

**WORK ORDER Summary****Evergreen Analytical, Inc.****09-7835****Rpt To:** Todd Hutson**Email To:** thutson@qrinc.com

10/23/2009 1:49:13 PM

Quicksilver Resources Inc.

777 W. Rosedale

Fort Worth, TX 76104

(817) 422-2883

**Client Project ID:****QC Level:** LEVEL I**Comments**

Sample ID	Client Sample ID	Matrix	Collection Date	Date Received	Test Code	Test Name	Hold	MS	Date Due	Hold Time
09-7835-01A	Cherokee Ridge	Soil	9/29/09 1045	9/30/09	6010_CR6S	6010: Hexavalent Chromium, Soil	<input type="checkbox"/>	<input type="checkbox"/>	10/14/09	10/29/09
09-7835-01A	Cherokee Ridge	Soil	9/29/09 1045	9/30/09	6010_S *	6010: Soil/Solids	<input type="checkbox"/>	<input type="checkbox"/>	10/14/09	3/28/10
09-7835-01A	Cherokee Ridge	Soil	9/29/09 1045	9/30/09	6020_S *	6020 Metals, Soil/Solid	<input type="checkbox"/>	<input type="checkbox"/>	10/14/09	3/28/10
09-7835-01A	Cherokee Ridge	Soil	9/29/09 1045	9/30/09	7471_S	7471: Mercury Solid	<input type="checkbox"/>	<input type="checkbox"/>	10/14/09	10/27/09
09-7835-01A	Cherokee Ridge	Soil	9/29/09 1045	9/30/09	TRI_CRS	Trivalent Chromium Calculation, Soil Basis	<input type="checkbox"/>	<input type="checkbox"/>	10/14/09	3/28/10
09-7835-01B	Cherokee Ridge	Soil	9/29/09 1045	9/30/09	IGN ^	1010: Ignitability by Pensky-Martens Closed Cup	<input type="checkbox"/>	<input type="checkbox"/>	10/23/09	10/27/09
09-7835-01B	Cherokee Ridge	Soil	9/29/09 1045	9/30/09	TEH_S *	8015: TEH-Diesel	<input type="checkbox"/>	<input type="checkbox"/>	10/14/09	10/13/09
09-7835-01C	Cherokee Ridge	Soil	9/29/09 1045	9/30/09	6010_D *	6010: Dissolved Metals	<input type="checkbox"/>	<input type="checkbox"/>	10/14/09	3/28/10
09-7835-01C	Cherokee Ridge	Soil	9/29/09 1045	9/30/09	COND_S	Specific Conductance @ 25°C	<input type="checkbox"/>	<input type="checkbox"/>	10/14/09	10/27/09
09-7835-01C	Cherokee Ridge	Soil	9/29/09 1045	9/30/09	PH_S	9045C: pH	<input type="checkbox"/>	<input type="checkbox"/>	10/14/09	9/30/09
09-7835-01C	Cherokee Ridge	Soil	9/29/09 1045	9/30/09	SAR_S	Sodium Adsorption Ratio, Soil Leachate	<input type="checkbox"/>	<input type="checkbox"/>	10/14/09	3/28/10
09-7835-01D	Cherokee Ridge	Soil	9/29/09 1045	9/30/09	8270_S *	8270C: BNA PAH	<input type="checkbox"/>	<input type="checkbox"/>	10/14/09	10/13/09
09-7835-01D	Cherokee Ridge	Soil	9/29/09 1045	9/30/09	TEH_S * ^	8015: TEH-Fuel ID	<input type="checkbox"/>	<input type="checkbox"/>	10/23/09	10/13/09
09-7835-01E	Cherokee Ridge	Soil	9/29/09 1045	9/30/09	8021_S *	8021: BTEX	<input type="checkbox"/>	<input type="checkbox"/>	10/14/09	10/13/09
09-7835-01E	Cherokee Ridge	Soil	9/29/09 1045	9/30/09	TVH_S *	8015: TVH-Gasoline	<input type="checkbox"/>	<input type="checkbox"/>	10/14/09	10/13/09
09-7835-01F	Cherokee Ridge	Soil	9/29/09 1045	9/30/09	200.7_SBORON	Hot-Water-Soluble Boron, Leachate Basis	<input type="checkbox"/>	<input type="checkbox"/>	10/14/09	3/28/10
09-7835-01F	Cherokee Ridge	Soil	9/29/09 1045	9/30/09	TCLPBNA * ^	TCLP BNA	<input type="checkbox"/>	<input type="checkbox"/>	10/23/09	10/06/09
09-7835-01F	Cherokee Ridge	Soil	9/29/09 1045	9/30/09	TCLPMETALS * ^	6010 TCLP Metals, Leached	<input type="checkbox"/>	<input type="checkbox"/>	10/23/09	3/28/10
09-7835-01G	Cherokee Ridge	Soil	9/29/09 1045	9/30/09	LDNR True Total Barium	LDNR True Total Barium	<input type="checkbox"/>	<input type="checkbox"/>	10/14/09	10/13/09

**Definitions:** \* - Test Code has a Select List



**AMS Sample**

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**From:** Shea Greiner  
**Sent:** Friday, October 16, 2009 3:06 PM  
**To:** Jim Travis; AMS Sample; Bonnie Porter; Laura Cooper; Tami Buchner  
**Cc:** Andrea Engelbrecht; Patty McClellan  
**Subject:** Add Testing 09-7835 RUSH

Todd Hutson/Quicksilver Resources would like to add the following analyses to the soil sample on the above WO.

