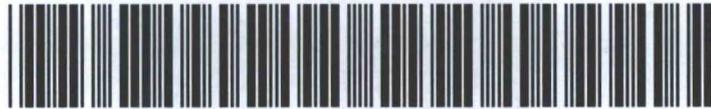




# AE Order Number Banner

## Report Description

This report shows an AE Order Number in Barcode format for purposes of scanning. The Barcode format is Code 39.



**App Number: pGRL0930836186**

**1RP - 2318**

**MELROSE OPERATING COMPANY**

District I  
1625 N. French Dr., Hobbs, NM 88240  
District II  
1301 W. Grand Avenue, 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

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MA 01 2011  
HOBSOCD

Form C-141  
Revised October 10, 2003

Submit 2 Copies to appropriate  
District Office in accordance  
with Rule 116 on back  
side of form

### Release Notification and Corrective Action

#### OPERATOR

Initial Report  Final Report

Name of Company	MELROSE OPERATING CO	Contact	Cam Robbins
Address	1000 W. WILSHIRE, STE. 223 Oklahoma City OK	Telephone No.	575-390-4677
Facility Name	CJYPU #605	Facility Type	FLOWLINE
Surface Owner	State	Mineral Owner	State
		Lease No.	25203

#### LOCATION OF RELEASE

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County
O	24	22S	35E	330'	NORTH	800'	EAST	LEA

Latitude \_\_\_\_\_ Longitude \_\_\_\_\_

#### NATURE OF RELEASE

Type of Release	FLOWLINE LEAK	Volume of Release	50bbls	Volume Recovered	0
Source of Release	CJYPU #605	Date and Hour of Occurrence	10/2/09	Date and Hour of Discovery	10/2/09 1PM
Was Immediate Notice Given?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Not Required	If YES, To Whom?	NMOCD, Geoffrey Leking		
By Whom?	Cam Robbins	Date and Hour	10/2/09 1:30 PM		
Was a Watercourse Reached?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	If YES, Volume Impacting the Watercourse.			

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MAR 02 2011  
HOBSOCD

If a Watercourse was Impacted, Describe Fully.\*

Describe Cause of Problem and Remedial Action Taken.\*

Poly Flowline leak, well was SI, line clamped, immediately began digging out & hauling off saturated soil, removed all contaminated soil, tested bottom ditch to OCD standards. Replaced all contaminated soil with clean soil from Ranchers pit, level & contour area, plant Rancher grass seed.

Describe Area Affected and Cleanup Action Taken.\*

LOW LYING AREA, SOUTH OF WELL #634, IN SANDY SOIL, HAULED OFF SATUATED SOIL & REPLACED WITH CLEAN TOP SOIL

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 federal, state, or local laws and/or regulations.

Signature:		Approved by	<b>APPROVED</b>
Printed Name:	Cam Robbins		
Title:	Forman	Approval Date:	2/10/14
E-mail Address:	maximum@valornet.com	Expiration Date:	
Date:	Phone: 575-390-4677	Conditions of Approval:	Attached <input type="checkbox"/>

\* Attach Additional Sheets If Necessary

RP 2318

District I  
1625 N. French Dr., Hobbs, NM 88240  
District II  
1301 W. Grand Avenue, Artesia, NM 88210  
District III  
1000 Rio Brazos Road, Aztec, NM 87410  
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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

RECEIVED  
MAY 01 2011  
HOBSOCD

Form C-141  
Revised October 10, 2003

Submit 2 Copies to appropriate  
District Office in accordance  
with Rule 116 on back  
side of form

### Release Notification and Corrective Action

#### OPERATOR

Initial Report  Final Report

Name of Company	QUANTUM RESOURCES	Contact	Cam Robbins
Address	4000 N. Big Spring, Suite 305, Midland TX 79705	Telephone No.	575-390-4677
Facility Name	CJYPU #605	Facility Type	FLOWLINE
Surface Owner	State	Mineral Owner	State
		Lease No.	25203

#### LOCATION OF RELEASE

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County
O	24	22S	35E	330'	NORTH	800'	EAST	LEA

Latitude \_\_\_\_\_ Longitude \_\_\_\_\_

#### NATURE OF RELEASE

Type of Release	FLOWLINE LEAK	Volume of Release	50bbls	Volume Recovered	0
Source of Release	CJYPU #605	Date and Hour of Occurrence	10/2/09	Date and Hour of Discovery	10/2/09 1PM
Was Immediate Notice Given?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Not Required	If YES, To Whom?	NMOCD, Geoffrey Leking		
By Whom?	Cam Robbins	Date and Hour	10/2/09 1:30 PM		
Was a Watercourse Reached?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	If YES, Volume Impacting the Watercourse.			

