

UIC- I - __005__

ANNUAL REPORT

2015

Annual Class I Well Report for 2015

June 1st , 2016

Agua Moss, LLC

PO Box 600

Farmington, NM 87499

Permit UICI-005

API 30-045-28653

Submitted By:

Philana Thompson

Regulatory Compliance Specialist

Merrion Oil & Gas

610 Reilly Ave

Farmington, NM 87401

505-486-1171 cell

pthompson@merrion.bz

Summary of Operations

The annual MIT and Fall off Test was performed 4/28/2015.

Agua Moss, LLC in summer of 2012 began closure process of NM1-009 surface waste facilities. The surface waste facilities have now been closed and the area reclaimed. The landfarm, NM1-009, is still in the process of closure.

Appendices

Appendix A

Monthly Injection/disposal volumes
MAX and Average injection PSI

Appendix B

Quarterly Chemical Analyses Data

Appendix C

MIT
BH Test
FOT

Appendix D

2015 Monthly Injection Report

Appendix E

AOR

Appendix F

C138

Appendix A

UICI-5-0
Agua Moss, LLC
Sunco Disposal #1 30-045-28653

2015
Quarterly
Injection Report

	Average Pressure (psig)	Maximum Pressure (psig)	Minimum Pressure (psig)	Average Flow (gpm)	Maxium Flow (gpm)	Minimum Flow (gpm)	Average Annular Pressure (psig)	Maximum Annular Pressure (psig)	Minimum Annular Pressure (psig)	Average Volume (bpd)	Maximum Volume (bpd)	Minimum Volume (bpd)	Volume (barrels)	Total Cumulative Volume (barrels)	
													Previous year	13471572	
Jan-2015	1674.545	1750	1600	18.70277778	32.2875	4.725	0	0	0	641.2381	1107	162	13466	13485038	
Feb-2015	1678.5	1750	1600	15.855	26.36666667	7.2041667	0	0	0	543.6	904	247	10872	13495910	
Mar-2015	1638.636	1750	1600	17.79034091	32.725	5.075	0	0	0	609.9545	1122	174	13419	13509329	
													Previous Quarter	13509329	
Apr-2015	1628.409	1950	1400	25.46736111	98.29166667	2.5375	0	0	0	873.1667	3370	87	15717	13525046	
May-2015	1696.429	1800	1600	21.32520833	37.24583333	8.6041667	0	0	0	731.15	1277	295	14623	13539669	
Jun-2015	1775	2000	1700	26.69384058	72.39166667	7.8166667	0	0	0	915.2174	2482	268	21050	13560719	
													Previous Quarter	13560719	
Jul-15	1775	1900	1600	20.55742754	53.31666667	7.6416667	0	0	0	704.8261	1828	262	16211	13576930	
Aug-15	1739.13	2200	1600	30.89041667	79.04166667	4.55	0	0	0	1059.1	2710	156	21182	13598112	
Sep-15	1800	2000	1750	25.57536232	51.85833333	12.104167	0	0	0	876.8696	1778	415	20168	13618280	
													Previous Quarter	13618280	
Oct-2015	1814.13	2200	1750	41.66944444	79.68333333	8.1666667	0	0	0	1428.667	2732	280	34288	13652568	
Nov-2015	1947.917	2100	1750	70.05401235	92.60416667	43.458333	0	0	0	2401.852	3175	1490	64850	13717418	
Dec-2015	2044.231	2250	1900	66.63257576	85.225	32.1125	0	0	0	2284.545	2922	1101	50260	13767678	
												Total for year	296106	14063784	Life Of well injected

Appendix B



April 23, 2015

Number: 07117-0027

Ms. Philana Thompson
Regulatory Compliance
Agua Moss
P.O. Box 600
Farmington, New Mexico 87499

Phone: (505) 324-5336

RE: FIRST QUARTER INJECTED FLUIDS SAMPLING AND ANALYTICAL RESULTS, AGUA MOSS, SAN JUAN COUNTY, NEW MEXICO

Dear Ms. Thompson:

Enclosed please find the Table 1, Summary of Analytical Results, analytical results, and field notes for the injected fluids located at the Agua Moss Facility in Section 2, Township 29 North, Range 12 West, San Juan County, New Mexico. Activities included sample collection and analysis, documentation and reporting, in alignment with the analyses and procedures that were in accordance with the Agua Moss, LLC Sunco Disposal Well No. 1 Discharge Permit UICI-005.

If you have any questions or require additional information, please contact our office at (505) 632-0615.

Respectfully submitted,
ENVIROTECH, INC.

A handwritten signature in blue ink, appearing to read 'Greg Crabtree', is written over a horizontal line.

Greg Crabtree, PE
Environmental Manager
gcrabtree@envirotech-inc.com

Enclosures: Table 1, Summary of Analytical Results
Analytical Results
Field Notes

Cc: Client File Number: 07117

Table 1, Summary of Analytical Results
First Quarter Injected Fluids Sampling
Agua Moss
San Juan County, New Mexico
Project No. 07117-0027

Contaminant of Concern	Units	Sample Location
		Injection Fluid (4/10/15)
pH*	(s.u.)	6.9
ORP*	mV	-121.4
Specific Conductance*	mS	35.41
Temperature*	°F	65.75
Specific Gravity	ratio	1.003
Conductivity @ 25 °C	umhos/cm	34000
Total Dissolved Solids @ 180 °C	mg/L	21800
Sodium Absorption Ratio	ratio	61.5
Total Alkalinity as CaCO ₃	mg/L	2900
Total Hardness as CaCO ₃	mg/L	7833
Bicarbonate as CaCO ₃	mg/L	2900
Carbonate as CaCO ₃	mg/L	<10
Hydroxide as CaCO ₃	mg/L	<10
Nitrate Nitrogen	mg/L	<10
Nitrite Nitrogen	mg/L	<10
Chloride	mg/L	13300
Fluoride	mg/L	<10
Phosphate	mg/L	<50
Sulfate	mg/L	<100
Iron	mg/L	0.18
Calcium	mg/L	133
Magnesium	mg/L	34.6
Potassium	mg/L	46.2
Sodium	mg/L	3080
Bromide	mg/L	27.6
* Field Measurement		

Table 1, Summary of Analytical Results
First Quarter Injected Fluids Sampling
Agua Moss
San Juan County, New Mexico
Project No. 07117-0027

Contaminant of Concern	Units	Sample Location
		Injection Fluid (4/10/15)
Flash Point	°C	>95
Reactivity		negative
Arsenic	mg/L	<0.01
Barium	mg/L	21.2
Cadmium	mg/L	<0.01
Chromium	mg/L	<0.01
Lead	mg/L	<0.01
Mercury	mg/L	<0.0002
Selenium	mg/L	<0.01
Silver	mg/L	<0.01
Benzene	mg/L	7.67
Carbon Tetrachloride	mg/L	<0.05
Chlorobenzene	mg/L	<0.05
1,2-Dichloroethane	mg/L	<0.25
1,1-Dichloroethene	mg/L	<0.05
2-Butanone (MEK)	mg/L	<0.5
Tetrachloroethene	mg/L	<0.05
Trichloroethene	mg/L	<0.05
Vinyl Chloride	mg/L	<0.05
1,4-Dichlorobenzene	mg/L	<0.1
2,4-Dinitrotoluene	mg/L	<0.1
Hexachlorobenzene	mg/L	<0.1
Hexachloro-1,3-butadiene	mg/L	<0.1
Hexachloroethane	mg/L	<0.1
Nitrobenzene	mg/L	<0.1
Pyridine	mg/L	<0.1
3&4-Methyl Phenol	mg/L	<0.1
2-Methylphenol	mg/L	0.13
Pentachlorophenol	mg/L	<0.1
2,4,5-Trichlorophenol	mg/L	<0.1
2,4,6-Trichlorophenol	mg/L	<0.1



Analytical Report

Report Summary

Client: Agua Moss LLC

Chain Of Custody Number:

Samples Received: 4/10/2015 2:36:00PM

Job Number: 07117-0027

Work Order: P504035

Project Name/Location: 1st Quarter Injection Fluid

Entire Report Reviewed By:

A handwritten signature in black ink, appearing to read 'Tim Cain', is written over a horizontal line.

Tim Cain, Laboratory Manager

Date: 4/16/15

Supplement to analytical report generated on: 4/16/15 3:05 pm

The results in this report apply to the samples submitted to Envirotech's Analytical Laboratory and were analyzed in accordance with the chain of custody document supplied by you, the client, and as such are for your exclusive use only. The results in this report are based on the sample as received unless otherwise noted. Partial or incomplete reproduction of this report is prohibited, unless approved by Envirotech, Inc. If you have any questions regarding this analytical report, please don't hesitate to contact Envirotech's Laboratory Staff.



Agua Moss LLC
PO Box 600
Farmington NM, 87499

Project Name: 1st Quarter Injection Fluid
Project Number: 07117-0027
Project Manager: Isaac Garcia

Reported:
16-Apr-15 15:07

Analytical Report for Samples

Client Sample ID	Lab Sample ID	Matrix	Sampled	Received	Container
Injection Fluid	P504035-01A	Aqueous	04/10/15	04/10/15	Amber, 1L
	P504035-01B	Aqueous	04/10/15	04/10/15	Amber, 1L
	P504035-01C	Aqueous	04/10/15	04/10/15	Poly, 1000mL
	P504035-01D	Aqueous	04/10/15	04/10/15	Poly, 1000mL
	P504035-01E	Aqueous	04/10/15	04/10/15	Poly 125mL
	P504035-01F	Aqueous	04/10/15	04/10/15	Poly 500mL
	P504035-01G	Aqueous	04/10/15	04/10/15	Voa vial, 40mL, HCl
	P504035-01H	Aqueous	04/10/15	04/10/15	Voa vial, 40mL, HCl
	P504035-01I	Aqueous	04/10/15	04/10/15	Voa vial, 40mL, HCl
	P504035-01J	Aqueous	04/10/15	04/10/15	Poly 250mL; HNO3

Partial or incomplete reproduction of this report is prohibited, unless approved by Envirotech, Inc.

5796 US Highway 64, Farmington, NM 87401

Three Springs • 65 Mercado Street, Suite 115, Durango, CO 81301

Ph (505) 632-0615 Fx (505) 632-1865

Ph (970) 259-0615 Fr (800) 362-1879

envirotech-inc.com

laboratory@envirotech-inc.com



Agua Moss LLC
PO Box 600
Farmington NM, 87499

Project Name: 1st Quarter Injection Fluid
Project Number: 07117-0027
Project Manager: Isaac Garcia

Reported:
16-Apr-15 15:07

Injection Fluid
P504035-01 (Water)

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
TCLP Metals									
Arsenic	ND	0.01	mg/L	1	1516016	04/15/15	04/15/15	EPA 6010C	
Barium	21.2	0.05	mg/L	1	1516016	04/15/15	04/15/15	EPA 6010C	
Cadmium	ND	0.01	mg/L	1	1516016	04/15/15	04/15/15	EPA 6010C	
Chromium	ND	0.01	mg/L	1	1516016	04/15/15	04/15/15	EPA 6010C	
Lead	ND	0.01	mg/L	1	1516016	04/15/15	04/15/15	EPA 6010C	
Selenium	ND	0.01	mg/L	1	1516016	04/15/15	04/15/15	EPA 6010C	
Silver	ND	0.01	mg/L	1	1516016	04/15/15	04/15/15	EPA 6010C	
Cation/Anion Analysis									
pH @7.6°C	7.08		pH Units	1	1516003	04/13/15 10:55	04/13/15 10:55	150.1/4500H	H1
Electrical Conductivity	34000		umhos/cm	1	1516003	04/13/15 10:55	04/13/15 10:55	EPA 120.1	H1
Total Dissolved Solids	21800	10.0	mg/L	1	1516005	04/13/15	04/13/15	160.1/2540C	
Sodium Absorption Ratio	61.5		N/A	1	1516020	04/15/15	04/15/15	[CALC]	
Total Alkalinity as CaCO3	2900	10.0	mg/L	1	1516008	04/13/15	04/13/15	Hach Method 8203	
Bicarbonate as CaCO3	2900	10.0	mg/L	1	1516008	04/13/15	04/13/15	Hach Method 8203	
Carbonate as CaCO3	ND	10.0	mg/L	1	1516008	04/13/15	04/13/15	Hach Method 8203	
Hydroxide as CaCO3	ND	10.0	mg/L	1	1516008	04/13/15	04/13/15	Hach Method 8203	
Nitrate-N	ND	10.0	mg/L	100	1516004	04/13/15 11:07	04/13/15 13:34	EPA 300.0	H2
Nitrite-N	ND	10.0	mg/L	100	1516004	04/13/15 11:07	04/13/15 13:34	EPA 300.0	H2
Bromide	27.6	10.0	mg/L	100	1516004	04/13/15	04/13/15	EPA 300.0	
Chloride	13300	100	mg/L	100	1516004	04/13/15	04/13/15	EPA 300.0	
Fluoride	ND	10.0	mg/L	100	1516004	04/13/15	04/13/15	EPA 300.0	
o-Phosphate	ND	50.0	mg/L	100	1516004	04/13/15 11:07	04/13/15 13:34	EPA 300.0	H2
Sulfate	ND	100	mg/L	100	1516004	04/13/15	04/13/15	EPA 300.0	
Iron	0.18	0.01	mg/L	1	1516016	04/15/15	04/15/15	EPA 6010C	
Calcium	133	0.01	mg/L	1	1516016	04/15/15	04/15/15	EPA 6010C	
Magnesium	34.6	0.01	mg/L	1	1516016	04/15/15	04/15/15	EPA 6010C	
Potassium	46.2	0.01	mg/L	1	1516016	04/15/15	04/15/15	EPA 6010C	
Sodium	3080	0.01	mg/L	1	1516016	04/15/15	04/15/15	EPA 6010C	

Partial or incomplete reproduction of this report is prohibited, unless approved by Envirotech, Inc.

5796 US Highway 64, Farmington, NM 87401

Three Springs • 65 Mercado Street, Suite 115, Durango, CO 81301

Ph (505) 632-0615 Fx (505) 632-1865

Ph (970) 259-0615 Fr (800) 362-1879

envirotech-inc.com

laboratory@envirotech-inc.com



Agua Moss LLC
PO Box 600
Farmington NM, 87499

Project Name: 1st Quarter Injection Fluid
Project Number: 07117-0027
Project Manager: Isaac Garcia

Reported:
16-Apr-15 15:07

Injection Fluid
P504035-01 (Water)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Waste Characteristic									
Flash Point	>95		°C	1	1516027	04/16/15	04/16/15	ASTM D93-10a	
Reactivity	Negative		N/A	1	1516027	04/16/15	04/16/15		
Wet Chemistry									
Specific Gravity	1.003		N/A	1	1516009	04/13/15	04/13/15	STD Meth 2710F	
TCLP Mercury by EPA 7470A									
Mercury	ND	0.0002	mg/L	1	1516019	04/15/15	04/16/15	EPA 7470A	

Partial or incomplete reproduction of this report is prohibited, unless approved by Envirotech, Inc.

5796 US Highway 64, Farmington, NM 87401

Three Springs • 65 Mercado Street, Suite 115, Durango, CO 81301

Ph (505) 632-0615 Fx (505) 632-1865

Ph (970) 259-0615 Fr (800) 362-1879

envirotech-inc.com

laboratory@envirotech-inc.com



Agua Moss LLC
PO Box 600
Farmington NM, 87499

Project Name: 1st Quarter Injection Fluid
Project Number: 07117-0027
Project Manager: Isaac Garcia

Reported:
16-Apr-15 15:07

TCLP Metals - Quality Control
Envirotech Analytical Laboratory

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
---------	--------	-----------------	-------	-------------	---------------	------	-------------	-----	-----------	-------

Batch 1516016 - Metal Water/TCLP (EPA 1311) Digestion EPA 3015A

Blank (1516016-BLK1)

Prepared & Analyzed: 15-Apr-15

Arsenic	ND	0.01	mg/L
Barium	ND	0.05	"
Cadmium	ND	0.01	"
Chromium	ND	0.01	"
Lead	ND	0.01	"
Selenium	ND	0.01	"
Silver	ND	0.01	"

Duplicate (1516016-DUP1)

Source: P504038-01

Prepared & Analyzed: 15-Apr-15

Arsenic	ND	0.01	mg/L	ND			30
Barium	65.9	0.05	"	65.6		0.389	30
Cadmium	ND	0.01	"	ND			30
Chromium	0.02	0.01	"	0.02		8.04	30
Lead	ND	0.01	"	ND			30
Selenium	ND	0.01	"	ND			30
Silver	ND	0.01	"	ND			30

Matrix Spike (1516016-MS1)

Source: P504038-01

Prepared & Analyzed: 15-Apr-15

Arsenic	0.27		mg/L	0.250	0.007	103	75-125
Barium	60.8		"	5.00	56.1	94.3	75-125
Cadmium	0.23		"	0.250	0.00009	91.6	75-125
Chromium	0.47		"	0.500	0.02	90.2	75-125
Lead	0.44		"	0.500	0.003	87.7	75-125
Selenium	0.10		"	0.100	0.006	92.8	75-125
Silver	0.09		"	0.100	0.0002	88.4	75-125

Partial or incomplete reproduction of this report is prohibited, unless approved by Envirotech, Inc.

5796 US Highway 64, Farmington, NM 87401

Ph (505) 632-0615 Fx (505) 632-1865

Three Springs • 65 Mercado Street, Suite 115, Durango, CO 81301

Ph (970) 259-0615 Fr (800) 362-1879

envirotech-inc.com

laboratory@envirotech-inc.com



Agua Moss LLC
PO Box 600
Farmington NM, 87499

Project Name: 1st Quarter Injection Fluid
Project Number: 07117-0027
Project Manager: Isaac Garcia

Reported:
16-Apr-15 15:07

Cation/Anion Analysis - Quality Control
Envirotech Analytical Laboratory

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
---------	--------	-----------------	-------	-------------	---------------	------	-------------	-----	-----------	-------

Batch 1516004 - Anion Extraction EPA 300.0

Blank (1516004-BLK1)

Prepared & Analyzed: 13-Apr-15

Nitrate-N	ND	0.10	mg/L
Nitrite-N	ND	0.10	"
Bromide	ND	0.10	"
Chloride	ND	1.00	"
Fluoride	ND	0.10	"
o-Phosphate	ND	0.50	"
Sulfate	ND	1.00	"

LCS (1516004-BS1)

Prepared & Analyzed: 13-Apr-15

Nitrate-N	4.79	0.10	mg/L	5.00	95.8	90-110
Nitrite-N	5.05	0.10	"	5.00	101	90-110
Bromide	4.75	0.10	"	5.00	95.0	90-110
Chloride	50.9	1.00	"	50.0	102	90-110
Fluoride	5.06	0.10	"	5.00	101	90-110
o-Phosphate	24.1	0.50	"	25.0	96.5	90-110
Sulfate	49.8	1.00	"	50.0	99.6	90-110

Matrix Spike (1516004-MS1)

Source: P504035-01

Prepared & Analyzed: 13-Apr-15

Nitrate-N	483	10.0	mg/L	500	ND	96.5	80-120
Nitrite-N	503	10.0	"	500	ND	101	80-120
Bromide	512	10.0	"	500	27.6	97.0	80-120
Chloride	18400	100	"	5000	13300	103	80-120
Fluoride	517	10.0	"	500	ND	103	80-120
o-Phosphate	2440	50.0	"	2500	ND	97.5	80-120
Sulfate	5040	100	"	5000	ND	101	80-120

Matrix Spike Dup (1516004-MSD1)

Source: P504035-01

Prepared & Analyzed: 13-Apr-15

Nitrate-N	484	10.0	mg/L	500	ND	96.8	80-120	0.290	20
Nitrite-N	505	10.0	"	500	ND	101	80-120	0.516	20
Bromide	512	10.0	"	500	27.6	96.8	80-120	0.117	20
Chloride	18300	100	"	5000	13300	99.4	80-120	0.862	20
Fluoride	517	10.0	"	500	ND	103	80-120	0.0387	20
o-Phosphate	2440	50.0	"	2500	ND	97.7	80-120	0.254	20
Sulfate	5050	100	"	5000	ND	101	80-120	0.238	20

Partial or incomplete reproduction of this report is prohibited, unless approved by Envirotech, Inc.

5796 US Highway 64, Farmington, NM 87401

Three Springs - 65 Mercado Street, Suite 115, Durango, CO 81301

Ph (505) 632-0615 Fx (505) 632-1865

Ph (970) 259-0615 Fr (800) 362-1879

envirotech-inc.com

laboratory@envirotech-inc.com



Agua Moss LLC
PO Box 600
Farmington NM, 87499

Project Name: 1st Quarter Injection Fluid
Project Number: 07117-0027
Project Manager: Isaac Garcia

Reported:
16-Apr-15 15:07

TCLP Mercury by EPA 7470A - Quality Control

Envirotech Analytical Laboratory

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 1516019 - Mercury Water/TCLP Digestion KMNO4										
Blank (1516019-BLK1)				Prepared: 15-Apr-15 Analyzed: 16-Apr-15						
Mercury	ND	0.0002	mg/L							
LCS (1516019-BS1)				Prepared: 15-Apr-15 Analyzed: 16-Apr-15						
Mercury	0.002	0.0002	mg/L	0.00229		103	80-120			
Matrix Spike (1516019-MS1)				Source: P504035-01 Prepared: 15-Apr-15 Analyzed: 16-Apr-15						
Mercury	ND	0.0002	mg/L	0.00229	ND		75-125			SPK1
Matrix Spike Dup (1516019-MSD1)				Source: P504035-01 Prepared: 15-Apr-15 Analyzed: 16-Apr-15						
Mercury	ND	0.0002	mg/L	0.00229	ND		75-125	15		SPK1

Partial or incomplete reproduction of this report is prohibited, unless approved by Envirotech, Inc.

5796 US Highway 64, Farmington, NM 87401

Three Springs - 65 Mercado Street, Suite 115, Durango, CO 81301

Ph (505) 632-0615 Fx (505) 632-1865

Ph (970) 259-0615 Fr (800) 362-1879

envirotech-inc.com

laboratory@envirotech-inc.com



Agua Moss LLC
PO Box 600
Farmington NM, 87499

Project Name: 1st Quarter Injection Fluid
Project Number: 07117-0027
Project Manager: Isaac Garcia

Reported:
16-Apr-15 15:07

Notes and Definitions

SPK1 The spike recovery is outside of quality control limits.

H2 Sample was analyzed after regulatory hold-time exceeded for target analyte.

H1 Sample was received after regulatory hold-time exceeded for target analyte.

FP1 >95

DET Analyte DETECTED

ND Analyte NOT DETECTED at or above the reporting limit

NR Not Reported

dry Sample results reported on a dry weight basis

RPD Relative Percent Difference

Partial or incomplete reproduction of this report is prohibited, unless approved by Envirotech, Inc.

5796 US Highway 64, Farmington, NM 87401

Three Springs • 65 Mercado Street, Suite 115, Durango, CO 81301

Ph (505) 632-0615 Fx (505) 632-1865

Ph (970) 259-0615 Fr (800) 362-1879

envirotech-inc.com
laboratory@envirotech-inc.com

Client: Aqua Moss
 Project: 1st Quarter Rejection Fluid sampling
 Sampler: P. Garcia
 Phone: _____
 Email(s): Isaac Co.
 Project Manager: Greg Crabtree

RUSH?
☒ 1d
☐ 3d

Page 1 of 1

Sample ID				Sample Date	Sample Time	Matrix	Containers QTY - Vol/TYPE/Preservative	GRO/DI	BTEX by	TPH by	Chloride	Coliform	TCL	RCI	Reef	Reef	Correct
Injection Fluid				4/10/15	1:40	A	1-500 ml/poly/cool 3 40ml vials HCL 1-200 ml/poly H2O2					X					1
							1-125 /poly/cool						X				1
							1-Liter/poly/cool							X			1
							1-Liter/poly/cool								X		1
																	</

April 15, 2015

EnviroTech- NM

Sample Delivery Group: L758699
Samples Received: 04/11/2015
Project Number: 07117-0027
Description: 1st Quarter Injection Fluid Sampling
Site: P504035
Report To: Lynn Cook
5796 US. Highway 64
Farmington, NM 87401

Entire Report Reviewed By:



Daphne Richards
Technical Service Representative

Results relate only to the items tested or calibrated and are reported as rounded values. This test report shall not be reproduced, except in full, without written approval of the laboratory. Where applicable, sampling conducted by ESC is performed per guidance provided in laboratory standard operating procedures: 060302, 060303, and 060304.

TABLE OF CONTENTS

ONE LAB. NATIONWIDE.



¹Cp: Cover Page	1
²Tc: Table of Contents	2
³Ss: Sample Summary	3
⁴Cn: Case Narrative	4
⁵Sr: Sample Results	5
INJECTION FLUID L758699-01	5
⁶Qc: Quality Control Summary	6
Wet Chemistry by Method 9012B/SW846 7.3.2	6
Wet Chemistry by Method 9034/9030B	7
Volatile Organic Compounds (GC/MS) by Method 8260B	8
Semi Volatile Organic Compounds (GC/MS) by Method 8270C	10
⁷Gl: Glossary of Terms	12
⁸Al: Accreditations & Locations	13
⁹Sc: Chain of Custody	14

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc

SAMPLE SUMMARY

ONE LAB. NATIONWIDE.



INJECTION FLUID L758699-01 WW

Collected by
I. Garcia

Collected date/time
04/10/15 13:40

Received date/time
04/11/15 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analysis Analyst
Preparation by Method 1311	WG781700	1	04/13/15 11:49	04/13/15 15:06	LJN
Preparation by Method 1311	WG781701	1	04/13/15 11:38	04/13/15 15:06	LJN
Semi Volatile Organic Compounds (GC/MS) by Method 8270C	WG781730	1	04/14/15 17:32	04/15/15 07:42	ADF
Volatile Organic Compounds (GC/MS) by Method 8260B	WG781992	1	04/14/15 12:42	04/14/15 12:42	MCB
Wet Chemistry by Method 9012B/SW846 7.3.2	WG781589	1	04/14/15 11:35	04/14/15 14:26	MCG
Wet Chemistry by Method 9034/9030B	WG781590	1	04/14/15 11:40	04/14/15 14:59	AS

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc

CASE NARRATIVE

ONE LAB. NATIONWIDE.



All sample aliquots were received at the correct temperature, in the proper containers, with the appropriate preservatives, and within method specified holding times. All Method and Batch Quality Control are within established criteria except where addressed in this case narrative, a non-conformance form or properly qualified within the sample results. By my digital signature below, I affirm to the best of my knowledge, all problems/anomalies observed by the laboratory as having the potential to affect the quality of the data have been identified by the laboratory, and no information or data have been knowingly withheld that would affect the quality of the data.

Daphne R Richards

Daphne Richards
Technical Service Representative

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc

Preparation by Method 1311

Analyte	Result	Qualifier	Prep date / time	Batch
TCLP Extraction	-		4/13/2015 11:38:19 AM	WG781701
TCLP ZHE Extraction	-		4/13/2015 11:49:23 AM	WG781700

Wet Chemistry by Method 9012B/SW846 7.3.2

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Reactive CN (SW846 7.3.3.2)	ND		0.125	1	04/14/2015 14:26	WG781589

Wet Chemistry by Method 9034/9030B

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Reactive Sulf. (SW846 7.3.4.1)	ND		25.0	1	04/14/2015 14:59	WG781590

Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result mg/l	Qualifier	RDL mg/l	Limit mg/l	Dilution	Analysis date / time	Batch
Benzene	7.67	V	0.0500	0.50	1	04/14/2015 12:42	WG781992
Carbon tetrachloride	ND		0.0500	0.50	1	04/14/2015 12:42	WG781992
Chlorobenzene	ND		0.0500	100	1	04/14/2015 12:42	WG781992
Chloroform	ND		0.250	6	1	04/14/2015 12:42	WG781992
1,2-Dichloroethane	ND		0.0500	0.50	1	04/14/2015 12:42	WG781992
1,1-Dichloroethene	ND		0.0500	0.70	1	04/14/2015 12:42	WG781992
2-Butanone (MEK)	ND	J4	0.500	200	1	04/14/2015 12:42	WG781992
Tetrachloroethene	ND		0.0500	0.70	1	04/14/2015 12:42	WG781992
Trichloroethene	ND		0.0500	0.50	1	04/14/2015 12:42	WG781992
Vinyl chloride	ND		0.0500	0.20	1	04/14/2015 12:42	WG781992
(S) Toluene-d8	104		88.5-111	114		04/14/2015 12:42	WG781992
(S) Dibromofluoromethane	102		78.3-121	125		04/14/2015 12:42	WG781992
(S) α,α,α-Trifluorotoluene	103		85.0-114	114		04/14/2015 12:42	WG781992
(S) 4-Bromofluorobenzene	99.7		71.0-126	128		04/14/2015 12:42	WG781992

Semi Volatile Organic Compounds (GC/MS) by Method 8270C

Analyte	Result mg/l	Qualifier	RDL mg/l	Limit mg/l	Dilution	Analysis date / time	Batch
1,4-Dichlorobenzene	ND		0.100	7.50	1	04/15/2015 07:42	WG781730
2,4-Dinitrotoluene	ND		0.100	0.13	1	04/15/2015 07:42	WG781730
Hexachlorobenzene	ND		0.100	0.13	1	04/15/2015 07:42	WG781730
Hexachloro-1,3-butadiene	ND		0.100	0.50	1	04/15/2015 07:42	WG781730
Hexachloroethane	ND		0.100	3	1	04/15/2015 07:42	WG781730
Nitrobenzene	ND		0.100	2	1	04/15/2015 07:42	WG781730
Pyridine	ND		0.100	5	1	04/15/2015 07:42	WG781730
3&4-Methyl Phenol	ND		0.100	400	1	04/15/2015 07:42	WG781730
2-Methylphenol	0.130		0.100	200	1	04/15/2015 07:42	WG781730
Pentachlorophenol	ND		0.100	100	1	04/15/2015 07:42	WG781730
2,4,5-Trichlorophenol	ND		0.100	400	1	04/15/2015 07:42	WG781730
2,4,6-Trichlorophenol	ND		0.100	2	1	04/15/2015 07:42	WG781730
(S) 2-Fluorophenol	34.7		10.0-77.9	87		04/15/2015 07:42	WG781730
(S) Phenol-d5	27.9		5.00-70.1	67		04/15/2015 07:42	WG781730
(S) Nitrobenzene-d5	60.0		21.8-123	120		04/15/2015 07:42	WG781730
(S) 2-Fluorobiphenyl	73.8		29.5-131	122		04/15/2015 07:42	WG781730
(S) 2,4,6-Tribromophenol	74.2		11.2-130	148		04/15/2015 07:42	WG781730
(S) p-Terphenyl-d14	79.0		29.3-137	149		04/15/2015 07:42	WG781730

Method Blank (MB)

(MB) 04/14/15 14:21

Analyte	MB Result mg/l	MB Qualifier	MB RDL mg/l
Reactive CN (SW846 7.3.3.2)	ND		0.125

L758628-01 Original Sample (OS) • Duplicate (DUP)

(OS) 04/14/15 14:22 • (DUP) 04/14/15 14:23

Analyte	Original Result mg/l	DUP Result mg/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Reactive CN (SW846 7.3.3.2)	ND	ND	1	0.00		20

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) 04/14/15 13:50 • (LCSD) 04/14/15 13:51

Analyte	Spike Amount mg/l	LCS Result mg/l	LCSD Result mg/l	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Reactive CN (SW846 7.3.3.2)	0.100	0.104	0.100	104	100	90.0-110			3.92	20

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

Method Blank (MB)

(MB) 04/14/15 14:59

Analyte	MB Result mg/l	MB Qualifier	MB RDL mg/l
Reactive Sulf.(SW846 7.3.4.1)	ND		25.0

L758628-01 Original Sample (OS) • Duplicate (DUP)

(OS) 04/14/15 14:59 • (DUP) 04/14/15 14:59

Analyte	Original Result mg/l	DUP Result mg/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Reactive Sulf.(SW846 7.3.4.1)	ND	ND	1	0.00		20

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) 04/14/15 14:59 • (LCSD) 04/14/15 14:59

Analyte	Spike Amount mg/l	LCS Result mg/l	LCSD Result mg/l	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Reactive Sulf.(SW846 7.3.4.1)	100	93.9	99.9	94.0	99.9	70.0-130			6.19	20

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

Method Blank (MB)

(MB) 04/14/15 10:51

Analyte	MB Result mg/l	MB Qualifier	MB RDL mg/l
Benzene	ND		0.0500
Carbon tetrachloride	ND		0.0500
Chlorobenzene	ND		0.0500
Chloroform	ND		0.250
1,2-Dichloroethane	ND		0.0500
1,1-Dichloroethene	ND		0.0500
2-Butanone (MEK)	ND		0.500
Tetrachloroethene	ND		0.0500
Trichloroethene	ND		0.0500
Vinyl chloride	ND		0.0500
(S) Toluene-d8	106		88.5-111
(S) Dibromofluoromethane	107		78.3-121
(S) a,a-Trifluorotoluene	104		85.0-114
(S) 4-Bromofluorobenzene	98.5		71.0-126

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) 04/14/15 09:38 • (LCSD) 04/14/15 09:56

Analyte	Spike Amount mg/l	LCS Result mg/l	LCSD Result mg/l	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Benzene	0.0250	0.0247	0.0260	98.6	104	74.8-121			5.47	20
Carbon tetrachloride	0.0250	0.0259	0.0287	104	115	70.2-123			10.2	20
Chlorobenzene	0.0250	0.0217	0.0238	87.0	95.1	78.1-119			8.90	20
Chloroform	0.0250	0.0253	0.0269	101	108	76.0-121			6.19	20
1,2-Dichloroethane	0.0250	0.0277	0.0299	111	120	68.8-124			7.63	20
1,1-Dichloroethene	0.0250	0.0268	0.0284	107	114	67.8-129			5.90	20
2-Butanone (MEK)	0.125	0.195	0.194	156	155	55.0-149	J4	J4	0.420	20
Tetrachloroethene	0.0250	0.0216	0.0230	86.5	92.0	72.6-126			6.12	20
Trichloroethene	0.0250	0.0234	0.0250	93.8	100	77.7-118			6.48	20
Vinyl chloride	0.0250	0.0234	0.0262	93.5	105	65.9-128			11.6	20
(S) Toluene-d8				109	100	88.5-111				
(S) Dibromofluoromethane				107	109	78.3-121				
(S) a,a-Trifluorotoluene				105	101	85.0-114				
(S) 4-Bromofluorobenzene				96.5	104	71.0-126				

L758699-01

L757979-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) 04/14/15 12:24 • (MS) 04/14/15 13:00 • (MSD) 04/14/15 13:19

Analyte	Spike Amount mg/l	Original Result mg/l	MS Result mg/l	MSD Result mg/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Benzene	1.25	ND	1.30	1.25	104	99.8	1	54.3-133			4.34	20
Carbon tetrachloride	1.25	ND	1.41	1.36	113	109	1	55.7-134			3.99	20
Chlorobenzene	1.25	ND	1.13	1.13	90.4	90.7	1	67.0-125			0.400	20.3
Chloroform	1.25	ND	1.32	1.30	106	104	1	63.0-129			1.80	20
1,2-Dichloroethane	1.25	ND	1.38	1.37	111	110	1	60.0-126			0.650	20
1,1-Dichloroethene	1.25	ND	1.43	1.40	115	112	1	51.1-140			2.56	20.2
2-Butanone (MEK)	6.25	ND	7.21	7.06	115	113	1	22.4-138			2.06	27
Tetrachloroethene	1.25	ND	1.10	1.12	87.9	89.4	1	53.0-139			1.68	20
Trichloroethene	1.25	ND	1.20	1.21	95.8	96.6	1	44.1-149			0.750	20
Vinyl chloride	1.25	ND	1.42	1.39	114	111	1	47.8-137			2.07	20
(S) Toluene-d8					107	105		88.5-111				
(S) Dibromofluoromethane					112	109		78.3-121				
(S) a,a,-Trifluorotoluene					102	106		85.0-114				
(S) 4-Bromofluorobenzene					98.6	99.7		71.0-126				

L758699-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) 04/14/15 12:42 • (MS) 04/14/15 13:37 • (MSD) 04/14/15 13:55

Analyte	Spike Amount mg/l	Original Result mg/l	MS Result mg/l	MSD Result mg/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Benzene	1.25	7.67	8.95	8.32	102	52.3	1	54.3-133		V	7.24	20
Carbon tetrachloride	1.25	ND	1.35	1.35	108	108	1	55.7-134			0.160	20
Chlorobenzene	1.25	ND	1.15	1.12	91.8	89.4	1	67.0-125			2.68	20.3
Chloroform	1.25	ND	1.29	1.33	103	107	1	63.0-129			3.21	20
1,2-Dichloroethane	1.25	ND	1.37	1.40	110	112	1	60.0-126			1.94	20
1,1-Dichloroethene	1.25	ND	1.35	1.35	108	108	1	51.1-140			0.280	20.2
2-Butanone (MEK)	6.25	ND	7.00	7.00	112	112	1	22.4-138			0.0800	27
Tetrachloroethene	1.25	ND	1.20	1.15	95.6	92.2	1	53.0-139			3.61	20
Trichloroethene	1.25	ND	1.22	1.18	97.6	94.5	1	44.1-149			3.27	20
Vinyl chloride	1.25	ND	1.38	1.36	111	109	1	47.8-137			1.88	20
(S) Toluene-d8					103	107		88.5-111				
(S) Dibromofluoromethane					103	107		78.3-121				
(S) a,a,-Trifluorotoluene					104	103		85.0-114				
(S) 4-Bromofluorobenzene					99.9	97.1		71.0-126				

Method Blank (MB)

(MB) 04/15/15 02:37

Analyte	MB Result mg/l	MB Qualifier	MB RDL mg/l
1,4-Dichlorobenzene	ND	0.100	0.100
2,4-Dinitrotoluene	ND	0.100	0.100
Hexachlorobenzene	ND	0.100	0.100
Hexachloro-1,3-butadiene	ND	0.100	0.100
Hexachloroethane	ND	0.100	0.100
Nitrobenzene	ND	0.100	0.100
Pyridine	ND	0.100	0.100
2-Methylphenol	ND	0.100	0.100
3&4-Methyl Phenol	ND	0.100	0.100
Pentachlorophenol	ND	0.100	0.100
2,4,5-Trichlorophenol	ND	0.100	0.100
2,4,6-Trichlorophenol	ND	0.100	0.100
(S) Nitrobenzene-d5	48.6		21.8-123
(S) 2-Fluorobiphenyl	59.0		29.5-131
(S) p-Terphenyl-d14	66.4		29.3-137
(S) Phenol-d5	29.3		5.00-70.1
(S) 2-Fluorophenol	38.2		10.0-77.9
(S) 2,4,6-Tribromophenol	70.8		11.2-130

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) 04/15/15 01:27 • (LCSD) 04/15/15 01:50

Analyte	Spike Amount mg/l	LCS Result mg/l	LCSD Result mg/l	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
1,4-Dichlorobenzene	0.0250	0.0132	0.0133	52.9	53.3	21.0-89.4	0.710	0.710	32.6	32.6
2,4-Dinitrotoluene	0.0250	0.0187	0.0186	74.9	74.6	31.2-105	0.440	0.440	22	22
Hexachlorobenzene	0.0250	0.0183	0.0190	73.4	76.1	38.5-116	3.62	3.62	20.1	20.1
Hexachloro-1,3-butadiene	0.0250	0.0138	0.0154	55.2	61.7	16.1-104	11.2	11.2	31.2	31.2
Hexachloroethane	0.0250	0.0128	0.0133	51.3	53.1	16.5-89.8	3.50	3.50	30.7	30.7
Nitrobenzene	0.0250	0.0152	0.0146	60.9	58.4	31.4-106	4.11	4.11	25.7	25.7
Pyridine	0.0250	0.00604	0.00811	24.2	32.4	13.5-58.9	29.3	29.3	32.5	32.5
2-Methylphenol	0.0250	0.0130	0.0132	51.9	52.9	26.4-86.9	1.91	1.91	26.5	26.5
3&4-Methyl Phenol	0.0250	0.0141	0.0132	56.3	52.9	27.9-92.0	6.31	6.31	27	27
Pentachlorophenol	0.0250	0.00925	0.00811	37.0	32.4	10.0-97.4	13.1	13.1	35.1	35.1
2,4,5-Trichlorophenol	0.0250	0.0189	0.0179	75.7	71.6	34.9-112	5.51	5.51	23.9	23.9
2,4,6-Trichlorophenol	0.0250	0.0181	0.0176	72.4	70.3	29.8-107	3.01	3.01	24.1	24.1
(S) Nitrobenzene-d5				55.2	59.4	21.8-123				
(S) 2-Fluorobiphenyl				72.0	65.0	29.5-131				

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) 04/15/15 01:27 • (LCSD) 04/15/15 01:50

Analyte	Spike Amount mg/l	LCS Result mg/l	LCSD Result mg/l	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
(S) p-Terphenyl-d14			65.7	66.8	29.3-137					
(S) Phenol-d5			28.9	25.5	5.00-70.1					
(S) 2-Fluorophenol			38.2	31.1	10.0-77.9					
(S) 2,4,6-Tribromophenol			73.7	77.0	11.2-130					

L757979-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) 04/15/15 04:35 • (MS) 04/15/15 04:58 • (MSD) 04/15/15 05:22

Analyte	Spike Amount mg/l	Original Result mg/l	MS Result mg/l	MSD Result mg/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
1,4-Dichlorobenzene	0.250	ND	0.154	0.134	61.5	53.7	1	14.0-104			13.6	36.4
2,4-Dinitrotoluene	0.250	ND	0.198	0.191	79.3	76.4	1	16.2-135			3.74	20.6
Hexachlorobenzene	0.250	ND	0.202	0.202	80.8	80.8	1	31.9-135			0.0500	20
Hexachloro-1,3-butadiene	0.250	ND	0.167	0.149	66.6	59.6	1	15.7-109			11.1	37.6
Hexachloroethane	0.250	ND	0.138	0.131	55.0	52.5	1	10.4-105			4.74	40
Nitrobenzene	0.250	ND	0.166	0.152	66.4	60.9	1	23.1-121			8.56	29
Pyridine	0.250	ND	0.0886	0.0826	35.4	33.0	1	10.0-77.8			6.93	38.8
2-Methylphenol	0.250	ND	0.140	0.130	56.2	52.1	1	10.0-133			7.47	40
3&4-Methyl Phenol	0.250	ND	0.144	0.136	57.6	54.4	1	17.4-100			5.86	27.7
Pentachlorophenol	0.250	ND	0.114	0.125	45.5	50.1	1	10.0-108			9.59	40
2,4,5-Trichlorophenol	0.250	ND	0.186	0.180	74.2	72.0	1	30.6-120			2.99	33.8
2,4,6-Trichlorophenol	0.250	ND	0.177	0.167	70.6	66.8	1	19.1-114			5.60	29.9
(S) Nitrobenzene-d5					62.0	55.8		21.8-123				
(S) 2-Fluorobiphenyl					70.6	66.3		29.5-131				
(S) p-Terphenyl-d14					72.6	68.8		29.3-137				
(S) Phenol-d5					30.7	28.6		5.00-70.1				
(S) 2-Fluorophenol					44.1	43.4		10.0-77.9				
(S) 2,4,6-Tribromophenol					87.2	79.1		11.2-130				



Abbreviations and Definitions

SDG	Sample Delivery Group.
MDL	Method Detection Limit.
RDL	Reported Detection Limit.
ND,U	Not detected at the Reporting Limit (or MDL where applicable).
RPD	Relative Percent Difference.
(dry)	Results are reported based on the dry weight of the sample. [this will only be present on a dry report basis for soils].
Original Sample	The non-spiked sample in the prep batch used to determine the Relative Percent Difference (RPD) from a quality control sample. The Original Sample may not be included within the reported SDG.
(S)	Surrogate (Surrogate Standard) - Analytes added to every blank, sample, Laboratory Control Sample/Duplicate and Matrix Spike/Duplicate; used to evaluate analytical efficiency by measuring recovery. Surrogates are not expected to be detected in all environmental media.
Rec.	Recovery.
SDL	Sample Detection Limit.
MQL	Method Quantitation Limit.
Unadj. MQL	Unadjusted Method Quantitation Limit.

Qualifier Description

J4	The associated batch QC was outside the established quality control range for accuracy.
V	The sample concentration is too high to evaluate accurate spike recoveries.

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

ACCREDITATIONS & LOCATIONS

ONE LAB. NATIONWIDE.

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc

ESC Lab Sciences is the only environmental laboratory accredited/certified to support your work nationwide from one location. One phone call, one point of contact, one laboratory. No other lab is as accessible or prepared to handle your needs throughout the country. Our capacity and capability from our single location laboratory is comparable to the collective totals of the network laboratories in our industry. The most significant benefit to our "one location" design is the design of our laboratory campus. The model is conducive to accelerated productivity, decreasing turn-around time, and preventing cross contamination, thus protecting sample integrity. Our focus on premium quality and prompt service allows us to be **YOUR LAB OF CHOICE**.

State Accreditations

Alabama	40660	Nevada	TN-03-2002-34
Alaska	UST-080	New Hampshire	2975
Arizona	AZ0612	New Jersey-NELAP	TN002
Arkansas	88-0469	New Mexico	TN00003
California	01157CA	New York	11742
Colorado	TN00003	North Carolina	Env375
Connecticut	PH-0197	North Carolina ¹	DW21704
Florida	E87487	North Carolina ²	41
Georgia	NELAP	North Dakota	R-140
Georgia ¹	923	Ohio-VAP	CL0069
Idaho	TN00003	Oklahoma	9915
Illinois	200008	Oregon	TN200002
Indiana	C-TN-01	Pennsylvania	68-02979
Iowa	364	Rhode Island	221
Kansas	E-10277	South Carolina	84004
Kentucky ¹	90010	South Dakota	n/a
Kentucky ²	16	Tennessee ^{1,4}	2006
Louisiana	AI30792	Texas	T 104704245-07-TX
Maine	TN0002	Texas ⁵	LAB0152
Maryland	324	Utah	6157585858
Massachusetts	M-TN003	Vermont	VT2006
Michigan	9958	Virginia	109
Minnesota	047-999-395	Washington	C1915
Mississippi	TN00003	West Virginia	233
Missouri	340	Wisconsin	9980939910
Montana	CERT0086	Wyoming	A2LA
Nebraska	NE-OS-15-05		

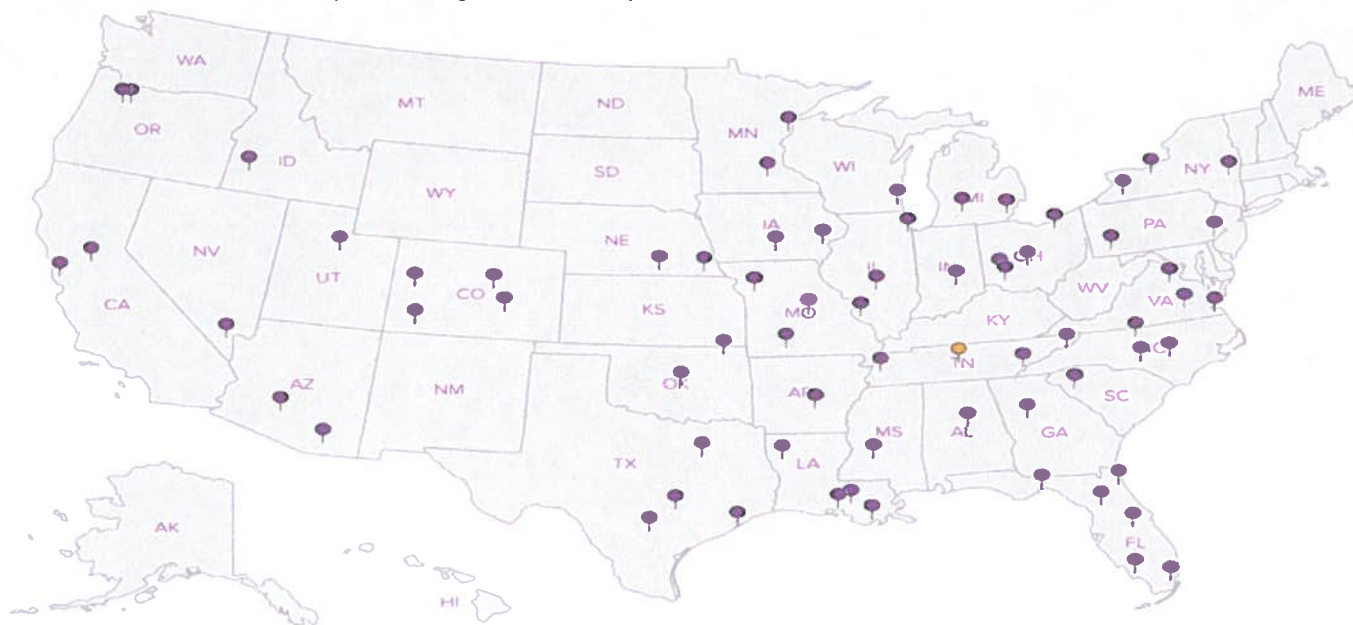
¹ Drinking Water ² Underground Storage Tanks ³ Aquatic Toxicity ⁴ Chemical/Microbiological ⁵ Mold ⁶ Accreditation not applicable

Third Party & Federal Accreditations

A2LA - ISO 17025	1461.01	AIHA	100789
Canada	1461.01	DOD	1461.01
EPA-Crypto	TN00003	USDA	S-67674

Our Locations

ESC Lab Sciences has sixty-four client support centers that provide sample pickup and/or the delivery of sampling supplies. If you would like assistance from one of our support offices, please contact our main office. ESC Lab Sciences performs all testing at our central laboratory.



Analysis / Container / Preservative

ESC
L.A.D. S.C.I.E.N.C.E.S.
12065 Lebanon Rd
Mount Juliet, TN 37122
Phone: 615-750-5858
Phone: 800-767-5859
Fax: 615-758-5859

Lab: **L780699**
T: **B076**
Account: **ENVIROFNM**
Template:
Prelogin:
TSR: **288 - Daphne Richards**
PB:
Shipped Via:
Rem./Contaminant
Sample # (lab only):

Billing Information:
Doris Moore
5796 US. Highway 64
Farmington, NM 87401

Report to: **Tim A Lynn**
Email To:

Project: **for Drifter Injection Fluid Sampling**

Description: **for Drifter Injection Fluid Sampling**

Phone: **505-632-0615**

Fax:

Collected by (print): **I. Garcia**

Collected by (signature):

Client Project #
07117-0027
Site/Facility ID #
P504035
Rush? (Lab MUST Be Notified)
Same Day200%
Next Day100%
Two Day50%
Three Day25%

Immediately Packed on Ice **N - y X**

Sample ID

Injection Fluid

Comp/Grab

Matrix • **WW**

Depth

Date

Time

Email? ☐ No ☐ Yes
FAX? ☐ No ☐ Yes

No. of Entrs

Date Results Needed

P.O. # **142018**

City/State Collected:

Lab Project #

* Matrix: **SS - Soil GW - Groundwater WW - WasteWater DW - Drinking Water OT - Other**

Remarks:

6204 3739 2099

Relinquished by: (Signature)

Date: **4/10/15**

Time: **1700**

Received by: (Signature) **FedEx**

Received by: (Signature)

Samples returned via: ☐ FedEx ☐ Courier ☐ UPS

Condition:

(lab use only)

Hold #

Relinquished by: (Signature)

Date:

Time:

Received by: (Signature)

Received by: (Signature)

Samples returned via: ☐ FedEx ☐ Courier ☐ UPS

Condition:

(lab use only)

Hold #

Relinquished by: (Signature)

Date:

Time:

Received by: (Signature)

Received by: (Signature)

Samples returned via: ☐ FedEx ☐ Courier ☐ UPS

Condition:

(lab use only)

Hold #

Relinquished by: (Signature)

Date:

Time:

Received by: (Signature)

Received by: (Signature)

Samples returned via: ☐ FedEx ☐ Courier ☐ UPS

Condition:

(lab use only)

Hold #

Relinquished by: (Signature)

Date:

Time:

Received by: (Signature)

Received by: (Signature)

Samples returned via: ☐ FedEx ☐ Courier ☐ UPS

Condition:

(lab use only)

Hold #

Relinquished by: (Signature)

Date:

Time:

Received by: (Signature)

Received by: (Signature)

Samples returned via: ☐ FedEx ☐ Courier ☐ UPS

Condition:

(lab use only)

Hold #

Relinquished by: (Signature)

Date:

Time:

Received by: (Signature)

Received by: (Signature)

Samples returned via: ☐ FedEx ☐ Courier ☐ UPS

Condition:

(lab use only)

Hold #

Relinquished by: (Signature)

Date:

Time:

Received by: (Signature)

Received by: (Signature)

Samples returned via: ☐ FedEx ☐ Courier ☐ UPS

Condition:

(lab use only)

Hold #

Relinquished by: (Signature)

Date:

Time:

Received by: (Signature)

Received by: (Signature)

Samples returned via: ☐ FedEx ☐ Courier ☐ UPS

Condition:

(lab use only)

Hold #

Relinquished by: (Signature)

Date:

Time:

Received by: (Signature)

Received by: (Signature)

Samples returned via: ☐ FedEx ☐ Courier ☐ UPS

Condition:

(lab use only)

Hold #

Relinquished by: (Signature)

Date:

Time:

Received by: (Signature)

Received by: (Signature)

Samples returned via: ☐ FedEx ☐ Courier ☐ UPS

Condition:

(lab use only)

Hold #

Relinquished by: (Signature)

Date:

Time:

Received by: (Signature)

Received by: (Signature)

Samples returned via: ☐ FedEx ☐ Courier ☐ UPS

Condition:

(lab use only)

Hold #

Relinquished by: (Signature)

Date:

Time:

Received by: (Signature)

Received by: (Signature)

Samples returned via: ☐ FedEx ☐ Courier ☐ UPS

Condition:

(lab use only)

Hold #

Relinquished by: (Signature)

Date:

Time:

Received by: (Signature)

Received by: (Signature)

Samples returned via: ☐ FedEx ☐ Courier ☐ UPS

Condition:

(lab use only)

Hold #

Relinquished by: (Signature)

Date:

Time:

Received by: (Signature)

Received by: (Signature)

Samples returned via: ☐ FedEx ☐ Courier ☐ UPS

Condition:

(lab use only)

Hold #

Relinquished by: (Signature)

Date:

Time:

Received by: (Signature)

Received by: (Signature)

Samples returned via: ☐ FedEx ☐ Courier ☐ UPS

Condition:

(lab use only)

Hold #

Relinquished by: (Signature)

Date:

Time:

Received by: (Signature)

Received by: (Signature)

Samples returned via: ☐ FedEx ☐ Courier ☐ UPS

Condition:

(lab use only)

Hold #

Relinquished by: (Signature)

Date:

Time:

Received by: (Signature)

Received by: (Signature)

Samples returned via: ☐ FedEx ☐ Courier ☐ UPS

Condition:

(lab use only)

Hold #

Relinquished by: (Signature)

Date:

Time:

Received by: (Signature)

Received by: (Signature)

Samples returned via: ☐ FedEx ☐ Courier ☐ UPS

Condition:

(lab use only)

Hold #

Relinquished by: (Signature)

Date:

Time:

Received by: (Signature)

Received by: (Signature)

Samples returned via: ☐ FedEx ☐ Courier ☐ UPS

Condition:

(lab use only)

Hold #

Relinquished by: (Signature)

Date:

Time:

Received by: (Signature)

Received by: (Signature)

Samples returned via: ☐ FedEx ☐ Courier ☐ UPS

Condition:

(lab use only)

Hold #

Relinquished by: (Signature)

Date:

Time:

Received by: (Signature)

Received by: (Signature)

Samples returned via: ☐ FedEx ☐ Courier ☐ UPS

Condition:

(lab use only)

Hold #

Relinquished by: (Signature)

Date:

Time:

Received by: (Signature)

Received by: (Signature)

Samples returned via: ☐ FedEx ☐ Courier ☐ UPS

Condition:

(lab use only)

Hold #

Relinquished by: (Signature)

Date:

Time:

Received by: (Signature)

Received by: (Signature)

Samples returned via: ☐ FedEx ☐ Courier ☐ UPS

Condition:

(lab use only)

Hold #

Relinquished by: (Signature)

Date:

Time:

Received by: (Signature)

Received by: (Signature)

Samples returned via: ☐ FedEx ☐ Courier ☐ UPS

Condition:

(lab use only)

Hold #

Relinquished by: (Signature)

Date:

Time:

Received by: (Signature)

Received by: (Signature)

Samples returned via: ☐ FedEx ☐ Courier ☐ UPS

Condition:

(lab use only)

Hold #

Relinquished by: (Signature)

Date:

Time:

Received by: (Signature)

Received by: (Signature)

Samples returned via: ☐ FedEx ☐ Courier ☐ UPS

Condition:

(lab use only)

Hold #

Relinquished by: (Signature)

Date:

Time:

Received by: (Signature)

Received by: (Signature)

Samples returned via: ☐ FedEx ☐ Courier ☐ UPS

Condition:

(lab use only)

Hold #

Relinquished by: (Signature)

Date:

Time:

Received by: (Signature)

Received by: (Signature)

Samples returned via: ☐ FedEx ☐ Courier ☐ UPS

Condition:

(lab use only)

Hold #

Relinquished by: (Signature)

Date:

Time:

Received by: (Signature)

Received by: (Signature)

Samples returned via: ☐ FedEx ☐ Courier ☐ UPS

Condition:

(lab use only)

Hold #

Relinquished by: (Signature)

Date:

Time:

Received by: (Signature)

Received by: (Signature)

Samples returned via: ☐ FedEx ☐ Courier ☐ UPS

Condition:

(lab use only)

Hold #

Relinquished by: (Signature)

Date:

Time:

Received by: (Signature)



July 23, 2015

Number: 07117-0029

Ms. Philana Thompson
Regulatory Compliance
Agua Moss
P.O. Box 600
Farmington, New Mexico 87499

Phone: (505) 324-5336

RE: SECOND QUARTER INJECTED FLUIDS SAMPLING AND ANALYTICAL RESULTS, AGUA MOSS, SAN JUAN COUNTY, NEW MEXICO

Dear Ms. Thompson:

Enclosed please find the Table 1, Summary of Analytical Results, analytical results, and field notes for the injected fluids located at the Agua Moss Facility in Section 2, Township 29 North, Range 12 West, San Juan County, New Mexico. Activities included sample collection and analysis, documentation and reporting, in alignment with the analyses and procedures that were in accordance with the Agua Moss, LLC Sunco Disposal Well No. 1 Discharge Permit UICI-005.

If you have any questions or require additional information, please contact our office at (505) 632-0615.

Respectfully submitted,
ENVIROTECH, INC.

A handwritten signature in blue ink, appearing to read 'Isaac Garcia', is written over a horizontal line.

Isaac Garcia
Environmental Field Technician
igarcia@envirotech-inc.com

Enclosures: Table 1, Summary of Analytical Results
Analytical Results
Field Notes

Cc: Client File Number: 07117

Table 1, Summary of Analytical Results
Second Quarter Injected Fluids Sampling
Agua Moss
San Juan County, New Mexico
Project No. 07117-0029

Contaminant of Concern	Units	Sample Location Description
		Injection Fluid (4/10/15)
pH*	(s.u.)	7.11
ORP*	mV	-124.2
Specific Conductance*	mS	49.54
Temperature*	°F	71.46
Specific Gravity	ratio	1.017
Conductivity @ 25 °C	umhos/cm	40500
Total Dissolved Solids @ 180 °C	mg/L	30900
Sodium Absorption Ratio	ratio	79.7
Total Alkalinity as CaCO ₃	mg/L	3000
Total Hardness as CaCO ₃	mg/L	1050
Bicarbonate as CaCO ₃	mg/L	3000
Carbonate as CaCO ₃	mg/L	<10
Hydroxide as CaCO ₃	mg/L	<10
Nitrate Nitrogen	mg/L	<10
Nitrite Nitrogen	mg/L	<10
Chloride	mg/L	19600
Fluoride	mg/L	<10
Phosphate	mg/L	<50
Sulfate	mg/L	121
Iron	mg/L	9.49
Calcium	mg/L	250
Magnesium	mg/L	104.0
Potassium	mg/L	102
Sodium	mg/L	5940
Bromide	mg/L	33.7
* Field Measurement		

Table 1, Summary of Analytical Results
Second Quarter Injected Fluids Sampling
Agua Moss
San Juan County, New Mexico
Project No. 07117-0029

Contaminant of Concern	Units	Sample Location Description
		Injection Fluid (4/10/15)
Flash Point	°C	>95
Reactivity		negative
Arsenic	mg/L	<0.01
Barium	mg/L	4.29
Cadmium	mg/L	<0.01
Chromium	mg/L	0.01
Lead	mg/L	<0.01
Mercury	mg/L	<0.0002
Selenium	mg/L	<0.01
Silver	mg/L	<0.01
Benzene	mg/L	0.486
Carbon Tetrachloride	mg/L	<0.05
Chlorobenzene	mg/L	<0.05
1,2-Dichloroethane	mg/L	<0.25
1,1-Dichloroethene	mg/L	<0.05
2-Butanone (MEK)	mg/L	<0.5
Tetrachloroethene	mg/L	<0.05
Trichloroethene	mg/L	<0.05
Vinyl Chloride	mg/L	<0.05
1,4-Dichlorobenzene	mg/L	<0.1
2,4-Dinitrotoluene	mg/L	<0.1
Hexachlorobenzene	mg/L	<0.1
Hexachloro-1,3-butadiene	mg/L	<0.1
Hexachloroethane	mg/L	<0.1
Nitrobenzene	mg/L	<0.1
Pyridine	mg/L	<0.1
3&4-Methyl Phenol	mg/L	<0.1
2-Methylphenol	mg/L	<0.1
Pentachlorophenol	mg/L	<0.1
2,4,5-Trichlorophenol	mg/L	<0.1
2,4,6-Trichlorophenol	mg/L	<0.1



Analytical Report

Report Summary

Client: Agua Moss LLC

Chain Of Custody Number:

Samples Received: 5/21/2015 9:25:00AM

Job Number: 07117-0029

Work Order: P505058

Project Name/Location: 2nd Qtr Injected Fluids
Sampling

Entire Report Reviewed By:

A handwritten signature in black ink, appearing to read 'Tim Cain', is written over a horizontal line.

Date: 6/10/15

Tim Cain, Laboratory Manager

The results in this report apply to the samples submitted to Envirotech's Analytical Laboratory and were analyzed in accordance with the chain of custody document supplied by you, the client, and as such are for your exclusive use only. The results in this report are based on the sample as received unless otherwise noted. Partial or incomplete reproduction of this report is prohibited, unless approved by Envirotech, Inc. If you have any questions regarding this analytical report, please don't hesitate to contact Envirotech's Laboratory Staff.

Agua Moss LLC
 PO Box 600
 Farmington NM, 87499

Project Name: 2nd Qtr Injected Fluids Sampling
 Project Number: 07117-0029
 Project Manager: Isaac Garcia

Reported:
 10-Jun-15 07:32

Analytical Report for Samples

Client Sample ID	Lab Sample ID	Matrix	Sampled	Received	Container
Injection Fluids	P505058-01A	Aqueous	05/20/15	05/21/15	Amber, 1L
	P505058-01B	Aqueous	05/20/15	05/21/15	Amber, 1L
	P505058-01C	Aqueous	05/20/15	05/21/15	Poly 500mL
	P505058-01D	Aqueous	05/20/15	05/21/15	Poly 500mL
	P505058-01E	Aqueous	05/20/15	05/21/15	Poly 500mL
	P505058-01F	Aqueous	05/20/15	05/21/15	Poly 500mL
	P505058-01G	Aqueous	05/20/15	05/21/15	Poly 500mL
	P505058-01H	Aqueous	05/20/15	05/21/15	Poly 250mL; HNO ₃
	P505058-01I	Aqueous	05/20/15	05/21/15	Poly 125mL
	P505058-01J	Aqueous	05/20/15	05/21/15	Voa vial, 40mL, HCl
	P505058-01K	Aqueous	05/20/15	05/21/15	Voa vial, 40mL, HCl
	P505058-01L	Aqueous	05/20/15	05/21/15	Voa vial, 40mL, HCl

Partial or incomplete reproduction of this report is prohibited, unless approved by Envirotech, Inc.

Agua Moss LLC
 PO Box 600
 Farmington NM, 87499

 Project Name: 2nd Qtr Injected Fluids Sampling
 Project Number: 07117-0029
 Project Manager: Isaac Garcia

 Reported:
 10-Jun-15 07:32

Injection Fluids
P505058-01 (Water)

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
TCLP Metals									
Arsenic	ND	0.01	mg/L	1	1521023	05/21/15	05/31/15	EPA 6010C	
Barium	4.29	0.05	mg/L	1	1521023	05/21/15	05/31/15	EPA 6010C	
Cadmium	ND	0.01	mg/L	1	1521023	05/21/15	05/31/15	EPA 6010C	
Chromium	0.01	0.01	mg/L	1	1521023	05/21/15	05/31/15	EPA 6010C	B
Lead	ND	0.01	mg/L	1	1521023	05/21/15	05/31/15	EPA 6010C	
Selenium	ND	0.01	mg/L	1	1521023	05/21/15	05/31/15	EPA 6010C	
Silver	ND	0.01	mg/L	1	1521023	05/21/15	05/31/15	EPA 6010C	
Cation/Anion Analysis									
pH @13.5°C	7.20		pH Units	1	1521024	05/21/15 13:14	05/21/15 13:15	150.1/4500H	H1
Electrical Conductivity	40500		umhos/cm	1	1521024	05/21/15 13:14	05/21/15 13:15	EPA 120.1	H1
Total Dissolved Solids	30900	10.0	mg/L	1	1521026	05/21/15	05/21/15	160.1/2540C	
Sodium Absorption Ratio	79.7		N/A	1	1524013	06/09/15	06/09/15	[CALC]	
Total Alkalinity as CaCO3	3000	10.0	mg/L	1	1523006	06/01/15	06/01/15	Hach Method 8203	
Total Hardness as CaCO3	1050	0.07	mg/L		[CALC]	05/21/15	05/31/15	[CALC]	
Bicarbonate as CaCO3	3000	10.0	mg/L	1	1523006	06/01/15	06/01/15	Hach Method 8203	
Carbonate as CaCO3	ND	10.0	mg/L	1	1523006	06/01/15	06/01/15	Hach Method 8203	
Hydroxide as CaCO3	ND	10.0	mg/L	1	1523006	06/01/15	06/01/15	Hach Method 8203	
Nitrate-N	ND	10.0	mg/L	100	1521025	05/21/15 13:19	05/21/15 15:45	EPA 300.0	
Nitrite-N	ND	10.0	mg/L	100	1521025	05/21/15 13:19	05/21/15 15:45	EPA 300.0	
Bromide	33.7	10.0	mg/L	100	1521025	05/21/15	05/21/15	EPA 300.0	
Chloride	19600	100	mg/L	100	1521025	05/21/15	05/21/15	EPA 300.0	
Fluoride	ND	10.0	mg/L	100	1521025	05/21/15	05/21/15	EPA 300.0	
o-Phosphate	ND	50.0	mg/L	100	1521025	05/21/15 13:19	05/21/15 15:45	EPA 300.0	
Sulfate	121	100	mg/L	100	1521025	05/21/15	05/21/15	EPA 300.0	
Iron	9.49	0.01	mg/L	1	1521023	05/21/15	05/31/15	EPA 6010C	
Calcium	250	0.01	mg/L	1	1521023	05/21/15	05/31/15	EPA 6010C	
Magnesium	104	0.01	mg/L	1	1521023	05/21/15	05/31/15	EPA 6010C	
Potassium	102	0.01	mg/L	1	1521023	05/21/15	05/31/15	EPA 6010C	
Sodium	5940	0.01	mg/L	1	1521023	05/21/15	05/31/15	EPA 6010C	E

Partial or incomplete reproduction of this report is prohibited, unless approved by Envirotech, Inc.

Agua Moss LLC
 PO Box 600
 Farmington NM, 87499

Project Name: 2nd Qtr Injected Fluids Sampling
 Project Number: 07117-0029
 Project Manager: Isaac Garcia

Reported:
 10-Jun-15 07:32

Injection Fluids
P505058-01 (Water)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Waste Characteristic									
Flash Point	>95		°C	1	1523010	06/01/15	06/01/15	ASTM D93-10a	
Reactivity	Negative		N/A	1	1523010	06/01/15	06/01/15		
Wet Chemistry									
Specific Gravity	1.017		N/A	1	1523009	06/01/15	06/01/15	STD Meth 2710F	

Partial or incomplete reproduction of this report is prohibited, unless approved by Envirotech, Inc.

Agua Moss LLC
 PO Box 600
 Farmington NM, 87499

Project Name: 2nd Qtr Injected Fluids Sampling
 Project Number: 07117-0029
 Project Manager: Isaac Garcia

Reported:
 10-Jun-15 07:32

Injection Fluids
P505058-01 (Water)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
TCLP Mercury by EPA 7470A									
Mercury	ND	0.0002	mg/L	1	1524004	05/22/15	06/09/15	EPA 7470A	

Partial or incomplete reproduction of this report is prohibited, unless approved by Envirotech, Inc.



Agua Moss LLC
PO Box 600
Farmington NM, 87499

Project Name: 2nd Qtr Injected Fluids Sampling
Project Number: 07117-0029
Project Manager: Isaac Garcia

Reported:
10-Jun-15 07:32

TCLP Metals - Quality Control
Envirotech Analytical Laboratory

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
---------	--------	-----------------	-------	-------------	---------------	------	-------------	-----	-----------	-------

Batch 1521023 - Metal Water/TCLP (EPA 1311) Digestion EPA 3015A

Blank (1521023-BLK1)

Prepared: 21-May-15 Analyzed: 31-May-15

Arsenic	ND	0.01	mg/L
Barium	ND	0.05	"
Cadmium	ND	0.01	"
Chromium	0.01	0.01	"
Lead	ND	0.01	"
Selenium	0.02	0.01	"
Silver	ND	0.01	"

Duplicate (1521023-DUP1)

Source: P505005-13

Prepared: 21-May-15 Analyzed: 31-May-15

Arsenic	0.03	0.01	mg/L	0.03	1.49	30
Barium	0.35	0.05	"	0.45	26.3	30
Cadmium	ND	0.01	"	ND		30
Chromium	ND	0.01	"	ND		30
Lead	1.36	0.01	"	1.30	4.52	30
Selenium	ND	0.01	"	ND		30
Silver	ND	0.01	"	ND		30

Matrix Spike (1521023-MS1)

Source: P505005-13

Prepared: 21-May-15 Analyzed: 31-May-15

Arsenic	0.30	mg/L	0.250	0.03	109	75-125
Barium	5.52	"	5.00	0.39	103	75-125
Cadmium	0.25	"	0.250	0.004	98.7	75-125
Chromium	0.51	"	0.500	0.006	100	75-125
Lead	1.59	"	0.500	1.11	95.7	75-125
Selenium	0.11	"	0.100	0.0004	112	75-125
Silver	0.10	"	0.100	-0.002	97.5	75-125

Partial or incomplete reproduction of this report is prohibited, unless approved by Envirotech, Inc.

5796 US Highway 64, Farmington, NM 87401

Ph (505) 632-0615 Fx (505) 632-1865

Three Springs • 65 Mercado Street, Suite 115, Durango, CO 81301

Ph (970) 259-0615 Fr (800) 362-1879

envirotech-inc.com
laboratory@envirotech-inc.com



Agua Moss LLC
PO Box 600
Farmington NM, 87499

Project Name: 2nd Qtr Injected Fluids Sampling
Project Number: 07117-0029
Project Manager: Isaac Garcia

Reported:
10-Jun-15 07:32

Cation/Anion Analysis - Quality Control
Envirotech Analytical Laboratory

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
---------	--------	-----------------	-------	-------------	---------------	------	-------------	-----	-----------	-------

Batch 1521025 - Anion Extraction EPA 300.0

Blank (1521025-BLK1)

Prepared & Analyzed: 21-May-15

Nitrate-N	ND	0.10	mg/L
Nitrite-N	ND	0.10	"
Bromide	ND	0.10	"
Chloride	ND	1.00	"
Fluoride	ND	0.10	"
o-Phosphate	ND	0.50	"
Sulfate	ND	1.00	"

LCS (1521025-BS1)

Prepared & Analyzed: 21-May-15

Nitrate-N	5.15	0.10	mg/L	5.00	103	90-110
Nitrite-N	5.29	0.10	"	5.00	106	90-110
Bromide	5.07	0.10	"	5.00	101	90-110
Chloride	51.8	1.00	"	50.0	104	90-110
Fluoride	5.29	0.10	"	5.00	106	90-110
o-Phosphate	25.6	0.50	"	25.0	102	90-110
Sulfate	51.6	1.00	"	50.0	103	90-110

Matrix Spike (1521025-MS1)

Source: P505058-01

Prepared & Analyzed: 21-May-15

Nitrate-N	519	10.0	mg/L	500	ND	104	80-120
Nitrite-N	522	10.0	"	500	ND	104	80-120
Bromide	558	10.0	"	500	33.7	105	80-120
Chloride	24300	100	"	5000	19600	93.8	80-120
Fluoride	527	10.0	"	500	ND	105	80-120
o-Phosphate	2600	50.0	"	2500	ND	104	80-120
Sulfate	5280	100	"	5000	121	103	80-120

Matrix Spike Dup (1521025-MSD1)

Source: P505058-01

Prepared & Analyzed: 21-May-15

Nitrate-N	522	10.0	mg/L	500	ND	104	80-120	0.538	20
Nitrite-N	531	10.0	"	500	ND	106	80-120	1.63	20
Bromide	560	10.0	"	500	33.7	105	80-120	0.286	20
Chloride	24300	100	"	5000	19600	93.2	80-120	0.120	20
Fluoride	529	10.0	"	500	ND	106	80-120	0.493	20
o-Phosphate	2610	50.0	"	2500	ND	104	80-120	0.572	20
Sulfate	5310	100	"	5000	121	104	80-120	0.425	20

Partial or incomplete reproduction of this report is prohibited, unless approved by Envirotech, Inc.

5796 US Highway 64, Farmington, NM 87401

Ph (505) 632-0615 Fx (505) 632-1865

Three Springs • 65 Mercado Street, Suite 115, Durango, CO 81301

Ph (970) 259-0615 Fr (800) 362-1879

envirotech-inc.com

laboratory@envirotech-inc.com



Agua Moss LLC
PO Box 600
Farmington NM, 87499

Project Name: 2nd Qtr Injected Fluids Sampling
Project Number: 07117-0029
Project Manager: Isaac Garcia

Reported:
10-Jun-15 07:32

TCLP Mercury by EPA 7470A - Quality Control
Envirotech Analytical Laboratory

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 1524004 - Mercury Water/TCLP Digestion KMNO4										
Blank (1524004-BLK1)				Prepared: 08-Jun-15 Analyzed: 09-Jun-15						
Mercury	ND	0.0002	mg/L							
LCS (1524004-BS1)				Prepared: 08-Jun-15 Analyzed: 09-Jun-15						
Mercury	0.002	0.0002	mg/L	0.00229		105	80-120			
Matrix Spike (1524004-MS1)				Source: P506026-01 Prepared: 08-Jun-15 Analyzed: 09-Jun-15						
Mercury	0.002	0.0002	mg/L	0.00229	ND	103	75-125			
Matrix Spike Dup (1524004-MSD1)				Source: P506026-01 Prepared: 08-Jun-15 Analyzed: 09-Jun-15						
Mercury	0.002	0.0002	mg/L	0.00229	ND	104	75-125	0.731	15	

Partial or incomplete reproduction of this report is prohibited, unless approved by Envirotech, Inc.

5796 US Highway 64, Farmington, NM 87401

Three Springs • 65 Mercado Street, Suite 115, Durango, CO 81301

Ph (505) 632-0615 Fx (505) 632-1865

Ph (970) 259-0615 Fr (800) 362-1879

envirotech-inc.com

laboratory@envirotech-inc.com



Agua Moss LLC
PO Box 600
Farmington NM, 87499

Project Name: 2nd Qtr Injected Fluids Sampling
Project Number: 07117-0029
Project Manager: Isaac Garcia

Reported:
10-Jun-15 07:32

Notes and Definitions

H1 Sample was received after regulatory hold-time exceeded for target analyte.

FPI >95

E Analyte was present at a concentration greater than the calibration curve upper limit.

B Analyte is found in the associated blank

DET Analyte DETECTED

ND Analyte NOT DETECTED at or above the reporting limit

NR Not Reported

dry Sample results reported on a dry weight basis

RPD Relative Percent Difference

Partial or incomplete reproduction of this report is prohibited, unless approved by Envirotech, Inc.

5796 US Highway 64, Farmington, NM 87401

Three Springs • 65 Mercado Street, Suite 115, Durango, CO 81301

Ph (505) 632-0615 Fx (505) 632-1865

Ph (970) 259-0615 Fr (800) 362-1879

envirotech-inc.com
laboratory@envirotech-inc.com

May 29, 2015

EnviroTech- NM

Sample Delivery Group: L766893
Samples Received: 05/22/2015
Project Number: 07117-0029
Description: 2nd QTR Injection Fluid Sampling
Site: P505058
Report To: Lynn Cook
5796 US. Highway 64
Farmington, NM 87401

Entire Report Reviewed By:



T. Alan Harvill

Technical Service Representative

Results relate only to the items tested or calibrated and are reported as rounded values. This test report shall not be reproduced, except in full, without written approval of the laboratory. Where applicable, sampling conducted by ESC is performed per guidance provided in laboratory standard operating procedures: 060302, 060303, and 060304.

TABLE OF CONTENTS

ONE LAB. NATIONWIDE.



¹ Cp: Cover Page	1
² Tc: Table of Contents	2
³ Ss: Sample Summary	3
⁴ Cn: Case Narrative	4
⁵ Sr: Sample Results	5
INJECTION FLUIDS L766893-01	5
⁶ Qc: Quality Control Summary	6
Wet Chemistry by Method 9012B/SW846 7.3.2	6
Wet Chemistry by Method 9034/9030B	7
Volatile Organic Compounds (GC/MS) by Method 8260B	8
Semi Volatile Organic Compounds (GC/MS) by Method 8270C	10
⁷ Gl: Glossary of Terms	12
⁸ Al: Accreditations & Locations	13
⁹ Sc: Chain of Custody	14



SAMPLE SUMMARY

ONE LAB. NATIONWIDE.



INJECTION FLUIDS L766893-01 Solid

						Collected by	Collected date/time	Received date/time	
						I. Garcia	05/20/15 15:18	05/22/15 09:00	
Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analysis Analyst				
Preparation by Method 1311	WG791292	1	05/26/15 15:37	05/26/15 15:38	LJN				
Preparation by Method 1311	WG791495	1	05/27/15 14:12	05/27/15 14:24	BG				
Semi Volatile Organic Compounds (GC/MS) by Method 8270C	WG791572	1	05/27/15 10:17	05/28/15 03:05	ADF				
Volatile Organic Compounds (GC/MS) by Method 8260B	WG791948	1	05/29/15 12:26	05/29/15 12:26	MCB				
Wet Chemistry by Method 9012B/SW846 7.3.2	WG791501	1	05/27/15 14:19	05/28/15 01:15	ASK				
Wet Chemistry by Method 9034/9030B	WG791500	1	05/27/15 17:41	05/28/15 13:56	AS				

¹ Cp

² Tc

Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc

CASE NARRATIVE

ONE LAB. NATIONWIDE.



All sample aliquots were received at the correct temperature, in the proper containers, with the appropriate preservatives, and within method specified holding times. All Method and Batch Quality Control are within established criteria except where addressed in this case narrative, a non-conformance form or properly qualified within the sample results. By my digital signature below, I affirm to the best of my knowledge, all problems/anomalies observed by the laboratory as having the potential to affect the quality of the data have been identified by the laboratory, and no information or data have been knowingly withheld that would affect the quality of the data.

T. Alan Harvill
Technical Service Representative

¹ Cp

² Tc

³ Ss

⁴ Cr

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc

INJECTION FLUIDS

Collected date/time: 05/20/15 15:18

SAMPLE RESULTS - 01

L766893

ONE LAB. NATIONWIDE.



Preparation by Method 1311

Analyte	Result	Qualifier	Prep date / time	Batch
TCLP Extraction	-		5/26/2015 3:37:45 PM	WG791292
TCLP ZHE Extraction	-		5/27/2015 2:12:13 PM	WG791495

Wet Chemistry by Method 9012B/SW846 7.3.2

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Reactive CN (SW846 7.3.3.2)	ND		0.125	1	05/28/2015 01:15	WG791501

Wet Chemistry by Method 9034/9030B

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Reactive Sulf. (SW846 7.3.4.1)	ND		25.0	1	05/28/2015 13:56	WG791500

Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Benzene	0.486		0.0500	1	05/29/2015 12:26	WG791948
Carbon tetrachloride	ND		0.0500	1	05/29/2015 12:26	WG791948
Chlorobenzene	ND		0.0500	1	05/29/2015 12:26	WG791948
Chloroform	ND		0.250	1	05/29/2015 12:26	WG791948
1,2-Dichloroethane	ND		0.0500	1	05/29/2015 12:26	WG791948
1,1-Dichloroethene	ND		0.0500	1	05/29/2015 12:26	WG791948
2-Butanone (MEK)	ND		0.500	1	05/29/2015 12:26	WG791948
Tetrachloroethene	ND		0.0500	1	05/29/2015 12:26	WG791948
Trichloroethene	ND		0.0500	1	05/29/2015 12:26	WG791948
Vinyl chloride	ND		0.0500	1	05/29/2015 12:26	WG791948
(S) Toluene-d8	97.2		90.0-115		05/29/2015 12:26	WG791948
(S) Dibromofluoromethane	89.1		79.0-121		05/29/2015 12:26	WG791948
(S) o,a,a-Trifluorotoluene	102		90.4-116		05/29/2015 12:26	WG791948
(S) 4-Bromofluorobenzene	102		80.1-120		05/29/2015 12:26	WG791948

Semi Volatile Organic Compounds (GC/MS) by Method 8270C

Analyte	Result mg/l	Qualifier	RDL mg/l	Limit mg/l	Dilution	Analysis date / time	Batch
1,4-Dichlorobenzene	ND		0.100	7.50	1	05/28/2015 03:05	WG791572
2,4-Dinitrotoluene	ND		0.100	0.13	1	05/28/2015 03:05	WG791572
Hexachlorobenzene	ND		0.100	0.13	1	05/28/2015 03:05	WG791572
Hexachloro-1,3-butadiene	ND		0.100	0.50	1	05/28/2015 03:05	WG791572
Hexachloroethane	ND		0.100	3	1	05/28/2015 03:05	WG791572
Nitrobenzene	ND		0.100	2	1	05/28/2015 03:05	WG791572
Pyridine	ND		0.100	5	1	05/28/2015 03:05	WG791572
3&4-Methyl Phenol	ND		0.100	400	1	05/28/2015 03:05	WG791572
2-Methylphenol	ND		0.100	200	1	05/28/2015 03:05	WG791572
Pentachlorophenol	ND		0.100	100	1	05/28/2015 03:05	WG791572
2,4,5-Trichlorophenol	ND		0.100	400	1	05/28/2015 03:05	WG791572
2,4,6-Trichlorophenol	ND		0.100	2	1	05/28/2015 03:05	WG791572
(S) 2-Fluorophenol	45.2		10.0-77.9	87		05/28/2015 03:05	WG791572
(S) Phenol-d5	31.5		5.00-70.1	67		05/28/2015 03:05	WG791572
(S) Nitrobenzene-d5	64.1		21.8-123	120		05/28/2015 03:05	WG791572
(S) 2-Fluorobiphenyl	56.7		29.5-131	122		05/28/2015 03:05	WG791572
(S) 2,4,6-Tribromophenol	114		11.2-130	148		05/28/2015 03:05	WG791572
(S) p-Terphenyl-d14	69.9		29.3-137	149		05/28/2015 03:05	WG791572

Method Blank (MB)

(MB) 05/28/15 01:09

Analyte	MB Result mg/kg	MB Qualifier	MB RDL mg/kg
Reactive CN (SW846 7.3.3.2)	ND		0.125

L766893-01 Original Sample (OS) • Duplicate (DUP)

(OS) 05/28/15 01:15 • (DUP) 05/28/15 01:16

Analyte	Original Result mg/kg	DUP Result mg/kg	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Reactive CN (SW846 7.3.3.2)	ND	ND	1	0.00		20

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) 05/28/15 00:31 • (LCSD) 05/28/15 00:32

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCSD Result mg/kg	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Reactive CN (SW846 7.3.3.2)	0.100	0.105	0.103	105	0.000	90.0-110			1.92	20





Method Blank (MB)

(MB) 05/28/15 13:56

Analyte	MB Result mg/kg	MB Qualifier	MB RDL mg/kg
Reactive Sulf.(SW846 7.3.4.1)	ND		25.0

L766893-01 Original Sample (OS) • Duplicate (DUP)

(OS) 05/28/15 13:56 • (DUP) 05/28/15 13:56

Analyte	Original Result mg/kg	DUP Result mg/kg	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Reactive Sulf.(SW846 7.3.4.1)	ND	ND	1	0.00		20

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) 05/28/15 13:56 • (LCSD) 05/28/15 13:56

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCSD Result mg/kg	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Reactive Sulf.(SW846 7.3.4.1)	100	95.0	95.0	95.0	95.0	70.0-130			0.000	20



Method Blank (MB)

(MB) 05/28/15 12:18

Analyte	MB Result mg/l	MB Qualifier	MB RDL mg/l
Benzene	ND		0.0500
Carbon tetrachloride	ND		0.0500
Chlorobenzene	ND		0.0500
Chloroform	ND		0.250
1,2-Dichloroethane	ND		0.0500
1,1-Dichloroethene	ND		0.0500
2-Butanone (MEK)	ND		0.500
Tetrachloroethene	ND		0.0500
Trichloroethene	ND		0.0500
Vinyl chloride	ND		0.0500
(S) Toluene-d8	99.6		90.0-115
(S) Dibromofluoromethane	82.1		79.0-121
(S) a,a,o-Trifluorotoluene	101		90.4-116
(S) 4-Bromofluorobenzene	109		80.1-120

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) 05/28/15 06:30 • (LCSD) 05/28/15 06:51

Analyte	Spike Amount mg/l	LCS Result mg/l	LCSD Result mg/l	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Benzene	0.0250	0.0238	0.0236	95.1	94.3	73.0-122			0.910	20
Carbon tetrachloride	0.0250	0.0191	0.0190	76.3	76.0	70.9-129			0.470	20
Chlorobenzene	0.0250	0.0259	0.0252	104	101	79.7-122			2.65	20
Chloroform	0.0250	0.0209	0.0206	83.4	82.3	73.2-125			1.35	20
1,2-Dichloroethane	0.0250	0.0210	0.0211	83.9	84.4	65.3-126			0.540	20
1,1-Dichloroethene	0.0250	0.0227	0.0224	90.8	89.7	60.6-133			1.17	20
2-Butanone (MEK)	0.125	0.0948	0.0991	75.9	79.3	46.4-155			4.39	20
Tetrachloroethene	0.0250	0.0243	0.0239	97.1	95.4	73.5-130			1.75	20
Trichloroethene	0.0250	0.0232	0.0226	92.6	90.3	79.5-121			2.51	20
Vinyl chloride	0.0250	0.0228	0.0224	91.2	89.4	61.5-134			1.91	20
(S) Toluene-d8				100	99.2	90.0-115				
(S) Dibromofluoromethane				84.7	86.3	79.0-121				
(S) a,a,o-Trifluorotoluene				101	100	90.4-116				
(S) 4-Bromofluorobenzene				103	102	80.1-120				

L766303-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) 05/28/15 13:19 • (MS) 05/28/15 14:00 • (MSD) 05/28/15 14:20

Analyte	Spike Amount mg/l	Original Result mg/l	MS Result mg/l	MSD Result mg/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Benzene	1.25	0.00560	1.20	1.26	95.8	101	1	58.6-133			4.82	20
Carbon tetrachloride	1.25	ND	0.970	1.02	77.6	81.5	1	60.6-139			4.86	20
Chlorobenzene	1.25	ND	1.32	1.36	105	109	1	70.1-130			3.48	20
Chloroform	1.25	ND	1.05	1.10	84.1	88.0	1	66.1-133			4.58	20
1,2-Dichloroethane	1.25	ND	1.05	1.12	83.9	89.6	1	60.7-132			6.49	20
1,1-Dichloroethene	1.25	ND	1.15	1.18	91.7	94.3	1	48.8-144			2.76	20
2-Butanone (MEK)	6.25	ND	4.00	4.65	64.0	74.5	1	45.0-156			15.1	20.8
Tetrachloroethene	1.25	ND	1.27	1.31	101	105	1	57.4-141			3.24	20
Trichloroethene	1.25	ND	1.16	1.21	93.1	96.7	1	48.9-148			3.85	20
Vinyl chloride	1.25	ND	1.07	1.12	85.4	89.8	1	44.3-143			5.06	20
(S) Toluene-d8					99.0	99.1		90.0-115				
(S) Dibromofluoromethane					83.9	84.8		79.0-121				
(S) o,o,a-Trifluorotoluene					101	102		90.4-116				
(S) 4-Bromofluorobenzene					102	99.9		80.1-120				

L766604-02 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) 05/28/15 13:39 • (MS) 05/28/15 14:40 • (MSD) 05/28/15 15:00

Analyte	Spike Amount mg/l	Original Result mg/l	MS Result mg/l	MSD Result mg/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Benzene	1.25	1.47	2.53	2.57	84.9	87.8	1	58.6-133			1.44	20
Carbon tetrachloride	1.25	ND	0.968	0.987	77.5	79.0	1	60.6-139			1.90	20
Chlorobenzene	1.25	ND	1.32	1.36	105	109	1	70.1-130			3.33	20
Chloroform	1.25	ND	1.05	1.07	83.8	85.5	1	66.1-133			2.03	20
1,2-Dichloroethane	1.25	ND	1.06	1.07	85.2	85.7	1	60.7-132			0.590	20
1,1-Dichloroethene	1.25	ND	1.12	1.14	89.4	91.0	1	48.8-144			1.77	20
2-Butanone (MEK)	6.25	0.0330	5.06	5.11	80.5	81.2	1	45.0-156			0.890	20.8
Tetrachloroethene	1.25	ND	1.24	1.29	98.9	103	1	57.4-141			4.20	20
Trichloroethene	1.25	ND	1.17	1.18	93.3	94.6	1	48.9-148			1.41	20
Vinyl chloride	1.25	ND	1.08	1.08	86.2	86.8	1	44.3-143			0.710	20
(S) Toluene-d8					99.4	99.7		90.0-115				
(S) Dibromofluoromethane					84.0	83.0		79.0-121				
(S) o,o,a-Trifluorotoluene					102	102		90.4-116				
(S) 4-Bromofluorobenzene					101	102		80.1-120				

Method Blank (MB)

(MB) 05/27/15 18:54

Analyte	MB Result mg/l	MB Qualifier	MB RDL mg/l
1,4-Dichlorobenzene	ND	0.100	0.100
2,4-Dinitrotoluene	ND	0.100	0.100
Hexachlorobenzene	ND	0.100	0.100
Hexachloro-1,3-butadiene	ND	0.100	0.100
Hexachloroethane	ND	0.100	0.100
Nitrobenzene	ND	0.100	0.100
Pyridine	ND	0.100	0.100
2-Methylphenol	ND	0.100	0.100
3,4-Methyl Phenol	ND	0.100	0.100
Pentachlorophenol	ND	0.100	0.100
2,4,5-Trichlorophenol	ND	0.100	0.100
2,4,6-Trichlorophenol	ND	0.100	0.100
(S) Nitrobenzene-d5	63.3	218-123	
(S) 2-Fluorobiphenyl	67.7	29.5-131	
(S) p-Terphenyl-d14	69.2	29.3-137	
(S) Phenol-d5	33.0	5.00-70.1	
(S) 2-Fluorophenol	50.6	10.0-77.9	
(S) 2,4,6-Tribromophenol	62.9	11.2-130	

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) 05/27/15 17:44 • (LCSD) 05/27/15 18:07

Analyte	Spike Amount mg/l	LCS Result mg/l	LCSD Result mg/l	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
1,4-Dichlorobenzene	0.0500	0.0282	0.0295	56.4	59.0	210-89.4			4.51	32.6
2,4-Dinitrotoluene	0.0500	0.0429	0.0422	85.8	84.3	312-105			1.68	22
Hexachlorobenzene	0.0500	0.0403	0.0390	80.6	77.9	38.5-116			3.37	20.1
Hexachloro-1,3-butadiene	0.0500	0.0285	0.0314	57.0	62.8	16.1-104			9.62	31.2
Hexachloroethane	0.0500	0.0273	0.0294	54.6	58.9	16.5-89.8			7.56	30.7
Nitrobenzene	0.0500	0.0364	0.0354	72.8	70.8	31.4-106			2.86	25.7
Pyridine	0.0500	0.0127	0.0132	25.4	26.4	13.5-58.9			3.69	32.5
2-Methylphenol	0.0500	0.0322	0.0307	64.3	61.3	26.4-86.9			4.77	26.5
3,4-Methyl Phenol	0.0500	0.0348	0.0339	69.7	67.8	27.9-92.0			2.76	27
Pentachlorophenol	0.0500	0.0389	0.0378	77.7	75.6	10.0-97.4			2.84	35.1
2,4,5-Trichlorophenol	0.0500	0.0407	0.0390	81.5	78.0	34.9-112			4.38	23.9
2,4,6-Trichlorophenol	0.0500	0.0404	0.0387	80.9	77.5	29.8-107			4.30	24.1
(S) Nitrobenzene-d5				70.1	66.7	21.8-123				
(S) 2-Fluorobiphenyl				70.5	68.6	29.5-131				

L766893-01

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) 05/27/15 17:44 • (LCSD) 05/27/15 18:07

Analyte	Spike Amount mg/l	LCS Result mg/l	LCSD Result mg/l	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
(S) p-Terphenyl-d14		65.1	65.0	29.3-137						
(S) Phenol-d5		38.7	31.9	5.00-70.1						
(S) 2-Fluorophenol		53.8	38.5	10.0-77.9						
(S) 2,4,6-Tribromophenol		84.8	85.6	11.2-130						

L766758-02 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) 05/28/15 01:55 • (MS) 05/28/15 02:18 • (MSD) 05/28/15 02:42

Analyte	Spike Amount mg/l	Original Result mg/l	MS Result mg/l	MSD Result mg/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
1,4-Dichlorobenzene	0.500	ND	0.283	0.318	56.7	63.6	1	14.0-104			11.5	36.4
2,4-Dinitrotoluene	0.500	ND	0.456	0.434	91.2	86.8	1	16.2-135			4.93	20.6
Hexachlorobenzene	0.500	ND	0.396	0.417	79.1	83.3	1	31.9-135			5.18	20
Hexachloro-1,3-butadiene	0.500	ND	0.303	0.337	60.6	67.5	1	15.7-109			10.7	37.6
Hexachloroethane	0.500	ND	0.297	0.323	59.4	64.7	1	10.4-105			8.42	40
Nitrobenzene	0.500	ND	0.349	0.373	69.8	74.5	1	23.1-121			6.51	29
Pyridine	0.500	ND	0.0777	0.0875	15.5	17.5	1	10.0-77.8			12.0	38.8
2-Methylphenol	0.500	0.0804	0.385	0.420	60.9	68.0	1	10.0-133			8.87	40
3&4-Methyl Phenol	0.500	0.118	0.463	0.493	68.9	74.9	1	17.4-100			6.29	27.7
Pentachlorophenol	0.500	ND	0.413	0.430	82.7	85.9	1	10.0-108			3.85	40
2,4,5-Trichlorophenol	0.500	ND	0.430	0.423	85.9	84.6	1	30.6-120			1.60	33.8
2,4,6-Trichlorophenol	0.500	ND	0.414	0.406	82.7	81.2	1	19.1-114			1.84	29.9
(S) Nitrobenzene-d5					68.9	72.3		218-123				
(S) 2-Fluorobiphenyl					72.8	72.1		29.5-131				
(S) p-Terphenyl-d14					84.1	43.7		29.3-137				
(S) Phenol-d5					33.9	38.7		5.00-70.1				
(S) 2-Fluorophenol					47.8	54.7		10.0-77.9				
(S) 2,4,6-Tribromophenol					89.3	89.1		11.2-130				



Abbreviations and Definitions

SDG	Sample Delivery Group.
MDL	Method Detection Limit.
RDL	Reported Detection Limit.
ND,U	Not detected at the Reporting Limit (or MDL where applicable).
RPD	Relative Percent Difference.
(dry)	Results are reported based on the dry weight of the sample. [this will only be present on a dry report basis for soils].
Original Sample	The non-spiked sample in the prep batch used to determine the Relative Percent Difference (RPD) from a quality control sample. The Original Sample may not be included within the reported SDG.
(S)	Surrogate (Surrogate Standard) - Analytes added to every blank, sample, Laboratory Control Sample/Duplicate and Matrix Spike/Duplicate; used to evaluate analytical efficiency by measuring recovery. Surrogates are not expected to be detected in all environmental media.
Rec.	Recovery.
SDL	Sample Detection Limit.
MQL	Method Quantitation Limit.
Unadj. MQL	Unadjusted Method Quantitation Limit.