Fuel ID (ORO)

Ignitability

TCLP BNA for Benzo A Anthracene, Benzo B Fluoranthene, Benzo A Pyrene, Dibenzo A,H Anthracene

TCLP Barium

I've checked the sample and there is plenty remaining. He's requested a RUSH TAT, 3-5 working days. Please log for a 5 day.....If anyone has questions or problems, let me know.

Thanks, Shea

**Evergreen Analytical, Inc.**

**Date:** 23-Oct-09

**Lab Order:** 09-7835

**Client Project ID**

## **CASE NARRATIVE**

### **SAMPLE RECEIVING**

Custody seals were present and intact.

The temperature of the sample(s) upon arrival was 4.5°C.

Sample(s) were received in good condition and in the proper container.

The pH sample was received outside of holding time.

VOC sample(s) were received with no headspace present. JD

### **QUALITY ASSURANCE (QA)**

Analyses performed on samples in this work order by EAL meet the requirements of the EAL Quality Assurance Program unless otherwise explained. Analyses of RCRA samples meet the requirements of NELAC and Utah Rule R444-14 unless otherwise explained. JE

### **CLIENT SERVICES**

The client did not relinquish the COC. Client requested the lab to add Fuel ID, Ignitability, TCLP BNA, and TCLP for Barium analyses for this work order on 10/16/09. There are no other anomalies to report. AE/TP

### **GENERAL CHEMISTRY**

Method SW9045C: The pH analysis was done outside of the holding time for RCRA samples (H). There are no other anomalies to report. MM/JE

### **METALS ANALYSIS**

Method GUPTA: Hot-Water Soluble Boron was detected in the method blank (MB) at 0.034 mg/L. This amount was not subtracted from the sample result. The sample result was greater than five times the MB concentration so no further action was needed. There are no other anomalies to report. MB/JE

Method SW6010B Cr6: The matrix spike, matrix spike duplicate, and post digestion spike (MS/MSD/PDS; on the client's sample from a different work order) recoveries of Hexavalent Chromium are below the QC limits. The Hexavalent Chromium recovery for the laboratory control spike (LCS) is within QC limits, proving the analysis is in control. This is a common occurrence for this method since interferences in the sample can cause the Hexavalent Chromium to be reduced to other forms of Chromium. The MS, MSD, and PDS were analyzed outside of holding time (H). There are no other anomalies to report. MB

**Evergreen Analytical, Inc.****Date:** 23-Oct-09**Lab Order:** 09-7835**Client Project ID****CASE NARRATIVE**

Method SW6010B: The matrix spike, matrix spike, duplicate and post digestion spike (MS/MSD/PDS; on the client's sample) recoveries of several elements are outside the QC limits. The laboratory control spike (LCS) recoveries of these analytes are within QC limits, proving the analysis is in control. There are no other anomalies to report. MB/JE

**GAS CHROMATOGRAPHY**

Method TEH\_S: The sample was extracted outside the method specified holding time (H). Also, the sample overlap in the diesel range and the motor oil range. The result for diesel and motor oil may be overstated due to this overlap. There are no other anomalies to report. AS

Method TVH\_S: The matrix spike (MS; on the client's sample) recovery of TVH is below the QC limits. The surrogate recovery on the matrix spike duplicate (MSD) is above the QC limits. The TVH recovery for the laboratory control spike (LCS) is within QC limits, proving the analysis is in control. There are no other anomalies to report. LC/JE/TP

Method 8021\_S: The matrix spike (MS; on the client's sample) recovery of Toluene is below the QC limits. The Toluene recovery for the laboratory control spike (LCS) is within QC limits, proving the analysis is in control. There are no other anomalies to report. LC/JE

**GAS CHROMATOGRAPHY/MASS SPECTROMETRY**

Method 8270\_S: There are no anomalies to report. TMB

Method TCLPBNA: Sample (09-7835-01F) was analyzed outside method specified holding time (H). Internal standard Perylene-d12 is below QC limits on the matrix spike. All other quality control spikes associated with this project are within the QC limits for Perylene-d12. There are no other anomalies to report. TMB/TP

**ADDENDUM 10/15/09**

The LDNR True Total Barium analysis was done by an outside laboratory and has been represented to us as having met criteria. JE

