QC 1 <u>C F</u>	e Analyzec Preparatic MS Result 1110	d: 201 on: 201 Units mg/Kg	.3-06-18 .3-06-18 Dil. 1	Spike Amount 250	Ma Res	trix sult 34	Prepa Rec.	ured By	r: DS Rec. Limit
Percent recovery is based on the Matrix Spike (MS-1) Sp QC Batch: 102416 Prep Batch: 86753 Param DRO	iked San <sub>Qs</sub>	nple: F	332585 Date QC I <u>C</u> H	e Analyzec Preparatic MS Result 1110	d: 201 on: 201 Units mg/Kg	3-06-18 3-06-18 Dil. 1 Dike and s	Spike Amount 250 pike duplic	Ma Res	trix sult 34 ult.	Prepa Rec. 190	ured By	r: DS Rec. Limit .5 - 174
Percent recovery is based on the Matrix Spike (MS-1) Sp QC Batch: 102416 Prep Batch: 86753 Param DRO Percent recovery is based on the Param	iked San <sub>Q∗</sub> ne spike :	וזףופ: F פא resul	332585 $C I$ $C I$ $1$ $C H$ $1$ $MSD$	e Analyzec Preparatio MS Result 1110 is based c	d: 201 on: 201 <u>units</u> <u>mg/Kg</u> on the sp	.3-06-18 .3-06-18 Dil. 1 Dike and s Spike	Spike Amount 250 pike duplic Matrix	Ma Res 6: ate res	trix sult 34 ult. Rec	Prepa Rec. 190	ured By	r: DS Rec. <u>Limit</u> .5 - 174 RPD
Percent recovery is based on the Matrix Spike (MS-1) Sp QC Batch: 102416 Prep Batch: 86753 Param DRO Percent recovery is based on the Param	iked San <sub>Q∗</sub> ne spike :	nple: F	332585 $C I$ $C I$ $C H$ $1$ It. RPD $MSD$ Result	e Analyzec Preparatio MS Result 1110 is based o Units	d: 201 on: 201 <u>units</u> <u>mg/Kg</u> on the sp	3-06-18 3-06-18 Dil. 1 Dike and s Spike Amount	Spike Amount 250 pike duplic Matrix Result	Ma Res 6: ate res Rec.	trix sult 34 ult. Rec Limi	Prepa Rec. 190	ured By	r: DS Rec. Limit .5 - 174 RPD Limit
Percent recovery is based on the Matrix Spike (MS-1) Sp QC Batch: 102416 Prep Batch: 86753 Param DRO Percent recovery is based on the Param DRO	iked San Qs ne spike : F	1ple: $\frac{F}{Q_8}$ result $\frac{C}{1}$	332585 Date QC 1 1 It. RPD MSD Result 983	e Analyzec Preparatio MS Result 1110 is based o Units mg/Kg	l: 201 on: 201 <u>Units</u> mg/Kg m the sp <u>Dil.</u> 1	.3-06-18 .3-06-18 Dil. 1 Dike and s Spike Amount 250	Spike Amount 250 pike duplic Matrix Result 634	Ma Res cate res Rec. 140	trix sult 34 ult. Limi 15.5 -	Prepa Rec. 190	ured By 15 RPD	r: DS Rec. <u>Limit</u> .5 - 174 RPD
Percent recovery is based on the Matrix Spike (MS-1) Sp QC Batch: 102416 Prep Batch: 86753 Param DRO Percent recovery is based on the Param DRO	iked San Qs ne spike : F ne spike :	$\frac{F}{C}$	332585 Date QC I 1 It. RPD Result 983 It. RPD	e Analyzec Preparatio MS Result 1110 is based o Units mg/Kg is based o	l: 201 on: 201 <u>Units</u> mg/Kg m the sp <u>Dil.</u> 1	.3-06-18 .3-06-18 Dil. 1 Dike and s Spike Amount 250	Spike Amount 250 pike duplic Matrix Result 634 pike duplic	Ma Res 6: ate res <u>Rec.</u> 140 cate res	trix sult 34 ult. Rec Limi 15.5 - ult.	Prepa <u>Rec.</u> 190 2. it 174	red By 15 RPD 12	:: DS Rec. <u>Limit</u> <u>5 - 174</u> RPD <u>Limit</u> 20
Percent recovery is based on th Matrix Spike (MS-1) Sp QC Batch: 102416	iked San Qs ne spike : F	$\frac{F}{Q_{S}}$ result $\frac{C}{1}$ Tresult S	332585 Date QC 1 1 It. RPD MSD Result 983	e Analyzec Preparatio MS Result 1110 is based o Units mg/Kg is based o	l: 201 on: 201 <u>Units</u> mg/Kg m the sp <u>Dil.</u> 1	.3-06-18 .3-06-18 Dil. 1 Dike and s Spike Amount 250	Spike Amount 250 pike duplic Matrix Result 634	Ma Res cate res Rec. 140	$\frac{\text{trix}}{\text{sult}}$ $\frac{34}{\text{ult.}}$ $\frac{\text{Rec}}{15.5 - \frac{1}{2}}$ $\text{ult.}$ $M$	Prepa Rec. 190	red By 15 RPD 12	Rec. Limit .5 - 174 RPD Limit

QC Batch:	102434	Date Analyzed:	2013-06-18	Analyzed By:	$_{\rm JS}$
Prep Batch:	86771	QC Preparation:	2013-06-18	Prepared By:	

Matrix Spike (MS-1) Spiked Sample: 332582

Report Date: July 2, 2013 Apache Red Lake 29-I Battery	Work Order: 13061822PageApache Red Lake I BatteryRed Lake										15 of 19 ery, NM
Param	F	С	MS Result	Units	Dil.	Spike Amount		atrix esult	Rec.		Rec. Jimit
GRO		1	18.3	mg/Kg	ç 5	20.0	. ]	1.89	82	38.	8 - 120
Percent recovery is based on the sp	ike r	sult. RP	D is based	on the	spike and	spike dupl	icate re	esult.			
	F (			Dil.	Spike Amount		Rec.	Ro Lir	nit	RPD	RPD Limit
GRO		19.0	mg/Kg		20.0	1.89	86	38.8	- 120	4	20
Percent recovery is based on the sp	ike r	esult. RP	D is based	on the	spike and	spike dupl	icate re	esult.			
Surrogate Trifluorotoluene (TFT) 4-Bromofluorobenzene (4-BFB)		Re1	esult Ro		Units mg/Kg mg/Kg	Dil. Am 5	oike ount 2 2	MS Rec. 90 106	MSE Rec. 90 106	<u> </u>	Rec. Limit 6 - 124 7 - 120
Matrix Spike (MS-1) Spiked	Sam	ole: 33255	2	·							
QC Batch: 102764 Prep Batch: 87056			ate Analyz C Preparat		013-07-02 013-07-02				•	zed By red By	
Param	I	C C	MS Result	Units	s Dil.	Spike Amoun		latrix .esult	Rec.		Rec. Limit
Chloride Qs	¢	s	28400	mg/K	g 1	500	2	7470	186	63.	6 - 131
Percent recovery is based on the sp	ike r	sult. RP	D is based	on the	spike and	spike dupl	icate re	esult.			
Param	F (	MSD C Result	t Units	Dil.	Spike Amount	Matrix Result	Rec.	Re Lir		RPD	RPD Limit
Chloride		28000			500	27470	106	63.6		1	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Report Date: July 2, 2013 Apache Red Lake 29-I Battery Work Order: 13061822 Apache Red Lake I Battery Page Number: 16 of 19 Red Lake 29-I Battery, NM

## **Calibration Standards**

#### Standard (CCV-1)

QC Batch:	102416		Date	Analyzed:	2013-06-18		Analyzed By: DS			
				CCVs	CCVs	CCVs	Percent			
				True	Found	Percent	Recovery	Date		
Param	$\operatorname{Flag}$	Cert	Units	Conc.	Conc.	Recovery	Limits	Analyzed		
DRO		1	mg/Kg	250	249	100	80 - 120	2013-06-18		

#### Standard (CCV-2)

QC Batch:	102416		Date	Analyzed:	2013-06-18		Analy	zed By: DS
				CCVs	CCVs	CCVs	Percent	
				True	Found	Percent	Recovery	Date
Param	$\operatorname{Flag}$	$\operatorname{Cert}$	Units	Conc.	Conc.	Recovery	Limits	Analyzed
DRO		1	mg/Kg	250	247	99	80 - 120	2013-06-18

#### Standard (CCV-3)

QC Batch:	102416		Date	Analyzed:	2013-06-18		Analy	zed By: DS
				CCVs True	CCVs Found	$\operatorname{CCVs}$	Percent	Date
				True	Found	Percent	Recovery	Date
Param	Flag	Cert	Units	Conc.	Conc.	Recovery	Limits	Analyzed
DRO		1	mg/Kg	250	222	89	80 - 120	2013-06-18

.

#### Standard (CCV-1)

QC Batch:	102434		Date	Analyzed:	2013-06-18		Anal	yzed By: JS
				CCVs True	CCVs Found	CCVs Percent	Percent Recovery	Date
Param	Flag	Cert	Units	Conc.	Conc.	Recovery	Limits	Analyzed
GRO		1	mg/Kg	1.00	0.982	98	80 - 120	2013-06-18

Report Date: J Apache Red La		ery			: 13061822 ake I Battery			mber: 17 of 19 I Battery, NM
Standard (CC	CV-2)							
QC Batch: 102	2434		Date	Analyzed:	2013-06-18		Anal	yzed By: JS
Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
GRO	Tag	1	mg/Kg	1.00	0.937	94	80 - 120	2013-06-18
Standard (CC	CV-3)							
QC Batch: 102	2434		Date	Analyzed:	2013-06-18		Anal	yzed By: JS
Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
GRO	Flag	1	mg/Kg	1.00	0.947	95	80 - 120	2013-06-18
Standard (IC) QC Batch: 102			Date	Analyzed:	2013-07-02		Analy	vzed By: GS
				ICVs	ICVs	ICVs	Percent	
Param	Flag	Cert	Units	True Conc.	Found Conc.	Percent Recovery	Recovery Limits	Date Analyzed
Chloride	<b>1</b> 14	<u></u>	mg/Kg	100	98.0	98	85 - 115	2013-07-02
Standard (CC	CV-1)							
QC Batch: 102	2764		Date	Analyzed:	2013-07-02		Analy	vzed By: GS
Param	Flag	$\operatorname{Cert}$	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
			mg/Kg	100	102	102	85 - 115 -	2013-07-02

.

Report Date: July 2, 2013 Apache Red Lake 29-I Battery Work Order: 13061822 Apache Red Lake I Battery Page Number: 18 of 19 Red Lake 29-I Battery, NM

## Appendix

#### **Report Definitions**

NameDefinitionMDLMethod Detection LimitMQLMinimum Quantitation LimitSDLSample Detection Limit

#### Laboratory Certifications

	Certifying	Certification	Laboratory
С	Authority	Number	Location
-	NCTRCA	WFWB384444Y0909	TraceAnalysis
-	DBE	VN 20657	TraceAnalysis
-	HUB	1752439743100-86536	TraceAnalysis
-	WBE	237019	TraceAnalysis
1	NELAP	T104704219-13-9	Lubbock

#### Standard Flags

- F Description
- B Analyte detected in the corresponding method blank above the method detection limit
- H Analyzed out of hold time
- J Estimated concentration
- Jb The analyte is positively identified and the value is approximated between the SDL and MQL. Sample contains less then ten times the concentration found in the method blank. The result should be considered non-detect to the SDL.
- Je Estimated concentration exceeding calibration range.
- MI1 Split peak or shoulder peak
- MI2 Instrument software did not integrate
- MI3 Instrument software misidentified the peak
- MI4 Instrument software integrated improperly
- MI5 Baseline correction
- Qc Calibration check outside of laboratory limits.
- Qr RPD outside of laboratory limits
- Qs Spike recovery outside of laboratory limits.
- Qsr Surrogate recovery outside of laboratory limits.
- U The analyte is not detected above the SDL

#### **Result Comments**

Report Date: July 2, 2013 Apache Red Lake 29-I Battery Work Order: 13061822 Apache Red Lake I Battery Page Number: 19 of 19 Red Lake 29-I Battery, NM

1 Sample dilution due to turbidity.

#### Attachments

The scanned attachments will follow this page. Please note, each attachment may consist of more than one page.