Qualifier	Description
-----------	-------------

The remainder of this page intentionally left blank, there are no qualifiers applied to this SDG.

¹ Cp² Tc³ Ss⁴ Cn⁵ Sr⁵ Qc

Gl

⁸ Al⁹ Sc

ACCREDITATIONS & LOCATIONS

ONE LAB. NATIONWIDE.

ESC Lab Sciences is the only environmental laboratory accredited/certified to support your work nationwide from one location. One phone call, one point of contact, one laboratory. No other lab is as accessible or prepared to handle your needs throughout the country. Our capacity and capability from our single location laboratory is comparable to the collective totals of the network laboratories in our industry. The most significant benefit to our "one location" design is the design of our laboratory campus. The model is conducive to accelerated productivity, decreasing turn-around time, and preventing cross contamination, thus protecting sample integrity. Our focus on premium quality and prompt service allows us to be **YOUR LAB OF CHOICE**.

State Accreditations

Alabama	40660	Nevada	TN-03-2002-34
Alaska	UST-080	New Hampshire	2975
Arizona	AZ0612	New Jersey--NELAP	TN002
Arkansas	88-0469	New Mexico	TN00003
California	01157CA	New York	11742
Colorado	TN00003	North Carolina	Env375
Connecticut	PH-0197	North Carolina ¹	DW21704
Florida	E87487	North Carolina ²	41
Georgia	NELAP	North Dakota	R-140
Georgia ¹	923	Ohio--VAP	CL0069
Idaho	TN00003	Oklahoma	9915
Illinois	200008	Oregon	TN200002
Indiana	C-TN-01	Pennsylvania	68-02979
Iowa	364	Rhode Island	221
Kansas	E-10277	South Carolina	84004
Kentucky ¹	90010	South Dakota	n/a
Kentucky ²	16	Tennessee ¹⁴	2006
Louisiana	AI30792	Texas	T 104704245-07-TX
Maine	TN0002	Texas ⁵	LAB0152
Maryland	324	Utah	6157585858
Massachusetts	M-TN003	Vermont	VT2006
Michigan	9958	Virginia	109
Minnesota	047-999-395	Washington	C1915
Mississippi	TN00003	West Virginia	233
Missouri	340	Wisconsin	9980939910
Montana	CERT0086	Wyoming	A2LA
Nebraska	NE-OS-15-05		

¹ Drinking Water ² Underground Storage Tanks ³ Aquatic Toxicity ⁴ Chemical/Microbiological ⁵ Mold ¹⁴ Accreditation not applicable

Third Party & Federal Accreditations

A2LA - ISO 17025	1461.01	AIHA	100789
Canada	1461.01	DOD	1461.01
EPA-Crypto	TN00003	USDA	S-67674

Our Locations

ESC Lab Sciences has sixty-four client support centers that provide sample pickup and/or the delivery of sampling supplies. If you would like assistance from one of our support offices, please contact our main office. **ESC Lab Sciences performs all testing at our central laboratory.**





October 22, 2015

Agua Moss
c/o Merrion Oil & Gas Corp.
610 Reilly Avenue
Farmington, New Mexico 87401

Attn: Ms. Shacie Murray
P: (505) 324-5324
E: shacie@merrion.bz

Re: Analytical Results
NM1-9 Injection Well
SWNW S2, T29N, R12W
Crouch Mesa Road
San Juan County, New Mexico
Terracon Project No. 66157040

Dear Ms. Murray;

Terracon Consultants, Inc. (Terracon) appreciates the opportunity to submit analytical results for the third quarter 2015 quarterly sampling of the injection well located at the above-referenced site. A sample was collected from the injection well for laboratory analysis and field measurements on October 1, 2015. The results of analyses are presented in the attached Table 1. A copy of the laboratory analytical report is also provided as an attachment.

We appreciate the opportunity to provide environmental services for you. If you should have any questions or comments regarding this data, please contact Mark Hillier at (505) 222-5593.

Sincerely,
Terracon Consultants, Inc.

Mark R. Hillier, P.G. (TX)
Office Manager

Attachment – Table 1 – NM1-9 Injection Well Analytical Results
Laboratory Analytical Report



Terracon Consultants, Inc. 4905 Hawkins NE Albuquerque, NM 87109
P (505) 797 4287 F (505) 797 4288 terracon.com

Geotechnical



Environmental



Construction Materials



Facilities

TABLE 1 NM1-9 INJECTION WELL ANALYTICAL RESULTS Agua Moss Disposal Facility Crouch Mesa Road San Juan County, New Mexico		
Contaminant of Concern	Units	Sample Location
		NM1-9 IW (10/01/2015)
pH*	ratio	4.9
ORP*	mV ¹	-92
Specific Conductance*	mS/cm ²	18.27
Temperature*	°C ³	26.8
Specific Gravity	ratio	1.009
Conductivity @ 25° C	µmhos/cm ⁴	22,000
Total Dissolved Solids @ 180° C	mg/L ⁵	15,400 D ⁶
Sodium Absorption Ratio	ratio	33
Total Alkalinity as CaCO ₃	mg/L	222.4
Total Hardness as CaCO ₃	mg/L	2,400
Bicarbonate as CaCO ₃	mg/L	222.4
Carbonate as CaCO ₃	mg/L	<2.0
Hydroxide as CaCO ₃	mg/L	<2.0
Nitrate Nitrogen	mg/L	18
Nitrite Nitrogen	mg/L	<0.5
Chloride	mg/L	4,400
Fluoride	mg/L	160
Phosphate	mg/L	3.0 H ⁷
Sulfate	mg/L	3,700
Iron	mg/L	24
Calcium	mg/L	880
Magnesium	mg/L	39
Potassium	mg/L	210
Sodium	mg/L	3,700
Bromide	mg/L	7.3

* - Filed Measurement

1 - mV - millivolts

2 - mS - millisiemen per centimeter

3 - °C - degrees Celsius

4 - µmhos/cm - micromhos per centimeter

4 - mg/L - milligrams per liter

6 - D - Sample diluted due to matrix

7 - H - Holding time for preparation or analysis exceeded



Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com

October 20, 2015

Mark Hillier

Terracon

4905 Hawkins, NE

Albuquerque, NM 87109

TEL: (505) 715-0375

FAX (505) 797-4288

RE: NM1-9 IW

OrderNo.: 1510070

Dear Mark Hillier:

Hall Environmental Analysis Laboratory received 1 sample(s) on 10/1/2015 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent. To access our accredited tests please go to www.hallenvironmental.com or the state specific web sites. In order to properly interpret your results it is imperative that you review this report in its entirety. See the sample checklist and/or the Chain of Custody for information regarding the sample receipt temperature and preservation. Data qualifiers or a narrative will be provided if the sample analysis or analytical quality control parameters require a flag. When necessary, data qualifiers are provided on both the sample analysis report and the QC summary report, both sections should be reviewed. All samples are reported, as received, unless otherwise indicated. Lab measurement of analytes considered field parameters that require analysis within 15 minutes of sampling such as pH and residual chlorine are qualified as being analyzed outside of the recommended holding time.

Please don't hesitate to contact HEAL for any additional information or clarifications.

ADHS Cert #AZ0682 -- NMED-DWB Cert #NM9425 -- NMED-Micro Cert #NM0190

Sincerely,

A handwritten signature in black ink, appearing to read 'Andy Freeman', is written over a horizontal line.

Andy Freeman

Laboratory Manager

4901 Hawkins NE

Albuquerque, NM 87109

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1510070

Date Reported: 10/20/2015

CLIENT: Terracon

Client Sample ID: NM1-9 IW

Project: NM1-9 IW

Collection Date: 10/1/2015 1:00:00 PM

Lab ID: 1510070-001

Matrix: AQUEOUS

Received Date: 10/1/2015 4:36:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
SM2340B: HARDNESS							Analyst: MED
Hardness (As CaCO ₃)	2400	6.6		mg/L	1	10/16/2015 11:15:00 AM	R29600
SODIUM ADSORPTION RATIO							Analyst: MED
Calcium	880	1.0		mg/L	1	10/16/2015 11:15:00 AM	R29600
Magnesium	39	1.0		mg/L	1	10/16/2015 11:15:00 AM	R29600
Sodium	3700	1.0		mg/L	1	10/16/2015 11:15:00 AM	R29600
Sodium Adsorption Ratio	33	0			1	10/16/2015 11:15:00 AM	R29600
SPECIFIC GRAVITY							Analyst: JRR
Specific Gravity	1.009	0			1	10/7/2015 2:57:00 PM	R29369
EPA METHOD 300.0: ANIONS							Analyst: LGT
Fluoride	160	5.0	*	mg/L	50	10/8/2015 6:27:04 PM	R29418
Chloride	4400	250		mg/L	500	10/8/2015 6:39:28 PM	R29418
Bromide	7.3	0.50		mg/L	5	10/2/2015 8:22:45 PM	R29291
Phosphorus, Orthophosphate (As P)	3.0	2.5	H	mg/L	5	10/17/2015 2:13:37 AM	R29627
Sulfate	3700	250		mg/L	500	10/8/2015 6:39:28 PM	R29418
Nitrate+Nitrite as N	18	1.0	*	mg/L	5	10/13/2015 11:01:46 AM	R29566
SM2510B: SPECIFIC CONDUCTANCE							Analyst: JRR
Conductivity	22000	0.050		µmhos/cm	5	10/8/2015 4:47:50 PM	R29409
SM2320B: ALKALINITY							Analyst: JRR
Alkalinity, Hydroxide (As CaCO ₃)	ND	2.000		mg/L CaCO ₃	1	10/8/2015 4:19:21 PM	R29409
Bicarbonate (As CaCO ₃)	222.4	20.00		mg/L CaCO ₃	1	10/8/2015 4:19:21 PM	R29409
Carbonate (As CaCO ₃)	ND	2.000		mg/L CaCO ₃	1	10/8/2015 4:19:21 PM	R29409
Total Alkalinity (as CaCO ₃)	222.4	20.00		mg/L CaCO ₃	1	10/8/2015 4:19:21 PM	R29409
SM2540C MOD: TOTAL DISSOLVED SOLIDS							Analyst: KS
Total Dissolved Solids	15400	200	*D	mg/L	1	10/7/2015 7:00:00 PM	21689
EPA METHOD 6010B: DISSOLVED METALS							Analyst: MED
Calcium	880	10		mg/L	10	10/16/2015 2:29:46 PM	A29600
Iron	24	2.0		mg/L	100	10/16/2015 2:27:56 PM	A29600
Magnesium	39	1.0		mg/L	1	10/16/2015 1:11:17 PM	A29600
Potassium	210	10		mg/L	10	10/16/2015 2:29:46 PM	A29600
Sodium	3700	100		mg/L	100	10/16/2015 2:27:56 PM	A29600

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1510070

20-Oct-15

Client: Terracon
Project: NM1-9 IW

Sample ID MB	SampType: MBLK		TestCode: EPA Method 300.0: Anions							
Client ID: PBW	Batch ID: R29291		RunNo: 29291							
Prep Date:	Analysis Date: 10/2/2015		SeqNo: 890215		Units: mg/L					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Bromide	ND	0.10								

Sample ID LCS	SampType: LCS		TestCode: EPA Method 300.0: Anions							
Client ID: LCSW	Batch ID: R29291		RunNo: 29291							
Prep Date:	Analysis Date: 10/2/2015		SeqNo: 890216		Units: mg/L					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Bromide	2.5	0.10	2.500	0	98.4	90	110			

Sample ID MB	SampType: MBLK		TestCode: EPA Method 300.0: Anions							
Client ID: PBW	Batch ID: R29418		RunNo: 29418							
Prep Date:	Analysis Date: 10/8/2015		SeqNo: 894857		Units: mg/L					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Fluoride	ND	0.10								
Chloride	ND	0.50								
Sulfate	ND	0.50								

Sample ID LCS	SampType: LCS		TestCode: EPA Method 300.0: Anions							
Client ID: LCSW	Batch ID: R29418		RunNo: 29418							
Prep Date:	Analysis Date: 10/8/2015		SeqNo: 894858		Units: mg/L					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Fluoride	0.50	0.10	0.5000	0	99.3	90	110			
Chloride	4.9	0.50	5.000	0	97.7	90	110			
Sulfate	9.8	0.50	10.00	0	98.3	90	110			

Sample ID MB	SampType: mblk		TestCode: EPA Method 300.0: Anions							
Client ID: PBW	Batch ID: R29566		RunNo: 29566							
Prep Date:	Analysis Date: 10/13/2015		SeqNo: 899882		Units: mg/L					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Nitrate+Nitrite as N	ND	0.20								

Sample ID LCS	SampType: lcs		TestCode: EPA Method 300.0: Anions							
Client ID: LCSW	Batch ID: R29566		RunNo: 29566							
Prep Date:	Analysis Date: 10/13/2015		SeqNo: 899883		Units: mg/L					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Nitrate+Nitrite as N	3.4	0.20	3.500	0	98.5	90	110			

Qualifiers:

- | | |
|---|---|
| * Value exceeds Maximum Contaminant Level. | B Analyte detected in the associated Method Blank |
| D Sample Diluted Due to Matrix | E Value above quantitation range |
| H Holding times for preparation or analysis exceeded | J Analyte detected below quantitation limits |
| ND Not Detected at the Reporting Limit | P Sample pH Not In Range |
| R RPD outside accepted recovery limits | RL Reporting Detection Limit |
| S % Recovery outside of range due to dilution or matrix | |

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1510070

20-Oct-15

Client: Terracon
Project: NM1-9 IW

Sample ID MB	SampType: MBLK			TestCode: EPA Method 300.0: Anions						
Client ID: PBW	Batch ID: R29627			RunNo: 29627						
Prep Date:	Analysis Date: 10/16/2015			SeqNo: 902085		Units: mg/L				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Phosphorus, Orthophosphate (As P	ND	0.50								

Sample ID LCS	SampType: LCS			TestCode: EPA Method 300.0: Anions						
Client ID: LCSW	Batch ID: R29627			RunNo: 29627						
Prep Date:	Analysis Date: 10/16/2015			SeqNo: 902086		Units: mg/L				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Phosphorus, Orthophosphate (As P	4.9	0.50	5.000	0	97.5	90	110			

Qualifiers:

* Value exceeds Maximum Contaminant Level.
D Sample Diluted Due to Matrix
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
R RPD outside accepted recovery limits
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank
E Value above quantitation range
J Analyte detected below quantitation limits
P Sample pH Not In Range
RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1510070

20-Oct-15

Client: Terracon

Project: NM1-9 IW

Sample ID	MB	SampType:	MBLK	TestCode:	EPA Method 6010B: Dissolved Metals					
Client ID:	PBW	Batch ID:	A29600	RunNo:	29600					
Prep Date:		Analysis Date:	10/16/2015	SeqNo:	901066	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Calcium	ND	1.0								
Iron	ND	0.020								
Magnesium	ND	1.0								
Potassium	ND	1.0								
Sodium	ND	1.0								

Qualifiers:

* Value exceeds Maximum Contaminant Level.
D Sample Diluted Due to Matrix
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
R RPD outside accepted recovery limits
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank
E Value above quantitation range
J Analyte detected below quantitation limits
P Sample pH Not In Range
RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1510070

20-Oct-15

Client: Terracon
Project: NM1-9 IW

Sample ID mb-1	SampType: MBLK			TestCode: SM2320B: Alkalinity						
Client ID: PBW	Batch ID: R29409			RunNo: 29409						
Prep Date:	Analysis Date: 10/8/2015			SeqNo: 894449		Units: mg/L CaCO3				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Alkalinity (as CaCO3)	ND	20.00								

Sample ID lcs-1	SampType: LCS			TestCode: SM2320B: Alkalinity						
Client ID: LCSW	Batch ID: R29409			RunNo: 29409						
Prep Date:	Analysis Date: 10/8/2015			SeqNo: 894450		Units: mg/L CaCO3				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Alkalinity (as CaCO3)	79.52	20.00	80.00	0	99.4	90	110			

Sample ID mb-2	SampType: MBLK			TestCode: SM2320B: Alkalinity						
Client ID: PBW	Batch ID: R29409			RunNo: 29409						
Prep Date:	Analysis Date: 10/8/2015			SeqNo: 894473		Units: mg/L CaCO3				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Alkalinity (as CaCO3)	ND	20.00								

Sample ID lcs-2	SampType: LCS			TestCode: SM2320B: Alkalinity						
Client ID: LCSW	Batch ID: R29409			RunNo: 29409						
Prep Date:	Analysis Date: 10/8/2015			SeqNo: 894474		Units: mg/L CaCO3				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Alkalinity (as CaCO3)	80.32	20.00	80.00	0	100	90	110			

Qualifiers:

* Value exceeds Maximum Contaminant Level.
D Sample Diluted Due to Matrix
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
R RPD outside accepted recovery limits
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank
E Value above quantitation range
J Analyte detected below quantitation limits
P Sample pH Not In Range
RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1510070

20-Oct-15

Client: Terracon
Project: NM1-9 IW

Sample ID	MB-21689		SampType: MBLK		TestCode: SM2540C MOD: Total Dissolved Solids					
Client ID:	PBW		Batch ID: 21689		RunNo: 29378					
Prep Date:	10/6/2015		Analysis Date: 10/7/2015		SeqNo: 893278		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Dissolved Solids	ND	20.0								

Sample ID	LCS-21689		SampType: LCS		TestCode: SM2540C MOD: Total Dissolved Solids					
Client ID:	LCSW		Batch ID: 21689		RunNo: 29378					
Prep Date:	10/6/2015		Analysis Date: 10/7/2015		SeqNo: 893279		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Dissolved Solids	1010	20.0	1000	0	101	80	120			

Qualifiers:

* Value exceeds Maximum Contaminant Level.
D Sample Diluted Due to Matrix
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
R RPD outside accepted recovery limits
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank
E Value above quantitation range
J Analyte detected below quantitation limits
P Sample pH Not In Range
RL Reporting Detection Limit

Sample Log-In Check List

Client Name: TER-Alb

Work Order Number: 1510070

RcptNo: 1

Received by/date:

CS 10/01/15

Logged By: Lindsay Mangin

10/1/2015 4:36:00 PM

[Signature]

Completed By: Lindsay Mangin

10/2/2015 10:42:48 AM

[Signature]

Reviewed By:

[Signature] 10/02/15

Chain of Custody

1. Custody seals intact on sample bottles? Yes ☐ No ☐ Not Present ☒
2. Is Chain of Custody complete? Yes ☒ No ☐ Not Present ☐
3. How was the sample delivered? Client ☐

Log In

4. Was an attempt made to cool the samples? Yes ☒ No ☐ NA ☐
5. Were all samples received at a temperature of $>0^{\circ}\text{C}$ to 6.0°C ? Yes ☐ No ☒ NA ☐
Samples were collected the same day and chilled.
6. Sample(s) in proper container(s)? Yes ☒ No ☐
7. Sufficient sample volume for indicated test(s)? Yes ☒ No ☐
8. Are samples (except VOA and ONG) properly preserved? Yes ☒ No ☒ CS 10/02/15
9. Was preservative added to bottles? Yes ☒ No ☒ NA ☐
10. VOA vials have zero headspace? Yes ☐ No ☐ No VOA Vials ☒
11. Were any sample containers received broken? Yes ☐ No ☒
12. Does paperwork match bottle labels?
 (Note discrepancies on chain of custody) Yes ☒ No ☐

of preserved bottles checked for pH: 2
 (<2 or >12 unless noted)
 Adjusted? yes
 Checked by: CS
13. Are matrices correctly identified on Chain of Custody? Yes ☒ No ☐
14. Is it clear what analyses were requested? Yes ☒ No ☐
15. Were all holding times able to be met?
 (If no, notify customer for authorization.) Yes ☒ No ☐

Special Handling (if applicable)

16. Was client notified of all discrepancies with this order? Yes ☐ No ☐ NA ☒

Person Notified:

Date:

By Whom:

Via: ☐ eMail ☐ Phone ☐ Fax ☐ In Person

Regarding:

Client Instructions:

17. Additional remarks: For metals analysis, added 1ml HNO_3 for acceptable pH. Held for 24 hours prior to analysis. CS 10/02/15

18. Cooler Information

Cooler No	Temp $^{\circ}\text{C}$	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	11.6	Good	Not Present			

[illegible]

If necessary, samples submitted to Hall Environmental may be subcontracted to other accredited laboratories. The services of notice of this possibility. Any sub-contracted data will be clearly marked on the analytical report.

Remarks: cation/anion balance to include conductivity, TDS, total alkalinity, bicarbonate hydroxide, nitrate as nitrogen, nitrite as nitrate, chloride, fluoride, phosphate, sulfate,

Analysis Request

BTEX + MTBE + TMB's (8021)
BTEX + MTBE + TPH (Gas only)
TPH 8015B (GRO / DRO / MRO)
TPH (Method 418.1)
EDB (Method 504.1)
PAH's (8310 or 8270 SIMS)
RCRA 8 Metals
Anions (F, Cl, NO ₃ , NO ₂ , PO ₄ , SO ₄)
8081 Pesticides / 8082 PCB's
8260B (VOA)
8270 (Semi-VOA)
Specific gravity
Sodium Absorption rate
total hardness
calcium/magnesium balance *

Remarks: cation/anion balance to include conductivity, TDS, total alkalinity, bicarbonate hydroxide, nitrate as nitrogen, nitrite as nitrate, chloride, fluoride, phosphate, sulfate,

December 30, 2015

Agua Moss
c/o Merrion Oil & Gas Corp.
610 Reilly Avenue
Farmington, New Mexico 87401

Attn: Ms. Shacie Murray
P: (505) 324-5324
E: shacie@merrion.bz

Re: Analytical Results
NM1-9 Injection Well
SWNW S2, T29N, R12W
Crouch Mesa Road
San Juan County, New Mexico
Terracon Project No. 66157040

Dear Ms. Murray;

Terracon Consultants, Inc. (Terracon) appreciates the opportunity to submit analytical results for the fourth quarter 2015 quarterly sampling of the injection well located at the above-referenced site. A sample was collected from the injection well port at the east end of the aboveground storage tanks for laboratory analysis and field measurements on December 7, 2015. The results of analyses are presented in the attached Table 1. A copy of the laboratory analytical report is also provided as an attachment.

We appreciate the opportunity to provide environmental services for you. If you should have any questions or comments regarding this data, please contact Mark Hillier at (505) 222-5593.

Sincerely,
Terracon Consultants, Inc.



Mark R. Hillier, P.G. (TX)
Office Manager

Attachment – Table 1 – NM1-9 Injection Well Analytical Results
Laboratory Analytical Report



TABLE 1
NM1-9 INJECTION WELL ANALYTICAL RESULTS
 Agua Moss Disposal Facility
 Crouch Mesa Road
 San Juan County, New Mexico

Contaminant of Concern	Units	Sample Location
		NM1-9 IW (12/07/2015)
pH*	ratio	7.92
ORP*	mV ¹	85
Specific Conductance*	mS/cm ²	14.15
Temperature*	°C ³	9.9
Specific Gravity	ratio	1.01
Conductivity @ 25° C	µmhos/cm ⁴	19,000
Total Dissolved Solids @ 180° C	mg/L ⁵	9,860
Sodium Absorption Ratio	ratio	50
Total Alkalinity as CaCO ₃	mg/L	388.8
Total Hardness as CaCO ₃	mg/L	770
Bicarbonate as CaCO ₃	mg/L	388.8
Carbonate as CaCO ₃	mg/L	<2.000
Hydroxide as CaCO ₃	mg/L	<2.000
Nitrate Nitrogen	mg/L	3.7
Nitrite Nitrogen	mg/L	<2.0
Chloride	mg/L	5,000
Fluoride	mg/L	2.1
Phosphate	mg/L	<2.5
Sulfate	mg/L	620
Iron	mg/L	6.1
Calcium	mg/L	230
Magnesium	mg/L	46
Potassium	mg/L	61
Sodium	mg/L	3,200
Bromide	mg/L	8.2

* - Filed Measurement

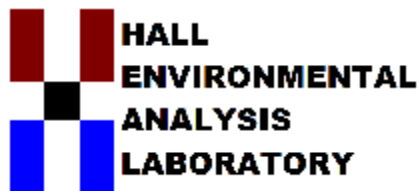
1 - mV - millivolts

2 - mS - millisiemen per centimeter

3 - °C - degrees Celsius

4 - µmhos/cm - micromhos per centimeter

5 - mg/L - milligrams per liter



Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com

December 30, 2015

Mark Hillier

Terracon

4905 Hawkins, NE

Albuquerque, NM 87109

TEL: (505) 715-0375

FAX (505) 797-4288

RE: Agua Moss

OrderNo.: 1512322

Dear Mark Hillier:

Hall Environmental Analysis Laboratory received 7 sample(s) on 12/7/2015 for the analyses presented in the following report.

This report is a revised report and it replaces the original report issued December 23, 2015.

These were analyzed according to EPA procedures or equivalent. To access our accredited tests please go to www.hallenvironmental.com or the state specific web sites. See the sample checklist and/or the Chain of Custody for information regarding the sample receipt temperature and preservation. Data qualifiers or a narrative will be provided if the sample analysis or analytical quality control parameters require a flag. All samples are reported as received unless otherwise indicated.

Please don't hesitate to contact HEAL for any additional information or clarifications.

Sincerely,

A handwritten signature in black ink, appearing to read 'Andy Freeman', is written over a horizontal line.

Andy Freeman

Laboratory Manager

4901 Hawkins NE

Albuquerque, NM 87109

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1512322

Date Reported: 12/30/2015

CLIENT: Terracon

Client Sample ID: C1(36")

Project: Agua Moss

Collection Date: 12/7/2015 10:30:00 AM

Lab ID: 1512322-001

Matrix: SOIL

Received Date: 12/7/2015 4:33:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 418.1: TPH							Analyst: TOM
Petroleum Hydrocarbons, TR	ND	19		mg/Kg	1	12/10/2015	22703
EPA METHOD 300.0: ANIONS							Analyst: LGT
Fluoride	26	6.0		mg/Kg	20	12/11/2015 5:24:57 PM	22775
Chloride	230	30		mg/Kg	20	12/11/2015 5:24:57 PM	22775
Nitrogen, Nitrite (As N)	ND	0.30		mg/Kg	1	12/11/2015 5:12:33 PM	22775
Nitrogen, Nitrate (As N)	0.88	0.30		mg/Kg	1	12/11/2015 5:12:33 PM	22775
Sulfate	410	30		mg/Kg	20	12/11/2015 5:24:57 PM	22775
EPA METHOD 7471: MERCURY							Analyst: pmf
Mercury	ND	0.033		mg/Kg	1	12/9/2015 3:26:17 PM	22709
EPA METHOD 6010B: SOIL METALS							Analyst: MED
Arsenic	4.1	2.5		mg/Kg	1	12/9/2015 11:17:16 AM	22688
Barium	140	0.099		mg/Kg	1	12/9/2015 11:17:16 AM	22688
Cadmium	ND	0.099		mg/Kg	1	12/9/2015 11:17:16 AM	22688
Calcium	55000	2500		mg/Kg	100	12/9/2015 12:08:53 PM	22688
Chromium	7.3	0.30		mg/Kg	1	12/9/2015 11:17:16 AM	22688
Copper	7.0	0.30		mg/Kg	1	12/9/2015 11:17:16 AM	22688
Iron	12000	250		mg/Kg	100	12/9/2015 12:08:53 PM	22688
Lead	2.4	0.25		mg/Kg	1	12/9/2015 11:17:16 AM	22688
Magnesium	5400	49		mg/Kg	2	12/9/2015 11:18:55 AM	22688
Manganese	140	0.099		mg/Kg	1	12/9/2015 11:17:16 AM	22688
Potassium	1800	99		mg/Kg	2	12/9/2015 11:18:55 AM	22688
Selenium	ND	2.5		mg/Kg	1	12/9/2015 11:17:16 AM	22688
Silver	ND	0.25		mg/Kg	1	12/9/2015 11:17:16 AM	22688
Sodium	810	49		mg/Kg	2	12/9/2015 11:18:55 AM	22688
Uranium	ND	4.9		mg/Kg	1	12/9/2015 11:17:16 AM	22688
Zinc	25	2.5		mg/Kg	1	12/9/2015 11:17:16 AM	22688
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: KJH
Diesel Range Organics (DRO)	ND	10		mg/Kg	1	12/10/2015 4:32:41 PM	22675
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	12/10/2015 4:32:41 PM	22675
Surr: DNOP	110	70-130		%REC	1	12/10/2015 4:32:41 PM	22675
EPA METHOD 8015D: GASOLINE RANGE							Analyst: NSB
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	12/9/2015 2:14:33 PM	22678
Surr: BFB	91.6	66.2-112		%REC	1	12/9/2015 2:14:33 PM	22678
EPA METHOD 8021B: VOLATILES							Analyst: NSB
Benzene	ND	0.048		mg/Kg	1	12/9/2015 2:14:33 PM	22678
Toluene	ND	0.048		mg/Kg	1	12/9/2015 2:14:33 PM	22678

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1512322

Date Reported: 12/30/2015

CLIENT: Terracon

Client Sample ID: C1(36")

Project: Agua Moss

Collection Date: 12/7/2015 10:30:00 AM

Lab ID: 1512322-001

Matrix: SOIL

Received Date: 12/7/2015 4:33:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8021B: VOLATILES						Analyst: NSB	
Ethylbenzene	ND	0.048		mg/Kg	1	12/9/2015 2:14:33 PM	22678
Xylenes, Total	ND	0.095		mg/Kg	1	12/9/2015 2:14:33 PM	22678
Surr: 4-Bromofluorobenzene	119	80-120		%REC	1	12/9/2015 2:14:33 PM	22678

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1512322

Date Reported: 12/30/2015

CLIENT: Terracon

Client Sample ID: C2S(36")

Project: Agua Moss

Collection Date: 12/7/2015 10:50:00 AM

Lab ID: 1512322-002

Matrix: SOIL

Received Date: 12/7/2015 4:33:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 418.1: TPH							Analyst: TOM
Petroleum Hydrocarbons, TR	ND	19		mg/Kg	1	12/10/2015	22703
EPA METHOD 300.0: ANIONS							Analyst: LGT
Fluoride	2.0	0.30		mg/Kg	1	12/11/2015 6:27:01 PM	22775
Chloride	140	30		mg/Kg	20	12/11/2015 6:39:26 PM	22775
Nitrogen, Nitrite (As N)	ND	0.30		mg/Kg	1	12/11/2015 6:27:01 PM	22775
Nitrogen, Nitrate (As N)	ND	0.30		mg/Kg	1	12/11/2015 6:27:01 PM	22775
Sulfate	160	30		mg/Kg	20	12/11/2015 6:39:26 PM	22775
EPA METHOD 7471: MERCURY							Analyst: pmf
Mercury	ND	0.032		mg/Kg	1	12/9/2015 3:28:11 PM	22709
EPA METHOD 6010B: SOIL METALS							Analyst: MED
Arsenic	2.8	2.5		mg/Kg	1	12/9/2015 11:25:31 AM	22688
Barium	110	0.10		mg/Kg	1	12/9/2015 11:25:31 AM	22688
Cadmium	ND	0.10		mg/Kg	1	12/9/2015 11:25:31 AM	22688
Calcium	11000	130		mg/Kg	5	12/9/2015 12:00:59 PM	22688
Chromium	2.2	0.30		mg/Kg	1	12/9/2015 11:25:31 AM	22688
Copper	2.5	0.30		mg/Kg	1	12/9/2015 11:25:31 AM	22688
Iron	6300	250		mg/Kg	100	12/9/2015 12:10:18 PM	22688
Lead	2.3	0.25		mg/Kg	1	12/9/2015 11:25:31 AM	22688
Magnesium	2800	25		mg/Kg	1	12/9/2015 11:25:31 AM	22688
Manganese	160	0.10		mg/Kg	1	12/9/2015 11:25:31 AM	22688
Potassium	500	50		mg/Kg	1	12/9/2015 11:25:31 AM	22688
Selenium	ND	2.5		mg/Kg	1	12/9/2015 11:25:31 AM	22688
Silver	ND	0.25		mg/Kg	1	12/9/2015 11:25:31 AM	22688
Sodium	360	25		mg/Kg	1	12/9/2015 11:25:31 AM	22688
Uranium	ND	5.0		mg/Kg	1	12/9/2015 11:25:31 AM	22688
Zinc	13	2.5		mg/Kg	1	12/9/2015 11:25:31 AM	22688
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: KJH
Diesel Range Organics (DRO)	ND	9.6		mg/Kg	1	12/10/2015 4:54:25 PM	22675
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	12/10/2015 4:54:25 PM	22675
Surr: DNOP	103	70-130		%REC	1	12/10/2015 4:54:25 PM	22675
EPA METHOD 8015D: GASOLINE RANGE							Analyst: NSB
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	12/9/2015 3:28:05 PM	22678
Surr: BFB	90.8	66.2-112		%REC	1	12/9/2015 3:28:05 PM	22678
EPA METHOD 8021B: VOLATILES							Analyst: NSB
Benzene	ND	0.049		mg/Kg	1	12/9/2015 3:28:05 PM	22678
Toluene	ND	0.049		mg/Kg	1	12/9/2015 3:28:05 PM	22678

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1512322

Date Reported: 12/30/2015

CLIENT: Terracon

Client Sample ID: C2S(36")

Project: Agua Moss

Collection Date: 12/7/2015 10:50:00 AM

Lab ID: 1512322-002

Matrix: SOIL

Received Date: 12/7/2015 4:33:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8021B: VOLATILES						Analyst: NSB	
Ethylbenzene	ND	0.049		mg/Kg	1	12/9/2015 3:28:05 PM	22678
Xylenes, Total	ND	0.098		mg/Kg	1	12/9/2015 3:28:05 PM	22678
Surr: 4-Bromofluorobenzene	119	80-120		%REC	1	12/9/2015 3:28:05 PM	22678

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1512322

Date Reported: 12/30/2015

CLIENT: Terracon

Client Sample ID: C2N(36")

Project: Agua Moss

Collection Date: 12/7/2015 11:20:00 AM

Lab ID: 1512322-003

Matrix: SOIL

Received Date: 12/7/2015 4:33:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 418.1: TPH							Analyst: TOM
Petroleum Hydrocarbons, TR	ND	20		mg/Kg	1	12/10/2015	22703
EPA METHOD 300.0: ANIONS							Analyst: LGT
Fluoride	1.1	0.30		mg/Kg	1	12/11/2015 6:51:51 PM	22775
Chloride	270	30		mg/Kg	20	12/11/2015 7:04:15 PM	22775
Nitrogen, Nitrite (As N)	ND	0.30		mg/Kg	1	12/11/2015 6:51:51 PM	22775
Nitrogen, Nitrate (As N)	8.8	0.30		mg/Kg	1	12/11/2015 6:51:51 PM	22775
Sulfate	660	30		mg/Kg	20	12/11/2015 7:04:15 PM	22775
EPA METHOD 7471: MERCURY							Analyst: pmf
Mercury	ND	0.032		mg/Kg	1	12/9/2015 3:30:00 PM	22709
EPA METHOD 6010B: SOIL METALS							Analyst: MED
Arsenic	ND	2.4		mg/Kg	1	12/9/2015 11:28:27 AM	22688
Barium	170	0.098		mg/Kg	1	12/9/2015 11:28:27 AM	22688
Cadmium	ND	0.098		mg/Kg	1	12/9/2015 11:28:27 AM	22688
Calcium	37000	240		mg/Kg	10	12/9/2015 12:02:23 PM	22688
Chromium	6.1	0.29		mg/Kg	1	12/9/2015 11:28:27 AM	22688
Copper	5.9	0.29		mg/Kg	1	12/9/2015 11:28:27 AM	22688
Iron	11000	240		mg/Kg	100	12/9/2015 12:11:57 PM	22688
Lead	3.7	0.24		mg/Kg	1	12/9/2015 11:28:27 AM	22688
Magnesium	4500	49		mg/Kg	2	12/9/2015 11:30:06 AM	22688
Manganese	180	0.098		mg/Kg	1	12/9/2015 11:28:27 AM	22688
Potassium	1500	98		mg/Kg	2	12/9/2015 11:30:06 AM	22688
Selenium	ND	2.4		mg/Kg	1	12/9/2015 11:28:27 AM	22688
Silver	ND	0.24		mg/Kg	1	12/9/2015 11:28:27 AM	22688
Sodium	470	49		mg/Kg	2	12/9/2015 11:30:06 AM	22688
Uranium	ND	4.9		mg/Kg	1	12/9/2015 11:28:27 AM	22688
Zinc	23	2.4		mg/Kg	1	12/9/2015 11:28:27 AM	22688
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: KJH
Diesel Range Organics (DRO)	ND	9.7		mg/Kg	1	12/10/2015 5:16:11 PM	22675
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	12/10/2015 5:16:11 PM	22675
Surr: DNOP	102	70-130		%REC	1	12/10/2015 5:16:11 PM	22675
EPA METHOD 8015D: GASOLINE RANGE							Analyst: NSB
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	12/9/2015 3:52:41 PM	22678
Surr: BFB	94.5	66.2-112		%REC	1	12/9/2015 3:52:41 PM	22678
EPA METHOD 8021B: VOLATILES							Analyst: NSB
Benzene	ND	0.048		mg/Kg	1	12/9/2015 3:52:41 PM	22678
Toluene	ND	0.048		mg/Kg	1	12/9/2015 3:52:41 PM	22678

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1512322

Date Reported: 12/30/2015

CLIENT: Terracon

Client Sample ID: C2N(36")

Project: Agua Moss

Collection Date: 12/7/2015 11:20:00 AM

Lab ID: 1512322-003

Matrix: SOIL

Received Date: 12/7/2015 4:33:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8021B: VOLATILES						Analyst: NSB	
Ethylbenzene	ND	0.048		mg/Kg	1	12/9/2015 3:52:41 PM	22678
Xylenes, Total	ND	0.097		mg/Kg	1	12/9/2015 3:52:41 PM	22678
Surr: 4-Bromofluorobenzene	126	80-120	S	%REC	1	12/9/2015 3:52:41 PM	22678

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1512322

Date Reported: 12/30/2015

CLIENT: Terracon

Client Sample ID: C2S(6")

Project: Agua Moss

Collection Date: 12/7/2015 12:20:00 PM

Lab ID: 1512322-004

Matrix: SOIL

Received Date: 12/7/2015 4:33:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 418.1: TPH							Analyst: TOM
Petroleum Hydrocarbons, TR	6600	200		mg/Kg	10	12/10/2015	22703
EPA METHOD 300.0: ANIONS							Analyst: LGT
Chloride	680	30		mg/Kg	20	12/11/2015 7:29:05 PM	22775
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: KJH
Diesel Range Organics (DRO)	390	94		mg/Kg	10	12/10/2015 5:37:53 PM	22675
Motor Oil Range Organics (MRO)	2800	470		mg/Kg	10	12/10/2015 5:37:53 PM	22675
Surr: DNOP	0	70-130	S	%REC	10	12/10/2015 5:37:53 PM	22675
EPA METHOD 8015D: GASOLINE RANGE							Analyst: NSB
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	12/9/2015 4:17:14 PM	22678
Surr: BFB	91.8	66.2-112		%REC	1	12/9/2015 4:17:14 PM	22678

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1512322

Date Reported: 12/30/2015

CLIENT: Terracon

Client Sample ID: C2N(6")

Project: Agua Moss

Collection Date: 12/7/2015 12:10:00 PM

Lab ID: 1512322-005

Matrix: SOIL

Received Date: 12/7/2015 4:33:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 418.1: TPH							Analyst: TOM
Petroleum Hydrocarbons, TR	8400	200		mg/Kg	10	12/10/2015	22703
EPA METHOD 300.0: ANIONS							Analyst: LGT
Chloride	390	30		mg/Kg	20	12/11/2015 7:53:53 PM	22775
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: KJH
Diesel Range Organics (DRO)	370	97		mg/Kg	10	12/10/2015 5:59:42 PM	22675
Motor Oil Range Organics (MRO)	3300	480		mg/Kg	10	12/10/2015 5:59:42 PM	22675
Surr: DNOP	0	70-130	S	%REC	10	12/10/2015 5:59:42 PM	22675
EPA METHOD 8015D: GASOLINE RANGE							Analyst: NSB
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	12/9/2015 4:41:46 PM	22678
Surr: BFB	91.2	66.2-112		%REC	1	12/9/2015 4:41:46 PM	22678

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1512322

Date Reported: 12/30/2015

CLIENT: Terracon

Client Sample ID: C1(6")

Project: Agua Moss

Collection Date: 12/7/2015 11:40:00 AM

Lab ID: 1512322-006

Matrix: SOIL

Received Date: 12/7/2015 4:33:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 418.1: TPH							Analyst: TOM
Petroleum Hydrocarbons, TR	5000	200		mg/Kg	10	12/10/2015	22703
EPA METHOD 300.0: ANIONS							Analyst: LGT
Chloride	19	1.5		mg/Kg	1	12/11/2015 8:31:06 PM	22775
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: KJH
Diesel Range Organics (DRO)	230	100		mg/Kg	10	12/11/2015 9:24:57 AM	22675
Motor Oil Range Organics (MRO)	1500	500		mg/Kg	10	12/11/2015 9:24:57 AM	22675
Surr: DNOP	0	70-130	S	%REC	10	12/11/2015 9:24:57 AM	22675
EPA METHOD 8015D: GASOLINE RANGE							Analyst: NSB
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	12/9/2015 5:06:17 PM	22678
Surr: BFB	87.5	66.2-112		%REC	1	12/9/2015 5:06:17 PM	22678

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1512322

Date Reported: 12/30/2015

CLIENT: Terracon

Client Sample ID: NM1-9 IW1504

Project: Agua Moss

Collection Date: 12/7/2015 12:40:00 PM

Lab ID: 1512322-007

Matrix: AQUEOUS

Received Date: 12/7/2015 4:33:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
SM2340B: HARDNESS							Analyst: ELS
Hardness (As CaCO ₃)	770	6.6		mg/L	1	12/15/2015 10:30:00 AM	R30843
SODIUM ADSORPTION RATIO							Analyst: ELS
Sodium Absorption Ratio	50	0			1	12/16/2015 1:12:00 PM	R30889
SPECIFIC GRAVITY							Analyst: JRR
Specific Gravity	1.010	0			1	12/8/2015 11:54:00 AM	R30692
EPA METHOD 300.0: ANIONS							Analyst: LGT
Fluoride	2.1	0.50		mg/L	5	12/8/2015 2:54:23 PM	R30715
Chloride	5000	250	*	mg/L	500	12/12/2015 2:48:35 AM	A30806
Nitrogen, Nitrite (As N)	ND	2.0		mg/L	20	12/8/2015 3:06:47 PM	R30715
Bromide	8.2	0.50		mg/L	5	12/8/2015 2:54:23 PM	R30715
Nitrogen, Nitrate (As N)	3.7	0.50		mg/L	5	12/8/2015 2:54:23 PM	R30715
Phosphorus, Orthophosphate (As P)	ND	2.5		mg/L	5	12/8/2015 2:54:23 PM	R30715
Sulfate	620	10	*	mg/L	20	12/8/2015 3:06:47 PM	R30715
SM2510B: SPECIFIC CONDUCTANCE							Analyst: MRA
Conductivity	19000	0.050		µmhos/cm	5	12/12/2015 12:01:56 AM	R30810
SM2320B: ALKALINITY							Analyst: JRR
Alkalinity, Hydroxide (As CaCO ₃)	ND	2.000		mg/L CaCO ₃	1	12/10/2015 1:35:23 PM	R30782
Bicarbonate (As CaCO ₃)	388.8	20.00		mg/L CaCO ₃	1	12/10/2015 1:35:23 PM	R30782
Carbonate (As CaCO ₃)	ND	2.000		mg/L CaCO ₃	1	12/10/2015 1:35:23 PM	R30782
Total Alkalinity (as CaCO ₃)	388.8	20.00		mg/L CaCO ₃	1	12/10/2015 1:35:23 PM	R30782
SM2540C MOD: TOTAL DISSOLVED SOLIDS							Analyst: KS
Total Dissolved Solids	9860	200	*D	mg/L	1	12/16/2015 11:04:00 AM	22799
EPA METHOD 200.7: METALS							Analyst: ELS
Calcium	230	5.0		mg/L	5	12/15/2015 1:27:17 PM	22725
Iron	6.1	1.0	*	mg/L	50	12/16/2015 2:11:44 PM	22713
Magnesium	46	1.0		mg/L	1	12/15/2015 1:25:32 PM	22725
Potassium	61	1.0		mg/L	1	12/15/2015 1:25:32 PM	22725
Sodium	3200	50		mg/L	50	12/16/2015 2:11:44 PM	22713

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1512322

30-Dec-15

Client: Terracon
Project: Agua Moss

Sample ID	MB-22725	SampType: MBLK			TestCode: EPA Method 200.7: Metals					
Client ID:	PBW	Batch ID: 22725			RunNo: 30843					
Prep Date:	12/9/2015	Analysis Date: 12/15/2015			SeqNo: 942392		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Calcium	ND	1.0								
Magnesium	ND	1.0								
Potassium	ND	1.0								

Sample ID	LCS-22725		SampType: LCS		TestCode: EPA Method 200.7: Metals					
Client ID:	LCSW		Batch ID: 22725		RunNo: 30843					
Prep Date:	12/9/2015		Analysis Date: 12/15/2015		SeqNo: 942393		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Calcium	49	1.0	50.00	0	97.8	85	115			
Magnesium	49	1.0	50.00	0	98.6	85	115			
Potassium	49	1.0	50.00	0	98.4	85	115			

Sample ID	LLLCS-22725	SampType: LCSLL			TestCode: EPA Method 200.7: Metals					
Client ID:	BatchQC	Batch ID: 22725			RunNo: 30843					
Prep Date:	12/9/2015	Analysis Date: 12/15/2015			SeqNo: 942394		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Calcium	ND	1.0	0.5000	0	101	50	150			
Magnesium	ND	1.0	0.5000	0	101	50	150			
Potassium	ND	1.0	0.5000	0	108	50	150			

Qualifiers:

* Value exceeds Maximum Contaminant Level.
D Sample Diluted Due to Matrix
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
R RPD outside accepted recovery limits
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank
E Value above quantitation range
J Analyte detected below quantitation limits
P Sample pH Not In Range
RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1512322

30-Dec-15

Client: Terracon
Project: Agua Moss

Sample ID	MB-22775	SampType: MBLK		TestCode: EPA Method 300.0: Anions						
Client ID:	PBS	Batch ID: 22775		RunNo: 30809						
Prep Date:	12/14/2015	Analysis Date: 12/11/2015		SeqNo: 941358		Units: mg/Kg				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Fluoride	ND	0.30								
Chloride	ND	1.5								
Nitrogen, Nitrite (As N)	ND	0.30								
Nitrogen, Nitrate (As N)	ND	0.30								
Sulfate	ND	1.5								

Sample ID	LCS-22775		SampType: LCS		TestCode: EPA Method 300.0: Anions					
Client ID:	LCSS		Batch ID: 22775		RunNo: 30809					
Prep Date:	12/14/2015		Analysis Date: 12/11/2015		SeqNo: 941359		Units: mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Fluoride	1.5	0.30	1.500	0	103	90	110			
Chloride	14	1.5	15.00	0	93.8	90	110			
Nitrogen, Nitrite (As N)	2.8	0.30	3.000	0	94.6	90	110			
Nitrogen, Nitrate (As N)	7.3	0.30	7.500	0	96.8	90	110			
Sulfate	29	1.5	30.00	0	95.5	90	110			

Sample ID	1512322-001AMS		SampType: MS		TestCode: EPA Method 300.0: Anions					
Client ID:	C1(36")		Batch ID: 22775		RunNo: 30809					
Prep Date:	12/14/2015		Analysis Date: 12/11/2015		SeqNo: 941393		Units: mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Nitrogen, Nitrite (As N)	2.4	0.30	3.000	0	81.5	84.9	108			S
Nitrogen, Nitrate (As N)	8.3	0.30	7.500	0.8800	98.9	87.6	109			

Sample ID	1512322-001AMSD		SampType: MSD		TestCode: EPA Method 300.0: Anions					
Client ID:	C1(36")		Batch ID: 22775		RunNo: 30809					
Prep Date:	12/14/2015		Analysis Date: 12/11/2015		SeqNo: 941394		Units: mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Nitrogen, Nitrite (As N)	2.5	0.30	3.000	0	81.9	84.9	108	0.456	20	S
Nitrogen, Nitrate (As N)	8.3	0.30	7.500	0.8800	98.5	87.6	109	0.361	20	

Qualifiers:

* Value exceeds Maximum Contaminant Level.
D Sample Diluted Due to Matrix
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
R RPD outside accepted recovery limits
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank
E Value above quantitation range
J Analyte detected below quantitation limits
P Sample pH Not In Range
RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1512322

30-Dec-15

Client: Terracon
Project: Agua Moss

Sample ID MB	SampType: MBLK		TestCode: EPA Method 300.0: Anions							
Client ID: PBW	Batch ID: R30715		RunNo: 30715							
Prep Date:	Analysis Date: 12/8/2015		SeqNo: 938175		Units: mg/L					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Fluoride	ND	0.10								
Nitrogen, Nitrite (As N)	ND	0.10								
Nitrogen, Nitrate (As N)	ND	0.10								
Phosphorus, Orthophosphate (As P	ND	0.50								
Sulfate	ND	0.50								

Sample ID LCS	SampType: LCS		TestCode: EPA Method 300.0: Anions							
Client ID: LCSW	Batch ID: R30715		RunNo: 30715							
Prep Date:	Analysis Date: 12/8/2015		SeqNo: 938176		Units: mg/L					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Fluoride	0.53	0.10	0.5000	0	105	90	110			
Nitrogen, Nitrite (As N)	0.96	0.10	1.000	0	95.6	90	110			
Nitrogen, Nitrate (As N)	2.5	0.10	2.500	0	99.6	90	110			
Phosphorus, Orthophosphate (As P	4.8	0.50	5.000	0	95.1	90	110			
Sulfate	9.8	0.50	10.00	0	97.9	90	110			

Sample ID MB	SampType: MBLK		TestCode: EPA Method 300.0: Anions							
Client ID: PBW	Batch ID: A30806		RunNo: 30806							
Prep Date:	Analysis Date: 12/12/2015		SeqNo: 941286		Units: mg/L					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	ND	0.50								

Sample ID LCS	SampType: LCS		TestCode: EPA Method 300.0: Anions							
Client ID: LCSW	Batch ID: A30806		RunNo: 30806							
Prep Date:	Analysis Date: 12/12/2015		SeqNo: 941287		Units: mg/L					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	5.0	0.50	5.000	0	99.6	90	110			

Qualifiers:

* Value exceeds Maximum Contaminant Level.
D Sample Diluted Due to Matrix
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
R RPD outside accepted recovery limits
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank
E Value above quantitation range
J Analyte detected below quantitation limits
P Sample pH Not In Range
RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1512322

30-Dec-15

Client: Terracon
Project: Agua Moss

Sample ID	MB-22703		SampType: MBLK		TestCode: EPA Method 418.1: TPH					
Client ID:	PBS		Batch ID: 22703		RunNo: 30759					
Prep Date:	12/9/2015		Analysis Date: 12/10/2015		SeqNo: 939490		Units: mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Petroleum Hydrocarbons, TR	ND	20								

Sample ID	LCS-22703		SampType: LCS		TestCode: EPA Method 418.1: TPH					
Client ID:	LCSS		Batch ID: 22703		RunNo: 30759					
Prep Date:	12/9/2015		Analysis Date: 12/10/2015		SeqNo: 939491		Units: mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Petroleum Hydrocarbons, TR	100	20	100.0	0	101	83.6	116			

Sample ID	LCSD-22703		SampType: LCSD		TestCode: EPA Method 418.1: TPH					
Client ID:	LCSS02		Batch ID: 22703		RunNo: 30759					
Prep Date:	12/9/2015		Analysis Date: 12/10/2015		SeqNo: 939492		Units: mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Petroleum Hydrocarbons, TR	100	20	100.0	0	104	83.6	116	2.64	20	

Qualifiers:

* Value exceeds Maximum Contaminant Level.
D Sample Diluted Due to Matrix
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
R RPD outside accepted recovery limits
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank
E Value above quantitation range
J Analyte detected below quantitation limits
P Sample pH Not In Range
RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1512322

30-Dec-15

Client: Terracon
Project: Agua Moss

Sample ID	MB-22675		SampType: MBLK		TestCode: EPA Method 8015M/D: Diesel Range Organics					
Client ID:	PBS		Batch ID: 22675		RunNo: 30744					
Prep Date:	12/9/2015		Analysis Date: 12/10/2015		SeqNo: 939460		Units: mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	ND	10								
Motor Oil Range Organics (MRO)	ND	50								
Surr: DNOP	11		10.00		109	70	130			

Sample ID	LCS-22675		SampType: LCS		TestCode: EPA Method 8015M/D: Diesel Range Organics					
Client ID:	LCSS		Batch ID: 22675		RunNo: 30744					
Prep Date:	12/9/2015		Analysis Date: 12/10/2015		SeqNo: 939461		Units: mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	54	10	50.00	0	109	57.4	139			
Surr: DNOP	5.6		5.000		112	70	130			

Qualifiers:

* Value exceeds Maximum Contaminant Level.
D Sample Diluted Due to Matrix
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
R RPD outside accepted recovery limits
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank
E Value above quantitation range
J Analyte detected below quantitation limits
P Sample pH Not In Range
RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1512322

30-Dec-15

Client: Terracon
Project: Agua Moss

Sample ID MB-22678	SampType: MBLK			TestCode: EPA Method 8015D: Gasoline Range						
Client ID: PBS	Batch ID: 22678			RunNo: 30727						
Prep Date: 12/8/2015	Analysis Date: 12/9/2015			SeqNo: 938888		Units: mg/Kg				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	ND	5.0								
Surr: BFB	870		1000		87.4	66.2	112			

Sample ID LCS-22678	SampType: LCS			TestCode: EPA Method 8015D: Gasoline Range						
Client ID: LCSS	Batch ID: 22678			RunNo: 30727						
Prep Date: 12/8/2015	Analysis Date: 12/9/2015			SeqNo: 938889		Units: mg/Kg				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	21	5.0	25.00	0	83.6	79.6	122			
Surr: BFB	1100		1000		107	66.2	112			

Qualifiers:

* Value exceeds Maximum Contaminant Level.
D Sample Diluted Due to Matrix
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
R RPD outside accepted recovery limits
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank
E Value above quantitation range
J Analyte detected below quantitation limits
P Sample pH Not In Range
RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1512322

30-Dec-15

Client: Terracon
Project: Agua Moss

Sample ID MB-22678	SampType: MBLK		TestCode: EPA Method 8021B: Volatiles							
Client ID: PBS	Batch ID: 22678		RunNo: 30727							
Prep Date: 12/8/2015	Analysis Date: 12/9/2015		SeqNo: 938921		Units: mg/Kg					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	0.050								
Toluene	ND	0.050								
Ethylbenzene	ND	0.050								
Xylenes, Total	ND	0.10								
Surr: 4-Bromofluorobenzene	1.1		1.000		114	80	120			

Sample ID LCS-22678	SampType: LCS		TestCode: EPA Method 8021B: Volatiles							
Client ID: LCSS	Batch ID: 22678		RunNo: 30727							
Prep Date: 12/8/2015	Analysis Date: 12/9/2015		SeqNo: 938922		Units: mg/Kg					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.88	0.050	1.000	0	87.8	80	120			
Toluene	0.88	0.050	1.000	0	88.5	80	120			
Ethylbenzene	0.95	0.050	1.000	0	95.1	80	120			
Xylenes, Total	2.7	0.10	3.000	0	91.2	80	120			
Surr: 4-Bromofluorobenzene	1.3		1.000		134	80	120			S

Sample ID 1512322-001AMS	SampType: MS		TestCode: EPA Method 8021B: Volatiles							
Client ID: C1(36")	Batch ID: 22678		RunNo: 30727							
Prep Date: 12/8/2015	Analysis Date: 12/9/2015		SeqNo: 938924		Units: mg/Kg					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.99	0.047	0.9470	0	105	69.6	136			
Toluene	1.0	0.047	0.9470	0	108	76.2	134			
Ethylbenzene	1.1	0.047	0.9470	0	117	75.8	137			
Xylenes, Total	3.2	0.095	2.841	0	112	78.9	133			
Surr: 4-Bromofluorobenzene	1.3		0.9470		138	80	120			S

Sample ID 1512322-001AMSD	SampType: MSD		TestCode: EPA Method 8021B: Volatiles							
Client ID: C1(36")	Batch ID: 22678		RunNo: 30727							
Prep Date: 12/8/2015	Analysis Date: 12/9/2015		SeqNo: 938925		Units: mg/Kg					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	1.1	0.047	0.9479	0	113	69.6	136	7.10	20	
Toluene	1.1	0.047	0.9479	0	112	76.2	134	4.61	20	
Ethylbenzene	1.2	0.047	0.9479	0	122	75.8	137	4.15	20	
Xylenes, Total	3.3	0.095	2.844	0	118	78.9	133	5.39	20	
Surr: 4-Bromofluorobenzene	1.3		0.9479		139	80	120	0	0	S

Qualifiers:

* Value exceeds Maximum Contaminant Level.
D Sample Diluted Due to Matrix
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
R RPD outside accepted recovery limits
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank
E Value above quantitation range
J Analyte detected below quantitation limits
P Sample pH Not In Range
RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1512322

30-Dec-15

Client: Terracon
Project: Agua Moss

Sample ID	MB-22709		SampType: MBLK		TestCode: EPA Method 7471: Mercury					
Client ID:	PBS		Batch ID: 22709		RunNo: 30733					
Prep Date:	12/9/2015		Analysis Date: 12/9/2015		SeqNo: 938623		Units: mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	ND	0.033								

Sample ID	LCS-22709		SampType: LCS		TestCode: EPA Method 7471: Mercury					
Client ID:	LCSS		Batch ID: 22709		RunNo: 30733					
Prep Date:	12/9/2015		Analysis Date: 12/9/2015		SeqNo: 938624		Units: mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	0.18	0.033	0.1667	0	105	80	120			

Qualifiers:

* Value exceeds Maximum Contaminant Level.
D Sample Diluted Due to Matrix
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
R RPD outside accepted recovery limits
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank
E Value above quantitation range
J Analyte detected below quantitation limits
P Sample pH Not In Range
RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1512322

30-Dec-15

Client: Terracon
Project: Agua Moss

Sample ID	MB-22688	SampType: MBLK			TestCode: EPA Method 6010B: Soil Metals					
Client ID:	PBS	Batch ID: 22688			RunNo: 30722					
Prep Date:	12/8/2015	Analysis Date: 12/9/2015			SeqNo: 938366		Units: mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	ND	2.5								
Barium	ND	0.10								
Cadmium	ND	0.10								
Calcium	ND	25								
Chromium	ND	0.30								
Copper	ND	0.30								
Iron	ND	2.5								
Lead	ND	0.25								
Magnesium	ND	25								
Manganese	ND	0.10								
Potassium	ND	50								
Selenium	ND	2.5								
Silver	ND	0.25								
Sodium	ND	25								
Uranium	ND	5.0								
Zinc	ND	2.5								

Sample ID	LCS-22688		SampType: LCS		TestCode: EPA Method 6010B: Soil Metals					
Client ID:	LCSS		Batch ID: 22688		RunNo: 30722					
Prep Date:	12/8/2015		Analysis Date: 12/9/2015		SeqNo: 938367		Units: mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	28	2.5	25.00	0	110	80	120			
Barium	25	0.10	25.00	0	102	80	120			
Cadmium	25	0.10	25.00	0	102	80	120			
Calcium	2600	25	2500	0	103	80	120			
Chromium	25	0.30	25.00	0	100	80	120			
Copper	26	0.30	25.00	0	104	80	120			
Iron	26	2.5	25.00	0	103	80	120			
Lead	25	0.25	25.00	0	99.2	80	120			
Magnesium	2500	25	2500	0	102	80	120			
Manganese	25	0.10	25.00	0	101	80	120			
Potassium	2500	50	2500	0	99.3	80	120			
Selenium	27	2.5	25.00	0	108	80	120			
Silver	5.1	0.25	5.000	0	102	80	120			
Sodium	2500	25	2500	0	100	80	120			
Uranium	26	5.0	25.00	0	104	80	120			
Zinc	26	2.5	25.00	0	103	80	120			

Qualifiers:

* Value exceeds Maximum Contaminant Level.
D Sample Diluted Due to Matrix
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
R RPD outside accepted recovery limits
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank
E Value above quantitation range
J Analyte detected below quantitation limits
P Sample pH Not In Range
RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1512322

30-Dec-15

Client: Terracon
Project: Agua Moss

Sample ID mb-1	SampType: MBLK			TestCode: SM2320B: Alkalinity						
Client ID: PBW	Batch ID: R30782			RunNo: 30782						
Prep Date:	Analysis Date: 12/10/2015			SeqNo: 940209		Units: mg/L CaCO3				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Alkalinity (as CaCO3)	ND	20.00								

Sample ID lcs-1	SampType: LCS			TestCode: SM2320B: Alkalinity						
Client ID: LCSW	Batch ID: R30782			RunNo: 30782						
Prep Date:	Analysis Date: 12/10/2015			SeqNo: 940210		Units: mg/L CaCO3				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Alkalinity (as CaCO3)	77.28	20.00	80.00	0	96.6	90	110			

Qualifiers:

* Value exceeds Maximum Contaminant Level.
D Sample Diluted Due to Matrix
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
R RPD outside accepted recovery limits
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank
E Value above quantitation range
J Analyte detected below quantitation limits
P Sample pH Not In Range
RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1512322

30-Dec-15

Client: Terracon
Project: Agua Moss

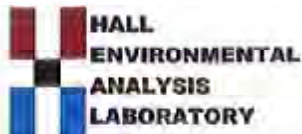
Sample ID	MB-22799		SampType: MBLK		TestCode: SM2540C MOD: Total Dissolved Solids					
Client ID:	PBW		Batch ID: 22799		RunNo: 30873					
Prep Date:	12/14/2015		Analysis Date: 12/16/2015		SeqNo: 943604		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Dissolved Solids	ND	20.0								

Sample ID	LCS-22799		SampType: LCS		TestCode: SM2540C MOD: Total Dissolved Solids					
Client ID:	LCSW		Batch ID: 22799		RunNo: 30873					
Prep Date:	12/14/2015		Analysis Date: 12/16/2015		SeqNo: 943605		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Dissolved Solids	996	20.0	1000	0	99.6	80	120			

Qualifiers:

* Value exceeds Maximum Contaminant Level.
D Sample Diluted Due to Matrix
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
R RPD outside accepted recovery limits
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank
E Value above quantitation range
J Analyte detected below quantitation limits
P Sample pH Not In Range
RL Reporting Detection Limit



Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com

Sample Log-In Check List

Client Name: TER-Alb

Work Order Number: 1512322

ReptNo: 1

Received by/date: CS 12/07/15

Logged By: Celina Sessa 12/7/2015 4:33:00 PM Celina Sessa

Completed By: Celina Sessa 12/7/2015 4:50:18 PM Celina Sessa

Reviewed By: [Signature] 12/08/15

Chain of Custody

1. Custody seals intact on sample bottles? Yes ☐ No ☐ Not Present ☒
2. Is Chain of Custody complete? Yes ☒ No ☐ Not Present ☐
3. How was the sample delivered? Client

Log In

4. Was an attempt made to cool the samples? Yes ☒ No ☐ NA ☐
5. Were all samples received at a temperature of $>0^{\circ}\text{C}$ to 6.0°C ? Yes ☒ No ☐ NA ☐
6. Sample(s) in proper container(s)? Yes ☒ No ☐
7. Sufficient sample volume for indicated test(s)? Yes ☒ No ☐
8. Are samples (except VOA and ONG) properly preserved? Yes ☒ No ☐
9. Was preservative added to bottles? Yes ☐ No ☒ NA ☐
10. VOA vials have zero headspace? Yes ☐ No ☐ No VOA Vials ☒
11. Were any sample containers received broken? Yes ☐ No ☒
12. Does paperwork match bottle labels?
(Note discrepancies on chain of custody) Yes ☒ No ☐
13. Are matrices correctly identified on Chain of Custody? Yes ☒ No ☐
14. Is it clear what analyses were requested? Yes ☒ No ☐
15. Were all holding times able to be met?
(If no, notify customer for authorization.) Yes ☒ No ☐
- # of preserved bottles checked for pH: 2
(≤ 2) or >12 unless noted)
Adjusted? NO
Checked by: [Signature]

Special Handling (if applicable)

16. Was client notified of all discrepancies with this order? Yes ☐ No ☐ NA ☒

Person Notified: _____ Date: _____
By Whom: _____ Via: ☐ eMail ☐ Phone ☐ Fax ☐ In Person
Regarding: _____
Client Instructions: _____

17. Additional remarks:

18. Cooler Information

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	5.6	Good	Not Present			

Appendix C



NEW MEXICO ENERGY, MINERALS and NATURAL RESOURCES DEPARTMENT

MECHANICAL INTEGRITY TEST REPORT

(TA OR UIC)

Date of Test 4-28-15 Operator Agua Moss API # 30-0 45-28653

Property Name Sunco Disposal Well # 1 Location: Unit Sec 2 Twn 29 Rge 12

Land Type:

State
Federal
Private J
Indian

Well Type:

Water Injection
Salt Water Disposal ✓
Gas Injection
Producing Oil/Gas
Pressure observation

OIL CONS. DIV DIST. 3
APR 28 2015

Temporarily Abandoned Well (Y/N) N TA Expires:

Casing Pres. 0 Tbg. SI Pres. Max. Inj. Pres.
Bradenhead Pres. 0 Tbg. Inj. Pres.
Tubing Pres. 1349
Int. Casing Pres. N/A

Pressured annulus up to 390 psi. for 3 mins. Test passed failed

REMARKS:

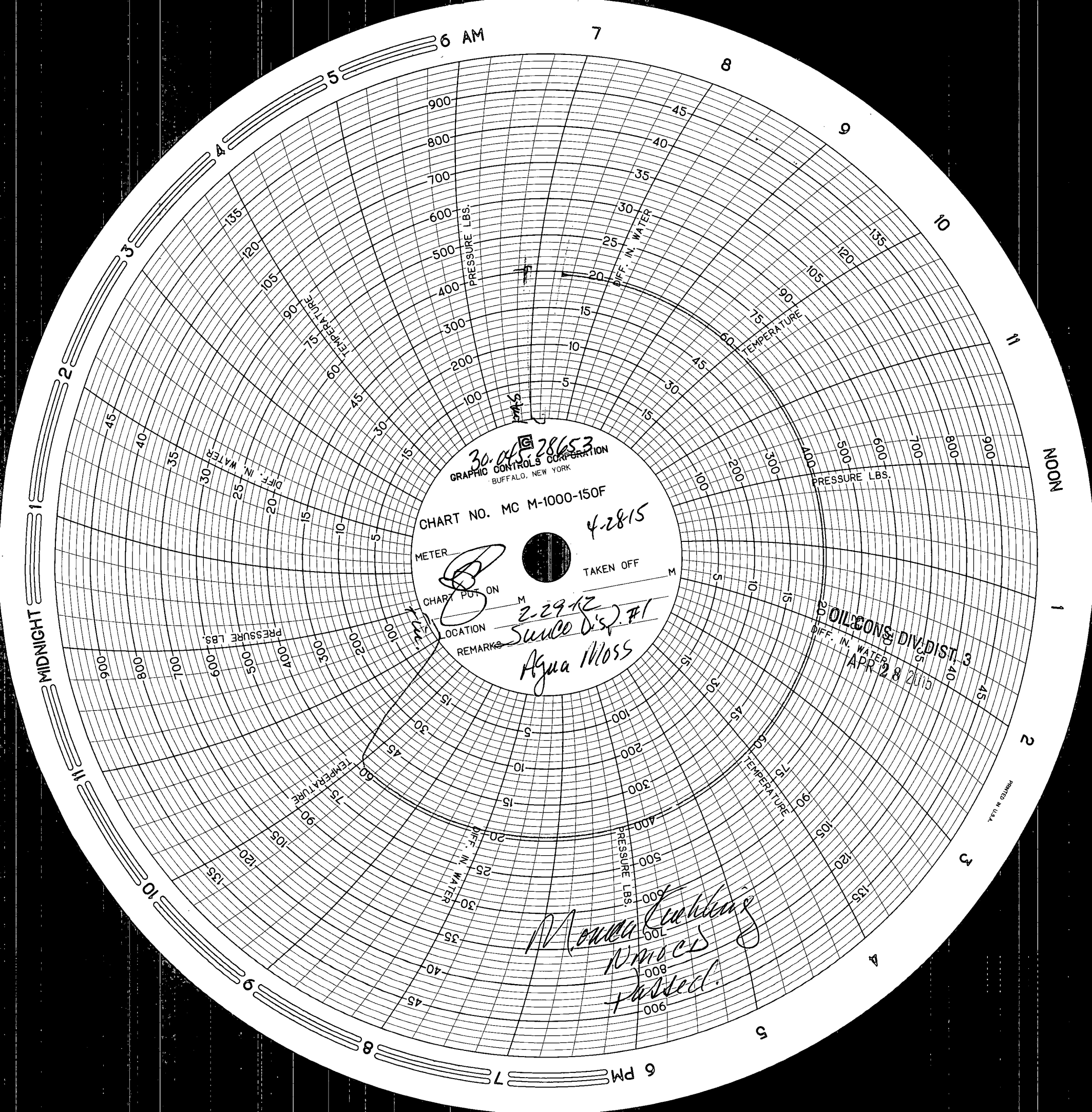
 Packer 4282
 top of 4350

By
(Operator Representative)

Witness Monica Cuhling
(NMOCD)

 Manager
(Position)

Revised 02-11-02



Sunco SWD #1
30-045-28653
Class I Disposal: UICI-5-0
2015 Falloff Test

Agua Moss, LLC
P.O Box 600
Farmington, NM 87499
ORGID 247130

Report Components:

1. Facility Operator Information
 - a. Agua Moss, LLC
 - b. PO Box 600 Farmington, NM 87499
 - c. OGRID 247130
2. Well Information:
 - a. UIC Permit # UICI-5-0
 - b. Class I
 - c. Sunco Disposal #1
 - d. 30-045-28653
 - e. UL E, Sec 2, T29N, R12W 1595 FNL & 1005 FWL San Juan County
3. Current Wellbore Diagram: **Attached** (page 4)
4. Copy of Electronic Log: **Previously submitted 1992** (page 5)
5. Copy of Porosity Log: **Previously submitted 1992** (page 6)
6. See attached Fall off Test analysis
 - a. FOT Procedure (page 7)
 - b. Analysis (page 7)
 - c. Results (page 9)
 - d. Summary (page 9)
7. Results Comparison attached (page 10)
8. The raw test data will be kept on file for a period of 3-year and will be made available to the NMOCD upon written request. (page 11)
9. Conclusions (page 11)
10. Any pressure or temperature anomaly: **None seen**
11. See Falloff Test Calculations (page 12)
12. Plots attached
 - a. Pressure and Rate (fig 6) (page 13)
 - b. Injection Rate vs Time (fig 7) (page 14)
 - c. Pressure and Rate (fig 8) (page 15)
 - d. Elapsed Time (fig 9) (page 16)
 - e. Derivative Plot (fig 10) (page 17)
 - f. Horner Plot (fig 11) (page 18)
 - g. Elapsed Gauge Time (fig 12) (page 19)
 - h. Injection Volumes and Surface Pressure (fig13) (page 20)
13. NO PVT data necessary, injected fluid is fresh-to-slightly saline water. No significant hydrocarbons present that would alter the density, compressibility and/or viscosity of the fluid.
14. The Agua Moss, LLC internal Daily Injection Reports were used to determine the appropriate injection history to use for the analysis. A summary of those reports (November 2013 through January 2014) are attached. (page 21- 26)
15. The Sunco Disposal #1 has injected approximately 13,547,086 bbls into the point lookout formation from 1994 through March 2015 (see attached). The offset well McGrath SWD #4 API 30-045-25923 was plugged 7/25/2013. Cumulative injection 1994-7/2013 27,746,479 bbls.

16. 1 Mile AOR:
 - a. AOR 1 mile (page 27)
 - b. AOR 1 mile well data (page 28)
 - c. The McGrath #4 was the only offset well that was injecting into the Point Lookout formation within 1 mile. This well was plugged 7/25/2013.
17. Geological information was provided in the last Permit renewal submitted and approved in 2012.
18. Offset Wells: One offset well that was completed in the same injection interval was the McGrath #4. This well was plugged 7/2013 and therefore was not impacted.
19. Chronological listing of the daily, testing activities (operations log) attached (pages 30-45)
 - a. Date of Test: **4/28/15 thru 5/4/2015**
 - b. Time of the injection period: **50 hours**
 - c. Type of injection fluid: **Produced water**
 - d. Final injection pressure & temp prior to shutting in in the well: **3764.43 psi, 69.42 °F**
 - e. Total shut-in time: **90.5 hours**
 - f. Final static pressure & temp at the end of the fall-off portion of the test: **3349.84 psi, 88.14 °F**
20. Location of the shut in valve: **A wing valve located on the well's Christmas Tree was closed to begin the FOT**
21. Pressure Gauges: (see attached)
 - a. SP-2000 Memory Pressure Gauge (page 46)
 - b. Pressure range: **0-5000 psig** (page 47)
 - c. Last Calibration: **2/4/14** (page 47)

Wellbore Schematic:

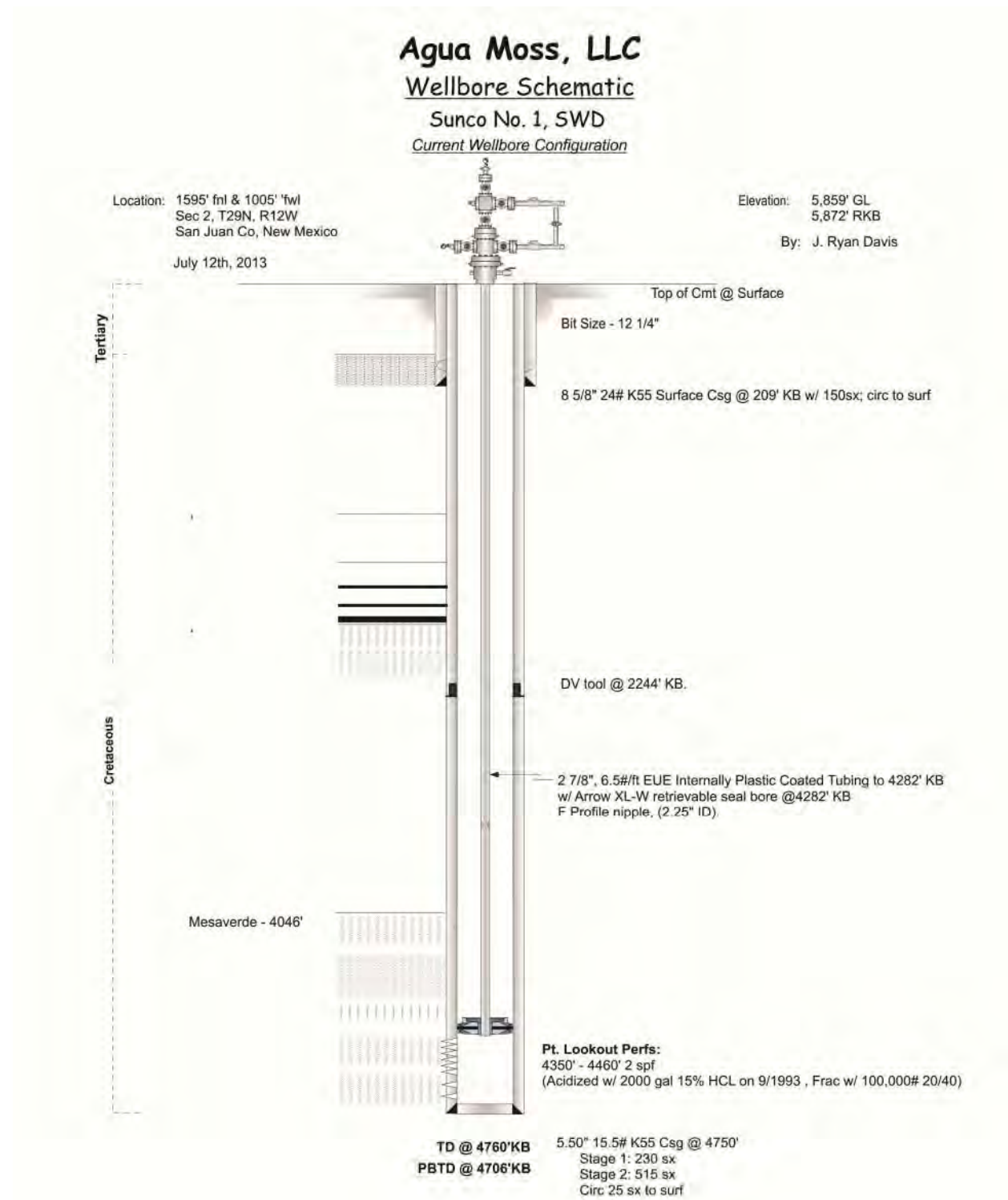
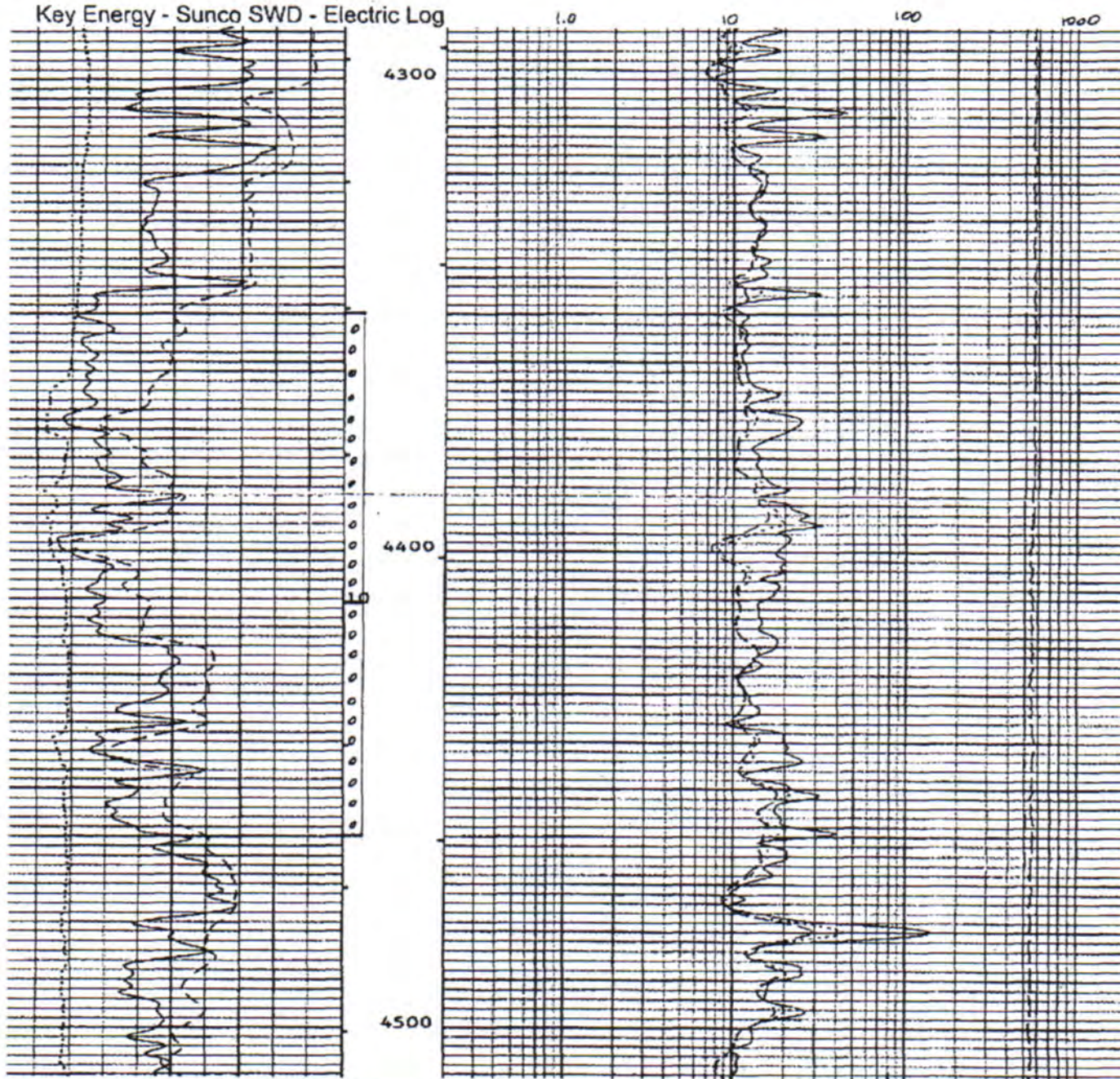


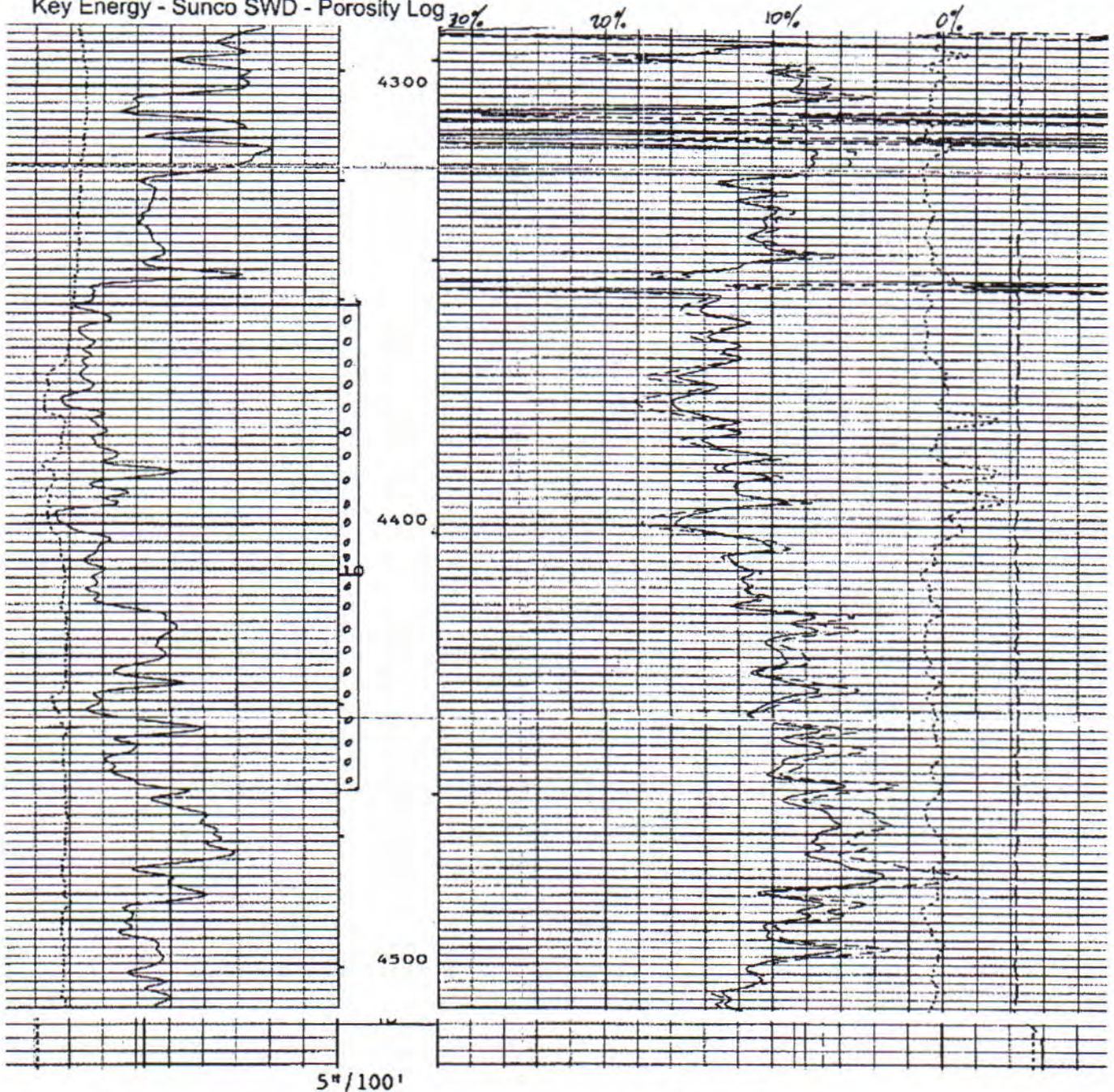
Figure 1: Wellbore Schematic

Key Energy - Sunco SWD - Electric Log



		TENS(LBF)	
		10000	0.0
CAL(I(N)		SFLU(OHMM)	
3.0000	16.000	20000	2000.0
GR(GAP)		ILD(OHMM)	
3.0	200.00	20000	2000.0
SP(MV)		ILM(OHMM)	
80.00	20.000	20000	2000.0

Key Energy - Sunco SWD - Porosity Log



5"/100'

CP 32.6

FILE 6

01-FEB-1992 20:21

(UP)

CALI (IN.)		RHO (G/C3)	
5.0000	16.000	2500	25000
GR (GAPI)		TENS (LBF)	
0.0	200.00	10000	0.0
		RHO B (G/C3)	
		2.0000	3.0000
		DPH (V/V)	
		30000	1.000

At the request of the NMOCD, a Falloff Test (FOT) was performed on the Sunco SWD #1 Class I injection well (UICI-5-0) on **04/28/2015**. Below is the summary of findings from the 2015 FOT.