006

**Evergreen Analytical, Inc.**  
4036 Youngfield Street, Wheat Ridge, Colorado 80033-3862  
(303) 425-6021

**Client Sample ID:** Cherokee Ridge  
**Client Project ID:**  
**Date Collected:** 9/29/09  
**Date Received:** 9/30/09

**Lab Work Order** 09-7835  
**Lab Sample ID:** 09-7835-01  
**Sample Matrix:** Soil

**IGNITABILITY BY PENSKEY-MARTENS CLOSED CUP**

**Method:** SW 1010

**Prep Method:**

**Comments:** Ignitable if Flashpoint is less than 140 °F, (<140)

**Date Prepared:** 10/20/09

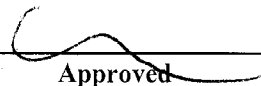
**Dilution Factor:** 1

**Date Analyzed:** 10/20/09

**Lab Fraction ID:** 09-7835-01B

Analytes	CAS Number	Result	LQL	Units
Flashpoint @ 620 mm Hg		>140		°F

  
\_\_\_\_\_  
**Analyst**

  
\_\_\_\_\_  
**Approved**

**Qualifiers:** B - Analyte detected in the associated Method Blank, value not subtracted from result  
E - Extrapolated value. Value exceeds calibration range  
H - Sample analysis exceeded analytical holding time  
J - Indicates an estimated value when the compound is detected, but is below the LQL  
S - Spike Recovery outside accepted limits  
U - Compound analyzed for but not detected  
X - See case narrative  
\* - Value exceeded the Maximum Contamination Level (MCL), TCLP limit, or if compound is undetected, LQL exceeds MCL.

**Definitions:** NA - Not Applicable  
LQL - Lower Quantitation Limit  
Surr - Surrogate

Print Date: 10/20/2009

**Evergreen Analytical, Inc.**  
 4036 Youngfield Street, Wheat Ridge, Colorado 80033-3862  
 (303) 425-6021

**Client Sample ID:** Cherokee Ridge  
**Client Project ID:**  
**Date Collected:** 9/29/09  
**Date Received:** 9/30/09

**Lab Work Order:** 09-7835  
**Lab Sample ID:** 09-7835-01  
**Sample Matrix:** Soil

**TOTAL EXTRACTABLE HYDROCARBONS**

**Method:** SW8015B Mod

**Prep Method:** SW3550B

**Date Prepared:** 10/19/09

**Lab File ID:** FI624.D

**Dilution Factor:** 2

**Date Analyzed:** 10/20/09

**Method Blank:** MB-21217

**Lab Fraction ID:** 09-7835-01D

Analytes	CAS Number	Result	LQL	Units
Diesel Fuel (No. 2)	68334-30-5	97 H	28	mg/Kg
Gasoline	86290-81-5	U H	40	mg/Kg
Jet A	64742-47-8	U H	28	mg/Kg
Motor Oil		370 H	66	mg/Kg
Surr: TBB	98-06-6	51	<b>QC Limits:</b> 39-130	%REC

AS  
 \_\_\_\_\_  
 Analyst

  
 \_\_\_\_\_  
 Approved

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 X - See case narrative  
 \* - Value exceeded the Maximum Contamination Level (MCL), TCLP limit, or if compound is undetected, LQL exceeds MCL.

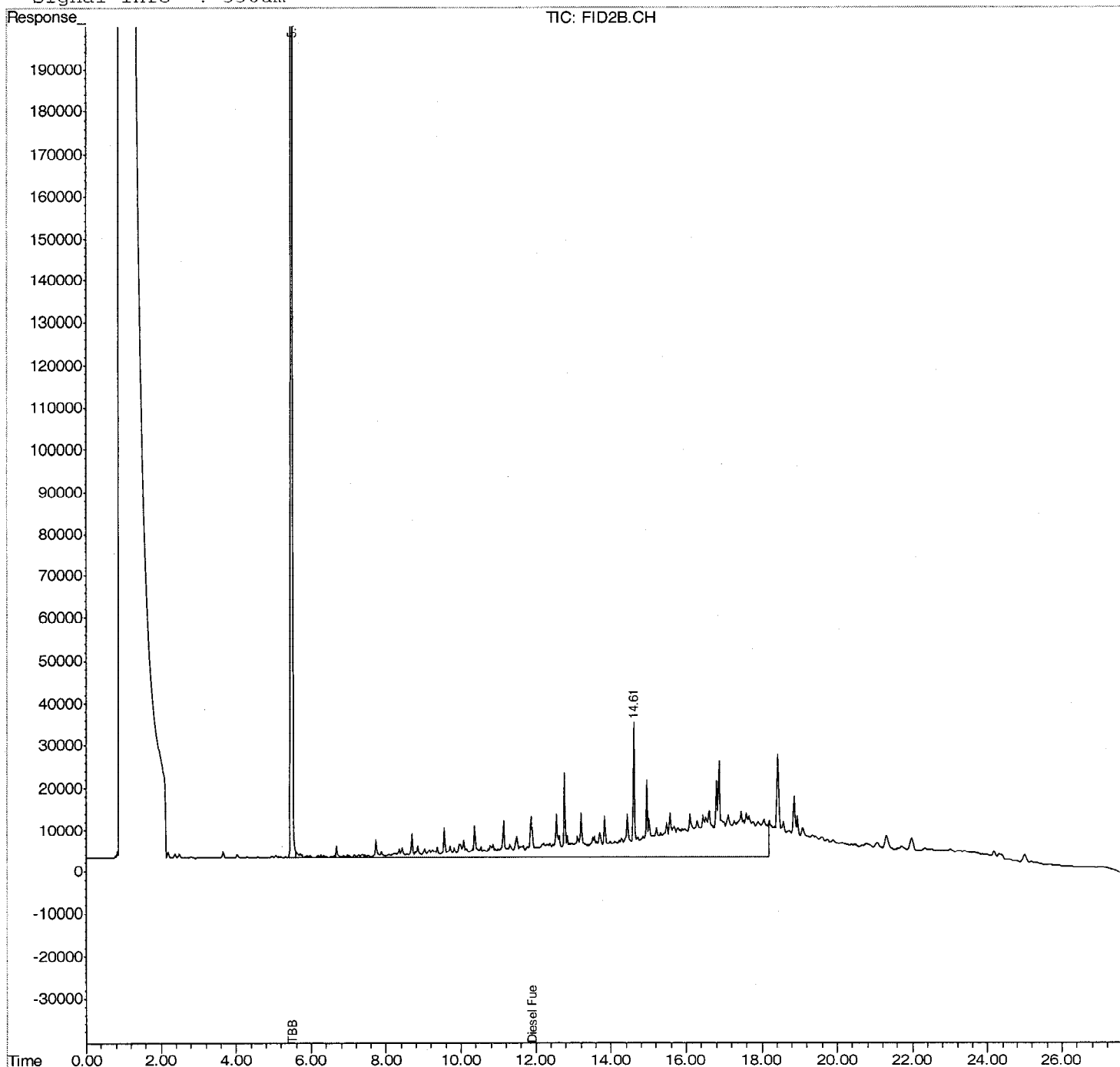
**Definitions:** NA - Not Applicable  
 LQL - Lower Quantitation Limit  
 Surr - Surrogate