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	ŝ	ount 1	ĥ	ATR	ix		.Pf		ERV/		/E(	SAN	IPLING	1 603		X100	0./ D	As Ba	Ag As	S	des.		260./		81 / 6	 	õntent NO: -N NO: -N	K, TDS			ľ	Lime
FIELD CC	CONTAINERS:	Volume / Amount			'щ			1			ľ		4 / M	1008	11008	TPH 418:1 / TX1005 / TX1005 Ext(C35)	TPH 8015 GRO/ DROM TVHC DAH 82704 625	Total Metals An As Ba Cd Cr Ph Se Ho	TCLP Metals Ag As Ba Cd Cr Pb Se Hg	TCLP Volatilés	TCLP Pesticides.		GC/MS Vol. 8260	CC/MS Semi. VOI. 82/U	Pésticides 8081 /	BOD, TSS, pH	Moisture Content	Ng, F				Turn Around Time if different from standard Hold
	CON	śwnio,	WATER SÖIL	AIR	SLUDGE	ĒH	HNO3	H <sub>2</sub> SO4	NaOH	Ш.	NONE	DATE	ŢĴŴĒ	MTRE	BTEX	PH 41	TPH 80 PAH 80	otal Me	CLP	CLP V	CLP F	RCI	C/MS		esticio	D, T	loistur	a, Ca,				Turn Ar Hold
Surface :	Sample #			) 4			, 1:11, 	، سلنة ب		.≃ 	~		·	<u>}</u>	≥   œ	) <u> -</u> 1			T.	·	-	ес П	<u></u>	20			≥ <b> </b> C	) <u>}</u>	<u>.</u>		-+-	
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# Appendix C Overspray Lab

RICE Environmental Consulting and Safety (RECS) P.O. Box 2948 Hobbs, NM 88241 Phone 575.393.2967



### Analytical and Quality Control Report

Bruce Baker Apache Corp.-Midland 303 Veterans Airpark Lane Suite #3000 Midland, TX, 79705

Report Date: September 13, 2013

Work Order: 13082913

Project Location:Red Lake 29-I Battery, NMProject Name:Apache Red Lake I BatteryProject Number:Apache Red Lake 29-I Battery

Enclosed are the Analytical Report and Quality Control Report for the following sample(s) submitted to TraceAnalysis, Inc.

			Date	Time	Date
Sample	Description	Matrix	Taken	Taken	Received
340451	Overspray Pt. 1	soil	2013-08-22	13:22	2013-08-28
340452	Overspray Pt. 2	soil	2013 - 08 - 22	13:24	2013-08-28
340453	Overspray Pt. 3	soil	2013-08-22	13:25	2013-08-28
340454	Overspray @ 6" Pt. 1	soil	2013-08-22	14:17	2013-08-28
340455	Overspray @ 6" Pt. 2	soil	2013-08-22	14:18	2013-08-28
340456	Overspray @ 6" Pt. 3	soil .	2013-08-22	14:20	2013-08-28

These results represent only the samples received in the laboratory. The Quality Control Report is generated on a batch basis. All information contained in this report is for the analytical batch(es) in which your sample(s) were analyzed.

This report consists of a total of 19 pages and shall not be reproduced except in its entirety, without written approval of TraceAnalysis, Inc.

Michael april

Dr. Blair Leftwich, Director Dr. Michael Abel, Project Manager

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### Case Narrative

Samples for project Apache Red Lake I Battery were received by TraceAnalysis, Inc. on 2013-08-28 and assigned to work order 13082913. Samples for work order 13082913 were received intact at a temperature of 3.3 C.

Samples were analyzed for the following tests using their respective methods.

		Prep	Prep	QC	Analysis
Test	Method	Batch	Date	Batch	Date
Chloride (Titration)	SM 4500-Cl B	89008	2013-09-13 at 11:00	105053	2013-09-13 at 12:00
TPH DRO - NEW	S 8015 D	88598	2013-08-29 at $13:00$	104577	2013-08-30 at $09:18$
TPH GRO	S 8015 D	88624	2013-08-30 at $16:54$	104610	2013-08-30 at 16:54

Results for these samples are reported on a wet weight basis unless data package indicates otherwise.

A matrix spike (MS) and matrix spike duplicate (MSD) sample is chosen at random from each preparation batch. The MS and MSD will indicate if a site specific matrix problem is occurring, however, it may not pertain to the samples for work order 13082913 since the sample was chosen at random. Therefore, the validity of the analytical data reported has been determined by the laboratory control sample (LCS) and the method blank (MB). These quality control measures are performed with each preparation batch to ensure data integrity.

All other exceptions associated with this report have been footnoted on the appropriate analytical page to assist in general data comprehension. Please contact the laboratory directly if there are any questions regarding this project.

Report Date: September 13, 2013 Apache Red Lake 29-I Battery

#### Work Order: 13082913 Apache Red Lake I Battery

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## Analytical Report

#### Sample: 340451 - Overspray Pt. 1

Laboratory: Analysis: QC Batch: Prep Batch:	Lubbock Chloride (Titration) 105053 89008		. Date An	al Method: alyzed: Preparation:	SM 4500-Cl B 2013-09-13 2013-09-13	J J	
				$\operatorname{RL}$	· .		
Parameter	F	lag	Cert	Result	Units	Dilution	$\mathbf{RL}$
Chloride				20.0	mg/Kg	1	5.00

#### Sample: 340451 - Overspray Pt. 1

Laboratory:	Lubbock								
Analysis:	TPH DF	RO - NEV	N	Anal	lytical Metho	od: S 8015 I	5	Prep Me	thod: N/A
QC Batch:	104577			Date	Analyzed:	2013-08	-30	Analyzed	By: CM
Prep Batch:	88598			Sam	ple Preparat	ion: 2013-08	-29	Prepared	By: CM
					1	RL			
Parameter			Flag	$\operatorname{Cert}$	Res	ult	Units	Dilution	$\operatorname{RL}$
DRO		M. 1993		1	4	19	mg/Kg	1	50.0
1						•	Spike	Percent	Recovery
Surrogate		Flag	Cert	$\operatorname{Result}$	Units	Dilution	Amount	Recovery	Limits
n-Tricosane	Qsr	Qsr		167	mg/Kg	1	100	167	70 - 130

#### Sample: 340451 - Overspray Pt. 1

Laboratory: Analysis: QC Batch: Prep Batch:	Lubbock TPH GRO 104610 88624		Date An	al Metho alyzed: Preparati	2013-0	08-30		Prep Metho Analyzed E Prepared B	sy: MT
					$\mathbf{RL}$				
Parameter		Flag	Cert		Result	Un	its	Dilution	RL
GRO		U	1		<40.0	mg/l	Kg	· 10	4.00
Surrogate		Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotolue	ene (TFT)			1.81	mg/Kg	10	2.00	90	73 - 122
						cont	inued		

Report Date: September 13, 2013 Apache Red Lake 29-I Battery				er: 130829 Lake I Bat		Re	Page Num d Lake 29-I l	ber: 6 of 19 Battery, NM
sample continued						Spike	Percent	Recovery
Surrogate	Flag	$\operatorname{Cert}$	Result	Units	Dilution	Amount	Recovery	Limits .
4-Bromofluorobenzene (4-BFB)			2.28	m mg/Kg	10	2.00	114	74.6 - 120

#### Sample: 340452 - Overspray Pt. 2

Laboratory: Lubbock Analysis: Chloride (Titration) QC Batch: 105053 Prep Batch: 89008		Date An	al Method: alyzed: Preparation:	SM 4500-Cl B 2013-09-13 2013-09-13	Prep Method: Analyzed By: Prepared By:	N/A GS GS
			$\operatorname{RL}$			
Parameter	Flag	$\operatorname{Cert}$	Result	Units	Dilution	RL
Chloride		· · · · · ·	49.0	mg/Kg	1	5.00

#### Sample: 340452 - Overspray Pt. 2

Laboratory:	Lubbock								
Analysis:	TPH DRO - NEW 104577			Anal	lytical Metho	d: S 8015	D	Prep Me	thod: N/A
QC Batch:				Date	Analyzed:	2013-08	8-30	Analyzed	By: CM
Prep Batch:	88598			Sam	ple Preparati	on: 2013-08	8-29	Prepared	l By: CM
					F	RL			
Parameter			Flag	Cert	Resu	ılt	Units	Dilution	$\operatorname{RL}$
DRO				1	6	93	mg/Kg	5	50.0
							Spike	Percent	Recovery
Surrogate		Flag	Cert	$\operatorname{Result}$	Units	Dilution	Amount	Recovery	Limits
n-Tricosane	Qsr	Qsr		69.3	mg/Kg	5	100	69	70 - 130

#### Sample: 340452 - Overspray Pt. 2

Laboratory: Analysis: QC Batch: Prep Batch:	TPH GRO : 104610		Analytical Method: S 8015 D Date Analyzed: 2013-08-30 Sample Preparation: 2013-08-30				S 5035 MT MT
				RL			
Parameter		Flag	Cert	Result	Units	Dilution	$\operatorname{RL}$
GRO	2	U .	1	<20.0	m mg/Kg	5	4.00

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Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits		
Trifluorotoluene (TFT)		•••••	1.86	mg/Kg	5	2.00	93	73 - 122		
4-Bromofluorobenzene (4-BFB)			2.21	mg/Kg	5	2.00	110	74.6 - 120		

### Sample: 340453 - Overspray Pt. 3

Laboratory: Lubbock Analysis: Chloride (Titration) QC Batch: 105053 Prep Batch: 89008		Date An	al Method: alyzed: Preparation:	SM 4500-Cl B 2013-09-13 2013-09-13	0 0	N/A GS GS	
				$\mathbf{RL}$			
Parameter		Flag	Cert	$\operatorname{Result}$	Units	Dilution	RL
Chloride				34.0	mg/Kg	1	5.00

# Sample: 340453 - Overspray Pt. 3

Laboratory:	Lubbock	τ							
Analysis:	TPH DF	RO - NEV	N	Anal	ytical Metho	d: S 8015	D	Prep Me	thod: N/A
QC Batch:	104577			Date	Analyzed:	2013-08	-30	Analyzed	By: CM
Prep Batch:	88598			Sam	Sample Preparation: 2013-08-29			Preparec	l By: CM
					F	RL			
Parameter			Flag	Cert	Resu	ılt	Units	Dilution	RL
DRO				1	30	<u>52</u>	mg/Kg	1	50.0
							Spike	Percent	Recovery
Surrogate		$\mathbf{Flag}$	Cert	Result	Units	Dilution	Amount	Recovery	Limits
n-Tricosane	Qsr	Qsr		184	mg/Kg	1	100	184	70 - 130

### Sample: 340453 - Overspray Pt. 3

Laboratory: Analysis: QC Batch: Prep Batch:	Lubbock TPH GRO 104610 88624		Analytical M Date Analyze Sample Prepa	ed: 2013-08	-30	Prep Method: Analyzed By: Prepared By:	MT
				$\operatorname{RL}$			
Parameter		Flag	Cert	Result	Units	Dilution	$\operatorname{RL}$
GRO	3	U	1	<20.0	mg/Kg	5	4.00

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	-	<i>a</i> .		<b>TT</b> 1.		Spike	Percent	Recovery	
Surrogate	Flag	$\operatorname{Cert}$	$\operatorname{Result}$	Units	Dilution	$\operatorname{Amount}$	Recovery	Limits	
Trifluorotoluene (TFT)			1.84	mg/Kg	5	2.00	92	73 - 122	
4-Bromofluorobenzene (4-BFB)			2.28	mg/Kg	5	2.00	114	74.6 - 120	

### Sample: 340454 - Overspray @ 6" Pt. 1

Laboratory: Analysis: QC Batch: Prep Batch:	ysis: Chloride (Titration) Batch: 105053		al Method: alyzed: Preparation:	SM 4500-Cl B 2013-09-13 2013-09-13	Prep Method: Analyzed By: Prepared By:	
			$\operatorname{RL}$			
Parameter	Flag	$\operatorname{Cert}$	Result	Units	Dilution	$\operatorname{RL}$
Chloride			64.0	mg/Kg	1	5.00

### Sample: 340454 - Overspray @ 6" Pt. 1

Laboratory:	Lubbock								
Analysis:	TPH DR	O - NEV	N	Anal	ytical Metho	d: S 8015	D	Prep Me	thod: N/A
QC Batch:	104577			Date	Analyzed:	2013-08	8-30	Analyzed	I By: CM
Prep Batch:	88598			Sample Preparation: 2013-08-29				Prepared	By: CM
					F	RL			
Parameter			Flag	Cert	Resi	ılt	Units	Dilution	$\operatorname{RL}$
DRO				1	50	)5	mg/Kg	5	50.0
							Spike	Percent	Recovery
Surrogate		Flag	$\operatorname{Cert}$	Result	Units	Dilution	$\operatorname{Amount}$	Recovery	Limits
n-Tricosane	Qsr	Qsr		214	mg/Kg	5	100	214	70 - 130

### Sample: 340454 - Overspray @ 6" Pt. 1

Laboratory: Analysis: QC Batch: Prep Batch:	Lubbock TPH GRO 104610 88624		Analytical Me Date Analyze Sample Prepa	d: 2013-08	-30	v v	S 5035 MT MT
				$\operatorname{RL}$			
Parameter		Flag	Cert	Result	Units	Dilution	RL
GRO	4	U	1	<40.0	mg/Kg	10	4.00