Procedure:

Tandem electronic gauges were run in the subject well. The initial BHP was 3243 psi at a depth of 4405'. The injection period started at 12:30 pm on 04/28/2015, with a total of 7002 bbls injected over 50 hours, and an average injection rate of 3361 bpd (98 gpm). The final bottom hole injection pressure was 3764 psi. Injection was shut down and the well was shut in at the wellhead. The bottom hole pressures were monitored for 90 hours of pressure falloff. The final BHP was 3350 psi.

Analysis:

The data was compiled in excel and analyzed. A Cartesian plot of pressure and temperature versus time was created see Figure 2 below..

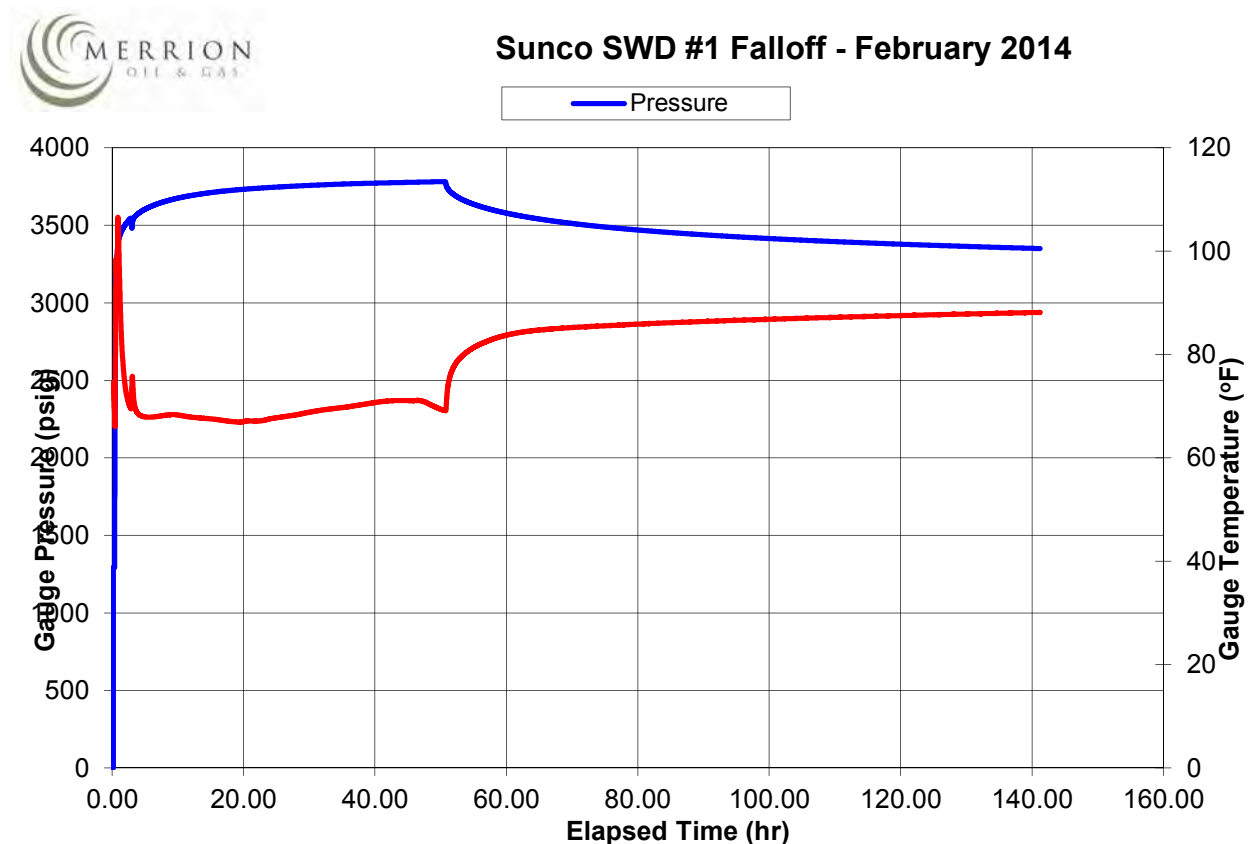


Figure 2: Cart Pressure/Temp vs. Time

The stabilization of pressure was confirmed prior to shut-in. The plot was reviewed for anomalous data, none found.

A log-log plot of pressure and the derivative was created to identify the radial flow period. Figure 3 below shows the log-log plot used for the analysis with the radial flow period identified.

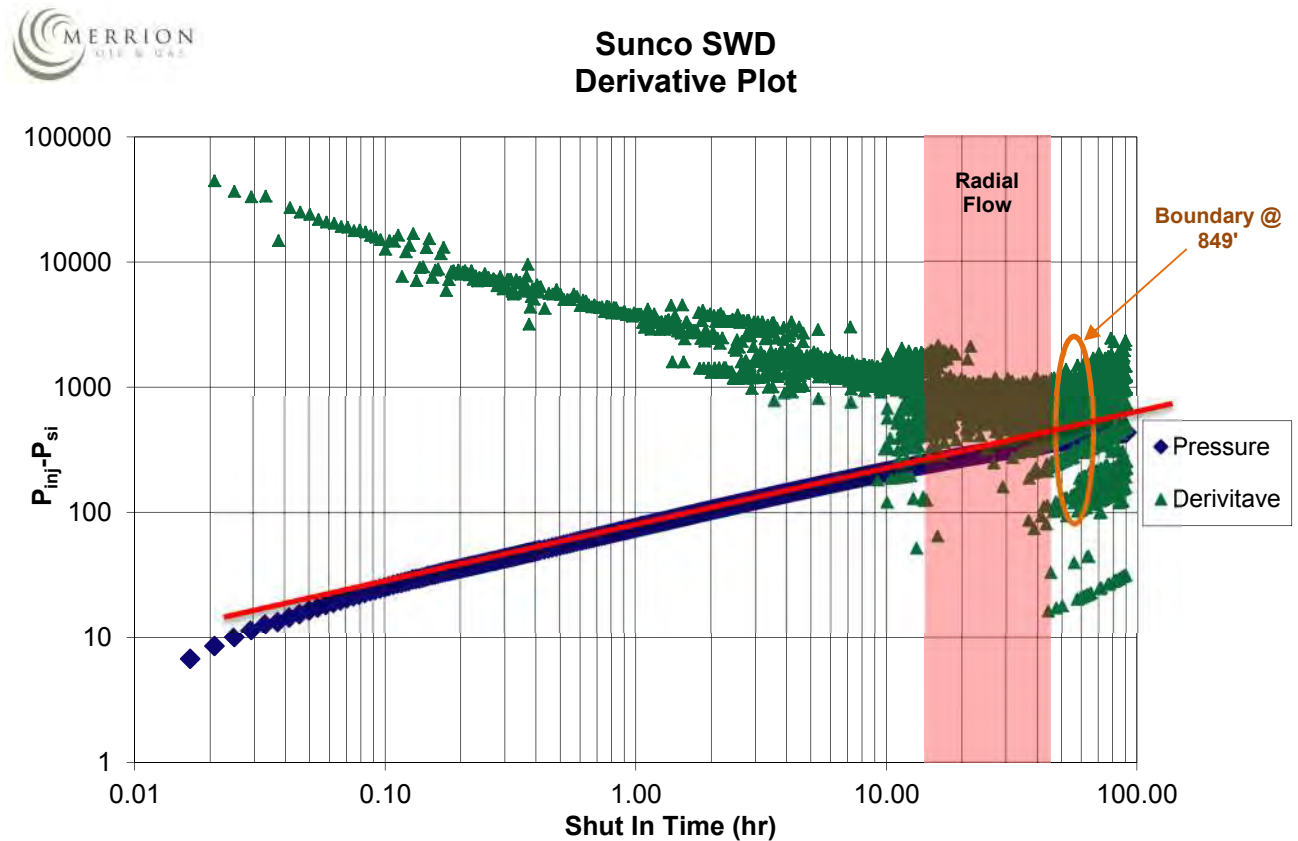


Figure 3: Derivative Plot

From Figure 3 above you can also see the change in the derivative at a shut-in time of approximately 55 hours, indicating a boundary at approximately 849 feet.

The radial flow interval was used to draw a straight line of best fit on the Horner Plot within the equivalent time interval. The slope m , P^* and P_{1hr} were determined from the straight line on the Horner Plot, Figure 4 below.



Sunco Disposal Well Horner Plot

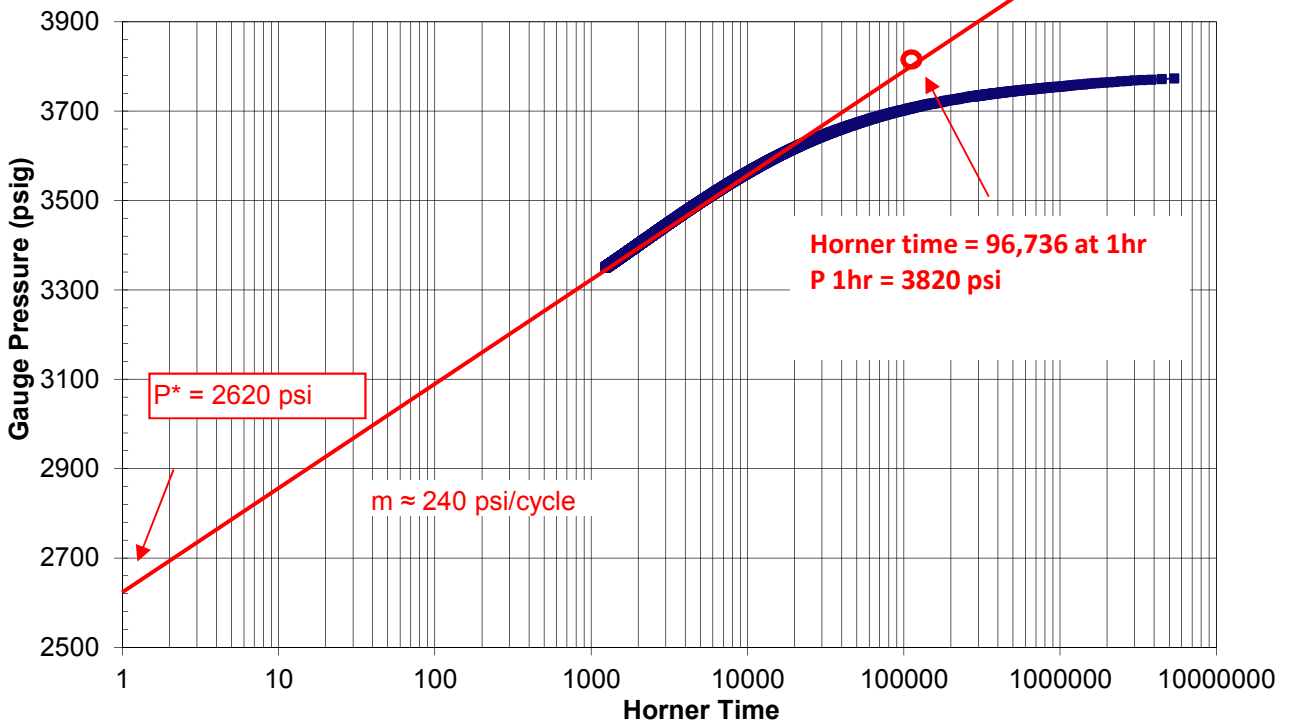


Figure 4: Horner Plot

Using the parameters identified, as described above, the reservoir and completion parameter were calculated. Calculations can be found in Figure 5 below.

Results:

1. $P^* = 2620$ psi
2. $K = 20.7$ md
3. $S = -5.5$
4. Radius of Investigation = 1,089 feet
5. Boundary seen at approximately 849 feet

Summary:

The data from the FOT indicated a hydraulically fractured injection interval with a Fracture half-length of 383 feet. The P^* value calculated from the data was 2620 psi, being somewhat lower than previous values. The injection volumes into the Mesa Verde interval in this area have been on a decline over the last eight years, can be seen in Figure 13. The reduced injection volumes are attributable to less water being received at the Sunco SWD Facility and the P&A of the offset McGrath SWD 4. The lower P^* value

is an indication of pressure dissipation into the reservoir, which is good. Although there has been boundaries seen in the past FOT's and one seen on this analysis, the reservoir is not being constrained by the boundaries. You can also see in Figure 13 a decreasing trend with the surface pressures, which again is evidence of pressure dissipation in the reservoir. As long as the surface pressure limitations keep us below fracture pressure, injecting into the well at the current injection rates will not damage the reservoir or migrate into other zones. The injection interval overall looks healthy and suitable for waste water disposal.

Comparison with past Falloff Tests:

The results from the 2015 FOT were compiled with previous FOT results from the facility and are shown below in Table 1.

Table 1: Results Comparison

	<u>2015</u>	<u>2014</u>	<u>2010</u>	<u>2009</u>	<u>2008</u>	<u>2007</u>
Rate (bbl/day)	3340	739	4500			
P* (psi)	2620	3135	3231	3242	3176	3258
K (md)	20.6	3.4	13.6	10.2	20.7	
S	-5.6	-4.1	-7.18	-7.23	-6.79	
Radius of Inv (ft)	1,085	336	1450	1250	1750	1620
Frac ½ Length (ft)	378	336	893	926	596	688
Boundary	846	None	648, 1520	755	987	none

Agua Moss did not conduct the prior tests and is relying on the 2010 report submitted by Key Energy, the prior operator, for the prior results. In comparing the results, there are a number of observations to make:

1. Pressure transient analysis is not an exact science, and the results are non-unique. All the calculated parameters vary significantly from year to year. One interpretation sees a boundary, the next one sees TWO boundaries, and one sees no boundary. The bottom line is that two different interpreters may come up with different results looking at the same data set, and even the same interpreter will come up with different results as data sets vary from year to year. Therefore, to a great extent, one must make qualitative conclusions from the analysis, without putting too much weight into the absolute numbers.
2. The slightly lower P* suggests that there has been some pressure dissipation in the reservoir due to less injection activity in the injection interval. That is a good sign, indicating the disposal zone has a lot of capacity to accept fluids.

3. The injection rate in the 2010 test was 4500 BPD, while we were only able to inject 739 BPD during the 2014 test, because of facility constraints. Since the injection rate drives the calculations, the **calculated** permeability was less and the **calculated** skin factor was greater than in past tests. All **calculated** radius are driven by the permeability used in the equation. Because the permeability used in the 2014 analysis was significantly less than prior analysis, **the calculated** radius of investigation and **fracture** half-length both come up significantly lower.
4. The radius of investigation for 2015 was adequate enough to see out beyond all but one of the previously seen boundaries. In fact a boundary was identified at approximately 846 feet.
Note: *On 2010 results seems peculiar to have a boundary beyond the Radius of Investigation.*
5. The parameters calculated compare well enough with previous FOT parameter to validate the 2015 FOT results. The only major variance is the P* which is easily justified by reduced injection and pressure dissipation.

Data:

The raw test data obtained during the 2015 falloff test and used for the analysis will be kept on file for a period of three (3) years and will be available upon request.

Conclusions:

Based on the above analysis and results comparison, Agua Moss believes the Sunco SWD #1 2015 FOT was successfully completed and doesn't show any indications of concern to continue the current waste injection operations. If the division is in agreement with the successful completion of the FOT, Agua Moss would like to propose conducting the next FOT on or before 04/2020.

Falloff Test Calculations					BHP	3,782		
Lease Name	Sunco SWD							
Field Name	Mesaverde						1.6E+07	
Test Date	04/28/15							
Cum Injection	7,002	Bbls						
Injection Period	50	hours						
Ave Inj Rate	3,361	BWD	Cum Inj	1.35E+07	Bbl			
Water specific gravity	1.00		Rate	3,361	Bbl/day			
			Inj Time	96,736	hrs	Average pres	3,201	psi
			Water vis	1.0000	cp	Drainage radius	2,980	ft
			Bw	1.00000	RB/ surf bbl			
Reservoir temp	173	°F						
Acres	640					Compressibility wate	3.00E-06	
I. Calculation of kh (md-ft) and k (md)						Compress formation	3.65E-06	
Slope (psi/cycle)	240	(1)				System Comp.	0.000007	
Pwf	3,782	psi	KH	2277.080	md-ft			
Pressure star	2,620	psi	Kw	20.701	md			
Net thickness	110	ft	KH/u	2,277				
II. Calculation of Skin Effect and Pressure Loss Due to Skin								
Porosity	0.200	frac						
Well bore radius	0.33	ft	Skin	-5.49	LN(rwa/rw)			
P one hour	3,820	(2)	Pseudo skin	(1,146)	psi			
Water saturation	1.00	frac	Flow Efficiency	199%	(Pwf-Dpskin - Pstatic)/(Pwf-Pstatic)			
Injection Time	50	hr						
Time to Reach Radial	0.000	hr	(200000+12000*S)*Ct/(kh/u)					
Radius of Investigation	809	ft	0.029*(kt/Por*u*Ct)^.5					
Shut In Time	90.5	hr			Time to Reach Boundary	55	hr	
Time to Reach Radial	0.00023	hr	170000*Ct*exp^(.14*S)/(kh/u)		Time to Reach Radial	0.0002302	hr	
adius of Investigation	1,089	ft	0.029*(kt/Por*u*Ct)^.5		Distance	849	ft	
ime to end of Frac Flow	11.2	hr						
Frac Half Length	383		0.029*(kt/Por*u*Ct)^.5					
Horner straight line starts 11 hours								
Finite Conductivity Fracture of approximately 383' half length								

Figure 5: FOT Calculations

Pressure and Rate

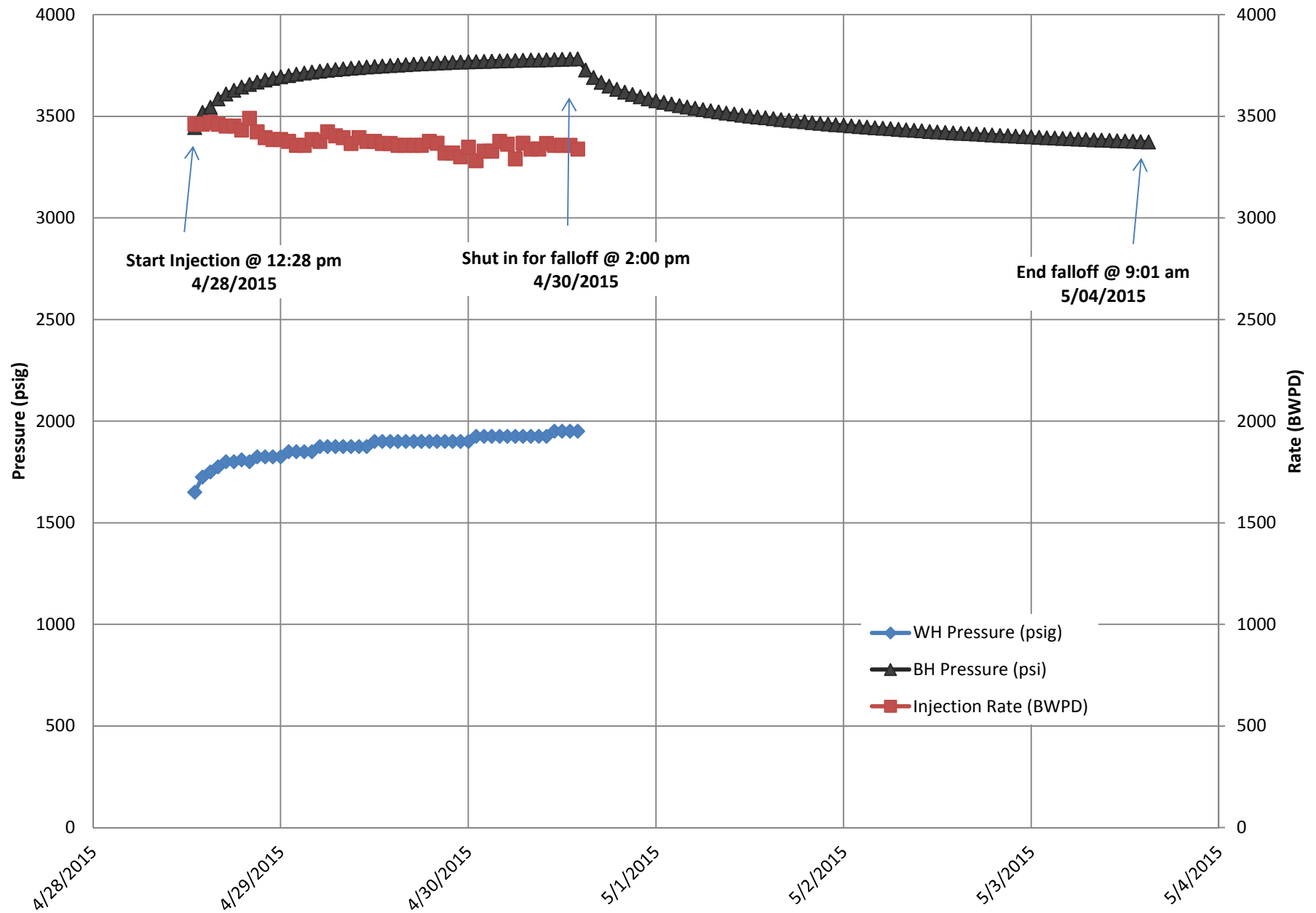


Figure 6



Figure 7

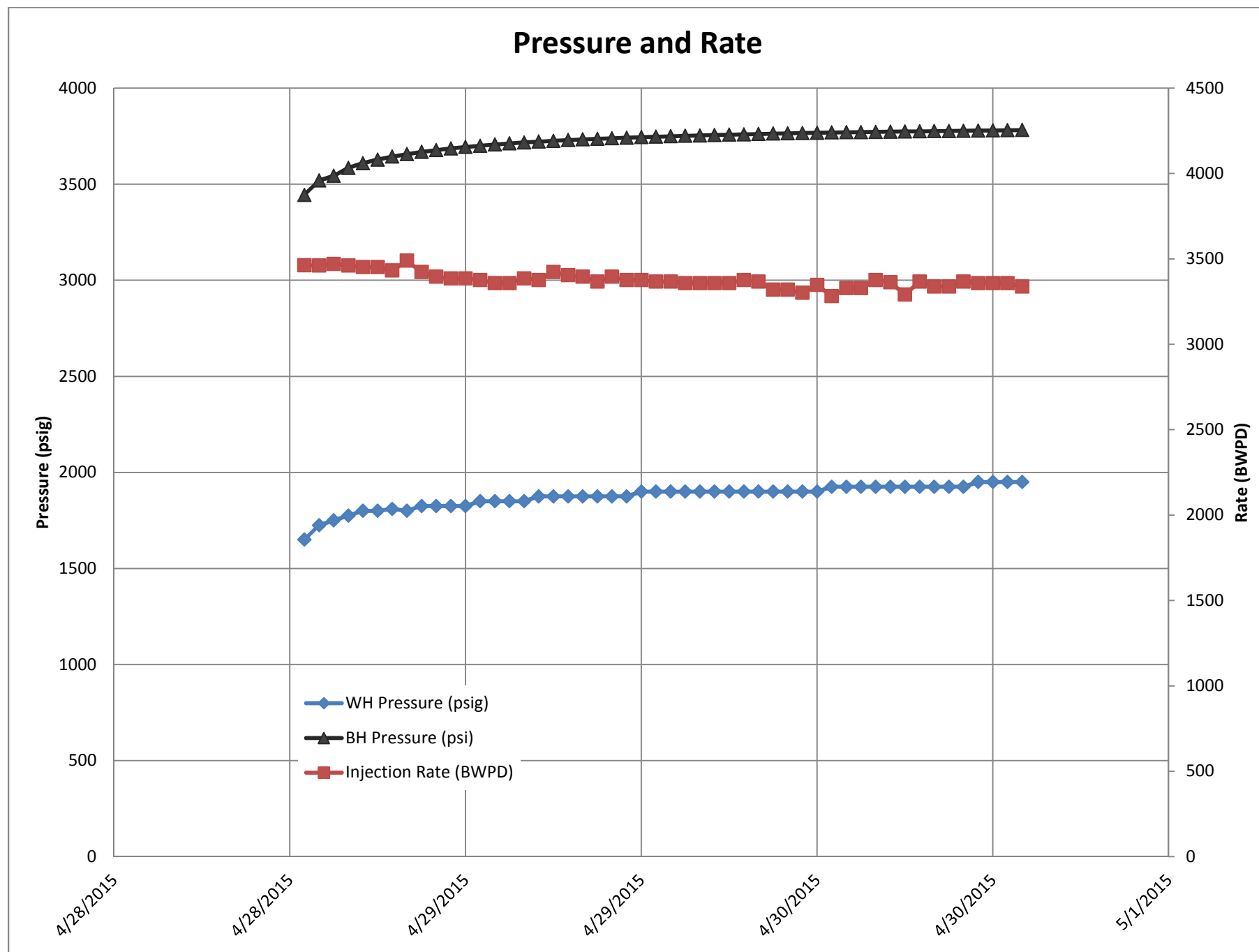


Figure 8



Sunco SWD #1 Falloff - April 2015

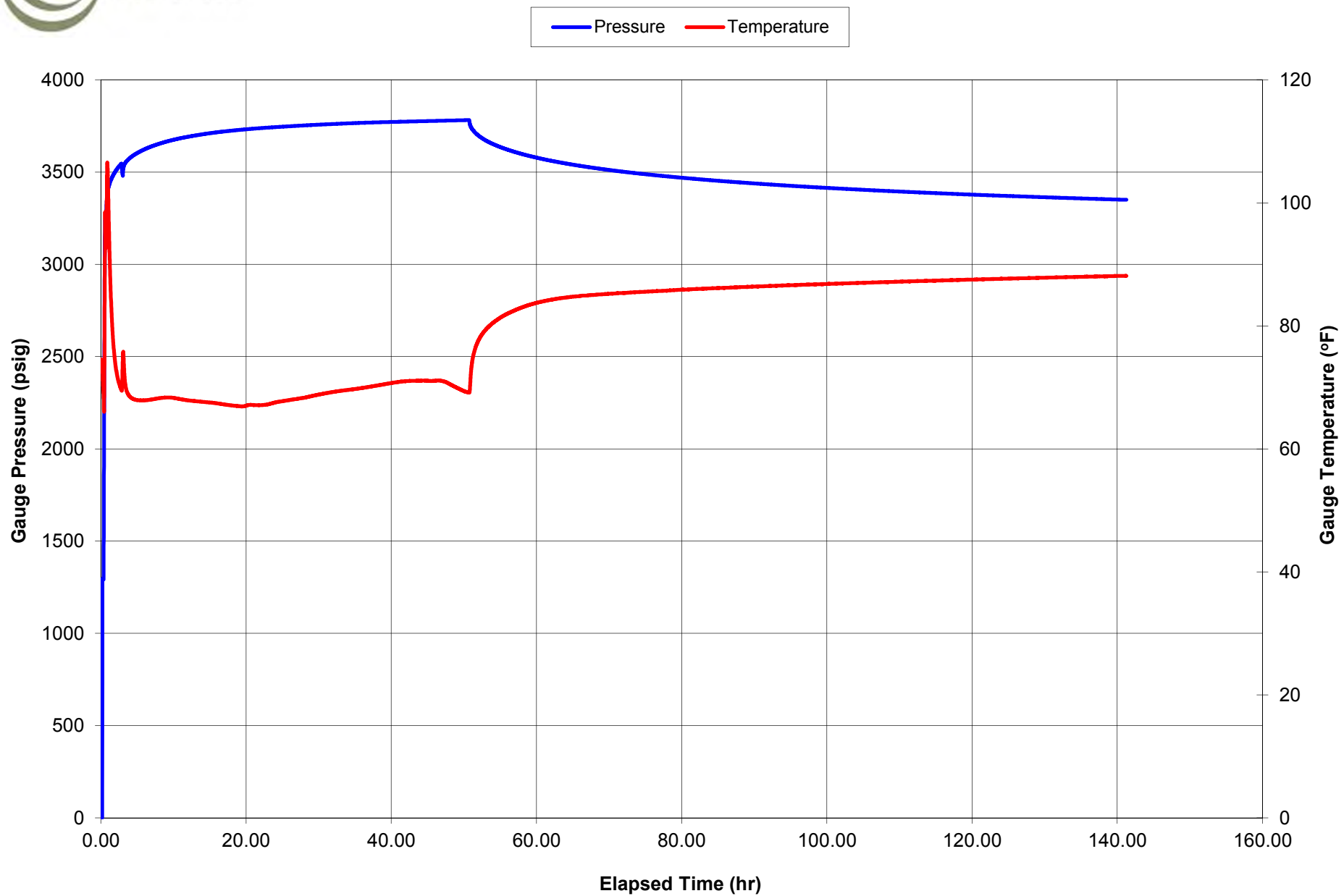


Figure 9

Sunco SWD Derivative Plot

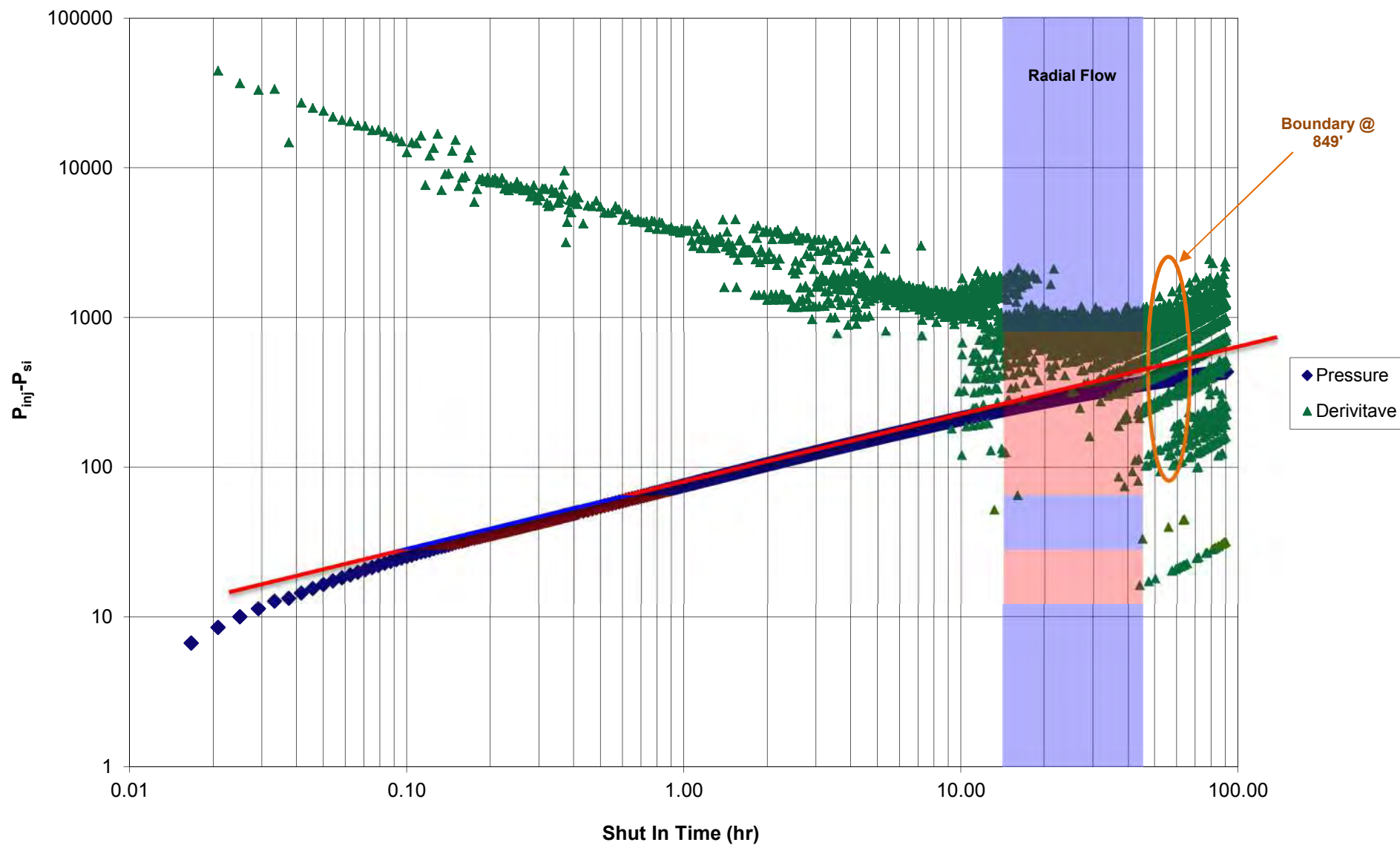


Figure 10



Sunco Disposal Well Horner Plot

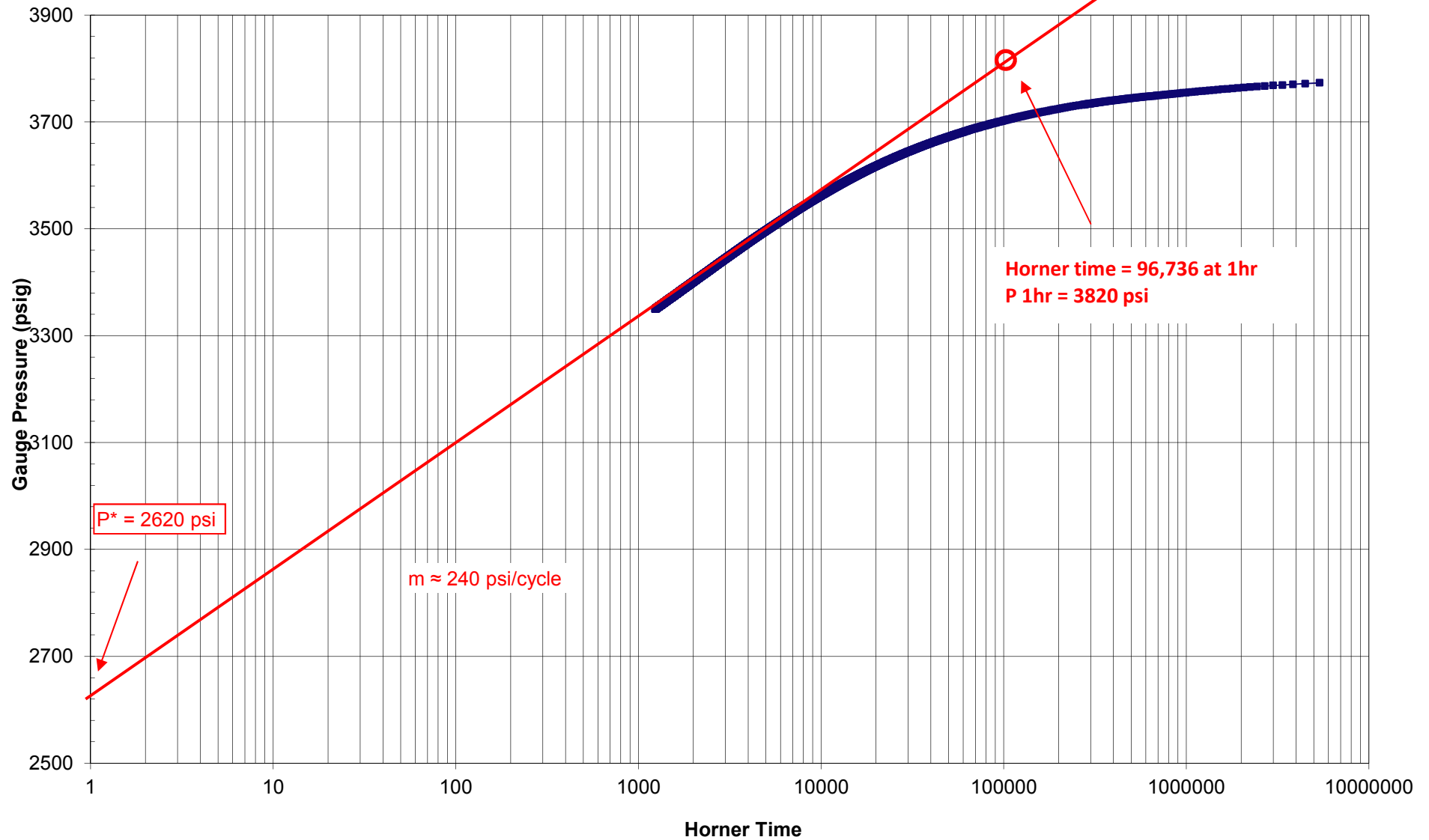


Figure 11

Sunco SWD #1 Falloff - February 2014

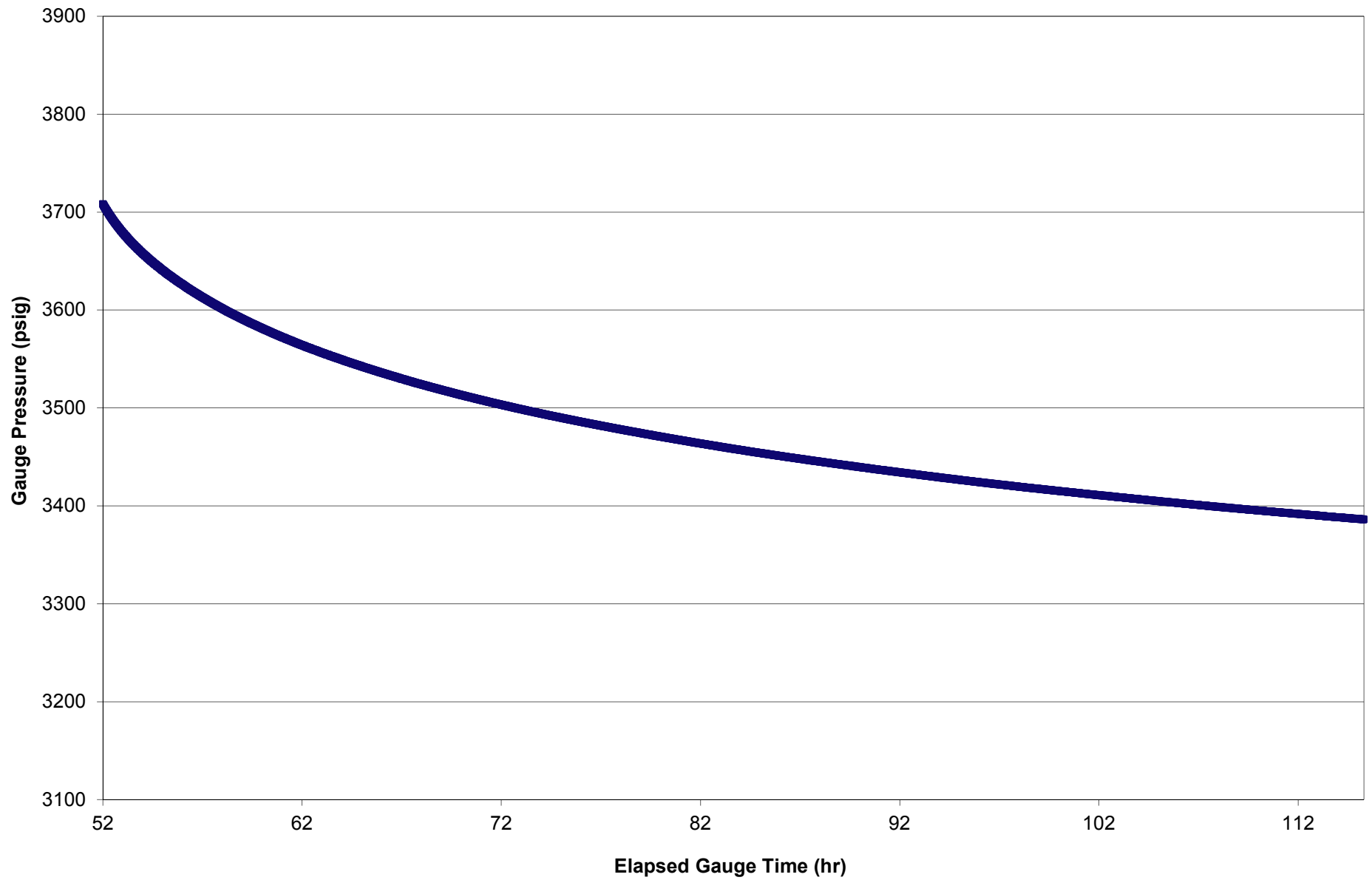


Figure 12

2015
 Quarterly
 Injection Report

	Average Pressure (psig)	Maximum Pressure (psig)	Minimum Pressure (psig)	Average Flow (gpm)	Maxium Flow (gpm)	Minimum Flow (gpm)	Average Annular Pressure (psig)	Maximum Annular Pressure (psig)	Minimum Annular Pressure (psig)	Average Volume (bpd)	Maximum Volume (bpd)	Minimum Volume (bpd)	Volume (barrels)	Total Cumulative Volume (barrels)	
													Previous year	13471572	
Jan-2015	1674.545	1750	1600	18.70277778	32.2875	4.725	0	0	0	641.2381	1107	162	13466	13485038	
Feb-2015	1678.5	1750	1600	15.855	26.36666667	7.2041667	0	0	0	543.6	904	247	10872	13495910	
Mar-2015	1638.636	1750	1600	17.79034091	32.725	5.075	0	0	0	609.9545	1122	174	13419	13509329	
													Previous Quarter	13509329	
Apr-2015	#DIV/0!	0	0	0	0	0	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	0	0	0	13509329	
May-2015	#DIV/0!	0	0	0	0	0	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	0	0	0	13509329	
Jun-2015	#DIV/0!	0	0	0	0	0	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	0	0	0	13509329	
													Previous Quarter	13509329	
Jul-15	#DIV/0!	0	0	0	0	0	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	0	0	0	13509329	
Aug-15	#DIV/0!	0	0	0	0	0	0	0	0	#DIV/0!	0	0	0	13509329	
Sep-15	#DIV/0!	0	0	0	0	0	0	0	0	#DIV/0!	0	0	0	13509329	
													Previous Quarter	13509329	
Oct-2015	#DIV/0!	0	0	0	0	0	0	0	0	#DIV/0!	0	0	0	13509329	
Nov-2015	#DIV/0!	0	0	0	0	0	0	0	0	#DIV/0!	0	0	0	13509329	
Dec-2015	#DIV/0!	0	0	0	0	0	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	0	0	0	13509329	
											Total for year		37757	13547086	Life Of well injected

	WH	AP	
1/1/15	1650		
1/2/15	1650		
1/3/15			
1/4/15			
1/5/15	1750		
1/6/15	1650		
1/7/15	1600		
1/8/15	1650		
1/9/15	1600		
1/10/15			
1/11/15			
1/12/15	1650		
1/13/15	1740		
1/14/15	1600		
1/15/15	1600		
1/16/15	1600		
1/17/15			
1/18/15			
1/19/15	1600		
1/20/15	1750		
1/21/15	1700		
1/22/15	1750		
1/23/15	1750		
1/24/15			
1/25/15			
1/26/15	1700		
1/27/15	1750		
1/28/15	1700		
1/29/15	1750		
1/30/15	1650		
1/31/15			
	1674.545	0	AVG
	1600	0	MIN
	1750	0	MAX

	WH	AP	
2/1/15			
2/2/15	1750		
2/3/15	1750		
2/4/15	1650		
2/5/15	1650		
2/6/15	1700		
2/7/15			
2/8/15			
2/9/15	1600		
2/10/15	1650		
2/11/15	1650		
2/12/15	1700		
2/13/15	1700		
2/14/15			
2/15/15			
2/16/15	1700		
2/17/15	1750		
2/18/15	1650		
2/19/15	1700		
2/20/15	1700		
2/21/15			
2/22/15			
2/23/15	1600		
2/24/15	1600		
2/25/15	1750		
2/26/15	1600		
2/27/15	1720		
2/28/15			
	1678.5	0	AVG
	1600	0	MIN
	1750	0	MAX

	WH	AP	
3/1/15			
3/2/15	1600		
3/3/15	1750		
3/4/15	1700		
3/5/15	1750		
3/6/15	1600		
3/7/15			
3/8/15			
3/9/15	1750		
3/10/15	1650		
3/11/15	1600		
3/12/15	1600		
3/13/15	1600		
3/14/15			
3/15/15			
3/16/15	1650		
3/17/15	1700		
3/18/15	1600		
3/19/15	1650		
3/20/15	1600		
3/21/15			
3/22/15			
3/23/15	1600		
3/24/15	1600		
3/25/15	1650		
3/26/15	1600		
3/27/15	1600		
3/28/15			
3/29/15			
3/30/15	1600		
3/31/15	1600		
	1638.636	0	AVG
	1600	0	MIN
	1750	0	MAX

Total Injected	Avg Vol	Avg Flow		Avg Vol	Avg Flow		Avg Vol	Avg Flow
1/1/2015	381	11.1125	2/1/2015			3/1/2015		
1/2/2015	275	8.020833333	2/2/2015	888	25.9	3/2/2015	238	6.941666667
1/3/2015			2/3/2015	400	11.66666667	3/3/2015	649	18.92916667
1/4/2015			2/4/2015	769	22.42916667	3/4/2015	879	25.6375
1/5/2015	713	20.79583333	2/5/2015	396	11.55	3/5/2015	1122	32.725
1/6/2015	400	11.66666667	2/6/2015	904	26.36666667	3/6/2015	609	17.7625
1/7/2015	270	7.875	2/7/2015			3/7/2015		
1/8/2015	404	11.78333333	2/8/2015			3/8/2015		
1/9/2015	162	4.725	2/9/2015	247	7.204166667	3/9/2015	1051	30.65416667
1/10/2015			2/10/2015	426	12.425	3/10/2015	737	21.49583333
1/11/2015			2/11/2015	564	16.45	3/11/2015	598	17.44166667
1/12/2015	937	27.32916667	2/12/2015	351	10.2375	3/12/2015	548	15.98333333
1/13/2015	1064	31.03333333	2/13/2015	574	16.74166667	3/13/2015	513	14.9625
1/14/2015	267	7.7875	2/14/2015			3/14/2015		
1/15/2015	412	12.01666667	2/15/2015			3/15/2015		
1/16/2015	675	19.6875	2/16/2015	454	13.24166667	3/16/2015	546	15.925
1/17/2015			2/17/2015	829	24.17916667	3/17/2015	608	17.73333333
1/18/2015			2/18/2015	263	7.670833333	3/18/2015	741	21.6125
1/19/2015	327	9.5375	2/19/2015	509	14.84583333	3/19/2015	237	6.9125
1/20/2015	1100	32.08333333	2/20/2015	609	17.7625	3/20/2015	407	11.87083333
1/21/2015	490	14.29166667	2/21/2015			3/21/2015		
1/22/2015	923	26.92083333	2/22/2015			3/22/2015		
1/23/2015	1091	31.82083333	2/23/2015	311	9.070833333	3/23/2015	567	16.5375
1/24/2015			2/24/2015	396	11.55	3/24/2015	174	5.075
1/25/2015			2/25/2015	785	22.89583333	3/25/2015	992	28.93333333
1/26/2015	1107	32.2875	2/26/2015	474	13.825	3/26/2015	576	16.8
1/27/2015	700	20.41666667	2/27/2015	723	21.0875	3/27/2015	551	16.07083333
1/28/2015	676	19.71666667	2/28/2015			3/28/2015		
1/29/2015	1092	31.85				3/29/2015		
1/30/2015						3/30/2015	399	11.6375
1/31/2015						3/31/2015	677	19.74583333

AVG	641.2381	18.70277778		543.6	15.855		609.9545	17.79034091
MAX	1107	32.2875		904	26.36666667		1122	32.725
MIN	162	4.725		247	7.20416667		174	5.075
Total for month	13466			10872			13419	

2014
 Quarterly
 Injection Report

	Average Pressure (psig)	Maximum Pressure (psig)	Minimum Pressure (psig)	Average Flow (gpm)	Maxium Flow (gpm)	Minimum Flow (gpm)	Average Annular Pressure (psig)	Maximum Annular Pressure (psig)	Minimum Annular Pressure (psig)	Average Volume (bpd)	Maximum Volume (bpd)	Minimum Volume (bpd)	Volume (barrels)	Total Cumulative Volume (barrels)
													Previous year	13214274
Jan-2014	1278.261	1400	550	0.91875	1.079167	0.7583333	250	250	250	31.5	37	26	63	13214337
Feb-2014	1407.059	1850	420	18.31991	33.54167	2.5083333	33.33333	50	25	628.1111	1150	86	5653	13219990
Mar-2014	1785.714	1950	1550	21.06222	32.375	1.1375	120	250	50	722.1333	1110	39	10832	13230822
													Previous Quarter	13230822
Apr-2014	1701.136	1875	1400	19.4473	35.81667	1.7791667	400	600	200	666.7647	1228	61	11335	13242157
May-2014	1622.727	2150	1400	19.3213	31.00417	5.4833333	200	200	200	662.4444	1063	188	11924	13254081
Jun-2014	1632.143	1800	1500	17.99	36.89583	2.7708333	300	300	300	616.8	1265	95	12336	13266417
													Previous Quarter	13266417
Jul-14	1632.143	1800	1550	17.29451	38.15	3.9375	300	300	300	592.9545	1308	135	13045	13279462
Aug-14	1655.435	1750	1400	15.74079	32.9875	7.5833333	0	0	0	539.6842	1131	260	10254	13289716
Sep-14	1613.095	1800	1400	20.7725	35.875	4.2	0	0	0	712.2	1230	144	14244	13303960
													Previous Quarter	13303960
Oct-2014	1630.682	1800	1400	17.97588	35.55417	8.6625	0	0	0	616.3158	1219	297	11710	13315670
Nov-2014	1580.435	1750	1450	20.83047	46.1125	3.4416667	0	0	0	714.1875	1581	118	11427	13327097
Dec-2014	1610.952	1800	1500	24.2943	38.7625	9.8291667	0	0	0	832.9474	1329	337	15826	13342923
Total for year												128649	13471572	Life Of well injected

Total Injected	Avg Vol	Avg Flow	Avg Vol	Avg Flow	Avg Vol	Avg Flow	Avg Vol	Avg Flow	Avg Vol	Avg Flow	Avg Vol	Avg Flow	Avg Vol	Avg Flow	Avg Vol	Avg Flow	
1/1/2014			2/1/2014		3/1/2014		4/1/2014	624	18.2	5/1/2014	671	19.57083333	6/1/2014				
1/2/2014			2/2/2014		3/2/2014		4/2/2014	500	14.58333333	5/2/2014			6/2/2014	1025	29.89583333		
1/3/2014			2/3/2014		3/3/2014	878	25.60833333	4/3/2014	785	22.89583333	5/3/2014			6/3/2014	447	13.0375	
1/4/2014			2/4/2014		3/4/2014	696	20.3	4/4/2014			5/4/2014			6/4/2014	784	22.86666667	
1/5/2014			2/5/2014		3/5/2014			4/5/2014			5/5/2014	584	17.03333333	6/5/2014	1265	36.89583333	
1/6/2014			2/6/2014		3/6/2014	893	26.04583333	4/6/2014			5/6/2014	413	12.04583333	6/6/2014	388	11.31666667	
1/7/2014			2/7/2014	86	2.508333333	3/7/2014	730	21.29166667	4/7/2014	417	12.1625	5/7/2014	512	14.93333333	6/7/2014		
1/8/2014			2/8/2014		3/8/2014			4/8/2014	699	20.3875	5/8/2014	593	17.29583333	6/8/2014			
1/9/2014			2/9/2014		3/9/2014			4/9/2014	848	24.73333333	5/9/2014	1050	30.625	6/9/2014	434	12.65833333	
1/10/2014			2/10/2014	308	8.983333333	3/10/2014	644	18.78333333	4/10/2014			5/10/2014			6/10/2014	482	14.05833333
1/11/2014			2/11/2014	532	15.51666667	3/11/2014			4/11/2014	758	22.10833333	5/11/2014			6/11/2014	976	28.46666667
1/12/2014			2/12/2014	292	8.516666667	3/12/2014	640	18.66666667	4/12/2014			5/12/2014	957	27.9125	6/12/2014		
1/13/2014			2/13/2014		3/13/2014	1110	32.375	4/13/2014			5/13/2014	578	16.85833333	6/13/2014	435	12.6875	
1/14/2014			2/14/2014		3/14/2014			4/14/2014	855	24.9375	5/14/2014	1004	29.28333333	6/14/2014			
1/15/2014			2/15/2014		3/15/2014			4/15/2014			5/15/2014	1007	29.37083333	6/15/2014			
1/16/2014			2/16/2014		3/16/2014			4/16/2014	643	18.75416667	5/16/2014			6/16/2014	563	16.42083333	
1/17/2014			2/17/2014		3/17/2014	974	28.40833333	4/17/2014	750	21.875	5/17/2014			6/17/2014	500	14.58333333	
1/18/2014			2/18/2014		3/18/2014	730	21.29166667	4/18/2014			5/18/2014			6/18/2014	431	12.57083333	
1/19/2014			2/19/2014	918	26.775	3/19/2014			4/19/2014			5/19/2014			6/19/2014	751	21.90416667
1/20/2014			2/20/2014	1042	30.39166667	3/20/2014	821	23.94583333	4/20/2014			5/20/2014			6/20/2014	723	21.0875
1/21/2014	26	0.7583333333	2/21/2014	1002	29.225	3/21/2014			4/21/2014	61	1.779166667	5/21/2014	188	5.483333333	6/21/2014		
1/22/2014	37	1.079166667	2/22/2014		3/22/2014			4/22/2014	864	25.2	5/22/2014	386	11.25833333	6/22/2014			
1/23/2014			2/23/2014		3/23/2014			4/23/2014	532	15.51666667	5/23/2014	399	11.6375	6/23/2014	876	25.55	
1/24/2014			2/24/2014		3/24/2014	880	25.66666667	4/24/2014	1228	35.81666667	5/24/2014			6/24/2014	609	17.7625	
1/25/2014			2/25/2014		3/25/2014	427	12.45416667	4/25/2014	654	19.075	5/25/2014			6/25/2014	495	14.4375	
1/26/2014			2/26/2014	323	9.420833333	3/26/2014	640	18.66666667	4/26/2014			5/26/2014	580	16.91666667	6/26/2014	527	15.37083333
1/27/2014			2/27/2014	1150	33.54166667	3/27/2014	730	21.29166667	4/27/2014			5/27/2014	569	16.59583333	6/27/2014	95	2.770833333
1/28/2014			2/28/2014		3/28/2014			4/28/2014			5/28/2014	1063	31.00416667	6/28/2014			
1/29/2014					3/29/2014			4/29/2014	418	12.19166667	5/29/2014	795	23.1875	6/29/2014			
1/30/2014					3/30/2014			4/30/2014	699	20.3875	5/30/2014	575	16.77083333	6/30/2014	530	15.45833333	
1/31/2014					3/31/2014	39	1.1375				5/31/2014						
AVG	31.5	0.91875		628.1111	18.31990741		722.1333	21.06222222		666.7647	19.44730392		662.4444	19.3212963		616.8	17.99
MAX	37	1.079166667		1150	33.54166667		1110	32.375		1228	35.81666667		1063	31.00416667		1265	36.89583333
Total for month	63			5653			10832			11335			11924			12336	

Avg Vol		Avg Flow															
7/1/2014	507	14.7875	8/1/2014	631	18.40416667	9/1/2014	144	4.2	10/1/2014	414	12.075	11/1/2014			12/1/2014	1216	35.46666667
7/2/2014	464	13.53333333	8/2/2014			9/2/2014	848	24.73333333	10/2/2014	448	13.06666667	11/2/2014			12/2/2014	1015	29.60416667
7/3/2014	498	14.525	8/3/2014			9/3/2014	470	13.70833333	10/3/2014	461	13.44583333	11/3/2014	243	7.0875	12/3/2014	549	16.0125
7/4/2014			8/4/2014	521	15.19583333	9/4/2014			10/4/2014			11/4/2014	656	19.13333333	12/4/2014	921	26.8625
7/5/2014			8/5/2014	665	19.39583333	9/5/2014	250	7.291666667	10/5/2014			11/5/2014	674	19.65833333	12/5/2014	783	22.8375
7/6/2014			8/6/2014	391	11.40416667	9/6/2014			10/6/2014			11/6/2014	193	5.629166667	12/6/2014		
7/7/2014	424	12.36666667	8/7/2014			9/7/2014			10/7/2014	473	13.79583333	11/7/2014	936	27.3	12/7/2014		
7/8/2014	537	15.6625	8/8/2014	467	13.62083333	9/8/2014	473	13.79583333	10/8/2014	1010	29.45833333	11/8/2014			12/8/2014	1040	30.33333333
7/9/2014	760	22.16666667	8/9/2014			9/9/2014	566	16.50833333	10/9/2014	566	16.50833333	11/9/2014			12/9/2014	748	21.81666667
7/10/2014	950	27.70833333	8/10/2014			9/10/2014	849	24.7625	10/10/2014			11/10/2014			12/10/2014		
7/11/2014	135	3.9375	8/11/2014	451	13.15416667	9/11/2014	712	20.76666667	10/11/2014			11/11/2014	776	22.63333333	12/11/2014	498	14.525
7/12/2014			8/12/2014			9/12/2014	990	28.875	10/12/2014			11/12/2014	962	28.05833333	12/12/2014	508	14.81666667
7/13/2014			8/13/2014	977	28.49583333	9/13/2014			10/13/2014	887	25.87083333	11/13/2014	440	12.83333333	12/13/2014		
7/14/2014	1176	34.3	8/14/2014	346	10.09166667	9/14/2014			10/14/2014	608	17.73333333	11/14/2014	1287	37.5375	12/14/2014		
7/15/2014	1308	38.15	8/15/2014	699	20.3875	9/15/2014	260	7.583333333	10/15/2014	297	8.6625	11/15/2014			12/15/2014	1052	30.68333333
7/16/2014	562	16.39166667	8/16/2014			9/16/2014	966	28.175	10/16/2014	325	9.479166667	11/16/2014			12/16/2014	1182	34.475
7/17/2014	285	8.3125	8/17/2014			9/17/2014	526	15.34166667	10/17/2014	672	19.6	11/17/2014	1581	46.1125	12/17/2014	849	24.7625
7/18/2014	497	14.49583333	8/18/2014	549	16.0125	9/18/2014	1151	33.57083333	10/18/2014			11/18/2014	118	3.441666667	12/18/2014		
7/19/2014			8/19/2014	260	7.583333333	9/19/2014	1230	35.875	10/19/2014			11/19/2014			12/19/2014	924	26.95
7/20/2014			8/20/2014	297	8.6625	9/20/2014			10/20/2014	911	26.57083333	11/20/2014			12/20/2014		
7/21/2014	532	15.51666667	8/21/2014	641	18.69583333	9/21/2014			10/21/2014	572	16.68333333	11/21/2014	684	19.95	12/21/2014		
7/22/2014	519	15.1375	8/22/2014	548	15.98333333	9/22/2014	380	11.08333333	10/22/2014	570	16.625	11/22/2014			12/22/2014	1329	38.7625
7/23/2014	582	16.975	8/23/2014			9/23/2014	1228	35.81666667	10/23/2014			11/23/2014			12/23/2014	766	22.34166667
7/24/2014	160	4.666666667	8/24/2014			9/24/2014	1143	33.3375	10/24/2014	345	10.0625	11/24/2014	776	22.63333333	12/24/2014	1154	33.65833333
7/25/2014	480	14	8/25/2014	277	8.079166667	9/25/2014	495	14.4375	10/25/2014			11/25/2014	980	28.58333333	12/25/2014		
7/26/2014			8/26/2014	492	14.35	9/26/2014	840	24.5	10/26/2014			11/26/2014	894	26.075	12/26/2014		
7/27/2014			8/27/2014	1131	32.9875	9/27/2014			10/27/2014	401	11.69583333	11/27/2014	227	6.620833333	12/27/2014		
7/28/2014	530	15.45833333	8/28/2014	520	15.16666667	9/28/2014			10/28/2014	540	15.75	11/28/2014			12/28/2014		
7/29/2014	760	22.16666667	8/29/2014	391	11.40416667	9/29/2014	723	21.0875	10/29/2014	1219	35.55416667	11/29/2014			12/29/2014	337	9.829166667
7/30/2014	1089	31.7625	8/30/2014			9/30/2014			10/30/2014	991	28.90416667	11/30/2014			12/30/2014	481	14.02916667
7/31/2014	290	8.458333333	8/31/2014						10/31/2014						12/31/2014	474	13.825
	592.9545	17.29450758		539.6842	15.74078947		712.2	20.7725		616.3158	17.97587719		714.1875	20.83046875		832.9474	24.29429825
	1308	38.15		1131	32.9875		1230	35.875		1219	35.55416667		1581	46.1125		1329	38.7625
	13045			10254			14244			11710			11427			15826	

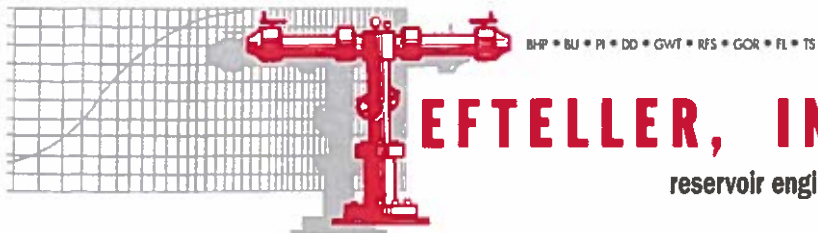
2014 AREA OF REVIEW
UNIT LETTERS ENCOMPASSED BY THE 1-MILE AOR

Sec	TWN	RNG	UL	
1	29N	12W	DELM	
2	29N	12W	ALL	
3	29N	12W	ABCFGHIJKOP	
10	29N	12W	AB	
11	29N	12W	ABCDEF	
34	30N	12W	AGHIJKNOP	
35	30N	12W	DEFGHIJKLMNPO	
36	30N	12W	LM	

**All tracts within the AOR were reviewed for activity that
had ensued since 2013 Annual Report.**

API	Well Name	Well #	Current Operator	Type	Lease	Status	Sec	TWN	RNG	UL	Spud Date	TD	size	depth	Sacks TOC	size	depth	Sacks TOC	size	depth	Sacks TOC	Perfs	Packer	PLUGGED
30-045-08851	ALLEN A	#001	BP America	Gas	Private	Active	1	29N	12W	D	3/12/1961	6785	8.265	264	200 surf				4.5	6785	300 surf	6518-6718		
30-045-26214	ALLEN A	#001E	BP America	Gas	Federal	Active	1	29N	12W	L	3/22/1985	5825	8.625	318	225 surf				5.5	6622	820 surf	6425-6602		
30-045-32346	CORNELL	#002R	Energen Resources	Gas	Federal	Active	1	29N	12W	M	7/22/2004	2152	7	137	90 surf				4.5	2151	310 surf	1702-1926		
30-045-32241	BECK	#001R	Burlington	Gas	Private	Active	2	29N	12W	G	12/1/2004	2225	7	135	34 surf				4.5	2221	262 surf	1774-2077		
30-045-33811	BECK	#001S	Burlington	Gas	Private	Active	2	29N	12W	D	8/17/2006	2200	7	162	85 surf				4.5	2195	255 surf	1730-1951		
30-045-31580	CORNELL COM	#500	Burlington	Gas	Federal	Active	2	29N	12W	N	7/14/2003	2136	7	139	44 surf	6.25	2126		4.5	2126	258 surf	1658-1878		
30-045-08714	CORNELL SRC	#007	Burlington	Gas	Federal	Active	2	29N	12W	L	7/29/1944	2107	16	42	10 surf	5.5	1978		3.5	2106	250 surf	1976-2010		
30-045-08704	MCGRATH B	#001	Burlington	Gas	Private	Active	2	29N	12W	J	11/19/1961	6720	8.625	318	225 surf				4.5	1865	1065 surf	6489-6596		
30-045-28653	SUNCO DISPOSAL	#001	Agua Moss	Salt Water Disposal	Private	Active	2	29N	12W	E	1/28/1992	4760	8.625	209	150 surf				5.5	4760	1010 surf	4350-4460	4282 10/15/07	4350-4460 TA'd
30-045-08839	YOUNG	#001	Burlington	Gas	Private	Active	2	29N	12W	D	8/1/1961	6740	8.625	307	275 surf				4.5	6739	700 surf	6446-6644		
30-045-33580	MCGRATH	#003S	Burlington	Gas	Private	Active	3	29N	12W	B	7/13/2007	2432	7	218	150 surf				4.5	2112	289 surf	1692-1904		
30-045-08712	MCGRATH A	#001	Burlington	Gas	Private	Active	3	29N	12W	I	3/14/1964	6689	8.625	307	250 surf				4.5	6688	500 surf	6432-6524		
30-045-32931	WALKER	#100S	Burlington	Gas	Private	Active	3	29N	12W	F	8/14/2005	2120	7	144	61 surf				4.5	2117	238 surf	1621-1885		NOI to PA 5/2014
30-045-23889	BECK A	#001E	Burlington	Gas	Federal	Active	10	29N	12W	B	1/5/1981	6514	8.625	240	150 surf				4.5	6514	765 surf	6277-6454		
30-045-30381	CORNELL	#100	Burlington	Gas	Federal	Active	10	29N	12W	B	1/7/2003	1968	7	147	55 surf				4.5	1959	229 surf	1543-1704 1744 1800		
30-045-08615	CORNELL	#006	Thompson Engr & Prod	Gas	Federal	Active	11	29N	12W	C	11/7/1955	1839	8.625	106	70 surf	5.5	1811		3.5	2022	181 surf	1811-1839		
30-045-31581	CORNELL	#101	Burlington	Gas	Federal	Active	11	29N	12W	D	10/7/2003	2008	7	140	35 surf				4.5	2000	270 surf	1726-1764		
30-045-13092	CORNELL C	#001	BP America	Gas	Federal	Active	11	29N	12W	D	12/6/1961	6604	8.625	250	150 surf				4.5	6604	300 surf	6298-6483		
30-045-26141	DUFF GAS COM	#001E	Burlington	Gas	Federal	TA'd	34	30N	12W	G	11/20/1984	6608	8.625	316	295 surf				4.5	6608	1000 surf	6396-6576 04" RC to FC 1492-1870		TA'd 3/5/14
30-045-08946	CARNAHAN COM	#001	Holcomb Oil & Gas	Gas	Private	Active	35	30N	12W	P	12/19/1960	6778	8.625	301	200 surf				4.5	6760	445 surf	6521-6708 94 RC to FC 1824-2037		
30-045-25844	CARNAHAN COM	#002	Merrion Oil & Gas	Gas	Private	Active	35	30N	12W	P	6/15/1984	6780	8.625	230	170 surf				4.5	6777	1425 surf	6529-6714		
30-045-11770	HUDSON J	#003	Burlington	Gas	Federal	Active	35	30N	12W	E	7/22/1966	6750	8.625	306	250 surf				4.5	6750	750 surf	6460-6680 01" RC to FC 1784-1994		
30-045-28177	FC STATE COM	#024	Burlington	Gas	State	Plugged	36	30N	12W	M	10/9/1990	6608	8.625	316	250 surf				4.5	6609	6000 surf	1492-1870		3/26/2013

30-045-08345	McGRATH C	#001	Burlington	Gas	Federal	Plugged	34	30n	12W	p	2/7/1963	6637	8.625	323	225 surf				4.5	6637	925 surf	6367-6576		4/29/2009
30-045-08713	McGrath SRC	#001	Burlington	Gas	Private	Plugged	2	29n	12w	j	7/7/1973	2136	13 & 10.75	550 & 864	2 sx mud 4 sx mud	8.625	1526	5 sx mud	5.50 & 3.50	2020 2136	12 sx mud 140 surf	2020-2136 2012-2078		1998
30-045-08797	Pre-Ongard		Southland	Gas	Private	Plugged	2	29n	12w	g	4/14/1948	2125											2/23/1984	
30-045-30486	McGRATH SRC	#001R	Burlington	Gas	Private	Plugged, Not Released	2	29N	12W	J	3/23/2001	2235	8.625	53	12 surf				2.875	2228	425 surf	2010-2157		5/25/2010
30-045-08793	Pre-Ongard		Southern union	Gas	Private	Plugged	1	29N	12W	E	3/16/1948	2125											3/16/1948	
30-045-08656	Cornell	2	Energen Resources	Gas	Federal	Plugged	1	29N	12W	M	10/2/1955	1996	8.625	97	75 surf				5.5	1950	100 surf	1711-1936		9/15/2005
30-045-08823	Walker SRC	1	Burlington	Gas	Private	Plugged	3	29N	12W	G	2/25/1943	2050	16	21	20 surf	5.5	1930		3.5	2050	175 surf	1938-1974		10/12/2009
30-045-08711	Pre-Ongard		Union Texas	Gas	Private	Plugged	3	29N	12W	K	6/25/1955	1940											11/10/1964	
30-045-23758	Pre-Ongard		Southland	Gas	Federal	Plugged	10	29N	12W	A	12/19/1980	1870											2/10/1984	
30-045-08950	HUDSON	2	Burlington	Gas	Federal	Plugged	34	30N	12W	P	7/17/1946	2137	15.5	38	20 surf	10 & 8.625	1219 1618	99 surf	5.5	1961	40 surf	1728-1938 1962-2008	2128	9/26/2008
30-045-08955	Pre-Ongard		Artec O&G	Gas	Private	Plugged	34	30N	12W	N	11/1/1944	1965											10/29/1977	
30-045-20140	Pre-Ongard		Southland	Gas	Federal	Plugged	35	30N	12W	L	9/7/1967	OH											6/9/1982	
30-045-33573	CORNELL COM	#500S	Burlington	Gas	Private	Plugged	2	29N	12W	P	3/18/2006	2210	7	132	34 surf	6.25	2210		4.5	2198	279 surf	1754-1939 1743-1924		1/23/2013
30-045-08844	KATTLER	#001	Burlington	Gas	Private	Plugged	2	29N	12W	C	1/26/1945	2069	10	846	surf	5.5	1960		3.5	2050	205 surf	1961-2007		5/26/2012
30-045-08709	McGRATH	#003	Burlington	Gas	Private	Plugged	3	29N	12W	J	3/4/1945	2040	13.375	675	2 surf	8.625 INT 1 5.5 INT 2	1460 1928	4 surf 58 surf	3.5	2011	110 surf	1872-1912 1922-1937	1871-1876	3/1/2013



FARMINGTON, NEW MEXICO/
GRAND JUNCTION, COLORADO

P. O. Box 1198
Farmington, New Mexico 87499
(505) 325-1731
Fax (505) 325-1148

2332 Interstate Ave.
Grand Junction, CO 81505
(970) 241-0403
Fax (970) 241-7634

AGUA MOSS, LLC

SUNCO SWD NO. 1

APRIL 28 – MAY 4, 2015

Serving the Rocky Mountains and the Western Slope

Customer AGUA MOSS, LLC
Street P.O. BOX 600
City/State..... FARMINGTON, NNM 87499
Country USA
Service Company TEFTELLER, INC.

Well Name SUNCO SWD NO. 1
Well Location SAN JUAN COUNTY, NEW MEXICO
Field / Pool
Status (Oil, Gas, Other) INJECTING

Test Type INJECTION & FALL-OFF TESTS
Date of Test 4-28-15
Producing Interval 4350' - 4460'
Recorder Depth 4405'
Recorder Position 4405'
Shut In Date Start: 4-28-2015
Stop: 5-4-2015
Duration: 144 HRS. TANDEM ELEC. MEMORY INST. TIME
Bottom Hole Temperature

Gauge Identification

Gauge Manufacturer MICRO-SMART SYSTEMS
Serial Number 162
Model Number SP2000
Pressure Range
Battery Type
Calibration I.D.
Last Calibration 2/ 4/14

Gauge Setup Parameters

Probe Set Up Time 4/28/15 11:46: 0
Time Delay to First Reading
Test Type Selection INJECTION & FALL-OFF TESTS
Test Duration Selection 144 HRS. TANDEM ELEC. MEMORY INST. TIME

COMPANY: AGUA MOSS, LLC

PAGE 1 OF 10

WELL NAME : SUNCO SWD NO. 1

DATE : 05/05/15

WELL LOCATION : SAN JUAN COUNTY, NEW MEXICO

FILE REF: F162504.RED

Date	Time	Test Time	Pressure	Temp	deltaP	Comment
MM/DD	hh:mm:ss	mmmmmmmm.mmmmm	Psig	Deg F	Psi	Ga. Press Ref. to 14.7 Psi Atm.
04/28	11:46:00	.0000	.01	74.55		
04/28	11:57:45	11.7500	18.35	73.25	18.34	PRESSURED UP LUBRICATOR
04/28	11:58:00	12.0000	161.16	73.15	142.80	
04/28	11:58:15	12.2500	737.58	73.06	576.42	
04/28	11:58:30	12.5000	960.07	72.97	222.49	
04/28	11:58:45	12.7500	1296.91	72.88	336.84	
04/28	12:05:00	19.0000	1292.04	69.82	-4.87	
04/28	12:08:15	22.2500	1300.13	68.92	8.08	SURFACE STOP
04/28	12:08:30	22.5000	1322.87	68.86	22.74	R.I.H. W/TANDEM ELEC. MEMORY INST.
04/28	12:08:45	22.7500	1371.00	68.80	48.14	
04/28	12:09:00	23.0000	1398.16	68.74	27.15	
04/28	12:09:15	23.2500	1437.83	68.51	39.68	
04/28	12:09:30	23.5000	1475.58	68.28	37.74	
04/28	12:09:45	23.7500	1520.18	68.06	44.61	
04/28	12:10:00	24.0000	1570.52	67.83	50.33	
04/28	12:10:15	24.2500	1621.24	67.61	50.72	
04/28	12:10:30	24.5000	1670.42	67.38	49.19	
04/28	12:10:45	24.7500	1720.78	67.16	50.35	
04/28	12:11:00	25.0000	1772.83	66.94	52.05	
04/28	12:11:15	25.2500	1815.43	66.71	42.60	
04/28	12:11:30	25.5000	1858.16	66.49	42.73	
04/28	12:11:45	25.7500	1902.73	66.26	44.57	
04/28	12:12:00	26.0000	1947.70	66.03	44.97	
04/28	12:12:15	26.2500	1992.81	66.07	45.11	
04/28	12:12:30	26.5000	2037.91	66.58	45.09	
04/28	12:12:45	26.7500	2083.00	67.09	45.09	
04/28	12:13:00	27.0000	2129.11	67.61	46.11	
04/28	12:13:15	27.2500	2177.06	68.11	47.95	
04/28	12:13:30	27.5000	2226.92	68.63	49.86	
04/28	12:13:45	27.7500	2274.33	69.14	47.41	
04/28	12:14:00	28.0000	2324.46	69.65	50.13	
04/28	12:14:15	28.2500	2380.94	70.16	56.48	
04/28	12:14:30	28.5000	2435.60	70.67	54.66	
04/28	12:14:45	28.7500	2478.97	71.18	43.36	
04/28	12:15:00	29.0000	2523.09	71.70	44.12	
04/28	12:15:15	29.2500	2566.34	72.71	43.25	
04/28	12:15:30	29.5000	2608.81	73.98	42.46	
04/28	12:15:45	29.7500	2650.09	75.25	41.29	
04/28	12:16:00	30.0000	2692.40	76.52	42.31	
04/28	12:16:15	30.2500	2734.58	77.79	42.17	
04/28	12:16:30	30.5000	2778.43	79.06	43.85	
04/28	12:16:45	30.7500	2823.17	80.33	44.74	
04/28	12:17:00	31.0000	2867.13	81.60	43.96	
04/28	12:17:15	31.2500	2913.53	82.87	46.41	
04/28	12:17:30	31.5000	2958.61	84.15	45.08	
04/28	12:17:45	31.7500	3003.31	85.42	44.70	
04/28	12:18:00	32.0000	3036.97	86.70	33.66	
04/28	12:18:15	32.2500	3067.91	88.07	30.93	
04/28	12:18:30	32.5000	3093.53	89.01	25.62	
04/28	12:18:45	32.7500	3119.28	89.95	25.75	
04/28	12:19:00	33.0000	3147.74	90.89	28.46	
04/28	12:19:15	33.2500	3178.78	91.83	31.04	
04/28	12:19:30	33.5000	3204.38	92.77	25.60	
04/28	12:19:45	33.7500	3220.54	93.71	16.16	
04/28	12:20:00	34.0000	3232.43	94.65	11.89	
04/28	12:21:00	35.0000	3236.45	98.42	4.02	
04/28	12:25:45	39.7500	3243.96	95.35	7.51	TANDEM ELEC. MEMORY INST. @ 4405'
04/28	12:29:45	43.7500	3242.80	92.89	-1.16	
04/28	12:30:00	44.0000	3270.61	92.76	27.82	BEGAN INJECTING
04/28	12:30:15	44.2500	3284.35	92.66	13.73	
04/28	12:30:30	44.5000	3291.84	93.00	7.50	
04/28	12:31:30	45.5000	3310.25	94.32	18.40	
04/28	12:31:45	45.7500	3313.23	94.65	2.98	
04/28	12:33:15	47.2500	3329.93	97.08	16.71	
04/28	12:33:30	47.5000	3332.46	97.71	2.53	

COMPANY: AGUA MOSS, LLC

PAGE 2 OF 10

WELL NAME : SUNCO SWD NO. 1

DATE : 05/05/15

WELL LOCATION : SAN JUAN COUNTY, NEW MEXICO

FILE REF: F162504.RED

Date	Time	Test Time	Pressure	Temp	deltaP	Comment
MM/DD	hh:mm:ss	mmmmmm.mmm	Psig	Deg F	Psi	Ga. Press Ref. to 14.7 Psi Atm.
04/28	12:34:45	48.7500	3344.50	100.85	12.03	
04/28	12:36:00	50.0000	3355.03	103.98	10.53	
04/28	12:38:15	52.2500	3373.37	105.95	18.34	
04/28	12:38:30	52.5000	3374.76	106.14	1.39	
04/28	12:42:00	56.0000	3392.83	105.63	18.06	
04/28	12:42:15	56.2500	3393.92	105.46	1.10	
04/28	12:46:00	60.0000	3408.25	102.36	14.33	
04/28	12:49:15	63.2500	3417.95	99.33	9.70	
04/28	12:52:45	66.7500	3426.26	96.13	8.31	
04/28	12:56:30	70.5000	3434.25	92.95	7.99	
04/28	13:01:00	75.0000	3442.61	89.59	8.35	
04/28	13:06:00	80.0000	3451.80	86.42	9.19	
04/28	13:12:00	86.0000	3461.44	83.25	9.64	
04/28	13:20:00	94.0000	3473.25	79.96	11.81	
04/28	13:30:00	104.0000	3485.97	76.95	12.72	
04/28	13:45:00	119.0000	3502.48	73.91	16.50	
04/28	14:03:00	137.0000	3519.98	71.69	17.50	
04/28	14:21:00	155.0000	3534.80	70.36	14.82	
04/28	14:39:00	173.0000	3535.49	69.48	.69	
04/28	14:40:15	174.2500	3518.05	69.85	-17.44	
04/28	14:40:30	174.5000	3515.66	69.95	-2.39	
04/28	14:43:30	177.5000	3497.23	71.73	-18.43	
04/28	14:43:45	177.7500	3495.97	71.93	-1.26	
04/28	14:48:00	182.0000	3479.75	75.09	-16.23	
04/28	14:48:30	182.5000	3494.28	75.30	14.54	
04/28	14:48:45	182.7500	3498.75	75.35	4.46	
04/28	14:51:00	185.0000	3517.19	75.81	18.44	
04/28	14:51:15	185.2500	3518.43	75.77	1.24	
04/28	14:57:45	191.7500	3536.87	73.15	18.44	
04/28	14:58:00	192.0000	3537.43	73.05	.56	
04/28	15:11:30	205.5000	3553.41	70.05	15.98	
04/28	15:29:00	223.0000	3566.12	68.95	12.71	
04/28	15:47:00	241.0000	3576.81	68.47	10.69	
04/28	16:05:00	259.0000	3586.06	68.21	9.25	
04/28	16:23:00	277.0000	3594.36	68.04	8.30	
04/28	16:41:00	295.0000	3601.32	67.94	6.96	
04/28	16:59:00	313.0000	3607.83	67.90	6.51	
04/28	17:17:00	331.0000	3614.09	67.88	6.26	
04/28	17:35:00	349.0000	3619.82	67.88	5.73	
04/28	17:53:00	367.0000	3625.30	67.89	5.48	
04/28	18:11:00	385.0000	3630.61	67.94	5.31	
04/28	18:29:00	403.0000	3635.48	67.98	4.88	
04/28	18:47:00	421.0000	3639.96	68.04	4.48	
04/28	19:05:00	439.0000	3644.40	68.09	4.44	
04/28	19:23:00	457.0000	3648.20	68.16	3.80	
04/28	19:41:00	475.0000	3652.08	68.22	3.88	
04/28	19:59:00	493.0000	3656.06	68.27	3.98	
04/28	20:17:00	511.0000	3659.63	68.32	3.57	
04/28	20:35:00	529.0000	3662.92	68.34	3.29	
04/28	20:53:00	547.0000	3666.23	68.35	3.31	
04/28	21:11:00	565.0000	3669.45	68.36	3.22	
04/28	21:29:00	583.0000	3672.43	68.34	2.98	
04/28	21:47:00	601.0000	3675.25	68.29	2.82	
04/28	22:05:00	619.0000	3677.97	68.23	2.72	
04/28	22:23:00	637.0000	3680.68	68.16	2.71	
04/28	22:41:00	655.0000	3683.26	68.09	2.59	
04/28	22:59:00	673.0000	3685.68	68.04	2.42	
04/28	23:17:00	691.0000	3687.93	67.97	2.25	
04/28	23:35:00	709.0000	3690.33	67.92	2.40	
04/28	23:53:00	727.0000	3692.36	67.87	2.03	
04/29	00:11:00	745.0000	3694.43	67.83	2.06	
04/29	00:29:00	763.0000	3696.53	67.80	2.10	
04/29	00:47:00	781.0000	3698.51	67.76	1.98	
04/29	01:05:00	799.0000	3700.51	67.72	2.00	
04/29	01:23:00	817.0000	3702.46	67.70	1.94	

COMPANY: AGUA MOSS, LLC

PAGE 3 OF 10

WELL NAME : SUNCO SWD NO. 1

DATE : 05/05/15

WELL LOCATION : SAN JUAN COUNTY, NEW MEXICO

FILE REF: F162504.RED

Date MM/DD	Time hh:mm:ss	Test Time mmmmmmmm.mmmmm	Pressure Psig	Temp Deg F	deltaP Psi	Comment Ga. Press Ref. to 14.7 Psi Atm.
04/29	01:41:00	835.0000	3704.39	67.66	1.94	
04/29	01:59:00	853.0000	3706.14	67.62	1.75	
04/29	02:17:00	871.0000	3707.90	67.59	1.75	
04/29	02:35:00	889.0000	3709.68	67.56	1.78	
04/29	02:53:00	907.0000	3711.24	67.53	1.56	
04/29	03:11:00	925.0000	3712.79	67.49	1.55	
04/29	03:29:00	943.0000	3714.44	67.45	1.65	
04/29	03:47:00	961.0000	3715.97	67.40	1.53	
04/29	04:05:00	979.0000	3717.38	67.35	1.41	
04/29	04:23:00	997.0000	3718.75	67.29	1.38	
04/29	04:41:00	1015.0000	3720.09	67.24	1.33	
04/29	04:59:00	1033.0000	3721.31	67.19	1.23	
04/29	05:17:00	1051.0000	3722.57	67.14	1.26	
04/29	05:35:00	1069.0000	3723.83	67.09	1.26	
04/29	05:53:00	1087.0000	3725.03	67.04	1.20	
04/29	06:11:00	1105.0000	3726.26	67.01	1.23	
04/29	06:29:00	1123.0000	3727.43	66.98	1.17	
04/29	06:47:00	1141.0000	3728.63	66.95	1.20	
04/29	07:05:00	1159.0000	3729.73	66.90	1.10	
04/29	07:23:00	1177.0000	3730.70	66.91	.97	
04/29	07:41:00	1195.0000	3731.66	66.99	.96	
04/29	07:59:00	1213.0000	3732.70	67.10	1.05	
04/29	08:17:00	1231.0000	3733.72	67.16	1.02	
04/29	08:35:00	1249.0000	3734.74	67.15	1.02	
04/29	08:53:00	1267.0000	3735.65	67.13	.92	
04/29	09:11:00	1285.0000	3736.55	67.11	.90	
04/29	09:29:00	1303.0000	3737.48	67.10	.93	
04/29	09:47:00	1321.0000	3738.38	67.10	.90	
04/29	10:05:00	1339.0000	3739.19	67.13	.81	
04/29	10:23:00	1357.0000	3740.02	67.17	.82	
04/29	10:41:00	1375.0000	3740.85	67.22	.84	
04/29	10:59:00	1393.0000	3741.64	67.30	.79	
04/29	11:17:00	1411.0000	3742.40	67.40	.76	
04/29	11:35:00	1429.0000	3743.18	67.49	.79	
04/29	11:53:00	1447.0000	3743.94	67.58	.75	
04/29	12:11:00	1465.0000	3744.73	67.65	.79	
04/29	12:29:00	1483.0000	3745.46	67.70	.73	
04/29	12:47:00	1501.0000	3746.15	67.76	.70	
04/29	13:05:00	1519.0000	3746.89	67.81	.74	
04/29	13:23:00	1537.0000	3747.61	67.87	.73	
04/29	13:41:00	1555.0000	3748.27	67.93	.66	
04/29	13:59:00	1573.0000	3748.94	68.00	.67	
04/29	14:17:00	1591.0000	3749.63	68.04	.69	
04/29	14:35:00	1609.0000	3750.38	68.09	.75	
04/29	14:53:00	1627.0000	3751.05	68.15	.67	
04/29	15:11:00	1645.0000	3751.71	68.21	.66	
04/29	15:29:00	1663.0000	3752.40	68.26	.69	
04/29	15:47:00	1681.0000	3753.10	68.32	.71	
04/29	16:05:00	1699.0000	3753.67	68.39	.57	
04/29	16:23:00	1717.0000	3754.31	68.47	.64	
04/29	16:41:00	1735.0000	3754.96	68.55	.66	
04/29	16:59:00	1753.0000	3755.54	68.64	.57	
04/29	17:17:00	1771.0000	3756.18	68.70	.64	
04/29	17:35:00	1789.0000	3756.71	68.78	.53	
04/29	17:53:00	1807.0000	3757.28	68.84	.56	
04/29	18:11:00	1825.0000	3757.83	68.92	.55	
04/29	18:29:00	1843.0000	3758.36	68.99	.53	
04/29	18:47:00	1861.0000	3758.93	69.05	.57	
04/29	19:05:00	1879.0000	3759.43	69.11	.50	
04/29	19:23:00	1897.0000	3759.97	69.18	.55	
04/29	19:41:00	1915.0000	3760.50	69.24	.53	
04/29	19:59:00	1933.0000	3760.96	69.29	.46	
04/29	20:17:00	1951.0000	3761.50	69.35	.54	
04/29	20:35:00	1969.0000	3762.05	69.41	.55	
04/29	20:53:00	1987.0000	3762.62	69.45	.57	

COMPANY: AGUA MOSS, LLC

PAGE 4 OF 10

WELL NAME : SUNCO SWD NO. 1

DATE : 05/05/15

WELL LOCATION : SAN JUAN COUNTY, NEW MEXICO

FILE REF: F162504.RED

Date MM/DD	Time hh:mm:ss	Test Time mmmmmm.mmmmm	Pressure Psig	Temp Deg F	deltaP Psi	Comment Ga. Press Ref. to 14.7 Psi Atm.
04/29	21:11:00	2005.0000	3763.17	69.50	.54	
04/29	21:29:00	2023.0000	3763.71	69.55	.54	
04/29	21:47:00	2041.0000	3764.24	69.58	.53	
04/29	22:05:00	2059.0000	3764.70	69.63	.45	
04/29	22:23:00	2077.0000	3765.13	69.68	.43	
04/29	22:41:00	2095.0000	3765.57	69.71	.44	
04/29	22:59:00	2113.0000	3766.01	69.77	.44	
04/29	23:17:00	2131.0000	3766.43	69.82	.42	
04/29	23:35:00	2149.0000	3766.90	69.86	.47	
04/29	23:53:00	2167.0000	3767.29	69.92	.39	
04/30	00:11:00	2185.0000	3767.72	69.98	.43	
04/30	00:29:00	2203.0000	3768.08	70.04	.36	
04/30	00:47:00	2221.0000	3768.48	70.10	.40	
04/30	01:05:00	2239.0000	3768.85	70.15	.37	
04/30	01:23:00	2257.0000	3769.18	70.22	.32	
04/30	01:41:00	2275.0000	3769.53	70.28	.36	
04/30	01:59:00	2293.0000	3769.86	70.33	.32	
04/30	02:17:00	2311.0000	3770.21	70.39	.36	
04/30	02:35:00	2329.0000	3770.55	70.46	.34	
04/30	02:53:00	2347.0000	3770.92	70.52	.37	
04/30	03:11:00	2365.0000	3771.15	70.58	.23	
04/30	03:29:00	2383.0000	3771.40	70.65	.26	
04/30	03:47:00	2401.0000	3771.73	70.70	.32	
04/30	04:05:00	2419.0000	3771.99	70.77	.26	
04/30	04:23:00	2437.0000	3772.31	70.81	.32	
04/30	04:41:00	2455.0000	3772.63	70.86	.32	
04/30	04:59:00	2473.0000	3772.89	70.91	.25	
04/30	05:17:00	2491.0000	3773.16	70.95	.28	
04/30	05:35:00	2509.0000	3773.48	70.99	.31	
04/30	05:53:00	2527.0000	3773.76	71.02	.29	
04/30	06:11:00	2545.0000	3774.11	71.04	.35	
04/30	06:29:00	2563.0000	3774.30	71.06	.19	
04/30	06:47:00	2581.0000	3774.61	71.08	.32	
04/30	07:05:00	2599.0000	3774.91	71.08	.30	
04/30	07:23:00	2617.0000	3775.25	71.08	.34	
04/30	07:41:00	2635.0000	3775.53	71.08	.29	
04/30	07:59:00	2653.0000	3775.83	71.08	.30	
04/30	08:17:00	2671.0000	3776.08	71.08	.25	
04/30	08:35:00	2689.0000	3776.34	71.09	.25	
04/30	08:53:00	2707.0000	3776.68	71.06	.35	
04/30	09:11:00	2725.0000	3776.99	71.04	.31	
04/30	09:29:00	2743.0000	3777.26	71.05	.27	
04/30	09:47:00	2761.0000	3777.58	71.07	.32	
04/30	10:05:00	2779.0000	3777.81	71.11	.23	
04/30	10:23:00	2797.0000	3778.12	71.12	.31	
04/30	10:41:00	2815.0000	3778.41	71.06	.29	
04/30	10:59:00	2833.0000	3778.74	70.97	.33	
04/30	11:17:00	2851.0000	3778.98	70.86	.24	
04/30	11:35:00	2869.0000	3779.22	70.70	.24	
04/30	11:53:00	2887.0000	3779.57	70.49	.35	
04/30	12:11:00	2905.0000	3779.84	70.30	.27	
04/30	12:29:00	2923.0000	3780.09	70.13	.25	
04/30	12:47:00	2941.0000	3780.40	69.95	.30	
04/30	13:05:00	2959.0000	3780.76	69.78	.36	
04/30	13:23:00	2977.0000	3780.96	69.60	.20	
04/30	13:41:00	2995.0000	3781.28	69.45	.33	
04/30	13:59:00	3013.0000	3781.60	69.30	.31	
04/30	14:17:00	3031.0000	3781.67	69.20	.07	
04/30	14:34:15	3048.2500	3764.43	69.42	-17.24	END INJECTING
04/30	14:43:15	3057.2500	3745.84	72.12	-18.59	BEGAN FALL-OFF
04/30	14:43:30	3057.5000	3745.49	72.18	-.35	
04/30	15:01:00	3075.0000	3727.47	74.89	-18.02	
04/30	15:19:00	3093.0000	3714.04	76.28	-13.43	
04/30	15:37:00	3111.0000	3703.08	77.23	-10.96	
04/30	15:55:00	3129.0000	3693.70	77.96	-9.38	