Print Date: 10/20/09

Data File : E:\DATA\GFI63\FI624.D Vial: 24  
Acq On : 20 Oct 2009 3:02 am Operator: adams1  
Sample : 09-7835-01D Inst : FID6  
Misc : ,SAMP,TEH\_S,2,21217|OP909,GFI63,30.04,,, Multiplr: 1.00  
IntFile : DF-GFI56.E  
Quant Time: Oct 20 8:03 2009 Quant Results File: DF-GFI56.RES

Quant Method : C:\MSDCHEM\1\METHODS\DF-GFI56.M (Chemstation Integrator)  
Title : 8015B TEH  
Last Update : Thu Sep 24 09:17:05 2009  
Response via : Multiple Level Calibration  
DataAcq Meth : RR\_BASE.M

Volume Inj. : 1ul  
Signal Phase : RTX-5  
Signal Info : 530um

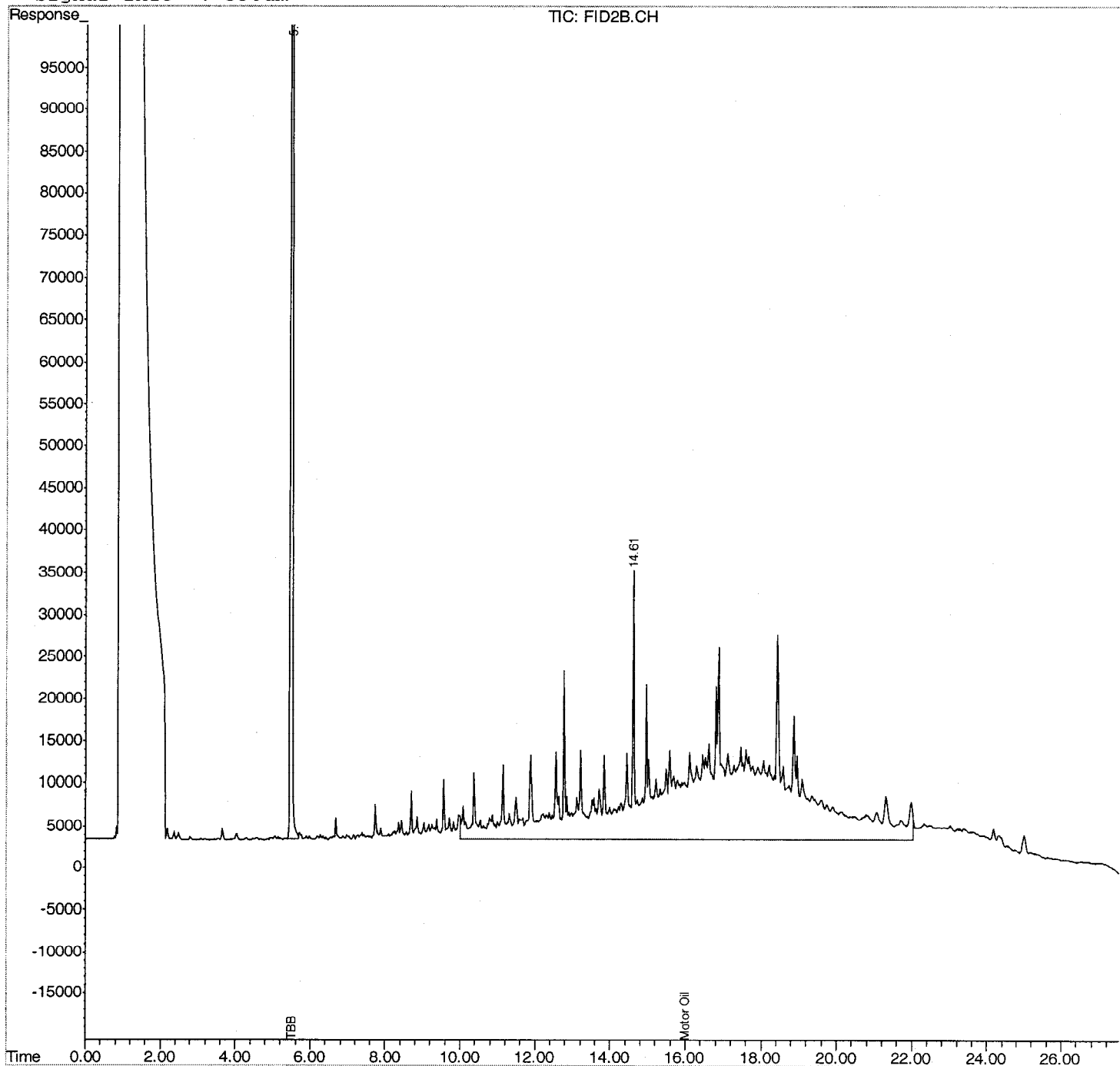




Data File : E:\DATA\GFI63\FI624.D Vial: 24  
Acq On : 20 Oct 2009 3:02 am Operator: adams1  
Sample : 09-7835-01D Inst : FID6  
Misc : ,SAMP,TEH,S,2,21217|OP909,GFI63,30.04,,, Multiplr: 1.00  
IntFile : MO-GFI52.E  
Quant Time: Oct 20 10:53 2009 Quant Results File: MO-GFI52.RES

Quant Method : C:\MSDCHEM\1\METHODS\MO-GFI52.M (Chemstation Integrator)  
Title : 8015B TEH  
Last Update : Mon Sep 21 14:29:49 2009  
Response via : Multiple Level Calibration  
DataAcq Meth : RR\_BASE.M

Volume Inj. : 1ul  
Signal Phase : RTX-5  
Signal Info : 530um



# Evergreen Analytical, Inc.

4036 Youngfield Street, Wheat Ridge, Colorado 80033-3862  
