

District I
1625 N. French Dr., Hobbs, NM 88240
District II
811 S. First St., Artesia, NM 88210
District III
1000 Rio Brazos Road, Aztec, NM 87410
District IV
1220 S. St. Francis Dr., Santa Fe, NM 87505

State of New Mexico
Energy Minerals and Natural Resources

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

Form C-141
Revised April 3, 2017

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	Ridgeway Arizona Oil Company	Contact	Lauri Stanfield
Address	777 N. Eldridge Parkway, Suite 150, Houston, TX 77079	Telephone No.	832-485-8522
Facility Name	Lauck Federal No. 4	Facility Type	Oil
Surface Owner	Federal	Mineral Owner	Federal
		API No.	30-041-10231

LOCATION OF RELEASE

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County
O	29	7S	33E	660	FSL	1980	FEL	Roosevelt

Latitude 33.611855 Longitude NAD83

NATURE OF RELEASE

Type of Release	Hydrocarbon	Volume of Release	20 bbls	Volume Recovered	17 bbls
Source of Release	Gun Barrel Tank Thief Hatch	Date and Hour of Occurrence	Unknown	Date and Hour of Discovery	8/29/2010 07:00 Hrs.
Was Immediate Notice Given?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Not Required				
By Whom?	N/A	Date and Hour			
Was a Watercourse Reached?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No				

If a Watercourse was Impacted, Describe Fully.*

Describe Cause of Problem and Remedial Action Taken.* The water leg on the steel gun barrel tank (500 bbls) plugged not allowing the water to flow from the tank. Therefore, causing an increase in the water level inside the tank that ultimately forced the hydrocarbon (oil) out of the thief hatch onto the ground to the east. When the pumper (Matthew Howe), reaching the location at 0700 Hrs., discovered the discharge, he immediately notified appropriate company personnel and called in a vacuum truck to remove the pooling hydrocarbon from the ground surface so as to prevent further horizontal and vertical absorption of the discharged oil until excavation could be achieved.


Describe Area Affected and Cleanup Action Taken.*

All vacuumed oil (17 bbls) was returned to the gun barrel tank. Since there was no backhoes available on Sunday or Monday, the excavation of the discharge area began and was completed on Tuesday. Approximately 1 foot of hydrocarbon contaminated material was hauled to disposal. Currently, this site awaits sampling for further disposition of the cleanup but it is believed to now be within regulatory limits. Concurrently, BLM located at historic discharge area between the gun tank and the heater treater west of the above spill. The company then excavated this area and removed approximately 1.5 feet of contaminated material to disposal. This also awaits analytical results before further action will be taken. Please refer to the Corrective Action Plan and Final Remediation Report for details.

Final Report: Attached is the Analytical and Quality Control Report for soil sampling completed on 09/07/2010.

I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to NMOCD rules and regulations all operators are required to report and/or file certain release notifications and perform corrective actions for releases which may endanger public health or the environment. The acceptance of a C-141 report by the NMOCD marked as "Final Report" does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to ground water, surface water, human health or the environment. In addition, NMOCD acceptance of a C-141 report does not relieve the operator of responsibility for compliance with any other federal, state, or local laws and/or regulations.

OIL CONSERVATION DIVISION

Signature: 	Approved by Environmental Specialist:	
Printed Name: Lauri M. Stanfield	Approval Date:	Expiration Date:
Title: Office Manager	Conditions of Approval:	
E-mail Address: lstanfield@hunteroil.com	Attached <input type="checkbox"/>	
Date: 3/14/2018	Phone: 832-485-8522	

* Attach Additional Sheets If Necessary

IR-2610
P6RL1035126658



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5002 Basin Street, Suite A1 Midland, Texas 79703 432•689•6301 FAX 432•689•6313
6015 Harris Parkway, Suite 110 Ft. Worth, Texas 76132 817•201•5260
E-Mail: lab@traceanalysis.com

Certifications

WBENC: 237019

HUB: 1752439743100-86536

DBE: VN 20657

NCTRCA WFWB38444Y0909

NELAP Certifications

Lubbock: T104704219-08-TX

El Paso: T104704221-08-TX

Midland: T104704392-08-TX

LELAP-02003

LELAP-02002

Kansas E-10317

Analytical and Quality Control Report

Andy Chalker
Ridgeway Arizona Oil Company
200 N. Lorraine St.
Suite 1400
Midland, Tx, 79701