If a Watercourse was Impacted, Describe Fully.\*

Describe Cause of Problem and Remedial Action Taken.\*

Poly Flowline leak, well was SI, line clamped, immediately began digging out & hauling off saturated soil, removed all contaminated soil, tested bottom ditch to OCD standards. Replaced all contaminated soil with clean soil from Ranchers pit, level & contour area, plant Rancher grass seed.

Describe Area Affected and Cleanup Action Taken.\*

LOW LYING AREA, SOUTH OF WELL #634, IN SANDY SOIL, HAULED OFF SATUATED SOIL & REPLACED WITH CLEAN TOP SOIL

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.

Signature: 	<u>OIL CONSERVATION DIVISION</u>		
Printed Name: Cam Robbins	Approved by District Supervisor:		
Title: Forman	Approval Date:	Expiration Date:	
E-mail Address: maximum@valornet.com	Conditions of Approval:		Attached <input type="checkbox"/>
Date:	Phone: 575-390-4677		

\* Attach Additional Sheets If Necessary

## Summary Report

Rick Navarratte  
Blade Services LLC.  
1100 East Michigan  
Hobbs, NM 88240

Report Date: October 15, 2010

Work Order: 9101304



Project Name: Cone #605 Spill

Sample	Description	Matrix	Date Taken	Time Taken	Date Received
212192	North	soil	2009-10-09	13:00	2009-10-13
212193	Middle	soil	2009-10-09	13:00	2009-10-13
212194	South	soil	2009-10-09	14:00	2009-10-13
212195	Background	soil	2009-10-09	14:00	2009-10-13

Sample - Field Code	BTEX				MTBE MTBE (mg/Kg)	TPH DRO DRO (mg/Kg)	TPH GRO GRO (mg/Kg)
	Benzene (mg/Kg)	Toluene (mg/Kg)	Ethylbenzene (mg/Kg)	Xylene (mg/Kg)			
212192 - North	<0.0200	<0.0200	<0.0200	<0.0200		<50.0	<2.00
212193 - Middle	<0.0200	<0.0200	<0.0200	<0.0200		<50.0	<2.00
212194 - South	<0.0200	<0.0200	<0.0200	<0.0200		<50.0	<2.00
212195 - Background	<0.0200	<0.0200	<0.0200	<0.0200		<50.0	<2.00

**Sample: 212192 - North**

Param	Flag	Result	Units	RL
Chloride		<b>294</b>	mg/Kg	3.25

**Sample: 212193 - Middle**

Param	Flag	Result	Units	RL
Chloride		<b>328</b>	mg/Kg	3.25

**Sample: 212194 - South**

Param	Flag	Result	Units	RL
Chloride		<b>328</b>	mg/Kg	3.25

**Sample: 212195 - Background**

Param	Flag	Result	Units	RL
Chloride		<32.5	mg/Kg	3.25

---



6701 Aberdeen Avenue, Suite 9 Lubbock, Texas 79424 800•378•1296 806•794•1296 FAX 806•794•1298  
 200 East Sunset Road, Suite E El Paso, Texas 79922 888•588•3443 915•585•3443 FAX 915•585•4944  
 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

Rick Navarratte  
 Blade Services LLC.  
 1100 East Michigan  
 Hobbs, NM, 88240

Report Date: October 15, 2010

Work Order: 9101304



Project Name: Cone #605 Spill  
 Project Number: Cone #605 Spill

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
212192	North	soil	2009-10-09	13:00	2009-10-13
212193	Middle	soil	2009-10-09	13:00	2009-10-13
212194	South	soil	2009-10-09	14:00	2009-10-13
212195	Background	soil	2009-10-09	14:00	2009-10-13

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 20 pages and shall not be reproduced except in its entirety, without written approval of TraceAnalysis, Inc.