COMPANY: AGUA MOSS, LLC

PAGE 5 OF 10

WELL NAME : SUNCO SWD NO. 1

DATE : 05/05/15

WELL LOCATION : SAN JUAN COUNTY, NEW MEXICO

FILE REF: F162504.RED

Date	Time	Test Time	Pressure	Temp	deltaP	Comment
MM/DD	hh:mm:ss	mmmmmm.mmmmm	Psig	Deg F	Psi	Ga. Press Ref. to 14.7 Psi Atm.
04/30	16:13:00	3147.0000	3685.34	78.54	-8.35	
04/30	16:31:00	3165.0000	3677.81	79.03	-7.53	
04/30	16:49:00	3183.0000	3670.76	79.45	-7.05	
04/30	17:07:00	3201.0000	3664.44	79.81	-6.32	
04/30	17:25:00	3219.0000	3658.71	80.13	-5.73	
04/30	17:43:00	3237.0000	3652.98	80.43	-5.74	
04/30	18:01:00	3255.0000	3647.72	80.71	-5.25	
04/30	18:19:00	3273.0000	3643.07	80.96	-4.65	
04/30	18:37:00	3291.0000	3638.06	81.20	-5.01	
04/30	18:55:00	3309.0000	3633.80	81.43	-4.26	
04/30	19:13:00	3327.0000	3629.37	81.64	-4.43	
04/30	19:31:00	3345.0000	3625.31	81.82	-4.06	
04/30	19:49:00	3363.0000	3621.23	82.01	-4.08	
04/30	20:07:00	3381.0000	3617.36	82.18	-3.86	
04/30	20:25:00	3399.0000	3613.58	82.34	-3.78	
04/30	20:43:00	3417.0000	3609.99	82.50	-3.59	
04/30	21:01:00	3435.0000	3606.42	82.66	-3.57	
04/30	21:19:00	3453.0000	3603.01	82.80	-3.40	
04/30	21:37:00	3471.0000	3599.70	82.94	-3.31	
04/30	21:55:00	3489.0000	3596.52	83.06	-3.19	
04/30	22:13:00	3507.0000	3593.39	83.19	-3.13	
04/30	22:31:00	3525.0000	3590.35	83.32	-3.03	
04/30	22:49:00	3543.0000	3587.34	83.43	-3.01	
04/30	23:07:00	3561.0000	3584.50	83.53	-2.84	
04/30	23:25:00	3579.0000	3581.67	83.63	-2.83	
04/30	23:43:00	3597.0000	3578.87	83.73	-2.80	
05/01	00:01:00	3615.0000	3576.19	83.81	-2.67	
05/01	00:19:00	3633.0000	3573.65	83.89	-2.55	
05/01	00:37:00	3651.0000	3571.08	83.97	-2.56	
05/01	00:55:00	3669.0000	3568.48	84.05	-2.61	
05/01	01:13:00	3687.0000	3565.99	84.13	-2.49	
05/01	01:31:00	3705.0000	3563.63	84.20	-2.35	
05/01	01:49:00	3723.0000	3561.34	84.26	-2.30	
05/01	02:07:00	3741.0000	3559.06	84.32	-2.27	
05/01	02:25:00	3759.0000	3556.69	84.38	-2.37	
05/01	02:43:00	3777.0000	3554.49	84.44	-2.20	
05/01	03:01:00	3795.0000	3552.33	84.49	-2.16	
05/01	03:19:00	3813.0000	3550.25	84.54	-2.07	
05/01	03:37:00	3831.0000	3548.05	84.57	-2.20	
05/01	03:55:00	3849.0000	3546.08	84.63	-1.98	
05/01	04:13:00	3867.0000	3543.93	84.67	-2.15	
05/01	04:31:00	3885.0000	3541.95	84.71	-1.98	
05/01	04:49:00	3903.0000	3540.04	84.75	-1.90	
05/01	05:07:00	3921.0000	3538.14	84.78	-1.90	
05/01	05:25:00	3939.0000	3536.18	84.79	-1.96	
05/01	05:43:00	3957.0000	3534.35	84.85	-1.82	
05/01	06:01:00	3975.0000	3532.43	84.90	-1.92	
05/01	06:19:00	3993.0000	3530.67	84.92	-1.76	
05/01	06:37:00	4011.0000	3528.89	84.92	-1.78	
05/01	06:55:00	4029.0000	3527.08	84.97	-1.81	
05/01	07:13:00	4047.0000	3525.33	85.02	-1.75	
05/01	07:31:00	4065.0000	3523.59	85.02	-1.74	
05/01	07:49:00	4083.0000	3522.02	85.04	-1.57	
05/01	08:07:00	4101.0000	3520.28	85.09	-1.74	
05/01	08:25:00	4119.0000	3518.67	85.11	-1.61	
05/01	08:43:00	4137.0000	3517.11	85.12	-1.57	
05/01	09:01:00	4155.0000	3515.47	85.14	-1.64	
05/01	09:19:00	4173.0000	3513.88	85.18	-1.59	
05/01	09:37:00	4191.0000	3512.32	85.20	-1.55	
05/01	09:55:00	4209.0000	3510.79	85.23	-1.53	
05/01	10:13:00	4227.0000	3509.31	85.25	-1.49	
05/01	10:31:00	4245.0000	3507.78	85.27	-1.53	
05/01	10:49:00	4263.0000	3506.31	85.30	-1.47	
05/01	11:07:00	4281.0000	3504.87	85.33	-1.44	
05/01	11:25:00	4299.0000	3503.48	85.34	-1.39	

COMPANY: AGUA MOSS, LLC

PAGE 6 OF 10

WELL NAME : SUNCO SWD NO. 1

DATE : 05/05/15

WELL LOCATION : SAN JUAN COUNTY, NEW MEXICO

FILE REF: F162504.RED

Date	Time	Test Time	Pressure	Temp	deltaP	Comment
MM/DD	hh:mm:ss	mmmmmm.mmmmm	Psig	Deg F	Psi	Ga. Press Ref. to 14.7 Psi Atm.
05/01	11:43:00	4317.0000	3502.06	85.35	-1.42	
05/01	12:01:00	4335.0000	3500.65	85.35	-1.42	
05/01	12:19:00	4353.0000	3499.25	85.39	-1.40	
05/01	12:37:00	4371.0000	3497.95	85.42	-1.30	
05/01	12:55:00	4389.0000	3496.59	85.44	-1.36	
05/01	13:13:00	4407.0000	3495.26	85.46	-1.33	
05/01	13:31:00	4425.0000	3493.94	85.49	-1.32	
05/01	13:49:00	4443.0000	3492.65	85.49	-1.28	
05/01	14:07:00	4461.0000	3491.36	85.51	-1.29	
05/01	14:25:00	4479.0000	3490.12	85.53	-1.25	
05/01	14:43:00	4497.0000	3488.86	85.55	-1.25	
05/01	15:01:00	4515.0000	3487.64	85.56	-1.22	
05/01	15:19:00	4533.0000	3486.42	85.59	-1.22	
05/01	15:37:00	4551.0000	3485.22	85.60	-1.21	
05/01	15:55:00	4569.0000	3483.99	85.63	-1.22	
05/01	16:13:00	4587.0000	3482.82	85.64	-1.17	
05/01	16:31:00	4605.0000	3481.63	85.67	-1.19	
05/01	16:49:00	4623.0000	3480.49	85.67	-1.14	
05/01	17:07:00	4641.0000	3479.31	85.69	-1.18	
05/01	17:25:00	4659.0000	3478.14	85.72	-1.17	
05/01	17:43:00	4677.0000	3477.04	85.73	-1.10	
05/01	18:01:00	4695.0000	3475.89	85.76	-1.15	
05/01	18:19:00	4713.0000	3474.80	85.79	-1.09	
05/01	18:37:00	4731.0000	3473.71	85.80	-1.09	
05/01	18:55:00	4749.0000	3472.61	85.82	-1.10	
05/01	19:13:00	4767.0000	3471.52	85.85	-1.09	
05/01	19:31:00	4785.0000	3470.39	85.88	-1.12	
05/01	19:49:00	4803.0000	3469.33	85.89	-1.06	
05/01	20:07:00	4821.0000	3468.29	85.89	-1.04	
05/01	20:25:00	4839.0000	3467.27	85.90	-1.02	
05/01	20:43:00	4857.0000	3466.21	85.92	-1.06	
05/01	21:01:00	4875.0000	3465.23	85.93	-.98	
05/01	21:19:00	4893.0000	3464.13	85.97	-1.09	
05/01	21:37:00	4911.0000	3463.10	85.99	-1.03	
05/01	21:55:00	4929.0000	3462.12	86.00	-.99	
05/01	22:13:00	4947.0000	3461.16	86.00	-.96	
05/01	22:31:00	4965.0000	3460.13	86.02	-1.02	
05/01	22:49:00	4983.0000	3459.12	86.05	-1.01	
05/01	23:07:00	5001.0000	3458.16	86.07	-.96	
05/01	23:25:00	5019.0000	3457.21	86.08	-.95	
05/01	23:43:00	5037.0000	3456.27	86.09	-.94	
05/02	00:01:00	5055.0000	3455.33	86.10	-.94	
05/02	00:19:00	5073.0000	3454.33	86.12	-.99	
05/02	00:37:00	5091.0000	3453.45	86.14	-.89	
05/02	00:55:00	5109.0000	3452.56	86.15	-.89	
05/02	01:13:00	5127.0000	3451.66	86.16	-.89	
05/02	01:31:00	5145.0000	3450.75	86.18	-.92	
05/02	01:49:00	5163.0000	3449.80	86.20	-.95	
05/02	02:07:00	5181.0000	3449.00	86.21	-.80	
05/02	02:25:00	5199.0000	3448.06	86.23	-.94	
05/02	02:43:00	5217.0000	3447.21	86.23	-.85	
05/02	03:01:00	5235.0000	3446.34	86.25	-.87	
05/02	03:19:00	5253.0000	3445.50	86.26	-.84	
05/02	03:37:00	5271.0000	3444.66	86.28	-.84	
05/02	03:55:00	5289.0000	3443.80	86.30	-.86	
05/02	04:13:00	5307.0000	3442.99	86.30	-.81	
05/02	04:31:00	5325.0000	3442.12	86.32	-.87	
05/02	04:49:00	5343.0000	3441.32	86.33	-.80	
05/02	05:07:00	5361.0000	3440.52	86.35	-.79	
05/02	05:25:00	5379.0000	3439.65	86.37	-.87	
05/02	05:43:00	5397.0000	3438.91	86.38	-.74	
05/02	06:01:00	5415.0000	3438.04	86.39	-.87	
05/02	06:19:00	5433.0000	3437.22	86.41	-.82	
05/02	06:37:00	5451.0000	3436.43	86.42	-.79	
05/02	06:55:00	5469.0000	3435.61	86.44	-.82	

COMPANY: AGUA MOSS, LLC

PAGE 7 OF 10

WELL NAME : SUNCO SWD NO. 1

DATE : 05/05/15

WELL LOCATION : SAN JUAN COUNTY, NEW MEXICO

FILE REF: F162504.RED

Date MM/DD hh:mm:ss	Time mmmmmmmm.mmmmm	Test Time mmmmmmmm.mmmmm	Pressure Psig	Temp Deg F	deltaP Psi	Comment Ga. Press Ref. to 14.7 Psi Atm.
05/02 07:13:00		5487.0000	3434.86	86.46	-.76	
05/02 07:31:00		5505.0000	3434.04	86.47	-.82	
05/02 07:49:00		5523.0000	3433.27	86.49	-.77	
05/02 08:07:00		5541.0000	3432.52	86.49	-.75	
05/02 08:25:00		5559.0000	3431.70	86.51	-.82	
05/02 08:43:00		5577.0000	3430.92	86.51	-.79	
05/02 09:01:00		5595.0000	3430.21	86.53	-.71	
05/02 09:19:00		5613.0000	3429.40	86.55	-.81	
05/02 09:37:00		5631.0000	3428.63	86.56	-.77	
05/02 09:55:00		5649.0000	3427.91	86.57	-.72	
05/02 10:13:00		5667.0000	3427.18	86.58	-.73	
05/02 10:31:00		5685.0000	3426.41	86.60	-.77	
05/02 10:49:00		5703.0000	3425.69	86.62	-.72	
05/02 11:07:00		5721.0000	3424.96	86.63	-.73	
05/02 11:25:00		5739.0000	3424.24	86.63	-.72	
05/02 11:43:00		5757.0000	3423.56	86.65	-.68	
05/02 12:01:00		5775.0000	3422.79	86.67	-.77	
05/02 12:19:00		5793.0000	3422.10	86.68	-.69	
05/02 12:37:00		5811.0000	3421.44	86.68	-.66	
05/02 12:55:00		5829.0000	3420.71	86.70	-.73	
05/02 13:13:00		5847.0000	3420.07	86.72	-.64	
05/02 13:31:00		5865.0000	3419.38	86.72	-.69	
05/02 13:49:00		5883.0000	3418.67	86.72	-.70	
05/02 14:07:00		5901.0000	3418.02	86.75	-.66	
05/02 14:25:00		5919.0000	3417.41	86.75	-.60	
05/02 14:43:00		5937.0000	3416.72	86.77	-.70	
05/02 15:01:00		5955.0000	3416.08	86.77	-.64	
05/02 15:19:00		5973.0000	3415.43	86.79	-.65	
05/02 15:37:00		5991.0000	3414.75	86.81	-.68	
05/02 15:55:00		6009.0000	3414.13	86.82	-.62	
05/02 16:13:00		6027.0000	3413.52	86.83	-.61	
05/02 16:31:00		6045.0000	3412.89	86.84	-.63	
05/02 16:49:00		6063.0000	3412.24	86.84	-.65	
05/02 17:07:00		6081.0000	3411.60	86.86	-.64	
05/02 17:25:00		6099.0000	3410.96	86.88	-.64	
05/02 17:43:00		6117.0000	3410.38	86.89	-.58	
05/02 18:01:00		6135.0000	3409.77	86.89	-.61	
05/02 18:19:00		6153.0000	3409.10	86.91	-.67	
05/02 18:37:00		6171.0000	3408.48	86.91	-.62	
05/02 18:55:00		6189.0000	3407.91	86.93	-.57	
05/02 19:13:00		6207.0000	3407.25	86.95	-.66	
05/02 19:31:00		6225.0000	3406.66	86.96	-.60	
05/02 19:49:00		6243.0000	3406.06	86.96	-.59	
05/02 20:07:00		6261.0000	3405.44	86.98	-.62	
05/02 20:25:00		6279.0000	3404.84	87.00	-.60	
05/02 20:43:00		6297.0000	3404.24	87.00	-.60	
05/02 21:01:00		6315.0000	3403.65	87.00	-.59	
05/02 21:19:00		6333.0000	3403.05	87.03	-.60	
05/02 21:37:00		6351.0000	3402.41	87.04	-.63	
05/02 21:55:00		6369.0000	3401.84	87.05	-.57	
05/02 22:13:00		6387.0000	3401.26	87.05	-.58	
05/02 22:31:00		6405.0000	3400.71	87.07	-.55	
05/02 22:49:00		6423.0000	3400.14	87.08	-.57	
05/02 23:07:00		6441.0000	3399.53	87.10	-.61	
05/02 23:25:00		6459.0000	3398.97	87.11	-.56	
05/02 23:43:00		6477.0000	3398.45	87.12	-.52	
05/03 00:01:00		6495.0000	3397.90	87.12	-.56	
05/03 00:19:00		6513.0000	3397.32	87.13	-.58	
05/03 00:37:00		6531.0000	3396.74	87.14	-.57	
05/03 00:55:00		6549.0000	3396.17	87.15	-.57	
05/03 01:13:00		6567.0000	3395.66	87.17	-.51	
05/03 01:31:00		6585.0000	3395.13	87.18	-.53	
05/03 01:49:00		6603.0000	3394.58	87.19	-.54	
05/03 02:07:00		6621.0000	3394.06	87.20	-.52	
05/03 02:25:00		6639.0000	3393.54	87.21	-.52	

COMPANY: AGUA MOSS, LLC

PAGE 8 OF 10

WELL NAME : SUNCO SWD NO. 1

DATE : 05/05/15

WELL LOCATION : SAN JUAN COUNTY, NEW MEXICO

FILE REF: F162504.RED

Date	Time	Test Time	Pressure	Temp	deltaP	Comment
MM/DD	hh:mm:ss	mmmmmm.mmmmm	Psig	Deg F	Psi	Ga. Press Ref. to 14.7 Psi Atm.
05/03	02:43:00	6657.0000	3393.00	87.22	-.55	
05/03	03:01:00	6675.0000	3392.51	87.23	-.48	
05/03	03:19:00	6693.0000	3391.96	87.25	-.56	
05/03	03:37:00	6711.0000	3391.43	87.25	-.53	
05/03	03:55:00	6729.0000	3390.91	87.27	-.52	
05/03	04:13:00	6747.0000	3390.42	87.27	-.49	
05/03	04:31:00	6765.0000	3389.91	87.29	-.51	
05/03	04:49:00	6783.0000	3389.37	87.30	-.54	
05/03	05:07:00	6801.0000	3388.90	87.30	-.47	
05/03	05:25:00	6819.0000	3388.39	87.31	-.50	
05/03	05:43:00	6837.0000	3387.90	87.32	-.50	
05/03	06:01:00	6855.0000	3387.39	87.34	-.51	
05/03	06:19:00	6873.0000	3386.89	87.34	-.50	
05/03	06:37:00	6891.0000	3386.36	87.36	-.53	
05/03	06:55:00	6909.0000	3385.85	87.36	-.51	
05/03	07:13:00	6927.0000	3385.38	87.37	-.47	
05/03	07:31:00	6945.0000	3384.84	87.38	-.53	
05/03	07:49:00	6963.0000	3384.36	87.40	-.49	
05/03	08:07:00	6981.0000	3383.88	87.40	-.48	
05/03	08:25:00	6999.0000	3383.35	87.42	-.53	
05/03	08:43:00	7017.0000	3382.86	87.43	-.49	
05/03	09:01:00	7035.0000	3382.38	87.43	-.48	
05/03	09:19:00	7053.0000	3381.88	87.45	-.50	
05/03	09:37:00	7071.0000	3381.40	87.45	-.48	
05/03	09:55:00	7089.0000	3380.89	87.47	-.51	
05/03	10:13:00	7107.0000	3380.41	87.48	-.48	
05/03	10:31:00	7125.0000	3379.91	87.49	-.50	
05/03	10:49:00	7143.0000	3379.47	87.49	-.44	
05/03	11:07:00	7161.0000	3378.98	87.50	-.49	
05/03	11:25:00	7179.0000	3378.49	87.52	-.50	
05/03	11:43:00	7197.0000	3378.03	87.52	-.46	
05/03	12:01:00	7215.0000	3377.55	87.54	-.48	
05/03	12:19:00	7233.0000	3377.16	87.54	-.39	
05/03	12:37:00	7251.0000	3376.70	87.54	-.46	
05/03	12:55:00	7269.0000	3376.17	87.57	-.53	
05/03	13:13:00	7287.0000	3375.73	87.58	-.44	
05/03	13:31:00	7305.0000	3375.33	87.59	-.40	
05/03	13:49:00	7323.0000	3374.89	87.59	-.44	
05/03	14:07:00	7341.0000	3374.41	87.60	-.48	
05/03	14:25:00	7359.0000	3373.95	87.61	-.46	
05/03	14:43:00	7377.0000	3373.53	87.61	-.42	
05/03	15:01:00	7395.0000	3373.12	87.63	-.41	
05/03	15:19:00	7413.0000	3372.71	87.64	-.41	
05/03	15:37:00	7431.0000	3372.27	87.65	-.44	
05/03	15:55:00	7449.0000	3371.83	87.66	-.44	
05/03	16:13:00	7467.0000	3371.42	87.67	-.41	
05/03	16:31:00	7485.0000	3371.04	87.68	-.38	
05/03	16:49:00	7503.0000	3370.60	87.69	-.44	
05/03	17:07:00	7521.0000	3370.20	87.69	-.40	
05/03	17:25:00	7539.0000	3369.82	87.70	-.38	
05/03	17:43:00	7557.0000	3369.38	87.71	-.44	
05/03	18:01:00	7575.0000	3368.96	87.71	-.41	
05/03	18:19:00	7593.0000	3368.57	87.73	-.40	
05/03	18:37:00	7611.0000	3368.09	87.74	-.47	
05/03	18:55:00	7629.0000	3367.75	87.75	-.35	
05/03	19:13:00	7647.0000	3367.35	87.75	-.39	
05/03	19:31:00	7665.0000	3366.91	87.76	-.44	
05/03	19:49:00	7683.0000	3366.51	87.77	-.40	
05/03	20:07:00	7701.0000	3366.06	87.78	-.45	
05/03	20:25:00	7719.0000	3365.64	87.79	-.43	
05/03	20:43:00	7737.0000	3365.27	87.80	-.37	
05/03	21:01:00	7755.0000	3364.82	87.82	-.45	
05/03	21:19:00	7773.0000	3364.41	87.82	-.41	
05/03	21:37:00	7791.0000	3364.04	87.83	-.37	
05/03	21:55:00	7809.0000	3363.59	87.84	-.45	

WELL NAME : SUNCO SWD NO. 1

DATE : 05/05/15

WELL LOCATION : SAN JUAN COUNTY, NEW MEXICO

FILE REF: F162504.RED

Date MM/DD	Time hh:mm:ss	Test Time mmmmmm.mmmmm	Pressure Psig	Temp Deg F	deltaP Psi	Comment Ga. Press Ref. to 14.7 Psi Atm.
05/03	22:13:00	7827.0000	3363.17	87.85	-.42	
05/03	22:31:00	7845.0000	3362.81	87.85	-.36	
05/03	22:49:00	7863.0000	3362.41	87.85	-.40	
05/03	23:07:00	7881.0000	3361.98	87.87	-.43	
05/03	23:25:00	7899.0000	3361.59	87.87	-.40	
05/03	23:43:00	7917.0000	3361.17	87.89	-.42	
05/04	00:01:00	7935.0000	3360.82	87.90	-.35	
05/04	00:19:00	7953.0000	3360.39	87.91	-.43	
05/04	00:37:00	7971.0000	3359.99	87.92	-.40	
05/04	00:55:00	7989.0000	3359.61	87.93	-.38	
05/04	01:13:00	8007.0000	3359.25	87.92	-.36	
05/04	01:31:00	8025.0000	3358.89	87.94	-.36	
05/04	01:49:00	8043.0000	3358.53	87.94	-.36	
05/04	02:07:00	8061.0000	3358.11	87.96	-.42	
05/04	02:25:00	8079.0000	3357.76	87.96	-.36	
05/04	02:43:00	8097.0000	3357.38	87.97	-.37	
05/04	03:01:00	8115.0000	3356.97	87.99	-.41	
05/04	03:19:00	8133.0000	3356.62	87.99	-.35	
05/04	03:37:00	8151.0000	3356.29	87.99	-.33	
05/04	03:55:00	8169.0000	3355.89	88.00	-.41	
05/04	04:13:00	8187.0000	3355.51	88.01	-.38	
05/04	04:31:00	8205.0000	3355.21	88.02	-.30	
05/04	04:49:00	8223.0000	3354.80	88.03	-.40	
05/04	05:07:00	8241.0000	3354.44	88.04	-.37	
05/04	05:25:00	8259.0000	3354.08	88.04	-.36	
05/04	05:43:00	8277.0000	3353.74	88.05	-.34	
05/04	06:01:00	8295.0000	3353.40	88.06	-.34	
05/04	06:19:00	8313.0000	3353.00	88.07	-.40	
05/04	06:37:00	8331.0000	3352.64	88.08	-.37	
05/04	06:55:00	8349.0000	3352.27	88.09	-.37	
05/04	07:13:00	8367.0000	3351.94	88.10	-.33	
05/04	07:31:00	8385.0000	3351.57	88.11	-.37	
05/04	07:49:00	8403.0000	3351.23	88.11	-.34	
05/04	08:07:00	8421.0000	3350.88	88.12	-.34	
05/04	08:25:00	8439.0000	3350.51	88.12	-.37	
05/04	08:43:00	8457.0000	3350.16	88.14	-.35	
05/04	09:01:00	8475.0000	3349.84	88.14	-.31	END FALL-OFF (90.5 HRS.)
05/04	09:02:00	8476.0000	3225.90	88.36	-123.94	TANDEM ELEC. MEMORY INST. OFF BOTTOM
05/04	09:02:15	8476.2500	3180.01	88.74	-45.90	
05/04	09:03:15	8477.2500	3165.05	92.23	-14.95	
05/04	09:04:15	8478.2500	3164.00	95.71	-1.05	ARRIVED @ 4000'
05/04	09:05:15	8479.2500	3164.63	99.22	.63	
05/04	09:06:30	8480.5000	3166.81	102.67	2.18	
05/04	09:07:45	8481.7500	3168.38	106.14	1.57	
05/04	09:09:30	8483.5000	3170.66	109.19	2.28	
05/04	09:10:30	8484.5000	3171.65	110.67	.98	STOP @ 4000'
05/04	09:10:45	8484.7500	3151.34	111.04	-20.30	
05/04	09:11:00	8485.0000	3107.32	111.41	-44.03	
05/04	09:11:15	8485.2500	3063.60	111.66	-43.72	
05/04	09:11:30	8485.5000	3019.38	111.63	-44.22	
05/04	09:11:45	8485.7500	2975.30	111.59	-44.08	
05/04	09:12:00	8486.0000	2930.33	111.55	-44.97	
05/04	09:12:15	8486.2500	2885.10	111.51	-45.23	
05/04	09:12:30	8486.5000	2839.61	111.48	-45.49	
05/04	09:12:45	8486.7500	2798.14	111.43	-41.48	
05/04	09:13:00	8487.0000	2783.00	111.40	-15.14	
05/04	09:13:15	8487.2500	2768.01	111.36	-14.99	
05/04	09:13:30	8487.5000	2750.44	111.32	-17.56	
05/04	09:13:45	8487.7500	2742.90	111.29	-7.55	
05/04	09:16:45	8490.7500	2743.48	108.15	.58	
05/04	09:20:30	8494.5000	2741.74	105.20	-1.74	STOP @ 3000'
05/04	09:20:45	8494.7500	2722.52	104.98	-19.21	
05/04	09:21:00	8495.0000	2683.78	104.77	-38.74	
05/04	09:21:15	8495.2500	2644.40	104.56	-39.39	
05/04	09:21:30	8495.5000	2604.62	104.35	-39.77	

COMPANY: AGUA MOSS, LLC

PAGE 10 OF 10

WELL NAME : SUNCO SWD NO. 1

DATE : 05/05/15

WELL LOCATION : SAN JUAN COUNTY, NEW MEXICO

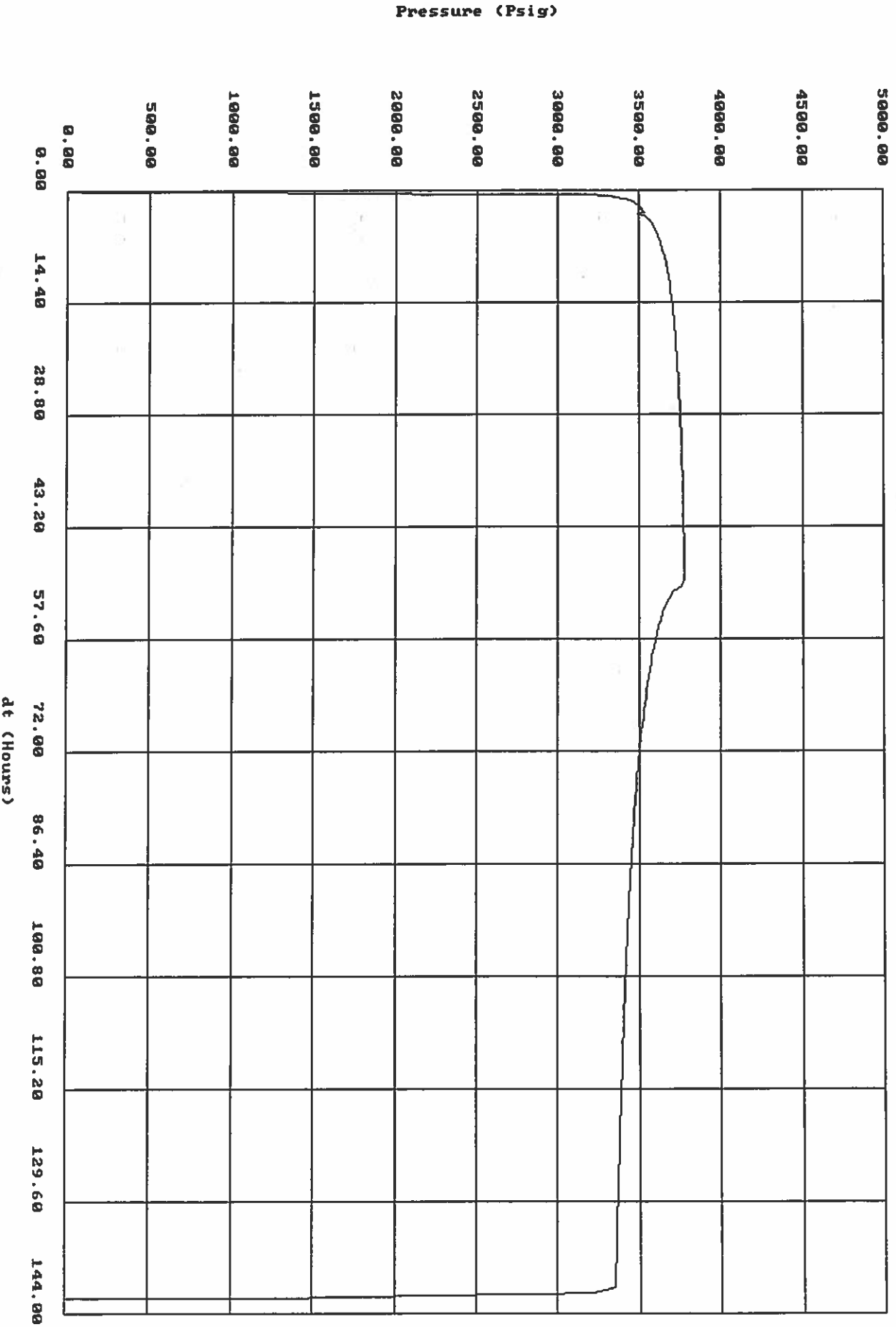
FILE REF: F162504.RED

Date MM/DD	Time hh:mm:ss	Test Time mmmmmm.mmmmm	Pressure Psig	Temp Deg F	deltaP Psi	Comment Ga. Press Ref. to 14.7 Psi Atm.
05/04	09:21:45	8495.7500	2560.10	104.13	-44.53	
05/04	09:22:00	8496.0000	2512.99	103.92	-47.11	
05/04	09:22:15	8496.2500	2472.05	103.71	-40.93	
05/04	09:22:30	8496.5000	2431.89	103.50	-40.16	
05/04	09:22:45	8496.7500	2399.99	103.28	-31.91	
05/04	09:23:00	8497.0000	2361.76	103.07	-38.23	
05/04	09:23:15	8497.2500	2328.99	102.61	-32.77	
05/04	09:23:30	8497.5000	2309.97	102.06	-19.01	
05/04	09:25:00	8499.0000	2309.50	98.72	-.47	
05/04	09:26:30	8500.5000	2308.55	95.61	-.95	
05/04	09:28:30	8502.5000	2306.52	92.54	-2.04	
05/04	09:30:45	8504.7500	2296.84	90.03	-9.68	STOP @ 2000'
05/04	09:31:00	8505.0000	2269.89	89.79	-26.94	
05/04	09:31:15	8505.2500	2242.84	89.55	-27.05	
05/04	09:31:30	8505.5000	2213.45	89.31	-29.39	
05/04	09:31:45	8505.7500	2180.71	89.07	-32.75	
05/04	09:32:00	8506.0000	2147.44	88.83	-33.27	
05/04	09:32:15	8506.2500	2104.77	88.47	-42.67	
05/04	09:32:30	8506.5000	2061.63	87.87	-43.14	
05/04	09:32:45	8506.7500	2018.11	87.26	-43.52	
05/04	09:33:00	8507.0000	1974.31	86.66	-43.80	
05/04	09:33:15	8507.2500	1930.12	86.06	-44.19	
05/04	09:33:30	8507.5000	1885.40	85.46	-44.72	
05/04	09:34:45	8508.7500	1872.98	82.45	-12.42	
05/04	09:36:15	8510.2500	1872.10	78.92	-.89	
05/04	09:37:45	8511.7500	1871.08	75.56	-1.01	
05/04	09:40:00	8514.0000	1869.15	72.33	-1.94	STOP @ 1000'
05/04	09:40:45	8514.7500	1855.79	71.38	-13.36	
05/04	09:41:00	8515.0000	1822.78	71.06	-33.01	
05/04	09:41:15	8515.2500	1779.44	70.81	-43.34	
05/04	09:41:30	8515.5000	1734.53	70.47	-44.91	
05/04	09:41:45	8515.7500	1689.63	70.12	-44.90	
05/04	09:42:00	8516.0000	1652.88	69.78	-36.75	
05/04	09:42:15	8516.2500	1618.21	69.43	-34.67	
05/04	09:42:30	8516.5000	1583.53	69.09	-34.68	
05/04	09:42:45	8516.7500	1547.55	68.75	-35.98	
05/04	09:43:00	8517.0000	1515.85	68.40	-31.70	
05/04	09:43:15	8517.2500	1482.34	68.06	-33.51	
05/04	09:43:30	8517.5000	1459.05	67.72	-23.29	
05/04	09:43:45	8517.7500	1439.67	67.37	-19.39	
05/04	09:52:00	8526.0000	1421.79	68.45	-17.88	SURFACE STOP
05/04	09:53:00	8527.0000	.01	68.93	-1421.78	
05/04	10:03:15	8537.2500	.01	71.93	.00	
05/04	10:15:00	8549.0000	.01	74.95	.00	

SUNCO SMD NO. 1
SAN JUAN COUNTY, NEW MEXICO
F162504.REB

AGUA MOSS, LLC
Pressure vs dt

TEFTELLER, INC.
4-28-15
INJECTION & FALL-OFF TESTS



 *
 * EVENT SUMMARY *
 *

COMPANY : AGUA MOSS, LLC

PAGE : B1

WELL NAME : SUNCO SWD NO. 1

DATE : 05/05/15

WELL LOCATION : SAN JUAN COUNTY, NEW MEXICO

FILE REF: F162504.RED

Date	Time	Test Time	Key Event	Pressure	Temp
MM/DD	hh:mm:ss	mmmmmm.mmmmm		Psig	Deg F
04/28	11:57:45	11.7500	PRESSURED UP LUBRICATOR	18.35	73.25
04/28	12:08:15	22.2500	SURFACE STOP	1300.13	68.92
04/28	12:08:30	22.5000	R.I.H. W/TANDEM ELEC. MEMORY INST.	1322.87	68.86
04/28	12:25:45	39.7500	TANDEM ELEC. MEMORY INST. @ 4405'	3243.96	95.35
04/28	12:30:00	44.0000	BEGAN INJECTING	3270.61	92.76
04/30	14:34:15	3048.2500	END INJECTING	3764.43	69.42
04/30	14:43:15	3057.2500	BEGAN FALL-OFF	3745.84	72.12
05/04	09:01:00	8475.0000	END FALL-OFF (90.5 HRS,)	3349.84	88.14
05/04	09:02:00	8476.0000	TANDEM ELEC. MEMORY INST. OFF BOTTOM	3225.90	88.36
05/04	09:04:15	8478.2500	ARRIVED @ 4000'	3164.00	95.71
05/04	09:10:30	8484.5000	STOP @ 4000'	3171.65	110.67
05/04	09:20:30	8494.5000	STOP @ 3000'	2741.74	105.20
05/04	09:30:45	8504.7500	STOP @ 2000'	2296.84	90.03
05/04	09:40:00	8514.0000	STOP @ 1000'	1869.15	72.33
05/04	09:52:00	8526.0000	SURFACE STOP	1421.79	68.45

Company: AGUA MOSS, LLC
Well: SUNCO SWD NO. 1
Field:
Engineer: NEIL TEFTELLER
Gauge Type: ELECTRONIC MEMORY
Gauge Range: 0 - 5000
Gauge Depth: 4405 ft
Serial No.: 162

County: SAN JUAN
State: NEW MEXICO
Date: 04/28/2015
Well Type: INJECTING
Test Type: GRADIENT
Status:
File Name: 66123

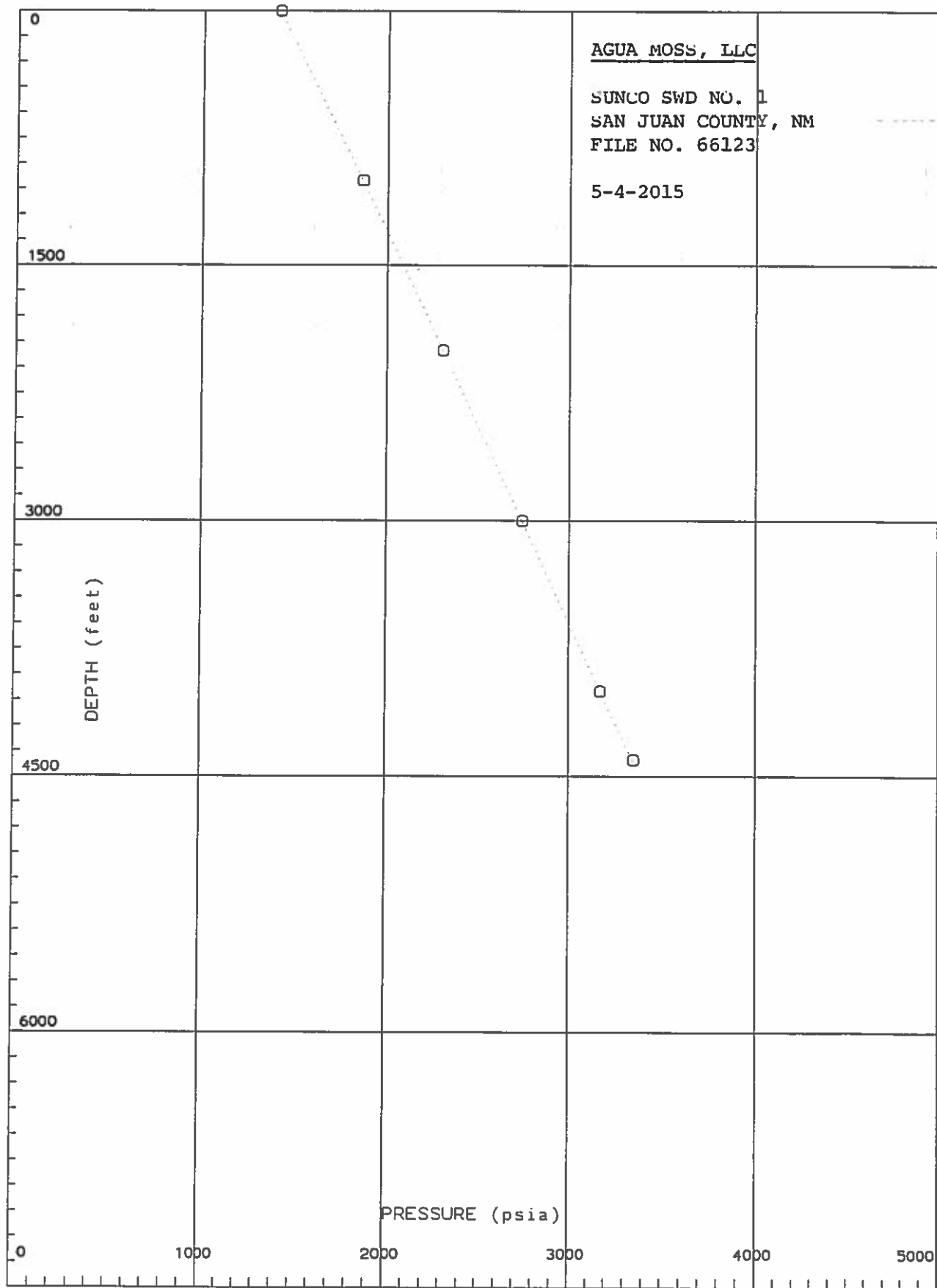
Tubing: 2-7/8" TO 4282'
Tubing: TO
Casing: TO
Perfs.: 4350' - 4460'

Packer Depth 4282 ft

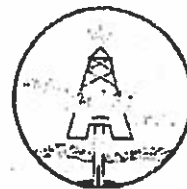
Oil Level
H2O Level

[Tefteller Incorporated]

#	MD	TVD	PRESSURE	PSI/ft
1	4405	4405	3350.00	
2	4000	4000	3172.00	0.440
3	3000	3000	2742.00	0.430
4	2000	2000	2305.00	0.437
5	1000	1000	1869.00	0.436
6	0	0	1422.00	0.447



SP-2000



Downhole Memory Pressure Gauge

The SP-2000 downhole memory pressure gauge is controlled by an internal microprocessor and powerful software.

The SP-2000 can stay downhole and collect data for hours or days; depending on your application. It is slimline and operates fully from battery power.

The microprocessor is capable of detecting the correct pressure and temperature and adjust the sampling rate automatically (once programmed for the test application).

The SP-2000 is tough, dependable, simple, and intelligent. If your job requires gauges that are reliable yet rugged and simple to use, the SP-2000 memory gauge, with its Hybrid-Quartz sensor is the one for you. It is so simple that a paper clip can be used to program it by changing the switch settings for the Type and Duration of test.

With the use of our simple, menu driven software, you can retrieve and report the gauge data (using a compatible computer and printer) from the tool once it is removed from the well.

Advanced reporting features are available such as data printouts, gradient reports, gradient plots and most of the standard time vs. pressure/temperature plot formats.

Micro-Smart Systems offers complete Well Test Interpretation, utilizing Fekete's "F.A.S.T. Well Test"™ software. This powerful state-of-the-art software includes data preparation, various analysis methods, analytical reservoir modeling and deliverability.

Micro-Smart Systems is the *SMART* choice for cutting-edge technology and superior customer support. We can save you time, money, and help you keep your customers satisfied.

SMART Features:

The technological features of the SP-2000 are:

- Dual EEPROM Memory
- Tool performs internal tests and delivers audible signal to confirm operation
- Multiple-run data storage capability
- User friendly software
- Convert from memory to SRO gauge with simple module change
- Compatible with Micro-Smart's production logging tools
- Standard ASCII data storage format
- Switch selectable programming without the use of a computer
- Selectable switches for duration in *DAYS* and *TYPE* of *TEST*
- Custom computer programming
 - up to 15 time periods
 - specify time interval, sampling rate, and ΔP switching.



"SMART AND SIMPLE"

SPECIFICATIONS:

Memory Capacity: 48,000 data sets (main memory)	Pressure Ranges: 2,500 psi (17,000 KPA)
2,000 data sets (backup memory)	5,000 psi (34,000 KPA)
(time, pressure, temp)	10,000 psi (68,000 KPA)
Sampling Intervals: 1.875 seconds to 64 minutes	15,000 psi (102,000 KPA)
(in binary multiples)	20,000 psi (136,000 KPA)
Diameter: 1.25 inch (31.2 mm)	Weight: 13 lbs (5.9 Kg)
Resolution: Pressure .01 psi	Operating Temp.: 32° F to 325° F
Temp. .04° F	(0° C to 160° C)
Accuracy: Pressure $\pm .05\%$ Full Scale	Power: 11.5v (9 "C" cell Alkaline)
Temp. $\pm 1^\circ F$	14.4v (4 "C" cell Lithium)
Time $\pm .05\%$	Length: 53 in. (1.3 m) plus battery pack
	24 in. (.6 m) for 9 cell pack
	16 in. (.4 m) for 4 cell pack



ACCURACY VERIFICATION

5-February-2014

Gauge Model SP-2000
Gauge S/N 162

Pressure Range 5 K
Accuracy 0.05% Full Scale

Applied Pressure psig	Recorded Pressure psig	Difference	
		psi	Percent (%)
0.01	0.71	0.70	0.0139%
774.08	774.96	0.88	0.0177%
1498.24	1499.12	0.88	0.0176%
2222.36	2222.99	0.63	0.0126%
2946.53	2947.04	0.51	0.0102%
3670.66	3671.23	0.57	0.0113%
4394.87	4395.53	0.66	0.0133%
5119.00	5119.94	0.94	0.0187%
4394.87	4396.16	1.29	0.0258%
3670.66	3671.99	1.33	0.0265%
2946.53	2947.97	1.44	0.0287%
2222.36	2223.84	1.48	0.0296%
1498.24	1499.73	1.49	0.0299%
774.08	775.18	1.10	0.0220%
0.01	0.25	0.24	0.0049%

Oven Temperature: 144.7 °F

Probe Temperature: 144.7 °F

Smart Gauge Calibration accuracy is confirmed.

Calibrated with RUSKA Pressure Standard, model # 2451-700-00

Serial #26618, Mass Set Serial #25608

Compensated to local acceleration due to gravity

Verified by: CM



NEW MEXICO ENERGY, MINERALS
& NATURAL RESOURCES DEPARTMENT

OIL CONSERVATION DIVISION
AZTEC DISTRICT OFFICE
1000 RIO BRAZOS ROAD
AZTEC NM 87410
(505) 334-6178 FAX: (505) 334-6170
[http://emnr.state.nm.us/ocd/District III/3district.htm](http://emnr.state.nm.us/ocd/District%20III/3district.htm)

BRADENHEAD TEST REPORT

(submit 1 copy to above address)

Date of Test 4-28-15 Operator Agua Nueva API #30-0 45 28653
Property Name Suncor D.S. Well No. 1 Location: Unit Section 2 Township 29 Range 12
Well Status(Shut-In or Producing) Initial PSI: Tubing 1350 Intermediate N/A Casing 0 Bradenhead 0

OPEN BRADENHEAD AND INTERMEDIATE TO ATMOSPHERE INDIVIDUALLY FOR 15 MINUTES EACH

PRESSURE

Testing	Bradenhead			INTERM	
	BH	Int	Csg	Int	Csg
TIME					
5 min	0		0		
10 min	0		0		
15 min	0		0		
20 min					
25 min					
30 min					

FLOW CHARACTERISTICS

BRADENHEAD INTERMEDIATE

Steady Flow

Surges

Down to Nothing

Nothing

Gas

Gas & Water

Water

OIL CONS. DIV DIST. 3
APR 28 2015

If bradenhead flowed water, check all of the descriptions that apply below:

CLEAR FRESH SALTY SULFUR BLACK

5 MINUTE SHUT-IN PRESSURE

BRADENHEAD 0

INTERMEDIATE N/A

REMARKS:

Vacuum when opened

By [Signature]
Manager
(Position)

Witness Monica Tuckling

E-mail address

Appendix D

Appendix E

2015 AREA OF REVIEW
UNIT LETTERS ENCOMPASSED BY THE 1-MILE AOR

Sec	TWN	RNG	UL	
1	29N	12W	DELM	
2	29N	12W	ALL	
3	29N	12W	ABCFGHIJKOP	
10	29N	12W	AB	
11	29N	12W	ABCDEF	
34	30N	12W	AGHIJKNOP	
35	30N	12W	DEFGHIJKLMNOP	
36	30N	12W	LM	

**All tracts within the AOR were reviewed for activity that
had ensued since 2013 Annual Report.**

													Surface Casing			INT Casing			Production Casing						
	API	Well Name	Well #	Current Operator	Type	Lease	Status	Sec	TWN	RNG	UL	Spud Date	TD	size	depth	Sacks TOC	size	depth	Sacks TOC	size	depth	Sacks TOC	Perfs	Packer	PLUGGED
x	30-045-08851	ALLEN A	#001	BP America	Gas	Private	Active	1	29N	12W	D	3/12/1961	6785	8.265	264	200 surf				4.5	6785	300 surf	6518-6718		
x	30-045-26214	ALLEN A	#001E	BP America	Gas	Federal	Active	1	29N	12W	L	3/22/1985	5825	8.625	318	225 surf				5.5	6622	820 surf	6425-6602		
x	30-045-32346	CORNELL	#002R	Energen Resources	Gas	Federal	Active	1	29N	12W	M	7/22/2004	2152	7	137	90 surf				4.5	2151	310 surf	1702-1926		
x	30-045-32241	BECK	#001R	Burlington	Gas	Private	Active	2	29N	12W	G	12/1/2004	2225	7	135	34 surf				4.5	2221	262 surf	1774-2077		
x	30-045-33811	BECK	#001S	Burlington	Gas	Private	Active	2	29N	12W	D	8/17/2006	2200	7	162	85 surf				4.5	2195	255 surf	1730-1951		
x	30-045-31580	CORNELL COM	#500	Burlington	Gas	Federal	Active	2	29N	12W	N	7/14/2003	2136	7	139	44 surf	6.25	2126		4.5	2126	258 surf	1658-1878		
x	30-045-08714	CORNELL SRC	#007	Burlington	Gas	Federal	Active	2	29N	12W	L	7/29/1944	2107	16	42	10 surf	5.5	1978		3.5	2106	250 surf	1976-2010		
x	30-045-08704	MCGRATH B	#001	Burlington	Gas	Private	Active	2	29N	12W	J	11/19/1961	6720	8.625	318	225 surf				4.5	1865	1065 surf	6489-6596		
	30-045-28653	SUNCO DISPOSAL	#001	Agua Moss	Salt Water Disposal	Private	Active	2	29N	12W	E	1/28/1992	4760	8.625	209	150 surf				5.5	4760	1010 surf	4350-4460	4282 10/15/07	4350-4460 TA'd
x	30-045-08839	YOUNG	#001	Burlington	Gas	Private	Active	2	29N	12W	D	8/1/1961	6740	8.625	307	275 surf				4.5	6739	700 surf	6446-6644		
x	30-045-33580	MCGRATH	#003S	Burlington	Gas	Private	Active	3	29N	12W	B	7/13/2007	2132	7	218	150 surf				4.5	2112	289 surf	1692-1904		
x	30-045-08712	MCGRATH A	#001	Burlington	Gas	Private	Active	3	29N	12W	I	3/14/1964	6689	8.625	307	250 surf				4.5	6688	500 surf	6432-6524		
x	30-045-32931	WALKER	#100S	Burlington	Gas	Private	Active	3	29N	12W	F	8/14/2005	2120	7	144	61 surf				4.5	2117	238 surf	1621-1885		NOI to PA 5/2014
x	30-045-23889	BECK A	#001E	Burlington	Gas	Federal	Active	10	29N	12W	B	1/5/1981	6514	8.625	240	150 surf				4.5	6514	765 surf	6277-6454		
x	30-045-30381	CORNELL	#100	Burlington	Gas	Federal	Active	10	29N	12W	B	1/7/2003	1968	7	147	55 surf				4.5	1959	229 surf	1543-1704 1744-1800		
x	30-045-08615	CORNELL	#006	Thompson Engr & Prod	Gas	Federal	Active	11	29N	12W	C	11/7/1955	1839	8.625	106	70 surf	5.5	1811		3.5	2022	181 surf	1811-1839		
x	30-045-31581	CORNELL	#101	Burlington	Gas	Federal	Active	11	29N	12W	D	10/7/2003	2008	7	140	35 surf				4.5	2000	270 surf	1726-1764		
x	30-045-13092	CORNELL C	#001	BP America	Gas	Federal	Active	11	29N	12W	D	12/6/1961	6604	8.625	250	150 surf				4.5	6604	300 surf	6298-6483		
x	30-045-26141	DUFF GAS COM	#001E	Burlington	Gas	Federal	TA'd	34	30N	12W	G	11/20/1984	6608	8.625	316	295 surf				4.5	6608	1000 surf	6396-6576 04'RC to FC 1492-1870		TA'd 3/5/14
x	30-045-08946	CARNAHAN COM	#001	Holcomb Oil & Gas	Gas	Private	Active	35	30N	12W	P	12/19/1960	6778	8.625	301	200 surf				4.5	6760	445 surf	6521-6708 94 RC to FC 1824-2037		
x	30-045-25844	CARNAHAN COM	#002	Merrion Oil & Gas	Gas	Private	Active	35	30N	12W	P	6/15/1984	6780	8.625	230	170 surf				4.5	6777	1425 surf	6529-6714		
x	30-045-11770	HUDSON J	#003	Burlington	Gas	Federal	Active	35	30N	12W	E	7/22/1966	6750	8.625	306	250 surf				4.5	6750	750 surf	6460-6680 01' RC to FC 1784-1994		
	30-045-28177	FC STATE COM	#024	Burlington	Gas	State	Plugged	36	30N	12W	M	10/9/1990	6608	8.625	316	250 surf				4.5	6609	6000 surf	1492-1870		3/26/2013
	30-045-08945	MCGRATH C	#001	Burlington	Gas	Federal	Plugged	34	30n	12W	p	2/7/1963	6637	8.625	323	225 surf				4.5	6637	925 surf	6367-6576		4/29/2009

30-045-08713	McGrath SRC	#001	Burlington	Gas	Private	Plugged	2	29n	12w	j	7/7/1973	2136	13 & 10.75	550 & 864	2 sx mud 4 sx mud	8.625	1526	5 sx mud	5.50 & 3.50	2020 2136	12 sx mud 140 surf	2020-2136 2012-2078		1998
30-045-08797	Pre-Ongard		Southland	Gas	Private	Plugged	2	29n	12w	g	4/14/1948	2125											2/23/1984	
30-045-30486	MCGRATH SRC	#001R	Burlington	Gas	Private	Plugged, Not Released	2	29N	12W	J	3/23/2001	2235	8.625	53	12 surf				2.875	2228	425 surf	2010-2157		6/25/2010
30-045-08793	Pre-Ongard		Southern union	Gas	Private	Plugged	1	29N	12W	E	3/16/1948	2125											3/16/1948	
30-045-08656	Cornell	2	Energen Resources	Gas	Federal	Plugged	1	29N	12W	M	10/2/1955	1996	8.625	97	75 surf				5.5	1950	100 surf	1711-1936		9/15/2005
30-045-08823	Walker SRC	1	Burlington	Gas	Private	Plugged	3	29N	12W	G	2/25/1943	2050	16	21	20 surf	5.5	1930		3.5	2050	175 surf	1938-1974		10/12/2009
30-045-08711	Pre-Ongard		Union Texas	Gas	Private	Plugged	3	29N	12W	K	6/25/1955	1940											11/10/1964	
30-045-23758	Pre-Ongard		Southland	Gas	Federal	Plugged	10	29N	12W	A	12/19/1980	1870											2/10/1984	
30-045-08950	HUDSON	2	Burlington	Gas	Federal	Plugged	34	30N	12W	P	7/17/1946	2137	15.5	38	20 surf	10 & 8.625	1217 1618	99 surf	5.5	1961	40 surf	1728-1938 1962-2008	2128	9/26/2008
30-045-08955	Pre-Ongard		Aztec O&G	Gas	Private	Plugged	34	30N	12W	N	11/1/1944	1965											10/29/1977	
30-045-20140	Pre-Ongard		Southland	Gas	Federal	Plugged	35	30N	12W	L	9/7/1967	DH											6/9/1982	
30-045-33573	CORNELL COM	#500S	Burlington	Gas	Private	Plugged	2	29N	12W	P	3/18/2006	2210	7	132	34 surf	6.25	2210		4.5	2198	279 surf	1754-1939 1743-1924		1/23/2013
30-045-08844	KATTLER	#001	Burlington	Gas	Private	Plugged	2	29N	12W	C	1/26/1945	2069	10	846	surf	5.5	1960		3.5	2050	205 surf	1961-2007		5/26/2012
30-045-08709	MCGRATH	#003	Burlington	Gas	Private	Plugged	3	29N	12W	J	3/4/1945	2040	13.375	675	2 surf	8.625 INT 1 5.5 INT 2	1460 1928	4 surf 58 surf	3.5	2011	110 surf	1872-1912 1922-1937	1871-1876	3/1/2013

Appendix F

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

16215MK

Form C-138
Revised August 1, 2011

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

*Surface Waste Management Facility Operator
and Generator shall maintain and make this
documentation available for Division inspection.

REQUEST FOR APPROVAL TO ACCEPT SOLID WASTE

1. Generator Name and Address: Western Refining Southwest, Inc. 50 CR 4990, Bloomfield, NM, 87413
2. Originating Site: Western Refining Southwest, Inc. Bloomfield Terminal – NESE27, T29N, R11W, San Juan County, NM
3. Location of Material (Street Address, City, State or ULSTR): Same as originating site
4. Source and Description of Waste: Treated non-hazardous water from the Bloomfield Terminal.
Estimated Volume _____ bbls Known Volume (to be entered by the operator at the end of the haul) _____ yd ³ / bbls
5. GENERATOR CERTIFICATION STATEMENT OF WASTE STATUS I, Matthew Krakow  , representative or authorized agent for Western Refining Southwest, Inc. do hereby PRINT & SIGN NAME COMPANY NAME certify that according to the Resource Conservation and Recovery Act (RCRA) and the US Environmental Protection Agency's July 1988 regulatory determination, the above described waste is: (Check the appropriate classification) ☐ RCRA Exempt: Oil field wastes generated from oil and gas exploration and production operations and are not mixed with non-exempt waste. Operator Use Only: Waste Acceptance Frequency ☐ Monthly ☐ Weekly ☐ Per Load ☒ RCRA Non-Exempt: Oil field waste which is non-hazardous that does not exceed the minimum standards for waste hazardous by characteristics established in RCRA regulations, 40 CFR 261.21-261.24, or listed hazardous waste as defined in 40 CFR, part 261, subpart D, as amended. The following documentation is attached to demonstrate the above-described waste is non-hazardous. (Check the appropriate items) ☐ MSDS Information ☒ RCRA Hazardous Waste Analysis ☐ Process Knowledge ☐ Other (Provide description in Box 4) GENERATOR 19.15.36.15 WASTE TESTING CERTIFICATION STATEMENT FOR LANDFARMS I, <u>N/A</u> , representative for <u>N/A</u> do hereby certify that representative samples of the oil field waste have been subjected to the paint filter test and tested for chloride content and that the samples have been found to conform to the specific requirements applicable to landfarms pursuant to Section 15 of 19.15.36 NMAC. The results of the representative samples are attached to demonstrate the above-described waste conform to the requirements of Section 15 of 19.15.36 NMAC.
5. Transporter: TBD

OCD Permitted Surface Waste Management Facility

Name and Facility Permit #: Agua Moss Permit # UICI-005

Address of Facility: 345 Rd 350 Aztec, NM 87410

Method of Treatment and/or Disposal:

☐ Evaporation ☒ Injection ☐ Treating Plant ☐ Landfarm ☐ Landfill ☐ Other

Waste Acceptance Status:

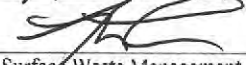
☐ APPROVED

☐ DENIED (Must Be Maintained As Permanent Record)

PRINT NAME: Adrian Hudson

TITLE: Operator

DATE: 12/31/15

SIGNATURE: 
Surface Waste Management Facility Authorized Agent

TELEPHONE NO.: (505) 334-6186

NON-HAZARDOUS WASTE MANIFEST

Please print or type (Form designed for use on elite (12 pitch) typewriter)

NON-HAZARDOUS WASTE MANIFEST		1. Generator's US EPA ID No. NMD089416416		Manifest Document No. BLM -		2. Page 1 of 1	
3. Generator's Name and Mailing Address WESTERN REFINING SOUTHWEST, INC. 50 CR 4990 BLOOMFIELD, NM 87413							
4. Generator's Phone (888) 658 - 8006							
5. Transporter 1 Company Name		6. US EPA ID Number		A. State Transporter's ID			
				B. Transporter 1 Phone			
7. Transporter 2 Company Name		8. US EPA ID Number		C. State Transporter's ID			
				D. Transporter 2 Phone			
9. Designated Facility Name and Site Address AGUA MOSS CLASS I WELL #345 CR 850 FARMINGTON, NM 87401		10. US EPA ID Number		E. State Facility's ID			
				F. Facility's Phone (505) 334-6186			
11. WASTE DESCRIPTION				12. Containers		13. Total Quantity	
				No. Type			
a. NON-HAZARDOUS, NON-D.O.T REGULATED LIQUID (TREATED WATER) - NON-EXEMPT WATER				1 TRUCK		BBL	
b.							
c.							
d.							
G. Additional Descriptions for Materials Listed Above				H. Handling Codes for Wastes Listed Above			
15. Special Handling Instructions and Additional Information							
16. GENERATOR'S CERTIFICATION: I hereby certify that the contents of this shipment are fully and accurately described and are in all respects in proper condition for transport. The materials described on this manifest are not subject to federal hazardous waste regulations.							
						Date	
Printed/Typed Name				Signature		Month Day Year	
17. Transporter 1 Acknowledgement of Receipt of Materials						Date	
Printed/Typed Name				Signature		Month Day Year	
18. Transporter 2 Acknowledgement of Receipt of Materials						Date	
Printed/Typed Name				Signature		Month Day Year	
19. Discrepancy Indication Space							
20. Facility Owner or Operator; Certification of receipt of the waste materials covered by this manifest, except as noted in item 19.						Date	
Printed/Typed Name				Signature		Month Day Year	

NON-HAZARDOUS WASTE

NR

TRANSPORTER FACILITY

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

Form C-138
Revised 08/01/11

*Surface Waste Management Facility Operator
and Generator shall maintain and make this
documentation available for Division inspection.

REQUEST FOR APPROVAL TO ACCEPT SOLID WASTE

1. Generator Name and Address:

Enterprise Field Services, LLC, 614 Reilly Ave, Farmington NM 87401

2. Originating Site:

Chaco Plant

3. Location of Material (Street Address, City, State or ULSTR):

UL M Section 16, T26N, R12W; 36.482905, -108.119193

4. Source and Description of Waste:

Source:

Description: Hydrocarbon impacted soil associated blow down pit.

Estimated Volume 1300 yd³ (bbls) Known Volume (to be entered by the operator at the end of the haul) 1640 yd³ (bbls)

5. GENERATOR CERTIFICATION STATEMENT OF WASTE STATUS

I, Thomas Long, representative or authorized agent for Enterprise Products Operating do hereby

Generator Signature

certify that according to the Resource Conservation and Recovery Act (RCRA) and the US Environmental Protection Agency's July 1988 regulatory determination, the above described waste is: (Check the appropriate classification)

☐ RCRA Exempt: Oil field wastes generated from oil and gas exploration and production operations and are not mixed with non-exempt waste. Operator Use Only: Waste Acceptance Frequency ☐ Monthly ☐ Weekly ☐ Per Load

☒ RCRA Non-Exempt: Oil field waste which is non-hazardous that does not exceed the minimum standards for waste hazardous by characteristics established in RCRA regulations, 40 CFR 261.21-261.24, or listed hazardous waste as defined in 40 CFR, part 261, subpart D, as amended. The following documentation is attached to demonstrate the above-described waste is non-hazardous. (Check the appropriate items)

☐ MSDS Information ☒ RCRA Hazardous Waste Analysis ☐ Process Knowledge ☐ Other (Provide description in Box 4)

GENERATOR 19.15.36.15 WASTE TESTING CERTIFICATION STATEMENT FOR LANDFARMS

I, Thomas Long, 9-14-15, representative for Enterprise Products Operating authorize Agua Moss, LLC to complete

Generator Signature

the required testing/sign the Generator Waste Testing Certification.

I, _____, representative for Agua Moss, Inc. do hereby certify that representative samples of the oil field waste have been subjected to the paint filter test and tested for chloride content and that the samples have been found to conform to the specific requirements applicable to landfarms pursuant to Section 15 of 19.15.36 NMAC. The results of the representative samples are attached to demonstrate the above-described waste conform to the requirements of Section 15 of 19.15.36 NMAC.

5. Transporter: To Be Determined

OCD Permitted Surface Waste Management Facility

Name and Facility Permit #: *Agua Moss, LLC - Permit #: NM-01-009

Address of Facility: SW/4 NW/4 Section 2, Township 29N, Range Crouch Mesa, NM

Method of Treatment and/or Disposal:

☐ Evaporation ☒ Injection ☐ Treating Plant ☐ Landfarm ☐ Landfill ☐ Other

Waste Acceptance Status:

☒ APPROVED

☐ DENIED (Must Be Maintained As Permanent Record)

PRINT NAME: Adrian Hudson

SIGNATURE: [Signature]

Surface Waste Management Facility Authorized Agent

TITLE: Operator

TELEPHONE NO.: (505) 334-6186

DATE: 12/30/15



Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com

September 09, 2015

Thomas Long
Enterprise Field Services
614 Reilly Ave.
Farmington, NM 87401
TEL: (505) 599-2141
FAX

RE: Chaco Plant NE Water Tank (Frac Tanks)

OrderNo.: 1509192

Dear Thomas Long:

Hall Environmental Analysis Laboratory received 5 sample(s) on 9/4/2015 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent. To access our accredited tests please go to www.hallenvironmental.com or the state specific web sites. In order to properly interpret your results it is imperative that you review this report in its entirety. See the sample checklist and/or the Chain of Custody for information regarding the sample receipt temperature and preservation. Data qualifiers or a narrative will be provided if the sample analysis or analytical quality control parameters require a flag. When necessary, data qualifiers are provided on both the sample analysis report and the QC summary report, both sections should be reviewed. All samples are reported, as received, unless otherwise indicated. Lab measurement of analytes considered field parameters that require analysis within 15 minutes of sampling such as pH and residual chlorine are qualified as being analyzed outside of the recommended holding time.

Please don't hesitate to contact HEAL for any additional information or clarifications.

ADHS Cert #AZ0682 -- NMED-DWB Cert #NM9425 -- NMED-Micro Cert #NM0190

Sincerely,

Andy Freeman
Laboratory Manager
4901 Hawkins NE
Albuquerque, NM 87109

Chain-of-Custody Record

Client: Enterprise Products

Mailing Address: 614 Roilly Ave

Farmington, NM 87401

Phone #: 505-599-2286

email or Fax#: tjlong@eprod.com

QA/QC Package:

☒ Standard ☐ Level 4 (Full Validation)

Accreditation

☐ NELAP ☐ Other

☐ EDD (Type)

Project Manager:

Thomas Long

Sampler: TJL

On Ice: ☒ Yes ☐ No

Sample Temperature: 41

Date Time Matrix Sample Request ID

Container Type and #

Preservative Type

HEAL No.

7-3-15 1225 water Tank # 251458

3 Vials

HgCl₂

1509192

1245 Tank # 259452

↓

002

1257 Tank # 252013

↓

003

1320 Tank # 251749

↓

004

1425 Tank # 259792

↓

005

Date: 7-3-15 1534

Relinquished by: Thomas Long

Received by:

Date: 9/13/15 1534

Remarks:

Need Test Results Back as soon as possible

TPH (Method 418.1)

EDB (Method 504.1)

PAH's (8310 or 8270 SIMS)

RCRA 8 Metals

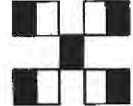
Anions (F, Cl, NO₃, NO₂, PO₄, SO₄)

8081 Pesticides / 8082 PCB's

8260B (VOA)

8270 (Semi-VOA)

Air Bubbles (Y or N)



HALL ENVIRONMENTAL ANALYSIS LABORATORY

www.hallenvironmental.com

4901 Hawkins NE - Albuquerque, NM 87109

Tel. 505-345-3975 Fax 505-345-4107

Analysis Request

Sample Log-In Check List

Client Name: Enterprise

Work Order Number 1509192

RcptNo: 1

Received by/date:

LM

09/04/15

Logged By:

Celina Sessa

9/4/2015 7:00:00 AM

Celina Sessa

Completed By:

Celina Sessa

9/4/2015 8:47:57 AM

Celina Sessa

Reviewed By:

LO

09/10/15

Chain of Custody

1. Custody seals intact on sample bottles?

Yes ☐

No ☐

Not Present ☒

2. Is Chain of Custody complete?

Yes ☒

No ☐

Not Present ☐

3. How was the sample delivered?

Courier

Log In

4. Was an attempt made to cool the samples?

Yes ☒

No ☐

NA ☐

5. Were all samples received at a temperature of $>0^{\circ}\text{C}$ to 6.0°C ?

Yes ☒

No ☐

NA ☐

6. Sample(s) in proper container(s)?

Yes ☒

No ☐

7. Sufficient sample volume for indicated test(s)?

Yes ☒

No ☐

8. Are samples (except VOA and ONG) properly preserved?

Yes ☒

No ☐

9. Was preservative added to bottles?

Yes ☐

No ☒

NA ☐

10. VOA vials have zero headspace?

Yes ☒

No ☐

No VOA Vials ☐

11. Were any sample containers received broken?

Yes ☐

No ☒

of preserved
bottles checked
for pH:

12. Does paperwork match bottle labels?

Yes ☒

No ☐

(<2 or >12 unless noted)

(Note discrepancies on chain of custody)

13. Are matrices correctly identified on Chain of Custody?

Yes ☒

No ☐

Adjusted?

14. Is it clear what analyses were requested?

Yes ☒

No ☐

15. Were all holding times able to be met?

Yes ☒

No ☐

Checked by:

(If no, notify customer for authorization)

Special Handling (if applicable)

16. Was client notified of all discrepancies with this order?

Yes ☐

No ☐

NA ☒

Person Notified:

Date:

By Whom:

Via:

☐ eMail

☐ Phone

☐ Fax

☐ In Person

Regarding:

Client Instructions:

17. Additional remarks:

18. Cooler Information

Cooler No	Temp $^{\circ}\text{C}$	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	4.1	Good	Yes			

Analytical Report

Lab Order 1509192

Date Reported: 9/9/2015

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Enterprise Field Services

Client Sample ID: Tank# 251458

Project: Chaco Plant NE Water Tank (Frac Tanks)

Collection Date: 9/3/2015 12:25:00 PM

Lab ID: 1509192-001

Matrix: AQUEOUS

Received Date: 9/4/2015 7:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8260B: VOLATILES							Analyst: RAA
Benzene	460	50	D	µg/L	50	9/4/2015 10:56:29 AM	R28669
Toluene	940	50	D	µg/L	50	9/4/2015 10:56:29 AM	R28669
Ethylbenzene	53	25	D	µg/L	50	9/4/2015 10:56:29 AM	R28669
Methyl tert-butyl ether (MTBE)	ND	50	D	µg/L	50	9/4/2015 10:56:29 AM	R28669
1,2,4-Trimethylbenzene	53	25	D	µg/L	50	9/4/2015 10:56:29 AM	R28669
1,3,5-Trimethylbenzene	ND	50	D	µg/L	50	9/4/2015 10:56:29 AM	R28669
1,2-Dichloroethane (EDC)	ND	50	D	µg/L	50	9/4/2015 10:56:29 AM	R28669
1,2-Dibromoethane (EDB)	ND	50	D	µg/L	50	9/4/2015 10:56:29 AM	R28669
Naphthalene	ND	100	D	µg/L	50	9/4/2015 10:56:29 AM	R28669
1-Methylnaphthalene	ND	200	D	µg/L	50	9/4/2015 10:56:29 AM	R28669
2-Methylnaphthalene	ND	200	D	µg/L	50	9/4/2015 10:56:29 AM	R28669
Acetone	ND	500	D	µg/L	50	9/4/2015 10:56:29 AM	R28669
Bromobenzene	ND	50	D	µg/L	50	9/4/2015 10:56:29 AM	R28669
Bromodichloromethane	ND	50	D	µg/L	50	9/4/2015 10:56:29 AM	R28669
Bromoform	ND	50	D	µg/L	50	9/4/2015 10:56:29 AM	R28669
Bromomethane	ND	150	D	µg/L	50	9/4/2015 10:56:29 AM	R28669
2-Butanone	ND	500	D	µg/L	50	9/4/2015 10:56:29 AM	R28669
Carbon disulfide	ND	500	D	µg/L	50	9/4/2015 10:56:29 AM	R28669
Carbon Tetrachloride	ND	50	D	µg/L	50	9/4/2015 10:56:29 AM	R28669
Chlorobenzene	ND	50	D	µg/L	50	9/4/2015 10:56:29 AM	R28669
Chloroethane	ND	100	D	µg/L	50	9/4/2015 10:56:29 AM	R28669
Chloroform	ND	50	D	µg/L	50	9/4/2015 10:56:29 AM	R28669
Chloromethane	ND	150	D	µg/L	50	9/4/2015 10:56:29 AM	R28669
2-Chlorotoluene	ND	50	D	µg/L	50	9/4/2015 10:56:29 AM	R28669
4-Chlorotoluene	ND	50	D	µg/L	50	9/4/2015 10:56:29 AM	R28669
cis-1,2-DCE	ND	50	D	µg/L	50	9/4/2015 10:56:29 AM	R28669
cis-1,3-Dichloropropene	ND	50	D	µg/L	50	9/4/2015 10:56:29 AM	R28669
1,2-Dibromo-3-chloropropane	ND	100	D	µg/L	50	9/4/2015 10:56:29 AM	R28669
Dibromochloromethane	ND	50	D	µg/L	50	9/4/2015 10:56:29 AM	R28669
Dibromomethane	ND	50	D	µg/L	50	9/4/2015 10:56:29 AM	R28669
1,2-Dichlorobenzene	ND	50	D	µg/L	50	9/4/2015 10:56:29 AM	R28669
1,3-Dichlorobenzene	ND	50	D	µg/L	50	9/4/2015 10:56:29 AM	R28669
1,4-Dichlorobenzene	ND	50	D	µg/L	50	9/4/2015 10:56:29 AM	R28669
Dichlorodifluoromethane	ND	50	D	µg/L	50	9/4/2015 10:56:29 AM	R28669
1,1-Dichloroethane	ND	50	D	µg/L	50	9/4/2015 10:56:29 AM	R28669
1,1-Dichloroethene	ND	50	D	µg/L	50	9/4/2015 10:56:29 AM	R28669
1,2-Dichloropropane	ND	50	D	µg/L	50	9/4/2015 10:56:29 AM	R28669
1,3-Dichloropropane	ND	50	D	µg/L	50	9/4/2015 10:56:29 AM	R28669
2,2-Dichloropropane	ND	100	D	µg/L	50	9/4/2015 10:56:29 AM	R28669

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1509192

Date Reported: 9/9/2015

CLIENT: Enterprise Field Services

Client Sample ID: Tank# 251458

Project: Chaco Plant NE Water Tank (Frac Tanks

Collection Date: 9/3/2015 12:25:00 PM

Lab ID: 1509192-001

Matrix: AQUEOUS

Received Date: 9/4/2015 7:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8260B: VOLATILES							Analyst: RAA
1,1-Dichloropropene	ND	50	D	µg/L	50	9/4/2015 10:56:29 AM	R28669
Hexachlorobutadiene	ND	50	D	µg/L	50	9/4/2015 10:56:29 AM	R28669
2-Hexanone	ND	500	D	µg/L	50	9/4/2015 10:56:29 AM	R28669
Isopropylbenzene	ND	50	D	µg/L	50	9/4/2015 10:56:29 AM	R28669
4-Isopropyltoluene	ND	50	D	µg/L	50	9/4/2015 10:56:29 AM	R28669
4-Methyl-2-pentanone	ND	500	D	µg/L	50	9/4/2015 10:56:29 AM	R28669
Methylene Chloride	ND	150	D	µg/L	50	9/4/2015 10:56:29 AM	R28669
n-Butylbenzene	ND	150	D	µg/L	50	9/4/2015 10:56:29 AM	R28669
n-Propylbenzene	ND	50	D	µg/L	50	9/4/2015 10:56:29 AM	R28669
sec-Butylbenzene	ND	50	D	µg/L	50	9/4/2015 10:56:29 AM	R28669
Styrene	ND	50	D	µg/L	50	9/4/2015 10:56:29 AM	R28669
tert-Butylbenzene	ND	50	D	µg/L	50	9/4/2015 10:56:29 AM	R28669
1,1,1,2-Tetrachloroethane	ND	50	D	µg/L	50	9/4/2015 10:56:29 AM	R28669
1,1,2,2-Tetrachloroethane	ND	100	D	µg/L	50	9/4/2015 10:56:29 AM	R28669
Tetrachloroethene (PCE)	ND	50	D	µg/L	50	9/4/2015 10:56:29 AM	R28669
trans-1,2-DCE	ND	50	D	µg/L	50	9/4/2015 10:56:29 AM	R28669
trans-1,3-Dichloropropene	ND	50	D	µg/L	50	9/4/2015 10:56:29 AM	R28669
1,2,3-Trichlorobenzene	ND	50	D	µg/L	50	9/4/2015 10:56:29 AM	R28669
1,2,4-Trichlorobenzene	ND	50	D	µg/L	50	9/4/2015 10:56:29 AM	R28669
1,1,1-Trichloroethane	ND	50	D	µg/L	50	9/4/2015 10:56:29 AM	R28669
1,1,2-Trichloroethane	ND	50	D	µg/L	50	9/4/2015 10:56:29 AM	R28669
Trichloroethene (TCE)	ND	50	D	µg/L	50	9/4/2015 10:56:29 AM	R28669
Trichlorofluoromethane	ND	50	D	µg/L	50	9/4/2015 10:56:29 AM	R28669
1,2,3-Trichloropropane	ND	100	D	µg/L	50	9/4/2015 10:56:29 AM	R28669
Vinyl chloride	ND	50	D	µg/L	50	9/4/2015 10:56:29 AM	R28669
Xylenes, Total	540	75	D	µg/L	50	9/4/2015 10:56:29 AM	R28669
Surr: 1,2-Dichloroethane-d4	92.9	70-130	D	%REC	50	9/4/2015 10:56:29 AM	R28669
Surr: 4-Bromofluorobenzene	104	70-130	D	%REC	50	9/4/2015 10:56:29 AM	R28669
Surr: Dibromofluoromethane	105	70-130	D	%REC	50	9/4/2015 10:56:29 AM	R28669
Surr: Toluene-d8	98.5	70-130	D	%REC	50	9/4/2015 10:56:29 AM	R28669

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	* Value exceeds Maximum Contaminant Level.	B Analyte detected in the associated Method Blank
	D Sample Diluted Due to Matrix	E Value above quantitation range
	H Holding times for preparation or analysis exceeded	J Analyte detected below quantitation limits
	ND Not Detected at the Reporting Limit	P Sample pH Not In Range
	R RPD outside accepted recovery limits	RL Reporting Detection Limit
	S % Recovery outside of range due to dilution or matrix	

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1509192

Date Reported: 9/9/2015

CLIENT: Enterprise Field Services

Client Sample ID: Tank# 259452

Project: Chaco Plant NE Water Tank (Frac Tanks

Collection Date: 9/3/2015 12:45:00 PM

Lab ID: 1509192-002

Matrix: AQUEOUS

Received Date: 9/4/2015 7:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8260B: VOLATILES							Analyst: RAA
Benzene	370	50	D	µg/L	50	9/4/2015 11:25:56 AM	R28669
Toluene	770	50	D	µg/L	50	9/4/2015 11:25:56 AM	R28669
Ethylbenzene	41	25	D	µg/L	50	9/4/2015 11:25:56 AM	R28669
Methyl tert-butyl ether (MTBE)	ND	50	D	µg/L	50	9/4/2015 11:25:56 AM	R28669
1,2,4-Trimethylbenzene	38	25	D	µg/L	50	9/4/2015 11:25:56 AM	R28669
1,3,5-Trimethylbenzene	ND	50	D	µg/L	50	9/4/2015 11:25:56 AM	R28669
1,2-Dichloroethane (EDC)	ND	50	D	µg/L	50	9/4/2015 11:25:56 AM	R28669
1,2-Dibromoethane (EDB)	ND	50	D	µg/L	50	9/4/2015 11:25:56 AM	R28669
Naphthalene	ND	100	D	µg/L	50	9/4/2015 11:25:56 AM	R28669
1-Methylnaphthalene	ND	200	D	µg/L	50	9/4/2015 11:25:56 AM	R28669
2-Methylnaphthalene	ND	200	D	µg/L	50	9/4/2015 11:25:56 AM	R28669
Acetone	ND	500	D	µg/L	50	9/4/2015 11:25:56 AM	R28669
Bromobenzene	ND	50	D	µg/L	50	9/4/2015 11:25:56 AM	R28669
Bromodichloromethane	ND	50	D	µg/L	50	9/4/2015 11:25:56 AM	R28669
Bromoform	ND	50	D	µg/L	50	9/4/2015 11:25:56 AM	R28669
Bromomethane	ND	150	D	µg/L	50	9/4/2015 11:25:56 AM	R28669
2-Butanone	ND	500	D	µg/L	50	9/4/2015 11:25:56 AM	R28669
Carbon disulfide	ND	500	D	µg/L	50	9/4/2015 11:25:56 AM	R28669
Carbon Tetrachloride	ND	50	D	µg/L	50	9/4/2015 11:25:56 AM	R28669
Chlorobenzene	ND	50	D	µg/L	50	9/4/2015 11:25:56 AM	R28669
Chloroethane	ND	100	D	µg/L	50	9/4/2015 11:25:56 AM	R28669
Chloroform	ND	50	D	µg/L	50	9/4/2015 11:25:56 AM	R28669
Chloromethane	ND	150	D	µg/L	50	9/4/2015 11:25:56 AM	R28669
2-Chlorotoluene	ND	50	D	µg/L	50	9/4/2015 11:25:56 AM	R28669
4-Chlorotoluene	ND	50	D	µg/L	50	9/4/2015 11:25:56 AM	R28669
cis-1,2-DCE	ND	50	D	µg/L	50	9/4/2015 11:25:56 AM	R28669
cis-1,3-Dichloropropene	ND	50	D	µg/L	50	9/4/2015 11:25:56 AM	R28669
1,2-Dibromo-3-chloropropane	ND	100	D	µg/L	50	9/4/2015 11:25:56 AM	R28669
Dibromochloromethane	ND	50	D	µg/L	50	9/4/2015 11:25:56 AM	R28669
Dibromomethane	ND	50	D	µg/L	50	9/4/2015 11:25:56 AM	R28669
1,2-Dichlorobenzene	ND	50	D	µg/L	50	9/4/2015 11:25:56 AM	R28669
1,3-Dichlorobenzene	ND	50	D	µg/L	50	9/4/2015 11:25:56 AM	R28669
1,4-Dichlorobenzene	ND	50	D	µg/L	50	9/4/2015 11:25:56 AM	R28669
Dichlorodifluoromethane	ND	50	D	µg/L	50	9/4/2015 11:25:56 AM	R28669
1,1-Dichloroethane	ND	50	D	µg/L	50	9/4/2015 11:25:56 AM	R28669
1,1-Dichloroethene	ND	50	D	µg/L	50	9/4/2015 11:25:56 AM	R28669
1,2-Dichloropropane	ND	50	D	µg/L	50	9/4/2015 11:25:56 AM	R28669
1,3-Dichloropropane	ND	50	D	µg/L	50	9/4/2015 11:25:56 AM	R28669
2,2-Dichloropropane	ND	100	D	µg/L	50	9/4/2015 11:25:56 AM	R28669

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	* Value exceeds Maximum Contaminant Level.	B Analyte detected in the associated Method Blank
	D Sample Diluted Due to Matrix	E Value above quantitation range
	H Holding times for preparation or analysis exceeded	J Analyte detected below quantitation limits
	ND Not Detected at the Reporting Limit	P Sample pH Not In Range
	R RPD outside accepted recovery limits	RL Reporting Detection Limit
	S % Recovery outside of range due to dilution or matrix	

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1509192

Date Reported: 9/9/2015

CLIENT: Enterprise Field Services

Client Sample ID: Tank# 259452

Project: Chaco Plant NE Water Tank (Frac Tanks

Collection Date: 9/3/2015 12:45:00 PM

Lab ID: 1509192-002

Matrix: AQUEOUS

Received Date: 9/4/2015 7:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8260B: VOLATILES							Analyst: RAA
1,1-Dichloropropene	ND	50	D	µg/L	50	9/4/2015 11:25:56 AM	R28669
Hexachlorobutadiene	ND	50	D	µg/L	50	9/4/2015 11:25:56 AM	R28669
2-Hexanone	ND	500	D	µg/L	50	9/4/2015 11:25:56 AM	R28669
Isopropylbenzene	ND	50	D	µg/L	50	9/4/2015 11:25:56 AM	R28669
4-Isopropyltoluene	ND	50	D	µg/L	50	9/4/2015 11:25:56 AM	R28669
4-Methyl-2-pentanone	ND	500	D	µg/L	50	9/4/2015 11:25:56 AM	R28669
Methylene Chloride	ND	150	D	µg/L	50	9/4/2015 11:25:56 AM	R28669
n-Butylbenzene	ND	150	D	µg/L	50	9/4/2015 11:25:56 AM	R28669
n-Propylbenzene	ND	50	D	µg/L	50	9/4/2015 11:25:56 AM	R28669
sec-Butylbenzene	ND	50	D	µg/L	50	9/4/2015 11:25:56 AM	R28669
Styrene	ND	50	D	µg/L	50	9/4/2015 11:25:56 AM	R28669
tert-Butylbenzene	ND	50	D	µg/L	50	9/4/2015 11:25:56 AM	R28669
1,1,1,2-Tetrachloroethane	ND	50	D	µg/L	50	9/4/2015 11:25:56 AM	R28669
1,1,2,2-Tetrachloroethane	ND	100	D	µg/L	50	9/4/2015 11:25:56 AM	R28669
Tetrachloroethene (PCE)	ND	50	D	µg/L	50	9/4/2015 11:25:56 AM	R28669
trans-1,2-DCE	ND	50	D	µg/L	50	9/4/2015 11:25:56 AM	R28669
trans-1,3-Dichloropropene	ND	50	D	µg/L	50	9/4/2015 11:25:56 AM	R28669
1,2,3-Trichlorobenzene	ND	50	D	µg/L	50	9/4/2015 11:25:56 AM	R28669
1,2,4-Trichlorobenzene	ND	50	D	µg/L	50	9/4/2015 11:25:56 AM	R28669
1,1,1-Trichloroethane	ND	50	D	µg/L	50	9/4/2015 11:25:56 AM	R28669
1,1,2-Trichloroethane	ND	50	D	µg/L	50	9/4/2015 11:25:56 AM	R28669
Trichloroethene (TCE)	ND	50	D	µg/L	50	9/4/2015 11:25:56 AM	R28669
Trichlorofluoromethane	ND	50	D	µg/L	50	9/4/2015 11:25:56 AM	R28669
1,2,3-Trichloropropane	ND	100	D	µg/L	50	9/4/2015 11:25:56 AM	R28669
Vinyl chloride	ND	50	D	µg/L	50	9/4/2015 11:25:56 AM	R28669
Xylenes, Total	430	75	D	µg/L	50	9/4/2015 11:25:56 AM	R28669
Surr: 1,2-Dichloroethane-d4	89.1	70-130	D	%REC	50	9/4/2015 11:25:56 AM	R28669
Surr: 4-Bromofluorobenzene	102	70-130	D	%REC	50	9/4/2015 11:25:56 AM	R28669
Surr: Dibromofluoromethane	100	70-130	D	%REC	50	9/4/2015 11:25:56 AM	R28669
Surr: Toluene-d8	103	70-130	D	%REC	50	9/4/2015 11:25:56 AM	R28669

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	* Value exceeds Maximum Contaminant Level.	B Analyte detected in the associated Method Blank
	D Sample Diluted Due to Matrix	E Value above quantitation range
	H Holding times for preparation or analysis exceeded	J Analyte detected below quantitation limits
	ND Not Detected at the Reporting Limit	P Sample pH Not In Range
	R RPD outside accepted recovery limits	RL Reporting Detection Limit
	S % Recovery outside of range due to dilution or matrix	

Analytical Report

Lab Order 1509192

Date Reported: 9/9/2015

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Enterprise Field Services

Client Sample ID: Tank# 252013

Project: Chaco Plant NE Water Tank (Frac Tanks)

Collection Date: 9/3/2015 12:57:00 PM

Lab ID: 1509192-003

Matrix: AQUEOUS

Received Date: 9/4/2015 7:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8260B: VOLATILES							Analyst: RAA
Benzene	370	50	D	µg/L	50	9/4/2015 11:55:28 AM	R28669
Toluene	760	50	D	µg/L	50	9/4/2015 11:55:28 AM	R28669
Ethylbenzene	42	25	D	µg/L	50	9/4/2015 11:55:28 AM	R28669
Methyl tert-butyl ether (MTBE)	ND	50	D	µg/L	50	9/4/2015 11:55:28 AM	R28669
1,2,4-Trimethylbenzene	48	25	D	µg/L	50	9/4/2015 11:55:28 AM	R28669
1,3,5-Trimethylbenzene	ND	50	D	µg/L	50	9/4/2015 11:55:28 AM	R28669
1,2-Dichloroethane (EDC)	ND	50	D	µg/L	50	9/4/2015 11:55:28 AM	R28669
1,2-Dibromoethane (EDB)	ND	50	D	µg/L	50	9/4/2015 11:55:28 AM	R28669
Naphthalene	ND	100	D	µg/L	50	9/4/2015 11:55:28 AM	R28669
1-Methylnaphthalene	ND	200	D	µg/L	50	9/4/2015 11:55:28 AM	R28669
2-Methylnaphthalene	ND	200	D	µg/L	50	9/4/2015 11:55:28 AM	R28669
Acetone	ND	500	D	µg/L	50	9/4/2015 11:55:28 AM	R28669
Bromobenzene	ND	50	D	µg/L	50	9/4/2015 11:55:28 AM	R28669
Bromodichloromethane	ND	50	D	µg/L	50	9/4/2015 11:55:28 AM	R28669
Bromoform	ND	50	D	µg/L	50	9/4/2015 11:55:28 AM	R28669
Bromomethane	ND	150	D	µg/L	50	9/4/2015 11:55:28 AM	R28669
2-Butanone	ND	500	D	µg/L	50	9/4/2015 11:55:28 AM	R28669
Carbon disulfide	ND	500	D	µg/L	50	9/4/2015 11:55:28 AM	R28669
Carbon Tetrachloride	ND	50	D	µg/L	50	9/4/2015 11:55:28 AM	R28669
Chlorobenzene	ND	50	D	µg/L	50	9/4/2015 11:55:28 AM	R28669
Chloroethane	ND	100	D	µg/L	50	9/4/2015 11:55:28 AM	R28669
Chloroform	ND	50	D	µg/L	50	9/4/2015 11:55:28 AM	R28669
Chloromethane	ND	150	D	µg/L	50	9/4/2015 11:55:28 AM	R23669
2-Chlorotoluene	ND	50	D	µg/L	50	9/4/2015 11:55:28 AM	R28669
4-Chlorotoluene	ND	50	D	µg/L	50	9/4/2015 11:55:28 AM	R28669
cis-1,2-DCE	ND	50	D	µg/L	50	9/4/2015 11:55:28 AM	R28669
cis-1,3-Dichloropropene	ND	50	D	µg/L	50	9/4/2015 11:55:28 AM	R28669
1,2-Dibromo-3-chloropropane	ND	100	D	µg/L	50	9/4/2015 11:55:28 AM	R28669
Dibromochloromethane	ND	50	D	µg/L	50	9/4/2015 11:55:28 AM	R28669
Dibromomethane	ND	50	D	µg/L	50	9/4/2015 11:55:28 AM	R28669
1,2-Dichlorobenzene	ND	50	D	µg/L	50	9/4/2015 11:55:28 AM	R28669
1,3-Dichlorobenzene	ND	50	D	µg/L	50	9/4/2015 11:55:28 AM	R28669
1,4-Dichlorobenzene	ND	50	D	µg/L	50	9/4/2015 11:55:28 AM	R28669
Dichlorodifluoromethane	ND	50	D	µg/L	50	9/4/2015 11:55:28 AM	R28669
1,1-Dichloroethane	ND	50	D	µg/L	50	9/4/2015 11:55:28 AM	R28669
1,1-Dichloroethene	ND	50	D	µg/L	50	9/4/2015 11:55:28 AM	R28669
1,2-Dichloropropane	ND	50	D	µg/L	50	9/4/2015 11:55:28 AM	R28669
1,3-Dichloropropane	ND	50	D	µg/L	50	9/4/2015 11:55:28 AM	R28669
2,2-Dichloropropane	ND	100	D	µg/L	50	9/4/2015 11:55:28 AM	R28669