Report Date: September 20, 2010

Work Order: 10090703



Project Name: Lauck Battery Discharge
Project Number: Lauck Federal No. 4

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

Sample	Description	Matrix	Date Taken	Time Taken	Date Received
243642	Spill Area West Side Battery	soil	2010-09-03	09:30	2010-09-04
243643	Spill Area East Side Battery	soil	2010-09-03	09:45	2010-09-04
243644	Spill Area Asphalted Hydrocarbon	soil	2010-09-03	10:00	2010-09-04
243645	Spill Area West Side Back Area	soil	2010-09-03	10:30	2010-09-04
243646	Spill Area Background	soil	2010-09-03	10:45	2010-09-04

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.

A handwritten signature in black ink that reads "Michael Abel". The signature is fluid and cursive, with the first name "Michael" and last name "Abel" clearly distinguishable.

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

Standard Flags

B - The sample contains less than ten times the concentration found in the method blank.

Case Narrative

Samples for project Lauck Battery Discharge were received by TraceAnalysis, Inc. on 2010-09-04 and assigned to work order 10090703. Samples for work order 10090703 were received intact at a temperature of 22.3 C.

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

Test	Method	Prep Batch	Prep Date	QC Batch	Analysis Date
BTEX	S 8021B	62856	2010-09-07 at 07:59	73279	2010-09-07 at 07:59
Chloride (Titration)	SM 4500-Cl B	63156	2010-09-17 at 17:27	73627	2010-09-17 at 17:27
TPH DRO - NEW	S 8015 D	62991	2010-09-12 at 13:00	73429	2010-09-12 at 19:00
TPH DRO - NEW	S 8015 D	63058	2010-09-14 at 15:00	73506	2010-09-14 at 15:00
TPH GRO	S 8015 D	62856	2010-09-07 at 07:59	73280	2010-09-07 at 07:59

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 10090703 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.

Analytical Report

Sample: 243642 - Spill Area West Side Battery

Laboratory: Lubbock

Analysis: BTEX

QC Batch: 73279

Prep Batch: 62856

Analytical Method: S 8021B

Date Analyzed: 2010-09-07

Sample Preparation: 2010-09-07

Prep Method: S 5035

Analyzed By: ER

Prepared By: ER

Parameter	Flag	RL Result	Units	Dilution	RL
Benzene	1	<0.200	mg/Kg	10	0.0200
Toluene		<0.200	mg/Kg	10	0.0200
Ethylbenzene		<0.200	mg/Kg	10	0.0200
Xylene		<0.200	mg/Kg	10	0.0200

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)		1.69	mg/Kg	10	2.00	84	71.6 - 116
4-Bromofluorobenzene (4-BFB)		2.03	mg/Kg	10	2.00	102	71.8 - 115

Sample: 243642 - Spill Area West Side Battery

Laboratory: Lubbock

Analysis: Chloride (Titration)

QC Batch: 73627

Prep Batch: 63156

Analytical Method: SM 4500-Cl B

Date Analyzed: 2010-09-17

Sample Preparation:

Prep Method: N/A

Analyzed By: CB

Prepared By: CB

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		190	mg/Kg	10	2.50

Sample: 243642 - Spill Area West Side Battery

Laboratory: Lubbock

Analysis: TPH DRO - NEW

QC Batch: 73429

Prep Batch: 62991

Analytical Method: S 8015 D

Date Analyzed: 2010-09-12

Sample Preparation: 2010-09-12

Prep Method: N/A

Analyzed By: AW

Prepared By: AW

Parameter	Flag	RL Result	Units	Dilution	RL
DRO		1460	mg/Kg	1	50.0

¹Sample dilution necessitated due to the presence of surfactants in sample.