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Client Sample ID: Cherokee Ridge  
Client Project ID:  
Date Collected: 9/29/09  
Date Received: 9/30/09  
Date Prepared: 10/19/09  
Date Analyzed: 10/21/09  
Percent Moisture: NA

Lab Work Order: 09-7835  
Lab Sample ID: 09-7835-01F  
Sample Matrix: Soil  
Lab File ID: 102109\1G03783.D  
Method Blank: TB-21224  
Prep Factor: 0.005  
Dilution Factor: 1.00

## TCLP SEMIVOLATILES

Method: SW8270C

Prep Method: SW3520C

Analytes	CAS Number	Result	LQL	RAL	Units
1,2,4-Trimethylbenzene	95-63-6	U H	0.025	N/A	mg/L
Benzo(a)anthracene	56-55-3	U H	0.025	N/A	mg/L
Benzo(a)pyrene	50-32-8	U H	0.025	N/A	mg/L
Benzo(b)fluoranthene	205-99-2	U H	0.025	N/A	mg/L
Dibenz(a,h)anthracene	53-70-3	U H	0.025	N/A	mg/L
Surr: 2,4,6-Tribromophenol	118-79-6	92		QC Limits: 54-130 %REC	
Surr: 2-Fluorobiphenyl	321-60-8	79		QC Limits: 40-130 %REC	
Surr: 2-Fluorophenol	367-12-4	82		QC Limits: 30-130 %REC	
Surr: Nitrobenzene-d5	4165-60-0	87		QC Limits: 45-130 %REC	
Surr: Phenol-d6	13127-88-3	82		QC Limits: 30-137 %REC	
Surr: Terphenyl-d14	1718-51-0	89		QC Limits: 52-130 %REC	



Analyst



Approved

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**Definitions:** NA - Not Applicable  
LQL - Lower Quantitation Limit  
MDL - Method Detection Limit  
RAL - Regulatory Action Limit  
Surr - Surrogate