*Michael Abel*

---

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 Cone #605 Spill were received by TraceAnalysis, Inc. on 2009-10-13 and assigned to work order 9101304. Samples for work order 9101304 were received intact at a temperature of 22.5 deg. 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	54994	2009-10-13 at 14:46	64398	2009-10-13 at 14:46
BTEX	S 8021B	55024	2009-10-14 at 14:20	64438	2009-10-14 at 14:20
Chloride (Titration)	SM 4500-Cl B	55025	2009-10-14 at 15:54	64441	2009-10-14 at 15:55
TPH DRO	Mod. 8015B	54997	2009-10-13 at 15:00	64404	2009-10-13 at 16:00
TPH GRO	S 8015B	54994	2009-10-13 at 14:46	64399	2009-10-13 at 14:46
TPH GRO	S 8015B	55024	2009-10-14 at 14:20	64439	2009-10-14 at 14:20

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 9101304 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: 212192 - North

Laboratory: Lubbock  
Analysis: BTEX  
QC Batch: 64398  
Prep Batch: 54994  
Analytical Method: S 8021B  
Date Analyzed: 2009-10-13  
Sample Preparation: 2009-10-13  
Prep Method: S 5035  
Analyzed By: ER  
Prepared By: ER

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

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)		1.76	mg/Kg	1	2.00	88	71.8 - 112
4-Bromofluorobenzene (4-BFB)		1.99	mg/Kg	1	2.00	100	72.8 - 115

### Sample: 212192 - North

Laboratory: Lubbock  
Analysis: Chloride (Titration)  
QC Batch: 64441  
Prep Batch: 55025  
Analytical Method: SM 4500-Cl B  
Date Analyzed: 2009-10-14  
Sample Preparation: 2009-10-14  
Prep Method: N/A  
Analyzed By: KV  
Prepared By: KV

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		294	mg/Kg	10	3.25

### Sample: 212192 - North

Laboratory: Lubbock  
Analysis: TPH DRO  
QC Batch: 64404  
Prep Batch: 54997  
Analytical Method: Mod. 8015B  
Date Analyzed: 2009-10-13  
Sample Preparation: 2009-10-13  
Prep Method: N/A  
Analyzed By: AW  
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-Triacontane		87.4	mg/Kg	1	100	87	70 - 130

**Sample: 212192 - North**

Laboratory: Lubbock  
 Analysis: TPH GRO      Analytical Method: S 8015B      Prep Method: S 5035  
 QC Batch: 64399      Date Analyzed: 2009-10-13      Analyzed By: ER  
 Prep Batch: 54994      Sample Preparation: 2009-10-13      Prepared By: ER

Parameter	Flag	RL Result	Units	Dilution	RL
GRO		<2.00	mg/Kg	1	2.00

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)		2.08	mg/Kg	1	2.00	104	86.9 - 113
4-Bromofluorobenzene (4-BFB)		2.13	mg/Kg	1	2.00	106	56.2 - 130

**Sample: 212193 - Middle**

Laboratory: Lubbock  
 Analysis: BTEX      Analytical Method: S 8021B      Prep Method: S 5035  
 QC Batch: 64398      Date Analyzed: 2009-10-13      Analyzed By: ER  
 Prep Batch: 54994      Sample Preparation: 2009-10-13      Prepared By: ER

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

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)		1.62	mg/Kg	1	2.00	81	71.8 - 112
4-Bromofluorobenzene (4-BFB)		1.78	mg/Kg	1	2.00	89	72.8 - 115

**Sample: 212193 - Middle**

Laboratory: Lubbock	Analytical Method: SM 4500-Cl B	Prep Method: N/A
Analysis: Chloride (Titration)	Date Analyzed: 2009-10-14	Analyzed By: KV
QC Batch: 64441	Sample Preparation: 2009-10-14	Prepared By: KV
Prep Batch: 55025		

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		328	mg/Kg	10	3.25

**Sample: 212193 - Middle**

Laboratory: Lubbock	Analytical Method: Mod. 8015B	Prep Method: N/A
Analysis: TPH DRO	Date Analyzed: 2009-10-13	Analyzed By: AW
QC Batch: 64404	Sample Preparation: 2009-10-13	Prepared By: AW
Prep Batch: 54997		

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-Triacontane		112	mg/Kg	1	100	112	70 - 130