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1509192

Date Reported: 9/9/2015

CLIENT: Enterprise Field Services

Client Sample ID: Tank# 252013

Project: Chaco Plant NE Water Tank (Frac Tanks

Collection Date: 9/3/2015 12:57:00 PM

Lab ID: 1509192-003

Matrix: AQUEOUS

Received Date: 9/4/2015 7:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8260B: VOLATILES							Analyst: RAA
1,1-Dichloropropene	ND	50	D	µg/L	50	9/4/2015 11:55:28 AM	R28669
Hexachlorobutadiene	ND	50	D	µg/L	50	9/4/2015 11:55:28 AM	R28669
2-Hexanone	ND	500	D	µg/L	50	9/4/2015 11:55:28 AM	R28669
Isopropylbenzene	ND	50	D	µg/L	50	9/4/2015 11:55:28 AM	R28669
4-Isopropyltoluene	ND	50	D	µg/L	50	9/4/2015 11:55:28 AM	R28669
4-Methyl-2-pentanone	ND	500	D	µg/L	50	9/4/2015 11:55:28 AM	R28669
Methylene Chloride	ND	150	D	µg/L	50	9/4/2015 11:55:28 AM	R28669
n-Butylbenzene	ND	150	D	µg/L	50	9/4/2015 11:55:28 AM	R28669
n-Propylbenzene	ND	50	D	µg/L	50	9/4/2015 11:55:28 AM	R28669
sec-Butylbenzene	ND	50	D	µg/L	50	9/4/2015 11:55:28 AM	R28669
Styrene	ND	50	D	µg/L	50	9/4/2015 11:55:28 AM	R28669
tert-Butylbenzene	ND	50	D	µg/L	50	9/4/2015 11:55:28 AM	R28669
1,1,1,2-Tetrachloroethane	ND	50	D	µg/L	50	9/4/2015 11:55:28 AM	R28669
1,1,2,2-Tetrachloroethane	ND	100	D	µg/L	50	9/4/2015 11:55:28 AM	R28669
Tetrachloroethene (PCE)	ND	50	D	µg/L	50	9/4/2015 11:55:28 AM	R28669
trans-1,2-DCE	ND	50	D	µg/L	50	9/4/2015 11:55:28 AM	R28669
trans-1,3-Dichloropropene	ND	50	D	µg/L	50	9/4/2015 11:55:28 AM	R28669
1,2,3-Trichlorobenzene	ND	50	D	µg/L	50	9/4/2015 11:55:28 AM	R28669
1,2,4-Trichlorobenzene	ND	50	D	µg/L	50	9/4/2015 11:55:28 AM	R28669
1,1,1-Trichloroethane	ND	50	D	µg/L	50	9/4/2015 11:55:28 AM	R28669
1,1,2-Trichloroethane	ND	50	D	µg/L	50	9/4/2015 11:55:28 AM	R28669
Trichloroethene (TCE)	ND	50	D	µg/L	50	9/4/2015 11:55:28 AM	R28669
Trichlorofluoromethane	ND	50	D	µg/L	50	9/4/2015 11:55:28 AM	R28669
1,2,3-Trichloropropane	ND	100	D	µg/L	50	9/4/2015 11:55:28 AM	R28669
Vinyl chloride	ND	50	D	µg/L	50	9/4/2015 11:55:28 AM	R28669
Xylenes, Total	450	75	D	µg/L	50	9/4/2015 11:55:28 AM	R28669
Surr: 1,2-Dichloroethane-d4	93.2	70-130	D	%REC	50	9/4/2015 11:55:28 AM	R28669
Surr: 4-Bromofluorobenzene	103	70-130	D	%REC	50	9/4/2015 11:55:28 AM	R28669
Surr: Dibromofluoromethane	103	70-130	D	%REC	50	9/4/2015 11:55:28 AM	R28669
Surr: Toluene-d8	98.6	70-130	D	%REC	50	9/4/2015 11:55:28 AM	R28669

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	* Value exceeds Maximum Contaminant Level.	B Analyte detected in the associated Method Blank
	D Sample Diluted Due to Matrix	E Value above quantitation range
	H Holding times for preparation or analysis exceeded	J Analyte detected below quantitation limits
	ND Not Detected at the Reporting Limit	P Sample pH Not In Range
	R RPD outside accepted recovery limits	RL Reporting Detection Limit
	S % Recovery outside of range due to dilution or matrix	

Analytical Report

Lab Order 1509192

Date Reported: 9/9/2015

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Enterprise Field Services

Client Sample ID: Tank# 251749

Project: Chaco Plant NE Water Tank (Frac Tanks)

Collection Date: 9/3/2015 1:20:00 PM

Lab ID: 1509192-004

Matrix: AQUEOUS

Received Date: 9/4/2015 7:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8260B: VOLATILES							Analyst: RAA
Benzene	490	50	D	µg/L	50	9/4/2015 12:24:30 PM	R28669
Toluene	940	50	D	µg/L	50	9/4/2015 12:24:30 PM	R28669
Ethylbenzene	51	25	D	µg/L	50	9/4/2015 12:24:30 PM	R28669
Methyl tert-butyl ether (MTBE)	ND	50	D	µg/L	50	9/4/2015 12:24:30 PM	R28669
1,2,4-Trimethylbenzene	47	25	D	µg/L	50	9/4/2015 12:24:30 PM	R28669
1,3,5-Trimethylbenzene	ND	50	D	µg/L	50	9/4/2015 12:24:30 PM	R28669
1,2-Dichloroethane (EDC)	ND	50	D	µg/L	50	9/4/2015 12:24:30 PM	R28669
1,2-Dibromoethane (EDB)	ND	50	D	µg/L	50	9/4/2015 12:24:30 PM	R28669
Naphthalene	ND	100	D	µg/L	50	9/4/2015 12:24:30 PM	R28669
1-Methylnaphthalene	ND	200	D	µg/L	50	9/4/2015 12:24:30 PM	R28669
2-Methylnaphthalene	ND	200	D	µg/L	50	9/4/2015 12:24:30 PM	R28669
Acetone	ND	500	D	µg/L	50	9/4/2015 12:24:30 PM	R28669
Bromobenzene	ND	50	D	µg/L	50	9/4/2015 12:24:30 PM	R28669
Bromodichloromethane	ND	50	D	µg/L	50	9/4/2015 12:24:30 PM	R28669
Bromoform	ND	50	D	µg/L	50	9/4/2015 12:24:30 PM	R28669
Bromomethane	ND	150	D	µg/L	50	9/4/2015 12:24:30 PM	R28669
2-Butanone	ND	500	D	µg/L	50	9/4/2015 12:24:30 PM	R28669
Carbon disulfide	ND	500	D	µg/L	50	9/4/2015 12:24:30 PM	R28669
Carbon Tetrachloride	ND	50	D	µg/L	50	9/4/2015 12:24:30 PM	R28669
Chlorobenzene	ND	50	D	µg/L	50	9/4/2015 12:24:30 PM	R28669
Chloroethane	ND	100	D	µg/L	50	9/4/2015 12:24:30 PM	R28669
Chloroform	ND	50	D	µg/L	50	9/4/2015 12:24:30 PM	R28669
Chloromethane	ND	150	D	µg/L	50	9/4/2015 12:24:30 PM	R28669
2-Chlorotoluene	ND	50	D	µg/L	50	9/4/2015 12:24:30 PM	R28669
4-Chlorotoluene	ND	50	D	µg/L	50	9/4/2015 12:24:30 PM	R28669
cis-1,2-DCE	ND	50	D	µg/L	50	9/4/2015 12:24:30 PM	R28669
cis-1,3-Dichloropropene	ND	50	D	µg/L	50	9/4/2015 12:24:30 PM	R28669
1,2-Dibromo-3-chloropropane	ND	100	D	µg/L	50	9/4/2015 12:24:30 PM	R28669
Dibromochloromethane	ND	50	D	µg/L	50	9/4/2015 12:24:30 PM	R28669
Dibromomethane	ND	50	D	µg/L	50	9/4/2015 12:24:30 PM	R28669
1,2-Dichlorobenzene	ND	50	D	µg/L	50	9/4/2015 12:24:30 PM	R28669
1,3-Dichlorobenzene	ND	50	D	µg/L	50	9/4/2015 12:24:30 PM	R28669
1,4-Dichlorobenzene	ND	50	D	µg/L	50	9/4/2015 12:24:30 PM	R28669
Dichlorodifluoromethane	ND	50	D	µg/L	50	9/4/2015 12:24:30 PM	R28669
1,1-Dichloroethane	ND	50	D	µg/L	50	9/4/2015 12:24:30 PM	R28669
1,1-Dichloroethene	ND	50	D	µg/L	50	9/4/2015 12:24:30 PM	R28669
1,2-Dichloropropane	ND	50	D	µg/L	50	9/4/2015 12:24:30 PM	R28669
1,3-Dichloropropane	ND	50	D	µg/L	50	9/4/2015 12:24:30 PM	R28669
2,2-Dichloropropane	ND	100	D	µg/L	50	9/4/2015 12:24:30 PM	R28669

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	* Value exceeds Maximum Contaminant Level.	B Analyte detected in the associated Method Blank
	D Sample Diluted Due to Matrix	E Value above quantitation range
	H Holding times for preparation or analysis exceeded	J Analyte detected below quantitation limits
	ND Not Detected at the Reporting Limit	P Sample pH Not In Range
	R RPD outside accepted recovery limits	RL Reporting Detection Limit
	S % Recovery outside of range due to dilution or matrix	

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1509192

Date Reported: 9/9/2015

CLIENT: Enterprise Field Services

Client Sample ID: Tank# 251749

Project: Chaco Plant NE Water Tank (Frac Tanks

Collection Date: 9/3/2015 1:20:00 PM

Lab ID: 1509192-004

Matrix: AQUEOUS

Received Date: 9/4/2015 7:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8260B: VOLATILES							Analyst: RAA
1,1-Dichloropropene	ND	50	D	µg/L	50	9/4/2015 12:24:30 PM	R28669
Hexachlorobutadiene	ND	50	D	µg/L	50	9/4/2015 12:24:30 PM	R28669
2-Hexanone	ND	500	D	µg/L	50	9/4/2015 12:24:30 PM	R28669
Isopropylbenzene	ND	50	D	µg/L	50	9/4/2015 12:24:30 PM	R28669
4-Isopropyltoluene	ND	50	D	µg/L	50	9/4/2015 12:24:30 PM	R28669
4-Methyl-2-pentanone	ND	500	D	µg/L	50	9/4/2015 12:24:30 PM	R28669
Methylene Chloride	ND	150	D	µg/L	50	9/4/2015 12:24:30 PM	R28669
n-Butylbenzene	ND	150	D	µg/L	50	9/4/2015 12:24:30 PM	R28669
n-Propylbenzene	ND	50	D	µg/L	50	9/4/2015 12:24:30 PM	R28669
sec-Butylbenzene	ND	50	D	µg/L	50	9/4/2015 12:24:30 PM	R28669
Styrene	ND	50	D	µg/L	50	9/4/2015 12:24:30 PM	R28669
tert-Butylbenzene	ND	50	D	µg/L	50	9/4/2015 12:24:30 PM	R28669
1,1,1,2-Tetrachloroethane	ND	50	D	µg/L	50	9/4/2015 12:24:30 PM	R28669
1,1,2,2-Tetrachloroethane	ND	100	D	µg/L	50	9/4/2015 12:24:30 PM	R28669
Tetrachloroethene (PCE)	ND	50	D	µg/L	50	9/4/2015 12:24:30 PM	R28669
trans-1,2-DCE	ND	50	D	µg/L	50	9/4/2015 12:24:30 PM	R28669
trans-1,3-Dichloropropene	ND	50	D	µg/L	50	9/4/2015 12:24:30 PM	R28669
1,2,3-Trichlorobenzene	ND	50	D	µg/L	50	9/4/2015 12:24:30 PM	R28669
1,2,4-Trichlorobenzene	ND	50	D	µg/L	50	9/4/2015 12:24:30 PM	R28669
1,1,1-Trichloroethane	ND	50	D	µg/L	50	9/4/2015 12:24:30 PM	R28669
1,1,2-Trichloroethane	ND	50	D	µg/L	50	9/4/2015 12:24:30 PM	R28669
Trichloroethene (TCE)	ND	50	D	µg/L	50	9/4/2015 12:24:30 PM	R28669
Trichlorofluoromethane	ND	50	D	µg/L	50	9/4/2015 12:24:30 PM	R28669
1,2,3-Trichloropropane	ND	100	D	µg/L	50	9/4/2015 12:24:30 PM	R28669
Vinyl chloride	ND	50	D	µg/L	50	9/4/2015 12:24:30 PM	R28669
Xylenes, Total	490	75	D	µg/L	50	9/4/2015 12:24:30 PM	R28669
Surr: 1,2-Dichloroethane-d4	91.8	70-130	D	%REC	50	9/4/2015 12:24:30 PM	R28669
Surr: 4-Bromofluorobenzene	102	70-130	D	%REC	50	9/4/2015 12:24:30 PM	R28669
Surr: Dibromofluoromethane	96.7	70-130	D	%REC	50	9/4/2015 12:24:30 PM	R28669
Surr: Toluene-d8	101	70-130	D	%REC	50	9/4/2015 12:24:30 PM	R28669

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	* Value exceeds Maximum Contaminant Level.	B Analyte detected in the associated Method Blank
	D Sample Diluted Due to Matrix	E Value above quantitation range
	H Holding times for preparation or analysis exceeded	J Analyte detected below quantitation limits
	ND Not Detected at the Reporting Limit	P Sample pH Not In Range
	R RPD outside accepted recovery limits	RL Reporting Detection Limit
	S % Recovery outside of range due to dilution or matrix	

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1509192

Date Reported: 9/9/2015

CLIENT: Enterprise Field Services

Client Sample ID: Tank# 259792

Project: Chaco Plant NE Water Tank (Frac Tanks)

Collection Date: 9/3/2015 2:25:00 PM

Lab ID: 1509192-005

Matrix: AQUEOUS

Received Date: 9/4/2015 7:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8260B: VOLATILES							Analyst: RAA
Benzene	2500	50	D	µg/L	50	9/4/2015 12:53:25 PM	R28669
Toluene	2900	50	D	µg/L	50	9/4/2015 12:53:25 PM	R28669
Ethylbenzene	98	25	D	µg/L	50	9/4/2015 12:53:25 PM	R28669
Methyl tert-butyl ether (MTBE)	ND	50	D	µg/L	50	9/4/2015 12:53:25 PM	R28669
1,2,4-Trimethylbenzene	60	25	D	µg/L	50	9/4/2015 12:53:25 PM	R28669
1,3,5-Trimethylbenzene	ND	50	D	µg/L	50	9/4/2015 12:53:25 PM	R28669
1,2-Dichloroethane (EDC)	ND	50	D	µg/L	50	9/4/2015 12:53:25 PM	R28669
1,2-Dibromoethane (EDB)	ND	50	D	µg/L	50	9/4/2015 12:53:25 PM	R28669
Naphthalene	ND	100	D	µg/L	50	9/4/2015 12:53:25 PM	R28669
1-Methylnaphthalene	ND	200	D	µg/L	50	9/4/2015 12:53:25 PM	R28669
2-Methylnaphthalene	ND	200	D	µg/L	50	9/4/2015 12:53:25 PM	R28669
Acetone	ND	500	D	µg/L	50	9/4/2015 12:53:25 PM	R28669
Bromobenzene	ND	50	D	µg/L	50	9/4/2015 12:53:25 PM	R28669
Bromodichloromethane	ND	50	D	µg/L	50	9/4/2015 12:53:25 PM	R28669
Bromoform	ND	50	D	µg/L	50	9/4/2015 12:53:25 PM	R28669
Bromomethane	ND	150	D	µg/L	50	9/4/2015 12:53:25 PM	R28669
2-Butanone	ND	500	D	µg/L	50	9/4/2015 12:53:25 PM	R28669
Carbon disulfide	ND	500	D	µg/L	50	9/4/2015 12:53:25 PM	R28669
Carbon Tetrachloride	ND	50	D	µg/L	50	9/4/2015 12:53:25 PM	R28669
Chlorobenzene	ND	50	D	µg/L	50	9/4/2015 12:53:25 PM	R28669
Chloroethane	ND	100	D	µg/L	50	9/4/2015 12:53:25 PM	R28669
Chloroform	ND	50	D	µg/L	50	9/4/2015 12:53:25 PM	R28669
Chloromethane	ND	150	D	µg/L	50	9/4/2015 12:53:25 PM	R28669
2-Chlorotoluene	ND	50	D	µg/L	50	9/4/2015 12:53:25 PM	R28669
4-Chlorotoluene	ND	50	D	µg/L	50	9/4/2015 12:53:25 PM	R28669
cis-1,2-DCE	ND	50	D	µg/L	50	9/4/2015 12:53:25 PM	R28669
cis-1,3-Dichloropropene	ND	50	D	µg/L	50	9/4/2015 12:53:25 PM	R28669
1,2-Dibromo-3-chloropropane	ND	100	D	µg/L	50	9/4/2015 12:53:25 PM	R28669
Dibromochloromethane	ND	50	D	µg/L	50	9/4/2015 12:53:25 PM	R28669
Dibromomethane	ND	50	D	µg/L	50	9/4/2015 12:53:25 PM	R28669
1,2-Dichlorobenzene	ND	50	D	µg/L	50	9/4/2015 12:53:25 PM	R28669
1,3-Dichlorobenzene	ND	50	D	µg/L	50	9/4/2015 12:53:25 PM	R28669
1,4-Dichlorobenzene	ND	50	D	µg/L	50	9/4/2015 12:53:25 PM	R28669
Dichlorodifluoromethane	ND	50	D	µg/L	50	9/4/2015 12:53:25 PM	R28669
1,1-Dichloroethane	ND	50	D	µg/L	50	9/4/2015 12:53:25 PM	R28669
1,1-Dichloroethene	ND	50	D	µg/L	50	9/4/2015 12:53:25 PM	R28669
1,2-Dichloropropane	ND	50	D	µg/L	50	9/4/2015 12:53:25 PM	R28669
1,3-Dichloropropane	ND	50	D	µg/L	50	9/4/2015 12:53:25 PM	R28669
2,2-Dichloropropane	ND	100	D	µg/L	50	9/4/2015 12:53:25 PM	R28669

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	* Value exceeds Maximum Contaminant Level.	B Analyte detected in the associated Method Blank
	D Sample Diluted Due to Matrix	E Value above quantitation range
	H Holding times for preparation or analysis exceeded	J Analyte detected below quantitation limits
	ND Not Detected at the Reporting Limit	P Sample pH Not In Range
	R RPD outside accepted recovery limits	RL Reporting Detection Limit
	S % Recovery outside of range due to dilution or matrix	

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1509192

Date Reported: 9/9/2015

CLIENT: Enterprise Field Services

Client Sample ID: Tank# 259792

Project: Chaco Plant NE Water Tank (Frac Tanks

Collection Date: 9/3/2015 2:25:00 PM

Lab ID: 1509192-005

Matrix: AQUEOUS

Received Date: 9/4/2015 7:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8260B: VOLATILES							Analyst: RAA
1,1-Dichloropropene	ND	50	D	µg/L	50	9/4/2015 12:53:25 PM	R28669
Hexachlorobutadiene	ND	50	D	µg/L	50	9/4/2015 12:53:25 PM	R28669
2-Hexanone	ND	500	D	µg/L	50	9/4/2015 12:53:25 PM	R28669
Isopropylbenzene	ND	50	D	µg/L	50	9/4/2015 12:53:25 PM	R28669
4-Isopropyltoluene	ND	50	D	µg/L	50	9/4/2015 12:53:25 PM	R28669
4-Methyl-2-pentanone	ND	500	D	µg/L	50	9/4/2015 12:53:25 PM	R28669
Methylene Chloride	ND	150	D	µg/L	50	9/4/2015 12:53:25 PM	R28669
n-Butylbenzene	ND	150	D	µg/L	50	9/4/2015 12:53:25 PM	R28669
n-Propylbenzene	ND	50	D	µg/L	50	9/4/2015 12:53:25 PM	R28669
sec-Butylbenzene	ND	50	D	µg/L	50	9/4/2015 12:53:25 PM	R28669
Styrene	ND	50	D	µg/L	50	9/4/2015 12:53:25 PM	R28669
tert-Butylbenzene	ND	50	D	µg/L	50	9/4/2015 12:53:25 PM	R28669
1,1,1,2-Tetrachloroethane	ND	50	D	µg/L	50	9/4/2015 12:53:25 PM	R28669
1,1,2,2-Tetrachloroethane	ND	100	D	µg/L	50	9/4/2015 12:53:25 PM	R28669
Tetrachloroethene (PCE)	59	50	D	µg/L	50	9/4/2015 12:53:25 PM	R28669
trans-1,2-DCE	ND	50	D	µg/L	50	9/4/2015 12:53:25 PM	R28669
trans-1,3-Dichloropropene	ND	50	D	µg/L	50	9/4/2015 12:53:25 PM	R28669
1,2,3-Trichlorobenzene	ND	50	D	µg/L	50	9/4/2015 12:53:25 PM	R28669
1,2,4-Trichlorobenzene	ND	50	D	µg/L	50	9/4/2015 12:53:25 PM	R28669
1,1,1-Trichloroethane	ND	50	D	µg/L	50	9/4/2015 12:53:25 PM	R28669
1,1,2-Trichloroethane	ND	50	D	µg/L	50	9/4/2015 12:53:25 PM	R28669
Trichloroethene (TCE)	60	50	D	µg/L	50	9/4/2015 12:53:25 PM	R28669
Trichlorofluoromethane	ND	50	D	µg/L	50	9/4/2015 12:53:25 PM	R28669
1,2,3-Trichloropropane	ND	100	D	µg/L	50	9/4/2015 12:53:25 PM	R28669
Vinyl chloride	ND	50	D	µg/L	50	9/4/2015 12:53:25 PM	R28669
Xylenes, Total	890	75	D	µg/L	50	9/4/2015 12:53:25 PM	R28669
Surr: 1,2-Dichloroethane-d4	96.4	70-130	D	%REC	50	9/4/2015 12:53:25 PM	R28669
Surr: 4-Bromofluorobenzene	108	70-130	D	%REC	50	9/4/2015 12:53:25 PM	R28669
Surr: Dibromofluoromethane	98.0	70-130	D	%REC	50	9/4/2015 12:53:25 PM	R28669
Surr: Toluene-d8	104	70-130	D	%REC	50	9/4/2015 12:53:25 PM	R28669

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1509192

09-Sep-15

Client: Enterprise Field Services
Project: Chaco Plant NE Water Tank (Frac Tanks)

Sample ID: 100ng lcs	SampType: LCS		TestCode: EPA Method 8260B: VOLATILES							
Client ID: LCSW	Batch ID: R28669		RunNo: 28669							
Prep Date:	Analysis Date: 9/4/2015		SeqNo: 868277		Units: µg/L					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	19	1.0	20.00	0	95.9	70	130			
Toluene	20	1.0	20.00	0	99.3	70	130			
Chlorobenzene	21	1.0	20.00	0	104	70	130			
1,1-Dichloroethene	22	1.0	20.00	0	109	70	130			
Trichloroethene (TCE)	19	1.0	20.00	0	92.7	70	130			
Surr: 1,2-Dichloroethane-d4	9.5		10.00		95.2	70	130			
Surr: 4-Bromofluorobenzene	11		10.00		106	70	130			
Surr: Dibromofluoromethane	9.6		10.00		95.8	70	130			
Surr: Toluene-d8	10		10.00		102	70	130			

Sample ID: rb	SampType: MBLK		TestCode: EPA Method 8260B: VOLATILES							
Client ID: PBW	Batch ID: R28669		RunNo: 28669							
Prep Date:	Analysis Date: 9/4/2015		SeqNo: 868283		Units: µg/L					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	1.0								
Toluene	ND	1.0								
Ethylbenzene	ND	1.0								
Methyl tert-butyl ether (MTBE)	ND	1.0								
1,2,4-Trimethylbenzene	ND	1.0								
1,3,5-Trimethylbenzene	ND	1.0								
1,2-Dichloroethane (EDC)	ND	1.0								
1,2-Dibromoethane (EDB)	ND	1.0								
Naphthalene	ND	2.0								
1-Methylnaphthalene	ND	4.0								
2-Methylnaphthalene	ND	4.0								
Acetone	ND	10								
Bromobenzene	ND	1.0								
Bromodichloromethane	ND	1.0								
Bromoform	ND	1.0								
Bromomethane	ND	3.0								
2-Butanone	ND	10								
Carbon disulfide	ND	10								
Carbon Tetrachloride	ND	1.0								
Chlorobenzene	ND	1.0								
Chloroethane	ND	2.0								
Chloroform	ND	1.0								
Chloromethane	ND	3.0								
2-Chlorotoluene	ND	1.0								

Qualifiers:

* Value exceeds Maximum Contaminant Level.
D Sample Diluted Due to Matrix
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
R RPD outside accepted recovery limits
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank
E Value above quantitation range
J Analyte detected below quantitation limits
P Sample pH Not In Range
RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1509192

09-Sep-15

Client: Enterprise Field Services
Project: Chaco Plant NE Water Tank (Frac Tanks)

Sample ID	rb	SampType:	MBLK	TestCode:	EPA Method 8260B: VOLATILES					
Client ID:	PBW	Batch ID:	R28669	RunNo:	28669					
Prep Date:		Analysis Date:	9/4/2015	SeqNo:	868283	Units:	µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
4-Chlorotoluene	ND	1.0								
cis-1,2-DCE	ND	1.0								
cis-1,3-Dichloropropene	ND	1.0								
1,2-Dibromo-3-chloropropane	ND	2.0								
Dibromochloromethane	ND	1.0								
Dibromomethane	ND	1.0								
1,2-Dichlorobenzene	ND	1.0								
1,3-Dichlorobenzene	ND	1.0								
1,4-Dichlorobenzene	ND	1.0								
Dichlorodifluoromethane	ND	1.0								
1,1-Dichloroethane	ND	1.0								
1,1-Dichloroethene	ND	1.0								
1,2-Dichloropropane	ND	1.0								
1,3-Dichloropropane	ND	1.0								
2,2-Dichloropropane	ND	2.0								
1,1-Dichloropropene	ND	1.0								
Hexachlorobutadiene	ND	1.0								
2-Hexanone	ND	10								
Isopropylbenzene	ND	1.0								
4-Isopropyltoluene	ND	1.0								
4-Methyl-2-pentanone	ND	10								
Methylene Chloride	ND	3.0								
n-Butylbenzene	ND	3.0								
n-Propylbenzene	ND	1.0								
sec-Butylbenzene	ND	1.0								
Styrene	ND	1.0								
tert-Butylbenzene	ND	1.0								
1,1,1,2-Tetrachloroethane	ND	1.0								
1,1,2,2-Tetrachloroethane	ND	2.0								
Tetrachloroethene (PCE)	ND	1.0								
trans-1,2-DCE	ND	1.0								
trans-1,3-Dichloropropene	ND	1.0								
1,2,3-Trichlorobenzene	ND	1.0								
1,2,4-Trichlorobenzene	ND	1.0								
1,1,1-Trichloroethane	ND	1.0								
1,1,2-Trichloroethane	ND	1.0								
Trichloroethene (TCE)	ND	1.0								
Trichlorofluoromethane	ND	1.0								
1,2,3-Trichloropropane	ND	2.0								

Qualifiers:

* Value exceeds Maximum Contaminant Level.
D Sample Diluted Due to Matrix
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
R RPD outside accepted recovery limits
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank
E Value above quantitation range
J Analyte detected below quantitation limits
P Sample pH Not In Range
RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1509192

09-Sep-15

Client: Enterprise Field Services

Project: Chaco Plant NE Water Tank (Frac Tanks)

Sample ID	rb	SampType: MBLK			TestCode: EPA Method 8260B: VOLATILES					
Client ID:	PBW	Batch ID: R28669			RunNo: 28669					
Prep Date:		Analysis Date: 9/4/2015			SeqNo: 868283		Units: µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Vinyl chloride	ND	1.0								
Xylenes, Total	ND	1.5								
Surr: 1,2-Dichloroethane-d4	9.2		10.00		91.9	70	130			
Surr: 4-Bromofluorobenzene	10		10.00		104	70	130			
Surr: Dibromofluoromethane	10		10.00		101	70	130			
Surr: Toluene-d8	9.6		10.00		96.4	70	130			

Sample ID	1509192-001a ms	SampType: MS	TestCode: EPA Method 8260B: VOLATILES							
Client ID:	Tank# 251458	Batch ID: R28669	RunNo: 28669							
Prep Date:	Analysis Date: 9/4/2015	SeqNo: 869597	Units: µg/L							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	1500	50	1000	458.6	99.2	70	130			
Toluene	2000	50	1000	940.4	105	70	130			
Chlorobenzene	1100	50	1000	0	108	70	130			
1,1-Dichloroethene	1200	50	1000	0	117	70	130			
Trichloroethene (TCE)	910	50	1000	0	91.2	70	130			
Surr: 1,2-Dichloroethane-d4	470		500.0		93.5	70	130			
Surr: 4-Bromofluorobenzene	500		500.0		100	70	130			
Surr: Dibromofluoromethane	490		500.0		97.3	70	130			
Surr: Toluene-d8	520		500.0		105	70	130			

Sample ID	1509192-001a msd	SampType: MSD	TestCode: EPA Method 8260B: VOLATILES							
Client ID:	Tank# 251458	Batch ID: R28669	RunNo: 28669							
Prep Date:	Analysis Date: 9/4/2015	SeqNo: 869598	Units: µg/L							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	1400	50	1000	458.6	95.6	70	130	2.52	20	
Toluene	2000	50	1000	940.4	101	70	130	1.77	20	
Chlorobenzene	1100	50	1000	0	106	70	130	2.18	20	
1,1-Dichloroethene	1100	50	1000	0	109	70	130	7.00	20	
Trichloroethene (TCE)	890	50	1000	0	88.7	70	130	2.77	20	
Surr: 1,2-Dichloroethane-d4	470		500.0		93.8	70	130	0	0	
Surr: 4-Bromofluorobenzene	510		500.0		102	70	130	0	0	
Surr: Dibromofluoromethane	470		500.0		93.3	70	130	0	0	
Surr: Toluene-d8	520		500.0		103	70	130	0	0	

Qualifiers:

* Value exceeds Maximum Contaminant Level.
D Sample Diluted Due to Matrix
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
R RPD outside accepted recovery limits
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank
E Value above quantitation range
J Analyte detected below quantitation limits
P Sample pH Not In Range
RL Reporting Detection Limit

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1509328

Date Reported:

CLIENT: Enterprise Field Services

Client Sample ID: Tank# 251749

Project: Chaco Plant NE Frac Tanks

Collection Date: 9/8/2015 11:32:00 AM

Lab ID: 1509328-004

Matrix: AQUEOUS

Received Date: 9/9/2015 8:30:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 7470: MERCURY							Analyst: JLF
Mercury	ND	0.020		mg/L	1	9/10/2015 5:36:17 PM	21232
EPA 6010B: TOTAL RECOVERABLE METALS							Analyst: JLF
Arsenic	ND	5.0		mg/L	1	9/11/2015 10:22:23 AM	21231
Barium	ND	100		mg/L	1	9/11/2015 10:22:23 AM	21231
Cadmium	ND	1.0		mg/L	1	9/11/2015 10:22:23 AM	21231
Chromium	ND	5.0		mg/L	1	9/11/2015 10:22:23 AM	21231
Lead	ND	5.0		mg/L	1	9/11/2015 10:22:23 AM	21231
Selenium	ND	1.0		mg/L	1	9/11/2015 10:22:23 AM	21231
Silver	ND	5.0		mg/L	1	9/11/2015 10:22:23 AM	21231

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix		

Analytical Report

Lab Order 1509328

Date Reported:

Hall Environmental Analysis Laboratory, Inc.**CLIENT:** Enterprise Field Services**Client Sample ID:** Tank# 252013**Project:** Chaco Plant NE Frac Tanks**Collection Date:** 9/8/2015 11:30:00 AM**Lab ID:** 1509328-003**Matrix:** AQUEOUS**Received Date:** 9/9/2015 8:30:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 7470: MERCURY							Analyst: JLF
Mercury	ND	0.020		mg/L	1	9/10/2015 5:48:43 PM	21232
EPA 6010B: TOTAL RECOVERABLE METALS							Analyst: JLF
Arsenic	ND	5.0		mg/L	1	9/11/2015 10:20:30 AM	21231
Barium	ND	100		mg/L	1	9/11/2015 10:20:30 AM	21231
Cadmium	ND	1.0		mg/L	1	9/11/2015 10:20:30 AM	21231
Chromium	ND	5.0		mg/L	1	9/11/2015 10:20:30 AM	21231
Lead	ND	5.0		mg/L	1	9/11/2015 10:20:30 AM	21231
Selenium	ND	1.0		mg/L	1	9/11/2015 10:20:30 AM	21231
Silver	ND	5.0		mg/L	1	9/11/2015 10:20:30 AM	21231

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank	Page 3 of 0
	D	Sample Diluted Due to Matrix	E	Value above quantitation range	
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits	
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range	
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit	
	S	% Recovery outside of range due to dilution or matrix			

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1509328

Date Reported:

CLIENT: Enterprise Field Services

Client Sample ID: Tank# 259452

Project: Chaco Plant NE Frac Tanks

Collection Date: 9/8/2015 11:28:00 AM

Lab ID: 1509328-002

Matrix: AQUEOUS

Received Date: 9/9/2015 8:30:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 7470: MERCURY							Analyst: JLF
Mercury	ND	0.020		mg/L	1	9/10/2015 5:28:06 PM	21232
EPA 6010B: TOTAL RECOVERABLE METALS							Analyst: JLF
Arsenic	ND	5.0		mg/L	1	9/11/2015 10:18:36 AM	21231
Barium	ND	100		mg/L	1	9/11/2015 10:18:36 AM	21231
Cadmium	ND	1.0		mg/L	1	9/11/2015 10:18:36 AM	21231
Chromium	ND	5.0		mg/L	1	9/11/2015 10:18:36 AM	21231
Lead	ND	5.0		mg/L	1	9/11/2015 10:18:36 AM	21231
Selenium	ND	1.0		mg/L	1	9/11/2015 10:18:36 AM	21231
Silver	ND	5.0		mg/L	1	9/11/2015 10:18:36 AM	21231

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank	Page 2 of 0
	D	Sample Diluted Due to Matrix	E	Value above quantitation range	
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits	
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range	
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit	
	S	% Recovery outside of range due to dilution or matrix			

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1509328

Date Reported:

CLIENT: Enterprise Field Services

Client Sample ID: Tank# 251458

Project: Chaco Plant NE Frac Tanks

Collection Date: 9/8/2015 11:25:00 AM

Lab ID: 1509328-001

Matrix: AQUEOUS

Received Date: 9/9/2015 8:30:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 7470: MERCURY							Analyst: JLF
Mercury	ND	0.020		mg/L	1	9/10/2015 5:25:58 PM	21232
EPA 6010B: TOTAL RECOVERABLE METALS							Analyst: JLF
Arsenic	ND	5.0		mg/L	1	9/11/2015 10:16:51 AM	21231
Barium	ND	100		mg/L	1	9/11/2015 10:16:51 AM	21231
Cadmium	ND	1.0		mg/L	1	9/11/2015 10:16:51 AM	21231
Chromium	ND	5.0		mg/L	1	9/11/2015 10:16:51 AM	21231
Lead	ND	5.0		mg/L	1	9/11/2015 10:16:51 AM	21231
Selenium	ND	1.0		mg/L	1	9/11/2015 10:16:51 AM	21231
Silver	ND	5.0		mg/L	1	9/11/2015 10:16:51 AM	21231

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank	Page 1 of 0
	D	Sample Diluted Due to Matrix	E	Value above quantitation range	
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits	
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range	
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit	
	S	% Recovery outside of range due to dilution or matrix			

District I 12/2/15
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

Form C-138
Revised 08/01/11

*Surface Waste Management Facility Operator
and Generator shall maintain and make this
documentation available for Division inspection.

REQUEST FOR APPROVAL TO ACCEPT SOLID WASTE

1. Generator Name and Address: Enterprise Field Services, LLC, 614 Reilly Ave, Farmington NM 87401
2. Originating Site: Chaco Plant
3. Location of Material (Street Address, City, State or ULSTR): UL M Section 16, T26N, R12W; 36.482905, -108.119193
4. Source and Description of Waste: Source: Description: Hydrocarbon impacted soil associated blow down pit. Estimated Volume 500 yd ³ / 6 bbls Known Volume (to be entered by the operator at the end of the haul) 320 yd ³ / bbls

5. GENERATOR CERTIFICATION STATEMENT OF WASTE STATUS

I, Thomas Long *Thomas Long*, representative or authorized agent for Enterprise Products Operating do hereby
Generator Signature
certify that according to the Resource Conservation and Recovery Act (RCRA) and the US Environmental Protection Agency's July 1988
regulatory determination, the above described waste is: (Check the appropriate classification)

☐ RCRA Exempt: Oil field wastes generated from oil and gas exploration and production operations and are not mixed with non-exempt waste. **Operator Use Only: Waste Acceptance Frequency** ☐ Monthly ☐ Weekly ☐ Per Load

☒ RCRA Non-Exempt: Oil field waste which is non-hazardous that does not exceed the minimum standards for waste hazardous by characteristics established in RCRA regulations, 40 CFR 261.21-261.24, or listed hazardous waste as defined in 40 CFR, part 261, subpart D, as amended. The following documentation is attached to demonstrate the above-described waste is non-hazardous. (Check the appropriate items)

☐ MSDS Information ☒ RCRA Hazardous Waste Analysis ☐ Process Knowledge ☐ Other (Provide description in Box 4)

GENERATOR 19.15.36.15 WASTE TESTING CERTIFICATION STATEMENT FOR LANDFARMS

I, Thomas Long *Thomas Long* 9-14-15, representative for Enterprise Products Operating authorize Agua Moss, LLC to complete
Generator Signature
the required testing/sign the Generator Waste Testing Certification.

I, _____, representative for Agua Moss, Inc. do hereby certify that
representative samples of the oil field waste have been subjected to the paint filter test and tested for chloride content and that the samples
have been found to conform to the specific requirements applicable to landfarms pursuant to Section 15 of 19.15.36 NMAC. The results
of the representative samples are attached to demonstrate the above-described waste conform to the requirements of Section 15 of
19.15.36 NMAC.

5. Transporter: D-Trix

OCD Permitted Surface Waste Management Facility

Name and Facility Permit #: ***Agua Moss, LLC - Permit #: NM-01-009**
Address of Facility: **SW/4 NW/4 Section 2, Township 29N, Range Crouch Mesa, NM**

Method of Treatment and/or Disposal:

☐ Evaporation ☒ Injection ☐ Treating Plant ☐ Landfarm ☐ Landfill ☐ Other

Waste Acceptance Status:

☒ **APPROVED**

☐ **DENIED** (Must Be Maintained As Permanent Record)

PRINT NAME: CHRIS MORGAN
SIGNATURE: *Chris Morgan*
Surface Waste Management Facility Authorized Agent

TITLE: LEAD TECH DATE: 2 DEC 15
TELEPHONE NO.: 632-3640

Analytical Report

Lab Order 1511A47

Date Reported:

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Souder, Miller and Associates

Client Sample ID: Non Exempt Water - Frac Tank

Project: Enterprise Chaco Natural Gas Plant

Collection Date: 11/23/2015 1:19:00 PM

Lab ID: 1511A47-001

Matrix: AQUEOUS

Received Date: 11/24/2015 8:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8310: PAHS						Analyst: SCC
Naphthalene	ND	10		µg/L	1	11/25/2015 8:17:00 AM
1-Methylnaphthalene	ND	10		µg/L	1	11/25/2015 8:17:00 AM
2-Methylnaphthalene	ND	10		µg/L	1	11/25/2015 8:17:00 AM
Acenaphthylene	ND	12		µg/L	1	11/25/2015 8:17:00 AM
Acenaphthene	ND	10		µg/L	1	11/25/2015 8:17:00 AM
Fluorene	ND	4.0		µg/L	1	11/25/2015 8:17:00 AM
Phenanthrene	ND	3.0		µg/L	1	11/25/2015 8:17:00 AM
Anthracene	ND	3.0		µg/L	1	11/25/2015 8:17:00 AM
Fluoranthene	ND	1.5		µg/L	1	11/25/2015 8:17:00 AM
Pyrene	ND	1.5		µg/L	1	11/25/2015 8:17:00 AM
Benz(a)anthracene	ND	0.35		µg/L	1	11/25/2015 8:17:00 AM
Chrysene	ND	1.0		µg/L	1	11/25/2015 8:17:00 AM
Benzo(b)fluoranthene	ND	0.50		µg/L	1	11/25/2015 8:17:00 AM
Benzo(k)fluoranthene	ND	0.35		µg/L	1	11/25/2015 8:17:00 AM
Benzo(a)pyrene	ND	0.35		µg/L	1	11/25/2015 8:17:00 AM
Dibenz(a,h)anthracene	ND	0.88		µg/L	1	11/25/2015 8:17:00 AM
Benzo(g,h,i)perylene	ND	0.62		µg/L	1	11/25/2015 8:17:00 AM
Indeno(1,2,3-cd)pyrene	ND	1.2		µg/L	1	11/25/2015 8:17:00 AM
Surr: Benzo(e)pyrene	38.8	33.4-129		%REC	1	11/25/2015 8:17:00 AM
EPA METHOD 7470: MERCURY						Analyst: DBD
Mercury	0.00098	0.00020		mg/L	1	12/1/2015 1:25:43 PM
EPA 6010B: TOTAL RECOVERABLE METALS						Analyst: MED
Arsenic	ND	0.020		mg/L	1	12/1/2015 10:27:25 AM
Barium	0.11	0.020		mg/L	1	12/1/2015 10:27:25 AM
Cadmium	0.0096	0.0020		mg/L	1	12/1/2015 10:27:25 AM
Chromium	0.047	0.0060		mg/L	1	12/1/2015 10:27:25 AM
Lead	0.034	0.0050		mg/L	1	12/1/2015 10:27:25 AM
Selenium	ND	0.050		mg/L	1	12/1/2015 10:27:25 AM
Silver	ND	0.0050		mg/L	1	12/1/2015 10:27:25 AM
EPA METHOD 8260B: VOLATILES						Analyst: AG
Benzene	440	10		µg/L	10	11/24/2015 12:56:55 PM
Toluene	970	100		µg/L	100	11/24/2015 2:52:00 PM
Ethylbenzene	50	10		µg/L	10	11/24/2015 12:56:55 PM
Methyl tert-butyl ether (MTBE)	ND	10		µg/L	10	11/24/2015 12:56:55 PM
1,2,4-Trimethylbenzene	40	10		µg/L	10	11/24/2015 12:56:55 PM
1,3,5-Trimethylbenzene	20	10		µg/L	10	11/24/2015 12:56:55 PM
1,2-Dichloroethane (EDC)	ND	10		µg/L	10	11/24/2015 12:56:55 PM
1,2-Dibromoethane (EDB)	ND	10		µg/L	10	11/24/2015 12:56:55 PM

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	* Value exceeds Maximum Contaminant Level.	B Analyte detected in the associated Method Blank
	D Sample Diluted Due to Matrix	E Value above quantitation range
	H Holding times for preparation or analysis exceeded	J Analyte detected below quantitation limits
	ND Not Detected at the Reporting Limit	P Sample pH Not In Range
	R RPD outside accepted recovery limits	RL Reporting Detection Limit
	S % Recovery outside of range due to dilution or matrix	

Analytical Report

Lab Order 1511A47

Date Reported:

Hall Environmental Analysis Laboratory, Inc.**CLIENT:** Souder, Miller and Associates**Client Sample ID:** Non Exempt Water - Frac Tank**Project:** Enterprise Chaco Natural Gas Plant**Collection Date:** 11/23/2015 1:19:00 PM**Lab ID:** 1511A47-001**Matrix:** AQUEOUS**Received Date:** 11/24/2015 8:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8260B: VOLATILES						Analyst: AG
n-Propylbenzene	ND	10		µg/L	10	11/24/2015 12:56:55 PM
sec-Butylbenzene	ND	10		µg/L	10	11/24/2015 12:56:55 PM
Styrene	ND	10		µg/L	10	11/24/2015 12:56:55 PM
tert-Butylbenzene	ND	10		µg/L	10	11/24/2015 12:56:55 PM
1,1,1,2-Tetrachloroethane	ND	10		µg/L	10	11/24/2015 12:56:55 PM
1,1,2,2-Tetrachloroethane	ND	20		µg/L	10	11/24/2015 12:56:55 PM
Tetrachloroethene (PCE)	55	10		µg/L	10	11/24/2015 12:56:55 PM
trans-1,2-DCE	ND	10		µg/L	10	11/24/2015 12:56:55 PM
trans-1,3-Dichloropropene	ND	10		µg/L	10	11/24/2015 12:56:55 PM
1,2,3-Trichlorobenzene	ND	10		µg/L	10	11/24/2015 12:56:55 PM
1,2,4-Trichlorobenzene	ND	10		µg/L	10	11/24/2015 12:56:55 PM
1,1,1-Trichloroethane	ND	10		µg/L	10	11/24/2015 12:56:55 PM
1,1,2-Trichloroethane	ND	10		µg/L	10	11/24/2015 12:56:55 PM
Trichloroethene (TCE)	ND	10		µg/L	10	11/24/2015 12:56:55 PM
Trichlorofluoromethane	ND	10		µg/L	10	11/24/2015 12:56:55 PM
1,2,3-Trichloropropane	ND	20		µg/L	10	11/24/2015 12:56:55 PM
Vinyl chloride	ND	10		µg/L	10	11/24/2015 12:56:55 PM
Xylenes, Total	450	15		µg/L	10	11/24/2015 12:56:55 PM
Surr: 1,2-Dichloroethane-d4	89.7	70-130		%REC	10	11/24/2015 12:56:55 PM
Surr: 4-Bromofluorobenzene	97.9	70-130		%REC	10	11/24/2015 12:56:55 PM
Surr: Dibromofluoromethane	90.3	70-130		%REC	10	11/24/2015 12:56:55 PM
Surr: Toluene-d8	105	70-130		%REC	10	11/24/2015 12:56:55 PM

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	* Value exceeds Maximum Contaminant Level.	B Analyte detected in the associated Method Blank
	D Sample Diluted Due to Matrix	E Value above quantitation range
	H Holding times for preparation or analysis exceeded	J Analyte detected below quantitation limits
	ND Not Detected at the Reporting Limit	P Sample pH Not In Range
	R RPD outside accepted recovery limits	RL Reporting Detection Limit
	S % Recovery outside of range due to dilution or matrix	

Analytical Report

Lab Order 1511A47

Date Reported:

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Souder, Miller and Associates

Client Sample ID: Non Exempt Water - Frac Tank

Project: Enterprise Chaco Natural Gas Plant

Collection Date: 11/23/2015 1:19:00 PM

Lab ID: 1511A47-001

Matrix: AQUEOUS

Received Date: 11/24/2015 8:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8260B: VOLATILES						Analyst: AG
Naphthalene	ND	20		µg/L	10	11/24/2015 12:56:55 PM
1-Methylnaphthalene	ND	40		µg/L	10	11/24/2015 12:56:55 PM
2-Methylnaphthalene	ND	40		µg/L	10	11/24/2015 12:56:55 PM
Acetone	500	100		µg/L	10	11/24/2015 12:56:55 PM
Bromobenzene	ND	10		µg/L	10	11/24/2015 12:56:55 PM
Bromodichloromethane	ND	10		µg/L	10	11/24/2015 12:56:55 PM
Bromoform	ND	10		µg/L	10	11/24/2015 12:56:55 PM
Bromomethane	ND	30		µg/L	10	11/24/2015 12:56:55 PM
2-Butanone	810	100		µg/L	10	11/24/2015 12:56:55 PM
Carbon disulfide	ND	100		µg/L	10	11/24/2015 12:56:55 PM
Carbon Tetrachloride	ND	10		µg/L	10	11/24/2015 12:56:55 PM
Chlorobenzene	ND	10		µg/L	10	11/24/2015 12:56:55 PM
Chloroethane	ND	20		µg/L	10	11/24/2015 12:56:55 PM
Chloroform	ND	10		µg/L	10	11/24/2015 12:56:55 PM
Chloromethane	ND	30		µg/L	10	11/24/2015 12:56:55 PM
2-Chlorotoluene	ND	10		µg/L	10	11/24/2015 12:56:55 PM
4-Chlorotoluene	ND	10		µg/L	10	11/24/2015 12:56:55 PM
cis-1,2-DCE	ND	10		µg/L	10	11/24/2015 12:56:55 PM
cis-1,3-Dichloropropene	ND	10		µg/L	10	11/24/2015 12:56:55 PM
1,2-Dibromo-3-chloropropane	ND	20		µg/L	10	11/24/2015 12:56:55 PM
Dibromochloromethane	ND	10		µg/L	10	11/24/2015 12:56:55 PM
Dibromomethane	ND	10		µg/L	10	11/24/2015 12:56:55 PM
1,2-Dichlorobenzene	ND	10		µg/L	10	11/24/2015 12:56:55 PM
1,3-Dichlorobenzene	ND	10		µg/L	10	11/24/2015 12:56:55 PM
1,4-Dichlorobenzene	ND	10		µg/L	10	11/24/2015 12:56:55 PM
Dichlorodifluoromethane	ND	10		µg/L	10	11/24/2015 12:56:55 PM
1,1-Dichloroethane	ND	10		µg/L	10	11/24/2015 12:56:55 PM
1,1-Dichloroethene	ND	10		µg/L	10	11/24/2015 12:56:55 PM
1,2-Dichloropropane	ND	10		µg/L	10	11/24/2015 12:56:55 PM
1,3-Dichloropropane	ND	10		µg/L	10	11/24/2015 12:56:55 PM
2,2-Dichloropropane	ND	20		µg/L	10	11/24/2015 12:56:55 PM
1,1-Dichloropropene	ND	10		µg/L	10	11/24/2015 12:56:55 PM
Hexachlorobutadiene	ND	10		µg/L	10	11/24/2015 12:56:55 PM
2-Hexanone	ND	100		µg/L	10	11/24/2015 12:56:55 PM
Isopropylbenzene	ND	10		µg/L	10	11/24/2015 12:56:55 PM
4-Isopropyltoluene	ND	10		µg/L	10	11/24/2015 12:56:55 PM
4-Methyl-2-pentanone	ND	100		µg/L	10	11/24/2015 12:56:55 PM
Methylene Chloride	ND	30		µg/L	10	11/24/2015 12:56:55 PM
n-Butylbenzene	ND	30		µg/L	10	11/24/2015 12:56:55 PM

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix		

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

OPEN 2015

Form C-138
Revised 08/01/11

*Surface Waste Management Facility Operator
and Generator shall maintain and make this
documentation available for Division inspection.

REQUEST FOR APPROVAL TO ACCEPT SOLID WASTE

1. Generator Name and Address:

Kinder Morgan CO2, 17801 Hwy 491, Cortez, CO 81321

2. Originating Site:

McElmo Dome and Doe Canyon CO2 Fields

3. Location of Material (Street Address, City, State or ULSTR):

Montezuma and Dolores Counties, Colorado

4. Source and Description of Waste: Drilling Waste Fluids, Cementitious Fluids

Estimated Volume 1000 yd³ / bbls Known Volume (to be entered by the operator at the end of the haul) _____ yd³ / bbls

5. GENERATOR CERTIFICATION STATEMENT OF WASTE STATUS

I, Dani C. Knight, representative or authorized agent for Kinder Morgan CO2 do hereby

Generator Signature

certify that according to the Resource Conservation and Recovery Act (RCRA) and the US Environmental Protection Agency's July 1988 regulatory determination, the above described waste is: (Check the appropriate classification)

☐ RCRA Exempt: Oil field wastes generated from oil and gas exploration and production operations and are not mixed with non-exempt waste. **Operator Use Only: Waste Acceptance Frequency** ☐ Monthly ☐ Weekly ☐ Per Load

☒ RCRA Non-Exempt: Oil field waste which is non-hazardous that does not exceed the minimum standards for waste hazardous by characteristics established in RCRA regulations, 40 CFR 261.21-261.24, or listed hazardous waste as defined in 40 CFR, part 261, subpart D, as amended. The following documentation is attached to demonstrate the above-described waste is non-hazardous. (Check the appropriate items)

☐ MSDS Information ☒ RCRA Hazardous Waste Analysis ☐ Process Knowledge ☐ Other (Provide description in Box 4)

GENERATOR 19.15.36.15 WASTE TESTING CERTIFICATION STATEMENT FOR LANDFARMS

I, Dani C. Knight, representative for Kinder Morgan CO2 authorize JFJ/IEI to complete

Generator Signature

the required testing/sign the Generator Waste Testing Certification.

I, _____, representative for _____ do hereby certify that

Representative/Agent Signature

Representative samples of the oil field waste have been subjected to the paint filter test and tested for chloride content and that the samples have been found to conform to the specific requirements applicable to landfarms pursuant to Section 15 of 19.15.36 NMAC. The results of the representative samples are attached to demonstrate the above-described waste conform to the requirements of Section 15 of 19.15.36 NMAC.

6. Transporter: RW Trucking

OCD Permitted Surface Waste Management Facility

Name and Facility Permit #: Aqua Mass LLC permit # VICT-005

Address of Facility: # 345 CR 350, Aztec, N.M. 87410 Santa Juan Co
Method of Treatment and/or Disposal:

☐ Evaporation ☒ Injection ☐ Treating Plant ☐ Landfarm ☐ Landfill ☐ Other

Waste Acceptance Status:

☒ **APPROVED**

☐ **DENIED** (Must Be Maintained As Permanent Record)

PRINT NAME: BARRY HIGGINS

TITLE: Superintendent DATE: 2-21-15

SIGNATURE: [Signature]
Surface Waste Management Facility Authorized Agent

TELEPHONE NO.: 334-6186



Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com

February 20, 2015

Tami Knight
Kinder Morgan
17801 Hwy 491
Cortez, CO 81321
TEL: (970) 882-5520
FAX

RE: Aqua Moss Water

OrderNo.: 1502269

Dear Tami Knight:

Hall Environmental Analysis Laboratory received 1 sample(s) on 2/6/2015 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent. To access our accredited tests please go to www.hallenvironmental.com or the state specific web sites. In order to properly interpret your results it is imperative that you review this report in its entirety. See the sample checklist and/or the Chain of Custody for information regarding the sample receipt temperature and preservation. Data qualifiers or a narrative will be provided if the sample analysis or analytical quality control parameters require a flag. When necessary, data qualifiers are provided on both the sample analysis report and the QC summary report, both sections should be reviewed. All samples are reported, as received, unless otherwise indicated. Lab measurement of analytes considered field parameters that require analysis within 15 minutes of sampling such as pH and residual chlorine are qualified as being analyzed outside of the recommended holding time.

Please don't hesitate to contact HEAL for any additional information or clarifications.

ADHS Cert #AZ0682 -- NMED-DWB Cert #NM9425 -- NMED-Micro Cert #NM0190

Sincerely,

Andy Freeman
Laboratory Manager
4901 Hawkins NE
Albuquerque, NM 87109



Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com

Sample Log-In Check List

Client Name: KINDER MORGAN CO

Work Order Number: 1502269

RcptNo: 1

Received by/date: AS 02/10/15

Logged By: Anne Thorne 2/6/2015 7:50:00 AM

Completed By: Anne Thorne 2/6/2015

Reviewed By: AS JA 02/10/15

Chain of Custody

1. Custody seals intact on sample bottles? Yes ☐ No ☐ Not Present ☒
2. Is Chain of Custody complete? Yes ☒ No ☐ Not Present ☐
3. How was the sample delivered? FedEx

Log In

4. Was an attempt made to cool the samples? Yes ☒ No ☐ NA ☐
5. Were all samples received at a temperature of $>0^{\circ}\text{C}$ to 6.0°C ? Yes ☒ No ☐ NA ☐
6. Sample(s) in proper container(s)? Yes ☒ No ☐
7. Sufficient sample volume for indicated test(s)? Yes ☒ No ☐
8. Are samples (except VOA and ONG) properly preserved? Yes ☒ No ☐
9. Was preservative added to bottles? Yes ☐ No ☒ NA ☐
10. VOA vials have zero headspace? Yes ☐ No ☐ No VOA Vials ☒
11. Were any sample containers received broken? Yes ☐ No ☒
12. Does paperwork match bottle labels?
(Note discrepancies on chain of custody) Yes ☒ No ☐
13. Are matrices correctly identified on Chain of Custody? Yes ☒ No ☐
14. Is it clear what analyses were requested? Yes ☒ No ☐
15. Were all holding times able to be met?
(If no, notify customer for authorization.) Yes ☒ No ☐

of preserved
bottles checked
for pH:

(<2 or >12 unless noted)

Adjusted? _____

Checked by: _____

Special Handling (if applicable)

16. Was client notified of all discrepancies with this order? Yes ☐ No ☐ NA ☒

Person Notified: _____

Date: _____

By Whom: _____

Via: ☐ eMail ☐ Phone ☐ Fax ☐ In Person

Regarding: _____

Client Instructions: _____

17. Additional remarks:

18. Cooler Information

Cooler No.	Temp $^{\circ}\text{C}$	Condition	Seal Intact	Seal No.	Seal Date	Signed By
1	1.6	Good	Yes			

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1502269

20-Feb-15

Client: Kinder Morgan
Project: Aqua Moss Water

Sample ID	MB-17765	SampType:	MBLK	TestCode:	EPA 6010B: Total Recoverable Metals					
Client ID:	PBW	Batch ID:	17765	RunNo:	24390					
Prep Date:	2/16/2015	Analysis Date:	2/18/2015	SeqNo:	718659	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	ND	0.020								
Barium	ND	0.020								
Cadmium	ND	0.0020								
Chromium	ND	0.0060								
Lead	ND	0.0050								
Selenium	ND	0.050								
Silver	ND	0.0050								

Sample ID	LCS-17765	SampType:	LCS	TestCode:	EPA 6010B: Total Recoverable Metals					
Client ID:	LCSW	Batch ID:	17765	RunNo:	24390					
Prep Date:	2/16/2015	Analysis Date:	2/18/2015	SeqNo:	718660	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	0.51	0.020	0.5000	0	102	80	120			
Barium	0.49	0.020	0.5000	0	97.3	80	120			
Cadmium	0.49	0.0020	0.5000	0	98.1	80	120			
Chromium	0.49	0.0060	0.5000	0	98.7	80	120			
Lead	0.48	0.0050	0.5000	0	96.4	80	120			
Selenium	0.50	0.050	0.5000	0	100	80	120			
Silver	0.11	0.0050	0.1000	0	105	80	120			

Qualifiers:

- | | |
|---|--|
| * Value exceeds Maximum Contaminant Level. | B Analyte detected in the associated Method Blank |
| E Value above quantitation range | H Holding times for preparation or analysis exceeded |
| J Analyte detected below quantitation limits | ND Not Detected at the Reporting Limit |
| O RSD is greater than RSDlimit | P Sample pH Not In Range |
| R RPD outside accepted recovery limits | RL Reporting Detection Limit |
| S Spike Recovery outside accepted recovery limits | |

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1502269

20-Feb-15

Client: Kinder Morgan
Project: Aqua Moss Water

Sample ID	MB-17736	SampType:	MBLK	TestCode:	EPA Method 7470: Mercury					
Client ID:	PBW	Batch ID:	17736	RunNo:	24308					
Prep Date:	2/13/2015	Analysis Date:	2/13/2015	SeqNo:	716384	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	ND	0.00020								

Sample ID	LCS-17736		SampType: LCS		TestCode: EPA Method 7470: Mercury					
Client ID:	LCSW		Batch ID: 17736		RunNo: 24308					
Prep Date:	2/13/2015		Analysis Date: 2/13/2015		SeqNo: 716385		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	0.0055	0.00020	0.005000	0	110	80	120			

Qualifiers:

* Value exceeds Maximum Contaminant Level.
E Value above quantitation range
J Analyte detected below quantitation limits
O RSD is greater than RSDlimit
R RPD outside accepted recovery limits
S Spike Recovery outside accepted recovery limits

B Analyte detected in the associated Method Blank
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
P Sample pH Not In Range
RL Reporting Detection Limit



YOUR LAB OF CHOICE

Hall Environmental Analysis Laboratory

4901 Hawkins NE

Albuquerque, NM 87109

Quality Assurance Report
Level II

L747923

12065 Lebanon Rd.
Mt. Juliet, TN 37122
(615) 758-5858
1-800-767-5859
Fax (615) 758-5859

Tax I.D. 62-0814289

Est. 1970

February 17, 2015

Analyte	Result	Laboratory Blank Units % Rec	Limit	Batch	Date Analyzed
Reactive Sulf.(SW846 7.3.4.1)	< 25	mg/l		WG769788	02/12/15 16:16
Reactive CN (SW846 7.3.3.2)	< .125	mg/l		WG769790	02/12/15 17:34

Analyte	Units	Result	Duplicate Duplicate	RPD	Limit	Ref Samp	Batch
Corrosivity		0.0	0.0	0.0	10	L747923-01	WG769746
Reactive Sulf.(SW846 7.3.4.1)	mg/l	0.0	0.0	0.0	20	L747836-01	WG769788
Reactive CN (SW846 7.3.3.2)	mg/l	0.0	0.0	0.0	20	L747836-01	WG769790
Flashpoint	deg F	0.00	0.00	0.00	20	L748722-05	WG770370

Analyte	Units	Laboratory Control Sample Known Val Result	% Rec	Limit	Batch	
Corrosivity		5.9	5.85	99.2	98.3-101.7	WG769746
Reactive Sulf.(SW846 7.3.4.1)	mg/l	100	85.0	85.0	70-130	WG769788
Reactive CN (SW846 7.3.3.2)	mg/l	.1	0.105	105.	90-110	WG769790
Flashpoint	deg F	82	82.0	100.	96-104	WG770370

Analyte	Units	Laboratory Control Sample Duplicate Result Ref %Rec	Limit	RPD	Limit	Batch
Corrosivity		5.86 5.85 99.0	98.3-101.7	0.171	10	WG769746
Reactive Sulf.(SW846 7.3.4.1)	mg/l	85.0 85.0 85.0	70-130	0.0	20	WG769788
Reactive CN (SW846 7.3.3.2)	mg/l	0.0953 0.105 95.0	90-110	9.69	20	WG769790
Flashpoint	deg F	82.0 82.0 100.	96-104	0.00	7	WG770370

Batch number /Run number / Sample number cross reference

WG769746: R3019321: L747923-01
WG769788: R3019639: L747923-01
WG769790: R3019673: L747923-01
WG770370: R3020153: L747923-01

* * Calculations are performed prior to rounding of reported values.

* Performance of this Analyte is outside of established criteria.

For additional information, please see Attachment A 'List of Analytes with QC Qualifiers.'



12065 Lebanon Rd.
Mt. Juliet, TN 37122
(615) 758-5858
1-800-767-5859
Fax (615) 758-5859

Tax I.D. 62-0814289

Est. 1970

REPORT OF ANALYSIS

February 17, 2015

Hall Environmental Analysis Laborat
4901 Hawkins NE
Albuquerque, NM 87109

Date Received : February 10, 2015
Description :
Sample ID : 1502269-001B TANK #5
Collected By :
Collection Date : 02/05/15 15:00

ESC Sample # : L747923-01

Site ID :

Project # :

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Corrosivity	Non-Corrosive			9040C	02/11/15	1
Flashpoint	See Footnote		deg F	D93/1010A	02/15/15	1
Reactive CN (SW846 7.3.3.2)	BDL	0.125	mg/l	9012B/SW846 7	02/12/15	1
Reactive Sulf. (SW846 7.3.4.1)	BDL	25.	mg/l	9034/9030B	02/12/15	1

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit(PQL)

Note:

The reported analytical results relate only to the sample submitted.

This report shall not be reproduced, except in full, without the written approval from ESC.

Reported: 02/17/15 14:49 Printed: 02/17/15 14:49
L747923-01 (FLASHPOINT) - Did Not Flash @ 170 F

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1502269

Date Reported: 2/20/2015

CLIENT: Kinder Morgan

Client Sample ID: Tank #5

Project: Aqua Moss Water

Collection Date: 2/5/2015 10:15:00 AM

Lab ID: 1502269-001

Matrix: AQUEOUS

Received Date: 2/6/2015 7:50:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 7470: MERCURY							Analyst: MMD
Mercury	0.0013	0.00040		mg/L	1	2/13/2015 2:38:39 PM	17736
EPA 6010B: TOTAL RECOVERABLE METALS							Analyst: ELS
Arsenic	ND	0.20		mg/L	10	2/19/2015 1:22:28 PM	17765
Barium	0.32	0.10		mg/L	5	2/19/2015 1:19:18 PM	17765
Cadmium	ND	0.010		mg/L	5	2/19/2015 1:19:18 PM	17765
Chromium	3.1	0.030		mg/L	5	2/19/2015 1:19:18 PM	17765
Lead	ND	0.025		mg/L	5	2/19/2015 1:19:18 PM	17765
Selenium	ND	0.25		mg/L	5	2/19/2015 1:19:18 PM	17765
Silver	ND	0.025		mg/L	5	2/19/2015 1:19:18 PM	17765

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank	Page 1 of 3
	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded	
	J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit	
	O	RSD is greater than RSDlimit	P	Sample pH Not In Range	
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit	
	S	Spike Recovery outside accepted recovery limits			

New Reply | Delete Archive Junk | Keep Move to Category

Search email

Folders

Inbox

Junk

Drafts 40

Sent

Deleted

New folder

C-138


Knight, Tami (Tami_Knight@kindermorgan.com)

To: 'aguamosshiggins@hotmail.com' Cc: Spore...

Outlook.com Active View

AguaMoss C-138 021915.doc (85.2 KB) View online

Download as zip Add to OneDrive

Gary,

Attached is a C-138 for drilling fluids from the KM CO2 fields. I wasn't sure if you needed detailed C-138's for specific wells? I will forward the lab reports tomorrow once they come in. Please let me know if you need any changes to the C-138. I am leaving for vacation and will return March 2, but I am available to help get the paperwork you need.

Thank you,

Tami C. Knight, CHMM

Description: Description

Operations Project Manager

17801 Hwy 491, Cortez, CO 81321

© 2015 Microsoft Terms Privacy & cookies Developers

American Express OPEN



Get the Business Card that works for you. Learn More.

[New](#) [Reply](#) | [Delete](#) [Archive](#) [Junk](#) | [Keep](#) [Move to](#) [Categories](#)

Folders

[Inbox](#)[Junk](#)[Drafts 40](#)[Sent](#)[Deleted](#)[New folder](#)

Rpt_1502269_Final_v1.pdf



Knight, Tami (Tami_Knight@kindermorgan.com)

To: aguamosghiggins@hotmail.com Cc: Stewar...

[Outlook.com Active View](#)

Loading...

[If it's taking too long, click here](#)[Download all as zip](#) [Add all to OneDrive](#)

Gary attached is the lab report for the water. Our drilling fluid is exempt; however, I believe you need documentation stating that. I am on vacation until March 1. I will work on that when I return.

Tami



**GET UP TO 10%
EXTRA AT
PARTICIPATING
RETAILERS.**

**CLICK FOR
DETAILS**

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-138
Revised August 1, 2011

*Surface Waste Management Facility Operator
and Generator shall maintain and make this
documentation available for Division inspection.

REQUEST FOR APPROVAL TO ACCEPT SOLID WASTE

1. Generator Name and Address: Elkhorn Construction, 1700 North 1 st Street, Bloomfield, NM 87413
2. Originating Site: Western Refining - Star Lake Pipeline Station; NWNE Sec 19, T21N, R7W; Sandoval County
3. Location of Material (Street Address, City, State or ULSTR): Same as originating Site
4. Source and Description of Waste: Test water used to hydrotest new facility piping.
Estimated Volume <u>60</u> bbls Known Volume (to be entered by the operator at the end of the haul) <u>70</u> yd ³ bbls
5. GENERATOR CERTIFICATION STATEMENT OF WASTE STATUS I, <u>Chris Mackey</u> , representative or authorized agent for <u>Elkhorn Construction, Inc.</u> do hereby PRINT & SIGN NAME COMPANY NAME certify that according to the Resource Conservation and Recovery Act (RCRA) and the US Environmental Protection Agency's July 1988 regulatory determination, the above described waste is: (Check the appropriate classification) ☐ RCRA Exempt: Oil field wastes generated from oil and gas exploration and production operations and are not mixed with non- exempt waste. Operator Use Only: Waste Acceptance Frequency ☐ Monthly ☐ Weekly ☐ Per Load ☒ RCRA Non-Exempt: Oil field waste which is non-hazardous that does not exceed the minimum standards for waste hazardous by characteristics established in RCRA regulations, 40 CFR 261.21-261.24, or listed hazardous waste as defined in 40 CFR, part 261, subpart D, as amended. The following documentation is attached to demonstrate the above-described waste is non-hazardous. (Check the appropriate items) ☐ MSDS Information ☒ RCRA Hazardous Waste Analysis ☒ Process Knowledge ☐ Other (Provide description in Box 4) GENERATOR 19.15.36.15 WASTE TESTING CERTIFICATION STATEMENT FOR LANDFARMS I, <u>Chris Mackey</u> , representative for <u>Elkhorn Construction, Inc.</u> do hereby certify that representative samples of the oil field waste have been subjected to the paint filter test and tested for chloride content and that the samples have been found to conform to the specific requirements applicable to landfarms pursuant to Section 15 of 19.15.36 NMAC. The results of the representative samples are attached to demonstrate the above-described waste conform to the requirements of Section 15 of 19.15.36 NMAC.
5. Transporter: M&R Trucking

OCD Permitted Surface Waste Management Facility

Name and Facility Permit #: Agua Moss, LLC Permit # UICI-005 (Class I Non-Hazardous Well)

Address of Facility: 345 CR 350, San Juan County, Aztec NM, 87410

Method of Treatment and/or Disposal:

☐ Evaporation ☒ Injection ☐ Treating Plant ☐ Landfarm ☐ Landfill ☐ Other

Waste Acceptance Status:

☒ APPROVED

☐ DENIED (Must Be Maintained As Permanent Record)

PRINT NAME: Garye Higgins

TITLE: Superintendent

DATE: 1/30/15

SIGNATURE: [Signature]

TELEPHONE NO.: 505-486-9425

Surface Waste Management Facility Authorized Agent



Analytical Report

Report Summary

Client: Western Refining Southwest, Inc.

Chain Of Custody Number: 16177

Samples Received: 1/30/2015 7:55:00AM

Job Number: 96012-0115

Work Order: P501081

Project Name/Location: Star Lake

Entire Report Reviewed By:

A handwritten signature in black ink, appearing to read 'Tim Cain', is written over a horizontal line.

Date: 2/3/15

Tim Cain, Laboratory Manager

The results in this report apply to the samples submitted to Envirotech's Analytical Laboratory and were analyzed in accordance with the chain of custody document supplied by you, the client, and as such are for your exclusive use only. The results in this report are based on the sample as received unless otherwise noted. Partial or incomplete reproduction of this report is prohibited, unless approved by Envirotech, Inc. If you have any questions regarding this analytical report, please don't hesitate to contact Envirotech's Laboratory Staff.

5796 US Highway 64, Farmington, NM 87401

Three Springs • 65 Mercado Street, Suite 115, Durango, CO 81301

Ph (505) 632-0615 Fx (505) 632-1865

Ph (970) 259-0615 Fr (800) 362-1879

envirotech-inc.com
laboratory@envirotech-inc.com



Western Refining Southwest, Inc.
PO Box 159
Bloomfield NM, 87413

Project Name: Star Lake
Project Number: 96012-0115
Project Manager: Kelly Robinson

Reported:
03-Feb-15 12:40

Analytical Report for Samples

Client Sample ID	Lab Sample ID	Matrix	Sampled	Received	Container
Test Water	P501081-01A	Aqueous	01/29/15	01/30/15	Poly 500mL
	P501081-01B	Aqueous	01/29/15	01/30/15	Poly 500mL; HNO3
	P501081-01C	Aqueous	01/29/15	01/30/15	Poly 500mL; NaOH

Partial or incomplete reproduction of this report is prohibited, unless approved by Envirotech, Inc.

5796 US Highway 64, Farmington, NM 87401

Ph (505) 632-0615 Fx (505) 632-1865

Three Springs • 65 Mercado Street, Suite 115, Durango, CO 81301

Ph (970) 259-0615 Fr (800) 362-1879

envirotech-inc.com

laboratory@envirotech-inc.com



Western Refining Southwest, Inc.
PO Box 159
Bloomfield NM, 87413

Project Name: Star Lake
Project Number: 96012-0115
Project Manager: Kelly Robinson

Reported:
03-Feb-15 12:40

Test Water
P501081-01 (Water)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Total Metals by 6010									
Arsenic	ND	0.01	mg/L	1	1505025	01/30/15	01/30/15	EPA 6010C	
Barium	0.09	0.05	mg/L	1	1505025	01/30/15	01/30/15	EPA 6010C	
Cadmium	ND	0.01	mg/L	1	1505025	01/30/15	01/30/15	EPA 6010C	
Chromium	ND	0.01	mg/L	1	1505025	01/30/15	01/30/15	EPA 6010C	
Lead	ND	0.01	mg/L	1	1505025	01/30/15	01/30/15	EPA 6010C	
Selenium	ND	0.01	mg/L	1	1505025	01/30/15	01/30/15	EPA 6010C	
Silver	ND	0.01	mg/L	1	1505025	01/30/15	01/30/15	EPA 6010C	
Cation/Anion Analysis									
pH @7.3°C	7.51		pH Units	1	1505024	01/30/15 09:50	01/30/15 09:50	150.1/4500H	
Suspected Hazardous Waste									
Flash Point	>95		°C	1	1505027	01/30/15	01/30/15	ASTM D93-10a	
Reactivity	Negative		N/A	1	1505024	01/30/15	01/30/15		
Total Mercury by EPA 7470A									
Mercury	ND	0.0002	mg/L	1	1505028	01/30/15	02/02/15	EPA 7470A	

Partial or incomplete reproduction of this report is prohibited, unless approved by Envirotech, Inc.

5796 US Highway 64, Farmington, NM 87401

Three Springs - 65 Mercado Street, Suite 115, Durango, CO 81301

Ph (505) 632-0615 Fx (505) 632-1865

Ph (970) 259-0615 Fr (800) 362-1879

envirotech-inc.com
laboratory@envirotech-inc.com



Western Refining Southwest, Inc.
PO Box 159
Bloomfield NM, 87413

Project Name: Star Lake
Project Number: 96012-0115
Project Manager: Kelly Robinson

Reported:
03-Feb-15 12:40

Total Metals by 6010 - Quality Control
Envirotech Analytical Laboratory

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
---------	--------	-----------------	-------	-------------	---------------	------	-------------	-----	-----------	-------

Batch 1505025 - Metal Water/TCLP (EPA 1311) Digestion EPA 3015A

Blank (1505025-BLK1)

Prepared & Analyzed: 30-Jan-15

Arsenic	ND	0.01	mg/L
Barium	ND	0.05	"
Cadmium	ND	0.01	"
Chromium	ND	0.01	"
Lead	ND	0.01	"
Selenium	ND	0.01	"
Silver	ND	0.01	"

Duplicate (1505025-DUP1)

Source: P501081-01

Prepared & Analyzed: 30-Jan-15

Arsenic	ND	0.01	mg/L	ND				30
Barium	0.09	0.05	"	0.09			1.81	30
Cadmium	ND	0.01	"	ND				30
Chromium	ND	0.01	"	ND				30
Lead	ND	0.01	"	ND				30
Selenium	ND	0.01	"	ND				30
Silver	ND	0.01	"	ND				30

Matrix Spike (1505025-MS1)

Source: P501081-01

Prepared & Analyzed: 30-Jan-15

Arsenic	0.24		mg/L	0.250	0.003	96.1	75-125
Barium	5.72		"	5.00	0.08	113	75-125
Cadmium	0.25		"	0.250	0.0005	98.8	75-125
Chromium	0.51		"	0.500	0.002	101	75-125
Lead	0.49		"	0.500	-0.001	97.5	75-125
Selenium	0.09		"	0.100	ND	89.5	75-125
Silver	0.10		"	0.100	-0.0005	96.6	75-125

Partial or incomplete reproduction of this report is prohibited, unless approved by Envirotech, Inc.

5796 US Highway 64, Farmington, NM 87401

Ph (505) 632-0615 Fx (505) 632-1865

Three Springs • 65 Mercado Street, Suite 115, Durango, CO 81301

Ph (970) 259-0615 Fr (800) 362-1879

envirotech-inc.com

laboratory@envirotech-inc.com



Western Refining Southwest, Inc.
PO Box 159
Bloomfield NM, 87413

Project Name: Star Lake
Project Number: 96012-0115
Project Manager: Kelly Robinson

Reported:
03-Feb-15 12:40

Total Mercury by EPA 7470A - Quality Control
Envirotech Analytical Laboratory

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 1505028 - Mercury Water/TCLP Digestion KMNO4										
Blank (1505028-BLK1)				Prepared: 30-Jan-15 Analyzed: 02-Feb-15						
Mercury	ND	0.0002	mg/L							
LCS (1505028-BS1)				Prepared: 30-Jan-15 Analyzed: 02-Feb-15						
Mercury	0.002	0.0002	mg/L	0.00229		98.6	80-120			
Matrix Spike (1505028-MS1)				Source: P501081-01 Prepared: 30-Jan-15 Analyzed: 02-Feb-15						
Mercury	0.002	0.0002	mg/L	0.00229	ND	97.7	75-125			
Matrix Spike Dup (1505028-MSD1)				Source: P501081-01 Prepared: 30-Jan-15 Analyzed: 02-Feb-15						
Mercury	0.002	0.0002	mg/L	0.00229	ND	98.1	75-125	0.383	15	

Partial or incomplete reproduction of this report is prohibited, unless approved by Envirotech, Inc.

5796 US Highway 64, Farmington, NM 87401

Three Springs • 65 Mercado Street, Suite 115, Durango, CO 81301

Ph (505) 632-0615 Fx (505) 632-1865

Ph (970) 259-0615 Fr (800) 362-1879

envirotech-inc.com

laboratory@envirotech-inc.com



Western Refining Southwest, Inc.
PO Box 159
Bloomfield NM, 87413

Project Name: Star Lake
Project Number: 96012-0115
Project Manager: Kelly Robinson

Reported:
03-Feb-15 12:40

Notes and Definitions

FP1 >95
DET Analyte DETECTED
ND Analyte NOT DETECTED at or above the reporting limit
NR Not Reported
dry Sample results reported on a dry weight basis
RPD Relative Percent Difference

Partial or incomplete reproduction of this report is prohibited, unless approved by Envirotech, Inc.

5796 US Highway 64, Farmington, NM 87401

Ph (505) 632-0615 Fx (505) 632-1865

Three Springs - 65 Mercado Street, Suite 115, Durango, CO 81301

Ph (970) 259-0615 Fr (800) 362-1879

envirotech-inc.com
laboratory@envirotech-inc.com

CHAIN OF CUSTODY RECORD

16177

Client: WESTERN PERINING		Project Name / Location: STAR LAKE		ANALYSIS / PARAMETERS																													
Email results to: Kelly.Robinson@wpcn.com		Sampler Name: TERRY HOPKIN		Preservative		No./Volume of Containers		TPH (Method 8015)		BTEX (Method 8021)		VOC (Method 8260)		RCRA 8 Metals - Total		Cation / Anion		RCI		TCLP with H/P		CO Table 910-1		TPH (418.1)		CHLORIDE		Ignitability, Corrosivity		Sample Cool		Sample Intact	
Client Phone No.: (505) 632-4166		Client No.: 96012-0115		HNO ₃ HCl NaOH		1-500mL		X																									
Sample No./ Identification		Sample Date		Sample Time		Lab No.		No./Volume of Containers		HNO ₃ HCl NaOH		1-500mL		X																			
TEST WATER		1/29/15		17:00		P501081-01		1-500mL		X		1-500mL		X																			

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-138
Revised August 1, 2011

*Surface Waste Management Facility Operator
and Generator shall maintain and make this
documentation available for Division inspection.

REQUEST FOR APPROVAL TO ACCEPT SOLID WASTE

1. Generator Name and Address:

* Enmar Oil & Gas USA Inc 6584 E MAIN ST FARMINGTON, NM 87402

2. Originating Site:

* Lybrook 0 01-2306-02H

3. Location of Material (Street Address, City, State or ULSTR):

* W/Lot 0 Sect. 01 T 23N R 06W

4. Source and Description of Waste:

* Storm water accumulation voided from E+P Completions
location. Lab analysis completed & attached.

Estimated Volume * 80 yd³/bbls Known Volume (to be entered by the operator at the end of the haul) 80 yd³/bbls

5. Tucker Smith GENERATOR CERTIFICATION STATEMENT OF WASTE STATUS

I, Tucker Smith, representative or authorized agent for Enmar Oil & Gas USA Inc do hereby
certify that according to the Resource Conservation and Recovery Act (RCRA) and the US Environmental Protection Agency's July 1988
regulatory determination, the above described waste is: (Check the appropriate classification)

☐ RCRA Exempt: Oil field wastes generated from oil and gas exploration and production operations and are not mixed with non-
exempt waste. Operator Use Only: Waste Acceptance Frequency ☐ Monthly ☐ Weekly ☐ Per Load

☒ RCRA Non-Exempt: Oil field waste which is non-hazardous that does not exceed the minimum standards for waste hazardous by
characteristics established in RCRA regulations, 40 CFR 261.21-261.24, or listed hazardous waste as defined in 40 CFR, part 261,
subpart D, as amended. The following documentation is attached to demonstrate the above-described waste is non-hazardous. (Check
the appropriate items)

* ☐ MSDS information ☒ RCRA Hazardous Waste Analysis ☐ Process Knowledge ☐ Other (Provide description in Box 4)

GENERATOR 19.15.36.15 WASTE TESTING CERTIFICATION STATEMENT FOR LANDFARMS

I, _____, representative for _____ do hereby certify that
representative samples of the oil field waste have been subjected to the paint filter test and tested for chloride content and that the samples
have been found to conform to the specific requirements applicable to landfarms pursuant to Section 15 of 19.15.36 NMAC. The results
of the representative samples are attached to demonstrate the above-described waste conform to the requirements of Section 15 of
19.15.36 NMAC.

5. Transporter:

* CND Oilfield Svc.

OCD Permitted Surface Waste Management Facility

Name and Facility Permit #: Agua Moss LLC Permit# UICI-005

Address of Facility: 345 CR 350, Aztec, NM 87410, San Juan County

Method of Treatment and/or Disposal:

☐ Evaporation ☒ Injection ☐ Treating Plant ☐ Landfarm ☐ Landfill ☐ Other

Waste Acceptance Status:

☒ APPROVED

☐ DENIED (Must Be Maintained As Permanent Record)

PRINT NAME: Adrian Hudson

TITLE: Operator

DATE: 2-15-15

SIGNATURE: [Signature]
Surface Waste Management Facility Authorized Agent

TELEPHONE NO.: 334-6186

RUSH?	1d	3d

1 of 1
11195-0087

Page

[illegible]

Sample Matrix: **S** - Soil, **Sd** - Solid, **Sg** - Sludge, **A** - Aqueous, **O** - Other

****Samples requiring thermal preservation must be received on ice the day they are sampled or received packed in ice at an avg temp above 0 but less than 6 °C on subsequent days.**

Sample(s) dropped off after hours to a secure drop off area:

Chain of Custody

Notes/Billing info:

Container Type: g - glass, p - poly/plastic, ag - amber glass



envirotech
Analytical Laboratory

5796 US Highway 64, Farmington, NM 87401

Three Springs • 65 Mercado Street, Suite 115, Durango, CO 81301

Ph (505) 632-0615 Fx (505) 632-1865

Ph (970) 259-0615 Fr (800) 362-1879

Encana Oil & Gas USA
370 17th Street
Denver CO, 80202

Project Name: Rain Water Rinse from Location
Project Number: 11195-0087
Project Manager: Tucker Smith

Reported:
20-Feb-15 15:08

Notes and Definitions

H2 Sample was analyzed after regulatory hold-time exceeded for target analyte.
FPI >95
DET Analyte DETECTED
ND Analyte NOT DETECTED at or above the reporting limit
NR Not Reported
dry Sample results reported on a dry weight basis
RPD Relative Percent Difference

Partial or incomplete reproduction of this report is prohibited, unless approved by Envirotech, Inc.

Encana Oil & Gas USA
 370 17th Street
 Denver CO, 80202

Project Name: Rain Water Rinse from Location
 Project Number: 11195-0087
 Project Manager: Tucker Smith

Reported:
 20-Feb-15 15:08

#1

P502065-01 (Water)

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								

Cation/Anion Analysis

pH @24.6°C	7.66		pH Units	1	1508035	02/19/15 13:57	02/19/15 14:16	150.1/4500H	H2
------------	------	--	----------	---	---------	----------------	----------------	-------------	----

Suspected Hazardous Waste

Flash Point	>95		°C	1	1508029	02/19/15	02/20/15	ASTM D93-10a	
Reactivity	Negative		N/A	1	1508029	02/19/15	02/20/15		

Partial or incomplete reproduction of this report is prohibited, unless approved by Envirotech, Inc.

Encana Oil & Gas USA
370 17th Street
Denver CO, 80202

Project Name: Rain Water Rinse from Location
Project Number: 11195-0087
Project Manager: Tucker Smith

Reported:
20-Feb-15 15:08

Analytical Report for Samples

Client Sample ID	Lab Sample ID	Matrix	Sampled	Received	Container
#1	P502065-01A	Aqueous	02/13/15	02/18/15	Glass Mason Jar 16 oz

Partial or incomplete reproduction of this report is prohibited, unless approved by Envirotech, Inc.

Open 2015

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-138
Revised August 1, 2011

*Surface Waste Management Facility Operator
and Generator shall maintain and make this
documentation available for Division inspection.

REQUEST FOR APPROVAL TO ACCEPT SOLID WASTE

1. Generator Name and Address:

* Coastal Chemical

2. Originating Site:

* 1130 Madison Lane, Farmington, NM. 87401

3. Location of Material (Street Address, City, State or ULSTR):

* Same

4. Source and Description of Waste: Wash out hoses & Totes - TEG, Gas/spec, Antifreeze

Estimated Volume * 1000 yd³/bbls Known Volume (to be entered by the operator at the end of the haul) yd³/bbls

5. GENERATOR CERTIFICATION STATEMENT OF WASTE STATUS

I, * Lee Hamm, representative or authorized agent for * Coastal Chemical do hereby
certify that according to the Resource Conservation and Recovery Act (RCRA) and the US Environmental Protection Agency's July 1988
regulatory determination, the above described waste is: (Check the appropriate classification)

☐ RCRA Exempt: Oil field wastes generated from oil and gas exploration and production operations and are not mixed with non-
exempt waste. Operator Use Only: Waste Acceptance Frequency ☐ Monthly ☐ Weekly ☐ Per Load

☒ RCRA Non-Exempt: Oil field waste which is non-hazardous that does not exceed the minimum standards for waste hazardous by
characteristics established in RCRA regulations, 40 CFR 261.21-261.24, or listed hazardous waste as defined in 40 CFR, part 261,
subpart D, as amended. The following documentation is attached to demonstrate the above-described waste is non-hazardous. (Check
the appropriate items)

* ☒ MSDS Information ☒ RCRA Hazardous Waste Analysis ☐ Process Knowledge ☐ Other (Provide description in Box 4)

GENERATOR 19.15.36.15 WASTE TESTING CERTIFICATION STATEMENT FOR LANDFARMS

I, _____, representative for _____ do hereby certify that
representative samples of the oil field waste have been subjected to the paint filter test and tested for chloride content and that the samples
have been found to conform to the specific requirements applicable to landfarms pursuant to Section 15 of 19.15.36 NMAC. The results
of the representative samples are attached to demonstrate the above-described waste conform to the requirements of Section 15 of
19.15.36 NMAC.

5. Transporter:

* Key Energy

OCD Permitted Surface Waste Management Facility

Name and Facility Permit #: Agua Moss LLC Permit# UICI-005

Address of Facility: 345 CR 350, Aztec, NM 87410, San Juan County

Method of Treatment and/or Disposal:

☐ Evaporation ☒ Injection ☐ Treating Plant ☐ Landfarm ☐ Landfill ☐ Other

Waste Acceptance Status:

☒ APPROVED

☐ DENIED (Must Be Maintained As Permanent Record)

PRINT NAME: Adrian Hudson

TITLE: Operator

DATE: 03/01/15

SIGNATURE: _____
Surface Waste Management Facility Authorized Agent

TELEPHONE NO.: 334-6186



Analytical Report

Report Summary

Client: Coastal Chemical

Chain Of Custody Number: 15334

Samples Received: 3/26/2013 11:08:00AM

Job Number: 95007-0025

Work Order: P303095

Project Name/Location: Coastal Chemical Plant

Entire Report Reviewed By:

A handwritten signature in black ink, appearing to read 'Tim Cain', is written over a horizontal line.

Date: 4/4/13

Tim Cain, Laboratory Manager

The results in this report apply to the samples submitted to Envirotech's Analytical Laboratory and were analyzed in accordance with the chain of custody document supplied by you, the client, and as such are for your exclusive use only. The results in this report are based on the sample as received unless otherwise noted. Partial or incomplete reproduction of this report is prohibited, unless approved by Envirotech, Inc. If you have any questions regarding this analytical report, please don't hesitate to contact Envirotech's Laboratory Staff.



Coastal Chemical
PO Box 820
Abbeville LA, 70511-0820

Project Name: Coastal Chemical Plant
Project Number: 95007-0025
Project Manager: Lee Hamm

Reported:
04-Apr-13 15:32

Analytical Report for Samples

Client Sample ID	Lab Sample ID	Matrix	Sampled	Received	Container
Waste Water	P303095-01A	Aqueous	03/26/13	03/26/13	Amber, 1L
	P303095-01B	Aqueous	03/26/13	03/26/13	Amber, 1L
	P303095-01C	Aqueous	03/26/13	03/26/13	Amber, 1L
	P303095-01D	Aqueous	03/26/13	03/26/13	Poly, 500mL
	P303095-01E	Aqueous	03/26/13	03/26/13	VOA Vial, 40mL
	P303095-01F	Aqueous	03/26/13	03/26/13	VOA Vial, 40mL
	P303095-01G	Aqueous	03/26/13	03/26/13	VOA Vial, 40mL
	P303095-01H	Aqueous	03/26/13	03/26/13	VOA Vial, 40mL
	P303095-01I	Aqueous	03/26/13	03/26/13	VOA Vial, 40mL
	P303095-01J	Aqueous	03/26/13	03/26/13	VOA Vial, 40mL

Partial or incomplete reproduction of this report is prohibited, unless approved by Envirotech, Inc.