Print Date: 10/22/09

Data File : D:\MSDCHEM\1\DATA\102109\1G03783.D

Vial: 10

Acq On : 21 Oct 2009 4:53 pm

Operator: TAMIB

Sample : 09-7835-01F

Inst : GCMS1

```
Misc      : ,SAMP,TCLPBNA,1,|OP913,E1G115,200,,,1,1
```

Multiplr: 1.00

```
MS Integration Params: RTEINT.P
```

Quant Time: Oct 22 12:35 2009

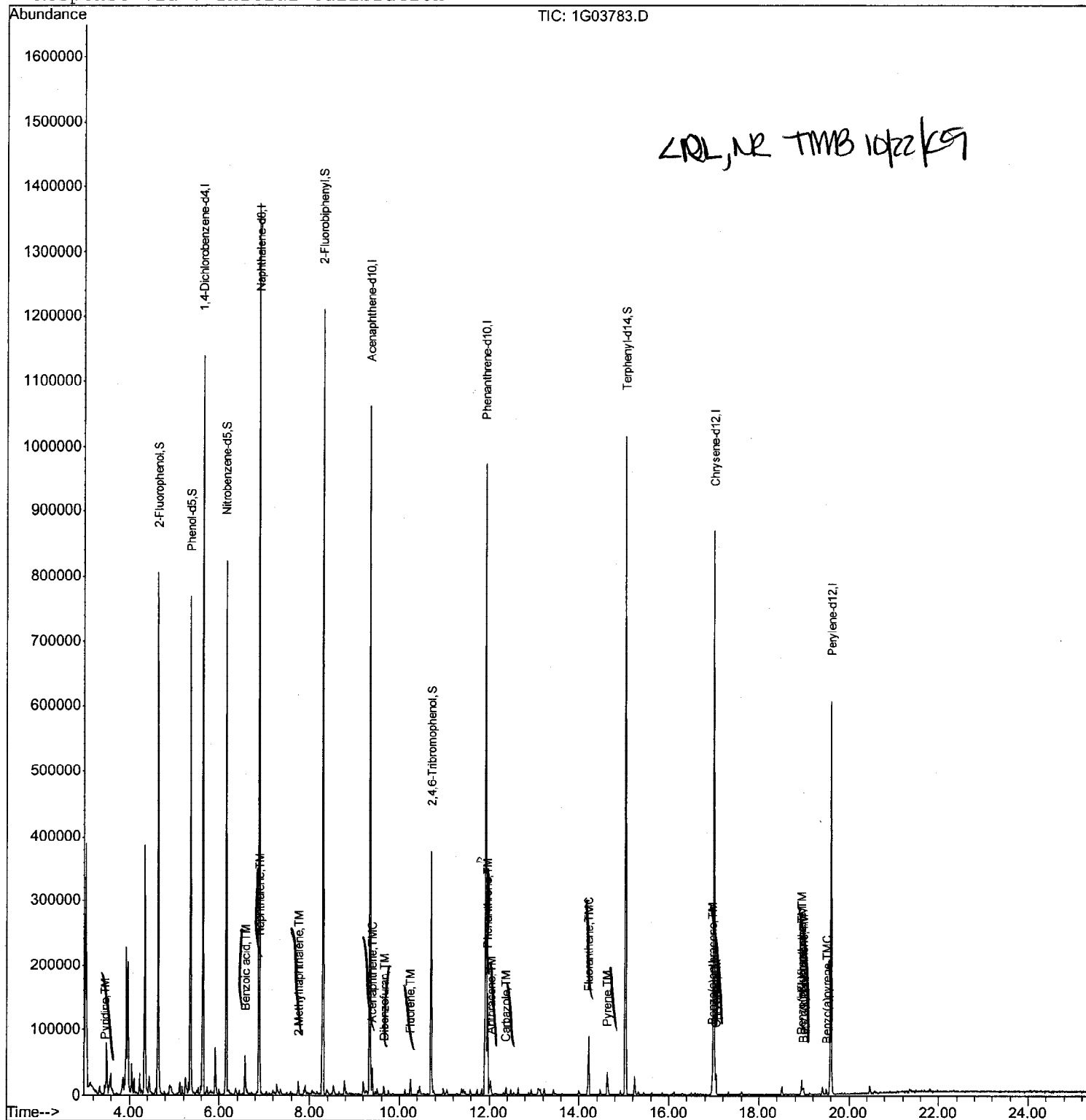
Quant Results File: BNAE1G114.RES

Method : D:\MSDCHEM\1\METHODS\BNAE1G114.M (RTE Integrator)

Title : 8270C Calibration

Last Update : Tue Oct 20 14:36:07 2009

Response via : Initial Calibration



**Evergreen Analytical, Inc.**  
4036 Youngfield Street, Wheat Ridge, Colorado 80033-3862  
(303) 425-6021

012

**Client Sample ID:** Cherokee Ridge  
**Client Project ID:**  
**Date Collected:** 9/29/09  
**Date Received:** 9/30/09

**Lab Work Order:** 09-7835  
**Lab Sample ID:** 09-7835-01  
**Sample Matrix:** Soil

**TCLP METALS, LEACHED**

**Method:** SW1311/6010B

**Prep Method:** SW1311,2/3010A

**Date Prepared:** 10/20/09

**Prep Factor:** 5

**Date Analyzed:** 10/22/09

**Method Blank:** MB-21207/21236

**Dilution Factor:** 1

Analytes	CAS Number	Result	LQL	RAL	Units
Barium	7440-39-3	U	2	100	mg/L



**Analyst**



**Approved**

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**Definitions:** NA - Not Applicable  
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RAL - Regulatory Action Limit  
Surr - Surrogate

Print Date: 10/22/2009

## **QUALITY ASSURANCE REPORTS**

**METHOD BLANKS (MB)**

**LABORATORY CONTROL SPIKES (LCS)**

**MATRIX SPIKES (MS/MSD)\***

**DUPLICATES (DUP)\***

• **For Metals or Wet Chemistry analyses: only included if requested.**

Evergreen Analytical, Inc.