**Sample: 212193 - Middle**

Laboratory: Lubbock	Analytical Method: S 8015B	Prep Method: S 5035
Analysis: TPH GRO	Date Analyzed: 2009-10-13	Analyzed By: ER
QC Batch: 64399	Sample Preparation: 2009-10-13	Prepared By: ER
Prep Batch: 54994		

Parameter	Flag	RL Result	Units	Dilution	RL
GRO		<2.00	mg/Kg	1	2.00

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)		1.97	mg/Kg	1	2.00	98	86.9 - 113
4-Bromofluorobenzene (4-BFB)		1.91	mg/Kg	1	2.00	96	56.2 - 130

**Sample: 212194 - South**

Laboratory: Lubbock	Analytical Method: S 8021B	Prep Method: S 5035
Analysis: BTEX	Date Analyzed: 2009-10-14	Analyzed By: ER
QC Batch: 64438	Sample Preparation: 2009-10-14	Prepared By: ER
Prep Batch: 55024		

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

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)	<sup>1</sup>	2.40	mg/Kg	1	2.00	120	71.8 - 112
4-Bromofluorobenzene (4-BFB)	<sup>2</sup>	2.62	mg/Kg	1	2.00	131	72.8 - 115

**Sample: 212194 - South**

Laboratory: Lubbock	Analytical Method: SM 4500-Cl B	Prep Method: N/A
Analysis: Chloride (Titration)	Date Analyzed: 2009-10-14	Analyzed By: KV
QC Batch: 64441	Sample Preparation: 2009-10-14	Prepared By: KV
Prep Batch: 55025		

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		<b>328</b>	mg/Kg	10	3.25

**Sample: 212194 - South**

Laboratory: Lubbock	Analytical Method: Mod. 8015B	Prep Method: N/A
Analysis: TPH DRO	Date Analyzed: 2009-10-13	Analyzed By: AW
QC Batch: 64404	Sample Preparation: 2009-10-13	Prepared By: AW
Prep Batch: 54997		

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

<sup>1</sup>High surrogate recovery. Sample non-detect, result bias high.

<sup>2</sup>High surrogate recovery. Sample non-detect, result bias high.

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Triacontane		97.3	mg/Kg	1	100	97	70 - 130

**Sample: 212194 - South**

Laboratory: Lubbock  
 Analysis: TPH GRO Analytical Method: S 8015B Prep Method: S 5035  
 QC Batch: 64439 Date Analyzed: 2009-10-14 Analyzed By: ER  
 Prep Batch: 55024 Sample Preparation: 2009-10-14 Prepared By: ER

Parameter	Flag	RL Result	Units	Dilution	RL
GRO		<2.00	mg/Kg	1	2.00

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)	<sup>3</sup>	3.03	mg/Kg	1	2.00	152	86.9 - 113
4-Bromofluorobenzene (4-BFB)	<sup>4</sup>	2.88	mg/Kg	1	2.00	144	56.2 - 130

**Sample: 212195 - Background**

Laboratory: Lubbock  
 Analysis: BTEX Analytical Method: S 8021B Prep Method: S 5035  
 QC Batch: 64398 Date Analyzed: 2009-10-13 Analyzed By: ER  
 Prep Batch: 54994 Sample Preparation: 2009-10-13 Prepared By: ER

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

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)		1.49	mg/Kg	1	2.00	74	71.8 - 112
4-Bromofluorobenzene (4-BFB)		1.66	mg/Kg	1	2.00	83	72.8 - 115

**Sample: 212195 - Background**

Laboratory: Lubbock  
 Analysis: Chloride (Titration) Analytical Method: SM 4500-Cl B Prep Method: N/A  
 QC Batch: 64441 Date Analyzed: 2009-10-14 Analyzed By: KV  
 Prep Batch: 55025 Sample Preparation: 2009-10-14 Prepared By: KV

<sup>3</sup>High surrogate recovery. Sample non-detect, result bias high.

<sup>4</sup>High surrogate recovery. Sample non-detect, result bias high.