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane	²	216	mg/Kg	10	100	216	71.7 - 148

Sample: 243642 - Spill Area West Side Battery

Laboratory: Lubbock
Analysis: TPH GRO Analytical Method: S 8015 D Prep Method: S 5035
QC Batch: 73280 Date Analyzed: 2010-09-07 Analyzed By: ER
Prep Batch: 62856 Sample Preparation: 2010-09-07 Prepared By: ER

Parameter	Flag	RL Result	Units	Dilution	RL
GRO	³	<20.0	mg/Kg	10	2.00

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)	⁴	1.40	mg/Kg	10	2.00	70	85.2 - 112
4-Bromofluorobenzene (4-BFB)		2.04	mg/Kg	10	2.00	102	68.4 - 112

Sample: 243643 - Spill Area East Side Battery

Laboratory: Lubbock
Analysis: BTEX Analytical Method: S 8021B Prep Method: S 5035
QC Batch: 73279 Date Analyzed: 2010-09-07 Analyzed By: ER
Prep Batch: 62856 Sample Preparation: 2010-09-07 Prepared By: ER

Parameter	Flag	RL Result	Units	Dilution	RL
Benzene	⁵	<0.200	mg/Kg	10	0.0200
Toluene		<0.200	mg/Kg	10	0.0200
Ethylbenzene		<0.200	mg/Kg	10	0.0200
Xylene		<0.200	mg/Kg	10	0.0200

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)		1.55	mg/Kg	10	2.00	78	71.6 - 116
4-Bromofluorobenzene (4-BFB)		1.93	mg/Kg	10	2.00	96	71.8 - 115

Sample: 243643 - Spill Area East Side Battery

Laboratory: Lubbock
Analysis: Chloride (Titration) Analytical Method: SM 4500-Cl B Prep Method: N/A
QC Batch: 73627 Date Analyzed: 2010-09-17 Analyzed By: CB
Prep Batch: 63156 Sample Preparation: Prepared By: CB

²High surrogate recovery due to peak interference.

³Sample dilution necessitated due to the presence of surfactants in sample.

⁴Surrogate recovery out due to dilution caused by surfactants in the sample.

⁵Sample dilution necessitated due to the presence of surfactants in sample.

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		180	mg/Kg	10	2.50

Sample: 243643 - Spill Area East Side Battery

Laboratory: Lubbock
Analysis: TPH DRO - NEW Analytical Method: S 8015 D Prep Method: N/A
QC Batch: 73429 Date Analyzed: 2010-09-12 Analyzed By: AW
Prep Batch: 62991 Sample Preparation: 2010-09-12 Prepared By: AW

Parameter	Flag	RL Result	Units	Dilution	RL
DRO		590	mg/Kg	10	50.0

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane		134	mg/Kg	10	100	134	71.7 - 148

Sample: 243643 - Spill Area East Side Battery

Laboratory: Lubbock
Analysis: TPH GRO Analytical Method: S 8015 D Prep Method: S 5035
QC Batch: 73280 Date Analyzed: 2010-09-07 Analyzed By: ER
Prep Batch: 62856 Sample Preparation: 2010-09-07 Prepared By: ER

Parameter	Flag	RL Result	Units	Dilution	RL
GRO	⁶	36.8	mg/Kg	10	2.00

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)	⁷	1.49	mg/Kg	10	2.00	74	85.2 - 112
4-Bromofluorobenzene (4-BFB)		1.78	mg/Kg	10	2.00	89	68.4 - 112

Sample: 243644 - Spill Area Asphalted Hydrocarbon

Laboratory: Lubbock
Analysis: BTEX Analytical Method: S 8021B Prep Method: S 5035
QC Batch: 73279 Date Analyzed: 2010-09-07 Analyzed By: ER
Prep Batch: 62856 Sample Preparation: 2010-09-07 Prepared By: ER

⁶Sample dilution necessitated due to the presence of surfactants in sample.

⁷Surrogate recovery out due to dilution caused by surfactants in the sample.

Parameter	Flag	RL Result	Units	Dilution	RL
Benzene	8	<0.200	mg/Kg	10	0.0200
Toluene		<0.200	mg/Kg	10	0.0200
Ethylbenzene		<0.200	mg/Kg	10	0.0200
Xylene		<0.200	mg/Kg	10	0.0200

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)		1.65	mg/Kg	10	2.00	82	71.6 - 116
4-Bromofluorobenzene (4-BFB)		1.84	mg/Kg	10	2.00	92	71.8 - 115

Sample: 243644 - Spill Area Asphalted Hydrocarbon

Laboratory: Lubbock
 Analysis: Chloride (Titration) Analytical Method: SM 4500-Cl B Prep Method: N/A
 QC Batch: 73627 Date Analyzed: 2010-09-17 Analyzed By: CB
 Prep Batch: 63156 Sample Preparation: Prepared By: CB