Date: 20-Oct-09

Work Order: 09-7835

Client Project ID:

## ANALYTICAL QC SUMMARY REPORT

TestCode: TEH\_S

Sample ID: MB-21217	SampType: MBLK	TestCode: TEH_S	Run ID: FID6_091019A	Prep Date: 10/19/09	Units: mg/Kg						
	Batch ID: 21217	TestNo: SW8015B Mo	FileID: FI602.D	Analysis Date: 10/19/09	SeqNo: 926576						
Analyte	Result	LQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Diesel Fuel (No. 2)	U	14									
Gasoline	U	20									
Jet A	U	14									
Motor Oil	U	33									
Surr: TBB	36.97	0	66.67	0	55.5	39	130	0	0		

Sample ID: LCS-21217	SampType: LCS	TestCode: TEH_S	Run ID: FID6_091019A	Prep Date: 10/19/09	Units: mg/Kg						
	Batch ID: 21217	TestNo: SW8015B Mo	FileID: FI603.D	Analysis Date: 10/19/09	SeqNo: 926577						
Analyte	Result	LQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Diesel Fuel (No. 2)	566.1	14	666.7	0	84.9	70	130	0	0		
Surr: TBB	43.54	0	66.67	0	65.3	39	130	0	0		

Sample ID: 09-8343-09AMS	SampType: MS	TestCode: TEH_S	Run ID: FID6_091019A	Prep Date: 10/19/09	Units: mg/Kg						
	Batch ID: 21217	TestNo: SW8015B Mo	FileID: FI607.D	Analysis Date: 10/19/09	SeqNo: 926581						
Analyte	Result	LQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Diesel Fuel (No. 2)	670.1	13	634.9	0	106	70	130	0	0		
Surr: TBB	51.5	0	63.49	0	81.1	39	130	0	0		

Sample ID: 09-8343-09AMSD	SampType: MSD	TestCode: TEH_S	Run ID: FID6_091019A	Prep Date: 10/19/09	Units: mg/Kg						
	Batch ID: 21217	TestNo: SW8015B Mo	FileID: FI608.D	Analysis Date: 10/19/09	SeqNo: 926582						
Analyte	Result	LQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Diesel Fuel (No. 2)	717.2	14	664.7	0	108	70	130	670.1	6.79	30	
Surr: TBB	54.16	0	66.47	0	81.5	39	130	0	0	0	

## Qualifiers:

U - Not detected at or above the Reporting Limit  
J - Analyte detected below quantitation limits  
S - Spike Recovery outside acceptance limits  
E - Extrapolated value, value exceeds calibration range.

R - RPD outside acceptance limits  
B - Analyte detected in the associated Method Blank  
H - Prep or analytical holding time exceeded  
X - See case narrative

Evergreen Analytical, Inc.

Date: 22-Oct-09

Work Order: 09-7835

Client Project ID:

## ANALYTICAL QC SUMMARY REPORT

TestCode: TCLPBNA

Sample ID: <b>TB-21224</b>	SampType: <b>MBLK</b>	TestCode: <b>TCLPBNA</b>	Run ID: <b>GCMS1_091021A</b>			Prep Date: <b>10/19/09</b>			Units: <b>mg/L</b>		
	Batch ID: <b>21224</b>	TestNo: <b>SW 8270C</b>	FileID: <b>10210911G03779.D</b>			Analysis Date: <b>10/21/09</b>			SeqNo: <b>927605</b>		
Analyte	Result	LQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzo(a)anthracene	U	0.025									
Benzo(a)pyrene	U	0.025									
Benzo(b)fluoranthene	U	0.025									
Dibenz(a,h)anthracene	U	0.025									
Surr: 2,4,6-Tribromophenol	0.2604	0	0.25	0	104	54	130	0	0		
Surr: 2-Fluorobiphenyl	0.2378	0	0.25	0	95.1	40	130	0	0		
Surr: 2-Fluorophenol	0.2353	0	0.25	0	94.1	30	130	0	0		
Surr: Nitrobenzene-d5	0.2523	0	0.25	0	101	45	130	0	0		
Surr: Phenol-d6	0.2453	0	0.25	0	98.1	30	137	0	0		
Surr: Terphenyl-d14	0.2345	0	0.25	0	93.8	52	130	0	0		

Sample ID: <b>LCS-21224</b>	SampType: <b>LCS</b>	TestCode: <b>TCLPBNA</b>	Run ID: <b>GCMS1_091021A</b>			Prep Date: <b>10/19/09</b>			Units: <b>mg/L</b>		
	Batch ID: <b>21224</b>	TestNo: <b>SW 8270C</b>	FileID: <b>10210911G03780.D</b>			Analysis Date: <b>10/21/09</b>			SeqNo: <b>927602</b>		
Analyte	Result	LQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzo(a)anthracene	0.4169	0.025	0.4	0	104	58	130	0	0		
Benzo(a)pyrene	0.4139	0.025	0.4	0	103	58	130	0	0		
Benzo(b)fluoranthene	0.4287	0.025	0.4	0	107	64	130	0	0		
Dibenz(a,h)anthracene	0.387	0.025	0.4	0	96.8	62	130	0	0		
Surr: 2,4,6-Tribromophenol	0.2267	0	0.25	0	90.7	54	130	0	0		
Surr: 2-Fluorobiphenyl	0.2409	0	0.25	0	96.3	40	130	0	0		
Surr: 2-Fluorophenol	0.2068	0	0.25	0	82.7	30	130	0	0		
Surr: Nitrobenzene-d5	0.2526	0	0.25	0	101	45	130	0	0		
Surr: Phenol-d6	0.2098	0	0.25	0	83.9	30	137	0	0		
Surr: Terphenyl-d14	0.2636	0	0.25	0	105	52	130	0	0		

## Qualifiers:

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E - Extrapolated value, value exceeds calibration range.

R - RPD outside acceptance limits  
B - Analyte detected in the associated Method Blank  
H - Prep or analytical holding time exceeded  
X - See case narrative

Evergreen Analytical, Inc.