5796 US Highway 64, Farmington, NM 87401

Ph (505) 632-0615 Fx (505) 632-1865

Three Springs • 65 Mercado Street, Suite 115, Durango, CO 81301

Ph (970) 259-0615 Fr (800) 362-1879

envirotech-inc.com
laboratory@envirotech-inc.com



Coastal Chemical	Project Name:	Coastal Chemical Plant	Reported:
PO Box 820	Project Number:	95007-0025	04-Apr-13 15:32
Abbeville LA, 70511-0820	Project Manager:	Lee Hamm	

Waste Water
P303095-01 (Water)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
TCLP Volatile Organic Compounds by 8260									
Vinyl chloride	ND	0.005	mg/L	1	1313027	28-Mar-13	28-Mar-13	EPA 8260B	
2-Butanone	ND	0.005	mg/L	1	1313027	28-Mar-13	28-Mar-13	EPA 8260B	
1,1-Dichloroethene	ND	0.005	mg/L	1	1313027	28-Mar-13	28-Mar-13	EPA 8260B	
Chloroform	ND	0.01	mg/L	1	1313027	28-Mar-13	28-Mar-13	EPA 8260B	
Carbon Tetrachloride	ND	0.005	mg/L	1	1313027	28-Mar-13	28-Mar-13	EPA 8260B	
Benzene	0.04	0.005	mg/L	1	1313027	28-Mar-13	28-Mar-13	EPA 8260B	
1,2-Dichloroethane	ND	0.005	mg/L	1	1313027	28-Mar-13	28-Mar-13	EPA 8260B	
Trichloroethene	ND	0.005	mg/L	1	1313027	28-Mar-13	28-Mar-13	EPA 8260B	
Tetrachloroethene	0.01	0.005	mg/L	1	1313027	28-Mar-13	28-Mar-13	EPA 8260B	
Chlorobenzene	ND	0.005	mg/L	1	1313027	28-Mar-13	28-Mar-13	EPA 8260B	
1,4-Dichlorobenzene	ND	0.005	mg/L	1	1313027	28-Mar-13	28-Mar-13	EPA 8260B	
Surrogate: Fluorobenzene		88.2 %		80-120	1313027	28-Mar-13	28-Mar-13	EPA 8260B	
Surrogate: 1,4-Difluorobenzene		85.9 %		80-120	1313027	28-Mar-13	28-Mar-13	EPA 8260B	
Surrogate: Bromochlorobenzene		90.7 %		80-120	1313027	28-Mar-13	28-Mar-13	EPA 8260B	
TCLP Base Neutrals by 8270									
Pyridine	ND	0.01	mg/L	500	1313034	28-Mar-13	29-Mar-13	EPA 8270D	
1,4-Dichlorobenzene	ND	0.01	mg/L	500	1313034	28-Mar-13	29-Mar-13	EPA 8270D	
Hexachloroethane	ND	0.01	mg/L	500	1313034	28-Mar-13	29-Mar-13	EPA 8270D	
Nitrobenzene	ND	0.01	mg/L	500	1313034	28-Mar-13	29-Mar-13	EPA 8270D	
Hexachlorobutadiene	ND	0.01	mg/L	500	1313034	28-Mar-13	29-Mar-13	EPA 8270D	
2,4-Dinitrotoluene	ND	0.01	mg/L	500	1313034	28-Mar-13	29-Mar-13	EPA 8270D	
Hexachlorobenzene	ND	0.01	mg/L	500	1313034	28-Mar-13	29-Mar-13	EPA 8270D	
Surrogate: 2-Fluorobiphenyl		64.6 %		10-120	1313034	28-Mar-13	29-Mar-13	EPA 8270D	

Partial or incomplete reproduction of this report is prohibited, unless approved by Envirotech, Inc.

5796 US Highway 64, Farmington, NM 87401

Three Springs • 65 Mercado Street, Suite 115, Durango, CO 81301

Ph (505) 632-0615 Fx (505) 632-1865

Ph (970) 259-0615 Fx (800) 362-1879

envirotech-inc.com
laboratory@envirotech-inc.com



Coastal Chemical PO Box 820 Abbeville LA, 70511-0820	Project Name: Coastal Chemical Plant Project Number: 95007-0025 Project Manager: Lee Hamm	Reported: 04-Apr-13 15:32
--	---	------------------------------

Waste Water
P303095-01 (Water)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
TCLP Phenols by 8270									
o-Cresol	ND	0.01	mg/L	10	1313035	28-Mar-13	29-Mar-13	EPA 8270D	A-01
m,p-Cresols	ND	0.01	mg/L	10	1313035	28-Mar-13	29-Mar-13	EPA 8270D	A-01
2,4,6-Trichlorophenol	ND	0.01	mg/L	10	1313035	28-Mar-13	29-Mar-13	EPA 8270D	A-01
2,4,5-Trichlorophenol	ND	0.01	mg/L	10	1313035	28-Mar-13	29-Mar-13	EPA 8270D	A-01
Pentachlorophenol	ND	0.01	mg/L	10	1313035	28-Mar-13	29-Mar-13	EPA 8270D	A-01
Surrogate: 2-Fluorophenol		4.23 %		20-120	1313035	28-Mar-13	29-Mar-13	EPA 8270D	A-01, Surr2
Surrogate: 2,4,6-Tribromophenol		%		20-120	1313035	28-Mar-13	29-Mar-13	EPA 8270D	A-01, Surr2
TCLP Metals									
Arsenic	0.17	0.10	mg/L	10	1313043	29-Mar-13	01-Apr-13	EPA 6010C	
Barium	ND	0.50	mg/L	10	1313043	29-Mar-13	01-Apr-13	EPA 6010C	
Cadmium	ND	0.10	mg/L	10	1313043	29-Mar-13	01-Apr-13	EPA 6010C	
Chromium	ND	0.10	mg/L	10	1313043	29-Mar-13	01-Apr-13	EPA 6010C	
Lead	ND	0.10	mg/L	10	1313043	29-Mar-13	01-Apr-13	EPA 6010C	
Mercury	ND	0.10	mg/L	10	1313043	29-Mar-13	01-Apr-13	EPA 6010C	
Selenium	ND	0.10	mg/L	10	1313043	29-Mar-13	01-Apr-13	EPA 6010C	
Silver	ND	0.10	mg/L	10	1313043	29-Mar-13	01-Apr-13	EPA 6010C	
Cation/Anion Analysis									
pH	9.22		pH Units	1	1313025	27-Mar-13	27-Mar-13	EPA 150.1	
Suspected Hazardous Waste									
Flash Point	>95		°C	1	1314012	01-Apr-13	01-Apr-13	ASTM D93-10a	

Partial or incomplete reproduction of this report is prohibited, unless approved by Envirotech, Inc.

5796 US Highway 64, Farmington, NM 87401

Ph (505) 632-0615 Fx (505) 632-1865

Three Springs • 65 Mercado Street, Suite 115, Durango, CO 81301

Ph (970) 259-0615 Fr (800) 362-1879

envirotech-inc.com
laboratory@envirotech-inc.com



Coastal Chemical
PO Box 820
Abbeville LA, 70511-0820

Project Name: Coastal Chemical Plant
Project Number: 95007-0025
Project Manager: Lee Hamm

Reported:
04-Apr-13 15:32

TCLP Volatile Organic Compounds by 8260 - Quality Control

Envirotech Analytical Laboratory

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
---------	--------	-----------------	-------	-------------	---------------	------	-------------	-----	-----------	-------

Batch 1313027 - Purge and Trap EPA 5030A

Blank (1313027-BLK1)

Prepared & Analyzed: 28-Mar-13

Vinyl chloride	ND	0.005	mg/L							
2-Butanone	ND	0.005	"							
1,1-Dichloroethene	ND	0.005	"							
Chloroform	ND	0.01	"							
Carbon Tetrachloride	ND	0.005	"							
Benzene	ND	0.005	"							
1,2-Dichloroethane	ND	0.005	"							
Trichloroethene	ND	0.005	"							
Tetrachloroethene	ND	0.005	"							
Chlorobenzene	ND	0.005	"							
1,4-Dichlorobenzene	ND	0.005	"							
Surrogate: Fluorobenzene	51.5		ug/L	50.0		103	80-120			
Surrogate: 1,4-Difluorobenzene	48.4		"	50.0		96.8	80-120			
Surrogate: Bromochlorobenzene	55.5		"	50.0		111	80-120			

Duplicate (1313027-DUP1)

Source: P303095-01

Prepared & Analyzed: 28-Mar-13

Vinyl chloride	ND	0.005	mg/L	ND				30		
2-Butanone	ND	0.005	"	ND				30		
1,1-Dichloroethene	ND	0.005	"	ND				30		
Chloroform	ND	0.01	"	ND				30		
Carbon Tetrachloride	ND	0.005	"	ND				30		
Benzene	0.05	0.005	"	0.04				13.1	30	
1,2-Dichloroethane	ND	0.005	"	ND				30		
Trichloroethene	ND	0.005	"	ND				30		
Tetrachloroethene	0.01	0.005	"	0.01				0.417	30	
Chlorobenzene	ND	0.005	"	ND				30		
1,4-Dichlorobenzene	ND	0.005	"	ND				30		
Surrogate: Fluorobenzene	48.3		ug/L	50.0		96.6	80-120			
Surrogate: 1,4-Difluorobenzene	44.7		"	50.0		89.4	80-120			
Surrogate: Bromochlorobenzene	49.5		"	50.0		99.0	80-120			

Matrix Spike (1313027-MS1)

Source: P303095-01

Prepared & Analyzed: 28-Mar-13

Vinyl chloride	119		ug/L	100	ND	119	26-163			
2-Butanone	97.9		"	100	ND	97.9	43-143			
1,1-Dichloroethene	102		"	100	ND	102	47-132			
Chloroform	100		"	100	ND	100	49-133			
Carbon Tetrachloride	94.7		"	100	ND	94.7	43-143			

Partial or incomplete reproduction of this report is prohibited, unless approved by Envirotech, Inc.

5796 US Highway 64, Farmington, NM 87401

Ph (505) 632-0615 Fx (505) 632-1865

Three Springs • 65 Mercado Street, Suite 115, Durango, CO 81301

Ph (970) 259-0615 Fr (800) 362-1879

envirotech inc.com
laboratory@envirotech inc.com

Coastal Chemical
 PO Box 820
 Abbeville LA, 70511-0820

 Project Name: Coastal Chemical Plant
 Project Number: 95007-0025
 Project Manager: Lee Hamm

 Reported:
 04-Apr-13 15:32

TCLP Volatile Organic Compounds by 8260 - Quality Control
Envirotech Analytical Laboratory

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
---------	--------	--------------------	-------	----------------	------------------	------	----------------	-----	--------------	-------

Batch 1313027 - Purge and Trap EPA 5030A
Matrix Spike (1313027-MS1)

Source: P303095-01

Prepared & Analyzed: 28-Mar-13

Benzene	142		ug/L	100	40.2	102	39-150			
1,2-Dichloroethane	102		"	100	ND	102	51-147			
Trichloroethene	99.1		"	100	ND	99.1	35-146			
Tetrachloroethene	106		"	100	9.58	96.2	26-162			
Chlorobenzene	91.4		"	100	ND	91.4	38-150			
1,4-Dichlorobenzene	92.7		"	100	ND	92.7	42-143			
Surrogate: Fluorobenzene	47.7		"	50.0		95.5	80-120			
Surrogate: 1,4-Difluorobenzene	47.2		"	50.0		94.4	80-120			
Surrogate: Bromochlorobenzene	50.6		"	50.0		101	80-120			

Partial or incomplete reproduction of this report is prohibited, unless approved by Envirotech, Inc.

5796 US Highway 64, Farmington, NM 87401

Ph (505) 632-0615 Fx (505) 632-1865

Three Springs • 65 Mercado Street, Suite 115, Durango, CO 81301

Ph (970) 259-0615 Fr (800) 362-1879

 envirotech-inc.com
 laboratory@envirotech-inc.com



Coastal Chemical
PO Box 820
Abbeville LA, 70511-0820

Project Name: Coastal Chemical Plant
Project Number: 95007-0025
Project Manager: Lee Hamm

Reported:
04-Apr-13 15:32

TCLP Base Neutrals by 8270 - Quality Control

Envirotech Analytical Laboratory

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
---------	--------	-----------------	-------	-------------	---------------	------	-------------	-----	-----------	-------

Batch 1313034 - Sep Funnel Liquid-Liquid Extraction EPA 3510C

Blank (1313034-BLK1)

Prepared: 28-Mar-13 Analyzed: 29-Mar-13

Pyridine	ND	0.01	mg/L							
1,4-Dichlorobenzene	ND	0.01	"							
Hexachloroethane	ND	0.01	"							
Nitrobenzene	ND	0.01	"							
Hexachlorobutadiene	ND	0.01	"							
2,4-Dinitrotoluene	ND	0.01	"							
Hexachlorobenzene	ND	0.01	"							
Surrogate: 2-Fluorobiphenyl	85.6		"	222		38.5	10-120			

Duplicate (1313034-DUP1)

Source: P303095-01

Prepared: 28-Mar-13 Analyzed: 29-Mar-13

Pyridine	ND	0.01	mg/L		ND				200	
1,4-Dichlorobenzene	ND	0.01	"		ND				200	
Hexachloroethane	ND	0.01	"		ND				200	
Nitrobenzene	ND	0.01	"		ND				200	
Hexachlorobutadiene	ND	0.01	"		ND				200	
2,4-Dinitrotoluene	ND	0.01	"		ND				200	
Hexachlorobenzene	ND	0.01	"		ND				200	
Surrogate: 2-Fluorobiphenyl	52.4		"	114		46.1	10-120			

Partial or incomplete reproduction of this report is prohibited, unless approved by Envirotech, Inc.

5796 US Highway 64, Farmington, NM 87401

Ph (505) 632-0615 Fx (505) 632-1865

Three Springs • 65 Mercado Street, Suite 115, Durango, CO 81301

Ph (970) 259-0615 Fr (800) 362-1879

envirotech-inc.com
laboratory@envirotech-inc.com



Coastal Chemical
PO Box 820
Abbeville LA, 70511-0820

Project Name: Coastal Chemical Plant
Project Number: 95007-0025
Project Manager: Lee Hamm

Reported:
04-Apr-13 15:32

TCLP Phenols by 8270 - Quality Control

Envirotech Analytical Laboratory

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
---------	--------	-----------------	-------	-------------	---------------	------	-------------	-----	-----------	-------

Batch 1313035 - Sep Funnel Liquid-Liquid Extraction EPA 3510C

Blank (1313035-BLK1)

Prepared: 28-Mar-13 Analyzed: 29-Mar-13

o-Cresol	ND	0.01	mg/L							
m,p-Cresols	ND	0.01	"							
2,4,6-Trichlorophenol	ND	0.01	"							
2,4,5-Trichlorophenol	ND	0.01	"							
Pentachlorophenol	ND	0.01	"							
Surrogate: 2-Fluorophenol	46.6		"	100		46.6	20-120			
Surrogate: 2,4,6-Tribromophenol	81.5		"	100		81.5	20-120			

Duplicate (1313035-DUP1)

Source: P303095-01

Prepared: 28-Mar-13 Analyzed: 29-Mar-13

o-Cresol	ND	0.01	mg/L		ND			30		A-01
m,p-Cresols	ND	0.01	"		ND			30		A-01
2,4,6-Trichlorophenol	ND	0.01	"		ND			30		A-01
2,4,5-Trichlorophenol	ND	0.01	"		ND			30		A-01
Pentachlorophenol	ND	0.01	"		ND			30		A-01
Surrogate: 2-Fluorophenol	0.00		"	8.89			20-120			A-01, Surr2
Surrogate: 2,4,6-Tribromophenol	0.00		"	8.89			20-120			A-01, Surr2

Partial or incomplete reproduction of this report is prohibited, unless approved by Envirotech, Inc.

5796 US Highway 64, Farmington, NM 87401

Ph (505) 632-0615 Fx (505) 632-1865

Three Springs • 65 Mercado Street, Suite 115, Durango, CO 81301

Ph (970) 259-0615 Fr (800) 362-1879

envirotech-inc.com
laboratory@envirotech-inc.com



Coastal Chemical
PO Box 820
Abbeville LA, 70511-0820

Project Name: Coastal Chemical Plant
Project Number: 95007-0025
Project Manager: Lee Hamm

Reported:
04-Apr-13 15:32

TCLP Metals - Quality Control
Envirotech Analytical Laboratory

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
---------	--------	-----------------	-------	-------------	---------------	------	-------------	-----	-----------	-------

Batch 1313043 - Metal Water/TCLP Digestion EPA 3015A

Blank (1313043-BLK1)

Prepared: 29-Mar-13 Analyzed: 01-Apr-13

Arsenic	ND	0.01	mg/L
Barium	ND	0.05	"
Cadmium	ND	0.01	"
Chromium	ND	0.01	"
Lead	ND	0.01	"
Mercury	ND	0.01	"
Selenium	ND	0.01	"
Silver	ND	0.01	"

Duplicate (1313043-DUP1)

Source: P303095-01

Prepared: 29-Mar-13 Analyzed: 01-Apr-13

Arsenic	ND	0.01	mg/L	0.17	30
Barium	ND	0.05	"	ND	30
Cadmium	ND	0.01	"	ND	30
Chromium	ND	0.01	"	ND	30
Lead	ND	0.01	"	ND	30
Mercury	ND	0.01	"	ND	30
Selenium	0.01	0.01	"	ND	30
Silver	ND	0.01	"	ND	30

Matrix Spike (1313043-MS1)

Source: P303095-01

Prepared: 29-Mar-13 Analyzed: 01-Apr-13

Arsenic	33.0	1.00	mg/L	27.8	0.17	118	75-125
Barium	485	5.00	"	556	ND	87.3	75-125
Cadmium	27.4	1.00	"	27.8	ND	98.8	75-125
Chromium	48.5	1.00	"	55.6	ND	87.4	75-125
Lead	52.9	1.00	"	55.6	ND	95.2	75-125
Mercury	10.1	1.00	"	11.1	ND	90.8	75-125
Selenium	12.3	1.00	"	11.1	ND	111	75-125
Silver	10.7	1.00	"	11.1	ND	95.9	75-125

Partial or incomplete reproduction of this report is prohibited, unless approved by Envirotech, Inc.

5796 US Highway 64, Farmington, NM 87401

Three Springs • 65 Mercado Street, Suite 115, Durango, CO 81301

Ph (505) 632-0615 Fx (505) 632-1865

Ph (970) 259-0615 Fr (800) 362-1879

envirotech-inc.com
laboratory@envirotech-inc.com

Coastal Chemical
PO Box 820
Abbeville LA, 70511-0820

Project Name: Coastal Chemical Plant
Project Number: 95007-0025
Project Manager: Lee Hamm

Reported:
04-Apr-13 15:32

Notes and Definitions

Surr2 Surrogate recovery was below acceptable limits.
FP1 >95
A-01 Unable to concentrate sample to desired volume
DET Analyte DETECTED
ND Analyte NOT DETECTED at or above the reporting limit
NR Not Reported
dry Sample results reported on a dry weight basis
RPD Relative Percent Difference

Partial or incomplete reproduction of this report is prohibited, unless approved by Envirotech, Inc.

5796 US Highway 64, Farmington, NM 87401

Ph (505) 632-0615 Fx (505) 632-1865

Three Springs • 65 Mercado Street, Suite 115, Durango, CO 81301

Ph (970) 259-0615 Fr (800) 362-1879

envirotech-inc.com
laboratory@envirotech-inc.com



12065 Lebanon Rd.
Mt. Juliet, TN 37122
(615) 758-5858
1-800-767-5859
Fax (615) 758-5859

Tax I.D. 62-0814289

Est. 1970

Lynn Berry
EnviroTech- NM
5796 US. Highway 64
Farmington, NM 87401

Report Summary

Thursday April 04, 2013

Report Number: L627434

Samples Received: 03/28/13

Client Project: 95007-0025

Description: Coastal Chemical Plant

The analytical results in this report are based upon information supplied by you, the client, and are for your exclusive use. If you have any questions regarding this data package, please do not hesitate to call.

Entire Report Reviewed By:

Daphne Richards, ESC Representative

Laboratory Certification Numbers

A2LA - 1461-01, AIHA - 100789, AL - 40660, CA - 01157CA, CT - PH-0197,
FL - E87487, GA - 923, IN - C-TN-01, KY - 90010, KYUST - 0016,
NC - ENV375/DW21704/BIO041, ND - R-140, NJ - TN002, NJ NELAP - TN002,
SC - 84004, TN - 2006, VA - 460132, WV - 233, AZ - 0612,
MN - 047-999-395, NY - 11742, WI - 998093910, NV - TN000032011-1,
TX - T104704245-11-3, OK - 9915, PA - 68-02979, IA Lab #364

Accreditation is only applicable to the test methods specified on each scope of accreditation held by ESC Lab Sciences.

Note: The use of the preparatory EPA Method 3511 is not approved or endorsed by the CA ELAP.

This report may not be reproduced, except in full, without written approval from ESC Lab Sciences. Where applicable, sampling conducted by ESC is performed per guidance provided in laboratory standard operating procedures: 060302, 060303, and 060304.



YOUR LAB OF CHOICE

12065 Lebanon Rd.
Mt. Juliet, TN 37122
(615) 758-5858
1-800-767-5859
Fax (615) 758-5859

Tax I.D. 62-0814289

Est. 1970

REPORT OF ANALYSIS

April 04, 2013

Lynn Berry
EnviroTech- NM
5796 US. Highway 64
Farmington, NM 87401

ESC Sample # : L627434-01

Date Received : March 28, 2013
Description : Coastal Chemical Plant
Sample ID : WASTE WATER-P303095-01

Site ID : 095-01

Collected By : L. Hamm
Collection Date : 03/26/13 09:30

Project # : 95007-0025

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Reactive CN (SW846 7.3.3.2)	BDL	0.125	mg/l	9012B	04/04/13	1
Reactive Sulf. (SW846 7.3.4.1)	BDL	25.	mg/l	9034/9030B	04/02/13	1
Methanol	140	4.0	mg/l	8015M	03/29/13	200
Ethanol	8.6	5.0	mg/l	8015M	03/29/13	50
Volatile Organics						
Acetone	BDL	5.0	mg/l	8260B	03/30/13	100
Acrolein	BDL	5.0	mg/l	8260B	03/30/13	100
Acrylonitrile	BDL	1.0	mg/l	8260B	03/30/13	100
Benzene	BDL	0.10	mg/l	8260B	03/30/13	100
Bromodichloromethane	BDL	0.10	mg/l	8260B	03/30/13	100
Bromoform	BDL	0.10	mg/l	8260B	03/30/13	100
Bromomethane	BDL	0.50	mg/l	8260B	03/30/13	100
Carbon disulfide	BDL	0.10	mg/l	8260B	03/30/13	100
Carbon tetrachloride	BDL	0.10	mg/l	8260B	03/30/13	100
Chlorobenzene	BDL	0.10	mg/l	8260B	03/30/13	100
Chlorodibromomethane	BDL	0.10	mg/l	8260B	03/30/13	100
Chloroethane	BDL	0.50	mg/l	8260B	03/30/13	100
Chloroform	BDL	0.50	mg/l	8260B	03/30/13	100
Chloromethane	BDL	0.25	mg/l	8260B	03/30/13	100
1,2-Dibromoethane	BDL	0.10	mg/l	8260B	03/30/13	100
1,2-Dibromo-3-Chloropropane	BDL	0.50	mg/l	8260B	03/30/13	100
Dibromomethane	BDL	0.10	mg/l	8260B	03/30/13	100
1,2-Dichlorobenzene	BDL	0.10	mg/l	8260B	03/30/13	100
1,3-Dichlorobenzene	BDL	0.10	mg/l	8260B	03/30/13	100
1,4-Dichlorobenzene	BDL	0.10	mg/l	8260B	03/30/13	100
Dichlorodifluoromethane	BDL	0.50	mg/l	8260B	03/30/13	100
1,1-Dichloroethane	BDL	0.10	mg/l	8260B	03/30/13	100
1,2-Dichloroethane	BDL	0.10	mg/l	8260B	03/30/13	100
1,1-Dichloroethene	BDL	0.10	mg/l	8260B	03/30/13	100
cis-1,2-Dichloroethene	BDL	0.10	mg/l	8260B	03/30/13	100
trans-1,2-Dichloroethene	BDL	0.10	mg/l	8260B	03/30/13	100
1,2-Dichloropropane	BDL	0.10	mg/l	8260B	03/30/13	100
cis-1,3-Dichloropropene	BDL	0.10	mg/l	8260B	03/30/13	100
trans-1,3-Dichloropropene	BDL	0.10	mg/l	8260B	03/30/13	100
Ethylbenzene	1.7	0.10	mg/l	8260B	03/30/13	100
2-Hexanone	BDL	1.0	mg/l	8260B	03/30/13	100
Iodomethane	BDL	1.0	mg/l	8260B	03/30/13	100
2-Butanone (MEK)	BDL	1.0	mg/l	8260B	03/30/13	100
Methylene Chloride	BDL	0.50	mg/l	8260B	03/30/13	100
4-Methyl-2-pentanone (MIBK)	BDL	1.0	mg/l	8260B	03/30/13	100
Pentachloroethane	BDL	0.50	mg/l	8260B	03/30/13	100

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit (PQL)

Page 2 of 12



YOUR LAB OF CHOICE

12065 Lebanon Rd.
Mt. Juliet, TN 37122
(615) 758-5858
1-800-767-5859
Fax (615) 758-5859

Tax I.D. 62-0814289

Est. 1970

REPORT OF ANALYSIS

Lynn Berry
EnviroTech- NM
5796 US. Highway 64
Farmington, NM 87401

April 04, 2013

Date Received : March 28, 2013
Description : Coastal Chemical Plant
Sample ID : WASTE WATER-P303095-01
Collected By : L. Hamm
Collection Date : 03/26/13 09:30

ESC Sample # : L627434-01

Site ID : 095-01

Project # : 95007-0025

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Styrene	BDL	0.10	mg/l	8260B	03/30/13	100
1,1,2,2-Tetrachloroethane	BDL	0.10	mg/l	8260B	03/30/13	100
1,1,1,2-Tetrachloroethane	BDL	0.10	mg/l	8260B	03/30/13	100
Tetrachloroethene	BDL	0.10	mg/l	8260B	03/30/13	100
Toluene	2.3	0.50	mg/l	8260B	03/30/13	100
1,1,1-Trichloroethane	BDL	0.10	mg/l	8260B	03/30/13	100
1,1,2-Trichloroethane	BDL	0.10	mg/l	8260B	03/30/13	100
Trichloroethene	BDL	0.10	mg/l	8260B	03/30/13	100
Trichlorofluoromethane	BDL	0.50	mg/l	8260B	03/30/13	100
1,2,3-Trichloropropane	BDL	0.25	mg/l	8260B	03/30/13	100
Vinyl acetate	BDL	1.0	mg/l	8260B	03/30/13	100
Vinyl chloride	BDL	0.10	mg/l	8260B	03/30/13	100
Xylenes, Total	13.	0.30	mg/l	8260B	03/30/13	100
Acetonitrile	BDL	5.0	mg/l	8260B	03/30/13	100
Allyl chloride	BDL	0.50	mg/l	8260B	03/30/13	100
Chloroprene	BDL	5.0	mg/l	8260B	03/30/13	100
trans-1,4-Dichloro-2-butene	BDL	0.25	mg/l	8260B	03/30/13	100
Isobutanol	BDL	10.	mg/l	8260B	03/30/13	100
1,4-Dioxane	BDL	10.	mg/l	8260B	04/01/13	100
Methacrylonitrile	BDL	5.0	mg/l	8260B	03/30/13	100
Methyl methacrylate	BDL	0.50	mg/l	8260B	03/30/13	100
Ethyl methacrylate	BDL	0.50	mg/l	8260B	03/30/13	100
Propionitrile	BDL	5.0	mg/l	8260B	03/30/13	100
Surrogate Recovery						
Toluene-d8	96.8		% Rec.	8260B	03/30/13	100
Dibromofluoromethane	106.		% Rec.	8260B	03/30/13	100
a,a,a-Trifluorotoluene	105.		% Rec.	8260B	03/30/13	100
4-Bromofluorobenzene	99.4		% Rec.	8260B	03/30/13	100
Volatile Organics						
2-propanol	6.3	2.5	mg/l	8260B	04/02/13	100
Surrogate Recovery						

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit (PQL)

Note:

The reported analytical results relate only to the sample submitted.

This report shall not be reproduced, except in full, without the written approval from ESC.

Reported: 04/04/13 15:32 Printed: 04/04/13 15:46

Page 3 of 12

Attachment A
List of Analytes with QC Qualifiers

Sample Number	Work Group	Sample Type	Analyte	Run ID	Qualifier
L627434-01	WG653691	SAMP	1,2-Dibromo-3-Chloropropane	R2600338	J3

Attachment B
Explanation of QC Qualifier Codes

Qualifier	Meaning
J3	The associated batch QC was outside the established quality control range for precision.

Qualifier Report Information

ESC utilizes sample and result qualifiers as set forth by the EPA Contract Laboratory Program and as required by most certifying bodies including NELAP. In addition to the EPA qualifiers adopted by ESC, we have implemented ESC qualifiers to provide more information pertaining to our analytical results. Each qualifier is designated in the qualifier explanation as either EPA or ESC. Data qualifiers are intended to provide the ESC client with more detailed information concerning the potential bias of reported data. Because of the wide range of constituents and variety of matrices incorporated by most EPA methods, it is common for some compounds to fall outside of established ranges. These exceptions are evaluated and all reported data is valid and useable "unless qualified as 'R' (Rejected)."

Definitions

- Accuracy - The relationship of the observed value of a known sample to the true value of a known sample. Represented by percent recovery and relevant to samples such as: control samples, matrix spike recoveries, surrogate recoveries, etc.
- Precision - The agreement between a set of samples or between duplicate samples. Relates to how close together the results are and is represented by Relative Percent Difference.
- Surrogate - Organic compounds that are similar in chemical composition, extraction, and chromatography to analytes of interest. The surrogates are used to determine the probable response of the group of analytes that are chemically related to the surrogate compound. Surrogates are added to the sample and carried through all stages of preparation and analyses.
- TIC - Tentatively Identified Compound: Compounds detected in samples that are not target compounds, internal standards, system monitoring compounds, or surrogates.



YOUR LAB OF CHOICE

EnviroTech- NM
Lynn Berry
5796 US. Highway 64
Farmington, NM 87401

Quality Assurance Report
Level II

L627434

12065 Lebanon Rd.
Mt. Juliet, TN 37122
(615) 758-5858
1-800-767-5859
Fax (615) 758-5859

Tax I.D. 62-0814289

Est. 1970

April 04, 2013

Analyte	Result	Laboratory Blank Units	% Rec	Limit	Batch	Date Analyzed
1,1,1,2-Tetrachloroethane	< .001	mg/l			WG653691	03/30/13 12:08
1,1,1-Trichloroethane	< .001	mg/l			WG653691	03/30/13 12:08
1,1,2,2-Tetrachloroethane	< .001	mg/l			WG653691	03/30/13 12:08
1,1,2-Trichloroethane	< .001	mg/l			WG653691	03/30/13 12:08
1,1-Dichloroethane	< .001	mg/l			WG653691	03/30/13 12:08
1,1-Dichloroethene	< .001	mg/l			WG653691	03/30/13 12:08
1,2,3-Trichloropropane	< .001	mg/l			WG653691	03/30/13 12:08
1,2-Dibromo-3-Chloropropane	< .005	mg/l			WG653691	03/30/13 12:08
1,2-Dibromoethane	< .001	mg/l			WG653691	03/30/13 12:08
1,2-Dichlorobenzene	< .001	mg/l			WG653691	03/30/13 12:08
1,2-Dichloroethane	< .001	mg/l			WG653691	03/30/13 12:08
1,2-Dichloropropane	< .001	mg/l			WG653691	03/30/13 12:08
1,3-Dichlorobenzene	< .001	mg/l			WG653691	03/30/13 12:08
1,4-Dichlorobenzene	< .001	mg/l			WG653691	03/30/13 12:08
2-Butanone (MEK)	< .01	mg/l			WG653691	03/30/13 12:08
2-Hexanone	< .01	mg/l			WG653691	03/30/13 12:08
4-Methyl-2-pentanone (MIBK)	< .01	mg/l			WG653691	03/30/13 12:08
Acetone	< .05	mg/l			WG653691	03/30/13 12:08
Acetonitrile	< .05	mg/l			WG653691	03/30/13 12:08
Acrolein	< .025	mg/l			WG653691	03/30/13 12:08
Acrylonitrile	< .01	mg/l			WG653691	03/30/13 12:08
Allyl chloride	< .005	mg/l			WG653691	03/30/13 12:08
Benzene	< .001	mg/l			WG653691	03/30/13 12:08
Bromodichloromethane	< .001	mg/l			WG653691	03/30/13 12:08
Bromoform	< .001	mg/l			WG653691	03/30/13 12:08
Bromomethane	< .005	mg/l			WG653691	03/30/13 12:08
Carbon disulfide	< .001	mg/l			WG653691	03/30/13 12:08
Carbon tetrachloride	< .001	mg/l			WG653691	03/30/13 12:08
Chlorobenzene	< .001	mg/l			WG653691	03/30/13 12:08
Chlorodibromomethane	< .001	mg/l			WG653691	03/30/13 12:08
Chloroethane	< .005	mg/l			WG653691	03/30/13 12:08
Chloroform	< .005	mg/l			WG653691	03/30/13 12:08
Chloromethane	< .0025	mg/l			WG653691	03/30/13 12:08
Chloroprene	< .05	mg/l			WG653691	03/30/13 12:08
cis-1,2-Dichloroethene	< .001	mg/l			WG653691	03/30/13 12:08
cis-1,3-Dichloropropene	< .001	mg/l			WG653691	03/30/13 12:08
Dibromomethane	< .001	mg/l			WG653691	03/30/13 12:08
Dichlorodifluoromethane	< .005	mg/l			WG653691	03/30/13 12:08
Ethyl methacrylate	< .005	mg/l			WG653691	03/30/13 12:08
Ethylbenzene	< .001	mg/l			WG653691	03/30/13 12:08
Iodomethane	< .01	mg/l			WG653691	03/30/13 12:08
Isobutanol	< .1	mg/l			WG653691	03/30/13 12:08
Methacrylonitrile	< .05	mg/l			WG653691	03/30/13 12:08
Methyl methacrylate	< .005	mg/l			WG653691	03/30/13 12:08
Methylene Chloride	< .005	mg/l			WG653691	03/30/13 12:08
Pentachloroethane	< .005	mg/l			WG653691	03/30/13 12:08
Propionitrile	< .05	mg/l			WG653691	03/30/13 12:08
Styrene	< .001	mg/l			WG653691	03/30/13 12:08
Tetrachloroethene	< .001	mg/l			WG653691	03/30/13 12:08
Toluene	< .005	mg/l			WG653691	03/30/13 12:08
trans-1,2-Dichloroethene	< .001	mg/l			WG653691	03/30/13 12:08
trans-1,3-Dichloropropene	< .001	mg/l			WG653691	03/30/13 12:08
trans-1,4-Dichloro-2-butene	< .0025	mg/l			WG653691	03/30/13 12:08
Trichloroethene	< .001	mg/l			WG653691	03/30/13 12:08
Trichlorofluoromethane	< .005	mg/l			WG653691	03/30/13 12:08
Vinyl acetate	< .01	mg/l			WG653691	03/30/13 12:08
Vinyl chloride	< .001	mg/l			WG653691	03/30/13 12:08
Xylenes, Total	< .003	mg/l			WG653691	03/30/13 12:08
4-Bromofluorobenzene		% Rec.	98.44	82-120	WG653691	03/30/13 12:08

* Performance of this Analyte is outside of established criteria.

For additional information, please see Attachment A 'List of Analytes with QC Qualifiers.'



YOUR LAB OF CHOICE

EnviroTech- NM
Lynn Berry
5796 US. Highway 64
Farmington, NM 87401

Quality Assurance Report
Level II

L627434

12065 Lebanon Rd.
Mt. Juliet, TN 37122
(615) 758-5858
1-800-767-5859
Fax (615) 758-5859

Tax I.D. 62-0814289

Est. 1970

April 04, 2013

Analyte	Result	Laboratory Blank		Limit	Batch	Date Analyzed
		Units	% Rec			
Dibromofluoromethane		% Rec.	97.22	82-126		03/30/13 12:08
Toluene-d8		% Rec.	93.24	92-112		03/30/13 12:08
a,a,a-Trifluorotoluene		% Rec.	100.3	90-116		03/30/13 12:08
Ethanol	< .1	mg/l			WG653575	03/29/13 10:45
Methanol	< .02	mg/l			WG653575	03/29/13 10:45
Reactive Sulf. (SW846 7.3.4.1)	< 25	mg/l			WG654165	04/02/13 15:26
Reactive CN (SW846 7.3.3.2)	< .125	mg/l			WG654167	04/04/13 13:19

Analyte	Units	Result	Duplicate		RPD	Limit	Ref Samp	Batch
			Duplicate					
Reactive Sulf. (SW846 7.3.4.1)	mg/l	0	0		0	20	L627434-01	WG654165
Reactive CN (SW846 7.3.3.2)	mg/l	0	0		0	20	L627434-01	WG654167

Analyte	Units	Laboratory Control Sample		% Rec	Limit	Batch
		Known Val	Result			
1,1,1,2-Tetrachloroethane	mg/l	.025	0.0257	103.	77-128	WG653691
1,1,1-Trichloroethane	mg/l	.025	0.0260	104.	71-126	WG653691
1,1,2,2-Tetrachloroethane	mg/l	.025	0.0261	105.	78-130	WG653691
1,1,2-Trichloroethane	mg/l	.025	0.0246	98.2	81-121	WG653691
1,1-Dichloroethane	mg/l	.025	0.0232	92.9	73-123	WG653691
1,1-Dichloroethene	mg/l	.025	0.0268	107.	54-134	WG653691
1,2,3-Trichloropropane	mg/l	.025	0.0238	95.1	68-130	WG653691
1,2-Dibromo-3-Chloropropane	mg/l	.025	0.0272	109.	55-142	WG653691
1,2-Dibromoethane	mg/l	.025	0.0261	104.	78-124	WG653691
1,2-Dichlorobenzene	mg/l	.025	0.0245	97.9	82-121	WG653691
1,2-Dichloroethane	mg/l	.025	0.0242	96.8	69-128	WG653691
1,2-Dichloropropane	mg/l	.025	0.0229	91.7	77-121	WG653691
1,3-Dichlorobenzene	mg/l	.025	0.0250	99.9	77-127	WG653691
1,4-Dichlorobenzene	mg/l	.025	0.0239	95.5	79-117	WG653691
2-Butanone (MEK)	mg/l	.125	0.0891	71.3	58-144	WG653691
2-Hexanone	mg/l	.125	0.113	90.3	62-144	WG653691
4-Methyl-2-pentanone (MIBK)	mg/l	.125	0.121	96.9	58-147	WG653691
Acetone	mg/l	.125	0.0785	62.8	49-153	WG653691
Acrolein	mg/l	.125	0.204	163.	10-181	WG653691
Acrylonitrile	mg/l	.125	0.128	102.	53-153	WG653691
Benzene	mg/l	.025	0.0242	96.6	72-119	WG653691
Bromodichloromethane	mg/l	.025	0.0242	96.8	75-127	WG653691
Bromoform	mg/l	.025	0.0264	106.	61-136	WG653691
Bromomethane	mg/l	.025	0.0360	144.	42-172	WG653691
Carbon disulfide	mg/l	.025	0.0252	101.	19-150	WG653691
Carbon tetrachloride	mg/l	.025	0.0272	109.	63-129	WG653691
Chlorobenzene	mg/l	.025	0.0248	99.3	78-123	WG653691
Chlorodibromomethane	mg/l	.025	0.0251	100.	73-128	WG653691
Chloroethane	mg/l	.025	0.0304	122.	52-164	WG653691
Chloroform	mg/l	.025	0.0253	101.	76-122	WG653691
Chloromethane	mg/l	.025	0.0230	92.0	50-141	WG653691
cis-1,2-Dichloroethene	mg/l	.025	0.0252	101.	75-121	WG653691
cis-1,3-Dichloropropane	mg/l	.025	0.0236	94.4	74-124	WG653691
Dibromomethane	mg/l	.025	0.0250	100.	77-124	WG653691
Dichlorodifluoromethane	mg/l	.025	0.0290	116.	33-173	WG653691
Ethylbenzene	mg/l	.025	0.0252	101.	77-124	WG653691

* Performance of this Analyte is outside of established criteria.

For additional information, please see Attachment A 'List of Analytes with QC Qualifiers.'



YOUR LAB OF CHOICE

EnviroTech- NM
Lynn Berry
5796 US. Highway 64
Farmington, NM 87401

Quality Assurance Report
Level II

L627434

12065 Lebanon Rd.
Mt. Juliet, TN 37122
(615) 758-5858
1-800-767-5859
Fax (615) 758-5859

Tax I.D. 62-0814289

Est. 1970

April 04, 2013

Analyte	Units	Laboratory Known Val	Control Sample Result	% Rec	Limit	Batch
Iodomethane	mg/l	.125	0.129	103.	54-139	WG653691
Methylene Chloride	mg/l	.025	0.0228	91.3	67-122	WG653691
Styrene	mg/l	.025	0.0249	99.6	69-145	WG653691
Tetrachloroethene	mg/l	.025	0.0270	108.	69-131	WG653691
Toluene	mg/l	.025	0.0237	94.7	75-114	WG653691
trans-1,2-Dichloroethene	mg/l	.025	0.0247	98.9	63-127	WG653691
trans-1,3-Dichloropropene	mg/l	.025	0.0254	102.	69-124	WG653691
trans-1,4-Dichloro-2-butene	mg/l	.025	0.0243	97.0	58-137	WG653691
Trichloroethene	mg/l	.025	0.0252	101.	69-131	WG653691
Trichlorofluoromethane	mg/l	.025	0.0315	126.	53-161	WG653691
Vinyl acetate	mg/l	.125	0.115	92.4	47-161	WG653691
Vinyl chloride	mg/l	.025	0.0255	102.	55-142	WG653691
Xylenes, Total	mg/l	.075	0.0757	101.	77-123	WG653691
4-Bromofluorobenzene				98.69	82-120	WG653691
Dibromofluoromethane				103.3	82-126	WG653691
Toluene-d8				97.76	92-112	WG653691
a,a,a-Trifluorotoluene				103.6	90-116	WG653691
Ethanol	mg/l	.5	0.494	98.7	70-130	WG653575
Methanol	mg/l	.5	0.455	90.9	70-130	WG653575
Reactive Sulf. (SW846 7.3.4.1)	mg/l	100	95.0	95.0	70-130	WG654165

Analyte	Units	Laboratory Result	Control Ref	Sample %Rec	Duplicate	Limit	RPD	Limit	Batch
1,1,1,2-Tetrachloroethane	mg/l	0.0263	0.0257	105.		77-128	2.52	20	WG653691
1,1,1-Trichloroethane	mg/l	0.0235	0.0260	94.0		71-126	10.3	20	WG653691
1,1,2,2-Tetrachloroethane	mg/l	0.0260	0.0261	104.		78-130	0.540	20	WG653691
1,1,2-Trichloroethane	mg/l	0.0248	0.0246	99.0		81-121	0.840	20	WG653691
1,1-Dichloroethane	mg/l	0.0238	0.0232	95.0		73-123	2.29	20	WG653691
1,1-Dichloroethene	mg/l	0.0273	0.0268	109.		54-134	1.85	20	WG653691
1,2,3-Trichloropropane	mg/l	0.0232	0.0238	93.0		68-130	2.56	20	WG653691
1,2-Dibromo-3-Chloropropane	mg/l	0.0259	0.0272	104.		55-142	5.03	20	WG653691
1,2-Dibromoethane	mg/l	0.0256	0.0261	102.		78-124	1.61	20	WG653691
1,2-Dichlorobenzene	mg/l	0.0244	0.0245	98.0		82-121	0.310	20	WG653691
1,2-Dichloroethane	mg/l	0.0221	0.0242	88.0		69-128	9.01	20	WG653691
1,2-Dichloropropane	mg/l	0.0231	0.0229	92.0		77-121	0.570	20	WG653691
1,3-Dichlorobenzene	mg/l	0.0255	0.0250	102.		77-127	2.12	20	WG653691
1,4-Dichlorobenzene	mg/l	0.0235	0.0239	94.0		79-117	1.74	20	WG653691
2-Butanone (MEK)	mg/l	0.0827	0.0891	66.0		58-144	7.43	20	WG653691
2-Hexanone	mg/l	0.115	0.113	92.0		62-144	1.77	20	WG653691
4-Methyl-2-pentanone (MIBK)	mg/l	0.121	0.121	97.0		58-147	0.210	20	WG653691
Acetone	mg/l	0.0750	0.0785	60.0		49-153	4.53	21	WG653691
Acrolein	mg/l	0.195	0.204	156.		10-181	4.04	30	WG653691
Acrylonitrile	mg/l	0.124	0.128	99.0		53-153	3.11	20	WG653691
Benzene	mg/l	0.0229	0.0242	91.0		72-119	5.51	20	WG653691
Bromodichloromethane	mg/l	0.0247	0.0242	99.0		75-127	2.07	20	WG653691
Bromoform	mg/l	0.0257	0.0264	103.		61-136	2.88	20	WG653691
Bromomethane	mg/l	0.0358	0.0360	143.		42-172	0.650	20	WG653691
Carbon disulfide	mg/l	0.0252	0.0252	101.		19-150	0.120	20	WG653691
Carbon tetrachloride	mg/l	0.0246	0.0272	98.0		63-129	10.1	20	WG653691
Chlorobenzene	mg/l	0.0254	0.0248	101.		78-123	2.18	20	WG653691
Chlorodibromomethane	mg/l	0.0257	0.0251	103.		73-128	2.54	20	WG653691
Chloroethane	mg/l	0.0323	0.0304	129.		52-164	6.01	20	WG653691
Chloroform	mg/l	0.0235	0.0253	94.0		76-122	7.24	20	WG653691
Chloromethane	mg/l	0.0254	0.0230	102.		50-141	10.0	20	WG653691

* Performance of this Analyte is outside of established criteria.

For additional information, please see Attachment A 'List of Analytes with QC Qualifiers.'



YOUR LAB OF CHOICE

EnviroTech- NM
Lynn Berry
5796 US. Highway 64
Farmington, NM 87401

Quality Assurance Report
Level II

L627434

12065 Lebanon Rd.
Mt. Juliet, TN 37122
(615) 758-5858
1-800-767-5859
Fax (615) 758-5859

Tax I.D. 62-0814289

Est. 1970

April 04, 2013

Analyte	Units	Laboratory Result	Control Ref	Sample %Rec	Duplicate	Limit	RPD	Limit	Batch
cis-1,2-Dichloroethene	mg/l	0.0240	0.0252	96.0		75-121	5.17	20	WG653691
cis-1,3-Dichloropropene	mg/l	0.0237	0.0236	95.0		74-124	0.550	20	WG653691
Dibromomethane	mg/l	0.0242	0.0250	97.0		77-124	3.15	20	WG653691
Dichlorodifluoromethane	mg/l	0.0315	0.0290	126.		33-173	8.15	20	WG653691
Ethylbenzene	mg/l	0.0253	0.0252	101.		77-124	0.190	20	WG653691
Iodomethane	mg/l	0.129	0.129	103.		54-139	0.110	20	WG653691
Methylene Chloride	mg/l	0.0235	0.0228	94.0		67-122	2.68	20	WG653691
Styrene	mg/l	0.0253	0.0249	101.		69-145	1.69	20	WG653691
Tetrachloroethene	mg/l	0.0273	0.0270	109.		69-131	1.11	20	WG653691
Toluene	mg/l	0.0237	0.0237	95.0		75-114	0.0100	20	WG653691
trans-1,2-Dichloroethene	mg/l	0.0246	0.0247	98.0		63-127	0.540	20	WG653691
trans-1,3-Dichloropropene	mg/l	0.0247	0.0254	99.0		69-124	3.07	20	WG653691
trans-1,4-Dichloro-2-butene	mg/l	0.0219	0.0243	88.0		58-137	10.1	20	WG653691
Trichloroethene	mg/l	0.0249	0.0252	100.		69-131	1.23	20	WG653691
Trichlorofluoromethane	mg/l	0.0323	0.0315	129.		53-161	2.72	20	WG653691
Vinyl acetate	mg/l	0.103	0.115	82.0		47-161	11.2	20	WG653691
Vinyl chloride	mg/l	0.0287	0.0255	115.		55-142	11.7	20	WG653691
Xylenes, Total	mg/l	0.0760	0.0757	101.		77-123	0.480	20	WG653691
4-Bromofluorobenzene				99.41		82-120			WG653691
Dibromofluoromethane				97.20		82-126			WG653691
Toluene-d8				98.91		92-112			WG653691
a,a,a-Trifluorotoluene				103.1		90-116			WG653691
Ethanol	mg/l	0.499	0.494	100.		70-130	0.970	20	WG653575
Methanol	mg/l	0.456	0.455	91.0		70-130	0.320	20	WG653575
Reactive Sulf. (SW846 7.3.4.1)	mg/l	110.	95.0	110.		70-130	14.6	20	WG654165

Analyte	Units	MS Res	Ref Res	TV	% Rec	Limit	Ref Samp	Batch
1,1,1,2-Tetrachloroethane	mg/l	2.48	0	.025	99.1	71-130	L627434-01	WG653691
1,1,1-Trichloroethane	mg/l	2.39	0	.025	95.5	58-137	L627434-01	WG653691
1,1,2,2-Tetrachloroethane	mg/l	2.17	0	.025	86.7	64-149	L627434-01	WG653691
1,1,2-Trichloroethane	mg/l	2.21	0	.025	88.3	73-128	L627434-01	WG653691
1,1-Dichloroethane	mg/l	2.33	0	.025	93.3	58-133	L627434-01	WG653691
1,1-Dichloroethene	mg/l	2.67	0	.025	107.	32-152	L627434-01	WG653691
1,2,3-Trichloropropane	mg/l	2.02	0	.025	80.6	74-137	L627434-01	WG653691
1,2-Dibromo-3-Chloropropane	mg/l	2.15	0	.025	86.0	55-148	L627434-01	WG653691
1,2-Dibromoethane	mg/l	2.30	0	.025	92.0	71-129	L627434-01	WG653691
1,2-Dichlorobenzene	mg/l	2.35	0	.025	94.2	75-125	L627434-01	WG653691
1,2-Dichloroethane	mg/l	1.94	0	.025	77.5	59-135	L627434-01	WG653691
1,2-Dichloropropane	mg/l	2.11	0	.025	84.5	68-126	L627434-01	WG653691
1,3-Dichlorobenzene	mg/l	2.53	0	.025	101.	69-131	L627434-01	WG653691
1,4-Dichlorobenzene	mg/l	2.33	0	.025	93.2	70-123	L627434-01	WG653691
2-Butanone (MEK)	mg/l	9.02	0	.125	72.2	51-149	L627434-01	WG653691
2-Hexanone	mg/l	11.8	0	.125	94.4	58-148	L627434-01	WG653691
4-Methyl-2-pentanone (MIBK)	mg/l	10.6	0	.125	84.6	53-154	L627434-01	WG653691
Acetone	mg/l	8.80	0.335	.125	67.7	34-146	L627434-01	WG653691
Acrolein	mg/l	13.4	0	.125	107.	10-189	L627434-01	WG653691
Acrylonitrile	mg/l	9.56	0	.125	76.4	49-162	L627434-01	WG653691
Benzene	mg/l	2.23	0.0402	.025	87.6	51-134	L627434-01	WG653691
Bromodichloromethane	mg/l	2.13	0	.025	85.2	67-132	L627434-01	WG653691
Bromoform	mg/l	2.26	0	.025	90.4	59-137	L627434-01	WG653691
Bromomethane	mg/l	3.70	0	.025	148.	23-177	L627434-01	WG653691
Carbon disulfide	mg/l	2.75	0	.025	110.	10-165	L627434-01	WG653691
Carbon tetrachloride	mg/l	2.48	0	.025	99.2	49-140	L627434-01	WG653691

* Performance of this Analyte is outside of established criteria.

For additional information, please see Attachment A 'List of Analytes with QC Qualifiers.'



YOUR LAB OF CHOICE

EnviroTech- NM
Lynn Berry
5796 US, Highway 64
Farmington, NM 87401

Quality Assurance Report
Level II

L627434

12065 Lebanon Rd.
Mt. Juliet, TN 37122
(615) 758-5858
1-800-767-5859
Fax (615) 758-5859

Tax I.D. 62-0814289

Est. 1970

April 04, 2013

Analyte	Units	MS Res	Matrix Spike Ref Res	TV	% Rec	Limit	Ref Samp	Batch
Chlorobenzene	mg/l	2.50	0	.025	99.9	69-126	L627434-01	WG653691
Chlorodibromomethane	mg/l	2.32	0	.025	92.7	68-130	L627434-01	WG653691
Chloroethane	mg/l	3.07	0	.025	123.	32-177	L627434-01	WG653691
Chloroform	mg/l	2.26	0.0130	.025	90.1	64-130	L627434-01	WG653691
Chloromethane	mg/l	2.52	0	.025	101.	27-155	L627434-01	WG653691
cis-1,2-Dichloroethene	mg/l	2.25	0	.025	89.8	54-137	L627434-01	WG653691
cis-1,3-Dichloropropene	mg/l	2.16	0	.025	86.3	63-127	L627434-01	WG653691
Dibromomethane	mg/l	2.09	0	.025	83.6	68-131	L627434-01	WG653691
Dichlorodifluoromethane	mg/l	3.36	0	.025	134.	16-188	L627434-01	WG653691
Ethylbenzene	mg/l	4.51	1.66	.025	114.	64-135	L627434-01	WG653691
Iodomethane	mg/l	10.9	0	.125	86.9	38-149	L627434-01	WG653691
Methylene Chloride	mg/l	2.17	0.102	.025	82.6	52-130	L627434-01	WG653691
Styrene	mg/l	2.69	0	.025	108.	58-152	L627434-01	WG653691
Tetrachloroethene	mg/l	2.68	0	.025	107.	56-139	L627434-01	WG653691
Toluene	mg/l	4.93	2.33	.025	104.	61-126	L627434-01	WG653691
trans-1,2-Dichloroethene	mg/l	2.42	0	.025	96.9	45-137	L627434-01	WG653691
trans-1,3-Dichloropropene	mg/l	2.17	0	.025	86.8	59-130	L627434-01	WG653691
trans-1,4-Dichloro-2-butene	mg/l	1.92	0	.025	76.7	51-145	L627434-01	WG653691
Trichloroethene	mg/l	2.34	0	.025	93.4	40-155	L627434-01	WG653691
Trichlorofluoromethane	mg/l	3.35	0	.025	134.	35-177	L627434-01	WG653691
Vinyl acetate	mg/l	10.3	0	.125	82.5	36-186	L627434-01	WG653691
Vinyl chloride	mg/l	2.87	0	.025	115.	32-159	L627434-01	WG653691
Xylenes, Total	mg/l	21.8	12.7	.075	122.	64-133	L627434-01	WG653691
4-Bromofluorobenzene					100.6	82-120		WG653691
Dibromofluoromethane					94.49	82-126		WG653691
Toluene-d8					97.19	92-112		WG653691
a,a,a-Trifluorotoluene					102.6	90-116		WG653691
Ethanol	mg/l	0.560	0.0434	.5	103.	70-130	L626347-05	WG653575
Methanol	mg/l	0.499	0	.5	99.7	70-130	L626347-05	WG653575

Analyte	Units	MSD	Matrix Spike Duplicate Ref	%Rec	Limit	RPD	Limit	Ref Samp	Batch
1,1,1,2-Tetrachloroethane	mg/l	2.64	2.48	105.	71-130	6.23	20	L627434-01	WG653691
1,1,1-Trichloroethane	mg/l	2.40	2.39	95.8	58-137	0.340	20	L627434-01	WG653691
1,1,2,2-Tetrachloroethane	mg/l	2.49	2.17	99.8	64-149	14.0	20	L627434-01	WG653691
1,1,2-Trichloroethane	mg/l	2.49	2.21	99.6	73-128	12.0	20	L627434-01	WG653691
1,1-Dichloroethane	mg/l	2.28	2.33	91.2	58-133	2.33	20	L627434-01	WG653691
1,1-Dichloroethene	mg/l	2.83	2.67	113.	32-152	5.65	20	L627434-01	WG653691
1,2,3-Trichloropropane	mg/l	2.29	2.02	91.5	74-137	12.7	20	L627434-01	WG653691
1,2-Dibromo-3-Chloropropane	mg/l	2.71	2.15	108.	55-148	23.0*	22	L627434-01	WG653691
1,2-Dibromoethane	mg/l	2.52	2.30	101.	71-129	9.13	20	L627434-01	WG653691
1,2-Dichlorobenzene	mg/l	2.51	2.35	100.	75-125	6.49	20	L627434-01	WG653691
1,2-Dichloroethane	mg/l	2.20	1.94	87.9	59-135	12.7	20	L627434-01	WG653691
1,2-Dichloropropane	mg/l	2.29	2.11	91.7	68-126	8.17	20	L627434-01	WG653691
1,3-Dichlorobenzene	mg/l	2.61	2.53	104.	69-131	3.01	20	L627434-01	WG653691
1,4-Dichlorobenzene	mg/l	2.46	2.33	98.5	70-123	5.55	20	L627434-01	WG653691
2-Butanone (MEK)	mg/l	11.1	9.02	88.8	51-149	20.7	22	L627434-01	WG653691
2-Hexanone	mg/l	13.3	11.8	106.	58-148	12.1	24	L627434-01	WG653691
4-Methyl-2-pentanone (MIBK)	mg/l	12.7	10.6	101.	53-154	17.9	21	L627434-01	WG653691
Acetone	mg/l	9.46	8.80	73.0	34-146	7.21	22	L627434-01	WG653691
Acrolein	mg/l	14.1	13.4	113.	10-189	4.89	30	L627434-01	WG653691
Acrylonitrile	mg/l	11.1	9.56	88.7	49-162	14.8	20	L627434-01	WG653691
Benzene	mg/l	2.32	2.23	91.3	51-134	4.07	20	L627434-01	WG653691
Bromodichloromethane	mg/l	2.34	2.13	93.7	67-132	9.47	20	L627434-01	WG653691
Bromoform	mg/l	2.53	2.26	101.	59-137	11.4	20	L627434-01	WG653691
Bromomethane	mg/l	3.68	3.70	147.	23-177	0.420	21	L627434-01	WG653691

* Performance of this Analyte is outside of established criteria.

For additional information, please see Attachment A 'List of Analytes with QC Qualifiers.'



YOUR LAB OF CHOICE

EnviroTech- NM
Lynn Berry
5796 US. Highway 64
Farmington, NM 87401

Quality Assurance Report
Level II

L627434

12065 Lebanon Rd.
Mt. Juliet, TN 37122
(615) 758-5858
1-800-767-5859
Fax (615) 758-5859

Tax I.D. 62-0814289

Est. 1970

April 04, 2013

Analyte	Units	MSD	Matrix Spike Duplicate		Limit	RPD	Limit	Ref Samp	Batch
			Ref	%Rec					
Carbon disulfide	mg/l	2.90	2.75	116.	10-165	5.20	22	L627434-01	WG653691
Carbon tetrachloride	mg/l	2.51	2.48	100.	49-140	1.29	20	L627434-01	WG653691
Chlorobenzene	mg/l	2.56	2.50	102.	69-126	2.28	20	L627434-01	WG653691
Chlorodibromomethane	mg/l	2.55	2.32	102.	68-130	9.56	20	L627434-01	WG653691
Chloroethane	mg/l	3.15	3.07	126.	32-177	2.46	21	L627434-01	WG653691
Chloroform	mg/l	2.39	2.26	95.0	64-130	5.33	20	L627434-01	WG653691
Chloromethane	mg/l	2.62	2.52	105.	27-155	3.96	20	L627434-01	WG653691
cis-1,2-Dichloroethene	mg/l	2.42	2.25	97.0	54-137	7.66	20	L627434-01	WG653691
cis-1,3-Dichloropropene	mg/l	2.38	2.16	95.1	63-127	9.72	20	L627434-01	WG653691
Dibromomethane	mg/l	2.41	2.09	96.5	68-131	14.3	20	L627434-01	WG653691
Dichlorodifluoromethane	mg/l	3.09	3.36	124.	16-188	8.40	22	L627434-01	WG653691
Ethylbenzene	mg/l	4.50	4.51	113.	64-135	0.220	20	L627434-01	WG653691
Iodomethane	mg/l	11.5	10.9	92.1	38-149	5.79	20	L627434-01	WG653691
Methylene Chloride	mg/l	2.26	2.17	96.2	52-130	4.07	20	L627434-01	WG653691
Styrene	mg/l	2.75	2.69	110.	58-152	2.24	20	L627434-01	WG653691
Tetrachloroethene	mg/l	2.65	2.68	106.	56-139	1.14	20	L627434-01	WG653691
Toluene	mg/l	5.07	4.93	110.	61-126	2.76	20	L627434-01	WG653691
trans-1,2-Dichloroethene	mg/l	2.38	2.42	95.1	45-137	1.87	20	L627434-01	WG653691
trans-1,3-Dichloropropene	mg/l	2.48	2.17	99.1	59-130	13.2	20	L627434-01	WG653691
trans-1,4-Dichloro-2-butene	mg/l	2.19	1.92	87.6	51-145	13.3	24	L627434-01	WG653691
Trichloroethene	mg/l	2.44	2.34	97.6	40-155	4.42	20	L627434-01	WG653691
Trichlorofluoromethane	mg/l	3.41	3.35	136.	35-177	1.60	23	L627434-01	WG653691
Vinyl acetate	mg/l	12.0	10.3	95.9	36-186	15.0	20	L627434-01	WG653691
Vinyl chloride	mg/l	2.79	2.87	111.	32-159	2.78	21	L627434-01	WG653691
Xylenes, Total	mg/l	21.7	21.8	120.	64-133	0.870	20	L627434-01	WG653691
4-Bromofluorobenzene				99.04	82-120				WG653691
Dibromofluoromethane				96.03	82-126				WG653691
Toluene-d8				99.44	92-112				WG653691
a,a,a-Trifluorotoluene				104.2	90-116				WG653691
Ethanol	mg/l	0.489	0.560	89.1	70-130	13.6	20	L626347-05	WG653575
Methanol	mg/l	0.393	0.499	78.5	70-130	23.8*	20	L626347-05	WG653575

Batch number / Run number / Sample number cross reference

WG653691: R2600338: L627434-01
WG653575: R2600458: L627434-01
WG654005: R2600763: L627434-01
WG654165: R2601920: L627434-01
WG654152: R2602197: L627434-01
WG654167: R2603757: L627434-01

* * Calculations are performed prior to rounding of reported values.

* Performance of this Analyte is outside of established criteria.

For additional information, please see Attachment A 'List of Analytes with QC Qualifiers.'



YOUR LAB OF CHOICE

EnviroTech- NM
Lynn Berry
5796 US. Highway 64
Farmington, NM 87401

Quality Assurance Report
Level II

L627434

12065 Lebanon Rd.
Mt. Juliet, TN 37122
(615) 758-5858
1-800-767-5859
Fax (615) 758-5859

Tax I.D. 62-0814289

Est. 1970

April 04, 2013

The data package includes a summary of the analytic results of the quality control samples required by the SW-846 or CWA methods. The quality control samples include a method blank, a laboratory control sample, and the matrix spike/matrix spike duplicate analysis. If a target parameter is outside the method limits, every sample that is effected is flagged with the appropriate qualifier in Appendix B of the analytic report.

Method Blank - an aliquot of reagent water carried through the entire analytic process. The method blank results indicate if any possible contamination exposure during the sample handling, digestion or extraction process, and analysis. Concentrations of target analytes above the reporting limit in the method blank are qualified with the "B" qualifier.

Laboratory Control Sample - is a sample of known concentration that is carried through the digestion/extraction and analysis process. The percent recovery, expressed as a percentage of the theoretical concentration, has statistical control limits indicating that the analytic process is "in control". If a target analyte is outside the control limits for the laboratory control sample or any other control sample, the parameter is flagged with a "J4" qualifier for all effected samples.

Matrix Spike and Matrix Spike Duplicate - is two aliquots of an environmental sample that is spiked with known concentrations of target analytes. The percent recovery of the target analytes also has statistical control limits. If any recoveries that are outside the method control limits, the sample that was selected for matrix spike/matrix spike duplicate analysis is flagged with either a "J5" or a "J6". The relative percent difference (%RPD) between the matrix spike and the matrix spike duplicate recoveries is all calculated. If the RPD is above the method limit, the effected samples are flagged with a "J3" qualifier.

Page 1 of 4

 **ESC**
LAB SCIENCES

12065 Lebanon Road
Mt. Juliet, TN 37122

Phone: (800) 767-5859
Phone: (615) 758-5858
Fax: (615) 758-5859

Isopropanol in water (V8260AP9)
 Methanol in water (MEETAC)
 Reactive sulfide
 Reactive cyanide

66-7434-51

243555128953

Relinquished by: (Signature) <i>William Joe</i>	Date <i>3/27/13</i>	Time <i>13:57</i>	Received by: (Signature)	Samples returned via ☒ FedEx ☐ Courier ☐ UPS	Condition:	(abuse only) <i>JR</i>
Relinquished by: (Signature)	Date:	Time:	Received by: (Signature)	Temp: <i>2.4°C</i>	Bottles Received: <i>5</i>	
Relinquished by: (Signature)	Date:	Time:	Received for lab by: (Signature) <i>Lynn Wooten</i>	Date: <i>3/28/13</i>	Time: <i>0900</i>	pH Checked: ☒ HCF: ☒



NON-CONFORMANCE FORM

Login No.: 627434 M

Date: 3/22/13

Evaluated by: Matt S

Client: ENVIRONMENT

Non-Conformance (check applicable items)

- | | |
|---|---|
| ☐ Parameter(s) past holding time | ☐ Login Clarification Needed |
| ☐ Improper temperature | ☐ Chain of custody is incomplete |
| ☒ Improper container type | ☐ Chain of Custody is missing (see below) |
| ☐ Improper preservation | ☐ Broken container(s) (See below) |
| ☐ Container lid not intact | ☐ Broken container: sufficient sample
volume remains for analysis requested (See below) |

If no COC: Received by _____
Date: _____ Time: _____
Temp: _____ Cont. Rec _____ pH: _____
☐ Fedex ☐ UPS ☐ SWA ☐ Other _____
Tracking # _____

- ☐ Insufficient packing material around container
- ☐ Insufficient packing material inside cooler
- ☐ Improper handling by carrier (FedEx / UPS / Courier)
- ☐ Sample was frozen

Comments: Reactive cyanide, Reactive Sulfide required in plastic.

Login Instructions: UB

TSR Initials: TK

Client informed by call / email / fax / voice mail date: 3/29 time: 12:00

Client contact: Qualify + proceed w/ improper containers

Material Safety Data Sheet

Triethylene Glycol



1. Product and company identification

Common name : Triethylene Glycol
Supplier : Coastal Chemical Company, LLC
 3520 Veterans Memorial Drive
 Abbeville, LA 70510
 website: www.coastalchem.com
 Non-Emergency Phone Number: 800-535-3862 (8:00AM - 5:00PM CST, Monday - Friday)
Synonym : 2,2' - [ETHANEDIYLBIS(OXY)] BIS-ETHANOL
Trade name : TEG, INDUSTRIAL GRADE
Material uses : Dehydration of natural gas.
Manufacturer : Coastal Chemical Company, LLC
 3520 Veterans Memorial Drive
 Abbeville, LA 70510
 24 HOUR EMERGENCY PHONE: CHEMTREC 1-800-424-9300
Code : 93101
MSDS # : GHS000040
Validation date : 11/8/2006.
Print date : 11/8/2006.
Responsible name : Scott Norton
In case of emergency : IN CASE OF EMERGENCY CALL CHEMTREC (24 HOURS) 800-424-9300

2. Hazards identification

Physical state : Colorless, viscous liquid.
Odor : slight to no odor.
OSHA/HCS status : This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).
Emergency overview : Warning!
 HARMFUL IF SWALLOWED. CONTAINS MATERIAL WHICH CAUSES DAMAGE TO THE FOLLOWING ORGANS: BLOOD, KIDNEYS, LIVER, SKIN, EYE, LENS OR CORNEA.
 May cause irritation by all routes of exposure. May cause symptoms of nervous system depression, kidney and liver damage.
Routes of entry : Eye contact. Skin contact. Ingestion. Inhalation.
Potential acute health effects
Eyes : Causes mild to moderate irritation, and transient corneal injury.
Skin : May be absorbed through skin, although not expected to produce toxicity by this route. Brief contact is not irritating.
Inhalation : Exposure to vapor at room temperature is minimal due to low volatility. Vapors or mist, in unusually high concentrations generated from spraying, heating the material, or from exposure in poorly ventilated areas or confined spaces may cause irritation of the nose and throat, headache, nausea, and drowsiness.
Ingestion : Swallowing small amounts incidental to normal handling operations are not likely to cause injury. Swallowing larger amounts may produce symptoms of central nervous system depression including headache, dizziness, nausea, euphoria, loss of equilibrium, drowsiness, visual disturbances, fatigue, unconsciousness and respiratory arrest. May cause abdominal discomfort or diarrhea.

11/8/2006.

GHS000040

Page: 1/9

Powered by



Triethylene Glycol**2. Hazards identification**

- Potential chronic health effects** : **CARCINOGENIC EFFECTS** No components at or above 0.1% are listed by IARC, OSHA, NTP or ACGIH as a carcinogen.
MUTAGENIC EFFECTS Refer to Section 11.
TERATOGENIC EFFECTS Refer to Section 11.
 No adverse chronic human health effects have been reported for Triethylene glycol, Diethylene glycol, and Tetraethylene glycol. Repeated or prolonged exposure to Ethylene glycol may result in kidney damage. May produce nervous system depression symptoms including headache, dizziness, nausea, euphoria, loss of equilibrium, drowsiness, visual disturbances, fatigue, unconsciousness, and respiratory arrest.
- Medical conditions aggravated by over-exposure** : Repeated or prolonged exposure to the substance can produce target organs damage. Any pre-existing disorders or diseases of the skin, liver, and/or kidney can be aggravated by exposure to this material.
- Over-exposure signs/symptoms** : Signs and symptoms of overexposure to this material or its components through breathing, swallowing, and/or passage of the material through the skin may include: stomach or intestinal upset (nausea, vomiting, diarrhea), irritation (nose, throat, airways), central nervous system effects (dizziness, drowsiness, weakness, fatigue, nausea, headache, unconsciousness), pain in abdomen or lower back, acute kidney failure (sudden slowing or stopping of urine production).

See toxicological information (section 11)

3. Composition/information on ingredients

<u>Name</u>	<u>CAS number</u>	<u>%</u>
Triethylene glycol	112-27-6	>95
Diethylene glycol	111-46-6	<= 5
Tetraethylene glycol	112-60-7	<= 2
Ethylene glycol	107-21-1	<= 1

4. First aid measures

- Eye contact** : Check for and remove any contact lenses. Immediately flush eyes with plenty of water for at least 15 minutes, occasionally lifting the upper and lower eyelids. Get medical attention if irritation occurs.
- Skin contact** : Remove contaminated clothing and shoes. Flush contaminated skin with plenty of water. Get medical attention if symptoms occur. Wash clothing before reuse. Clean shoes thoroughly before reuse.
- Inhalation** : Move exposed person to fresh air. Keep person warm and at rest. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Get medical attention if symptoms appear.
- Ingestion** : GET MEDICAL ATTENTION. Never give anything by mouth to an unconscious person. If swallowed, do not induce vomiting. Give large quantities of water. (If available, give several glasses of milk.) If vomiting occurs spontaneously, keep airway clear and give more water.
- Protection of first-aiders** : Take proper precautions to ensure your own safety before attempting to rescue and provide first aid.
- Notes to physician** : No detoxification information is available. Treatment of overexposure should be directed at the control of symptoms and the clinical condition of the patient.

Triethylene Glycol**5 . Fire-fighting measures**

- Flammability of the product** : May be combustible at high temperature.
- Products of combustion** : These products are carbon oxides (CO, CO₂). Generates toxic and/or irritating gases in a fire.

Extinguishing media

- Suitable** : Use water spray, fog, or foam. Do not use water jet or direct stream. For small fires, use dry chemicals, CO₂, water spray or alcohol-resistant foam.
- Not suitable** : Do not direct a solid stream of water or foam into hot, burning pools. This may cause frothing and increase fire intensity. Water spray may be used to flush spills away from exposures and to dilute spills to noncombustible mixtures.

- Special exposure hazards** : No specific hazard.
- Special protective equipment for fire-fighters** : Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.
- Special remarks on fire hazards** : Airborne mists from this substance are a moderate fire and explosion hazard. Fine sprays/mists may be combustible at temperatures below normal flashpoint. Avoid sparks, heat, and open flame. Vapors can travel to a source of ignition and flash back. Move containers from fire area if you can do it without risk. Fight fire from maximum distance or use unmanned hose holders or monitor nozzles. Cool containers with flooding quantities of water until well after fire is out. Withdraw immediately in case of rising sound from venting safety devices or discoloration of tank. Always stay away from tanks engulfed in fire. For massive fire, use unmanned hose holders or monitor nozzles. If this is impossible, withdraw from area and let fire burn.
- Special remarks on explosion hazards** : **WARNING:** Hot organic chemical vapors or mists are susceptible to sudden spontaneous combustion when mixed with air. Ignition may occur at temperatures below those published as "autoignition" or "ignition" temperatures. Ignition temperatures decrease with vapor volume and vapor/air contact time, and are influenced by pressure changes. Ignition may occur at typical elevated temperature-process conditions.

6 . Accidental release measures

- Personal precautions** : Immediately contact emergency personnel. Keep unnecessary personnel away. Use suitable protective equipment.
- Environmental precautions** : Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.
- Methods for cleaning up** : If emergency personnel are unavailable, contain spilled material. For small spills, add absorbent (soil may be used in the absence of other suitable materials), scoop up material and place in a sealable, liquid-proof container for disposal. For large spills, dike spilled material or otherwise contain material to ensure runoff does not reach a waterway. Place spilled material in an appropriate container for disposal. All recovered material should be packaged, labeled, transported and disposed of or reclaimed in conformance with applicable laws and regulations and in conformance with good engineering practices. Reclaim where possible.

7 . Handling and storage

- Handling** : Wash thoroughly after handling. Avoid breathing vapors, spray or mists. Avoid contact with eyes, skin and clothing. Do not eat, drink, or smoke in areas where this material is used. Do not enter storage area unless it is properly ventilated. Metal containers involved in the transfer of these materials should be grounded and bonded. Use only with adequate ventilation.
- Storage** : Keep container tightly closed and properly labeled. Keep container in a cool, well-ventilated area away from incompatibles and sources of ignition.

Triethylene Glycol**8 . Exposure controls/personal protection****Product name**

Diethylene glycol

Exposure limits

AIHA WEEL (United States, 1/2006).

TWA: 10 mg/m³ 8 hour/hours.**Engineering measures**

- : No special ventilation requirements. Good general ventilation should be sufficient to control airborne levels. If this product contains ingredients with exposure limits, use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure below any recommended or statutory limits.

Personal protection**Eyes**

- : Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists, gases or dusts. Wear chemical safety goggles plus full face shield to protect against splashing when appropriate (ANSI Z87.1).

Skin

- : Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

Respiratory

- : Use a properly fitted, air-purifying or air-fed respirator complying with an approved standard if a risk assessment indicates this is necessary. Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator.

Hands

- : Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary. Suggested material for gloves: neoprene.

Hygiene measures

- : Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.

9 . Physical and chemical properties

Physical state	: Colorless, viscous liquid.
Flash point	: 157 C (315 F) Pensky-Martins Closed Cup.
Auto-ignition temperature	: 375°C (707 °F).
Flammable limits	: Lower:0.9% Upper: 9.2%
Color	: Colorless.
Odor	: slight to no odor.
Molecular weight	: 150.2 (Triethylene glycol)
Molecular formula	: HOCH ₂ CH ₂ OCH ₂ CH ₂ OCH ₂ CH ₂ OH
pH	: Neutral.
Boiling/condensation point	: 281°C (538 °F)
Melting/freezing point	: May start to solidify at - 7°C (19 °F).
Critical temperature	: The lowest known value is 407.9°C (766.2°F) (2,2'-oxybisethanol).
Relative density	: 1.12 (Water = 1)
Vapor pressure	: > 0.01 mm Hg @ 20 C.
Vapor density	: 5.2 AIR = 1
Evaporation rate	: The highest known value is <0.01 (2,2'-oxybisethanol) Weighted average: 0 compared with Butyl acetate.
Viscosity	: 48.2 mPa
Dispersibility properties	: See solubility in water, methanol, diethyl ether.
Solubility	: Easily soluble in hot water, methanol. Soluble in cold water. Insoluble in oil, fat, and hydrocarbons. Slightly soluble in ether.

11/8/2006.

GHS000040

Page: 4/9

Powered by



Triethylene Glycol**9 . Physical and chemical properties**

Physical/chemical properties comments : Bulk density 1.250 lbs/ft³.

10 . Stability and reactivity

Stability and reactivity : The product is stable.

Conditions of instability : Decomposes with heat. If fluid is heated above the temperature of the onset of initial decomposition (206 C), thermal degradation may result in the formation of volatile organic compounds such as aldehydes including formaldehyde and acetaldehyde, dioxolanes, glycol ethers including ethylene glycol monomethyl ether, and other potentially harmful decomposition products.

Incompatibility with various substances : Slightly reactive or incompatible with the following materials: oxidizing materials. Avoid contact with oxidizing agents, strong acids, strong bases, alkalis.

Hazardous decomposition products : May form: acetaldehyde, alcohols, aldehydes, carbon dioxide and carbon monoxide, dioxolanes, ethers, ethylene glycol monomethyl ether, formaldehyde.

Hazardous polymerization : Will not occur.

Conditions of reactivity : Slightly flammable in the presence of the following materials or conditions: open flames, sparks and static discharge and heat.

11 . Toxicological information**Toxicity data****Product/ingredient name**

Triethylene glycol

Test

LD50

Result

17000 mg/Kg

Route

Oral

Species

Rat

LD50

14600 mg/Kg

Oral

Guinea Pig

LD50

>20 mL/Kg

Dermal

Rabbit

Diethylene glycol

LD50

12000 mg/kg

Oral

Rat

LD50

12565 mg/kg

Oral

Rat

LD50

4400 mg/kg

Oral

Rabbit

LD50

11890 mg/kg

Dermal

Rabbit

LD50

11900 mg/kg

Dermal

Rabbit

Ethylene glycol

LDLo

0.75 mg/kg

Oral

Human

LDlo

398 mg/Kg

Oral

Human

LDlo

786 mg/Kg

Oral

Human

LD50

4700 mg/Kg

Oral

Rat

LD50

1650 mg/Kg

Oral

Cat

Tetraethylene glycol

LD50

9530 mg/Kg

Dermal

Rabbit

LD50

29000 mg/Kg

Oral

Rat

Chronic effects on humans : Contains material which causes damage to the following organs: blood, kidneys, liver, skin, eye, lens or cornea.

Other toxic effects on humans : Not considered to be toxic to humans. The substance appears to be of low toxicity, except for possible mild irritant effects in humans. A high dose may produce central nervous system depression, but there are no reports of adverse health effects from occupational exposure.

Special remarks on toxicity to animals : Oral toxicity LD₅₀ (mg/Kg) If <5 Supertoxic; If 5-50 Extremely toxic; If 50-500 Very Toxic; If 500 - 5000 Moderately Toxic; If >5000 Slightly Toxic.

Triethylene glycol has not caused carcinogenic or reproductive toxicity in animals. High oral doses (5000 mg/Kg) of Triethylene glycol caused reduced fetal weights in mice. However, other studies in mice and rats show either no developmental toxicity or developmental effects only at exposure levels producing other toxic effects in the adult animal. Triethylene glycol was of very low oral toxicity in acute tests in animals. Single exposure to Triethylene glycol by inhalation to saturated air or to aerosol produced no signs of toxicity and no mortality. Repeated exposures at low concentrations produced reduced body weight and at higher concentrations produced increased mortality.

11/8/2006.

GHS000040

Page: 5/9

Powered by



Triethylene Glycol**11. Toxicological information****Special remarks on other toxic effects on humans**

: Doses of ethylene glycol that result in high levels of the metabolite glycolic acid induce developmental/teratogenic effects in rats and mice, although at doses greater than those associated with kidney effects in rats. Human exposure is not expected to generate sufficient levels of glycolic acid. Therefore, no developmental effects are expected in humans.

Specific effects**Carcinogenic effects**

: This material is not classified as a carcinogen. Not listed by IARC, NTP, or OSHA.

Mutagenic effects

: Negative for genotoxicity for both in vitro and in vivo tests.

Teratogenicity /**Reproductive toxicity**

: No known significant effects or critical hazards. No evidence of adverse effects on reproductive organs or fertility in rats and rabbits have occurred from ethylene glycol exposure. Mice exposed to doses considerably higher than those associated with developmental effects or kidney effects in rats exhibited reduced number of litters and smaller litters. No reproductive effects from human exposures.

Sensitization**Ingestion**

: No known significant effects or critical hazards.

Inhalation

: No known significant effects or critical hazards.

Eyes

: Causes mild to moderate irritation, and transient corneal injury.

Skin

: No known significant effects or critical hazards.

12. Ecological information**Ecotoxicity data****Product/Ingredient name****Species****Period****Result**

Triethylene glycol

Fathead minnows

96 hour

69800 mg/L

Ethylene glycol

Rainbow trout

96 hour

22810 mg/L

Diethylene glycol

Pimephales promelas (LC50)

96 hour/hours

75200 mg/l

Environmental precautions

: The material is highly soluble in water. Laboratory tests on each of the components of this product indicate no significant toxicity to fish and aquatic invertebrates, although amphibians may be more sensitive. Mammals and birds do not readily metabolize this material and may be more susceptible to toxicity.

Octanol/water partition coefficient

: Kow = -1.75 (Estimated)

Bioconcentration factor

: This material is highly soluble in water and should not bioaccumulate in aquatic or terrestrial organisms.

Biodegradable/OECD

: This material will biodegrade relatively rapidly in both soil and water, and will not persist in the environment. Due care should be taken to avoid accidental release to aquatic or terrestrial systems.

Mobility

: The material is volatile and water soluble. It is not expected to adsorb onto soils or sediments. Expected to have high mobility in soils. Not expected to persist in the environment. Environmental half-life of 0.35 to 24 days in soil, air, surface and ground water. Not expected to undergo hydrolysis.

Products of degradation

: These products are carbon oxides (CO, CO₂) and water.

Toxicity of the products of biodegradation

: The product itself and its products of degradation are not toxic.

Triethylene Glycol**13 . Disposal considerations**

Waste disposal : The generation of waste should be avoided or minimized wherever possible. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements.

Disposal should be in accordance with applicable regional, national and local laws and regulations. Local regulations may be more stringent than regional or national requirements.

The information presented below only applies to the material as supplied. The identification based on characteristic(s) or listing may not apply if the material has been used or otherwise contaminated. It is the responsibility of the waste generator to determine the toxicity and physical properties of the material generated to determine the proper waste identification and disposal methods in compliance with applicable regulations.

Refer to Section 7: HANDLING AND STORAGE and Section 8: EXPOSURE CONTROLS/PERSONAL PROTECTION for additional handling information and protection of employees.

14 . Transport information

Regulatory Information	UN number	Proper shipping name	Class	PG*	Label	Additional Information
DOT Classification	Not regulated.	Not applicable.	Not applicable.	Not applicable		-
TDG Classification	Not available.	Not available.	Not available.	-		-
Mexico Classification	Not available.	Not available.	Not available.	-		-
ADR/RID Class	Not available.	Not available.	Not available.	-		-
IMDG Class	Not available.	Not available.	Not available.	-		-
IATA-DGR Class	Not available.	Not available.	Not available.	-		-

PG* : Packing group

15 . Regulatory information

HCS Classification : Target organ effects

U.S. Federal regulations : TSCA 8(b) inventory: Triethylene Glycol

SARA 302/304/311/312 extremely hazardous substances: No products were found.

SARA 302/304 emergency planning and notification: No products were found.

SARA 302/304/311/312 hazardous chemicals: 2,2'-oxybisethanol; tetraethylene glycol; Triethylene Glycol

SARA 311/312 MSDS distribution - chemical inventory - hazard identification: 2,2'-oxybisethanol: Immediate (acute) health hazard, Delayed (chronic) health hazard;

tetraethylene glycol: Immediate (acute) health hazard, Delayed (chronic) health hazard;

Triethylene Glycol: Immediate (acute) health hazard, Delayed (chronic) health hazard

Clean Water Act (CWA) 307: No products were found.

Clean Water Act (CWA) 311: No products were found.

Clean Air Act (CAA) 112 accidental release prevention: No products were found.

Clean Air Act (CAA) 112 regulated flammable substances: No products were found.

11/8/2006.

GHS000040

Page: 7/9

Powered by



Triethylene Glycol**15 . Regulatory information****State regulations**

Clean Air Act (CAA) 112 regulated toxic substances: No products were found.
 : Pennsylvania RTK: 2,2'-oxybisethanol: (generic environmental hazard); Triethylene Glycol: (generic environmental hazard)
 Minnesota: 2,2'-oxybisethanol

EU regulations**Risk phrases**

: This product is not classified according to EU legislation.

International regulations**International lists**

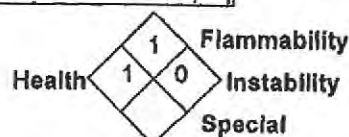
: Australia (NICNAS): 2,2'-oxybisethanol; tetraethylene glycol; Triethylene Glycol
 China: 2,2'-oxybisethanol; tetraethylene glycol; Triethylene Glycol
 Germany water class: 2,2'-oxybisethanol; Triethylene Glycol
 Japan (METI): 2,2'-oxybisethanol; tetraethylene glycol; Triethylene Glycol
 Korea (TCCL): 2,2'-oxybisethanol; tetraethylene glycol; Triethylene Glycol
 Philippines (RA6969): 2,2'-oxybisethanol; tetraethylene glycol; Triethylene Glycol

16 . Other information**Label requirements**

: HARMFUL IF SWALLOWED. CONTAINS MATERIAL WHICH CAUSES DAMAGE TO THE FOLLOWING ORGANS: BLOOD, KIDNEYS, LIVER, SKIN, EYE, LENS OR CORNEA.

Hazardous Material Information System (U.S.A.)

Health	1
Fire hazard	1
Reactivity	0
Personal protection	B

National Fire Protection Association (U.S.A.)**References**

: - Manufacturer's Material Safety Data Sheet.
 -2005/2006 Hazardous Materials, Substances & Wastes Compliance Guide (hazmatpublishing.com)
 ACRONYMS: ACGIH - American Conference of Governmental Industrial Hygienists; AIHA- American Industrial Hygiene Association; C - Celsius; CERCLA - Environmental Response, Compensation, and Liability Act of 1980; CFR - Code of Federal Regulations; DOT - Department of Transportation (U.S.); DSD - Dangerous Substances Directive (Europe); EC50 - Effective concentration for 50% of test species; EINECS - European Inventory of Existing Chemical Substances; EPA - Environmental Protection Agency; F-Fahrenheit; HMIS - Hazardous Material Information System (U.S.); IARC - International Agency for Research on Cancer; LC50 - Lethal concentration for 50% of test species; mg/cu m - milligrams per cubic meter; mg/L - milligrams per liter; mmHg- millimeters of Mercury; mPa - milli Pascals; NIOSH - National Institute for Occupational Safety and Health; NFPA - National Fire Protection Association (U.S.); NTP - National Toxicology Program; OSHA - Occupational Safety and Health Administration; PEL - Permissible Exposure Limit; SARA - Superfund Amendments and Reauthorization Act of 1986; STEL - Short Term Exposure Limit; TSCA - Toxic Substances Control Act (U.S.); TLV - Threshold Limit Value; TWA - Time Weighted Average.

Other special considerations

: Proposition 65 (California): No products were found.

Date of printing

: 11/8/2006.

11/8/2006.

GHS000040

Page: 8/9

Powered by



Triethylene Glycol

16 . Other information

Date of Issue : 11/8/2006.

Date of previous issue : 11/8/2006.

Version : 0.12

Notice to reader

To the best of our knowledge, the information contained herein is accurate. However, neither the above-named supplier, nor any of its subsidiaries, assumes any liability whatsoever for the accuracy or completeness of the information contained herein.

Final determination of suitability of any material is the sole responsibility of the user. All materials may present unknown hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards that exist.

11/8/2006.

GHS000040

Page: 9/9

Powered by



MATERIAL SAFETY DATA SHEET

Product Name: GAS/SPEC* CS-Plus* Solvent Additive

MSDS #: INEOS Oxide 29451

Preparation Date: January 7, 2005

Page # 1 of 10

Protective Clothing	NFPA (USA)	WHMIS (Canada)	Transportation
		 B3- Combustible Liquid  E-Corrosive	

Section 1: Identification of the Substance / Preparation and of the Company / Undertaking

Product Name: GAS/SPEC* CS-Plus* Solvent Additive**Product Code:** 29451

Manufacturer: INEOS Oxide
 A division of INEOS Americas LLC
 2925 Briarpark, Suite 870
 Houston TX, 77042

Phone Number: (866) 865-4767**24-hour Emergency:** CHEMTREC: (800) 424-9300

* Indicates a Trademark of INEOS Oxide.

Section 2: Composition / Information on Ingredients

Hazardous Ingredients:

Common Name	Chemical Name	CAS No.	Wt. %
Trade Secret Alkanolamine	Proprietary	HMIRC RN 5384**	95-100

Non-Hazardous Ingredients:

Common Name	Chemical Name	CAS No.	Wt. %
Water	Water	7732-18-5	2-5

Note: **HMIRC (Canada - Hazardous Materials Information Review Commission) January 7, 2005
 See Section 8 of this MSDS for exposure limit data for these ingredients.

MATERIAL SAFETY DATA SHEET

Product Name: GAS/SPEC* CS-Plus* Solvent Additive

MSDS #: INEOS Oxide 29451

Preparation Date: January 7, 2005

Page # 2 of 10

Section 3: Hazards Identification

Preparation Hazards and Classification:

Harmful in contact with skin and if swallowed. Causes burns.

USA: This product is a hazardous material as defined by 29 CFR1910.1200, OSHA Hazard Communication Evaluation.

Canada: This is a controlled product under WHMIS.

Appearance, Color and Odor:

Colorless, viscous liquid, fish-like amine odor

Primary Route(s) of Exposure:

Inhalation, Ingestion, Eye contact, Skin contact

Potential Health Effects:

ACUTE (short term): see Section 8 for exposure controls

Inhalation: At room temperature, exposures to vapors are minimal due to the physical properties. When heated, vapor concentrations may be generated that may cause adverse effects. Vapors or mists may cause severe irritation to the respiratory tract. Symptoms of exposure may include coughing, wheezing, shortness of breath, difficult breathing, headache, nausea, vomiting and chest pain. High concentrations of vapor or mist may cause burns to the respiratory tract.