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		<25.0	mg/Kg	10	2.50

Sample: 243644 - Spill Area Asphalted Hydrocarbon

Laboratory: Lubbock
 Analysis: TPH DRO - NEW Analytical Method: S 8015 D Prep Method: N/A
 QC Batch: 73429 Date Analyzed: 2010-09-12 Analyzed By: AW
 Prep Batch: 62991 Sample Preparation: 2010-09-12 Prepared By: AW

Parameter	Flag	RL Result	Units	Dilution	RL
DRO		98.6	mg/Kg	1	50.0

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane		93.1	mg/Kg	1	100	93	71.7 - 148

Sample: 243644 - Spill Area Asphalted Hydrocarbon

Laboratory: Lubbock
 Analysis: TPH GRO Analytical Method: S 8015 D Prep Method: S 5035
 QC Batch: 73280 Date Analyzed: 2010-09-07 Analyzed By: ER
 Prep Batch: 62856 Sample Preparation: 2010-09-07 Prepared By: ER

⁸Sample dilution necessitated due to the presence of surfactants in sample.

Parameter	Flag	RL Result	Units	Dilution	RL
GRO	⁹	<20.0	mg/Kg	10	2.00

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)	¹⁰	1.59	mg/Kg	10	2.00	80	85.2 - 112
4-Bromofluorobenzene (4-BFB)		1.88	mg/Kg	10	2.00	94	68.4 - 112

Sample: 243645 - Spill Area West Side Back Area

Laboratory: Lubbock

Analysis: BTEX

QC Batch: 73279

Prep Batch: 62856

Analytical Method: S 8021B

Date Analyzed: 2010-09-07

Sample Preparation: 2010-09-07

Prep Method: S 5035

Analyzed By: ER

Prepared By: ER

Parameter	Flag	RL Result	Units	Dilution	RL
Benzene	¹¹	<0.200	mg/Kg	10	0.0200
Toluene		<0.200	mg/Kg	10	0.0200
Ethylbenzene		<0.200	mg/Kg	10	0.0200
Xylene		<0.200	mg/Kg	10	0.0200

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)		1.63	mg/Kg	10	2.00	82	71.6 - 116
4-Bromofluorobenzene (4-BFB)		1.84	mg/Kg	10	2.00	92	71.8 - 115

Sample: 243645 - Spill Area West Side Back Area

Laboratory: Lubbock

Analysis: Chloride (Titration)

QC Batch: 73627

Prep Batch: 63156

Analytical Method: SM 4500-Cl B

Date Analyzed: 2010-09-17

Sample Preparation:

Prep Method: N/A

Analyzed By: CB

Prepared By: CB

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		218	mg/Kg	10	2.50

Sample: 243645 - Spill Area West Side Back Area

Laboratory: Lubbock

Analysis: TPH DRO - NEW

QC Batch: 73506

Prep Batch: 63058

Analytical Method: S 8015 D

Date Analyzed: 2010-09-14

Sample Preparation: 2010-09-14

Prep Method: N/A

Analyzed By: AW

Prepared By: AW

⁹Sample dilution necessitated due to the presence of surfactants in sample.

¹⁰Surrogate recovery out due to dilution caused by surfactants in the sample.

¹¹Sample dilution necessitated due to the presence of surfactants in sample.

Parameter	Flag	RL Result	Units	Dilution	RL
DRO		623	mg/Kg	1	50.0

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane	¹²	172	mg/Kg	1	100	172	71.7 - 148

Sample: 243645 - Spill Area West Side Back Area

Laboratory: Lubbock
Analysis: TPH GRO
QC Batch: 73280
Prep Batch: 62856

Analytical Method: S 8015 D
Date Analyzed: 2010-09-07
Sample Preparation: 2010-09-07

Prep Method: S 5035
Analyzed By: ER
Prepared By: ER

Parameter	Flag	RL Result	Units	Dilution	RL
GRO	¹³	<20.0	mg/Kg	10	2.00

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)	¹⁴	1.57	mg/Kg	10	2.00	78	85.2 - 112
4-Bromofluorobenzene (4-BFB)		1.93	mg/Kg	10	2.00	96	68.4 - 112