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		<32.5	mg/Kg	10	3.25

**Sample: 212195 - Background**

Laboratory: Lubbock  
 Analysis: TPH DRO                      Analytical Method: Mod. 8015B                      Prep Method: N/A  
 QC Batch: 64404                      Date Analyzed: 2009-10-13                      Analyzed By: AW  
 Prep Batch: 54997                      Sample Preparation: 2009-10-13                      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-Triacontane		100	mg/Kg	1	100	100	70 - 130

**Sample: 212195 - Background**

Laboratory: Lubbock  
 Analysis: TPH GRO                      Analytical Method: S 8015B                      Prep Method: S 5035  
 QC Batch: 64399                      Date Analyzed: 2009-10-13                      Analyzed By: ER  
 Prep Batch: 54994                      Sample Preparation: 2009-10-13                      Prepared By: ER

Parameter	Flag	RL Result	Units	Dilution	RL
GRO		<2.00	mg/Kg	1	2.00

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)		1.78	mg/Kg	1	2.00	89	86.9 - 113
4-Bromofluorobenzene (4-BFB)		1.78	mg/Kg	1	2.00	89	56.2 - 130

**Method Blank (1)      QC Batch: 64398**

QC Batch: 64398                      Date Analyzed: 2009-10-13                      Analyzed By: ER  
 Prep Batch: 54994                      QC Preparation: 2009-10-13                      Prepared By: ER

Parameter	Flag	MDL Result	Units	RL
Benzene		<0.00331	mg/Kg	0.02

*continued ...*



Parameter	Flag	MDL Result	Units	RL
Benzene		<0.00331	mg/Kg	0.02
Toluene		<0.00528	mg/Kg	0.02
Ethylbenzene		<0.00448	mg/Kg	0.02
Xylene		<0.00456	mg/Kg	0.02

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)		1.74	mg/Kg	1	2.00	87	71.8 - 112
4-Bromofluorobenzene (4-BFB)		1.80	mg/Kg	1	2.00	90	72.8 - 115

**Method Blank (1)**      QC Batch: 64439

QC Batch: 64439                      Date Analyzed: 2009-10-14                      Analyzed By: ER  
Prep Batch: 55024                      QC Preparation: 2009-10-14                      Prepared By: ER

Parameter	Flag	MDL Result	Units	RL
GRO		<0.403	mg/Kg	2

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)		2.12	mg/Kg	1	2.00	106	86.9 - 113
4-Bromofluorobenzene (4-BFB)		1.98	mg/Kg	1	2.00	99	56.2 - 130

**Method Blank (1)**      QC Batch: 64441

QC Batch: 64441                      Date Analyzed: 2009-10-14                      Analyzed By: KV  
Prep Batch: 55025                      QC Preparation: 2009-10-14                      Prepared By: KV

Parameter	Flag	MDL Result	Units	RL
Chloride		<1.80	mg/Kg	3.25

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

QC Batch: 64398                      Date Analyzed: 2009-10-13                      Analyzed By: ER  
Prep Batch: 54994                      QC Preparation: 2009-10-13                      Prepared By: ER

*continued ...*

control spikes continued ...

Param	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Param	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Benzene	1.88	mg/Kg	1	2.00	<0.00331	94	78.9 - 113
Toluene	1.90	mg/Kg	1	2.00	<0.00528	95	78.3 - 116
Ethylbenzene	1.82	mg/Kg	1	2.00	<0.00448	91	79.1 - 117
Xylene	5.48	mg/Kg	1	6.00	<0.00456	91	79.6 - 116

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
Param	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Benzene	2.00	mg/Kg	1	2.00	<0.00331	100	78.9 - 113	6	20
Toluene	1.98	mg/Kg	1	2.00	<0.00528	99	78.3 - 116	4	20
Ethylbenzene	1.90	mg/Kg	1	2.00	<0.00448	95	79.1 - 117	4	20
Xylene	5.68	mg/Kg	1	6.00	<0.00456	94	79.6 - 116	4	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
Surrogate	LCS Result	LCSD Result	Units	Dil.	Spike Amount	LCS Rec.	LCSD Rec.	Rec. Limit
Trifluorotoluene (TFT)	1.81	1.80	mg/Kg	1	2.00	91	90	70.8 - 111
4-Bromofluorobenzene (4-BFB)	1.96	1.98	mg/Kg	1	2.00	98	99	68.3 - 117