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Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			1.94	mg/Kg	10	2.00	97	73 - 122
4-Bromofluorobenzene (4-BFB)			2.17	mg/Kg	10	2.00	108	74.6 - 120

### . Sample: 340455 - Overspray @ 6" Pt. 2 .

Laboratory: Analysis: QC Batch: Prep Batch:	s: Chloride (Titration) ch: 105053		nalytical Method: até Analyzed: mple Preparation:	SM 4500-Cl B 2013-09-13 2013-09-13	Prep Method: Analyzed By: Prepared By:	$\mathbf{GS}$
			RL			
Parameter	Fla	ag Cei	t Result	Units	Dilution	RL
Chloride			25.0	mg/Kg	1	5.00

# Sample: 340455 - Overspray @ 6" Pt. 2

Laboratory:	Lubbock	2							
Analysis:	TPH DF	RO - NEV	N	Anal	lytical Metho	d: S 8015	D	Prep Me	thod: $N/A$
QC Batch:	104577			Date	Analyzed:	2013-08	2013-08-30		l By: CM
Prep Batch:				Sample Preparation: 2013-08-29			-29	Preparec	*
					. I	RL			
Parameter			Flag	$\operatorname{Cert}$	Res	ult	Units	Dilution	$\operatorname{RL}$
DRO				1	5	34	mg/Kg	1	50.0
							Spike	Percent	Recovery
Surrogate		Flag	$\operatorname{Cert}$	Result	Units	Dilution	Amount	Recovery	Limits
n-Tricosane	Qsr	Qsr		268	mg/Kg	1	100	268	70 - 130

### Sample: 340455 - Overspray @ 6" Pt. 2

Laboratory:	Lubbock						
Analysis:	TPH GRO		Analytical Metl	nod: S 8015	D	Prep Method:	S 5035
QC Batch:	104610		Date Analyzed:	2013-08	-30	Analyzed By:	MT
Prep Batch:	88624		Sample Prepara	ntion: 2013-08	-30	Prepared By:	$\mathbf{MT}$
				$\operatorname{RL}$			
Parameter		Flag	$\operatorname{Cert}$	Result	Units	Dilution	$\operatorname{RL}$
GRO	5	υ	1	<20.0	mg/Kg	5	4.00

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Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			2.30	mg/Kg	5	2.00	115	73 - 122
4-Bromofluorobenzene (4-BFB) Qsr	Qsr		2.48	mg/Kg	5	2.00	124	74.6 - 120

### Sample: 340456 - Overspray @ 6" Pt. 3

Laboratory: Analysis: QC Batch: Prep Batch:	Lubbock Chloride (Titration) 105053 89008	Date An	al Method: alyzed: Preparation:	SM 4500-Cl B 2013-09-13 2013-09-13	Prep Method: Analyzed By: Prepared By:	ĠŚ
			$\operatorname{RL}$			
Parameter	Flag	$\operatorname{Cert}$	Result	Units	Dilution	RL
Chloride			25.0	mg/Kg	1	5.00

# Sample: 340456 - Overspray @ 6" Pt. 3

Laboratory: Analysis: QC Batch: Prep Batch:	Analysis: TPH DRO - NEW QC Batch: 104577		Date	lytical Methe e Analyzed: ple Preparat	2013-0	08-30	Prep Me Analyzec Prepared	l By: CM
Parameter		Flag	$\operatorname{Cert}$		RL sult	Units	Dilution	, RL
DRO			1	<5	0.0	mg/Kg	1	50.0
Surrogate	Flag	$\operatorname{Cert}$	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane			112	mg/Kg	1	100	112	70 - 130

### Sample: 340456 - Overspray @ 6" Pt. 3

Laboratory: Analysis: QC Batch: Prep Batch:	Lubbock TPH GRO 104610 88624		Analytical M Date Analyze Sample Prepa	ed: 2013-08	-30	.Prep Method: Analyzed By: Prepared By:	S 5035 MT MT
				RL			
Parameter		Flag	Cert	Result	Units	Dilution	RL
GRO	6	U	1	<20.0	mg/Kg	5	4.00

Apache Red Lake 29-I Battery				er: 1308291 Lake I Bat	Page Number: 11 of 19 Red Lake 29-I Battery, NM			
Surrogate	Flag	Cert	Result	Units <sup>·</sup>	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			1.79	mg/Kg	5	2.00	90	73 - 122
4-Bromofluorobenzene (4-BFB)			2.10	$\mathrm{mg/Kg}$	5	2.00	105	74.6 - 120

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# Work Order 13082913

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# Method Blanks

Method Blank (1)	QC Batch: 10457	77						
QC Batch: 104577 Prep Batch: 88598			Analyzed: eparation:	2013-08-30 2013-08-29			Analyzed Prepared	
-					MDL		. ·	
Parameter	Flag		Cert		Result		Units	RL
DRO			1		< 5.22		mg/Kg	50
Surrogate	Flag Cert	Result	Units	Diluti	on A	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane <sub>Qsr</sub>	Qsr	141	mg/Kg	; 1		100	141	70 - 130
Method Blank (1)	QC Batch: 10461	10		, ·				
QC Batch: 104610 Prep Batch: 88624			Analyzed: reparation:	2013-08-30 2013-08-30			Analyzec Prepared	
Parameter	Flag	ç	$\operatorname{Cert}$		MDL Result		Units	RL
GRO		<u> </u>	1		< 0.230		mg/Kg	4
Surrogate	Fla	g Cert	Result		Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			2.40	mg/Kg	1	$2.00 \\ 2.00$	120	73 - 122 74.6 - 120
4-Bromofluorobenzene (	4-DFD)		2.23	mg/Kg	1	2.00	112	14.0 - 120
Method Blank (1)	QC Batch: 1050	53						
QC Batch: 105053 Prep Batch: 89008			Analyzed: reparation:	2013-09-13 2013-09-13	-		Analyze Prepare	v
Parameter	Flag	,	Cert	·	MDL Result		Units	RL
Chloride					<3.05		mg/Kg	5

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# Laboratory Control Spikes

### Laboratory Control Spike (LCS-1)

QC Batch: 104577 Prep Batch: 88598			U	2013-08-30 2013-08-29			Analyze Prepare	
Param DRO	F	C R	LCS csult Un 220 mg/		Spike Amount 250	Matri Resul <5.22	t Rec.	Rec. Limit 70 - 130
Percent recovery is based on the s	spike re	sult. RPD i	s based on th	e spike and :	spike duplic	ate result.		
Param DRO	F (	01.4	Units D mg/Kg	Spike il. Amount 1 250	Matrix t Result <5.22	Rec. I	Rec. Limit 1 ) - 130	RPD RPD Limit 3 20
Percent recovery is based on the s	spike re	sult. RPD i		e spike and	spike duplic	ate result.		
Surrogate n-Tricosane	LCS Resul	LCSE	)	- Dil.	Spike Amount 100	LCS Rec. 100	LCSD Rec. 99	Rec. Limit 70 - 130
Laboratory Control Spike (Lo QC Batch: 104610	CS-1)		Analyzed:	2013-08-30			Analyze	
Prep Batch: 88624		QC P	reparation:	2013-08-30			Prepare	ed By: MT
Param GRO	F	C Re	CS esult Uni 4.3 mg/		Spike Amount 20.0	Matrix Result <0.230	Rec.	Rec. Limit 60.1 - 120
Percent recovery is based on the s	spike re	sult. RPD i	s based on th	ne spike and	spike duplic	ate result.		
Param GRO	F C	LCSD Result 15.4	Units Di mg/Kg 1		Matrix Result <0.230	Rec. I	Rec. Jimit 1 - 120	RPD RPD Limit 7 20
Percent recovery is based on the s	spike re	sult. RPD i	s based on th	ie spike and	spike duplic	ate result.		
Surrogate Trifluorotoluene (TFT)		LCS Resul	t Result 2.09	mg/Kg	Spil Dil. Amo 1 2.0	unt Rec. 0 94	Rec.	Rec. Limit 73 - 122
4-Bromofluorobenzene (4-BFB)		2.00	2.19	mg/Kg	1 2.0	0 100	110	74.6 - 120

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Laboratory Control Spike (LCS-1)QC Batch:105053Prep Batch:89008Date Analyzed:2013-09-13QC Preparation:2013-09-13LCS			Analyzed E Prepared E	
Prep Batch: 89008 QC Preparation: 2013-09-13			0	
		Ι	Prepared E	~~~
LCS			1	y: GS
	Spike	Matrix		Rec.
Param F C Result Units Dil.	Amount	Result	Rec.	Limit
Chloride 100 mg/Kg 1	100	<3.05	100	85 - 115
Percent recovery is based on the spike result. RPD is based on the spike and spik	ke duplicat	te result.		
LCSD Spike I	Matrix	Rec	).	RPD
Param F C Result Units Dil. Amount	Result	Rec. Lim	it RPD	$\operatorname{Limit}$
Chloride 100 mg/Kg 1 100	<3.05	100 85 - 1	15 0	20

# Matrix Spike (xMS-1) Spiked Sample: 340444

,

QC Batch:	104577	Date Analyzed:	2013-08-30	Analyzed By:	CM
Prep Batch:	88598	QC Preparation:	2013-08-29	Prepared By:	CM

			MS			Spike	Matrix		Rec.
Param	F	С	Result	Units	Dil.	Amount	Result	Rec.	Limit
DRO		1	286	mg/Kg	1	250	32	102	70 - 130
Parcent recovery is he	and on the spiles res	1+ DI	2D in honor	l ou the spil	ro and a	oileo duplicat	o vocult		

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

			MSD			Spike	Matrix		Rec.		RPD
Param	$\mathbf{F}$	$\mathbf{C}$	Result	Units	Dil.	Amount	Result	Rec.	Limit	RPD	Limit
DRO		1	290	mg/Kg	1	250	32	103	70 - 130	1	20
Percent recovery is based on the s	spike	resu	lt. RPD	is based o	n the s	pike and sp	oike duplie	cate res	ult.		

	MS	MSD			Spike	MS	MSD	Rec.
Surrogate	Result	Result	Units	Dil.	Amount	Rec.	Rec.	Limit
n-Tricosane	111	112	mg/Kg	1	100	111	112	70 - 130

Matrix Spike (MS-1)	Spiked Sample: 339800		
QC Batch: 104610 Prep Batch: 88624	Date Analyzed: QC Preparation:	Analyzed By: Prepared By:	

		Work Order: 13082913Page NoApache Red Lake I BatteryRed Lake 29											
•			MS			Sp	ike N	latrix		-	Rec.		
Param	F	С	Result	Unit	s Dil.	Amo	ount F	Result	Rec.	I	Jinit		
GRO		1	15.2	mg/k	lg 1	20	.0 <	0.230	76	40.	3 - 120		
Percent recovery is based on the spike	rest	lt. RPI	) is based	d on the	e spike and	spike o	luplicate 1	esult.					
		MSD			Spike	Mat	rix	Re	c.		RPD		
Param F	С	Result	Units	s Dil.	Amount	t Rest	ilt Rec.	$\operatorname{Lin}$	nit	RPD	$\operatorname{Limit}$		
GRO	1	17.4	mg/K	g 1	20.0	< 0.2	230 87	40.3 ·	120	13	20		
Percent recovery is based on the spike	rest	ılt. RPI	) is base	d on the	e spike and	spike o	luplicate 1	esult.					
		Ν	AS N	MSD			Spike	MS	MSD	)	Rec.		
Surrogate		$\operatorname{Re}$	sult R	lesult	Units	Dil.	Amount	Rec.	Rec.	I	Limit		
Trifluorotoluene (TFT)		1	.97	2.21	mg/Kg	1	$\overline{2}$	98	111	73	3 - 122		
4-Bromofluorobenzene (4-BFB)		2.	31	2.42	mg/Kg	1	2	116	121	74.	6 - 120		

QC Batch:	105053	Date Analyzed:	2013-09-13	Analyzed By:	GS
Prep Batch:	89008	QC Preparation:	2013-09-13	Prepared By:	GS

Param	F	С	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride			515	mg/Kg	1	500	25	98	80 - 120
Percent recovery is base	d on the spike resi	ılt Bl			t ke and si			98	- 00 -
				, ou ouo shu					
		MS	D		Spike	Matrix	Re	c.	RF

D	-	~	T.1.0.10	<b>.</b> .	D.11	, opino	D L	D	- · · ·	000	T	
Param	F.	С	Result	Units	Dil.	Amount	Result	Rec.	$\operatorname{Limit}$	RPD	Limit	
Chloride			510	mg/Kg	1	500	25	97	80 - 120	1	20	_

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

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# **Calibration Standards**

### Standard (CCV-1)

QC Batch:	104577		Date	Analyzed:	2013-08-30		Analy	zed By: CM
				CCVs	CCVs	CCVs	Percent	
				True	Found	Percent	Recovery	Date
Param	Flag	Cert	Units	Conc.	Conc.	Recovery	Limits	Analyzed
DRO		1	mg/Kg	250	218	87	80 - 120	2013-08-30

#### Standard (CCV-2)

QC Batch:	104577		Date	Analyzed:	2013-08-30		Analyz	zed By: CM
				$\mathrm{CCVs}$	CCVs	CCVs	Percent	_
				True	Found	Percent	Recovery	Date
Param	Flag	Cert	Units	Conc.	Conc.	Recovery	Limits	Analyzed
DRO		1	ıng/Kg	250	228	91	80 - 120	2013-08-30

#### .

### Standard (CCV-3)

QC Batch:	104577		Date	Analyzed:	2013-08-30		Analy	zed By: CM
				CCVs	CCVs	CCVs	Percent	_
				True	Found	Percent	Recovery	$\operatorname{Date}$
Param	Flag	Cert	Units	Conc.	Conc.	Recovery	Limits	Analyzed
DRO		1	mg/Kg	250	226	90	80 - 120	2013-08-30

.