Ingestion: Low oral toxicity, but swallowing large amounts can cause severe irritation and burns of the digestive tract with abdominal and chest pain, nausea, vomiting and diarrhea. Due to the corrosive nature of the alkanolamine, any aspiration during ingestion or vomiting could result in lung injury.

Skin: Direct contact with the product causes severe irritation with local discomfort or pain, severe excess redness and swelling with chemical burns, blister formation and possible tissue destruction. Prolonged skin contact may result in the absorption of potentially harmful amounts.

Eyes: Direct contact with product will cause severe eye irritation or chemical burns. Serious damage, even blindness, may result if treatment is delayed.

CHRONIC (long term): see Section 11 for additional toxicological data
Repeated exposures to high concentrations may cause liver and kidney damage. Effects may be delayed.

Inhalation: Prolonged or repeated overexposure to mists or vapors may result in damage to the respiratory tract.

Skin: Chronic dermatitis and eczema may result from repeated or prolonged contact.

Medical Conditions Aggravated by Exposure:

Repeated skin contact may aggravate an existing dermatitis. Repeated inhalation may aggravate respiratory conditions, such as asthma and bronchitis, and inflammatory or fibrotic pulmonary disease.

--	--	--	--	--

MATERIAL SAFETY DATA SHEET

Product Name: GAS/SPEC* CS-Plus* Solvent Additive

MSDS #: INEOS Oxide 29451

Preparation Date: January 7, 2005

Page # 3 of 10

Section 4: First Aid Measures**Inhalation:**

Remove from exposure to fresh air immediately. Keep victim at rest. If breathing is difficult, trained personnel may administer oxygen. Do not allow victim to move about unnecessarily. Symptoms of pulmonary edema can be delayed up to 48 hours after exposure. Quickly transport victim to an emergency care facility.

Eye Contact:

Immediately flush the contaminated eye(s) with lukewarm flowing water for at least 60 minutes while holding the eyelids open. Neutral saline rinsing solution may be used as soon as it is available. Do not interrupt flushing. Take care not to rinse contaminated water into the unaffected eye or the face. Quickly transport victim to an emergency care facility.

Skin Contact:

Immediately flush the affected areas with plenty of flowing water or a safety shower for at least 20 minutes. Remove contaminated clothing and shoes while flushing. Do not interrupt flushing. If necessary, and it can be done safely, continue flushing during transport to emergency care facility.

Ingestion:

DO NOT INDUCE VOMITING. Get immediate medical attention. If vomiting occurs naturally, have victim lean forward to reduce the risk of aspiration; rinse the mouth. Quickly transport the victim to an emergency care facility. Never give anything by mouth if victim is unconscious, rapidly losing consciousness or convulsing.

Section 5: Fire-Fighting Measures**Flash Point and Method (°C):**

71°C (160°F) PMCC

Flammability Limits (%):LFL: 1.6%
UFL: 19.6%**Auto Ignition Temperature (°C):**

350°C (662°F)

Extinguishing Media:

Water fog or fine spray, carbon dioxide, alcohol-resistant foam or dry chemical. Use water spray to cool fire-exposed containers.

Violent steam generation or eruption may occur upon application of direct water stream.

Unusual Fire and Explosion Hazards:

Sensitivity to mechanical impact: Not applicable
Sensitivity to static discharge: Not applicable

Spills of these organic liquids on hot fibrous insulations may lead to lowering of the auto-ignition temperature possibly resulting in spontaneous combustion.

Fire Fighting Instructions:

Evacuate the area and fight fire from a safe distance or a protected location. Approach the fire from upwind to avoid hazardous vapors. Burning liquids may be extinguished by dilution with water. Do not use direct water stream, it may spread fire. Water spray may be used to flush spills away from ignition sources. Avoid all contact with this material during fire fighting operations. Wear chemical resistant clothing (chemical splash suit) and positive-pressure self-contained breathing apparatus. Contain water run-off if possible.

Hazardous Combustion Products:

During a fire smoke may contain the original material in addition to unidentified toxic and/or irritating compounds. Hazardous combustion products may include and are not limited to: nitrogen oxides, carbon monoxide, carbon dioxide.

Other Flammability Information:

This material can burn if strongly heated.

--	--	--	--	--

MATERIAL SAFETY DATA SHEET

INEOS Oxide

Product Name: GAS/SPEC[®] CS-Plus[®] Solvent Additive

MSDS #: INEOS Oxide 29451

Preparation Date: January 7, 2005

Page # 4 of 10

Section 6: Accidental Release Measures**Personal Precautions:**

Wear adequate personal protective equipment.

Air Release:

Evacuate the area. Ventilate the area. Extinguish or remove all ignition sources. Wear adequate personal protective equipment. Notify occupational and environmental authorities.

Land Spill:

Isolate the area; keep people away. Do not touch spilled material. Clean up should be conducted by trained personnel only. Wear adequate personal protective equipment. Ventilate the area. Extinguish or remove all ignition sources. Prevent the material from entering sewers, groundwater or surface water. Contain the spill with earth, sand or suitable absorbent. Do not absorb with sawdust, woodchips or other cellulose materials. Put material in suitable, covered, labeled containers. Contaminated absorbent may pose the same hazards as the spilled product. Flush the area with water. Notify occupational and environmental authorities.

Water Spill:

Not available. Notify occupational and environmental authorities.

Section 7: Handling and Storage**Storage Temperature:**

Store in a cool, dry, well-ventilated area away from sunlight, heat and ignition sources.

Storage Pressure:

Not available

General:

Handling: Avoid contact with eyes, skin and clothing. Avoid breathing vapors. Ensure that engineering controls are operating and that protective equipment requirements are being followed. Avoid generating vapors and mists.

Inspect containers for leaks before handling. Prevent damage to containers. Keep containers closed when not in use. Assume that empty containers contain residues which are hazardous. Do not use with incompatible materials (see Section 10).

Discard all contaminated leather items such as watchbands, shoes and belts.

Storage: Keep storage area away from work areas. Store away from incompatible materials (see Section 10). Do not store in containers made of copper, brass or other copper alloys zinc or galvanized iron.

MATERIAL SAFETY DATA SHEET

Product Name: GAS/SPEC® CS-Plus® Solvent Additive

MSDS #: INEOS Oxide 29451

Preparation Date: January 7, 2005

Page # 5 of 10

Section 8: Exposure Controls and Personal Protection

<u>Ingredient</u>	<u>ACGIH TLV</u> <u>(8-hr. TWA)</u> <u>(mg/m³)</u>	<u>U.S. OSHA PEL</u> <u>(8-hr. TWA)</u> <u>(mg/m³)</u>	<u>Ontario (Canada) TWAEV</u> <u>(mg/m³)</u>
Trade Secret Alkanolamine	Not established	Not established	Not established

Engineering Controls:

Good general ventilation is normally sufficient. In places where vapors or mists of this material are created, local exhaust ventilation is recommended. Ventilation system should be made of corrosion-resistant material.

Hygiene Measures:

Remove contaminated clothing promptly. Keep contaminated clothing in closed containers; discard or launder before re-wearing. Do not eat, drink or smoke in work areas. Wash hands thoroughly and promptly after handling this material.

Personal Protection

Respiratory Protection: Respiratory protection should not be necessary unless the product is heated to release vapors or a mist is created. If airborne vapor or mist exposure is likely wear a NIOSH/MSHA approved full-face mask, self-contained breathing apparatus.

Skin Protection: Wear chemical protective gloves, coveralls and boots. Protective clothing should be made of butyl rubber, neoprene, nitrile rubber or Viton™.

Eye Protection: Wear chemical safety goggles. If splashing is possible wear a face shield.

Other:

Have a safety shower and eye-wash fountain readily available in the immediate work area.

Section 9: Physical and Chemical Properties

Physical State:	Liquid	Vapor Pressure: <u>(mm Hg @ 20°C)</u>	<2.5 mmHg @ 20°C
Appearance:	Clear colorless, viscous liquid	Vapor Density: <u>(Air = 1)</u>	2.6
pH:	11.65 @ 25°C	Solubility in Water:	Complete
Specific Gravity: <u>(water = 1)</u>	1.08 @ 25°C	Water / Oil distribution coefficient:	Not available
Boiling Point:	152-162°C (306-324°F)	Odor Type:	Fish-like amine odor
Freezing Point:	-4.5°C (24°F)	Evaporation Rate: <u>(n-Butyl Acetate = 1)</u>	Not available
Viscosity:	<13 centipoises @ 20°C		

MATERIAL SAFETY DATA SHEET

Product Name: GAS/SPEC* CS-Plus* Solvent Additive

MSDS #: INEOS Oxide 29451

Preparation Date: January 7, 2005

Page # 6 of 10

Section 10: Stability and Reactivity**Stability:**

Stable under normal temperature and pressure.

Incompatible Materials and Conditions to Avoid:

Product can decompose at elevated temperatures.

Avoid direct sunlight.

Avoid contact with nitriles, strong acids and strong oxidizing agents.

Hazardous Decomposition Products:

Decomposition products may include nitrogen oxides, ammonia, irritating aldehydes and ketones. Hazardous decomposition products depend upon temperature, air supply and the presence of other materials.

Hazardous Polymerization:

Mixing with nitrite containing materials may cause nitrosamine formation.

Other Reactivity Concerns:

Absorbs moisture and can react with carbon dioxide in the air to form salts. It is decomposed by light and slowly oxidized by air, turning yellow and then brown. This reaction is accelerated by heat and the presence of metals.

Corrosive to copper, brass, bronze and other copper alloys, zinc and galvanized iron.

Contact with nitrosating agents, under acidic conditions such as nitrous acid, nitrite or nitrogen oxides, can form nitrosamines some of which are potent carcinogens.

Section 11: Toxicological Information**Carcinogenicity:**

The table below indicates whether or not each agency has listed each ingredient as a carcinogen.

<u>Ingredient</u>	<u>ACGIH</u>	<u>IARC</u>	<u>NTP</u>	<u>OSHA</u>
Trade Secret Alkanolamine	Not listed	Not listed	Not listed	Not listed

Carcinogenicity Designations:

ACGIH: (American Conference of Governmental Industrial Hygienists)

IARC: (International Agency for Research on Cancer)

NTP: (National Toxicity Program)

OSHA: Occupational Safety and Health Administration

Acute Toxicity Data:

<u>Ingredient</u>	<u>LD₅₀ Oral</u> (mg/kg)	<u>LD₅₀ Dermal</u> (mg/kg)	<u>LC₅₀ Inhalation</u> (mg/m ³ , 4 hrs.)
Trade Secret Alkanolamine	> 500 (Rat)	> 1 000 (rabbit)	> 2 500 (rat)

Irritation:

Severely irritating to eyes, skin and mucous membranes.

Sensitization:

None reported

Neurological Effects:

None known

Teratogenicity:

None known

Reproductive Toxicity:

High concentrations may cause fetal toxicity.

Mutagenicity (Genetic Effects):

None known

Toxicologically Synergistic Materials:

Alkanolamine ingredients in this product may react with nitriles, under acid conditions to form nitrosamines some of which are potent carcinogens.

MATERIAL SAFETY DATA SHEET

INEOS Oxide

Product Name: GAS/SPEC* CS-Plus* Solvent Additive
MSDS #: INEOS Oxide 29451
Preparation Date: January 7, 2005

Page # 7 of 10

Section 12: Ecological Information

Ecotoxicity: Not available.

Mobility: Not available

Persistence and degradability: Not available

Bioaccumulative potential: Not available

Other: For detailed Ecological data, write to the address in Section 1 or call INEOS Oxide's Customer Information Center at (866) 865-4767.

Section 13: Disposal Considerations

Waste Disposal Method: DO NOT dump into any sewers, on the ground or into any body of water. Store material for disposal as indicated in Section 7 Handling and Storage. For unused, uncontaminated product, the preferred options include sending to a licensed, permitted recycler, reclaimer, incinerator or other thermal destruction device.

USA: This product, as sold, meets the RCRA corrosivity characteristics described in 40 CFR §261.22 and has a hazardous waste number D002. Under RCRA, it is the responsibility of the user of the product to determine, at the time of disposal, whether the product meets RCRA criteria for hazardous waste.

Dispose of in accordance with local, state and federal laws and regulations.
RCRA: None listed

Canada: Dispose of in accordance with local, provincial and federal laws and regulations.

Other: Waste characterizations and compliance with applicable laws are the responsibility solely of the waste generator. INEOS Oxide HAS NO CONTROL OVER THE MANAGEMENT PRACTICES OR MANUFACTURING PROCESSES OF PARTIES HANDLING OR USING THIS MATERIAL. THE INFORMATION PRESENTED HERE PERTAINS ONLY TO THE PRODUCT AS SHIPPED IN ITS INTENDED CONDITION AS DESCRIBED IN MSDS SECTION 2.

As a service to its customers, INEOS Oxide can provide names of information resources to help identify waste management companies and other facilities which recycle, reprocess or manage chemicals or plastics, and that manage used drums. Telephone INEOS Oxide's Customer Information Center at (866) 865-4767.

--	--	--	--	--

MATERIAL SAFETY DATA SHEET

INEOS Oxide

Product Name: GAS/SPEC* CS-Plus* Solvent Additive
MSDS #: INEOS Oxide 29451
Preparation Date: January 7, 2005

Page # 8 of 10

Section 14: Transport InformationU.S. Hazardous Materials Regulation (DOT 49CFR)

DOT Proper Shipping Name: AMINES, LIQUID, CORROSIVE, N.O.S. (Alkanolamine)

DOT Hazard Classification: Primary: 8
Secondary:

Product Identification Number: UN2735

Packing Group: II

Reportable Quantity for US Shipments: None

DOT Special Provisions: None

DOT Packaging Exceptions: None

DOT Non-bulk Packaging: None

DOT Bulk Packaging: None

Canadian Transportation of Dangerous Goods (TDG)

TDG Proper Shipping Name: AMINES, LIQUID, CORROSIVE, N.O.S. (Alkanolamine)

TDG Hazard Classification: 8

Product Identification Number: UN2735

Packing Group: II

ADR/RID:

AMINES, LIQUID, CORROSIVE, N.O.S. (Alkanolamine), 8, UN2735, PGII

IMDG:

AMINES, LIQUID, CORROSIVE, N.O.S. (Alkanolamine), 8, UN2735, PGII

Marine Pollutants:

None

ICAO/IATA:

AMINES, LIQUID, CORROSIVE, N.O.S. (Alkanolamine), 8, UN2735, PGII

IATA Packing Instructions:Passenger/Cargo: 808
Cargo Only: 812
Limited Quantity: Y808Maximum Net Quantity per Package:Passenger/Cargo: 1L
Cargo Only: 30 L
Limited Quantity: 0.5 L

Other: For regulatory information regarding transportation, if required, consult product shipping papers, or your INEOS Oxide representative.

--	--	--	--	--

MATERIAL SAFETY DATA SHEET

INEOS Oxide

Product Name: GAS/SPEC[®] CS-Plus[®] Solvent Additive

MSDS #: INEOS Oxide 29451

Preparation Date: January 7, 2005

Page # 9 of 10

Section 15: Regulatory Information

HMIS and NFPA Hazard Rating:

Category	HMIS	NFPA
Acute Health	3	3
Flammability	2	2
Reactivity	0	0

USA

TSCA Status: This alkanolamine is listed on the TSCA inventory.

SARA Title III: Trade Secret Alkanolamine: acute, chronic, flammable
 Sec. 302/304: None of the chemicals in this product have a TPQ.
 Sec. 311/312: Immediate Health Hazard; Delayed Health Hazard.
 Sec. 313: None
 CERCLA: None

Right to Know: This alkanolamine can be found on the following state right to know lists: Florida, Pennsylvania, and Massachusetts.

Clean Air Act: None

Clean Water Act: None of the chemicals in this product are listed as Hazardous Substances, Priority Pollutants or Toxic Pollutants under the CWA.

Canada

This product has been classified in accordance with the hazard criteria of the *Controlled Products Regulations* and the MSDS contains all the information required by the *Controlled Products Regulations*.

WHMIS Classification: B3 – Combustible Liquid
 E – Corrosive

NSNR Status (New Substance Notification Regulations): This alkanolamine is listed on Canada's Domestic Substances List (DSL).

NPRI Substances (National Pollutant Release Inventory): This alkanolamine is not a NPRI reportable substance.

--	--	--	--	--

MATERIAL SAFETY DATA SHEET

INEOS Oxide

Product Name: GAS/SPEC* CS-Plus* Solvent Additive

MSDS #: INEOS Oxide 29451

Preparation Date: January 7, 2005

Page # 10 of 10

Section 16: Other Information

Preparation Information:

Prepared by: LEHDER Environmental Services Limited
704 Mara Street, Suite 210
Pt. Edward, ON
N7V 1X4
www.lehder.com

Phone: (519) 336-4101

Preparation date: January 7, 2005

Disclaimer: While LEHDER Environmental Services Limited believes that the data set forth herein is accurate, as of the date hereof, LEHDER makes no warranty with respect thereto and expressly disclaims all liability for reliance thereon. Such data is offered solely for your consideration, investigation and verification.

Manufacturer Disclaimer: The information provided on this MSDS is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guide for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered as a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other material or in any process, unless specified in the text.

--	--	--	--	--

Material Safety Data Sheet

Section 1: Chemical Product and Company Identification

Common Name	Coastalguard EG 100	Code	37252
Supplier	COASTAL CHEMICAL CO., L.L.C. 3520 Veterans Memorial Drive ABBEVILLE, LA 70510 337-893-3862	MSDS#	Not available.
Synonym	Not available.	Validation Date	05/24/2004
Trade name	Not available.	Print Date	05/24/2004
Material Uses	Industrial applications: Coolant and antifreeze.	In case of Emergency	Transportation Emergency Call CHEMTREC 800-424-9300 Other Information Call Charles Toups 337-261-0796
Manufacturer	Coastal Chemical Co., Inc. 3520 Veterans Memorial Drive Abbeville, La.		

Section 2: Composition and Information on Ingredients

Name	CAS #	% by Weight	TLV/PEL	LC ₅₀ /LD ₅₀
1) Ethylene Glycol	107-21-1	95	CEIL: 39.4 (ppm) CEIL: 100 (mg/m ³)	ORAL (LD ₅₀) mg/kg: Acute: 4700 (Rat). DERMAL (LD ₅₀) mg/kg: Acute: 9530 (Rabbit).

Section 3: Hazards Identification

Emergency Overview	CAUTION! HARMFUL IF INHALED. HARMFUL IF SWALLOWED. MAY CAUSE EYE IRRITATION. Repeated or prolonged exposure to the substance can produce kidney damage.
Routes of Entry	Ingestion.
Potential Acute Health Effects	Very dangerous in case of ingestion. Very slightly to slightly dangerous in case of skin contact (irritant, sensitizer, permeator), of eye contact (irritant), of inhalation. This product may irritate eyes and skin upon contact.
Potential Chronic Health Effects	CARCINOGENIC EFFECTS: Not available. MUTAGENIC EFFECTS: Not available. TERATOGENIC EFFECTS: Not available. The substance is toxic to kidneys, the nervous system, the reproductive system, liver. Repeated or prolonged exposure to the substance can produce target organs damage.

Section 4: First Aid Measures

Eye Contact	IMMEDIATELY flush eyes with running water for at least 15 minutes, keeping eyelids open. COLD water may be used.
Skin Contact	If the chemical got onto the clothed portion of the body, remove the contaminated clothes as quickly as possible, protecting your own hands and body. Place the victim under a deluge shower. If the chemical touches the victim's exposed skin, such as the hands: Gently and thoroughly wash the contaminated skin with running water and non-abrasive soap. Be particularly careful to clean folds, crevices, creases and groin. COLD water may be used. Cover the irritated skin with an emollient. If irritation persists, seek medical attention. Wash contaminated clothing before reusing.
Hazardous Skin Contact	No additional information.
Inhalation	Allow the victim to rest in a well ventilated area. Seek immediate medical attention.

Continued on Next Page

Coastalguard 100

Page Number: 2

Hazardous Inhalation	No additional information.
Ingestion	DO NOT induce vomiting. Have conscious person drink several glasses of water or milk. Seek immediate medical attention.
Hazardous Ingestion	DO NOT induce vomiting. Examine the lips and mouth to ascertain whether the tissues are damaged, a possible indication that the toxic material was ingested; the absence of such signs, however, is not conclusive. Loosen tight clothing such as a collar, tie, belt or waistband. If the victim is not breathing, perform mouth-to-mouth resuscitation. Seek medical attention.

Section 5. Fire and Explosion Data

Flammability of the Product	Combustible.
Auto-Ignition Temperature	The lowest known value is 398°C (748.4°F) (Ethylene Glycol).
Flash Points	The lowest known value is CLOSED CUP: 116°C (240.8°F) OPEN CUP: 232°C (240.8°F) (Cleveland) (Ethylene Glycol)
Flammable Limits	The greatest known range is LOWER: 3.2% UPPER: 15.3% (Ethylene Glycol)
Products of Combustion	These products are carbon oxides (CO, CO ₂).
Fire Hazards in Presence of Various Substances	Very slightly to slightly flammable in presence of open flames and sparks, of heat.
Explosion Hazards in Presence of Various Substances	Risks of explosion of the product in presence of mechanical impact: Not available. Risks of explosion of the product in presence of static discharge: Not available. No specific information is available in our database regarding the product's risks of explosion in the presence of various materials.
Fire Fighting Media and Instructions	SMALL FIRE: Use DRY chemicals, CO ₂ , water spray or foam. LARGE FIRE: Use water spray, fog or foam. DO NOT use water jet.
Special Remarks on Fire Hazards	When heated to decomposition, it emits acrid smoke and irritating fumes. (Ethylene Glycol)
Special Remarks on Explosion Hazards	No additional remark.

Section 6. Accidental Release Measures

Small Spill	Dilute with water and mop up, or absorb with an inert DRY material and place in an appropriate waste disposal container. Finish cleaning by spreading water on the contaminated surface and dispose of according to local and regional authority requirements.
Large Spill	Combustible material. Keep away from heat. Keep away from sources of ignition. Stop leak if without risk. Finish cleaning by spreading water on the contaminated surface and allow to evacuate through the sanitary system.

Section 7. Handling and Storage

Handling	Not available.
Storage	Keep container dry. Keep in a cool place. Ground all equipment containing material. Keep container tightly closed. Keep in a cool, well-ventilated place. Combustible materials should be stored away from extreme heat and away from strong oxidizing agents.

Continued on Next Page

Section 8. Exposure Controls/Personal Protection

Engineering Controls	Provide exhaust ventilation or other engineering controls to keep the airborne concentrations of vapors below their respective threshold limit value. Ensure that eyewash stations and safety showers are proximal to the work-station location.	
Personal Protection	Safety glasses. Lab coat. Gloves (impervious). Wear appropriate respirator when ventilation is inadequate.	
Personal Protection in Case of a Large Spill	Splash goggles. Full suit. Boots. Gloves. Suggested protective clothing might not be sufficient; consult a specialist BEFORE handling this product.	
Chemical Name or Product Name	CAS #	Exposure Limits
1) 1,2-Ethanediol	107-21-1	CEIL: 39.4 (ppm) CEIL: 100 (mg/m³)

Section 9. Physical and Chemical Properties

Physical state and appearance	Liquid.	Odor	Not available.
Molecular Weight	Not applicable.	Taste	Not available.
pH (1 % soln/water)	8 to 10 [Basic.]	Color	Green. (Dark.)
Boiling Point	The lowest known value is 198°C (388.4°F) (Ethylene Glycol).		
Melting Point/Pour Point	May start to solidify at -13.5°C (7.7°F) based on data for: Ethylene Glycol.		
Critical Temperature	Not available.		
Specific Gravity	The only known value is 1.12 (Water = 1) (Ethylene Glycol).		
Vapor Pressure	The highest known value is 0.05 mm of Hg (@ 20°C) (Ethylene Glycol).		
Vapor Density	The highest known value is 2.1 (Air = 1) (Ethylene Glycol).		
Volatility	Not available.		
Odor Threshold	Not available.		
Evaporation rate	Not available.		
Viscosity	Not available.		
Water/Oil Dist. Coeff.	The product is much more soluble in water.		
Ionicity (in Water)	Not available.		
Dispersion Properties	See solubility in water, methanol, diethyl ether.		
Solubility	Easily soluble in cold water, hot water, methanol, diethyl ether. Very slightly soluble in n-octanol.		
Physical Chemical Comments	Not available.		

Section 10. Stability and Reactivity Data

Chemical Stability	The product is stable.
Conditions of Instability	No additional remark.
Incompatibility with various substances	Slightly reactive to reactive with oxidizing agents, alkalis.
Hazardous Decomposition Products	Not available.
Hazardous Polymerization	Not available.

Continued on Next Page

Coastalguard 100

Page Number: 4

Section 11. Toxicological Information

Toxicity to Animals	Acute oral toxicity (LD50): 4700 mg/kg (Rat) Acute dermal toxicity (LD50): > 5000 mg/kg (Rabbit.)
Chronic Effects on Humans	The substance is toxic to kidneys, the nervous system, the reproductive system, liver.
Other Toxic Effects on Humans	Very dangerous in case of ingestion. Very slightly to slightly dangerous in case of skin contact (irritant, sensitizer, permeator), of eye contact (irritant), of inhalation.
Special Remarks on Toxicity to Animals	Toxic for humans or animal life. (Ethylene Glycol)
Special Remarks on Chronic Effects on Humans	No additional remark.
Special Remarks on other Toxic Effects on Humans	Exposure can cause nausea, headache and vomiting. (Ethylene Glycol)

Section 12. Ecological Information

Ecotoxicity	Not available.
BOD5 and COD	Not available.
Products of Biodegradation	Possibly hazardous short term degradation products are not likely. However, long term degradation products may arise.
Toxicity of the Products of Biodegradation	The products of degradation are less toxic than the product itself.
Special Remarks on the Products of Biodegradation	No additional remark.

Section 13. Disposal Considerations

Waste Disposal	Follow local, state, and federal guidelines.
----------------	--

Section 14. Transport Information

Proper Shipping Name	Drums - Not Regulated Bulk - Regulated Environmentally Hazardous Substance, liquid, n.o.s.
DOT Classification	DOT CLASS 9: Miscellaneous hazardous material.
DOT Identification Number	UN3082
Packing Group	III
Hazardous Substances Reportable Quantity (kg)	5000 LBS / 2268 kg
Special Provisions for Transport	No additional remark.

Continued on Next Page

Section 15: Regulatory Information**Federal and State Regulations**

The following product(s) is (are) listed on SARA 313: Ethylene Glycol
 The following product(s) is (are) listed by the State of Massachusetts: Ethylene Glycol
 The following product(s) is (are) listed on TSCA: Ethylene Glycol

Other Classifications

WHMIS (Canada) WHMIS CLASS D-2A: Material causing other toxic effects (VERY TOXIC).
 DSCL (EEC) Not controlled under DSCL (Europe).

Section 16: Other Information**HMIS (U.S.A.)**

Health Hazard	*	2
Fire Hazard		1
Reactivity		0
Personal Protection		B

National Fire Protection
 Association (U.S.A.)

Health



Fire Hazard

Reactivity

Specific hazard

References

Not available.

Other Special Considerations

No additional remark.

Validated by Charles Toups on 05/24/2004.

Verified by Charles Toups.

Printed 05/24/2004.

Transportation Emergency Call
 CHEMTREC 800-424-9300
 Other Information Call
 Charles Toups
 337-261-0796

Notice to Reader

To the best of our knowledge, the information contained herein is accurate. However, neither the above named supplier nor any of its subsidiaries assumes any liability whatsoever for the accuracy or completeness of the information contained herein. Final determination of suitability of any material is the sole responsibility of the user. All materials may present unknown hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards that exist.

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-138
Revised August 1, 2011

*Surface Waste Management Facility Operator
and Generator shall maintain and make this
documentation available for Division inspection.

REQUEST FOR APPROVAL TO ACCEPT SOLID WASTE

1. Generator Name and Address: Western Refining Southwest, Inc. 50 CR 4990, Bloomfield, NM, 87413
2. Originating Site: Western Refining Southwest, Inc. Bloomfield Terminal – NESE27, T29N, R11W, San Juan County, NM
3. Location of Material (Street Address, City, State or ULSTR): Same as originating site
4. Source and Description of Waste: Treated non-hazardous water from the Bloomfield Terminal.
Estimated Volume _____ bbls Known Volume (to be entered by the operator at the end of the haul) _____ yd ³ / bbls
5. GENERATOR CERTIFICATION STATEMENT OF WASTE STATUS I, <u>Matthew Krakow</u>  , representative or authorized agent for <u>Western Refining Southwest, Inc.</u> do hereby PRINT & SIGN NAME COMPANY NAME certify that according to the Resource Conservation and Recovery Act (RCRA) and the US Environmental Protection Agency's July 1988 regulatory determination, the above described waste is: (Check the appropriate classification) ☐ RCRA Exempt: Oil field wastes generated from oil and gas exploration and production operations and are not mixed with non-exempt waste. <i>Operator Use Only: Waste Acceptance Frequency</i> ☐ Monthly ☐ Weekly ☐ Per Load ☒ RCRA Non-Exempt: Oil field waste which is non-hazardous that does not exceed the minimum standards for waste hazardous by characteristics established in RCRA regulations, 40 CFR 261.21-261.24, or listed hazardous waste as defined in 40 CFR, part 261, subpart D, as amended. The following documentation is attached to demonstrate the above-described waste is non-hazardous. (Check the appropriate items) ☐ MSDS Information ☒ RCRA Hazardous Waste Analysis ☐ Process Knowledge ☐ Other (Provide description in Box 4) GENERATOR 19.15.36.15 WASTE TESTING CERTIFICATION STATEMENT FOR LANDFARMS I, <u>N/A</u> , representative for <u>N/A</u> do hereby certify that representative samples of the oil field waste have been subjected to the paint filter test and tested for chloride content and that the samples have been found to conform to the specific requirements applicable to landfarms pursuant to Section 15 of 19.15.36 NMAC. The results of the representative samples are attached to demonstrate the above-described waste conform to the requirements of Section 15 of 19.15.36 NMAC.
5. Transporter: TBD

OCD Permitted Surface Waste Management Facility

Name and Facility Permit #: Agua Moss Permit # UICI-005

Address of Facility: 345 Rd 350 Aztec, NM 87410

Method of Treatment and/or Disposal:

☐ Evaporation ☒ Injection ☐ Treating Plant ☐ Landfarm ☐ Landfill ☐ Other

Waste Acceptance Status:

☒ **APPROVED**

☐ **DENIED** (Must Be Maintained As Permanent Record)

PRINT NAME: Garye Higgins

TITLE: _____ DATE: 10-26-15

SIGNATURE: 
Surface Waste Management Facility Authorized Agent

TELEPHONE NO.: 486-4925

Sample Log-In Check List

Client Name: Western Refining Southw Work Order Number: 1510068 RptNo: 1

Received by/date:

SA

10/02/15

Logged By: Lindsay Mangin

10/2/2015 8:00:00 AM

[Signature]

Completed By: Lindsay Mangin

10/2/2015 10:18:19 AM

[Signature]

Reviewed By:

[Signature]

10/05/15

Chain of Custody

1. Custody seals intact on sample bottles?

Yes ☐

No ☐

Not Present ☒

2. Is Chain of Custody complete?

Yes ☒

No ☐

Not Present ☐

3. How was the sample delivered?

Courier

Log In

4. Was an attempt made to cool the samples?

Yes ☒

No ☐

NA ☐

5. Were all samples received at a temperature of $>0^{\circ}\text{C}$ to 6.0°C ?

Yes ☒

No ☐

NA ☐

6. Sample(s) in proper container(s)?

Yes ☒

No ☐

7. Sufficient sample volume for indicated test(s)?

Yes ☒

No ☐

8. Are samples (except VOA and ONG) properly preserved?

Yes ☒

No ☐

9. Was preservative added to bottles?

Yes ☐

No ☒

NA ☐

10. VOA vials have zero headspace?

Yes ☒

No ☐

No VOA Vials ☐

11. Were any sample containers received broken?

Yes ☐

No ☒

of preserved
bottles checked
for pH:

2, B

(<2 or >12 unless noted)

NO

12. Does paperwork match bottle labels?

(Note discrepancies on chain of custody)

Yes ☒

No ☐

Adjusted?

13. Are matrices correctly identified on Chain of Custody?

Yes ☒

No ☐

14. Is it clear what analyses were requested?

Yes ☒

No ☐

15. Were all holding times able to be met?

Yes ☒

No ☐

(if no, notify customer for authorization.)

Checked by:

[Signature]

Special Handling (if applicable)

16. Was client notified of all discrepancies with this order?

Yes ☐

No ☐

NA ☒

Person Notified:

Date

By Whom:

Via:

☐ eMail

☐ Phone

☐ Fax

☐ In Person

Regarding:

Client Instructions:

17. Additional remarks:

18. Cooler Information

Cooler No	Temp $^{\circ}\text{C}$	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	1.0	Good	Yes			

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1510068

21-Oct-15

Client: Western Refining Southwest, Inc.

Project: Injection Well 10-1-15

Sample ID	MB-21710	SampType:	MBLK	TestCode:	SM2540C MOD: Total Dissolved Solids					
Client ID:	PBW	Batch ID:	21710	RunNo:	29402					
Prep Date:	10/7/2015	Analysis Date:	10/8/2015	SeqNo:	894282	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Dissolved Solids	ND	20.0								

Sample ID	LCS-21710	SampType:	LCS	TestCode:	SM2540C MOD: Total Dissolved Solids					
Client ID:	LCSW	Batch ID:	21710	RunNo:	29402					
Prep Date:	10/7/2015	Analysis Date:	10/8/2015	SeqNo:	894283	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Dissolved Solids	1000	20.0	1000	0	101	80	120			

Sample ID	1510068-001CMS	SampType:	MS	TestCode:	SM2540C MOD: Total Dissolved Solids					
Client ID:	I.W.	Batch ID:	21710	RunNo:	29402					
Prep Date:	10/7/2015	Analysis Date:	10/8/2015	SeqNo:	894288	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Dissolved Solids	10800	200	10000	710.0	101	80	120			D

Sample ID	1510068-001CMSD	SampType:	MSD	TestCode:	SM2540C MOD: Total Dissolved Solids					
Client ID:	I.W.	Batch ID:	21710	RunNo:	29402					
Prep Date:	10/7/2015	Analysis Date:	10/8/2015	SeqNo:	894289	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Dissolved Solids	10700	200	10000	710.0	99.8	80	120	1.30	5	D

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- D Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- R RPD outside accepted recovery limits
- S % Recovery outside of range due to dilution or matrix

- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- J Analyte detected below quantitation limits
- P Sample pH Not In Range
- RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1510068

21-Oct-15

Client: Western Refining Southwest, Inc.

Project: Injection Well 10-1-15

Sample ID	mb-1	SampType: MBLK		TestCode: SM2320B: Alkalinity						
Client ID:	PBW	Batch ID: R29409		RunNo: 29409						
Prep Date:		Analysis Date: 10/8/2015		SeqNo: 894449		Units: mg/L CaCO3				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Alkalinity (as CaCO3)	ND	20.00								

Sample ID	Ics-1	SampType: LCS			TestCode: SM2320B: Alkalinity					
Client ID:	LCSW	Batch ID: R29409			RunNo: 29409					
Prep Date:		Analysis Date: 10/8/2015			SeqNo: 894450		Units: mg/L CaCO3			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Alkalinity (as CaCO3)	79.52	20.00	80.00	0	99.4	90	110			

Sample ID	mb-2	SampType: MBLK			TestCode: SM2320B: Alkalinity					
Client ID:	PBW	Batch ID: R29409			RunNo: 29409					
Prep Date:		Analysis Date: 10/8/2015			SeqNo: 894473		Units: mg/L CaCO3			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Alkalinity (as CaCO3)	ND	20.00								

Sample ID	Ics-2	SampType: LCS			TestCode: SM2320B: Alkalinity					
Client ID:	LCSW	Batch ID: R29409			RunNo: 29409					
Prep Date:		Analysis Date: 10/8/2015			SeqNo: 894474		Units: mg/L CaCO3			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Alkalinity (as CaCO3)	80.32	20.00	80.00	0	100	90	110			

Qualifiers:

* Value exceeds Maximum Contaminant Level.
D Sample Diluted Due to Matrix
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
R RPD outside accepted recovery limits
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank
E Value above quantitation range
J Analyte detected below quantitation limits
P Sample pH Not In Range
RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1510068

21-Oct-15

Client: Western Refining Southwest, Inc.

Project: Injection Well 10-1-15

Sample ID	MB-21722	SampType:	MBLK	TestCode:	EPA 6010B: Total Recoverable Metals					
Client ID:	PBW	Batch ID:	21722	RunNo:	29410					
Prep Date:	10/7/2015	Analysis Date:	10/8/2015	SeqNo:	894615	Units:	mg/L			

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	ND	0.020								
Barium	ND	0.020								
Cadmium	ND	0.0020								
Calcium	ND	1.0								
Chromium	ND	0.0060								
Lead	ND	0.0050								
Magnesium	ND	1.0								
Potassium	ND	1.0								
Selenium	ND	0.050								
Silver	ND	0.0050								
Sodium	ND	1.0								

Sample ID	LCS-21722	SampType:	LCS	TestCode:	EPA 6010B: Total Recoverable Metals					
Client ID:	LCSW	Batch ID:	21722	RunNo:	29410					
Prep Date:	10/7/2015	Analysis Date:	10/8/2015	SeqNo:	894616	Units:	mg/L			

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	0.50	0.020	0.5000	0	101	80	120			
Barium	0.48	0.020	0.5000	0	95.6	80	120			
Cadmium	0.49	0.0020	0.5000	0	97.4	80	120			
Calcium	51	1.0	50.00	0	102	80	120			
Chromium	0.49	0.0060	0.5000	0	97.6	80	120			
Lead	0.48	0.0050	0.5000	0	95.7	80	120			
Magnesium	52	1.0	50.00	0	103	80	120			
Potassium	50	1.0	50.00	0	100	80	120			
Selenium	0.50	0.050	0.5000	0	99.8	80	120			
Silver	0.099	0.0050	0.1000	0	98.7	80	120			
Sodium	51	1.0	50.00	0	102	80	120			

Qualifiers:

* Value exceeds Maximum Contaminant Level.
D Sample Diluted Due to Matrix
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
R RPD outside accepted recovery limits
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank
E Value above quantitation range
J Analyte detected below quantitation limits
P Sample pH Not In Range
RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1510068

21-Oct-15

Client: Western Refining Southwest, Inc.

Project: Injection Well 10-1-15

Sample ID	MB-21684	SampType:	MBLK	TestCode:	EPA Method 7470: Mercury					
Client ID:	PBW	Batch ID:	21684	RunNo:	29353					
Prep Date:	10/6/2015	Analysis Date:	10/6/2015	SeqNo:	892607	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	ND	0.00020								

Sample ID	LCS-21684	SampType:	LCS	TestCode:	EPA Method 7470: Mercury					
Client ID:	LCSW	Batch ID:	21684	RunNo:	29353					
Prep Date:	10/6/2015	Analysis Date:	10/6/2015	SeqNo:	892608	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	0.0051	0.00020	0.005000	0	102	80	120			

Qualifiers:

* Value exceeds Maximum Contaminant Level.
D Sample Diluted Due to Matrix
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
R RPD outside accepted recovery limits
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank
E Value above quantitation range
J Analyte detected below quantitation limits
P Sample pH Not In Range
RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1510068

21-Oct-15

Client: Western Refining Southwest, Inc.

Project: Injection Well 10-1-15

Sample ID	ics-21682		SampType: LCS		TestCode: EPA Method 8270C: Semivolatiles					
Client ID:	LCSW		Batch ID: 21682		RunNo: 29400					
Prep Date:	10/6/2015		Analysis Date: 10/7/2015		SeqNo: 894253		Units: µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	48	10	100.0	0	47.6	40.2	107			
4-Chloro-3-methylphenol	110	10	200.0	0	54.8	48.2	107			
2-Chlorophenol	110	10	200.0	0	52.6	42.5	106			
1,4-Dichlorobenzene	49	10	100.0	0	48.9	31.6	111			
2,4-Dinitrotoluene	48	10	100.0	0	48.3	33.6	86.5			
N-Nitrosodi-n-propylamine	53	10	100.0	0	52.8	44	106			
4-Nitrophenol	110	10	200.0	0	56.0	25.5	109			
Pentachlorophenol	83	20	200.0	0	41.4	38.8	97.8			
Phenol	100	10	200.0	0	52.0	22.7	116			
Pyrene	48	10	100.0	0	48.2	29.3	138			
1,2,4-Trichlorobenzene	56	10	100.0	0	55.7	35.3	123			
Surr: 2-Fluorophenol	93		200.0		46.3	14.9	111			
Surr: Phenol-d5	120		200.0		58.4	11.3	108			
Surr: 2,4,6-Tribromophenol	91		200.0		45.3	15.7	154			
Surr: Nitrobenzene-d5	59		100.0		58.8	47.8	106			
Surr: 2-Fluorobiphenyl	52		100.0		52.3	21.3	123			
Surr: 4-Terphenyl-d14	38		100.0		38.4	14.3	135			

Qualifiers:

* Value exceeds Maximum Contaminant Level.
D Sample Diluted Due to Matrix
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
R RPD outside accepted recovery limits
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank
E Value above quantitation range
J Analyte detected below quantitation limits
P Sample pH Not In Range
RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1510068

21-Oct-15

Client: Western Refining Southwest, Inc.

Project: Injection Well 10-1-15

Sample ID	mb-21682		SampType: MBLK		TestCode: EPA Method 8270C: Semivolatiles					
Client ID:	PBW		Batch ID: 21682		RunNo: 29400					
Prep Date:	10/6/2015		Analysis Date: 10/7/2015		SeqNo: 894252		Units: µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
2,4-Dinitrotoluene	ND	10								
2,6-Dinitrotoluene	ND	10								
Fluoranthene	ND	10								
Fluorene	ND	10								
Hexachlorobenzene	ND	10								
Hexachlorobutadiene	ND	10								
Hexachlorocyclopentadiene	ND	10								
Hexachloroethane	ND	10								
Indeno(1,2,3-cd)pyrene	ND	10								
Isophorone	ND	10								
1-Methylnaphthalene	ND	10								
2-Methylnaphthalene	ND	10								
2-Methylphenol	ND	10								
3+4-Methylphenol	ND	10								
N-Nitrosodi-n-propylamine	ND	10								
N-Nitrosodimethylamine	ND	10								
N-Nitrosodiphenylamine	ND	10								
Naphthalene	ND	10								
2-Nitroaniline	ND	10								
3-Nitroaniline	ND	10								
4-Nitroaniline	ND	10								
Nitrobenzene	ND	10								
2-Nitrophenol	ND	10								
4-Nitrophenol	ND	10								
Pentachlorophenol	ND	20								
Phenanthrene	ND	10								
Phenol	ND	10								
Pyrene	ND	10								
Pyridine	ND	10								
1,2,4-Trichlorobenzene	ND	10								
2,4,5-Trichlorophenol	ND	10								
2,4,6-Trichlorophenol	ND	10								
Surr: 2-Fluorophenol	98		200.0		49.2	14.9	111			
Surr: Phenol-d5	120		200.0		59.8	11.3	108			
Surr: 2,4,6-Tribromophenol	110		200.0		57.2	15.7	154			
Surr: Nitrobenzene-d5	62		100.0		61.9	47.8	106			
Surr: 2-Fluorobiphenyl	63		100.0		62.5	21.3	123			
Surr: 4-Terphenyl-d14	35		100.0		35.3	14.3	135			

Qualifiers:

* Value exceeds Maximum Contaminant Level.
D Sample Diluted Due to Matrix
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
R RPD outside accepted recovery limits
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank
E Value above quantitation range
J Analyte detected below quantitation limits
P Sample pH Not In Range
RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1510068

21-Oct-15

Client: Western Refining Southwest, Inc.

Project: Injection Well 10-1-15

Sample ID	mb-21682		SampType:	MBLK		TestCode:	EPA Method 8270C: Semivolatiles				
Client ID:	PBW		Batch ID:	21682		RunNo:	29400				
Prep Date:	10/6/2015		Analysis Date:	10/7/2015		SeqNo:	894252		Units:	µg/L	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Acenaphthene	ND	10									
Acenaphthylene	ND	10									
Aniline	ND	10									
Anthracene	ND	10									
Azobenzene	ND	10									
Benz(a)anthracene	ND	10									
Benzo(a)pyrene	ND	10									
Benzo(b)fluoranthene	ND	10									
Benzo(g,h,i)perylene	ND	10									
Benzo(k)fluoranthene	ND	10									
Benzoic acid	ND	20									
Benzyl alcohol	ND	10									
Bis(2-chloroethoxy)methane	ND	10									
Bis(2-chloroethyl)ether	ND	10									
Bis(2-chloroisopropyl)ether	ND	10									
Bis(2-ethylhexyl)phthalate	ND	10									
4-Bromophenyl phenyl ether	ND	10									
Butyl benzyl phthalate	ND	10									
Carbazole	ND	10									
4-Chloro-3-methylphenol	ND	10									
4-Chloroaniline	ND	10									
2-Chloronaphthalene	ND	10									
2-Chlorophenol	ND	10									
4-Chlorophenyl phenyl ether	ND	10									
Chrysene	ND	10									
Di-n-butyl phthalate	ND	10									
Di-n-octyl phthalate	ND	10									
Dibenz(a,h)anthracene	ND	10									
Dibenzofuran	ND	10									
1,2-Dichlorobenzene	ND	10									
1,3-Dichlorobenzene	ND	10									
1,4-Dichlorobenzene	ND	10									
3,3'-Dichlorobenzidine	ND	10									
Diethyl phthalate	ND	10									
Dimethyl phthalate	ND	10									
2,4-Dichlorophenol	ND	20									
2,4-Dimethylphenol	ND	10									
4,6-Dinitro-2-methylphenol	ND	20									
2,4-Dinitrophenol	ND	20									

Qualifiers:

* Value exceeds Maximum Contaminant Level.

D Sample Diluted Due to Matrix

H Holding times for preparation or analysis exceeded

ND Not Detected at the Reporting Limit

R RPD outside accepted recovery limits

S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank

E Value above quantitation range

J Analyte detected below quantitation limits

P Sample pH Not In Range

RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1510068

21-Oct-15

Client: Western Refining Southwest, Inc.

Project: Injection Well 10-1-15

Sample ID	rb	SampType: MBLK		TestCode: EPA Method 8260B: VOLATILES						
Client ID:	PBW	Batch ID: R29380		RunNo: 29380						
Prep Date:	Analysis Date: 10/7/2015		SeqNo: 893404		Units: µg/L					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Vinyl chloride	ND	1.0								
Xylenes, Total	ND	1.5								
Surr: 1,2-Dichloroethane-d4	9.2		10.00		91.5	70	130			
Surr: 4-Bromofluorobenzene	9.3		10.00		93.5	70	130			
Surr: Dibromofluoromethane	9.6		10.00		95.9	70	130			
Surr: Toluene-d8	8.9		10.00		88.6	70	130			

Sample ID	1510068-001ams	SampType: MS		TestCode: EPA Method 8260B: VOLATILES						
Client ID:	I.W.	Batch ID: R29380		RunNo: 29380						
Prep Date:	Analysis Date: 10/7/2015		SeqNo: 893448		Units: µg/L					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	200	10	200.0	1.820	101	70	130			
Toluene	220	10	200.0	2.640	107	70	130			
Chlorobenzene	190	10	200.0	0	97.3	70	130			
1,1-Dichloroethene	210	10	200.0	0	105	70	130			
Trichloroethene (TCE)	200	10	200.0	0	98.9	70	130			
Surr: 1,2-Dichloroethane-d4	97		100.0		97.2	70	130			
Surr: 4-Bromofluorobenzene	94		100.0		94.0	70	130			
Surr: Dibromofluoromethane	100		100.0		101	70	130			
Surr: Toluene-d8	99		100.0		98.6	70	130			

Sample ID	1510068-001amsd	SampType: MSD	TestCode: EPA Method 8260B: VOLATILES							
Client ID:	I.W.	Batch ID: R29380	RunNo: 29380							
Prep Date:	Analysis Date: 10/7/2015		SeqNo: 893449		Units: µg/L					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	190	10	200.0	1.820	96.4	70	130	4.75	20	
Toluene	200	10	200.0	2.640	97.7	70	130	9.26	20	
Chlorobenzene	190	10	200.0	0	94.4	70	130	3.06	20	
1,1-Dichloroethene	200	10	200.0	0	99.7	70	130	5.26	20	
Trichloroethene (TCE)	190	10	200.0	0	95.7	70	130	3.32	20	
Surr: 1,2-Dichloroethane-d4	93		100.0		93.5	70	130	0	0	
Surr: 4-Bromofluorobenzene	97		100.0		97.0	70	130	0	0	
Surr: Dibromofluoromethane	97		100.0		96.7	70	130	0	0	
Surr: Toluene-d8	94		100.0		93.6	70	130	0	0	

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- D Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- R RPD outside accepted recovery limits
- S % Recovery outside of range due to dilution or matrix

- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- J Analyte detected below quantitation limits
- P Sample pH Not In Range
- RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1510068

21-Oct-15

Client: Western Refining Southwest, Inc.

Project: Injection Well 10-1-15

Sample ID	rb	SampType: MBLK			TestCode: EPA Method 8260B: VOLATILES					
Client ID:	PBW	Batch ID: R29380			RunNo: 29380					
Prep Date:		Analysis Date: 10/7/2015			SeqNo: 893404		Units: µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
4-Chlorotoluene	ND	1.0								
cis-1,2-DCE	ND	1.0								
cis-1,3-Dichloropropene	ND	1.0								
1,2-Dibromo-3-chloropropane	ND	2.0								
Dibromochloromethane	ND	1.0								
Dibromomethane	ND	1.0								
1,2-Dichlorobenzene	ND	1.0								
1,3-Dichlorobenzene	ND	1.0								
1,4-Dichlorobenzene	ND	1.0								
Dichlorodifluoromethane	ND	1.0								
1,1-Dichloroethane	ND	1.0								
1,1-Dichloroethene	ND	1.0								
1,2-Dichloropropane	ND	1.0								
1,3-Dichloropropane	ND	1.0								
2,2-Dichloropropane	ND	2.0								
1,1-Dichloropropene	ND	1.0								
Hexachlorobutadiene	ND	1.0								
2-Hexanone	ND	10								
Isopropylbenzene	ND	1.0								
4-Isopropyltoluene	ND	1.0								
4-Methyl-2-pentanone	ND	10								
Methylene Chloride	ND	3.0								
n-Butylbenzene	ND	3.0								
n-Propylbenzene	ND	1.0								
sec-Butylbenzene	ND	1.0								
Styrene	ND	1.0								
tert-Butylbenzene	ND	1.0								
1,1,1,2-Tetrachloroethane	ND	1.0								
1,1,2,2-Tetrachloroethane	ND	2.0								
Tetrachloroethene (PCE)	ND	1.0								
trans-1,2-DCE	ND	1.0								
trans-1,3-Dichloropropene	ND	1.0								
1,2,3-Trichlorobenzene	ND	1.0								
1,2,4-Trichlorobenzene	ND	1.0								
1,1,1-Trichloroethane	ND	1.0								
1,1,2-Trichloroethane	ND	1.0								
Trichloroethene (TCE)	ND	1.0								
Trichlorofluoromethane	ND	1.0								
1,2,3-Trichloropropane	ND	2.0								

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- D Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- R RPD outside accepted recovery limits
- S % Recovery outside of range due to dilution or matrix

- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- J Analyte detected below quantitation limits
- P Sample pH Not In Range
- RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1510068

21-Oct-15

Client: Western Refining Southwest, Inc.

Project: Injection Well 10-1-15

Sample ID	100ng LCS	SampType: LCS		TestCode: EPA Method 8260B: VOLATILES						
Client ID:	LCSW	Batch ID: R29380		RunNo: 29380						
Prep Date:		Analysis Date: 10/7/2015		SeqNo: 893389		Units: µg/L				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	20	1.0	20.00	0	99.8	70	130			
Toluene	22	1.0	20.00	0	108	70	130			
Chlorobenzene	20	1.0	20.00	0	99.7	70	130			
1,1-Dichloroethene	21	1.0	20.00	0	103	70	130			
Trichloroethene (TCE)	20	1.0	20.00	0	99.0	70	130			
Surr: 1,2-Dichloroethane-d4	9.6		10.00		96.4	70	130			
Surr: 4-Bromofluorobenzene	9.5		10.00		95.1	70	130			
Surr: Dibromofluoromethane	9.7		10.00		96.8	70	130			
Surr: Toluene-d8	9.7		10.00		96.5	70	130			

Sample ID	rb	SampType: MBLK		TestCode: EPA Method 8260B: VOLATILES						
Client ID:	PBW	Batch ID: R29380		RunNo: 29380						
Prep Date:		Analysis Date: 10/7/2015		SeqNo: 893404		Units: µg/L				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	1.0								
Toluene	ND	1.0								
Ethylbenzene	ND	1.0								
Methyl tert-butyl ether (MTBE)	ND	1.0								
1,2,4-Trimethylbenzene	ND	1.0								
1,3,5-Trimethylbenzene	ND	1.0								
1,2-Dichloroethane (EDC)	ND	1.0								
1,2-Dibromoethane (EDB)	ND	1.0								
Naphthalene	ND	2.0								
1-Methylnaphthalene	ND	4.0								
2-Methylnaphthalene	ND	4.0								
Acetone	ND	10								
Bromobenzene	ND	1.0								
Bromodichloromethane	ND	1.0								
Bromoform	ND	1.0								
Bromomethane	ND	3.0								
2-Butanone	ND	10								
Carbon disulfide	ND	10								
Carbon Tetrachloride	ND	1.0								
Chlorobenzene	ND	1.0								
Chloroethane	ND	2.0								
Chloroform	ND	1.0								
Chloromethane	ND	3.0								
2-Chlorotoluene	ND	1.0								

Qualifiers:

* Value exceeds Maximum Contaminant Level.
D Sample Diluted Due to Matrix
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
R RPD outside accepted recovery limits
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank
E Value above quantitation range
J Analyte detected below quantitation limits
P Sample pH Not In Range
RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1510068

21-Oct-15

Client: Western Refining Southwest, Inc.

Project: Injection Well 10-1-15

Sample ID	MB	SampType:	MBLK	TestCode:	EPA Method 300.0: Anions					
Client ID:	PBW	Batch ID:	R29286	RunNo:	29286					
Prep Date:		Analysis Date:	10/2/2015	SeqNo:	890112	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	ND	0.50								
Nitrogen, Nitrite (As N)	ND	0.10								
Bromide	ND	0.10								
Nitrogen, Nitrate (As N)	ND	0.10								
Phosphorus, Orthophosphate (As P)	ND	0.50								
Sulfate	ND	0.50								

Sample ID	LCS	SampType:	LCS	TestCode:	EPA Method 300.0: Anions					
Client ID:	LCSW	Batch ID:	R29286	RunNo:	29286					
Prep Date:		Analysis Date:	10/2/2015	SeqNo:	890113	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	5.1	0.50	5.000	0	103	90	110			
Nitrogen, Nitrite (As N)	0.98	0.10	1.000	0	97.5	90	110			
Bromide	2.5	0.10	2.500	0	101	90	110			
Nitrogen, Nitrate (As N)	2.6	0.10	2.500	0	103	90	110			
Phosphorus, Orthophosphate (As P)	5.1	0.50	5.000	0	101	90	110			
Sulfate	10	0.50	10.00	0	99.9	90	110			

Qualifiers:

- | | |
|---|---|
| * Value exceeds Maximum Contaminant Level. | B Analyte detected in the associated Method Blank |
| D Sample Diluted Due to Matrix | E Value above quantitation range |
| H Holding times for preparation or analysis exceeded | J Analyte detected below quantitation limits |
| ND Not Detected at the Reporting Limit | P Sample pH Not In Range |
| R RPD outside accepted recovery limits | RL Reporting Detection Limit |
| S % Recovery outside of range due to dilution or matrix | |

Anatek Labs, Inc.

1282 Alturas Drive • Moscow, ID 83843 • (208) 883-2839 • Fax (208) 882-9246 • email moscow@anateklabs.com
504 E Sprague Ste. D • Spokane WA 99202 • (509) 838-3999 • Fax (509) 838-4433 • email spokane@anateklabs.com

Client: HALL ENVIRONMENTAL ANALYSIS LAB
Address: 4901 HAWKINS NE SUITE D
ALBUQUERQUE, NM 87109
Attn: ANDY FREEMAN

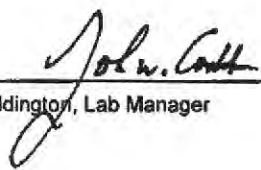
Batch #: 151006029
Project Name: 1510068

Analytical Results Report

Sample Number	151006029-001	Sampling Date	10/1/2015	Date/Time Received	10/6/2015 11:25 AM
Client Sample ID	1510068-001E / I.W.	Sampling Time	10:00 AM		
Matrix	Water	Sample Location			
Comments					

Parameter	Result	Units	PQL	Analysis Date	Analyst	Method	Qualifier
Cyanide (reactive)	ND	mg/L	1	10/14/2015	MER	SW846 CH7	
Flashpoint	>200	°F		10/7/2015	KFG	EPA 1010	
pH	6.72	ph Units		10/8/2015	KMC	SM 4500pH-B	
Reactive sulfide	11.2	mg/L	0.49	10/9/2015	KMC	SW846 CH7	

Authorized Signature


John Coddington, Lab Manager

MCL EPA's Maximum Contaminant Level
ND Not Detected
PQL Practical Quantitation Limit

This report shall not be reproduced except in full, without the written approval of the laboratory.
The results reported relate only to the samples indicated.
Soil/solid results are reported on a dry-weight basis unless otherwise noted.

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1510068

Date Reported: 10/21/2015

CLIENT: Western Refining Southwest, Inc.

Client Sample ID: I.W.

Project: Injection Well 10-1-15

Collection Date: 10/1/2015 10:00:00 AM

Lab ID: 1510068-001

Matrix: AQUEOUS

Received Date: 10/2/2015 8:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8260B: VOLATILES							Analyst: BCN
4-Isopropyltoluene	ND	5.0	D	µg/L	10	10/7/2015 2:56:33 PM	R29380
4-Methyl-2-pentanone	ND	50	D	µg/L	10	10/7/2015 2:56:33 PM	R29380
Methylene Chloride	ND	15	D	µg/L	10	10/7/2015 2:56:33 PM	R29380
n-Butylbenzene	ND	15	D	µg/L	10	10/7/2015 2:56:33 PM	R29380
n-Propylbenzene	ND	5.0	D	µg/L	10	10/7/2015 2:56:33 PM	R29380
sec-Butylbenzene	ND	5.0	D	µg/L	10	10/7/2015 2:56:33 PM	R29380
Styrene	ND	5.0	D	µg/L	10	10/7/2015 2:56:33 PM	R29380
tert-Butylbenzene	ND	5.0	D	µg/L	10	10/7/2015 2:56:33 PM	R29380
1,1,1,2-Tetrachloroethane	ND	5.0	D	µg/L	10	10/7/2015 2:56:33 PM	R29380
1,1,2,2-Tetrachloroethane	ND	10	D	µg/L	10	10/7/2015 2:56:33 PM	R29380
Tetrachloroethene (PCE)	ND	5.0	D	µg/L	10	10/7/2015 2:56:33 PM	R29380
trans-1,2-DCE	ND	5.0	D	µg/L	10	10/7/2015 2:56:33 PM	R29380
trans-1,3-Dichloropropene	ND	5.0	D	µg/L	10	10/7/2015 2:56:33 PM	R29380
1,2,3-Trichlorobenzene	ND	5.0	D	µg/L	10	10/7/2015 2:56:33 PM	R29380
1,2,4-Trichlorobenzene	ND	5.0	D	µg/L	10	10/7/2015 2:56:33 PM	R29380
1,1,1-Trichloroethane	ND	5.0	D	µg/L	10	10/7/2015 2:56:33 PM	R29380
1,1,2-Trichloroethane	ND	5.0	D	µg/L	10	10/7/2015 2:56:33 PM	R29380
Trichloroethene (TCE)	ND	5.0	D	µg/L	10	10/7/2015 2:56:33 PM	R29380
Trichlorofluoromethane	ND	5.0	D	µg/L	10	10/7/2015 2:56:33 PM	R29380
1,2,3-Trichloropropane	ND	10	D	µg/L	10	10/7/2015 2:56:33 PM	R29380
Vinyl chloride	ND	5.0	D	µg/L	10	10/7/2015 2:56:33 PM	R29380
Xylenes, Total	ND	7.5	D	µg/L	10	10/7/2015 2:56:33 PM	R29380
Surr: 1,2-Dichloroethane-d4	95.5	70-130	D	%REC	10	10/7/2015 2:56:33 PM	R29380
Surr: 4-Bromofluorobenzene	92.2	70-130	D	%REC	10	10/7/2015 2:56:33 PM	R29380
Surr: Dibromofluoromethane	98.2	70-130	D	%REC	10	10/7/2015 2:56:33 PM	R29380
Surr: Toluene-d8	92.5	70-130	D	%REC	10	10/7/2015 2:56:33 PM	R29380

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	* Value exceeds Maximum Contaminant Level.	B Analyte detected in the associated Method Blank
	D Sample Diluted Due to Matrix	E Value above quantitation range
	H Holding times for preparation or analysis exceeded	J Analyte detected below quantitation limits
	ND Not Detected at the Reporting Limit	P Sample pH Not In Range
	R RPD outside accepted recovery limits	RL Reporting Detection Limit
	S % Recovery outside of range due to dilution or matrix	

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1510068

Date Reported: 10/21/2015

CLIENT: Western Refining Southwest, Inc.

Client Sample ID: I.W.

Project: Injection Well 10-1-15

Collection Date: 10/1/2015 10:00:00 AM

Lab ID: 1510068-001

Matrix: AQUEOUS

Received Date: 10/2/2015 8:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8260B: VOLATILES							Analyst: BCN
1,2,4-Trimethylbenzene	ND	5.0	D	µg/L	10	10/7/2015 2:56:33 PM	R29380
1,3,5-Trimethylbenzene	ND	5.0	D	µg/L	10	10/7/2015 2:56:33 PM	R29380
1,2-Dichloroethane (EDC)	ND	5.0	D	µg/L	10	10/7/2015 2:56:33 PM	R29380
1,2-Dibromoethane (EDB)	ND	5.0	D	µg/L	10	10/7/2015 2:56:33 PM	R29380
Naphthalene	ND	10	D	µg/L	10	10/7/2015 2:56:33 PM	R29380
1-Methylnaphthalene	ND	20	D	µg/L	10	10/7/2015 2:56:33 PM	R29380
2-Methylnaphthalene	ND	20	D	µg/L	10	10/7/2015 2:56:33 PM	R29380
Acetone	ND	50	D	µg/L	10	10/7/2015 2:56:33 PM	R29380
Bromobenzene	ND	5.0	D	µg/L	10	10/7/2015 2:56:33 PM	R29380
Bromodichloromethane	ND	5.0	D	µg/L	10	10/7/2015 2:56:33 PM	R29380
Bromoform	ND	5.0	D	µg/L	10	10/7/2015 2:56:33 PM	R29380
Bromomethane	ND	15	D	µg/L	10	10/7/2015 2:56:33 PM	R29380
2-Butanone	ND	50	D	µg/L	10	10/7/2015 2:56:33 PM	R29380
Carbon disulfide	ND	50	D	µg/L	10	10/7/2015 2:56:33 PM	R29380
Carbon Tetrachloride	ND	5.0	D	µg/L	10	10/7/2015 2:56:33 PM	R29380
Chlorobenzene	ND	5.0	D	µg/L	10	10/7/2015 2:56:33 PM	R29380
Chloroethane	ND	10	D	µg/L	10	10/7/2015 2:56:33 PM	R29380
Chloroform	ND	5.0	D	µg/L	10	10/7/2015 2:56:33 PM	R29380
Chloromethane	ND	15	D	µg/L	10	10/7/2015 2:56:33 PM	R29380
2-Chlorotoluene	ND	5.0	D	µg/L	10	10/7/2015 2:56:33 PM	R29380
4-Chlorotoluene	ND	5.0	D	µg/L	10	10/7/2015 2:56:33 PM	R29380
cis-1,2-DCE	ND	5.0	D	µg/L	10	10/7/2015 2:56:33 PM	R29380
cis-1,3-Dichloropropene	ND	5.0	D	µg/L	10	10/7/2015 2:56:33 PM	R29380
1,2-Dibromo-3-chloropropane	ND	10	D	µg/L	10	10/7/2015 2:56:33 PM	R29380
Dibromochloromethane	ND	5.0	D	µg/L	10	10/7/2015 2:56:33 PM	R29380
Dibromomethane	ND	5.0	D	µg/L	10	10/7/2015 2:56:33 PM	R29380
1,2-Dichlorobenzene	ND	5.0	D	µg/L	10	10/7/2015 2:56:33 PM	R29380
1,3-Dichlorobenzene	ND	5.0	D	µg/L	10	10/7/2015 2:56:33 PM	R29380
1,4-Dichlorobenzene	ND	5.0	D	µg/L	10	10/7/2015 2:56:33 PM	R29380
Dichlorodifluoromethane	ND	5.0	D	µg/L	10	10/7/2015 2:56:33 PM	R29380
1,1-Dichloroethane	ND	5.0	D	µg/L	10	10/7/2015 2:56:33 PM	R29380
1,1-Dichloroethene	ND	5.0	D	µg/L	10	10/7/2015 2:56:33 PM	R29380
1,2-Dichloropropane	ND	5.0	D	µg/L	10	10/7/2015 2:56:33 PM	R29380
1,3-Dichloropropane	ND	5.0	D	µg/L	10	10/7/2015 2:56:33 PM	R29380
2,2-Dichloropropane	ND	10	D	µg/L	10	10/7/2015 2:56:33 PM	R29380
1,1-Dichloropropene	ND	5.0	D	µg/L	10	10/7/2015 2:56:33 PM	R29380
Hexachlorobutadiene	ND	5.0	D	µg/L	10	10/7/2015 2:56:33 PM	R29380
2-Hexanone	ND	50	D	µg/L	10	10/7/2015 2:56:33 PM	R29380
Isopropylbenzene	ND	5.0	D	µg/L	10	10/7/2015 2:56:33 PM	R29380

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	* Value exceeds Maximum Contaminant Level.	B Analyte detected in the associated Method Blank
	D Sample Diluted Due to Matrix	E Value above quantitation range
	H Holding times for preparation or analysis exceeded	J Analyte detected below quantitation limits
	ND Not Detected at the Reporting Limit	P Sample pH Not In Range
	R RPD outside accepted recovery limits	RL Reporting Detection Limit
	S % Recovery outside of range due to dilution or matrix	

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1510068

Date Reported: 10/21/2015

CLIENT: Western Refining Southwest, Inc.

Client Sample ID: I.W.

Project: Injection Well 10-1-15

Collection Date: 10/1/2015 10:00:00 AM

Lab ID: 1510068-001

Matrix: AQUEOUS

Received Date: 10/2/2015 8:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8270C: SEMIVOLATILES							Analyst: DAM
Hexachlorobenzene	ND	10		µg/L	1	10/7/2015 3:04:23 PM	21682
Hexachlorobutadiene	ND	10		µg/L	1	10/7/2015 3:04:23 PM	21682
Hexachlorocyclopentadiene	ND	10		µg/L	1	10/7/2015 3:04:23 PM	21682
Hexachloroethane	ND	10		µg/L	1	10/7/2015 3:04:23 PM	21682
Indeno(1,2,3-cd)pyrene	ND	10		µg/L	1	10/7/2015 3:04:23 PM	21682
Isophorone	ND	10		µg/L	1	10/7/2015 3:04:23 PM	21682
1-Methylnaphthalene	ND	10		µg/L	1	10/7/2015 3:04:23 PM	21682
2-Methylnaphthalene	ND	10		µg/L	1	10/7/2015 3:04:23 PM	21682
2-Methylphenol	14	10		µg/L	1	10/7/2015 3:04:23 PM	21682
3+4-Methylphenol	440	50		µg/L	5	10/9/2015 9:47:22 AM	21682
N-Nitrosodi-n-propylamine	ND	10		µg/L	1	10/7/2015 3:04:23 PM	21682
N-Nitrosodimethylamine	ND	10		µg/L	1	10/7/2015 3:04:23 PM	21682
N-Nitrosodiphenylamine	ND	10		µg/L	1	10/7/2015 3:04:23 PM	21682
Naphthalene	ND	10		µg/L	1	10/7/2015 3:04:23 PM	21682
2-Nitroaniline	ND	10		µg/L	1	10/7/2015 3:04:23 PM	21682
3-Nitroaniline	ND	10		µg/L	1	10/7/2015 3:04:23 PM	21682
4-Nitroaniline	ND	10		µg/L	1	10/7/2015 3:04:23 PM	21682
Nitrobenzene	ND	10		µg/L	1	10/7/2015 3:04:23 PM	21682
2-Nitrophenol	ND	10		µg/L	1	10/7/2015 3:04:23 PM	21682
4-Nitrophenol	ND	10		µg/L	1	10/7/2015 3:04:23 PM	21682
Pentachlorophenol	ND	20		µg/L	1	10/7/2015 3:04:23 PM	21682
Phenanthrene	ND	10		µg/L	1	10/7/2015 3:04:23 PM	21682
Phenol	ND	10		µg/L	1	10/7/2015 3:04:23 PM	21682
Pyrene	ND	10		µg/L	1	10/7/2015 3:04:23 PM	21682
Pyridine	ND	10		µg/L	1	10/7/2015 3:04:23 PM	21682
1,2,4-Trichlorobenzene	ND	10		µg/L	1	10/7/2015 3:04:23 PM	21682
2,4,5-Trichlorophenol	ND	10		µg/L	1	10/7/2015 3:04:23 PM	21682
2,4,6-Trichlorophenol	ND	10		µg/L	1	10/7/2015 3:04:23 PM	21682
Surr: 2-Fluorophenol	51.0	14.9-111		%REC	1	10/7/2015 3:04:23 PM	21682
Surr: Phenol-d5	59.0	11.3-108		%REC	1	10/7/2015 3:04:23 PM	21682
Surr: 2,4,6-Tribromophenol	74.0	15.7-154		%REC	1	10/7/2015 3:04:23 PM	21682
Surr: Nitrobenzene-d5	73.1	47.8-106		%REC	1	10/7/2015 3:04:23 PM	21682
Surr: 2-Fluorobiphenyl	64.6	21.3-123		%REC	1	10/7/2015 3:04:23 PM	21682
Surr: 4-Terphenyl-d14	41.8	14.3-135		%REC	1	10/7/2015 3:04:23 PM	21682

EPA METHOD 8260B: VOLATILES

Analyst: **BCN**

Benzene	ND	5.0	D	µg/L	10	10/7/2015 2:56:33 PM	R29380
Toluene	ND	5.0	D	µg/L	10	10/7/2015 2:56:33 PM	R29380
Ethylbenzene	ND	5.0	D	µg/L	10	10/7/2015 2:56:33 PM	R29380
Methyl tert-butyl ether (MTBE)	ND	5.0	D	µg/L	10	10/7/2015 2:56:33 PM	R29380

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1510068

Date Reported: 10/21/2015

CLIENT: Western Refining Southwest, Inc.

Client Sample ID: I.W.

Project: Injection Well 10-1-15

Collection Date: 10/1/2015 10:00:00 AM

Lab ID: 1510068-001

Matrix: AQUEOUS

Received Date: 10/2/2015 8:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8270C: SEMIVOLATILES							Analyst: DAM
Azobenzene	ND	10		µg/L	1	10/7/2015 3:04:23 PM	21682
Benz(a)anthracene	ND	10		µg/L	1	10/7/2015 3:04:23 PM	21682
Benzo(a)pyrene	ND	10		µg/L	1	10/7/2015 3:04:23 PM	21682
Benzo(b)fluoranthene	ND	10		µg/L	1	10/7/2015 3:04:23 PM	21682
Benzo(g,h,i)perylene	ND	10		µg/L	1	10/7/2015 3:04:23 PM	21682
Benzo(k)fluoranthene	ND	10		µg/L	1	10/7/2015 3:04:23 PM	21682
Benzoic acid	ND	20		µg/L	1	10/7/2015 3:04:23 PM	21682
Benzyl alcohol	ND	10		µg/L	1	10/7/2015 3:04:23 PM	21682
Bis(2-chloroethoxy)methane	ND	10		µg/L	1	10/7/2015 3:04:23 PM	21682
Bis(2-chloroethyl)ether	ND	10		µg/L	1	10/7/2015 3:04:23 PM	21682
Bis(2-chloroisopropyl)ether	ND	10		µg/L	1	10/7/2015 3:04:23 PM	21682
Bis(2-ethylhexyl)phthalate	ND	10		µg/L	1	10/7/2015 3:04:23 PM	21682
4-Bromophenyl phenyl ether	ND	10		µg/L	1	10/7/2015 3:04:23 PM	21682
Butyl benzyl phthalate	ND	10		µg/L	1	10/7/2015 3:04:23 PM	21682
Carbazole	ND	10		µg/L	1	10/7/2015 3:04:23 PM	21682
4-Chloro-3-methylphenol	ND	10		µg/L	1	10/7/2015 3:04:23 PM	21682
4-Chloroaniline	ND	10		µg/L	1	10/7/2015 3:04:23 PM	21682
2-Chloronaphthalene	ND	10		µg/L	1	10/7/2015 3:04:23 PM	21682
2-Chlorophenol	ND	10		µg/L	1	10/7/2015 3:04:23 PM	21682
4-Chlorophenyl phenyl ether	ND	10		µg/L	1	10/7/2015 3:04:23 PM	21682
Chrysene	ND	10		µg/L	1	10/7/2015 3:04:23 PM	21682
Di-n-butyl phthalate	ND	10		µg/L	1	10/7/2015 3:04:23 PM	21682
Di-n-octyl phthalate	ND	10		µg/L	1	10/7/2015 3:04:23 PM	21682
Dibenz(a,h)anthracene	ND	10		µg/L	1	10/7/2015 3:04:23 PM	21682
Dibenzofuran	ND	10		µg/L	1	10/7/2015 3:04:23 PM	21682
1,2-Dichlorobenzene	ND	10		µg/L	1	10/7/2015 3:04:23 PM	21682
1,3-Dichlorobenzene	ND	10		µg/L	1	10/7/2015 3:04:23 PM	21682
1,4-Dichlorobenzene	ND	10		µg/L	1	10/7/2015 3:04:23 PM	21682
3,3'-Dichlorobenzidine	ND	10		µg/L	1	10/7/2015 3:04:23 PM	21682
Diethyl phthalate	ND	10		µg/L	1	10/7/2015 3:04:23 PM	21682
Dimethyl phthalate	ND	10		µg/L	1	10/7/2015 3:04:23 PM	21682
2,4-Dichlorophenol	ND	20		µg/L	1	10/7/2015 3:04:23 PM	21682
2,4-Dimethylphenol	ND	10		µg/L	1	10/7/2015 3:04:23 PM	21682
4,6-Dinitro-2-methylphenol	ND	20		µg/L	1	10/7/2015 3:04:23 PM	21682
2,4-Dinitrophenol	ND	20		µg/L	1	10/7/2015 3:04:23 PM	21682
2,4-Dinitrotoluene	ND	10		µg/L	1	10/7/2015 3:04:23 PM	21682
2,6-Dinitrotoluene	ND	10		µg/L	1	10/7/2015 3:04:23 PM	21682
Fluoranthene	ND	10		µg/L	1	10/7/2015 3:04:23 PM	21682
Fluorene	ND	10		µg/L	1	10/7/2015 3:04:23 PM	21682

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	* Value exceeds Maximum Contaminant Level.	B Analyte detected in the associated Method Blank
	D Sample Diluted Due to Matrix	E Value above quantitation range
	H Holding times for preparation or analysis exceeded	J Analyte detected below quantitation limits
	ND Not Detected at the Reporting Limit	P Sample pH Not In Range
	R RPD outside accepted recovery limits	RL Reporting Detection Limit
	S % Recovery outside of range due to dilution or matrix	

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1510068

Date Reported: 10/21/2015

CLIENT: Western Refining Southwest, Inc.

Client Sample ID: I.W.

Project: Injection Well 10-1-15

Collection Date: 10/1/2015 10:00:00 AM

Lab ID: 1510068-001

Matrix: AQUEOUS

Received Date: 10/2/2015 8:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS							Analyst: LGT
Fluoride	ND	0.50		mg/L	5	10/3/2015 4:00:14 AM	R29286
Chloride	270	10		mg/L	20	10/3/2015 4:12:38 AM	R29286
Nitrogen, Nitrite (As N)	ND	0.50		mg/L	5	10/3/2015 4:00:14 AM	R29286
Bromide	1.9	0.50		mg/L	5	10/3/2015 4:00:14 AM	R29286
Nitrogen, Nitrate (As N)	ND	0.50		mg/L	5	10/3/2015 4:00:14 AM	R29286
Phosphorus, Orthophosphate (As P)	ND	2.5		mg/L	5	10/3/2015 4:00:14 AM	R29286
Sulfate	8.6	2.5		mg/L	5	10/3/2015 4:00:14 AM	R29286
SM2510B: SPECIFIC CONDUCTANCE							Analyst: MRA
Conductivity	1400	0.010		µmhos/cm	1	10/7/2015 10:01:55 PM	R29389
SM2320B: ALKALINITY							Analyst: JRR
Bicarbonate (As CaCO ₃)	333.8	20.00		mg/L CaCO ₃	1	10/8/2015 3:16:52 PM	R29409
Carbonate (As CaCO ₃)	ND	2.000		mg/L CaCO ₃	1	10/8/2015 3:16:52 PM	R29409
Total Alkalinity (as CaCO ₃)	333.8	20.00		mg/L CaCO ₃	1	10/8/2015 3:16:52 PM	R29409
SM2540C MOD: TOTAL DISSOLVED SOLIDS							Analyst: KS
Total Dissolved Solids	710	200	*D	mg/L	1	10/8/2015 4:14:00 PM	21710
SM4500-H+B: PH							Analyst: MRA
pH	7.52	1.68	H	pH units	1	10/7/2015 10:01:55 PM	R29389
EPA METHOD 7470: MERCURY							Analyst: JLF
Mercury	ND	0.00020		mg/L	1	10/6/2015 3:45:20 PM	21684
EPA 6010B: TOTAL RECOVERABLE METALS							Analyst: MED
Arsenic	ND	0.020		mg/L	1	10/8/2015 3:14:24 PM	21722
Barium	0.23	0.020		mg/L	1	10/8/2015 3:14:24 PM	21722
Cadmium	ND	0.0020		mg/L	1	10/8/2015 3:14:24 PM	21722
Calcium	69	1.0		mg/L	1	10/8/2015 3:14:24 PM	21722
Chromium	ND	0.0060		mg/L	1	10/8/2015 3:14:24 PM	21722
Lead	ND	0.0050		mg/L	1	10/8/2015 3:14:24 PM	21722
Magnesium	20	1.0		mg/L	1	10/8/2015 3:14:24 PM	21722
Potassium	9.0	1.0		mg/L	1	10/8/2015 3:14:24 PM	21722
Selenium	ND	0.050		mg/L	1	10/8/2015 3:14:24 PM	21722
Silver	ND	0.0050		mg/L	1	10/8/2015 3:14:24 PM	21722
Sodium	190	5.0		mg/L	5	10/12/2015 9:41:04 AM	21722
EPA METHOD 8270C: SEMIVOLATILES							Analyst: DAM
Acenaphthene	ND	10		µg/L	1	10/7/2015 3:04:23 PM	21682
Acenaphthylene	ND	10		µg/L	1	10/7/2015 3:04:23 PM	21682
Aniline	ND	10		µg/L	1	10/7/2015 3:04:23 PM	21682
Anthracene	ND	10		µg/L	1	10/7/2015 3:04:23 PM	21682

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	* Value exceeds Maximum Contaminant Level.	B Analyte detected in the associated Method Blank
	D Sample Diluted Due to Matrix	E Value above quantitation range
	H Holding times for preparation or analysis exceeded	J Analyte detected below quantitation limits
	ND Not Detected at the Reporting Limit	P Sample pH Not In Range
	R RPD outside accepted recovery limits	RL Reporting Detection Limit
	S % Recovery outside of range due to dilution or matrix	



Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com

October 21, 2015

Kelly Robinson

Western Refining Southwest, Inc.

#50 CR 4990

Bloomfield, NM 87413

TEL: (505) 632-4166

FAX (505) 632-3911

RE: Injection Well 10-1-15

OrderNo.: 1510068

Dear Kelly Robinson:

Hall Environmental Analysis Laboratory received 1 sample(s) on 10/2/2015 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent. To access our accredited tests please go to www.hallenvironmental.com or the state specific web sites. In order to properly interpret your results it is imperative that you review this report in its entirety. See the sample checklist and/or the Chain of Custody for information regarding the sample receipt temperature and preservation. Data qualifiers or a narrative will be provided if the sample analysis or analytical quality control parameters require a flag. When necessary, data qualifiers are provided on both the sample analysis report and the QC summary report, both sections should be reviewed. All samples are reported, as received, unless otherwise indicated. Lab measurement of analytes considered field parameters that require analysis within 15 minutes of sampling such as pH and residual chlorine are qualified as being analyzed outside of the recommended holding time.

Please don't hesitate to contact HEAL for any additional information or clarifications.

ADHS Cert #AZ0682 -- NMED-DWB Cert #NM9425 -- NMED-Micro Cert #NM0190

Sincerely,

Andy Freeman

Laboratory Manager

4901 Hawkins NE

Albuquerque, NM 87109

Sample Log-In Check List

Client Name: Western Refining Southw

Work Order Number: 1507094

RcptNo: 1

Received by/date:

AT 07/02/15

Logged By: Anne Thorne

Anne Thorne

7/2/2015 7:00:00 AM

Done Here

Completed By: Anne Thorne

Anne Thorne

7/2/2015

Ann. Hum. Genet. 25, 1971

Reviewed By:

19

07/02/15

Chain of Custody

1. Custody seals intact on sample bottles? Yes ☐ No ☐ Not Present ☒
2. Is Chain of Custody complete? Yes ☒ No ☐ Not Present ☐
3. How was the sample delivered? Courier

Log In

- | | | | |
|--|---|--|--|
| 4. Was an attempt made to cool the samples? | Yes ☒ | No ☐ | NA ☐ |
| 5. Were all samples received at a temperature of $>0^{\circ}\text{C}$ to 6.0°C | Yes ☒ | No ☐ | NA ☐ |
| 6. Sample(s) in proper container(s)? | Yes ☒ | No ☐ | |
| 7. Sufficient sample volume for indicated test(s)? | Yes ☒ | No ☐ | |
| 8. Are samples (except VOA and ONG) properly preserved? | Yes ☒ | No ☐ | |
| 9. Was preservative added to bottles? | Yes ☐ | No ☒ | NA ☐ |
| 10. VOA vials have zero headspace? | Yes ☐ | No ☐ | No VOA Vials ☒ |
| 11. Were any sample containers received broken? | Yes ☐ | No ☒ | |
| 12. Does paperwork match bottle labels?
(Note discrepancies on chain of custody) | Yes ☒ | No ☐ | |
| 13. Are matrices correctly identified on Chain of Custody? | Yes ☒ | No ☐ | |
| 14. Is it clear what analyses were requested? | Yes ☒ | No ☐ | |
| 15. Were all holding times able to be met?
(If no, notify customer for authorization.) | Yes ☒ | No ☐ | |
- # of preserved bottles checked for pH: Adjusted? ☒

Checked by: _____

of preserved bottles checked for pH: 2 2

Adjusted?

Checked by:

Special Handling (if applicable)

16. Was client notified of all discrepancies with this order? Yes ☐ No ☐ NA ☒

Person Notified: _____ Date: _____
By Whom: _____ Via: ☐ eMail ☐ Phone ☐ Fax ☐ In Person
Regarding: _____
Client Instructions: _____

17. Additional remarks:

18. Cooler Information

Cooler No.	Temp °C	Condition	Seal Intact	Seal No.	Seal Date	Signed By
1	1.0	Good	Yes			

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1507094

06-Aug-15

Client: Western Refining Southwest, Inc.

Project: Injection Well 7-1-15

Sample ID	MB-20129	SampType:	MBLK	TestCode:	SM2540C MOD: Total Dissolved Solids					
Client ID:	PBW	Batch ID:	20129	RunNo:	27360					
Prep Date:	7/7/2015	Analysis Date:	7/8/2015	SeqNo:	820297	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Dissolved Solids	ND	20.0								

Sample ID	LCS-20129	SampType:	LCS	TestCode:	SM2540C MOD: Total Dissolved Solids					
Client ID:	LCSW	Batch ID:	20129	RunNo:	27360					
Prep Date:	7/7/2015	Analysis Date:	7/8/2015	SeqNo:	820298	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Dissolved Solids	1010	20.0	1000	0	101	80	120			

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- D Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- R RPD outside accepted recovery limits
- S % Recovery outside of range due to dilution or matrix

- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- J Analyte detected below quantitation limits
- P Sample pH Not In Range
- RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1507094

06-Aug-15

Client: Western Refining Southwest, Inc.

Project: Injection Well 7-1-15

Sample ID	mb-1	SampType:	MBLK	TestCode:	SM2320B: Alkalinity					
Client ID:	PBW	Batch ID:	R27329	RunNo:	27329					
Prep Date:		Analysis Date:	7/6/2015	SeqNo:	819128	Units:	mg/L CaCO3			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Alkalinity (as CaCO3)	ND	20.00								

Sample ID	ics-1	SampType: LCS			TestCode: SM2320B: Alkalinity					
Client ID:	LCSW	Batch ID: R27329			RunNo: 27329					
Prep Date:		Analysis Date: 7/6/2015			SeqNo: 819129		Units: mg/L CaCO3			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Alkalinity (as CaCO3)	78.36	20.00	80.00	0	98.0	90	110			

Sample ID	mb-2	SampType:	MBLK	TestCode:	SM2320B: Alkalinity					
Client ID:	PBW	Batch ID:	R27329	RunNo:	27329					
Prep Date:		Analysis Date:	7/6/2015	SeqNo:	819152	Units:	mg/L CaCO3			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Alkalinity (as CaCO3)	ND	20.00								

Sample ID	ics-2	SampType:	LCS	TestCode:	SM2320B: Alkalinity					
Client ID:	LCSW	Batch ID:	R27329	RunNo:	27329					
Prep Date:		Analysis Date:	7/6/2015	SeqNo:	819153	Units:	mg/L CaCO3			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Alkalinity (as CaCO3)	79.44	20.00	80.00	0	99.3	90	110			

Qualifiers:

* Value exceeds Maximum Contaminant Level.
D Sample Diluted Due to Matrix
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
R RPD outside accepted recovery limits
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank
E Value above quantitation range
J Analyte detected below quantitation limits
P Sample pH Not In Range
RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1507094

06-Aug-15

Client: Western Refining Southwest, Inc.

Project: Injection Well 7-1-15

Sample ID	1507094-001b dup	SampType:	DUP	TestCode:	SM4500-H+B: pH					
Client ID:	Injection Well	Batch ID:	R27329	RunNo:	27329					
Prep Date:		Analysis Date:	7/6/2015	SeqNo:	819204	Units:	pH units			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
pH	7.46	1.68								H

Qualifiers:

* Value exceeds Maximum Contaminant Level.
D Sample Diluted Due to Matrix
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
R RPD outside accepted recovery limits
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank
E Value above quantitation range
J Analyte detected below quantitation limits
P Sample pH Not In Range
RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1507094

06-Aug-15

Client: Western Refining Southwest, Inc.

Project: Injection Well 7-1-15

Sample ID	MB-20102	SampType:	MBLK	TestCode:	EPA 6010B: Total Recoverable Metals					
Client ID:	PBW	Batch ID:	20102	RunNo:	27540					
Prep Date:	7/6/2015	Analysis Date:	7/16/2015	SeqNo:	826932	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Cadmium	ND	0.0020								
Selenium	ND	0.050								
Silver	ND	0.0050								

Sample ID	LCS-20102	SampType:	LCS	TestCode:	EPA 6010B: Total Recoverable Metals					
Client ID:	LCSW	Batch ID:	20102	RunNo:	27540					
Prep Date:	7/6/2015	Analysis Date:	7/16/2015	SeqNo:	826933	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Cadmium	0.50	0.0020	0.5000	0	101	80	120			
Selenium	0.50	0.050	0.5000	0	99.7	80	120			
Silver	0.10	0.0050	0.1000	0	105	80	120			

Qualifiers:

* Value exceeds Maximum Contaminant Level.
D Sample Diluted Due to Matrix
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
R RPD outside accepted recovery limits
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank
E Value above quantitation range
J Analyte detected below quantitation limits
P Sample pH Not In Range
RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1507094

06-Aug-15

Client: Western Refining Southwest, Inc.

Project: Injection Well 7-1-15

Sample ID	MB-20102		SampType: MBLK		TestCode: EPA 6010B: Total Recoverable Metals					
Client ID:	PBW		Batch ID: 20102		RunNo: 27378					
Prep Date:	7/6/2015		Analysis Date: 7/9/2015		SeqNo: 821352		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	ND	0.020								
Barium	ND	0.020								
Calcium	ND	1.0								
Lead	ND	0.0050								
Magnesium	ND	1.0								
Potassium	ND	1.0								
Sodium	ND	1.0								

Sample ID	LCS-20102		SampType: LCS		TestCode: EPA 6010B: Total Recoverable Metals					
Client ID:	LCSW		Batch ID: 20102		RunNo: 27378					
Prep Date:	7/6/2015		Analysis Date: 7/9/2015		SeqNo: 821353		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	0.52	0.020	0.5000	0	103	80	120			
Barium	0.49	0.020	0.5000	0	98.5	80	120			
Calcium	51	1.0	50.00	0	102	80	120			
Lead	0.50	0.0050	0.5000	0	100	80	120			
Magnesium	50	1.0	50.00	0	101	80	120			
Potassium	48	1.0	50.00	0	96.8	80	120			
Sodium	49	1.0	50.00	0	98.9	80	120			

Sample ID	MB-20102		SampType:	MBLK		TestCode:	EPA 6010B: Total Recoverable Metals				
Client ID:	PBW		Batch ID:	20102		RunNo:	27491				
Prep Date:	7/6/2015		Analysis Date:	7/14/2015		SeqNo:	824974		Units: mg/L		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Chromium	ND	0.0060									

Sample ID	LCS-20102		SampType:	LCS		TestCode:	EPA 6010B: Total Recoverable Metals				
Client ID:	LCSW		Batch ID:	20102		RunNo:	27491				
Prep Date:	7/6/2015		Analysis Date:	7/14/2015		SeqNo:	824975		Units: mg/L		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Chromium	0.49	0.0060	0.5000	0	98.5	80	120				

Sample ID	MB-20102		SampType:	MBLK		TestCode:	EPA 6010B: Total Recoverable Metals				
Client ID:	PBW		Batch ID:	20102		RunNo:	27540				
Prep Date:	7/6/2015		Analysis Date:	7/16/2015		SeqNo:	826932		Units: mg/L		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- D Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- R RPD outside accepted recovery limits
- S % Recovery outside of range due to dilution or matrix

- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- J Analyte detected below quantitation limits
- P Sample pH Not In Range
- RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1507094

06-Aug-15

Client: Western Refining Southwest, Inc.