Sample: 243646 - Spill Area Background

Laboratory: Lubbock
Analysis: BTEX
QC Batch: 73279
Prep Batch: 62856

Analytical Method: S 8021B
Date Analyzed: 2010-09-07
Sample Preparation: 2010-09-07

Prep Method: S 5035
Analyzed By: ER
Prepared By: ER

Parameter	Flag	RL Result	Units	Dilution	RL
Benzene	¹⁵	<0.0400	mg/Kg	2	0.0200
Toluene		<0.0400	mg/Kg	2	0.0200
Ethylbenzene		<0.0400	mg/Kg	2	0.0200
Xylene		<0.0400	mg/Kg	2	0.0200

¹²High surrogate recovery due to peak interference.

¹³Sample dilution necessitated due to the presence of surfactants in sample.

¹⁴Surrogate recovery out due to dilution caused by surfactants in the sample.

¹⁵Sample dilution necessitated due to the presence of surfactants in sample.

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)		1.46	mg/Kg	2	2.00	73	71.6 - 116
4-Bromofluorobenzene (4-BFB)		1.86	mg/Kg	2	2.00	93	71.8 - 115

Sample: 243646 - Spill Area Background

Laboratory: Lubbock
Analysis: Chloride (Titration) Analytical Method: SM 4500-Cl B Prep Method: N/A
QC Batch: 73627 Date Analyzed: 2010-09-17 Analyzed By: CB
Prep Batch: 63156 Sample Preparation: Prepared By: CB

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		<25.0	mg/Kg	10	2.50

Sample: 243646 - Spill Area Background

Laboratory: Lubbock
Analysis: TPH DRO - NEW Analytical Method: S 8015 D Prep Method: N/A
QC Batch: 73429 Date Analyzed: 2010-09-12 Analyzed By: AW
Prep Batch: 62991 Sample Preparation: 2010-09-12 Prepared By: AW

Parameter	Flag	RL Result	Units	Dilution	RL
DRO		<50.0	mg/Kg	1	50.0

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane		93.8	mg/Kg	1	100	94	71.7 - 148

Sample: 243646 - Spill Area Background

Laboratory: Lubbock
Analysis: TPH GRO Analytical Method: S 8015 D Prep Method: S 5035
QC Batch: 73280 Date Analyzed: 2010-09-07 Analyzed By: ER
Prep Batch: 62856 Sample Preparation: 2010-09-07 Prepared By: ER

Parameter	Flag	RL Result	Units	Dilution	RL
GRO	¹⁶	<4.00	mg/Kg	2	2.00

¹⁶Sample dilution necessitated due to the presence of surfactants in sample.

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)	¹⁷	1.41	mg/Kg	2	2.00	70	85.2 - 112
4-Bromofluorobenzene (4-BFB)		1.88	mg/Kg	2	2.00	94	68.4 - 112

Method Blank (1) QC Batch: 73279

QC Batch: 73279
Prep Batch: 62856

Date Analyzed: 2010-09-07
QC Preparation: 2010-09-07

Analyzed By: ER
Prepared By: ER

Parameter	Flag	MDL Result	Units	RL
Benzene		<0.00462	mg/Kg	0.02
Toluene		<0.00582	mg/Kg	0.02
Ethylbenzene		<0.00433	mg/Kg	0.02
Xylene		0.00410	mg/Kg	0.02

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)		1.94	mg/Kg	1	2.00	97	71.6 - 116
4-Bromofluorobenzene (4-BFB)		1.89	mg/Kg	1	2.00	94	71.8 - 115

Method Blank (1) QC Batch: 73280

QC Batch: 73280
Prep Batch: 62856

Date Analyzed: 2010-09-07
QC Preparation: 2010-09-07

Analyzed By: ER
Prepared By: ER

Parameter	Flag	MDL Result	Units	RL
GRO		<0.241	mg/Kg	2

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)		1.96	mg/Kg	1	2.00	98	85.2 - 112
4-Bromofluorobenzene (4-BFB)		1.93	mg/Kg	1	2.00	96	68.4 - 112

Method Blank (1) QC Batch: 73429

QC Batch: 73429
Prep Batch: 62991

Date Analyzed: 2010-09-12
QC Preparation: 2010-09-12

Analyzed By: AW
Prepared By: AW

¹⁷Surrogate recovery out due to dilution caused by surfactants in the sample.