### Standard (CCV-1)

QC Batch:	104610		Date	Analyzed:	2013-08-30		Analy	zed By: MT
				CCVs True	CCVs Found	CCVs Percent	Percent Recovery	Date
Param	Flag	Cert	Units	Conc.	Conc.	Recovery	Limits	Analyzed
GRO		1	mg/Kg	1.00	1.08	.108	80 - 120	2013-08-30

Report Date: Apache Red I	September 13 Jake 29-I Batte		A		ler: 13082913 Lake I Battery	У	Page Nu Red Lake 29-	mber: 17 of 1 I Battery, NM
Standard (C	CV-2)							
QC Batch: 1	04610		Date .	Analyzed:	2013-08-30		Analy	zed By: MT
Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
GRO		1	mg/Kg	1.00	0.875	88.	80 - 120	2013-08-3
Standard (C	,							
QC Batch: 1	04610		Date .	Analyzed:	2013-08-30		Analy	zed By: MI
				CCVs True	CCVs Found	$\operatorname{CCVs}$	Percent Recovery	Date
Param GRO	Flag	Cert	Units mg/Kg	Conc. 1.00	Conc.	Recovery 93	Limits 80 - 120	Analyzec 2013-08-3
Standard (IG	CV-1)							
QC Batch: 1	05053		Date	Analyzed:	2013-09-13		Analy	vzed By: GS
Param	Flag	Cert	Units	ICVs True Conc.	ICVs Found Conc.	ICVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride			mg/Kg	100	100	100	85 - 115	2013-09-1
Standard (C	CV-1)							
QC Batch: 1	05053		Date	Analyzed:	2013-09-13		Analy	vzed By: GS
				CCVs True	CCVs Found	CCVs Percent	Percent Recovery	Date
Param	Flag	Cert	Units	Conc.	Conc.	Recovery	Limits	Analyzed
Chloride			mg/Kg	100	100	100	85 - 115	2013-09-1

Report Date: September 13, 2013 Apache Red Lake 29-I Battery Work Order: 13082913 Apache Red Lake I Battery Page Number: 18 of 19 Red Lake 29-I Battery, NM

# Appendix

# **Report Definitions**

NameDefinitionMDLMethod Detection LimitMQLMininum Quantitation LimitSDLSample Detection Limit

# Laboratory Certifications

	Certifying	Certification	Laboratory
$\mathbf{C}$	Authority	Number	Location
-	NCTRCA	WFWB384444Y0909	TraceAnalysis
-	DBE	VN 20657	TraceAnalysis
-	HUB	1752439743100-86536	TraceAnalysis
-	WBE	237019	TraceAnalysis
1	NELAP	T104704219-13-9	Lubbock

# **Standard Flags**

- F Description
- B Analyte detected in the corresponding method blank above the method detection limit
- H Analyzed out of hold time
- J Estimated concentration
- Jb The analyte is positively identified and the value is approximated between the SDL and MQL. Sample contains less then ten times the concentration found in the method blank. The result should be considered non-detect to the SDL.
- Je Estimated concentration exceeding calibration range.
- MI1 Split peak or shoulder peak
- MI2 Instrument software did not integrate
- MI3 Instrument software misidentified the peak
- MI4 Instrument software integrated improperly
- MI5 Baseline correction
- Qc Calibration check outside of laboratory limits.
- Qr RPD outside of laboratory limits
- Qs Spike recovery outside of laboratory limits.
- Qsr Surrogate recovery outside of laboratory limits.
- U The analyte is not detected above the SDL

# **Result Comments**

Report Date: September 13, 2013 Apache Red Lake 29-I Battery Work Order: 13082913 Apache Red Lake I Battery Page Number: 19 of 19 Red Lake 29-I Battery, NM

- 1 Sample dilution due to surfactants.
- 2 Sample dilution due to surfactants.
- 3 Sample dilution due to surfactants.
- 4 Sample dilution due to surfactants.
- 5 Sample dilution due to surfactants.
- 6 Sample dilution due to surfactants.

### Attachments

The scanned attachments will follow this page. Please note, each attachment may consist of more than one page.

	TraceAnal iemail: lab@tracea	w	÷		1C	ò		'Ĝ	7017 .Li	Aber Ibbo Tel ( Fax 1, (l	deen ck; T 806) (806) 300) 3	Aveni exas 794-1 794- 794-1	ue, S 7942 296 1298 296	Suite'9 24	5002 Ba Midia Tel Fax	nd	Texa	s'797	703.		200 E	East El Pa Tel Fax 1 (	(915 (915 (915 (91	set [ Texa ) 585 ) 585 -588	Rd. 3 5-344 5-49 -344	Suite 922. 43 44 3	Ē		-22 .(	BioA 2501 Ma Carrollt Tel (S	iquatic ayes' F ton, T 972),2	c Testi Rd., S exas 242-77	ing te-10 7500 750	)0: )6.
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		ERS	Jount	ļ. 	MAT	RIX		· ·	PRJË	SEF	RVAT HOD			SAMP	LING	1 / 602	8021 / 602 / 8260(			g Aş Ba	s:Ag As	esi	Volatile	- 000	8260 /		/ 608	08.1 / 6 5H	ntent	NO <sub>3</sub> -N, I, K, TDS			ľ	Time
	FÎĘĿD <sup>°</sup> ÇÖDE'	# CONTAINERS	Volume / Amount	WATER	SÕIL AID	SUUDGE		HCI	HNO3	Namu.		NONE		<u>Ô</u> ATE	ŢIMĒ	MTBE 8021		TPH 418.1 / TX1005/	PAH 8270 //625	Total Métals/Ag As Ba Cd Cr.Pb Se Hg 6010/2007.	TCLP Metals Ag	TCLP Volatiles	I.CLP/Semi Volatiles	ŘČL	GC/MS Vol. 8260 / 624	GC/MS Semi. Vol.	PCB's 8082 / 608	Pesticides 808:1 / 608 BOD, FSS, pH.	Moisture Content	Ch F, SO4 N Na, Ca, Mg,				Turn Around Time if different from standard
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Submittal of	samples constitutes agreement to To	ermstar	d Con	tition	silisi	sa gn	reve	rse	side	of Ç	× 6,	<u>c</u> .,/	• • •	* • •		'n	àrrier	÷#.	R	Λ.		45	$\langle \mathbf{Q} \rangle$	10	7	$\mathcal{T}$	0	L	Ł					

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# Appendix D 5 Point Composite Sample Lab 8/26/13

RICE Environmental Consulting and Safety (RECS) P.O. Box 2948 Hobbs, NM 88241 Phone 575.393.2967



WBE HUB NCTRCA DBE NELAP DoD LELAP Kansas Oklahoma ISO 17025

# Analytical and Quality Control Report

Bruce Baker Apache Corp.-Midland 303 Veterans Airpark Lane Suite #3000 Midland, TX, 79705

340345

Report Date: September 12, 2013

Work Order: 13082825

13:55

Project Location:Red Lake 29-I Battery, NMProject Name:Red LakeProject Number:Red Lake

5 Point Composite

Enclosed are the	ne Analytical Report	and Quality Control Report for	the following sam	ple(s) submitted to Tr	aceAnalysis, Inc.
			Date	Time	Date
Sample	Description	Matrix	Taken	$\operatorname{Taken}$	Received

soil

These results represent only the samples received in the laboratory. The Quality Control Report is generated on a batch basis. All information contained in this report is for the analytical batch(es) in which your sample(s) were analyzed.

2013-08-26

This report consists of a total of 16 pages and shall not be reproduced except in its entirety, without written approval of TraceAnalysis, Inc.

2013-08-27

Dr. Blair Leftwich, Director Dr. Michael Abel, Project Manager

# Report Contents

Case Narrative	3
Analytical Report Sample 340345 (5 Point Composite)	<b>4</b> 4
Method Blanks           QC Batch 104577 - Method Blank (1)           QC Batch 104729 - Method Blank (1)           QC Batch 104730 - Method Blank (1)           QC Batch 104980 - Method Blank (1)	<b>6</b> 6 6 7
$\widetilde{\mathrm{QC}}$ Batch 104730 - MS (1)	8 8 9 9 9 9 10 11 11
QC Batch 104577 - CCV (1)	12 12 12 12 13 13 13 13 13 14
Report Definitions         Laboratory Certifications         Standard Flags         Result Comments	<b>15</b> 15 15 15 15

# Case Narrative

Samples for project Red Lake were received by TraceAnalysis, Inc. on 2013-08-27 and assigned to work order 13082825. Samples for work order 13082825 were received intact at a temperature of 8.0 C.

Samples were analyzed for the following tests using their respective methods.

		$\operatorname{Prep}$	Prep	$\rm QC$	Analysis
Test	Method	$\operatorname{Batch}$	Date	Batch	Date
BTEX	S 8021B	88734	2013-09-04 at 15:31	104729	2013-09-04 at 15:31
Chloride (Titration)	SM 4500-Cl B	88954	2013-09-11 at $20:00$	104980	2013-09-12 at $10:00$
TPH DRO - NEW	S 8015 D	88598	2013-08-29 at $13:00$	104577	2013-08-30 at $09:18$
TPH GRO	S 8015 D	88734	2013-09-04 at $15:31$	104730	2013-09-04 at $15:31$

Results for these samples are reported on a wet weight basis unless data package indicates otherwise.

A matrix spike (MS) and matrix spike duplicate (MSD) sample is chosen at random from each preparation batch. The MS and MSD will indicate if a site specific matrix problem is occurring, however, it may not pertain to the samples for work order 13082825 since the sample was chosen at random. Therefore, the validity of the analytical data reported has been determined by the laboratory control sample (LCS) and the method blank (MB). These quality control measures are performed with each preparation batch to ensure data integrity.

All other exceptions associated with this report have been footnoted on the appropriate analytical page to assist in general data comprehension. Please contact the laboratory directly if there are any questions regarding this project.

#### Work Order: 13082825 Red Lake

Page Number: 4 of 16 Red Lake 29-I Battery, NM

# Analytical Report

### Sample: 340345 - 5 Point Composite

Analysis: QC Batch:	Lubbock BTEX 104729 88734		Da	ate Anal	Method: yzed: reparation:	S 802 2013- : 2013-	09-04		Prep Meth Analyzed H Prepared H	By: B	5 5035 MT MT
						$\mathbf{RL}$					
Parameter		Flag		Cert		Result	Uni		Dilution		RL
Benzene	1	U		1	<	< 0.100	mg/ŀ	ζg	5		0.0200
Toluene		U		1	. <	< 0.100	mg/F		5		0.0200
Ethylbenzene				1		1.06	mg/ŀ		5		0.0200
Xylene				1		1.64	mg/ŀ	Śg	5		0.0200
			Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery		overy mits
Surrogate										CC S	2 - 120
Surrogate Trifluorotoluer	ne (TFT)				1.97	- mg/Ka	2 5	2.00	- 98	00.4	2 - 120
Trifluorotolue	ne (TFT) bbenzene (4-BFB)	Qsr	Qsr		1.97 2.48	mg/Kg mg/Kg		2.00 2.00	$\frac{98}{124}$		5 - 120 5 - 120
Trifluorotoluer 4-Bromofluoro Sample: 340 Laboratory: Analysis: QC Batch:		omposi	Qsr	Date		mg/Kg hod: tion:		2.00		59.8 thod: 1 By:	
Trifluorotoluer 4-Bromofluoro Sample: 340 Laboratory: Analysis: QC Batch:	<b>345 - 5 Point Co</b> Lubbock Chloride (Titration 104980 88954	omposi	Qsr	Date	2.48 ytical Met Analyzed ble Prepara	mg/Kg hod:	g 5 SM 4500-Cl E 2013-09-12	2.00	124 Prep Me Analyzeo	59.8 thod: 1 By:	5 - 120 N/A GS
Trifluorotoluer 4-Bromofluoro Sample: 340 Laboratory: Analysis: QC Batch:	345 - 5 Point Co Lubbock Chloride (Titration 104980	omposi	Qsr	Date	2.48 ytical Met Analyzed	mg/Kg hod:	g 5 SM 4500-Cl E 2013-09-12	2.00	124 Prep Me Analyzeo	59.8 thod: 1 By:	F)