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

QC Batch: 64399  
Prep Batch: 54994

Date Analyzed: 2009-10-13  
QC Preparation: 2009-10-13

Analyzed By: ER  
Prepared By: ER

Param	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Param	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
GRO	20.6	mg/Kg	1	20.0	<0.403	103	72.6 - 121

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
Param	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
GRO	21.1	mg/Kg	1	20.0	<0.403	106	72.6 - 121	2	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
Surrogate	LCS Result	LCSD Result	Units	Dil.	Spike Amount	LCS Rec.	LCSD Rec.	Rec. Limit
Trifluorotoluene (TFT)	2.14	2.04	mg/Kg	1	2.00	107	102	75.2 - 112
4-Bromofluorobenzene (4-BFB)	2.27	2.15	mg/Kg	1	2.00	114	108	54.9 - 133

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

QC Batch: 64404  
Prep Batch: 54997

Date Analyzed: 2009-10-13  
QC Preparation: 2009-10-13

Analyzed By: AW  
Prepared By: AW

Param	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
DRO	273	mg/Kg	1	250	<4.66	109	70 - 130

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	284	mg/Kg	1	250	<4.66	114	70 - 130	4	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-Triacontane	103	103	mg/Kg	1	100	103	103	70 - 130

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

QC Batch: 64438  
Prep Batch: 55024

Date Analyzed: 2009-10-14  
QC Preparation: 2009-10-14

Analyzed By: ER  
Prepared By: ER

Param	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Benzene	1.85	mg/Kg	1	2.00	<0.00331	93	78.9 - 113
Toluene	1.88	mg/Kg	1	2.00	<0.00528	94	78.3 - 116
Ethylbenzene	1.80	mg/Kg	1	2.00	<0.00448	90	79.1 - 117
Xylene	5.42	mg/Kg	1	6.00	<0.00456	90	79.6 - 116

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
Benzene	1.90	mg/Kg	1	2.00	<0.00331	95	78.9 - 113	3	20
Toluene	1.89	mg/Kg	1	2.00	<0.00528	94	78.3 - 116	0	20
Ethylbenzene	1.82	mg/Kg	1	2.00	<0.00448	91	79.1 - 117	1	20
Xylene	5.49	mg/Kg	1	6.00	<0.00456	92	79.6 - 116	1	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
Trifluorotoluene (TFT)	1.77	1.77	mg/Kg	1	2.00	88	88	70.8 - 111
4-Bromofluorobenzene (4-BFB)	1.84	1.87	mg/Kg	1	2.00	92	94	68.3 - 117



**Matrix Spike (MS-1)** Spiked Sample: 212192

QC Batch: 64399 Date Analyzed: 2009-10-13 Analyzed By: ER  
Prep Batch: 54994 QC Preparation: 2009-10-13 Prepared By: ER

Param	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
GRO	10.2	mg/Kg	1	20.0	<0.403	51	34.1 - 160

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	<sup>5</sup> 6.26	mg/Kg	1	20.0	<0.403	31	34.1 - 160	48	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)	<sup>6</sup> 1.20	0.596	mg/Kg	1	2	60	30	56.9 - 137
4-Bromofluorobenzene (4-BFB)	<sup>7</sup> 1.25	0.782	mg/Kg	1	2	62	39	42.1 - 171

**Matrix Spike (MS-1)** Spiked Sample: 212192

QC Batch: 64404 Date Analyzed: 2009-10-13 Analyzed By: AW  
Prep Batch: 54997 QC Preparation: 2009-10-13 Prepared By: AW

Param	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
DRO	225	mg/Kg	1	250	<4.66	90	70 - 130

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	214	mg/Kg	1	250	<4.66	86	70 - 130	5	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-Triacontane	80.4	79.1	mg/Kg	1	100	80	79	70 - 130

<sup>5</sup>Matrix spike recovery and RPD out of control limits due to matrix interference. Use LCS/LCSD to demonstrate analysis is under control.  
<sup>6</sup>Matrix spike recovery out of control limits due to matrix interference. Use LCS/LCSD to demonstrate analysis is under control.  
<sup>7</sup>Matrix spike recovery out of control limits. Use LCS/LCSD to demonstrate analysis is under control.