Report Date: September 20, 2010
Lauck Federal No. 4

Work Order: 10090703
Lauck Battery Discharge

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Parameter	Flag	MDL Result	Units	RL
DRO		<8.38	mg/Kg	50

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane		92.1	mg/Kg	1	100	92	71.7 - 148

Method Blank (1) QC Batch: 73506

QC Batch: 73506 Date Analyzed: 2010-09-14 Analyzed By: AW
Prep Batch: 63058 QC Preparation: 2010-09-14 Prepared By: AW

Parameter	Flag	MDL Result	Units	RL
DRO		<8.38	mg/Kg	50

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane		81.9	mg/Kg	1	100	82	71.7 - 148

Method Blank (1) QC Batch: 73627

QC Batch: 73627 Date Analyzed: 2010-09-17 Analyzed By: CB
Prep Batch: 63156 QC Preparation: 2010-09-17 Prepared By: CB

Parameter	Flag	MDL Result	Units	RL
Chloride		<1.59	mg/Kg	2.5

Laboratory Control Spike (LCS-1)

QC Batch: 73279 Date Analyzed: 2010-09-07 Analyzed By: ER
Prep Batch: 62856 QC Preparation: 2010-09-07 Prepared By: ER

Param	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Benzene	1.89	mg/Kg	1	2.00	<0.00462	94	77.8 - 118
Toluene	1.92	mg/Kg	1	2.00	<0.00582	96	76.6 - 121
Ethylbenzene	1.85	mg/Kg	1	2.00	<0.00433	92	77 - 114
Xylene	5.87	mg/Kg	1	6.00	0.0041	98	76.9 - 117

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

Param	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Benzene	1.87	mg/Kg	1	2.00	<0.00462	94	77.8 - 118	1	20
Toluene	1.95	mg/Kg	1	2.00	<0.00582	98	76.6 - 121	2	20
Ethylbenzene	1.87	mg/Kg	1	2.00	<0.00433	94	77 - 114	1	20
Xylene	5.90	mg/Kg	1	6.00	0.0041	98	76.9 - 117	0	20

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

Surrogate	LCS Result	LCS Result	Units	Dil.	Spike Amount	LCS Rec.	LCS Rec.	Rec. Limit
Trifluorotoluene (TFT)	1.92	1.91	mg/Kg	1	2.00	96	96	73.6 - 118
4-Bromofluorobenzene (4-BFB)	1.88	1.87	mg/Kg	1	2.00	94	94	73.4 - 117

Laboratory Control Spike (LCS-1)

QC Batch: 73280
Prep Batch: 62856

Date Analyzed: 2010-09-07
QC Preparation: 2010-09-07

Analyzed By: ER
Prepared By: ER

Param	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
GRO	20.4	mg/Kg	1	20.0	<0.241	102	70 - 130

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

Param	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
GRO	20.6	mg/Kg	1	20.0	<0.241	103	70 - 130	1	20

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

Surrogate	LCS Result	LCS Result	Units	Dil.	Spike Amount	LCS Rec.	LCS Rec.	Rec. Limit
Trifluorotoluene (TFT)	1.86	1.89	mg/Kg	1	2.00	93	94	79.3 - 111
4-Bromofluorobenzene (4-BFB)	1.97	1.99	mg/Kg	1	2.00	98	100	70.2 - 119

Laboratory Control Spike (LCS-1)

QC Batch: 73429
Prep Batch: 62991

Date Analyzed: 2010-09-12
QC Preparation: 2010-09-12

Analyzed By: AW
Prepared By: AW

Param	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
DRO	249	mg/Kg	1	250	<8.38	100	68 - 137

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

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Param	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
DRO	229	mg/Kg	1	250	<8.38	92	68 - 137	8	20

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

Surrogate	LCS Result	LCSD Result	Units	Dil.	Spike Amount	LCS Rec.	LCSD Rec.	Rec. Limit
n-Tricosane	116	113	mg/Kg	1	100	116	113	71.7 - 148

Laboratory Control Spike (LCS-1)

QC Batch: 73506
Prep Batch: 63058

Date Analyzed: 2010-09-14
QC Preparation: 2010-09-14

Analyzed By: AW
Prepared By: AW

Param	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
DRO	265	mg/Kg	1	250	<8.38	106	68 - 137