Analysis:	TPH DRO - NEW	1	Analytical Method:	S 8015 D	Prep Method:	N/A
QC Batch:	104577	]	Date Analyzed:	2013-08-30	Analyzed By:	СM
Prep Batch:	88598	2	Sample Preparation:	2013-08-29	Prepared By:	CM
			RL			
Parameter	$\mathbf{F}_{\mathbf{i}}$	ag Ce	rt Result	Units	Dilution	RL
DRO	· · ·	1	1060	ıng/Kg	1	50.0

Report Date: September 12, 2013 Red Lake				W	Work Order: 13082825 Red Lake				Page Number: 5 of 16 Red Lake 29-I Battery, NM		
Surrogate		Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits		
n-Tricosane	Qsr	Qsr		208	mg/Kg	1	100	208	70 - 130		
Sample: 34 Laboratory: Analysis: QC Batch:	Lubbock TPH GR 104730		omposite	Date Ana		S 8015 D 2013-09-04		Prep Meth Analyzed I			
Prep Batch:	88734			Sample F	reparation:	2013-09-04		Prepared I	•		

GRO			1		103	mg/k	(g	5	4.00
Surrogate		Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)				2.09	mg/Kg	5	2.00	104	73 - 122
4-Bromofluorobenzene (4-BFB)	Qsr	Qsr		3.91	mg/Kg	5	2.00	196	74.6 - 120

#### Work Order: 13082825 Red Lake

# Method Blanks

n-Tricosane	Qsr	Qsr		141	mg/Kg	·1	100	141	70 - 130
Surrogate		Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
DRO				•	1	<	5.22	mg/Kg	50
Parameter			Flag		Cert		fDL sult	Units	RL
QC Batch: Prep Batch:	104577 88598				nalyzed: paration:	2013-08-30 2013-08-29		Analyze Prepare	d By: CM d By: CM
Method Bl	ank (1)	QC Ba	itch: 10457	7					

Method Blank	(1)	QC Batch: 104729
--------------	-----	------------------

QC Batch: 104729 Prep Batch: 88734					04 04		l By: MT l By: MT	
•					MDL			
Parameter	Flag		Cert		Result		Units	RL
Benzene			1		< 0.00473		mg/Kg	0.02
Toluene			1		< 0.00416		mg/Kg	0.02
Ethylbenzene			1		< 0.00511		mg/Kg	0.02
Xylene			1		< 0.00430		mg/Kg	0.02
						Spike	Percent	Recovery
Surrogate	Flag	$\operatorname{Cert}$	Result	Units	Dilution	Amount	Recovery	Limits
Trifluorotoluene (TFT)			0.0932	mg/Kg	1	2.00	5	66.2 - 120
4-Bromofluorobenzene (4-BFB)			0.0926	mg/Kg	1	2.00	5	59.5 - 120

QC Batch:	104730	Date Analyzed:	2013-09-04	Analyzed By:	MT
Prep Batch:	88734	QC Preparation:	2013-09-04	Prepared By:	$\mathbf{MT}$

Report Date: September 12, Red Lake	2013		Work Orde Red	r: 1308282 Lake	25	Re	Page Num d Lake 29-I l	ber: 7 of 16 Battery, NM
Parameter	Flag		Cert		MDL Result		Units	RL
GRO			1		< 0.230		mg/Kg	4
Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT) 4-Bromofluorobenzene (4-BFI			$\begin{array}{c} 2.18 \\ 2.06 \end{array}$	mg/Kg mg/Kg	1 1	$2.00 \\ 2.00$	109 103	73 - 122 74.6 - 120
Method Blank (1) OC	'Batch: 104980							
Method Blank (1) QC QC Batch: 104980 Prep Batch: 88954	C Batch: 104980		Analyzed: reparation:	2013-09- 2013-09-			Analyze Prepare	

	Hiao	Cert	Result	Units	RL
Parameter Chloride	Flag				
Chioride			< 3.05	ıng/Kg	Э

Work Order: 13082825 Red Lake Page Number: 8 of 16 Red Lake 29-I Battery, NM

# Laboratory Control Spikes

### Laboratory Control Spike (LCS-1)

QC Batch: Prep Batch:	104577 88598			Date Ana QC Prep		)13-08-30 )13-08-29				zed By .red By	
				LCS			Spike	Mat	rix		Rec.
Param		F	C	Resu	·.	Dil.	Amount			ec.	Limit
DRO			1	220			250	<5.			70 - 130
Percent recov	ery is based on th	e spike re	esult. 1	RPD is ba			spike duplic	ate result	t.		
			L	CSD		Spike	Matrix		Rec.		RPD
Param		F			Jnits Dil.	Amount		Rec.	Limit	RPD	Limit
DRO					g/Kg 1	250	< 5.22		70 - 130	3	20
Percent recov	ery is based on th	e spike re	esult. l			spike and	spike duplic	ate result	t.		
		LCS	5	LCSD			Spike	LCS	LCS	D	Rec.
Surrogate		Resu		Result	Units	Dil.	Amount	Rec.	Rec		Limit
n-Tricosane		100	- <u></u>	98.7	mg/Kg	1	100	100	99		70 - 130
Laboratory	Control Spike (	LCS-1)									
QC Batch:	104729			Date Ana		)13-09-04			e e	zed By	
Prep Batch:	88734			QC Prep	aration: 20	013-09-04			Prepa	ared By	r: MT
				LCS			Spike	Matriz	~		Rec.
Param		F	С	Result	Units	Dil.	Amount	Result			Limit
Benzene				1.76	mg/Kg	1	2.00	< 0.004			0.3 - 120
Toluene			1	1.86	mg/Kg	1	2.00	< 0.004			).5 - 120
Ethylbenzene	1		1	1.94	mg/Kg	1	2.00	< 0.005			0.6 - 120
Xylene		,	1	5.88	mg/Kg	1	6.00	< 0.0043	30 98	70	).7 - 120
Percent recov	ery is based on th	e spike r	esult. ]	RPD is b		spike and	spike duplic	ate resul	t.		
			LC	SD		Spike	Matrix		Rec.		RPD
Param		F (	C Res	ult Un	its Dil.	Amount	Result	Rec.	Limit	RPD	Limit

			LCSD			Spike	Mathr		nec.		ILF D
Param	$\mathbf{F}$	$\mathbf{C}$	Result	Units	Dil.	Amount	Result	Rec.	$\operatorname{Limit}$	RPD	$\operatorname{Limit}$
Benzene		1	1.68	mg/Kg	1	2.00	< 0.00473	84	69.3 - 120	5	20
Toluene		1	1.77	mg/Kg	1	2.00	< 0.00416	88	70.5 - 120	5	20
Ethylbenzene		1	1.84	mg/Kg	1	2.00	< 0.00511	92	70.6 - 120	5	20
Xylene		1	5.60	mg/Kg	1	6.00	< 0.00430	93	70.7 - 120	5	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Report Date: September 12, 201 Red Lake	3			Woi	rk Order Red		82825					Page Nu ake 29-		
Surrogate			L( Res		LCSD Result	Uni		Dil.	Spike Amou		LCS Rec.	LCSE Rec.	Ι	Rec. Jimit
Trifluorotoluene (TFT)				86	1.78	mg/		1	2.00		93 96	89		$\frac{2}{100}$
4-Bromofluorobenzene (4-BFB)			1.	93	1.84	mg/	кg	1	2.00		96	92	39.	5 - 120
Laboratory Control Spike (L	CS-1	)	·											
QC Batch: 104730 Prep Batch: 88734				te Anal Prepa			-09-04 -09-04			-		Analyz Prepar	•7	${ m MT}$ ${ m MT}$
Param		F	С	LCS Result	Un	its	Dil.		Spike mount		atrix sult	Rec.		Rec. Jimit
GRO		-	1	16.9	mg/		1		20.0		.230	84		1 - 120
Percent recovery is based on the	-		LCSD			:	Spike	М	atrix		R	ec.	DDD	RPD
Param GRO	F	С	Result 17.1	Un mg/			.mount 20.0			Rec. 86		nit - 120	RPD 1	Limit 20
Percent recovery is based on the	spike	ı resu			-							- 120		
				LCS	LCSD				$\operatorname{Spik}$		LCS	LCSI		Rec.
Surrogate		<u>.</u>		lesult	Result		nits	Dil.	Amou		Rec.	Rec.		Jimit
Trifluorotoluene (TFT) 4-Bromofluorobenzene (4-BFB)	Qsr	Qsr		$2.35 \\ 2.43$	$2.37 \\ 2.43$		g/Kg g/Kg	$\frac{1}{1}$	2.00 2.00		$\frac{118}{122}$	118 122		- 122 6 - 120
Laboratory Control Spike (L QC Batch: 104980 Prep Batch: 88954	CS-:	L)		te Ana 2 Prepa	lyzed: tration:		3-09-12 3-09-11						zed By red By	
				LCS					Spike		Aatrix			Rec.
Param Chloride		F	С	Result		nits	Dil.		Amount		Result	Re		Limit
Percent recovery is based on the	spike	e resu	lt. RPI	99.0 D is bas		g/Kg he spil	1 ke and	spike	100 e duplica		<3.05 sult.	99	. 8	5 - 115
. <b>"</b>	-		LCSI			•	Spike	-	Matrix			lec.		RPD
Param	$\mathbf{F}$	$\mathbf{C}$	Resul		nits I	Dil.	Amoui		Result	Rec.		imit	RPD	Limit