**Matrix Spike (MS-1)** Spiked Sample: 212203

QC Batch: 64438  
Prep Batch: 55024

Date Analyzed: 2009-10-14  
QC Preparation: 2009-10-14

Analyzed By: ER  
Prepared By: ER

Param	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Benzene	1.76	mg/Kg	5	2.00	<0.0166	88	61.5 - 134
Toluene	1.90	mg/Kg	5	2.00	<0.0264	95	64.2 - 143
Ethylbenzene	1.94	mg/Kg	5	2.00	<0.0224	97	67.7 - 152
Xylene	5.88	mg/Kg	5	6.00	<0.0228	98	67.8 - 152

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	1.75	mg/Kg	5	2.00	<0.0166	88	61.5 - 134	1	20
Toluene	1.87	mg/Kg	5	2.00	<0.0264	94	64.2 - 143	2	20
Ethylbenzene	1.90	mg/Kg	5	2.00	<0.0224	95	67.7 - 152	2	20
Xylene	5.76	mg/Kg	5	6.00	<0.0228	96	67.8 - 152	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)	1.78	1.70	mg/Kg	5	2	89	85	65.3 - 134
4-Bromofluorobenzene (4-BFB)	1.96	1.81	mg/Kg	5	2	98	90	61.9 - 143

**Matrix Spike (MS-1)** Spiked Sample: 212194

QC Batch: 64439  
Prep Batch: 55024

Date Analyzed: 2009-10-14  
QC Preparation: 2009-10-14

Analyzed By: ER  
Prepared By: ER

Param	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
GRO	23.9	mg/Kg	1	20.0	<0.403	120	34.1 - 160

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	22.9	mg/Kg	1	20.0	<0.403	114	34.1 - 160	4	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)	2.37	2.46	mg/Kg	1	2	118	123	56.9 - 137
4-Bromofluorobenzene (4-BFB)	2.79	2.76	mg/Kg	1	2	140	138	42.1 - 171

**Matrix Spike (MS-1)** Spiked Sample: 212195

QC Batch: 64441  
 Prep Batch: 55025

Date Analyzed: 2009-10-14  
 QC Preparation: 2009-10-14

Analyzed By: KV  
 Prepared By: KV

Param	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride	83.8	mg/Kg	10	100	<18.0	84	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	87.7	mg/Kg	10	100	<18.0	88	80 - 120	4	20

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

**Standard (CCV-1)**

QC Batch: 64398

Date Analyzed: 2009-10-13

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	0.0924	92	80 - 120	2009-10-13
Toluene		mg/Kg	0.100	0.0941	94	80 - 120	2009-10-13
Ethylbenzene		mg/Kg	0.100	0.0912	91	80 - 120	2009-10-13
Xylene		mg/Kg	0.300	0.275	92	80 - 120	2009-10-13

**Standard (CCV-2)**

QC Batch: 64398

Date Analyzed: 2009-10-13

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	0.0953	95	80 - 120	2009-10-13
Toluene		mg/Kg	0.100	0.0942	94	80 - 120	2009-10-13
Ethylbenzene		mg/Kg	0.100	0.0895	90	80 - 120	2009-10-13
Xylene		mg/Kg	0.300	0.271	90	80 - 120	2009-10-13

**Standard (CCV-1)**

QC Batch: 64399

Date Analyzed: 2009-10-13

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	1.05	105	80 - 120	2009-10-13

**Standard (CCV-2)**

QC Batch: 64399

Date Analyzed: 2009-10-13

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	0.956	96	80 - 120	2009-10-13

**Standard (CCV-1)**

QC Batch: 64404

Date Analyzed: 2009-10-13

Analyzed By: AW

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
DRO		mg/Kg	250	260	104	80 - 120	2009-10-13

**Standard (CCV-2)**

QC Batch: 64404

Date Analyzed: 2009-10-13

Analyzed By: AW

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
DRO		mg/Kg	250	284	114	80 - 120	2009-10-13

**Standard (CCV-1)**

QC Batch: 64438

Date Analyzed: 2009-10-14

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	0.0918	92	80 - 120	2009-10-14
Toluene		mg/Kg	0.100	0.0937	94	80 - 120	2009-10-14
Ethylbenzene		mg/Kg	0.100	0.0932	93	80 - 120	2009-10-14
Xylene		mg/Kg	0.300	0.279	93	80 - 120	2009-10-14



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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	2009-10-14

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