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

Param	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
DRO	289	mg/Kg	1	250	<8.38	116	68 - 137	9	20

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

Surrogate	LCS Result	LCSD Result	Units	Dil.	Spike Amount	LCS Rec.	LCSD Rec.	Rec. Limit
n-Tricosane	116	125	mg/Kg	1	100	116	125	71.7 - 148

Matrix Spike (MS-1) Spiked Sample: 243642

QC Batch: 73279
Prep Batch: 62856

Date Analyzed: 2010-09-07
QC Preparation: 2010-09-07

Analyzed By: ER
Prepared By: ER

Param	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Benzene	1.87	mg/Kg	10	2.00	<0.0462	94	55.2 - 129
Toluene	1.89	mg/Kg	10	2.00	<0.0582	94	56.6 - 142
Ethylbenzene	1.78	mg/Kg	10	2.00	<0.0433	89	57.9 - 143
Xylene	5.66	mg/Kg	10	6.00	0.116	92	59 - 147

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

Param	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Benzene	1.83	mg/Kg	10	2.00	<0.0462	92	55.2 - 129	2	20

continued ...

matrix spikes continued ...

Param	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Toluene	1.90	mg/Kg	10	2.00	<0.0582	95	56.6 - 142	0	20
Ethylbenzene	1.80	mg/Kg	10	2.00	<0.0433	90	57.9 - 143	1	20
Xylene	5.72	mg/Kg	10	6.00	0.116	93	59 - 147	1	20

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

Surrogate	MS Result	MSD Result	Units	Dil.	Spike Amount	MS Rec.	MSD Rec.	Rec. Limit
Trifluorotoluene (TFT)	1.96	1.92	mg/Kg	10	2	98	96	59.6 - 138
4-Bromofluorobenzene (4-BFB)	1.92	1.90	mg/Kg	10	2	96	95	64.3 - 141

Matrix Spike (MS-1) Spiked Sample: 243285

QC Batch: 73280
Prep Batch: 62856

Date Analyzed: 2010-09-07
QC Preparation: 2010-09-07

Analyzed By: ER
Prepared By: ER

Param	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
GRO	18.7	mg/Kg	1	20.0	<0.241	94	54.2 - 135

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

Param	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
GRO	19.1	mg/Kg	1	20.0	<0.241	96	54.2 - 135	2	20

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

Surrogate	MS Result	MSD Result	Units	Dil.	Spike Amount	MS Rec.	MSD Rec.	Rec. Limit
Trifluorotoluene (TFT)	1.71	1.71	mg/Kg	1	2	86	86	63.8 - 126
4-Bromofluorobenzene (4-BFB)	2.06	2.07	mg/Kg	1	2	103	104	70.2 - 137

Matrix Spike (MS-1) Spiked Sample: 244010

QC Batch: 73429
Prep Batch: 62991

Date Analyzed: 2010-09-12
QC Preparation: 2010-09-12

Analyzed By: AW
Prepared By: AW

Param	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
DRO	406	mg/Kg	1	250	239	67	40 - 144

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

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Param	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
DRO	467	mg/Kg	1	250	239	91	40 - 144	14	20

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

Surrogate	MS Result	MSD Result	Units	Dil.	Spike Amount	MS Rec.	MSD Rec.	Rec. Limit
n-Tricosane	98.7	107	mg/Kg	1	100	99	107	71.7 - 148

Matrix Spike (MS-1) Spiked Sample: 244036

QC Batch: 73506
Prep Batch: 63058

Date Analyzed: 2010-09-14
QC Preparation: 2010-09-14

Analyzed By: AW
Prepared By: AW

Param	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
DRO	267	mg/Kg	1	250	<8.38	107	40 - 144

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

Param	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
DRO	267	mg/Kg	1	250	<8.38	107	40 - 144	0	20

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

Surrogate	MS Result	MSD Result	Units	Dil.	Spike Amount	MS Rec.	MSD Rec.	Rec. Limit
n-Tricosane	91.1	92.6	mg/Kg	1	100	91	93	71.7 - 148

Matrix Spike (MS-1) Spiked Sample: 243299

QC Batch: 73627
Prep Batch: 63156

Date Analyzed: 2010-09-17
QC Preparation: 2010-09-17

Analyzed By: CB
Prepared By: CB

Param	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride	455	mg/Kg	10	500	<15.9	91	80 - 120