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Report Date: September 12, 20 Red Lake	013		Work	Order: 1 Red Lak	3082825 ·						10 of 16 ery, NM
Matrix Spike (xMS-1) S <sub>1</sub>	piked Samp	ole: 3404	44								
QC Batch: 104577 Prep Batch: 88598			te Analyz C Preparat		13-08-30 13-08-29				Analyz Prepar		
			MS			Spike		latrix	_		Rec.
Param	F	С	Result	Units	Dil.	Amou	nt F	lesult	Rec		Limit
DRO		1	286	mg/Kg	<u>g 1</u>	250		32	102	2 7	0 - 130
Percent recovery is based on th	ie spike res	ult. RP	D is based	l on the s	pike and s	spike dupl	licate re	sult.			
D	n a	MSI		D'1	Spike	Matrix			ec.	מחמ	RPD
Param	F C	Resu			Amount					RPD	Limit
DRO	1	290	Ç,		250	32	103		130	1 .	20
Percent recovery is based on the	ie spike res	ult. RP	D is based	l on the s	pike and s	spike dupl	licate re	sult.			
	MS	$\mathbf{N}$	ISD			Spike	ľ	мs	MSD	۱.	Rec.
Surrogate	Result	Re	esult	Units	Dil.	Amour	it F	lec.	Rec.		Limit
n-Tricosane	111	]	12	mg/Kg	1	100	1	.11	112	7	0 - 130
Matrix Spike (MS-1) Spi	iked Sample	e: 34034	5								
Matrix Spike (MS-1) Spi QC Batch: 104729 Prep Batch: 88734	iked Sample	Da	5 ate Analyz C Preparat		13-09-04 13-09-04				Analyz Prepar		
QC Batch: 104729	iked Sampl	Da	ate Analyz			Spike	Ma	utrix		ed By:	
QC Batch: 104729	iked Sample F	Da	ate Analyz C Preparat			Amount				red By:	MT Rec. Limit
QC Batch: 104729 Prep Batch: 88734	-	Dă Q(	nte Analyz C Preparat MS Result 2.05	tion: 20 Units mg/Kg	13-09-04 	Amount 2.00	Re <0.	trix sult 0236	Prepar Rec. 102	red By: 1 63.	MT Rec. Limit 6 - 120
QC Batch: 104729 Prep Batch: 88734 Param Benzene Toluene	-	Da Qo	nte Analyz C Preparat MS Result 2.05 2.24	tion: 20 Units mg/Kg mg/Kg	13-09-04 	Amount 2.00 2.00	Re <0. <0.	utrix sult 0236 0208	Prepar <u>Rec.</u> 102 112	red By: 1 63. 67.	MT Rec. Limit .6 - 120 .8 - 128
QC Batch: 104729 Prep Batch: 88734 Param Benzene Toluene Ethylbenzene	-	Da Q( - C 	nte Analyz C Preparat MS Result 2.05 2.24 3.06	tion: 20 Units mg/Kg mg/Kg mg/Kg	13-09-04 	Amount 2.00 2.00 2.00	Re <0. <0. 1	utrix sult 0236 0208 .06	Prepar Rec. 102 112 100	red By: <u>I</u> 63. 67. 69.	MT Rec. Limit 6 - 120 .8 - 128 .5 - 136
QC Batch: 104729 Prep Batch: 88734 Param Benzene Toluene Ethylbenzene Xylene	F	Da QC . C	Ate Analyz C Preparat MS Result 2.05 2.24 3.06 8.40	tion: 20 Units mg/Kg mg/Kg mg/Kg mg/Kg	13-09-04 Dil. 5 5 5 5 5	Amount 2.00 2.00 2.00 6.00	Re <0. <0. 1	utrix sult 0236 0208 .06 .64	Prepar <u>Rec.</u> 102 112	red By: <u>I</u> 63. 67. 69.	MT Rec. Limit .6 - 120 .8 - 128
QC Batch: 104729 Prep Batch: 88734 Param Benzene Toluene Ethylbenzene	F	Da QC . C	Ate Analyz C Preparat MS Result 2.05 2.24 3.06 8.40	tion: 20 Units mg/Kg mg/Kg mg/Kg mg/Kg	13-09-04 Dil. 5 5 5 5 5	Amount 2.00 2.00 2.00 6.00	Re <0. <0. 1	utrix sult 0236 0208 .06 .64	Prepar Rec. 102 112 100	red By: <u>I</u> 63. 67. 69.	MT Rec. Limit 6 - 120 .8 - 128 .5 - 136
QC Batch: 104729 Prep Batch: 88734 Param Benzene Toluene Ethylbenzene Xylene	F	Da QC . C	Ate Analyz C Preparat MS Result 2.05 2.24 3.06 8.40	tion: 20 Units mg/Kg mg/Kg mg/Kg mg/Kg	13-09-04 Dil. 5 5 5 5 5	Amount 2.00 2.00 2.00 6.00	Re <0. <0. 1	utrix sult 0236 0208 .06 .64 sult.	Prepar Rec. 102 112 100	red By: <u>I</u> 63. 67. 69.	MT Rec. Limit 6 - 120 .8 - 128 .5 - 136
QC Batch: 104729 Prep Batch: 88734 Param Benzene Toluene Ethylbenzene Xylene	F	Da QC 1 1 1 1 ult. RP	Ate Analyz C Preparat MS Result 2.05 2.24 3.06 8.40 D is based	Units mg/Kg mg/Kg mg/Kg mg/Kg l on the s	13-09-04 Dil. 5 5 5 5 spike and a	Amount 2.00 2.00 2.00 6.00 spike dup	Re <0. <0. 1	utrix 0236 0208 .06 .64 sult. Ra	Prepar Rec. 102 112 100 113	red By: <u>I</u> 63. 67. 69.	MT Rec. Limit 6 - 120 .8 - 128 .5 - 136 .3 - 139
QC Batch: 104729 Prep Batch: 88734 Param Benzene Toluene Ethylbenzene Xylene Percent recovery is based on th	F ne spike res	Da QC I I I Ult. RP MSD	Ate Analyz C Preparat MS Result 2.05 2.24 3.06 8.40 D is based t Units mg/Kg	Units mg/Kg mg/Kg mg/Kg mg/Kg l on the s Dil. g 5	13-09-04 Dil. 5 5 5 spike and s Spike	Amount 2.00 2.00 2.00 6.00 spike dup Matrix	Re           <0.	atrix sult 0236 0208 .06 .64 sult. Ra Lin	Prepar <u>Rec.</u> 102 112 100 113 ec.	I 63. 67. 69. 69.	MT Rec. Limit 6 - 120 8 - 128 5 - 136 3 - 139 RPD Limit 20
QC Batch: 104729 Prep Batch: 88734 Param Benzene Toluene Ethylbenzene Xylene Percent recovery is based on the Param Benzene Toluene	F ne spike res F C	Da QC 1 1 1 ult. RP MSD Result 1.99 2.17	MS Result 2.05 2.24 3.06 8.40 D is based t Units mg/Kg mg/Kg	Units mg/Kg mg/Kg mg/Kg mg/Kg l on the s Dil. g 5 g 5	13-09-04 Dil. 5 5 5 5 spike and s Spike Amount 2.00 2.00	Amount 2.00 2.00 6.00 spike dup Matrix Result <0.0236 <0.0208	Re           <0.	utrix sult 0236 0208 .06 .64 sult. Ra Lin 63.6 67.8	Prepar Rec. 102 112 100 113 ec. nit - 120 - 128	I           63.           67.           69.           69.           3           3	MT Rec. Limit 6 - 120 8 - 128 5 - 136 3 - 139 RPD Limit 20 20
QC Batch: 104729 Prep Batch: 88734 Param Benzene Toluene Ethylbenzene Xylene Percent recovery is based on the Param Benzene Toluene Ethylbenzene	F ne spike res F C 1	Da QQ 1 1 1 ult. RP MSD Result 1.99 2.17 2.96	te Analyz C Preparat MS Result 2.05 2.24 3.06 8.40 D is based t Units mg/Kg mg/Kg mg/Kg	Units mg/Kg mg/Kg mg/Kg d on the s Dil. 5 5 5 5 5 5	13-09-04 Dil. 5 5 5 5 5 5 5 5 5 5 5 5 5	Amount 2.00 2.00 6.00 spike dup Matrix Result <0.0236 <0.0208 1.06	Rec           <0.	ttrix sult 0236 0208 .06 .64 sult. Ra Lin 63.6 67.8 69.5	Prepar Rec. 102 112 100 113 ec. nit - 120 - 128 - 136	I           63.           67.           69.           69.           3           3           3           3	MT Rec. Limit 6 - 120 8 - 128 5 - 136 3 - 139 RPD Limit 20 20 20
QC Batch: 104729 Prep Batch: 88734 Param Benzene Toluene Ethylbenzene Xylene Percent recovery is based on the Param Benzene Toluene	F ne spike res F C 1 1	Da QC 1 1 1 ult. RP MSD Result 1.99 2.17	MS Result 2.05 2.24 3.06 8.40 D is based t Units mg/Kg mg/Kg	Units mg/Kg mg/Kg mg/Kg d on the s Dil. 5 5 5 5 5 5	13-09-04 Dil. 5 5 5 5 spike and s Spike Amount 2.00 2.00	Amount 2.00 2.00 6.00 spike dup Matrix Result <0.0236 <0.0208	Re           <0.	ttrix sult 0236 0208 .06 .64 sult. Ra Lin 63.6 67.8 69.5	Prepar Rec. 102 112 100 113 ec. nit - 120 - 128	I           63.           67.           69.           69.           3           3	MT Rec. Limit 6 - 120 8 - 128 5 - 136 3 - 139 RPD Limit 20 20
QC Batch: 104729 Prep Batch: 88734 Param Benzene Toluene Ethylbenzene Xylene Percent recovery is based on the Param Benzene Toluene Ethylbenzene	F ne spike res F C 1 1 1 1	Da Qd 1 1 1 ult. RP MSD Result 1.99 2.17 2.96 8.39	MS Result 2.05 2.24 3.06 8.40 D is based t Units mg/Kg mg/Kg mg/Kg	tion: 20 Units mg/Kg mg/Kg mg/Kg mg/Kg l on the s Dil. 5 5 5 5 5 5 5 5	13-09-04 Dil. 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5	$\begin{array}{r} \text{Amount} \\ \hline 2.00 \\ 2.00 \\ 2.00 \\ 6.00 \\ \end{array}$ spike dup Matrix Result <0.0236 <0.0208 \\ 1.06 \\ 1.64 \\ \end{array}	Rec           <0.	ttrix sult 0236 0208 .06 .64 sult. Ro Lin 63.6 67.8 69.5 69.3	Prepar Rec. 102 112 100 113 ec. nit - 120 - 128 - 136	I           63.           67.           69.           69.           3           3           3           3	MT Rec. Limit 6 - 120 8 - 128 5 - 136 3 - 139 RPD Limit 20 20 20
QC Batch: 104729 Prep Batch: 88734 Param Benzene Toluene Ethylbenzene Xylene Percent recovery is based on th Param Benzene Toluene Ethylbenzene Xylene	F ne spike res F C 1 1 1 1	Da Qd 1 1 1 ult. RP MSD Result 1.99 2.17 2.96 8.39	MS Result 2.05 2.24 3.06 8.40 D is based t Units mg/Kg mg/Kg mg/Kg	tion: 20 Units mg/Kg mg/Kg mg/Kg mg/Kg l on the s Dil. 5 5 5 5 5 5 5 5	13-09-04 Dil. 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5	$\begin{array}{c} \text{Amount} \\ 2.00 \\ 2.00 \\ 2.00 \\ 6.00 \\ \end{array}$ spike dup Matrix Result <0.0236 <0.0208 \\ 1.06 \\ 1.64 \\ \end{array} spike dup	Rec           <0.	ttrix sult 0236 0208 .06 .64 sult. Ro Lin 63.6 67.8 69.5 69.3	Prepar Rec. 102 112 100 113 ec. nit - 120 - 128 - 136	RPD 3 0	MT Rec. Limit 6 - 120 8 - 128 5 - 136 3 - 139 RPD Limit 20 20 20
QC Batch: 104729 Prep Batch: 88734 Param Benzene Toluene Ethylbenzene Xylene Percent recovery is based on th Param Benzene Toluene Ethylbenzene Xylene	F ne spike res F C 1 1 1 1	Da Qd 1 1 1 ult. RP MSD Result 1.99 2.17 2.96 8.39	MS Result 2.05 2.24 3.06 8.40 D is based t Units mg/Kg mg/Kg mg/Kg mg/Kg mg/Kg	tion: 20 Units mg/Kg mg/Kg mg/Kg l on the s Dil. 5 5 5 5 5 5 1 on the s	13-09-04 Dil. 5 5 5 5 5 5 5 5 5 5 5 5 5	Amount 2.00 2.00 2.00 6.00 spike dup Matrix Result <0.0236 <0.0208 1.06 1.64	Rec           <0.	ttrix sult 0236 0208 .06 .64 sult. Ra Lin 63.6 67.8 69.5 69.3 sult.	Prepar Rec. 102 112 100 113 ec. nit - 120 - 128 - 136 - 139	I           63.           67.           69.           69.           3           3           0	MT Rec. Limit 6 - 120 8 - 128 5 - 136 3 - 139 RPD Limit 20 20 20 20 20
QC Batch: 104729 Prep Batch: 88734 Param Benzene Toluene Ethylbenzene Xylene Percent recovery is based on th Param Benzene Toluene Ethylbenzene Xylene Percent recovery is based on th	F ne spike res F C 1 1 1 1	Da Qd 1 1 1 ult. RP MSD Result 1.99 2.17 2.96 8.39	MS Result 2.05 2.24 3.06 8.40 D is based t Units mg/Kg mg/Kg mg/Kg mg/Kg mg/Kg	Units mg/Kg mg/Kg mg/Kg mg/Kg l on the s Dil. 5 5 5 5 5 1 on the s MSD	Dil. 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5	Amount 2.00 2.00 2.00 6.00 spike dup Matrix Result <0.0236 <0.0208 1.06 1.64	Re           <0.	ttrix sult 0236 0208 .06 .64 sult. Ra Lin 63.6 67.8 69.5 69.3 sult. MS	Prepar Rec. 102 112 100 113 ec. mit - 120 - 128 - 136 - 139 MSI	RPD 3 0	MT Rec. Limit 6 - 120 8 - 128 5 - 136 3 - 139 RPD Limit 20 20 20 20 Rec.