Date: 22-Oct-09

Work Order: 09-7835

Client Project ID:

## ANALYTICAL QC SUMMARY REPORT

TestCode: TCLPBNA

Sample ID: 09-8307-01BMS	SampType: MS	TestCode: TCLPBNA	Run ID: GCMS1_091021A	Prep Date: 10/19/09	Units: mg/L						
	Batch ID: 21224	TestNo: SW8270C	FileID: 1021091G03790.D	Analysis Date: 10/22/09	SeqNo: 927606						
Analyte	Result	LQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzo(a)anthracene	0.4342	0.025	0.4	0	109	50	130	0	0		
Benzo(a)pyrene	0.4345	0.025	0.4	0	109	50	130	0	0		
Benzo(b)fluoranthene	0.4638	0.025	0.4	0	116	50	130	0	0		
Dibenz(a,h)anthracene	0.3504	0.025	0.4	0	87.6	50	130	0	0		
Surr: 2,4,6-Tribromophenol	0.2342	0	0.25	0	93.7	54	130	0	0		
Surr: 2-Fluorobiphenyl	0.2458	0	0.25	0	98.3	40	130	0	0		
Surr: 2-Fluorophenol	0.2102	0	0.25	0	84.1	30	130	0	0		
Surr: Nitrobenzene-d5	0.2553	0	0.25	0	102	45	130	0	0		
Surr: Phenol-d6	0.2202	0	0.25	0	88.1	30	137	0	0		
Surr: Terphenyl-d14	0.3066	0	0.25	0	123	52	130	0	0		

Sample ID: 09-8307-01BMSD	SampType: MSD	TestCode: TCLPBNA	Run ID: GCMS1_091021A	Prep Date: 10/19/09				Units: mg/L			
	Batch ID: 21224	TestNo: SW8270C	FileID: 102109\1G03791.D	Analysis Date: 10/22/09				SeqNo: 927609			
Analyte	Result	LQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzo(a)anthracene	0.3909	0.025	0.4	0	97.7	50	130	0.4342	10.5	30	
Benzo(a)pyrene	0.401	0.025	0.4	0	100	50	130	0.4345	8.02	30	
Benzo(b)fluoranthene	0.4165	0.025	0.4	0	104	50	130	0.4638	10.8	30	
Dibenz(a,h)anthracene	0.3389	0.025	0.4	0	84.7	50	130	0.3504	3.35	30	
Surr: 2,4,6-Tribromophenol	0.2211	0	0.25	0	88.4	54	130	0	0	30	
Surr: 2-Fluorobiphenyl	0.2227	0	0.25	0	89.1	40	130	0	0	30	
Surr: 2-Fluorophenol	0.2011	0	0.25	0	80.4	30	130	0	0	30	
Surr: Nitrobenzene-d5	0.2405	0	0.25	0	96.2	45	130	0	0	30	
Surr: Phenol-d6	0.2069	0	0.25	0	82.8	30	137	0	0	30	
Surr: Terphenyl-d14	0.2617	0	0.25	0	105	52	130	0	0	30	

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Evergreen Analytical, Inc.

Date: 22-Oct-09

Work Order: 09-7835

Client Project ID:

## ANALYTICAL QC SUMMARY REPORT

TestCode: TCLPMETALS

Sample ID: MB-21207/21236	SampType: MBLK	TestCode: TCLPMETAL	Run ID: ICP-OPTIMA 5300 DV_091022B	Prep Date: 10/20/2009	Units: mg/L						
	Batch ID: 21236	TestNo: SW1311/6010	FileID:	Analysis Date: 10/22/2009	SeqNo: 927759						
Analyte	Result	LQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Barium	U	2.0									

Sample ID: LCS-21236	SampType: LCS	TestCode: TCLPMETAL	Run ID: ICP-OPTIMA 5300 DV_091022B	Prep Date: 10/20/2009	Units: mg/L						
	Batch ID: 21236	TestNo: SW1311/6010	FileID:	Analysis Date: 10/22/2009	SeqNo: 927760						
Analyte	Result	LQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Barium	25.91	2.0	25	0	104	80	120	0	0		

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October 23, 2009

Todd Hutson  
Quicksilver Resources Inc.  
777 W. Rosedale  
Fort Worth, TX 76104

Lab Work Order: 09-7835  
Client Project ID:

Dear Todd Hutson:

Enclosed are the analytical results for the samples shown in the Laboratory Work Order Summary.

THE INVOICE WILL BE MAILED FROM OUR NEW JERSEY OFFICE UNDER SEPARATE COVER.


The enclosed data for testing performed at Accutest Laboratory (formerly Evergreen Analytical) have been reviewed for quality assurance. A case narrative is included to describe any anomalies associated with the samples or data.

Accutest will dispose of all samples 44 days from the sample receipt date. If you want samples returned, please advise us by mail or fax as soon as possible.

A copy of this project report and supporting data will be retained for a period of five years unless we are otherwise advised by you. A document retrieval charge will apply.

Thank you for using the services of Accutest Laboratories. If you have any questions concerning the analytical data, please contact me. Please direct other questions to Client Services.

Sincerely,



Joseph J Eery IV/ Tiffany Pham  
Quality Assurance