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

Param	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Chloride	446	mg/Kg	10	500	<15.9	89	80 - 120	2	20

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

Standard (CCV-1)

QC Batch: 73279

Date Analyzed: 2010-09-07

Analyzed By: ER

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Benzene		mg/Kg	0.100	0.0957	96	80 - 120	2010-09-07
Toluene		mg/Kg	0.100	0.0959	96	80 - 120	2010-09-07
Ethylbenzene		mg/Kg	0.100	0.0936	94	80 - 120	2010-09-07
Xylene		mg/Kg	0.300	0.296	99	80 - 120	2010-09-07

Standard (CCV-2)

QC Batch: 73279

Date Analyzed: 2010-09-07

Analyzed By: ER

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Benzene		mg/Kg	0.100	0.0928	93	80 - 120	2010-09-07
Toluene		mg/Kg	0.100	0.0969	97	80 - 120	2010-09-07
Ethylbenzene		mg/Kg	0.100	0.0931	93	80 - 120	2010-09-07
Xylene		mg/Kg	0.300	0.294	98	80 - 120	2010-09-07

Standard (CCV-1)

QC Batch: 73280

Date Analyzed: 2010-09-07

Analyzed By: ER

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
GRO		mg/Kg	1.00	1.03	103	80 - 120	2010-09-07

Standard (CCV-2)

QC Batch: 73280

Date Analyzed: 2010-09-07

Analyzed By: ER

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
GRO		mg/Kg	1.00	0.994	99	80 - 120	2010-09-07

Standard (CCV-1)

QC Batch: 73429

Date Analyzed: 2010-09-12

Analyzed By: AW

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Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
DRO		mg/Kg	250	232	93	80 - 120	2010-09-12

Standard (CCV-2)

QC Batch: 73429

Date Analyzed: 2010-09-12

Analyzed By: AW

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
DRO		mg/Kg	250	218	87	80 - 120	2010-09-12

Standard (CCV-1)

QC Batch: 73506

Date Analyzed: 2010-09-14

Analyzed By: AW

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
DRO		mg/Kg	250	269	108	80 - 120	2010-09-14

Standard (CCV-2)

QC Batch: 73506

Date Analyzed: 2010-09-14

Analyzed By: AW

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
DRO		mg/Kg	250	256	102	80 - 120	2010-09-14

Standard (ICV-1)

QC Batch: 73627

Date Analyzed: 2010-09-17

Analyzed By: CB

Param	Flag	Units	ICVs True Conc.	ICVs Found Conc.	ICVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride		mg/Kg	100	100	100	85 - 115	2010-09-17

Standard (CCV-1)

QC Batch: 73627

Date Analyzed: 2010-09-17

Analyzed By: CB

Report Date: September 20, 2010
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Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride		mg/Kg	100	99.5	100	85 - 115	2010-09-17

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Project #: LAUCK FEDERAL No. 4
Project Location (including state): LAUCK BATTERY Discharge
Project Name: LAUCK BATTERY Discharge
Sampler Signature: _____

ANALYSIS REQUEST
(Circle or Specify Method No.)

LAB # (LAB USE ONLY)	FIELD CODE	# CONTAINERS	Volume / Amount	MATRIX			PRESERVATIVE METHOD					SAMPLING		Turn Around Time if different from standard
				WATER	SOIL	AIR	SLUDGE	HCl	HNO ₃	H ₂ SO ₄	NaOH	ICE	NONE	
644	Spill Area													
643	West Side Battery	1		X										
643	East Side Battery	1		X										
644	Asphalted Hydrocarbon	1		X										
645	West Side Back Area	1		X										
645	Background	1		X										
646														

Relinquished by: Andy Chalker Date: 9/3/10 Time: 1700
Relinquished by: _____ Date: _____ Time: _____
Relinquished by: _____ Date: _____ Time: _____

Received by: _____ Date: _____ Time: _____
Received by: _____ Date: _____ Time: _____
Received by: _____ Date: _____ Time: _____

LAB USE ONLY
INST OBS COR
INST OBS COR
INST OBS COR

REMARKS: Standard
Dry Weight Basis Required
TRRP Report Required
Check If Special Reporting Limits Are Needed