Report Date: September 12, 2013 Red Lake				Order: 1 Red Lak					age Nun ake 29-I		
matrix spikes continued			10	MCD			Co llos	MC	MCD		Dee
Surrogate				MSD Result	Units	Dil.	Spike Amoun		MSD Rec.		Rec. Jimit
4-Bromofluorobenzene (4-BFB) <sub>Qsr</sub>	Qsr	0			mg/Kg	5	2	121	130		5 - 120
							<u> </u>				
Matrix Spike (MS-1) Spiked S	ample	: 340345									
QC Batch: 104730		Date	Analyze	ed: 20	13-09-04				Analyz	ed By:	MT
Prep Batch: 88734			reparati		13-09-04				Prepare	ed By:	MT
			MS			Sp	ike	Matrix			Rec.
Param	$\mathbf{F}$		esult	Units	Dil.	Amo		Result	Rec.	I	limit
GRO Qs	Qs	1	140	mg/Kg	g 5	20	.0	103	185	40.	3 - 120
Percent recovery is based on the spik	e resu	ılt. RPD i	s based	on the s	spike and	spike d	uplicate	result.			
		MSD			Spike	Matr	iv	R	20		RPD
Param F	С	Result	Units	Dil.	Amount	Resu				RPD	Limit
GRO	1	116	mg/Kg		20.0	103			- 120	19	20
Percent recovery is based on the spik	e resu				spike and	spike d	uplicate				
	1000					-p	-		0		
0				MSD	TT •	וית	Spike		MSD		Rec.
Surrogate				Result 2.00	Units mg/Kg	Dil.	Amoun 2	t Rec. 106	Rec. 100		.imit - 122
Trifluorotoluene (TFT) 4-Bromofluorobenzene (4-BFB) <sub>Qsi</sub>	Qsr			12.00	mg/Kg mg/Kg	5 5	$\frac{2}{2}$	740	610		6 - 122
					0/0						<u> </u>
Matrix Spike (MS-1) Spiked S	ample	: 341102									
QC Batch: 104980 Prep Batch: 88954			Analyz Preparat		)13-09-12 )13-09-11				Analy: Prepa		
											Dee
Deser	D		MS	TT 14.	וית		oike	Matrix			Rec.
	F	C R	esult	Units		An	ount	Result	Rec		Limit
Param Chloride		C R	esult 566	$mg/K_{2}$	g 1	An 5	iount 00	Result 10			
Chloride		C R	esult 566	$mg/K_{2}$	g 1	An 5	iount 00	Result 10	Rec		Limit
Chloride		C R	esult 566	$mg/K_{2}$	g 1	An 5	iount 600 uplicate	Result 10 result.	Rec 111	. 8	Limit
	æ rest	C R	esult 566	mg/Ky on the s Dil.	g 1 spike and	Arr 5 spike d Ma	ount 00 uplicate trix sult R	Result 10 result. F.ec. Li	Rec 111		Limit 0 - 120

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

# --- site spine rooms. Iti D

Work Order: 13082825 Red Lake Page Number: 12 of 16 Red Lake 29-I Battery, NM

# **Calibration Standards**

### Standard (CCV-1)

QC Batch:	C Batch: 104577			Analyzed:	2013-08-30		Analyzed By: CM		
				CCVs	CCVs	CCVs	Percent	-	
				True	• Found	Percent	Recovery	Date	
Param	Flag	$\operatorname{Cert}$	Units	Conc.	Conc.	Recovery	Limits	Analyzed	
DRO		1	mg/Kg	250	218	87	80 - 120	2013-08-30	

### Standard (CCV-2)

QC Batch:	104577		Date	Analyzed:	2013-08-30		Analyz	zed By: CM
				CCVs True	CCVs Found	$\operatorname{CCVs}$	· Percent Recovery	Date
Param	Flag	Cert	Units	Conc.	Conc.	Recovery	Limits	Analyzed
DRO		1	mg/Kg	250	228	91	80 - 120	2013-08-30

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### Standard (CCV-3)

QC Batch:	104577		Date	Analyzed:	2013-08-30		Analy	zed By: CM
				CCVs	CCVs	CCVs	Percent	
				True	Found	Percent	Recovery	Date
Param	Flag	$\operatorname{Cert}$	Units	Conc.	Conc.	Recovery	Limits	Analyzed
DRO		1	mg/Kg	250	226	90	80 - 120	2013-08-30

### Standard (CCV-1)

QC Batch: 104729				Analyz	zed By: MT			
Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Benzene	0	1	mg/kg	0.100	0.0966	97	80 - 120	2013-09-04
Toluene		1	mg/kg	0.100	0.0938	94	80 - 120	2013-09-04
					0.01	ntinued		

 $continued \ldots$ 

Report Date: Septem Red Lake	ber 12, 201	3	W	ork Order: Red La	Page Number: 13 of 16 Red Lake 29-I Battery, NM					
standard continued				CCVs True	CCVs Found	CCVs Percent	Percent Recoverv	Date		
-		~ .	TT				0	,		
Param	Flag	$\operatorname{Cert}$	$\operatorname{Units}$	Conc.	Conc.	Recovery	Limits	Analyzed		
Ethylbenzene		1	_mg/kg	0.100	0.0935	94	80 - 120	2013-09-04		
Xylene		1	mg/kg	0.300	0.283	94	80 - 120	2013-09-04		

# Standard (CCV-2)

QC Batch: 104729			Date An	alyzed: 20	13-09-04		Analyz	zed By: MT
Danam	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Param	rtag	Cert						
Benzene		1	mg/kg	0.100	0.0937	94	80 - 120	2013-09-04
Toluene		1	mg/kg	0.100	0.0923	92	80 - 120	2013-09-04
Ethylbenzene		1	mg/kg	0.100	0.0919	92	80 - 120	2013-09-04
Xylene		1	mg/kg	0.300	0.276	92	80 - 120	2013-09-04

# Standard (CCV-1)

QC Batch:	104730		Date	Analyzed:	2013-09-04		Analy	zed By: MT
				CCVs	CCVs	CCVs	Percent	
				True	Found	Percent	Recovery	Date
Param	Flag	cert	Units	Conc.	Conc.	Recovery	Limits	Analyzed
GRO		1	$\mathrm{mg/Kg}$	1.00	0.969	97	80 - 120	2013-09-04

# Standard (CCV-2)

QC Batch:	104730		Date	Analyzed:	2013-09-04		Analyz	zed By: MT
				CCVs True	CCVs Found	CCVs Percent	Percent Recovery	Date
Param	Flag	· Cert	Units	Conc.	Conc.	Recovery	Limits	Analyzed
GRO		1	m mg/Kg	1.00	1.02	102	80 - 120	2013-09-04

Report Date: { Red Lake	September 12,	2013			er: 13082825 l Lake		Page Nu Red Lake 29	mber: 14 of I Battery, N
Standard (IC	V-1)							
QC Batch: 10	4980		Date .	Analyzed:	2013-09-12		Analy	zed By: GS
Param	Flag	Cert	Units	ICVs True Conc.	ICVs Found Conc.	ICVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride			mg/Kg	100	100	100	85 - 115	2013-09-1
Standard (CO	CV-1)							
QC Batch: 10	4980		Date	Analyzed:	2013-09-12		Analy	zed By: GS
Param	Flag	Cert <sup>·</sup>	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride	<u>_</u>		mg/Kg	100	100	100	85 - 115	2013-09-1

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Work Order: 13082825 Red Lake Page Number: 15 of 16 Red Lake 29-I Battery, NM

# Appendix

# **Report Definitions**

NameDefinitionMDLMethod Detection LimitMQLMinimum Quantitation LimitSDLSample Detection Limit

# Laboratory Certifications

	Certifying	Certification	Laboratory
С	Authority	Number	Location
-	NCTRCA	WFWB384444Y0909	TraceAnalysis
-	DBE	VN 20657	TraceAnalysis
-	HUB	1752439743100-86536	TraceAnalysis
-	WBE	237019	TraceAnalysis
1	NELAP	T104704219-13-9	Lubbock

# Standard Flags

- F Description
- B Analyte detected in the corresponding method blank above the method detection limit
- H Analyzed out of hold time
- J Estimated concentration
- Jb The analyte is positively identified and the value is approximated between the SDL and MQL. Sample contains less then ten times the concentration found in the method blank. The result should be considered non-detect to the SDL.
- Je Estimated concentration exceeding calibration range.
- MI1 Split peak or shoulder peak
- MI2 Instrument software did not integrate
- MI3 Instrument software misidentified the peak
- MI4 Instrument software integrated improperly
- MI5 Baseline correction
- Qc Calibration check outside of laboratory limits.
- Qr RPD outside of laboratory limits
- Qs Spike recovery outside of laboratory limits.
- Qsr Surrogate recovery outside of laboratory limits.
- U The analyte is not detected above the SDL

### **Result Comments**

Work Order: 13082825 Red Lake Page Number: 16 of 16 Red Lake 29-I Battery, NM

1 Sample dilution due to hydrocarbons.

# Attachments

The scanned attachments will follow this page. Please note, each attachment may consist of more than one page.

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ompany Name A A A C A ddress						 		hon ax #	· 	<u> </u>		·										(Ĉ	irc	le	AN	AL' S	YSI pe	S'F cif	REC Y I	oue Me	sī th	Г. ЮС	İN	10.	).			<u>``</u>
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# Appendix E 5 Point Composite Sample Lab 9/18/13

RICE Environmental Consulting and Safety (RECS) P.O. Box 2948 Hobbs, NM 88241 Phone 575.393.2967



September 25, 2013

BRUCE BAKER

APACHE - EUNICE

P. O. BOX 1849

EUNICE, NM 88231

RE: RED LAKE 29 I STATE #1

Enclosed are the results of analyses for samples received by the laboratory on 09/18/13 15:00.

Cardinal Laboratories is accredited through Texas NELAP under certificate number T104704398-11-3. 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 <a href="https://www.tceq.texas.gov/field/qa/lab">www.tceq.texas.gov/field/qa/lab</a> accredited certif.html.

Cardinal Laboratories is accreditated 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. Keine

Celey D. Keene Lab Director/Quality Manager



#### Analytical Results For:

APACHE - EUNICE BRUCE BAKER P. O. BOX 1849 EUNICE NM, 88231 Fax To: 394-2425

Received:	09/18/2013	Sampling Date:	09/18/2013
Reported:	09/25/2013	Sampling Type:	Soil
Project Name:	RED LAKE 29 I STATE #1	Sampling Condition:	** (See Notes)
Project Number:	NONE GIVEN	Sample Received By:	Jodi Henson
Project Location:	NOT GIVEN		

#### Sample ID: 5 PT. COMP (H302277-01)

TPH 8015M	mg,	/kg	Analyze	d By: MS		<u> </u>			
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	09/20/2013	ND	180	89.8	200	5.90	
DRO >C10-C28	221	10.0	09/20/2013	ND	167	83.3	200	9.08	
Surrogate: 1-Chlorooctane	100	% 65.2-14							
Surrogate: 1-Chlorooctadecane	107	% 63.6-15	4						

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 profits incurred by client, its subsidiaries, affiltates 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 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. Kune

Celey D. Keene, Lab Director/Quality Manager



#### **Notes and Definitions**

·	Samples reported on an as received basis (wet) unless otherwise noted on report
-	Chloride by SM4500CI-B does not require samples be received at or below 6°C
***	Insufficient time to reach temperature.
**	Samples not received at proper temperature of 6°C or below.
RPD	Relative Percent Difference
ND	Analyte NOT DETECTED at or above the reporting limit

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#### \*=Accredited Analyte

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Celey D.Kure

Celey D. Keene, Lab Director/Quality Manager

Page 3 of 4

## CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

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Page 4 of 4



101 East Marland, Hobbs, NM 88240 2111 Beechwood, Abilene, TX 79603 (505) 393-2326 FAX (505) 393-2476 (325) 673-7001 FAX (325)673-7020

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## Appendix F NMOCD Approval to Backfill Site

From:	Bratcher, Mike, EMNRD
To:	Lara Weinheimer; Warren, JeanMarie, EMNRD
Cc:	<u>"Hack Conder"; "Baker, Larry"; "Jacob Kamplain"</u>
Subject:	RE: Apache Red Lake 29-I State #1 Battery (2RP-1875)
Date:	Thursday, October 10, 2013 10:37:15 AM

Lara,

As discussed in our meeting yesterday, 10/9/13, RECS is approved to commence backfill operations at this site.

Mike Bratcher NMOCD District 2 811 S. First Street Artesia, NM 88210 O: 575-748-1283 X108 C: 575-626-0857 F: 575-748-9720

From: Lara Weinheimer [mailto:lweinheimer@rice-ecs.com]
Sent: Wednesday, September 25, 2013 2:18 PM
To: Bratcher, Mike, EMNRD; Warren, JeanMarie, EMNRD
Cc: 'Hack Conder'; 'Baker, Larry'; 'Jacob Kamplain'
Subject: Apache Red Lake 29-I State #1 Battery (2RP-1875)

Mike attached is the sampling data for the 6-9 inch scrape and overspray area for the abovereferenced site. The bottom samples are from the 6-9 inch scrape on the release. The overspray samples are from the surface and at a depth of 6 inches. Based on the data, Apache would like your permission to backfill the site with clean, imported soil. If you have any questions or concerns, please let us know. Otherwise, we await your approval.

Thanks!

Lara Weinheimer Rice Environmental Consulting & Safety Project Scientist 419 West Cain Hobbs, NM 88240 (575) 441-0431

## Appendix G Imported Soil Lab



November 11, 2013

BRUCE BAKER

APACHE - EUNICE

P. O. BOX 1849

EUNICE, NM 88231

RE: RED LAKE 29 I STATE #1

Enclosed are the results of analyses for samples received by the laboratory on 11/07/13 16:23.

Cardinal Laboratories is accredited through Texas NELAP under certificate number T104704398-11-3. 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 <a href="https://www.tceq.texas.gov/field/qa/lab">www.tceq.texas.gov/field/qa/lab</a> accredited analytes and matrices visit the TCEQ website at <a href="https://www.tceq.texas.gov/field/qa/lab">www.tceq.texas.gov/field/qa/lab</a> accredited certif.html.

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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,

Celing D. Keine

Celey D. Keene Lab Director/Quality Manager



### Analytical Results For:

APACHE - EUNICE BRUCE BAKER P. O. BOX 1849 EUNICE NM, 88231 Fax To: 394-2425

Received:	11/07/2013	Sampling Date:	11/06/2013
Reported:	11/11/2013	Sampling Type:	Soil
Project Name:	RED LAKE 29 I STATE #1	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Jodi Henson
Project Location:	NOT GIVEN		

#### Sample ID: TOP SOIL 7 PT. COMPOSITE (H302727-01)

Chloride, SM4500Cl-B mg/kg			Analyze	d By: AP			· · ·		
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	<16.0	16.0	11/08/2013	ND	416	104	400	3.92	

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#### \*=Accredited Analyte

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Celey D. Kune

Celey D. Keene, Lab Director/Quality Manager



#### **Notes and Definitions**

ND	Analyte NOT DETECTED at or above the reporting limit
RPD	Relative Percent Difference
**	Samples not received at proper temperature of 6°C or below.
***	Insufficient time to reach temperature.
	Chloride by SM4500CI-B does not require samples be received at or below 6°C
	Samples reported on an as received basis (wet) unless otherwise noted on report

**Cardinal Laboratories** 

#### \*=Accredited Analyte

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Celez D. Kune

Celey D. Keene, Lab Director/Quality Manager

Page 3 of 4



## CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

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Page 4 of

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

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Sampler - UPS	- Bus - Other:					No	P	es No	·		Ľ	r rv				1									

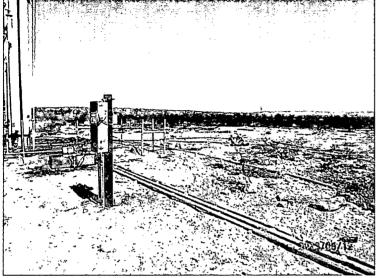
#

† Cardinal cannot accept verbal changes. Please fax written changes to (575) 393-2326

## Appendix H Photo Documentation

## Apache Red Lake 29 | State #1

Unit Letter I, Section 29, T17S, R28E



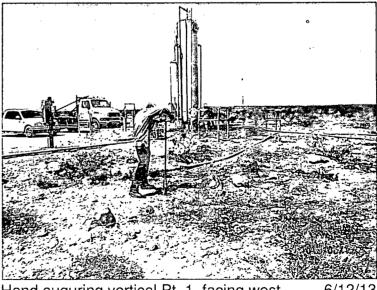
Initial release area, facing east .

6/12/13



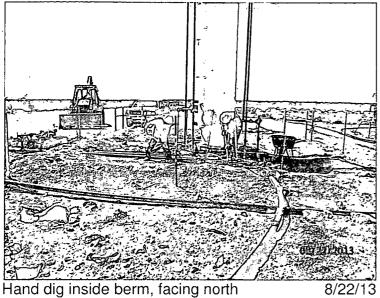
Initial release area, facing north

6/12/13 Initial release area, facing west

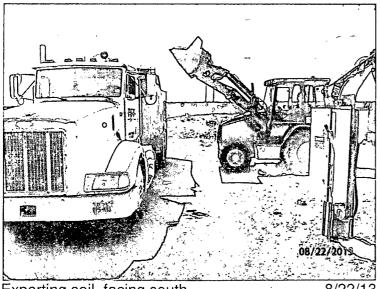


Hand auguring vertical Pt. 1, facing west 6/12/13



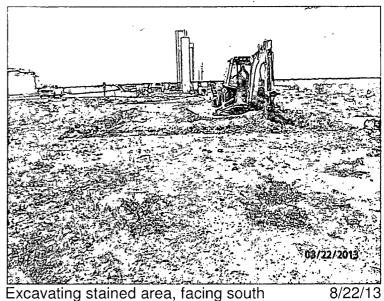


Hand dig inside berm, facing north

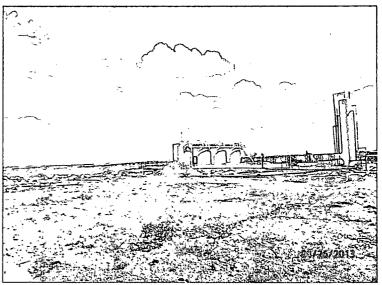


Exporting soil, facing south

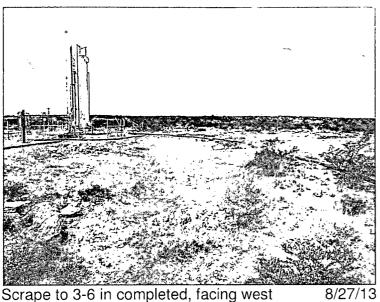
8/22/13



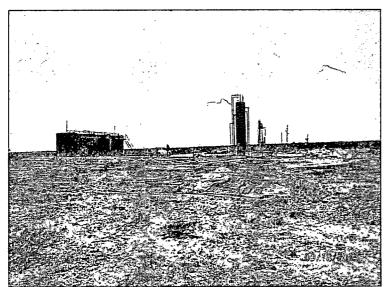
Excavating stained area, facing south



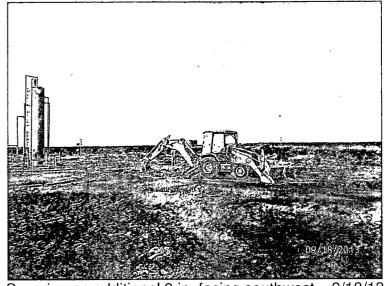
Scrape to 3-6 in completed, facing southeast 8/26/13



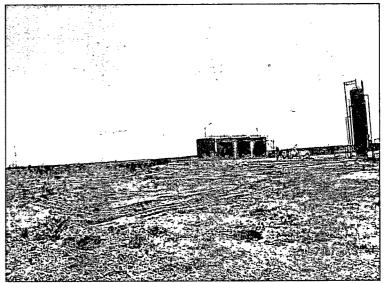
Scrape to 3-6 in completed, facing west



Scrape an additional 3 in completed, facing southeast 9/18/13



Scraping an additional 3 in, facing southwest 9/18/13

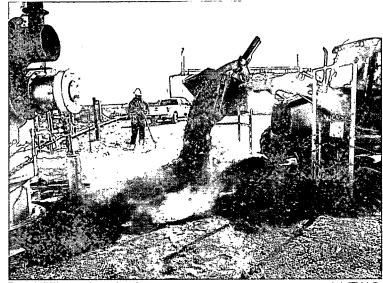


Scrape an additional 3 in completed, facing southeast 9/18/13



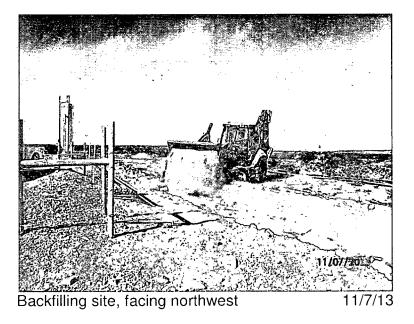
Backfilling site, facing northwest

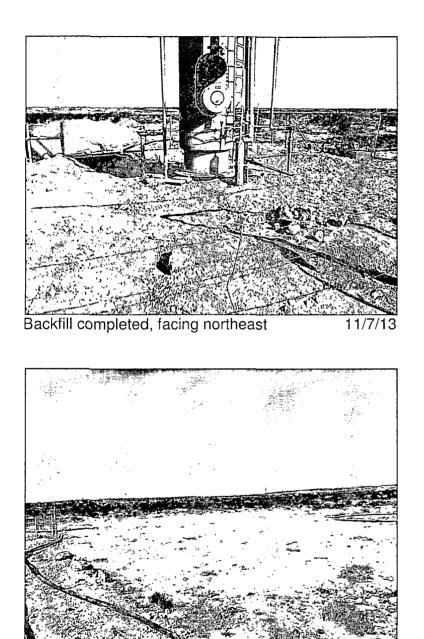
11/7/13



Backfilling site, facing east

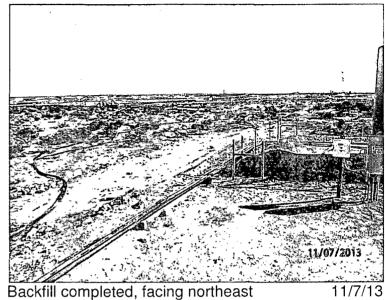
11/7/13



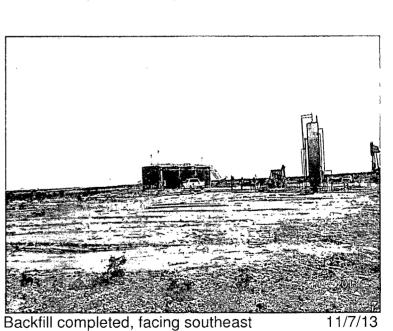


Backfill completed, facing northwest

11/7/13



Backfill completed, facing northeast



# Appendix I Final C-141

## State of New Mexico Energy Minerals and Natural Resources

Form C-141 Revised August 8, 2011

Oil Conservation Division 1220 South St. Francis Dr. Santa Fe, NM 87505 Submit 1 Copy to appropriate District Office in accordance with 19.15.29 NMAC.

## **Release Notification and Corrective Action**

	OPERATOR	Initial Report	Final Report
Name of Company Apache Corporation	Contact Bruce Baker		
Address P.O. Box 1849, Eunice, NM 88231	Telephone No. (432) 631-6982		
Facility Name Red Lake 29-I State #1	Facility Type Production Heater		

Surface Owner State

Mineral Owner

API No. 3001533579

### LOCATION OF RELEASE

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County
I	29	175	28E	1636	FSL	995	FEL	Eddy

Latitude\_32.802562 N Longitude -104.19265 W

### NATURE OF RELEASE

Type of Release Oil	Volume of Release 22 bbls	Volume R	ecovered 20 bbls
Source of Release Production Heater	Date and Hour of Occurrence	Date and	Hour of Discovery 6/11/13
	Unknown	1240 hrs	
Was Immediate Notice Given?	If YES, To Whom?	· · · · · · · · · · · · · · · · · · ·	
🗌 Yes 🖾 No 🗌 Not Require	ed		
By Whom?	Date and Hour		
Was a Watercourse Reached?	If YES, Volume Impacting the W	atercourse.	
🗌 Yes 🖾 No			
If a Watercourse was Impacted, Describe Fully.*	<u> </u>		
Describe Cause of Problem and Remedial Action Taken.* The gasket of the well heads and a vacuum truck was called. The vacuum truck recovered 20			oil. The power was turned off to
Describe Area Affected and Cleanup Action Taken.*			
A total of 7,113 sq ft of lease pad and pasture land was affected by the release.	RECS personnel were on site beginning Jur	ie 12 <sup>th</sup> , 2013. So	il samples were taken at the
surface at six points throughout the release. The samples were taken to a comm	ercial laboratory for analysis. The surface s	amples from all	six points showed elevated
laboratory chloride, Gasoline Range Organics (GRO) and Diesel Range Organic the surface and at six inches to determine the extent of contamination in this are:	s (DRO) readings. On August $22^{10}$ , $2013$ , (	hree points in th	e overspray area were sampled at
GRO and DRO values below regulatory standards. Based on the laboratory anal	lyses and presence of healthy vegetation, th	e overspray area	was not scraped. The remainder
of the release area was scraped down 3 to 6 inches and a 5 point composite samp	le from the base of the scrape was taken to	a commercial la	boratory for analysis on August
27 <sup>th</sup> , 2013. All constituents returned results below regulatory standards except f	or DRO, which had a reading of 1,060 mg/l	cg. The site then	was scraped down to 6 to 9 inches
and another 5 point composite sample from the base of the scrape was taken to a a GRO result of non-detect and a DRO result of 221 mg/kg. A total of 108 yard	commercial laboratory for analysis on Sep	tember 18 <sup>th</sup> , 2011	3. The 5 point composite returned
10 <sup>th</sup> , 2013, NMOCD approved the site to be backfilled. A total of 120 yards of c			
taken to a commercial laboratory and returned a chloride value of non-detect. The	he site was backfilled with the clean, impor	ted soil and cont	oured to the surrounding location.
I hereby certify that the information given above is true and complete to	the heat of my line ulades and under	ton it that muse	ant to NMOCD sulso and
regulations all operators are required to report and/or file certain release	notifications and perform corrective a	ctions for relev	ant to NMOCD futes and
public health or the environment. The acceptance of a C-141 report by	the NMOCD marked as "Final Report"	' does not relie	ve the operator of liability
should their operations have failed to adequately investigate and remedi	ate contamination that pose a threat to	ground water.	surface water, human health
or the environment. In addition, NMOCD acceptance of a C-141 report			
federal, state, or local laws and/or regulations.			
	OIL CONSER	VATION I	DIVISION
Signature: Pouce Bacher			
Signature: Knuce Bacher			
Printed Name: Bruce Baker	Approved by Environmental Special	ist:	
		· · · · · · · · · · · · · · · · · · ·	
Printed Name: Bruce Baker Title: Environmental Technician	Approved by Environmental Special Approval Date:	ist: Expiration D	ate:
		· · · · · · · · · · · · · · · · · · ·	ate:

\* Attach Additional Sheets If Necessary