Project: Injection Well 7-1-15

Sample ID	MB-20158	SampType:	MBLK	TestCode:	EPA Method 7470: Mercury					
Client ID:	PBW	Batch ID:	20158	RunNo:	27365					
Prep Date:	7/8/2015	Analysis Date:	7/8/2015	SeqNo:	820590	Units: mg/L				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	ND	0.00020								

Sample ID	LCS-20158	SampType:	LCS	TestCode:	EPA Method 7470: Mercury					
Client ID:	LCSW	Batch ID:	20158	RunNo:	27365					
Prep Date:	7/8/2015	Analysis Date:	7/8/2015	SeqNo:	820591	Units: mg/L				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	0.0051	0.00020	0.005000	0	102	80	120			

Sample ID	1507094-001DMS	SampType:	MS	TestCode:	EPA Method 7470: Mercury					
Client ID:	Injection Well	Batch ID:	20158	RunNo:	27365					
Prep Date:	7/8/2015	Analysis Date:	7/8/2015	SeqNo:	820635	Units: mg/L				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	0.0059	0.0010	0.005000	0	118	75	125			

Sample ID	1507094-001DMSD	SampType:	MSD	TestCode:	EPA Method 7470: Mercury					
Client ID:	Injection Well	Batch ID:	20158	RunNo:	27365					
Prep Date:	7/8/2015	Analysis Date:	7/8/2015	SeqNo:	820638	Units: mg/L				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	0.0058	0.0010	0.005000	0	116	75	125	1.62	20	

Qualifiers:

* Value exceeds Maximum Contaminant Level.
D Sample Diluted Due to Matrix
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
R RPD outside accepted recovery limits
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank
E Value above quantitation range
J Analyte detected below quantitation limits
P Sample pH Not In Range
RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1507094

06-Aug-15

Client: Western Refining Southwest, Inc.

Project: Injection Well 7-1-15

Sample ID	1507094-001b dup	SampType:	DUP	TestCode:	SM2510B: Specific Conductance					
Client ID:	Injection Well	Batch ID:	R27329	RunNo:	27329					
Prep Date:		Analysis Date:	7/6/2015	SeqNo:	819171	Units:	µmhos/cm			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Conductivity	2000	0.010						0.0491	20	

Qualifiers:

- | | |
|---|---|
| * Value exceeds Maximum Contaminant Level. | B Analyte detected in the associated Method Blank |
| D Sample Diluted Due to Matrix | E Value above quantitation range |
| H Holding times for preparation or analysis exceeded | J Analyte detected below quantitation limits |
| ND Not Detected at the Reporting Limit | P Sample pH Not In Range |
| R RPD outside accepted recovery limits | RL Reporting Detection Limit |
| S % Recovery outside of range due to dilution or matrix | |

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1507094

06-Aug-15

Client: Western Refining Southwest, Inc.

Project: Injection Well 7-1-15

Sample ID	lcscd-20095	SampType:	LCSD	TestCode:	EPA Method 8270C: Semivolatiles					
Client ID:	LCSS02	Batch ID:	20095	RunNo:	27414					
Prep Date:	7/6/2015	Analysis Date:	7/10/2015	SeqNo:	822560	Units:	µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: 4-Terphenyl-d14	51		100.0		51.2	14.3	135	0	0	

Sample ID	mb-20218		SampType:	MBLK		TestCode:	EPA Method 8270C: Semivolatiles				
Client ID:	PBW		Batch ID:	20218		RunNo:	27531				
Prep Date:	7/13/2015		Analysis Date:	7/15/2015		SeqNo:	826536		Units: %REC		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Surr: 2-Fluorophenol	90		200.0		45.0	14.9	111				
Surr: Phenol-d5	75		200.0		37.3	11.3	108				
Surr: 2,4,6-Tribromophenol	140		200.0		69.6	15.7	154				
Surr: Nitrobenzene-d5	64		100.0		64.4	47.8	106				
Surr: 2-Fluorobiphenyl	61		100.0		61.2	21.3	123				
Surr: 4-Terphenyl-d14	45		100.0		45.2	14.3	135				

Sample ID	lcs-20218	SampType:	LCS	TestCode:	EPA Method 8270C: Semivolatiles					
Client ID:	LCSW	Batch ID:	20218	RunNo:	27531					
Prep Date:	7/13/2015	Analysis Date:	7/15/2015	SeqNo:	826537	Units: %REC				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: 2-Fluorophenol	110		200.0		53.4	14.9	111			
Surr: Phenol-d5	82		200.0		41.0	11.3	108			
Surr: 2,4,6-Tribromophenol	150		200.0		74.7	15.7	154			
Surr: Nitrobenzene-d5	74		100.0		74.2	47.8	106			
Surr: 2-Fluorobiphenyl	74		100.0		73.5	21.3	123			
Surr: 4-Terphenyl-d14	44		100.0		44.2	14.3	135			

Sample ID	lcscd-20218	SampType:	LCSD	TestCode:	EPA Method 8270C: Semivolatiles					
Client ID:	LCSS02	Batch ID:	20218	RunNo:	27531					
Prep Date:	7/13/2015	Analysis Date:	7/15/2015	SeqNo:	826538	Units: %REC				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: 2-Fluorophenol	100		200.0		52.2	14.9	111	0	0	
Surr: Phenol-d5	84		200.0		41.8	11.3	108	0	0	
Surr: 2,4,6-Tribromophenol	150		200.0		75.7	15.7	154	0	0	
Surr: Nitrobenzene-d5	76		100.0		76.0	47.8	106	0	0	
Surr: 2-Fluorobiphenyl	69		100.0		68.5	21.3	123	0	0	
Surr: 4-Terphenyl-d14	46		100.0		45.5	14.3	135	0	0	

Qualifiers:

- | | |
|---|---|
| * Value exceeds Maximum Contaminant Level. | B Analyte detected in the associated Method Blank |
| D Sample Diluted Due to Matrix | E Value above quantitation range |
| H Holding times for preparation or analysis exceeded | J Analyte detected below quantitation limits |
| ND Not Detected at the Reporting Limit | P Sample pH Not In Range |
| R RPD outside accepted recovery limits | RL Reporting Detection Limit |
| S % Recovery outside of range due to dilution or matrix | |

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1507094

06-Aug-15

Client: Western Refining Southwest, Inc.

Project: Injection Well 7-1-15

Sample ID	Ics-20095		SampType: LCS		TestCode: EPA Method 8270C: Semivolatiles					
Client ID:	LCSW		Batch ID: 20095		RunNo: 27414					
Prep Date:	7/6/2015		Analysis Date: 7/10/2015		SeqNo: 822559		Units: µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	51	10	100.0	0	51.2	47.8	99.7			
4-Chloro-3-methylphenol	110	10	200.0	0	56.2	58.1	103			S
2-Chlorophenol	73	10	200.0	0	36.7	49.5	96.8			S
1,4-Dichlorobenzene	34	10	100.0	0	33.8	40.4	89.4			S
2,4-Dinitrotoluene	42	10	100.0	0	41.8	38.6	91.3			
N-Nitrosodi-n-propylamine	51	10	100.0	0	51.1	53.9	95.6			S
4-Nitrophenol	93	10	200.0	0	46.3	26.4	108			
Pentachlorophenol	98	20	200.0	0	49.1	36.5	86.6			
Phenol	85	10	200.0	0	42.7	29.3	108			
Pyrene	56	10	100.0	0	56.2	45.7	100			
1,2,4-Trichlorobenzene	43	10	100.0	0	42.9	39.3	94.5			
Surr: 2-Fluorophenol	67		200.0		33.4	14.9	111			
Surr: Phenol-d5	86		200.0		43.0	11.3	108			
Surr: 2,4,6-Tribromophenol	120		200.0		62.3	15.7	154			
Surr: Nitrobenzene-d5	47		100.0		46.6	47.8	106			S
Surr: 2-Fluorobiphenyl	53		100.0		53.0	21.3	123			
Surr: 4-Terphenyl-d14	44		100.0		44.1	14.3	135			

Sample ID	Icsd-20095		SampType: LCSd		TestCode: EPA Method 8270C: Semivolatiles					
Client ID:	LCSS02		Batch ID: 20095		RunNo: 27414					
Prep Date:	7/6/2015		Analysis Date: 7/10/2015		SeqNo: 822560		Units: µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	76	10	100.0	0	76.1	47.8	99.7	39.1	28.2	R
4-Chloro-3-methylphenol	160	10	200.0	0	81.3	58.1	103	36.4	24.4	R
2-Chlorophenol	150	10	200.0	0	76.8	49.5	96.8	70.6	28.1	R
1,4-Dichlorobenzene	72	10	100.0	0	72.5	40.4	89.4	72.9	31.2	R
2,4-Dinitrotoluene	55	10	100.0	0	54.6	38.6	91.3	26.4	44.4	
N-Nitrosodi-n-propylamine	76	10	100.0	0	76.4	53.9	95.6	39.6	24.2	R
4-Nitrophenol	130	10	200.0	0	63.8	26.4	108	31.8	36.6	
Pentachlorophenol	130	20	200.0	0	65.8	36.5	86.6	29.1	29.5	
Phenol	160	10	200.0	0	77.8	29.3	108	58.2	30	R
Pyrene	69	10	100.0	0	69.3	45.7	100	20.8	31	
1,2,4-Trichlorobenzene	86	10	100.0	0	85.7	39.3	94.5	66.6	24	R
Surr: 2-Fluorophenol	140		200.0		70.6	14.9	111	0	0	
Surr: Phenol-d5	160		200.0		79.2	11.3	108	0	0	
Surr: 2,4,6-Tribromophenol	160		200.0		82.0	15.7	154	0	0	
Surr: Nitrobenzene-d5	80		100.0		79.5	47.8	106	0	0	
Surr: 2-Fluorobiphenyl	77		100.0		77.3	21.3	123	0	0	

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- D Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- R RPD outside accepted recovery limits
- S % Recovery outside of range due to dilution or matrix

- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- J Analyte detected below quantitation limits
- P Sample pH Not In Range
- RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1507094

06-Aug-15

Client: Western Refining Southwest, Inc.

Project: Injection Well 7-1-15

Sample ID	mb-20095	SampType:	MBLK	TestCode:	EPA Method 8270C: Semivolatiles					
Client ID:	PBW	Batch ID:	20095	RunNo:	27414					
Prep Date:	7/6/2015	Analysis Date:	7/10/2015	SeqNo:	822558	Units:	µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
2,4-Dinitrotoluene	ND	10								
2,6-Dinitrotoluene	ND	10								
Fluoranthene	ND	10								
Fluorene	ND	10								
Hexachlorobenzene	ND	10								
Hexachlorobutadiene	ND	10								
Hexachlorocyclopentadiene	ND	10								
Hexachloroethane	ND	10								
Indeno(1,2,3-cd)pyrene	ND	10								
Isophorone	ND	10								
1-Methylnaphthalene	ND	10								
2-Methylnaphthalene	ND	10								
2-Methylphenol	ND	10								
3+4-Methylphenol	ND	10								
N-Nitrosodi-n-propylamine	ND	10								
N-Nitrosodimethylamine	ND	10								
N-Nitrosodiphenylamine	ND	10								
Naphthalene	ND	10								
2-Nitroaniline	ND	10								
3-Nitroaniline	ND	10								
4-Nitroaniline	ND	10								
Nitrobenzene	ND	10								
2-Nitrophenol	ND	10								
4-Nitrophenol	ND	10								
Pentachlorophenol	ND	20								
Phenanthrene	ND	10								
Phenol	ND	10								
Pyrene	ND	10								
Pyridine	ND	10								
1,2,4-Trichlorobenzene	ND	10								
2,4,5-Trichlorophenol	ND	10								
2,4,6-Trichlorophenol	ND	10								
Surr: 2-Fluorophenol	140		200.0		69.6	14.9	111			
Surr: Phenol-d5	150		200.0		74.2	11.3	108			
Surr: 2,4,6-Tribromophenol	150		200.0		75.2	15.7	154			
Surr: Nitrobenzene-d5	75		100.0		75.0	47.8	106			
Surr: 2-Fluorobiphenyl	76		100.0		75.9	21.3	123			
Surr: 4-Terphenyl-d14	52		100.0		52.2	14.3	135			

Qualifiers:

- | | |
|---|---|
| * Value exceeds Maximum Contaminant Level. | B Analyte detected in the associated Method Blank |
| D Sample Diluted Due to Matrix | E Value above quantitation range |
| H Holding times for preparation or analysis exceeded | J Analyte detected below quantitation limits |
| ND Not Detected at the Reporting Limit | P Sample pH Not In Range |
| R RPD outside accepted recovery limits | RL Reporting Detection Limit |
| S % Recovery outside of range due to dilution or matrix | |

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1507094

06-Aug-15

Client: Western Refining Southwest, Inc.

Project: Injection Well 7-1-15

Sample ID	mb-20095	SampType:	MBLK	TestCode:	EPA Method 8270C: Semivolatiles					
Client ID:	PBW	Batch ID:	20095	RunNo:	27414					
Prep Date:	7/6/2015	Analysis Date:	7/10/2015	SeqNo:	822558	Units:	µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	ND	10								
Acenaphthylene	ND	10								
Aniline	ND	10								
Anthracene	ND	10								
Azobenzene	ND	10								
Benz(a)anthracene	ND	10								
Benzo(a)pyrene	ND	10								
Benzo(b)fluoranthene	ND	10								
Benzo(g,h,i)perylene	ND	10								
Benzo(k)fluoranthene	ND	10								
Benzoic acid	ND	20								
Benzyl alcohol	ND	10								
Bis(2-chloroethoxy)methane	ND	10								
Bis(2-chloroethyl)ether	ND	10								
Bis(2-chloroisopropyl)ether	ND	10								
Bis(2-ethylhexyl)phthalate	ND	10								
4-Bromophenyl phenyl ether	ND	10								
Butyl benzyl phthalate	ND	10								
Carbazole	ND	10								
4-Chloro-3-methylphenol	ND	10								
4-Chloroaniline	ND	10								
2-Chloronaphthalene	ND	10								
2-Chlorophenol	ND	10								
4-Chlorophenyl phenyl ether	ND	10								
Chrysene	ND	10								
Di-n-butyl phthalate	ND	10								
Di-n-octyl phthalate	ND	10								
Dibenz(a,h)anthracene	ND	10								
Dibenzofuran	ND	10								
1,2-Dichlorobenzene	ND	10								
1,3-Dichlorobenzene	ND	10								
1,4-Dichlorobenzene	ND	10								
3,3'-Dichlorobenzidine	ND	10								
Diethyl phthalate	ND	10								
Dimethyl phthalate	ND	10								
2,4-Dichlorophenol	ND	20								
2,4-Dimethylphenol	ND	10								
4,6-Dinitro-2-methylphenol	ND	20								
2,4-Dinitrophenol	ND	20								

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- D Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- R RPD outside accepted recovery limits
- S % Recovery outside of range due to dilution or matrix

- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- J Analyte detected below quantitation limits
- P Sample pH Not In Range
- RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1507094

06-Aug-15

Client: Western Refining Southwest, Inc.

Project: Injection Well 7-1-15

Sample ID: rb1	SampType: MBLK		TestCode: EPA Method 8260B: VOLATILES							
Client ID: PBW	Batch ID: R27397		RunNo: 27397							
Prep Date:	Analysis Date: 7/9/2015		SeqNo: 822418		Units: µg/L					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Vinyl chloride	ND	1.0								
Xylenes, Total	ND	1.5								
Surr: 1,2-Dichloroethane-d4	10		10.00		102	70	130			
Surr: 4-Bromofluorobenzene	10		10.00		104	70	130			
Surr: Dibromofluoromethane	11		10.00		107	70	130			
Surr: Toluene-d8	9.9		10.00		98.7	70	130			

Qualifiers:

* Value exceeds Maximum Contaminant Level	B Analyte detected in the associated Method Blank
D Sample Diluted Due to Matrix	E Value above quantitation range
H Holding times for preparation or analysis exceeded	J Analyte detected below quantitation limits
ND Not Detected at the Reporting Limit	P Sample pH Not In Range
R RPD outside accepted recovery limits	RL Reporting Detection Limit
S % Recovery outside of range due to dilution or matrix	

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1507094

06-Aug-15

Client: Western Refining Southwest, Inc.

Project: Injection Well 7-1-15

Sample ID	rb1	SampType: MBLK			TestCode: EPA Method 8260B: VOLATILES					
Client ID:	PBW	Batch ID: R27397			RunNo: 27397					
Prep Date:		Analysis Date: 7/9/2015			SeqNo: 822418		Units: µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
4-Chlorotoluene	ND	1.0								
cis-1,2-DCE	ND	1.0								
cis-1,3-Dichloropropene	ND	1.0								
1,2-Dibromo-3-chloropropane	ND	2.0								
Dibromochloromethane	ND	1.0								
Dibromomethane	ND	1.0								
1,2-Dichlorobenzene	ND	1.0								
1,3-Dichlorobenzene	ND	1.0								
1,4-Dichlorobenzene	ND	1.0								
Dichlorodifluoromethane	ND	1.0								
1,1-Dichloroethane	ND	1.0								
1,1-Dichloroethene	ND	1.0								
1,2-Dichloropropane	ND	1.0								
1,3-Dichloropropane	ND	1.0								
2,2-Dichloropropane	ND	2.0								
1,1-Dichloropropene	ND	1.0								
Hexachlorobutadiene	ND	1.0								
2-Hexanone	ND	10								
Isopropylbenzene	ND	1.0								
4-Isopropyltoluene	ND	1.0								
4-Methyl-2-pentanone	ND	10								
Methylene Chloride	ND	3.0								
n-Butylbenzene	ND	3.0								
n-Propylbenzene	ND	1.0								
sec-Butylbenzene	ND	1.0								
Styrene	ND	1.0								
tert-Butylbenzene	ND	1.0								
1,1,1,2-Tetrachloroethane	ND	1.0								
1,1,2,2-Tetrachloroethane	ND	2.0								
Tetrachloroethene (PCE)	ND	1.0								
trans-1,2-DCE	ND	1.0								
trans-1,3-Dichloropropene	ND	1.0								
1,2,3-Trichlorobenzene	ND	1.0								
1,2,4-Trichlorobenzene	ND	1.0								
1,1,1-Trichloroethane	ND	1.0								
1,1,2-Trichloroethane	ND	1.0								
Trichloroethene (TCE)	ND	1.0								
Trichlorofluoromethane	ND	1.0								
1,2,3-Trichloropropane	ND	2.0								

Qualifiers:

- | | |
|---|---|
| * Value exceeds Maximum Contaminant Level. | B Analyte detected in the associated Method Blank |
| D Sample Diluted Due to Matrix | E Value above quantitation range |
| H Holding times for preparation or analysis exceeded | J Analyte detected below quantitation limits |
| ND Not Detected at the Reporting Limit | P Sample pH Not In Range |
| R RPD outside accepted recovery limits | RL Reporting Detection Limit |
| S % Recovery outside of range due to dilution or matrix | |

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1507094

06-Aug-15

Client: Western Refining Southwest, Inc.

Project: Injection Well 7-1-15

Sample ID: 100ng LCS	SampType: LCS	TestCode: EPA Method 8260B: VOLATILES								
Client ID: LCSW	Batch ID: R27397	RunNo: 27397								
Prep Date:	Analysis Date: 7/9/2015	SeqNo: 822125 Units: µg/L								
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	18	1.0	20.00	0	90.9	70	130			
Toluene	17	1.0	20.00	0	87.2	70	130			
Chlorobenzene	17	1.0	20.00	0	85.5	70	130			
1,1-Dichloroethene	19	1.0	20.00	0	95.4	70	130			
Trichloroethene (TCE)	17	1.0	20.00	0	84.0	70	130			
Surr: 1,2-Dichloroethane-d4	9.3		10.00		93.4	70	130			
Surr: 4-Bromofluorobenzene	9.9		10.00		99.3	70	130			
Surr: Dibromofluoromethane	11		10.00		106	70	130			
Surr: Toluene-d8	10		10.00		100	70	130			

Sample ID: rb1	SampType: MBLK	TestCode: EPA Method 8260B: VOLATILES								
Client ID: PBW	Batch ID: R27397	RunNo: 27397								
Prep Date:	Analysis Date: 7/9/2015	SeqNo: 822418 Units: µg/L								
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	1.0								
Toluene	ND	1.0								
Ethylbenzene	ND	1.0								
Methyl tert-butyl ether (MTBE)	ND	1.0								
1,2,4-Trimethylbenzene	ND	1.0								
1,3,5-Trimethylbenzene	ND	1.0								
1,2-Dichloroethane (EDC)	ND	1.0								
1,2-Dibromoethane (EDB)	ND	1.0								
Naphthalene	ND	2.0								
1-Methylnaphthalene	ND	4.0								
2-Methylnaphthalene	ND	4.0								
Acetone	ND	10								
Bromobenzene	ND	1.0								
Bromodichloromethane	ND	1.0								
Bromoform	ND	1.0								
Bromomethane	ND	3.0								
2-Butanone	ND	10								
Carbon disulfide	ND	10								
Carbon Tetrachloride	ND	1.0								
Chlorobenzene	ND	1.0								
Chloroethane	ND	2.0								
Chloroform	ND	1.0								
Chloromethane	ND	3.0								
2-Chlorotoluene	ND	1.0								

Qualifiers:

- | | |
|---|---|
| * Value exceeds Maximum Contaminant Level. | B Analyte detected in the associated Method Blank |
| D Sample Diluted Due to Matrix | E Value above quantitation range |
| H Holding times for preparation or analysis exceeded | J Analyte detected below quantitation limits |
| ND Not Detected at the Reporting Limit | P Sample pH Not In Range |
| R RPD outside accepted recovery limits | RL Reporting Detection Limit |
| S % Recovery outside of range due to dilution or matrix | |

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1507094

06-Aug-15

Client: Western Refining Southwest, Inc.

Project: Injection Well 7-1-15

Sample ID	MB	SampType:	MBLK	TestCode:	EPA Method 300.0: Anions						
Client ID:	PBW	Batch ID:	R27295	RunNo:	27295						
Prep Date:		Analysis Date:	7/2/2015	SeqNo:	817819	Units:	mg/L				
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride		ND	0.50								
Sulfate		ND	0.50								

Sample ID	LCS	SampType:	LCS	TestCode:	EPA Method 300.0: Anions						
Client ID:	LCSW	Batch ID:	R27295	RunNo:	27295						
Prep Date:		Analysis Date:	7/2/2015	SeqNo:	817820	Units:	mg/L				
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride		5.0	0.50	5.000	0	99.0	90	110			
Sulfate		10	0.50	10.00	0	103	90	110			

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- D Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- R RPD outside accepted recovery limits
- S % Recovery outside of range due to dilution or matrix

- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- J Analyte detected below quantitation limits
- P Sample pH Not In Range
- RL Reporting Detection Limit

Anatek Labs, Inc.

1282 Alturas Drive • Moscow, ID 83843 • (208) 883-2839 • Fax (208) 882-9246 • email moscow@anateklabs.com
504 E Sprague Ste. D • Spokane WA 99202 • (509) 838-3999 • Fax (509) 838-4433 • email spokane@anateklabs.com

Client: HALL ENVIRONMENTAL ANALYSIS LAB
Address: 4901 HAWKINS NE SUITE D
ALBUQUERQUE, NM 87109
Attn: ANDY FREEMAN

Batch #: 150707035
Project Name: 1507094

Analytical Results Report Quality Control Data

Lab Control Sample

Parameter	LCS Result	Units	LCS Spike	%Rec	AR %Rec	Prep Date	Analysis Date
Reactive sulfide	0.816	mg/L	0.907	90.0	70-130	7/15/2015	7/15/2015
Cyanide (reactive)	0.486	mg/L	0.5	97.2	80-120	7/15/2015	7/15/2015

Matrix Spike

Sample Number	Parameter	Sample Result	MS Result	Units	MS Spike	%Rec	AR %Rec	Prep Date	Analysis Date
150707035-001A	Reactive sulfide	ND	0.816	mg/L	0.907	90.0	70-130	7/15/2015	7/15/2015
150707035-001	Cyanide (reactive)	ND	0.462	mg/L	0.5	92.4	80-120	7/15/2015	7/15/2015

Matrix Spike Duplicate

Parameter	MSD Result	Units	MSD Spike	%Rec	%RPD	AR %RPD	Prep Date	Analysis Date
Cyanide (reactive)	0.454	mg/L	0.5	90.8	1.7	0-25	7/15/2015	7/15/2015

Method Blank

Parameter	Result	Units	PQL	Prep Date	Analysis Date
Cyanide (reactive)	ND	mg/L	1	7/15/2015	7/15/2015
Reactive sulfide	ND	mg/L	1	7/15/2015	7/15/2015

AR Acceptable Range
ND Not Detected
PQL Practical Quantitation Limit
RPD Relative Percentage Difference

Comments:

Certifications held by Anatek Labs ID: EPA-ID00013; AZ:0701; CO-ID00013; FL(NELAP):E87893; ID-ID00013; MT:CERT0028; NM: ID00013; OR:ID200001-002; WA:C596
Certifications held by Anatek Labs WA: EPA:WA00169; ID:WA00169; WA:C585; MT:Cert0095; FL(NELAP): E871099

Anatek Labs, Inc.

1282 Alturas Drive • Moscow, ID 83843 • (208) 883-2839 • Fax (208) 882-9246 • email moscow@anateklabs.com
504 E Sprague Ste. D • Spokane WA 99202 • (509) 838-3999 • Fax (509) 838-4433 • email spokane@anateklabs.com

Client: HALL ENVIRONMENTAL ANALYSIS LAB
Address: 4901 HAWKINS NE SUITE D
ALBUQUERQUE, NM 87109
Attn: ANDY FREEMAN

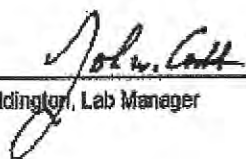
Batch #: 150707035
Project Name: 1507094

Analytical Results Report

Sample Number	150707035-001	Sampling Date	7/1/2015	Date/Time Received	7/7/2015 11:00 AM
Client Sample ID	1507094-001E / INJECTION WELL			Sampling Time	9:00 AM
Matrix	Water	Sample Location			
Comments					

Parameter	Result	Units	PQL	Analysis Date	Analyst	Method	Qualifier
Cyanide (reactive)	ND	mg/L	1	7/15/2015	CRW	SW846 CH7	
Flashpoint	>200	°F		7/15/2015	KFG	EPA 1010	
pH	7.38	ph Units		7/8/2015	KMC	SM 4500pH-B	
Reactive sulfide	ND	mg/L	1	7/15/2015	HSW	SW846 CH7	

Authorized Signature


John Coddington, Lab Manager

MCL EPA's Maximum Contaminant Level
ND Not Detected
PQL Practical Quantitation Limit

This report shall not be reproduced except in full, without the written approval of the laboratory.
The results reported relate only to the samples indicated.
Soil/solid results are reported on a dry-weight basis unless otherwise noted.

Certifications held by Anatek Labs ID: EPA ID00043, AZ0701, CO000013, FL(NELAP) E87693, ID000043, MT CERT0028, NM: ID00013, OR: ID20001-012, WA: C585
Certifications held by Anatek Labs WA: EPA/WA07158, IT/WA00150, WA-C585 MT Cert0028 FL(NELAP) E871099

Wednesday, July 22, 2015

Page 1 of 1

Hall Environmental Analysis Laboratory, Inc.**Analytical Report**

Lab Order 1507094

Date Reported: 8/6/2015

CLIENT: Western Refining Southwest, Inc.**Client Sample ID:** Injection Well**Project:** Injection Well 7-1-15**Collection Date:** 7/1/2015 9:00:00 AM**Lab ID:** 1507094-001**Matrix:** AQUEOUS**Received Date:** 7/2/2015 7:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8260B: VOLATILES							Analyst: BCN
sec-Butylbenzene	ND	1.0		µg/L	1	7/9/2015 8:19:52 PM	R27397
Styrene	ND	1.0		µg/L	1	7/9/2015 8:19:52 PM	R27397
tert-Butylbenzene	ND	1.0		µg/L	1	7/9/2015 8:19:52 PM	R27397
1,1,1,2-Tetrachloroethane	ND	1.0		µg/L	1	7/9/2015 8:19:52 PM	R27397
1,1,2,2-Tetrachloroethane	ND	2.0		µg/L	1	7/9/2015 8:19:52 PM	R27397
Tetrachloroethene (PCE)	ND	1.0		µg/L	1	7/9/2015 8:19:52 PM	R27397
trans-1,2-DCE	ND	1.0		µg/L	1	7/9/2015 8:19:52 PM	R27397
trans-1,3-Dichloropropene	ND	1.0		µg/L	1	7/9/2015 8:19:52 PM	R27397
1,2,3-Trichlorobenzene	ND	1.0		µg/L	1	7/9/2015 8:19:52 PM	R27397
1,2,4-Trichlorobenzene	ND	1.0		µg/L	1	7/9/2015 8:19:52 PM	R27397
1,1,1-Trichloroethane	ND	1.0		µg/L	1	7/9/2015 8:19:52 PM	R27397
1,1,2-Trichloroethane	ND	1.0		µg/L	1	7/9/2015 8:19:52 PM	R27397
Trichloroethene (TCE)	ND	1.0		µg/L	1	7/9/2015 8:19:52 PM	R27397
Trichlorofluoromethane	ND	1.0		µg/L	1	7/9/2015 8:19:52 PM	R27397
1,2,3-Trichloropropane	ND	2.0		µg/L	1	7/9/2015 8:19:52 PM	R27397
Vinyl chloride	ND	1.0		µg/L	1	7/9/2015 8:19:52 PM	R27397
Xylenes, Total	ND	1.5		µg/L	1	7/9/2015 8:19:52 PM	R27397
Surr: 1,2-Dichloroethane-d4	96.9	70-130		%REC	1	7/9/2015 8:19:52 PM	R27397
Surr: 4-Bromofluorobenzene	90.8	70-130		%REC	1	7/9/2015 8:19:52 PM	R27397
Surr: Dibromofluoromethane	103	70-130		%REC	1	7/9/2015 8:19:52 PM	R27397
Surr: Toluene-d8	95.5	70-130		%REC	1	7/9/2015 8:19:52 PM	R27397

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1507094

Date Reported: 8/6/2015

CLIENT: Western Refining Southwest, Inc.

Client Sample ID: Injection Well

Project: Injection Well 7-1-15

Collection Date: 7/1/2015 9:00:00 AM

Lab ID: 1507094-001

Matrix: AQUEOUS

Received Date: 7/2/2015 7:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8260B: VOLATILES							Analyst: BCN
1-Methylnaphthalene	ND	4.0		µg/L	1	7/9/2015 8:19:52 PM	R27397
2-Methylnaphthalene	ND	4.0		µg/L	1	7/9/2015 8:19:52 PM	R27397
Acetone	72	10		µg/L	1	7/9/2015 8:19:52 PM	R27397
Bromobenzene	ND	1.0		µg/L	1	7/9/2015 8:19:52 PM	R27397
Bromodichloromethane	ND	1.0		µg/L	1	7/9/2015 8:19:52 PM	R27397
Bromoform	ND	1.0		µg/L	1	7/9/2015 8:19:52 PM	R27397
Bromomethane	ND	3.0		µg/L	1	7/9/2015 8:19:52 PM	R27397
2-Butanone	11	10		µg/L	1	7/9/2015 8:19:52 PM	R27397
Carbon disulfide	ND	10		µg/L	1	7/9/2015 8:19:52 PM	R27397
Carbon Tetrachloride	ND	1.0		µg/L	1	7/9/2015 8:19:52 PM	R27397
Chlorobenzene	ND	1.0		µg/L	1	7/9/2015 8:19:52 PM	R27397
Chloroethane	ND	2.0		µg/L	1	7/9/2015 8:19:52 PM	R27397
Chloroform	ND	1.0		µg/L	1	7/9/2015 8:19:52 PM	R27397
Chloromethane	ND	3.0		µg/L	1	7/9/2015 8:19:52 PM	R27397
2-Chlorotoluene	ND	1.0		µg/L	1	7/9/2015 8:19:52 PM	R27397
4-Chlorotoluene	ND	1.0		µg/L	1	7/9/2015 8:19:52 PM	R27397
cis-1,2-DCE	ND	1.0		µg/L	1	7/9/2015 8:19:52 PM	R27397
cis-1,3-Dichloropropene	ND	1.0		µg/L	1	7/9/2015 8:19:52 PM	R27397
1,2-Dibromo-3-chloropropane	ND	2.0		µg/L	1	7/9/2015 8:19:52 PM	R27397
Dibromochloromethane	ND	1.0		µg/L	1	7/9/2015 8:19:52 PM	R27397
Dibromomethane	ND	1.0		µg/L	1	7/9/2015 8:19:52 PM	R27397
1,2-Dichlorobenzene	ND	1.0		µg/L	1	7/9/2015 8:19:52 PM	R27397
1,3-Dichlorobenzene	ND	1.0		µg/L	1	7/9/2015 8:19:52 PM	R27397
1,4-Dichlorobenzene	ND	1.0		µg/L	1	7/9/2015 8:19:52 PM	R27397
Dichlorodifluoromethane	ND	1.0		µg/L	1	7/9/2015 8:19:52 PM	R27397
1,1-Dichloroethane	ND	1.0		µg/L	1	7/9/2015 8:19:52 PM	R27397
1,1-Dichloroethene	ND	1.0		µg/L	1	7/9/2015 8:19:52 PM	R27397
1,2-Dichloropropane	ND	1.0		µg/L	1	7/9/2015 8:19:52 PM	R27397
1,3-Dichloropropane	ND	1.0		µg/L	1	7/9/2015 8:19:52 PM	R27397
2,2-Dichloropropane	ND	2.0		µg/L	1	7/9/2015 8:19:52 PM	R27397
1,1-Dichloropropene	ND	1.0		µg/L	1	7/9/2015 8:19:52 PM	R27397
Hexachlorobutadiene	ND	1.0		µg/L	1	7/9/2015 8:19:52 PM	R27397
2-Hexanone	ND	10		µg/L	1	7/9/2015 8:19:52 PM	R27397
Isopropylbenzene	ND	1.0		µg/L	1	7/9/2015 8:19:52 PM	R27397
4-Isopropyltoluene	ND	1.0		µg/L	1	7/9/2015 8:19:52 PM	R27397
4-Methyl-2-pentanone	ND	10		µg/L	1	7/9/2015 8:19:52 PM	R27397
Methylene Chloride	ND	3.0		µg/L	1	7/9/2015 8:19:52 PM	R27397
n-Butylbenzene	ND	3.0		µg/L	1	7/9/2015 8:19:52 PM	R27397
n-Propylbenzene	ND	1.0		µg/L	1	7/9/2015 8:19:52 PM	R27397

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	*	Value exceeds Maximum Contaminant Level	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1507094

Date Reported: 8/6/2015

CLIENT: Western Refining Southwest, Inc.

Client Sample ID: Injection Well

Project: Injection Well 7-1-15

Collection Date: 7/1/2015 9:00:00 AM

Lab ID: 1507094-001

Matrix: AQUEOUS

Received Date: 7/2/2015 7:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8270C: SEMIVOLATILES							Analyst: DAM
Isophorone	ND	10		µg/L	1	7/10/2015 1:30:30 PM	20095
1-Methylnaphthalene	ND	10		µg/L	1	7/10/2015 1:30:30 PM	20095
2-Methylnaphthalene	ND	10		µg/L	1	7/10/2015 1:30:30 PM	20095
2-Methylphenol	ND	10		µg/L	1	7/10/2015 1:30:30 PM	20095
3+4-Methylphenol	ND	10		µg/L	1	7/10/2015 1:30:30 PM	20095
N-Nitrosodi-n-propylamine	ND	10		µg/L	1	7/10/2015 1:30:30 PM	20095
N-Nitrosodimethylamine	ND	10		µg/L	1	7/10/2015 1:30:30 PM	20095
N-Nitrosodiphenylamine	ND	10		µg/L	1	7/10/2015 1:30:30 PM	20095
Naphthalene	ND	10		µg/L	1	7/10/2015 1:30:30 PM	20095
2-Nitroaniline	ND	10		µg/L	1	7/10/2015 1:30:30 PM	20095
3-Nitroaniline	ND	10		µg/L	1	7/10/2015 1:30:30 PM	20095
4-Nitroaniline	ND	10		µg/L	1	7/10/2015 1:30:30 PM	20095
Nitrobenzene	ND	10		µg/L	1	7/10/2015 1:30:30 PM	20095
2-Nitrophenol	ND	10		µg/L	1	7/10/2015 1:30:30 PM	20095
4-Nitrophenol	ND	10		µg/L	1	7/10/2015 1:30:30 PM	20095
Pentachlorophenol	ND	20		µg/L	1	7/10/2015 1:30:30 PM	20095
Phenanthrene	ND	10		µg/L	1	7/10/2015 1:30:30 PM	20095
Phenol	ND	10		µg/L	1	7/10/2015 1:30:30 PM	20095
Pyrene	ND	10		µg/L	1	7/10/2015 1:30:30 PM	20095
Pyridine	ND	10		µg/L	1	7/10/2015 1:30:30 PM	20095
1,2,4-Trichlorobenzene	ND	10		µg/L	1	7/10/2015 1:30:30 PM	20095
2,4,5-Trichlorophenol	ND	10		µg/L	1	7/10/2015 1:30:30 PM	20095
2,4,6-Trichlorophenol	ND	10		µg/L	1	7/10/2015 1:30:30 PM	20095
Surr: 2-Fluorophenol	66.2	14.9-111		%REC	1	7/10/2015 1:30:30 PM	20095
Surr: Phenol-d5	64.1	11.3-108		%REC	1	7/10/2015 1:30:30 PM	20095
Surr: 2,4,6-Tribromophenol	75.7	15.7-154		%REC	1	7/10/2015 1:30:30 PM	20095
Surr: Nitrobenzene-d5	84.6	47.8-106		%REC	1	7/10/2015 1:30:30 PM	20095
Surr: 2-Fluorobiphenyl	63.7	21.3-123		%REC	1	7/10/2015 1:30:30 PM	20095
Surr: 4-Terphenyl-d14	51.4	14.3-136		%REC	1	7/10/2015 1:30:30 PM	20095
EPA METHOD 8260B: VOLATILES							Analyst: BCN
Benzene	ND	1.0		µg/L	1	7/9/2015 8:19:52 PM	R27397
Toluene	1.5	1.0		µg/L	1	7/9/2015 8:19:52 PM	R27397
Ethylbenzene	ND	1.0		µg/L	1	7/9/2015 8:19:52 PM	R27397
Methyl tert-butyl ether (MTBE)	ND	1.0		µg/L	1	7/9/2015 8:19:52 PM	R27397
1,2,4-Trimethylbenzene	ND	1.0		µg/L	1	7/9/2015 8:19:52 PM	R27397
1,3,5-Trimethylbenzene	ND	1.0		µg/L	1	7/9/2015 8:19:52 PM	R27397
1,2-Dichloroethane (EDC)	ND	1.0		µg/L	1	7/9/2015 8:19:52 PM	R27397
1,2-Dibromoethane (EDB)	ND	1.0		µg/L	1	7/9/2015 8:19:52 PM	R27397
Naphthalene	ND	2.0		µg/L	1	7/9/2015 8:19:52 PM	R27397

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	* Value exceeds Maximum Contaminant Level.	B Analyte detected in the associated Method Blank
	D Sample Diluted Due to Matrix	E Value above quantitation range
	H Holding times for preparation or analysis exceeded	J Analyte detected below quantitation limits
	ND Not Detected at the Reporting Limit	P Sample pH Not In Range
	R RPD outside accepted recovery limits	RL Reporting Detection Limit
	S % Recovery outside of range due to dilution or matrix	

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1507094

Date Reported: 8/6/2015

CLIENT: Western Refining Southwest, Inc.

Client Sample ID: Injection Well

Project: Injection Well 7-1-15

Collection Date: 7/1/2015 9:00:00 AM

Lab ID: 1507094-001

Matrix: AQUEOUS

Received Date: 7/2/2015 7:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8270C: SEMIVOLATILES							Analyst: DAM
Benzo(k)fluoranthene	ND	10		µg/L	1	7/10/2015 1:30:30 PM	20095
Benzoic acid	ND	20		µg/L	1	7/10/2015 1:30:30 PM	20095
Benzyl alcohol	ND	10		µg/L	1	7/10/2015 1:30:30 PM	20095
Bis(2-chloroethoxy)methane	ND	10		µg/L	1	7/10/2015 1:30:30 PM	20095
Bis(2-chloroethyl)ether	ND	10		µg/L	1	7/10/2015 1:30:30 PM	20095
Bis(2-chloroisopropyl)ether	ND	10		µg/L	1	7/10/2015 1:30:30 PM	20095
Bis(2-ethylhexyl)phthalate	ND	10		µg/L	1	7/10/2015 1:30:30 PM	20095
4-Bromophenyl phenyl ether	ND	10		µg/L	1	7/10/2015 1:30:30 PM	20095
Butyl benzyl phthalate	ND	10		µg/L	1	7/10/2015 1:30:30 PM	20095
Carbazole	ND	10		µg/L	1	7/10/2015 1:30:30 PM	20095
4-Chloro-3-methylphenol	ND	10		µg/L	1	7/10/2015 1:30:30 PM	20095
4-Chloroaniline	ND	10		µg/L	1	7/10/2015 1:30:30 PM	20095
2-Chloronaphthalene	ND	10		µg/L	1	7/10/2015 1:30:30 PM	20095
2-Chlorophenol	ND	10		µg/L	1	7/10/2015 1:30:30 PM	20095
4-Chlorophenyl phenyl ether	ND	10		µg/L	1	7/10/2015 1:30:30 PM	20095
Chrysene	ND	10		µg/L	1	7/10/2015 1:30:30 PM	20095
Di-n-butyl phthalate	ND	10		µg/L	1	7/10/2015 1:30:30 PM	20095
Di-n-octyl phthalate	ND	10		µg/L	1	7/10/2015 1:30:30 PM	20095
Dibenz(a,h)anthracene	ND	10		µg/L	1	7/10/2015 1:30:30 PM	20095
Dibenzofuran	ND	10		µg/L	1	7/10/2015 1:30:30 PM	20095
1,2-Dichlorobenzene	ND	10		µg/L	1	7/10/2015 1:30:30 PM	20095
1,3-Dichlorobenzene	ND	10		µg/L	1	7/10/2015 1:30:30 PM	20095
1,4-Dichlorobenzene	ND	10		µg/L	1	7/10/2015 1:30:30 PM	20095
3,3'-Dichlorobenzidine	ND	10		µg/L	1	7/10/2015 1:30:30 PM	20095
Diethyl phthalate	ND	10		µg/L	1	7/10/2015 1:30:30 PM	20095
Dimethyl phthalate	ND	10		µg/L	1	7/10/2015 1:30:30 PM	20095
2,4-Dichlorophenol	ND	20		µg/L	1	7/10/2015 1:30:30 PM	20095
2,4-Dimethylphenol	ND	10		µg/L	1	7/10/2015 1:30:30 PM	20095
4,6-Dinitro-2-methylphenol	ND	20		µg/L	1	7/10/2015 1:30:30 PM	20095
2,4-Dinitrophenol	ND	20		µg/L	1	7/10/2015 1:30:30 PM	20095
2,4-Dinitrotoluene	ND	10		µg/L	1	7/10/2015 1:30:30 PM	20095
2,6-Dinitrotoluene	ND	10		µg/L	1	7/10/2015 1:30:30 PM	20095
Fluoranthene	ND	10		µg/L	1	7/10/2015 1:30:30 PM	20095
Fluorene	ND	10		µg/L	1	7/10/2015 1:30:30 PM	20095
Hexachlorobenzene	ND	10		µg/L	1	7/10/2015 1:30:30 PM	20095
Hexachlorobutadiene	ND	10		µg/L	1	7/10/2015 1:30:30 PM	20095
Hexachlorocyclopentadiene	ND	10		µg/L	1	7/10/2015 1:30:30 PM	20095
Hexachloroethane	ND	10		µg/L	1	7/10/2015 1:30:30 PM	20095
Indeno(1,2,3-cd)pyrene	ND	10		µg/L	1	7/10/2015 1:30:30 PM	20095

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1507094

Date Reported: 8/6/2015

CLIENT: Western Refining Southwest, Inc.

Client Sample ID: Injection Well

Project: Injection Well 7-1-15

Collection Date: 7/1/2015 9:00:00 AM

Lab ID: 1507094-001

Matrix: AQUEOUS

Received Date: 7/2/2015 7:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS							Analyst: LGT
Chloride	480	50		mg/L	100	7/2/2015 5:18:55 PM	R27295
Sulfate	65	5.0		mg/L	10	7/2/2015 5:06:31 PM	R27295
SM2510B: SPECIFIC CONDUCTANCE							Analyst: JRR
Conductivity	2000	0.010		µmhos/cm	1	7/6/2015 11:31:17 AM	R27329
SM2320B: ALKALINITY							Analyst: JRR
Bicarbonate (As CaCO ₃)	274.6	20.00		mg/L CaCO ₃	1	7/6/2015 11:31:17 AM	R27329
Carbonate (As CaCO ₃)	ND	2.000		mg/L CaCO ₃	1	7/6/2015 11:31:17 AM	R27329
Total Alkalinity (as CaCO ₃)	274.6	20.00		mg/L CaCO ₃	1	7/6/2015 11:31:17 AM	R27329
SM2540C MOD: TOTAL DISSOLVED SOLIDS							Analyst: KS
Total Dissolved Solids	1220	40.0	*	mg/L	1	7/8/2015 5:09:00 PM	20129
SM4500-H+B: PH							Analyst: JRR
pH	7.45	1.68	H	pH units	1	7/6/2015 11:31:17 AM	R27329
EPA METHOD 7470: MERCURY							Analyst: JLF
Mercury	ND	0.0010		mg/L	5	7/8/2015 4:47:51 PM	20158
EPA 6010B: TOTAL RECOVERABLE METALS							Analyst: MED
Arsenic	ND	0.020		mg/L	1	7/9/2015 10:51:23 AM	20102
Barium	0.27	0.020		mg/L	1	7/9/2015 10:51:23 AM	20102
Cadmium	ND	0.0020		mg/L	1	7/16/2015 12:13:28 PM	20102
Calcium	120	5.0		mg/L	5	7/9/2015 1:02:36 PM	20102
Chromium	ND	0.0060		mg/L	1	7/14/2015 3:52:06 PM	20102
Lead	ND	0.0050		mg/L	1	7/9/2015 10:51:23 AM	20102
Magnesium	28	1.0		mg/L	1	7/9/2015 10:51:23 AM	20102
Potassium	7.7	1.0		mg/L	1	7/9/2015 10:51:23 AM	20102
Selenium	ND	0.050		mg/L	1	7/16/2015 12:13:28 PM	20102
Silver	ND	0.0050		mg/L	1	7/16/2015 12:13:28 PM	20102
Sodium	280	5.0		mg/L	5	7/9/2015 1:02:36 PM	20102
EPA METHOD 8270C: SEMIVOLATILES							Analyst: DAM
Acenaphthene	ND	10		µg/L	1	7/10/2015 1:30:30 PM	20095
Acenaphthylene	ND	10		µg/L	1	7/10/2015 1:30:30 PM	20095
Aniline	ND	10		µg/L	1	7/10/2015 1:30:30 PM	20095
Anthracene	ND	10		µg/L	1	7/10/2015 1:30:30 PM	20095
Azobenzene	ND	10		µg/L	1	7/10/2015 1:30:30 PM	20095
Benz(a)anthracene	ND	10		µg/L	1	7/10/2015 1:30:30 PM	20095
Benzo(a)pyrene	ND	10		µg/L	1	7/10/2015 1:30:30 PM	20095
Benzo(b)fluoranthene	ND	10		µg/L	1	7/10/2015 1:30:30 PM	20095
Benzo(g,h,i)perylene	ND	10		µg/L	1	7/10/2015 1:30:30 PM	20095

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix		

102115MK



Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com

August 06, 2015

Kelly Robinson

Western Refining Southwest, Inc.

#50 CR 4990

Bloomfield, NM 87413

TEL: (505) 632-4166

FAX (505) 632-3911

RE: Injection Well 7-1-15

OrderNo.: 1507094

Dear Kelly Robinson:

Hall Environmental Analysis Laboratory received 1 sample(s) on 7/2/2015 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent. To access our accredited tests please go to www.hallenvironmental.com or the state specific web sites. In order to properly interpret your results it is imperative that you review this report in its entirety. See the sample checklist and/or the Chain of Custody for information regarding the sample receipt temperature and preservation. Data qualifiers or a narrative will be provided if the sample analysis or analytical quality control parameters require a flag. When necessary, data qualifers are provided on both the sample analysis report and the QC summary report, both sections should be reviewed. All samples are reported, as received, unless otherwise indicated. Lab measurement of analytes considered field parameters that require analysis within 15 minutes of sampling such as pH and residual chlorine are qualified as being analyzed outside of the recommended holding time.

Please don't hesitate to contact HEAL for any additional information or clarifications.

ADHS Cert #AZ0682 -- NMED-DWB Cert #NM9425 -- NMED-Micro Cert #NM0190

Sincerely,

Andy Freeman

Laboratory Manager

4901 Hawkins NE

Albuquerque, NM 87109

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-138
Revised August 1, 2011
Submitted 11/4/15
*Surface Waste Management Facility Operator
and Generator shall maintain and make this
documentation available for Division inspection.

REQUEST FOR APPROVAL TO ACCEPT SOLID WASTE

1. Generator Name and Address:

Western Refining Pipeline, LLC
111 County Road 4990, Bloomfield, NM 87413

2. Originating Site:

Western Refining – Gallup Pipeline Station; SWNE Sec 33, T15N, R15W; McKinley County

3. Location of Material (Street Address, City, State or ULSTR):

Same as Originating Site

4. Source and Description of Waste:

Hydro Test water used to hydro test new facility piping.

Estimated Volume 8,800 bbls Known Volume (to be entered by the operator at the end of the haul) 4670 yd³ / bbls

5. GENERATOR CERTIFICATION STATEMENT OF WASTE STATUS

I, Kelly Robinson Kelly Robinson representative or authorized agent for Western Refining Pipeline, LLC. do hereby

PRINT & SIGN NAME

COMPANY NAME

certify that according to the Resource Conservation and Recovery Act (RCRA) and the US Environmental Protection Agency's July 1988 regulatory determination, the above described waste is: (Check the appropriate classification)

☐ RCRA Exempt: Oil field wastes generated from oil and gas exploration and production operations and are not mixed with non-exempt waste. *Operator Use Only: Waste Acceptance Frequency* ☐ Monthly ☐ Weekly ☐ Per Load

☒ RCRA Non-Exempt: Oil field waste which is non-hazardous that does not exceed the minimum standards for waste hazardous by characteristics established in RCRA regulations, 40 CFR 261.21-261.24, or listed hazardous waste as defined in 40 CFR, part 261, subpart D, as amended. The following documentation is attached to demonstrate the above-described waste is non-hazardous. (Check the appropriate items)

☐ MSDS Information ☒ RCRA Hazardous Waste Analysis ☒ Process Knowledge ☐ Other (Provide description in Box 4)

GENERATOR 19.15.36.15 WASTE TESTING CERTIFICATION STATEMENT FOR LANDFARMS

I, Kelly Robinson Kelly Robinson representative for Western Refining Pipeline, LLC do hereby certify that representative samples of the oil field waste have been subjected to the paint filter test and tested for chloride content and that the samples have been found to conform to the specific requirements applicable to landfarms pursuant to Section 15 of 19.15.36 NMAC. The results of the representative samples are attached to demonstrate the above-described waste conform to the requirements of Section 15 of 19.15.36 NMAC.

5. Transporter:

Triple S

OCD Permitted Surface Waste Management Facility

Name and Facility Permit #: Agua Moss, LLC Permit # UICI-005 (Class I Non-Hazardous Well)

Address of Facility: 345 CR 350, San Juan County, Aztec NM, 87410

Method of Treatment and/or Disposal:

☐ Evaporation ☒ Injection ☐ Treating Plant ☐ Landfarm ☐ Landfill ☐ Other

Waste Acceptance Status:

☐ APPROVED

☐ DENIED (Must Be Maintained As Permanent Record)

PRINT NAME: ADRIAN HUDSON

TITLE: Operator

DATE: 11/5/15

SIGNATURE: [Signature]

Surface Waste Management Facility Authorized Agent

TELEPHONE NO.: (505) 334 6186



Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com

Sample Log-In Check List

Client Name: Western Refining Southw

Work Order Number: 1510A28

RcptNo: 1

Received by/date:

[Signature] 10/22/15

Logged By: Lindsay Mangin

10/22/2015 7:30:00 AM

[Signature]

Completed By: Lindsay Mangin

10/22/2015 7:53:31 AM

[Signature]

Reviewed By:

[Signature] 10/22/15

Chain of Custody

1. Custody seals intact on sample bottles? Yes ☐ No ☐ Not Present ☒
2. Is Chain of Custody complete? Yes ☒ No ☐ Not Present ☐
3. How was the sample delivered? Courier

Log In

4. Was an attempt made to cool the samples? Yes ☒ No ☐ NA ☐
5. Were all samples received at a temperature of $>0^{\circ}\text{C}$ to 6.0°C ? Yes ☒ No ☐ NA ☐
6. Sample(s) in proper container(s)? Yes ☒ No ☐
7. Sufficient sample volume for indicated test(s)? Yes ☒ No ☐
8. Are samples (except VOA and ONG) properly preserved? Yes ☒ No ☐
9. Was preservative added to bottles? Yes ☐ No ☒ NA ☐
10. VOA vials have zero headspace? Yes ☒ No ☐ No VOA Vials ☐
11. Were any sample containers received broken? Yes ☐ No ☒
12. Does paperwork match bottle labels?
(Note discrepancies on chain of custody) Yes ☒ No ☐
13. Are matrices correctly identified on Chain of Custody? Yes ☒ No ☐
14. Is it clear what analyses were requested? Yes ☒ No ☐
15. Were all holding times able to be met?
(If no, notify customer for authorization.) Yes ☒ No ☐

of preserved
bottles checked
for pH: 2, 4
(2 or 12 unless noted)
Adjusted? No
Checked by: CS

Special Handling (if applicable)

16. Was client notified of all discrepancies with this order? Yes ☐ No ☐ NA ☒

Person Notified:

Date:

By Whom:

Via:

☐ eMail ☐ Phone ☐ Fax ☐ In Person

Regarding:

Client Instructions:

17. Additional remarks:

18. Cooler Information

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	1.6	Good	Yes			

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1510A28

28-Oct-15

Client: Western Refining Southwest, Inc.

Project: West Line Test Water 10-20-15

Sample ID: 1510A28-001CMSD	SampType: MSD	TestCode: EPA 6010B: Total Recoverable Metals								
Client ID: Bisti	Batch ID: 22029	RunNo: 29799								
Prep Date: 10/26/2015	Analysis Date: 10/27/2015	SeqNo: 907721		Units: mg/L						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.57	0.020	0.5000	0.05610	102	75	125	1.35	20	
Cadmium	0.51	0.0020	0.5000	0	102	75	125	0.761	20	
Chromium	0.51	0.0060	0.5000	0	102	75	125	1.12	20	
Lead	0.51	0.0050	0.5000	0	102	75	125	0.0626	20	
Selenium	0.49	0.050	0.5000	0	98.7	75	125	2.13	20	
Silver	0.10	0.0050	0.1000	0	104	75	125	0.950	20	

Qualifiers:

* Value exceeds Maximum Contaminant Level.
D Sample Diluted Due to Matrix
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
R RPD outside accepted recovery limits
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank
E Value above quantitation range
J Analyte detected below quantitation limits
P Sample pH Not In Range
RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1510A28

28-Oct-15

Client: Western Refining Southwest, Inc.

Project: West Line Test Water 10-20-15

Sample ID	MB-22029	SampType:	MBLK	TestCode:	EPA 6010B: Total Recoverable Metals					
Client ID:	PBW	Batch ID:	22029	RunNo:	29799					
Prep Date:	10/26/2015	Analysis Date:	10/27/2015	SeqNo:	907717	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	ND	0.020								
Barium	ND	0.020								
Cadmium	ND	0.0020								
Chromium	ND	0.0060								
Lead	ND	0.0050								
Selenium	ND	0.050								
Silver	ND	0.0050								

Sample ID	LCS-22029	SampType:	LCS	TestCode:	EPA 6010B: Total Recoverable Metals					
Client ID:	LCSW	Batch ID:	22029	RunNo:	29799					
Prep Date:	10/26/2015	Analysis Date:	10/27/2015	SeqNo:	907718	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	0.51	0.020	0.5000	0	102	80	120			
Barium	0.50	0.020	0.5000	0	99.8	80	120			
Cadmium	0.49	0.0020	0.5000	0	98.6	80	120			
Chromium	0.50	0.0060	0.5000	0	99.3	80	120			
Lead	0.50	0.0050	0.5000	0	101	80	120			
Selenium	0.49	0.050	0.5000	0	97.5	80	120			
Silver	0.10	0.0050	0.1000	0	102	80	120			

Sample ID	1510A28-001CMS	SampType:	MS	TestCode:	EPA 6010B: Total Recoverable Metals					
Client ID:	Bisti	Batch ID:	22029	RunNo:	29799					
Prep Date:	10/26/2015	Analysis Date:	10/27/2015	SeqNo:	907720	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	0.53	0.020	0.5000	0	106	75	125			
Barium	0.56	0.020	0.5000	0.05610	101	75	125			
Cadmium	0.51	0.0020	0.5000	0	101	75	125			
Chromium	0.50	0.0060	0.5000	0	101	75	125			
Lead	0.51	0.0050	0.5000	0	102	75	125			
Selenium	0.48	0.050	0.5000	0	96.7	75	125			
Silver	0.10	0.0050	0.1000	0	103	75	125			

Sample ID	1510A28-001CMSD	SampType:	MSD	TestCode:	EPA 6010B: Total Recoverable Metals					
Client ID:	Bisti	Batch ID:	22029	RunNo:	29799					
Prep Date:	10/26/2015	Analysis Date:	10/27/2015	SeqNo:	907721	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	0.53	0.020	0.5000	0	107	75	125	1.15	20	

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- D Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- R RPD outside accepted recovery limits
- S % Recovery outside of range due to dilution or matrix
- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- J Analyte detected below quantitation limits
- P Sample pH Not In Range
- RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1510A28

28-Oct-15

Client: Western Refining Southwest, Inc.

Project: West Line Test Water 10-20-15

Sample ID	MB-21998	SampType:	MBLK	TestCode:	EPA Method 7470: Mercury					
Client ID:	PBW	Batch ID:	21998	RunNo:	29759					
Prep Date:	10/23/2015	Analysis Date:	10/23/2015	SeqNo:	906381	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	ND	0.00020								

Sample ID	LCS-21998	SampType:	LCS	TestCode:	EPA Method 7470: Mercury					
Client ID:	LCSW	Batch ID:	21998	RunNo:	29759					
Prep Date:	10/23/2015	Analysis Date:	10/23/2015	SeqNo:	906382	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	0.0052	0.00020	0.005000	0	103	80	120			

Sample ID	1510A28-001CMS	SampType:	MS	TestCode:	EPA Method 7470: Mercury					
Client ID:	Bisti	Batch ID:	21998	RunNo:	29759					
Prep Date:	10/23/2015	Analysis Date:	10/23/2015	SeqNo:	906384	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	0.0051	0.00020	0.005000	0	102	75	125			

Sample ID	1510A28-001CMSD	SampType:	MSD	TestCode:	EPA Method 7470: Mercury					
Client ID:	Bisti	Batch ID:	21998	RunNo:	29759					
Prep Date:	10/23/2015	Analysis Date:	10/23/2015	SeqNo:	906385	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	0.0051	0.00020	0.005000	0	102	75	125	0.0557	20	

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- D Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- R RPD outside accepted recovery limits
- S % Recovery outside of range due to dilution or matrix

- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- J Analyte detected below quantitation limits
- P Sample pH Not In Range
- RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1510A28

28-Oct-15

Client: Western Refining Southwest, Inc.

Project: West Line Test Water 10-20-15

Sample ID	lcsd-22016	SampType:	LCSD	TestCode:	EPA Method 8270C: Semivolatiles					
Client ID:	LCSS02	Batch ID:	22016	RunNo:	29797					
Prep Date:	10/26/2015	Analysis Date:	10/26/2015	SeqNo:	907638	Units:	µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: 4-Terphenyl-d14	46		100.0		46.5	12.9	107	0	0	

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- D Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- R RPD outside accepted recovery limits
- S % Recovery outside of range due to dilution or matrix

- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- J Analyte detected below quantitation limits
- P Sample pH Not In Range
- RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1510A28

28-Oct-15

Client: Western Refining Southwest, Inc.

Project: West Line Test Water 10-20-15

Sample ID	Ics-22016		SampType: LCS	TestCode: EPA Method 8270C: Semivolatiles						
Client ID:	LCSW		Batch ID: 22016	RunNo: 29797						
Prep Date:	10/26/2015		Analysis Date: 10/26/2015	SeqNo: 907637		Units: µg/L				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	74	10	100.0	0	73.6	40.2	107			
4-Chloro-3-methylphenol	150	10	200.0	0	74.2	48.2	107			
2-Chlorophenol	170	10	200.0	0	84.3	42.5	106			
1,4-Dichlorobenzene	78	10	100.0	0	78.4	31.6	111			
2,4-Dinitrotoluene	62	10	100.0	0	62.2	33.6	86.5			
N-Nitrosodi-n-propylamine	77	10	100.0	0	76.9	44	106			
4-Nitrophenol	150	10	200.0	0	72.8	25.5	109			
Pentachlorophenol	120	20	200.0	0	58.3	38.8	97.8			
Phenol	160	10	200.0	0	78.6	22.7	116			
Pyrene	65	10	100.0	0	65.1	29.3	138			
1,2,4-Trichlorobenzene	80	10	100.0	0	80.2	35.3	123			
Surr: 2-Fluorophenol	150		200.0		74.6	4.63	113			
Surr: Phenol-d5	170		200.0		82.9	4.13	124			
Surr: 2,4,6-Tribromophenol	140		200.0		70.4	5.14	132			
Surr: Nitrobenzene-d5	78		100.0		77.9	9.13	140			
Surr: 2-Fluorobiphenyl	72		100.0		71.8	10.8	132			
Surr: 4-Terphenyl-d14	44		100.0		44.0	12.9	107			

Sample ID	Icsd-22016		SampType: LCSD	TestCode: EPA Method 8270C: Semivolatiles						
Client ID:	LCSS02		Batch ID: 22016	RunNo: 29797						
Prep Date:	10/26/2015		Analysis Date: 10/26/2015	SeqNo: 907638		Units: µg/L				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	92	10	100.0	0	92.4	40.2	107	22.7	46.7	
4-Chloro-3-methylphenol	180	10	200.0	0	91.6	48.2	107	21.1	29.4	
2-Chlorophenol	180	10	200.0	0	91.6	42.5	106	8.26	38.7	
1,4-Dichlorobenzene	88	10	100.0	0	87.5	31.6	111	11.0	25.3	
2,4-Dinitrotoluene	74	10	100.0	0	74.1	33.6	86.5	17.6	35.6	
N-Nitrosodi-n-propylamine	90	10	100.0	0	90.5	44	106	16.2	30.2	
4-Nitrophenol	160	10	200.0	0	81.1	25.5	109	10.7	42.2	
Pentachlorophenol	140	20	200.0	0	70.0	38.8	97.8	18.2	35.5	
Phenol	180	10	200.0	0	90.4	22.7	116	14.0	32	
Pyrene	82	10	100.0	0	81.7	29.3	138	22.6	27.1	
1,2,4-Trichlorobenzene	90	10	100.0	0	90.5	35.3	123	12.0	43.3	
Surr: 2-Fluorophenol	170		200.0		83.4	4.63	113	0	0	
Surr: Phenol-d5	180		200.0		92.4	4.13	124	0	0	
Surr: 2,4,6-Tribromophenol	180		200.0		91.8	5.14	132	0	0	
Surr: Nitrobenzene-d5	87		100.0		86.5	9.13	140	0	0	
Surr: 2-Fluorobiphenyl	90		100.0		89.7	10.8	132	0	0	

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- D Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- R RPD outside accepted recovery limits
- S % Recovery outside of range due to dilution or matrix

- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- J Analyte detected below quantitation limits
- P Sample pH Not In Range
- RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1510A28

28-Oct-15

Client: Western Refining Southwest, Inc.

Project: West Line Test Water 10-20-15

Sample ID	mb-22016	SampType:	MBLK	TestCode:	EPA Method 8270C: Semivolatiles					
Client ID:	PBW	Batch ID:	22016	RunNo:	29797					
Prep Date:	10/26/2015	Analysis Date:	10/26/2015	SeqNo:	907636	Units:	µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
2,4-Dinitrotoluene	ND	10								
2,6-Dinitrotoluene	ND	10								
Fluoranthene	ND	10								
Fluorene	ND	10								
Hexachlorobenzene	ND	10								
Hexachlorobutadiene	ND	10								
Hexachlorocyclopentadiene	ND	10								
Hexachloroethane	ND	10								
Indeno(1,2,3-cd)pyrene	ND	10								
Isophorone	ND	10								
1-Methylnaphthalene	ND	10								
2-Methylnaphthalene	ND	10								
2-Methylphenol	ND	10								
3+4-Methylphenol	ND	10								
N-Nitrosodi-n-propylamine	ND	10								
N-Nitrosodimethylamine	ND	10								
N-Nitrosodiphenylamine	ND	10								
Naphthalene	ND	10								
2-Nitroaniline	ND	10								
3-Nitroaniline	ND	10								
4-Nitroaniline	ND	10								
Nitrobenzene	ND	10								
2-Nitrophenol	ND	10								
4-Nitrophenol	ND	10								
Pentachlorophenol	ND	20								
Phenanthrene	ND	10								
Phenol	ND	10								
Pyrene	ND	10								
Pyridine	ND	10								
1,2,4-Trichlorobenzene	ND	10								
2,4,5-Trichlorophenol	ND	10								
2,4,6-Trichlorophenol	ND	10								
Surr: 2-Fluorophenol	150		200.0		76.2	4.63	113			
Surr: Phenol-d5	150		200.0		73.0	4.13	124			
Surr: 2,4,6-Tribromophenol	150		200.0		72.9	5.14	132			
Surr: Nitrobenzene-d5	74		100.0		73.7	9.13	140			
Surr: 2-Fluorobiphenyl	75		100.0		74.7	10.8	132			
Surr: 4-Terphenyl-d14	50		100.0		50.4	12.9	107			

Qualifiers:

- | | |
|---|---|
| * Value exceeds Maximum Contaminant Level. | B Analyte detected in the associated Method Blank |
| D Sample Diluted Due to Matrix | E Value above quantitation range |
| H Holding times for preparation or analysis exceeded | J Analyte detected below quantitation limits |
| ND Not Detected at the Reporting Limit | P Sample pH Not In Range |
| R RPD outside accepted recovery limits | RL Reporting Detection Limit |
| S % Recovery outside of range due to dilution or matrix | |

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1510A28

28-Oct-15

Client: Western Refining Southwest, Inc.

Project: West Line Test Water 10-20-15

Sample ID	mb-22016	SampType:	MBLK	TestCode:	EPA Method 8270C: Semivolatiles					
Client ID:	PBW	Batch ID:	22016	RunNo:	29797					
Prep Date:	10/26/2015	Analysis Date:	10/26/2015	SeqNo:	907636	Units:	µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	ND	10								
Acenaphthylene	ND	10								
Aniline	ND	10								
Anthracene	ND	10								
Azobenzene	ND	10								
Benz(a)anthracene	ND	10								
Benzo(a)pyrene	ND	10								
Benzo(b)fluoranthene	ND	10								
Benzo(g,h,i)perylene	ND	10								
Benzo(k)fluoranthene	ND	10								
Benzoic acid	ND	20								
Benzyl alcohol	ND	10								
Bis(2-chloroethoxy)methane	ND	10								
Bis(2-chloroethyl)ether	ND	10								
Bis(2-chloroisopropyl)ether	ND	10								
Bis(2-ethylhexyl)phthalate	ND	10								
4-Bromophenyl phenyl ether	ND	10								
Butyl benzyl phthalate	ND	10								
Carbazole	ND	10								
4-Chloro-3-methylphenol	ND	10								
4-Chloroaniline	ND	10								
2-Chloronaphthalene	ND	10								
2-Chlorophenol	ND	10								
4-Chlorophenyl phenyl ether	ND	10								
Chrysene	ND	10								
Di-n-butyl phthalate	ND	10								
Di-n-octyl phthalate	ND	10								
Dibenz(a,h)anthracene	ND	10								
Dibenzofuran	ND	10								
1,2-Dichlorobenzene	ND	10								
1,3-Dichlorobenzene	ND	10								
1,4-Dichlorobenzene	ND	10								
3,3'-Dichlorobenzidine	ND	10								
Diethyl phthalate	ND	10								
Dimethyl phthalate	ND	10								
2,4-Dichlorophenol	ND	20								
2,4-Dimethylphenol	ND	10								
4,6-Dinitro-2-methylphenol	ND	20								
2,4-Dinitrophenol	ND	20								

Qualifiers:

- | | |
|---|---|
| * Value exceeds Maximum Contaminant Level. | B Analyte detected in the associated Method Blank |
| D Sample Diluted Due to Matrix | E Value above quantitation range |
| H Holding times for preparation or analysis exceeded | J Analyte detected below quantitation limits |
| ND Not Detected at the Reporting Limit | P Sample pH Not In Range |
| R RPD outside accepted recovery limits | RL Reporting Detection Limit |
| S % Recovery outside of range due to dilution or matrix | |

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1510A28

28-Oct-15

Client: Western Refining Southwest, Inc.

Project: West Line Test Water 10-20-15

Sample ID: 100ng lcs	SampType: LCS	TestCode: EPA Method 8260B: VOLATILES								
Client ID: LCSW	Batch ID: R29742	RunNo: 29742								
Prep Date:	Analysis Date: 10/22/2015	SeqNo: 905841 Units: µg/L								
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,1-Dichloroethene	19	1.0	20.00	0	93.6	70	130			
Trichloroethene (TCE)	18	1.0	20.00	0	92.1	70	130			
Surr: 1,2-Dichloroethane-d4	9.1		10.00		90.6	70	130			
Surr: 4-Bromofluorobenzene	11		10.00		106	70	130			
Surr: Dibromofluoromethane	10		10.00		102	70	130			
Surr: Toluene-d8	10		10.00		101	70	130			

Qualifiers:

* Value exceeds Maximum Contaminant Level.
D Sample Diluted Due to Matrix
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
R RPD outside accepted recovery limits
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank
E Value above quantitation range
J Analyte detected below quantitation limits
P Sample pH Not In Range
RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1510A28

28-Oct-15

Client: Western Refining Southwest, Inc.

Project: West Line Test Water 10-20-15

Sample ID	rb	SampType:	MBLK	TestCode:	EPA Method 8260B: VOLATILES					
Client ID:	PBW	Batch ID:	R29742	RunNo:	29742					
Prep Date:		Analysis Date:	10/22/2015	SeqNo:	905840	Units:	µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,1-Dichloropropene	ND	1.0								
Hexachlorobutadiene	ND	1.0								
2-Hexanone	ND	10								
Isopropylbenzene	ND	1.0								
4-Isopropyltoluene	ND	1.0								
4-Methyl-2-pentanone	ND	10								
Methylene Chloride	ND	3.0								
n-Butylbenzene	ND	3.0								
n-Propylbenzene	ND	1.0								
sec-Butylbenzene	ND	1.0								
Styrene	ND	1.0								
tert-Butylbenzene	ND	1.0								
1,1,1,2-Tetrachloroethane	ND	1.0								
1,1,2,2-Tetrachloroethane	ND	2.0								
Tetrachloroethene (PCE)	ND	1.0								
trans-1,2-DCE	ND	1.0								
trans-1,3-Dichloropropene	ND	1.0								
1,2,3-Trichlorobenzene	ND	1.0								
1,2,4-Trichlorobenzene	ND	1.0								
1,1,1-Trichloroethane	ND	1.0								
1,1,2-Trichloroethane	ND	1.0								
Trichloroethene (TCE)	ND	1.0								
Trichlorofluoromethane	ND	1.0								
1,2,3-Trichloropropane	ND	2.0								
Vinyl chloride	ND	1.0								
Xylenes, Total	ND	1.5								
Surr: 1,2-Dichloroethane-d4	9.6		10.00		95.5	70	130			
Surr: 4-Bromofluorobenzene	11		10.00		108	70	130			
Surr: Dibromofluoromethane	11		10.00		107	70	130			
Surr: Toluene-d8	9.6		10.00		96.3	70	130			

Sample ID	100ng lcs	SampType:	LCS	TestCode:	EPA Method 8260B: VOLATILES					
Client ID:	LCSW	Batch ID:	R29742	RunNo:	29742					
Prep Date:		Analysis Date:	10/22/2015	SeqNo:	905841	Units:	µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	19	1.0	20.00	0	93.5	70	130			
Toluene	20	1.0	20.00	0	101	70	130			
Chlorobenzene	20	1.0	20.00	0	101	70	130			

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- B Analyte detected in the associated Method Blank
- D Sample Diluted Due to Matrix
- E Value above quantitation range
- H Holding times for preparation or analysis exceeded
- J Analyte detected below quantitation limits
- ND Not Detected at the Reporting Limit
- P Sample pH Not In Range
- R RPD outside accepted recovery limits
- RL Reporting Detection Limit
- S % Recovery outside of range due to dilution or matrix

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1510A28

28-Oct-15

Client: Western Refining Southwest, Inc.

Project: West Line Test Water 10-20-15

Sample ID	rb	SampType:	MBLK	TestCode:	EPA Method 8260B: VOLATILES					
Client ID:	PBW	Batch ID:	R29742	RunNo:	29742					
Prep Date:		Analysis Date:	10/22/2015	SeqNo:	905840	Units:	µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	1.0								
Toluene	ND	1.0								
Ethylbenzene	ND	1.0								
Methyl tert-butyl ether (MTBE)	ND	1.0								
1,2,4-Trimethylbenzene	ND	1.0								
1,3,5-Trimethylbenzene	ND	1.0								
1,2-Dichloroethane (EDC)	ND	1.0								
1,2-Dibromoethane (EDB)	ND	1.0								
Naphthalene	ND	2.0								
1-Methylnaphthalene	ND	4.0								
2-Methylnaphthalene	ND	4.0								
Acetone	ND	10								
Bromobenzene	ND	1.0								
Bromodichloromethane	ND	1.0								
Bromofom	ND	1.0								
Bromomethane	ND	3.0								
2-Butanone	ND	10								
Carbon disulfide	ND	10								
Carbon Tetrachloride	ND	1.0								
Chlorobenzene	ND	1.0								
Chloroethane	ND	2.0								
Chlorofom	ND	1.0								
Chloromethane	ND	3.0								
2-Chlorotoluene	ND	1.0								
4-Chlorotoluene	ND	1.0								
cis-1,2-DCE	ND	1.0								
cis-1,3-Dichloropropene	ND	1.0								
1,2-Dibromo-3-chloropropane	ND	2.0								
Dibromochloromethane	ND	1.0								
Dibromomethane	ND	1.0								
1,2-Dichlorobenzene	ND	1.0								
1,3-Dichlorobenzene	ND	1.0								
1,4-Dichlorobenzene	ND	1.0								
Dichlorodifluoromethane	ND	1.0								
1,1-Dichloroethane	ND	1.0								
1,1-Dichloroethene	ND	1.0								
1,2-Dichloropropane	ND	1.0								
1,3-Dichloropropane	ND	1.0								
2,2-Dichloropropane	ND	2.0								

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- D Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- R RPD outside accepted recovery limits
- S % Recovery outside of range due to dilution or matrix

- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- J Analyte detected below quantitation limits
- P Sample pH Not In Range
- RL Reporting Detection Limit

Anatek Labs, Inc.

1282 Alturas Drive • Moscow, ID 83843 • (208) 883-2839 • Fax (208) 882-9246 • email moscow@anateklabs.com
504 E Sprague Ste. D • Spokane WA 99202 • (509) 838-3999 • Fax (509) 838-4433 • email spokane@anateklabs.com

Client: HALL ENVIRONMENTAL ANALYSIS LAB
Address: 4901 HAWKINS NE SUITE D
ALBUQUERQUE, NM 87109
Attn: ANDY FREEMAN

Batch #: 151023025
Project Name: 1510A28

Analytical Results Report Quality Control Data

Lab Control Sample

Parameter	LCS Result	Units	LCS Spike	%Rec	AR %Rec	Prep Date	Analysis Date
Reactive sulfide	0.180	mg/L	0.2	90.0	70-130	10/26/2015	10/26/2015
Cyanide (reactive)	0.478	mg/L	0.5	95.6	80-120	10/28/2015	10/28/2015

Matrix Spike

Sample Number	Parameter	Sample Result	MS Result	Units	MS Spike	%Rec	AR %Rec	Prep Date	Analysis Date
151023025-001	Reactive sulfide	ND	0.224	mg/L	0.2	112.0	70-130	10/26/2015	10/26/2015
151023025-001	Cyanide (reactive)	ND	0.464	mg/L	0.5	92.8	80-120	10/28/2015	10/28/2015

Matrix Spike Duplicate

Parameter	MSD Result	Units	MSD Spike	%Rec	%RPD	AR %RPD	Prep Date	Analysis Date
Cyanide (reactive)	0.474	mg/L	0.5	94.8	2.1	0-25	10/28/2015	10/28/2015

Method Blank

Parameter	Result	Units	PQL	Prep Date	Analysis Date
Cyanide (reactive)	ND	mg/L	1	10/28/2015	10/28/2015
Reactive sulfide	ND	mg/L	1	10/26/2015	10/26/2015

AR Acceptable Range
ND Not Detected
PQL Practical Quantitation Limit
RPD Relative Percentage Difference

Comments:

Certifications held by Anatek Labs ID: EPA:ID00013; AZ:0701; CO:ID00013; FL(NELAP):E87893; ID:ID00013; MT:CERT0028; NM: ID00013; OR:ID200001-002; WA:C595
Certifications held by Anatek Labs WA: EPA:WA00169; ID:WA00169; WA:C585; MT:Cert0095; FL(NELAP): E871099

Anatek Labs, Inc.

1282 Alturas Drive • Moscow, ID 83843 • (208) 883-2839 • Fax (208) 882-9246 • email moscow@anateklabs.com
504 E Sprague Ste. D • Spokane WA 99202 • (509) 838-3999 • Fax (509) 838-4433 • email spokane@anateklabs.com

Client: HALL ENVIRONMENTAL ANALYSIS LAB
Address: 4901 HAWKINS NE SUITE D
ALBUQUERQUE, NM 87109
Attn: ANDY FREEMAN

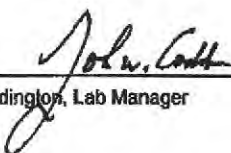
Batch #: 151023025
Project Name: 1510A28

Analytical Results Report

Sample Number	151023025-001	Sampling Date	10/20/2015	Date/Time Received	10/23/2015 10:30 AM
Client Sample ID	1510A28-001D / BISTI	Sampling Time	9:30 AM		
Matrix	Water	Sample Location			
Comments					

Parameter	Result	Units	PQL	Analysis Date	Analyst	Method	Qualifier
Cyanide (reactive)	ND	mg/L	1	10/28/2015	MER	SW846 CH7	
Flashpoint	>200	°F		10/26/2015	KFG	EPA 1010	
pH	7.89	ph Units		10/26/2015	KMC	SM 4500pH-B	
Reactive sulfide	ND	mg/L	1	10/26/2015	KMC	SW846 CH7	

Authorized Signature


John Coddington, Lab Manager

MCL EPA's Maximum Contaminant Level
ND Not Detected
PQL Practical Quantitation Limit

This report shall not be reproduced except in full, without the written approval of the laboratory.
The results reported relate only to the samples indicated.
Soil/solid results are reported on a dry-weight basis unless otherwise noted.

Certifications held by Anatek Labs ID: EPA:ID00013; AZ:0701; CO:ID00013; FL(NELAP):E87893; ID:ID00013; MT:CERT0028; NM: ID00013; OR:ID200001-002; WA:C595
Certifications held by Anatek Labs WA: EPA:WA00169; ID:WA00169; WA:C585; MT:Cert0095; FL(NELAP): E871099

Wednesday, October 28, 2015

Page 1 of 1

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1510A28

Date Reported: 10/28/2015

CLIENT: Western Refining Southwest, Inc.

Client Sample ID: SR-IV

Project: West Line Test Water 10-20-15

Collection Date: 10/20/2015 1:30:00 PM

Lab ID: 1510A28-005

Matrix: AQUEOUS

Received Date: 10/22/2015 7:30:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8260B: VOLATILES							Analyst: DJF
1,1-Dichloropropene	ND	1.0		µg/L	1	10/22/2015 4:00:46 PM	R29742
Hexachlorobutadiene	ND	1.0		µg/L	1	10/22/2015 4:00:46 PM	R29742
2-Hexanone	ND	10		µg/L	1	10/22/2015 4:00:46 PM	R29742
Isopropylbenzene	ND	1.0		µg/L	1	10/22/2015 4:00:46 PM	R29742
4-Isopropyltoluene	5.0	1.0		µg/L	1	10/22/2015 4:00:46 PM	R29742
4-Methyl-2-pentanone	ND	10		µg/L	1	10/22/2015 4:00:46 PM	R29742
Methylene Chloride	ND	3.0		µg/L	1	10/22/2015 4:00:46 PM	R29742
n-Butylbenzene	ND	3.0		µg/L	1	10/22/2015 4:00:46 PM	R29742
n-Propylbenzene	ND	1.0		µg/L	1	10/22/2015 4:00:46 PM	R29742
sec-Butylbenzene	ND	1.0		µg/L	1	10/22/2015 4:00:46 PM	R29742
Styrene	ND	1.0		µg/L	1	10/22/2015 4:00:46 PM	R29742
tert-Butylbenzene	ND	1.0		µg/L	1	10/22/2015 4:00:46 PM	R29742
1,1,1,2-Tetrachloroethane	ND	1.0		µg/L	1	10/22/2015 4:00:46 PM	R29742
1,1,2,2-Tetrachloroethane	ND	2.0		µg/L	1	10/22/2015 4:00:46 PM	R29742
Tetrachloroethene (PCE)	ND	1.0		µg/L	1	10/22/2015 4:00:46 PM	R29742
trans-1,2-DCE	ND	1.0		µg/L	1	10/22/2015 4:00:46 PM	R29742
trans-1,3-Dichloropropene	ND	1.0		µg/L	1	10/22/2015 4:00:46 PM	R29742
1,2,3-Trichlorobenzene	ND	1.0		µg/L	1	10/22/2015 4:00:46 PM	R29742
1,2,4-Trichlorobenzene	ND	1.0		µg/L	1	10/22/2015 4:00:46 PM	R29742
1,1,1-Trichloroethane	ND	1.0		µg/L	1	10/22/2015 4:00:46 PM	R29742
1,1,2-Trichloroethane	ND	1.0		µg/L	1	10/22/2015 4:00:46 PM	R29742
Trichloroethene (TCE)	ND	1.0		µg/L	1	10/22/2015 4:00:46 PM	R29742
Trichlorofluoromethane	ND	1.0		µg/L	1	10/22/2015 4:00:46 PM	R29742
1,2,3-Trichloropropane	ND	2.0		µg/L	1	10/22/2015 4:00:46 PM	R29742
Vinyl chloride	ND	1.0		µg/L	1	10/22/2015 4:00:46 PM	R29742
Xylenes, Total	170	1.5		µg/L	1	10/22/2015 4:00:46 PM	R29742
Surr: 1,2-Dichloroethane-d4	92.8	70-130		%REC	1	10/22/2015 4:00:46 PM	R29742
Surr: 4-Bromofluorobenzene	103	70-130		%REC	1	10/22/2015 4:00:46 PM	R29742
Surr: Dibromofluoromethane	101	70-130		%REC	1	10/22/2015 4:00:46 PM	R29742
Surr: Toluene-d8	101	70-130		%REC	1	10/22/2015 4:00:46 PM	R29742

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	* Value exceeds Maximum Contaminant Level.	B Analyte detected in the associated Method Blank
	D Sample Diluted Due to Matrix	E Value above quantitation range
	H Holding times for preparation or analysis exceeded	J Analyte detected below quantitation limits
	ND Not Detected at the Reporting Limit	P Sample pH Not In Range
	R RPD outside accepted recovery limits	RL Reporting Detection Limit
	S % Recovery outside of range due to dilution or matrix	

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1510A28

Date Reported: 10/28/2015

CLIENT: Western Refining Southwest, Inc.

Client Sample ID: SR-IV

Project: West Line Test Water 10-20-15

Collection Date: 10/20/2015 1:30:00 PM

Lab ID: 1510A28-005

Matrix: AQUEOUS

Received Date: 10/22/2015 7:30:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8260B: VOLATILES							Analyst: DJF
Benzene	36	1.0		µg/L	1	10/22/2015 4:00:46 PM	R29742
Toluene	30	1.0		µg/L	1	10/22/2015 4:00:46 PM	R29742
Ethylbenzene	ND	1.0		µg/L	1	10/22/2015 4:00:46 PM	R29742
Methyl tert-butyl ether (MTBE)	ND	1.0		µg/L	1	10/22/2015 4:00:46 PM	R29742
1,2,4-Trimethylbenzene	76	1.0		µg/L	1	10/22/2015 4:00:46 PM	R29742
1,3,5-Trimethylbenzene	49	1.0		µg/L	1	10/22/2015 4:00:46 PM	R29742
1,2-Dichloroethane (EDC)	ND	1.0		µg/L	1	10/22/2015 4:00:46 PM	R29742
1,2-Dibromoethane (EDB)	ND	1.0		µg/L	1	10/22/2015 4:00:46 PM	R29742
Naphthalene	ND	2.0		µg/L	1	10/22/2015 4:00:46 PM	R29742
1-Methylnaphthalene	ND	4.0		µg/L	1	10/22/2015 4:00:46 PM	R29742
2-Methylnaphthalene	ND	4.0		µg/L	1	10/22/2015 4:00:46 PM	R29742
Acetone	ND	10		µg/L	1	10/22/2015 4:00:46 PM	R29742
Bromobenzene	ND	1.0		µg/L	1	10/22/2015 4:00:46 PM	R29742
Bromodichloromethane	ND	1.0		µg/L	1	10/22/2015 4:00:46 PM	R29742
Bromoform	ND	1.0		µg/L	1	10/22/2015 4:00:46 PM	R29742
Bromomethane	ND	3.0		µg/L	1	10/22/2015 4:00:46 PM	R29742
2-Butanone	ND	10		µg/L	1	10/22/2015 4:00:46 PM	R29742
Carbon disulfide	21	10		µg/L	1	10/22/2015 4:00:46 PM	R29742
Carbon Tetrachloride	ND	1.0		µg/L	1	10/22/2015 4:00:46 PM	R29742
Chlorobenzene	ND	1.0		µg/L	1	10/22/2015 4:00:46 PM	R29742
Chloroethane	ND	2.0		µg/L	1	10/22/2015 4:00:46 PM	R29742
Chloroform	ND	1.0		µg/L	1	10/22/2015 4:00:46 PM	R29742
Chloromethane	ND	3.0		µg/L	1	10/22/2015 4:00:46 PM	R29742
2-Chlorotoluene	ND	1.0		µg/L	1	10/22/2015 4:00:46 PM	R29742
4-Chlorotoluene	ND	1.0		µg/L	1	10/22/2015 4:00:46 PM	R29742
cis-1,2-DCE	ND	1.0		µg/L	1	10/22/2015 4:00:46 PM	R29742
cis-1,3-Dichloropropene	ND	1.0		µg/L	1	10/22/2015 4:00:46 PM	R29742
1,2-Dibromo-3-chloropropane	ND	2.0		µg/L	1	10/22/2015 4:00:46 PM	R29742
Dibromochloromethane	ND	1.0		µg/L	1	10/22/2015 4:00:46 PM	R29742
Dibromomethane	ND	1.0		µg/L	1	10/22/2015 4:00:46 PM	R29742
1,2-Dichlorobenzene	ND	1.0		µg/L	1	10/22/2015 4:00:46 PM	R29742
1,3-Dichlorobenzene	ND	1.0		µg/L	1	10/22/2015 4:00:46 PM	R29742
1,4-Dichlorobenzene	ND	1.0		µg/L	1	10/22/2015 4:00:46 PM	R29742
Dichlorodifluoromethane	ND	1.0		µg/L	1	10/22/2015 4:00:46 PM	R29742
1,1-Dichloroethane	ND	1.0		µg/L	1	10/22/2015 4:00:46 PM	R29742
1,1-Dichloroethene	ND	1.0		µg/L	1	10/22/2015 4:00:46 PM	R29742
1,2-Dichloropropane	ND	1.0		µg/L	1	10/22/2015 4:00:46 PM	R29742
1,3-Dichloropropane	ND	1.0		µg/L	1	10/22/2015 4:00:46 PM	R29742
2,2-Dichloropropane	ND	2.0		µg/L	1	10/22/2015 4:00:46 PM	R29742

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	* Value exceeds Maximum Contaminant Level.	B Analyte detected in the associated Method Blank
	D Sample Diluted Due to Matrix	E Value above quantitation range
	H Holding times for preparation or analysis exceeded	J Analyte detected below quantitation limits
	ND Not Detected at the Reporting Limit	P Sample pH Not In Range
	R RPD outside accepted recovery limits	RL Reporting Detection Limit
	S % Recovery outside of range due to dilution or matrix	

Analytical Report

Lab Order 1510A28

Date Reported: 10/28/2015

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Southwest, Inc.

Client Sample ID: SR-III

Project: West Line Test Water 10-20-15

Collection Date: 10/20/2015 1:25:00 PM

Lab ID: 1510A28-004

Matrix: AQUEOUS

Received Date: 10/22/2015 7:30:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8260B: VOLATILES							Analyst: DJF
1,1-Dichloropropene	ND	1.0		µg/L	1	10/22/2015 3:33:11 PM	R29742
Hexachlorobutadiene	ND	1.0		µg/L	1	10/22/2015 3:33:11 PM	R29742
2-Hexanone	ND	10		µg/L	1	10/22/2015 3:33:11 PM	R29742
Isopropylbenzene	ND	1.0		µg/L	1	10/22/2015 3:33:11 PM	R29742
4-Isopropyltoluene	4.5	1.0		µg/L	1	10/22/2015 3:33:11 PM	R29742
4-Methyl-2-pentanone	ND	10		µg/L	1	10/22/2015 3:33:11 PM	R29742
Methylene Chloride	ND	3.0		µg/L	1	10/22/2015 3:33:11 PM	R29742
n-Butylbenzene	ND	3.0		µg/L	1	10/22/2015 3:33:11 PM	R29742
n-Propylbenzene	ND	1.0		µg/L	1	10/22/2015 3:33:11 PM	R29742
sec-Butylbenzene	ND	1.0		µg/L	1	10/22/2015 3:33:11 PM	R29742
Styrene	ND	1.0		µg/L	1	10/22/2015 3:33:11 PM	R29742
tert-Butylbenzene	ND	1.0		µg/L	1	10/22/2015 3:33:11 PM	R29742
1,1,1,2-Tetrachloroethane	ND	1.0		µg/L	1	10/22/2015 3:33:11 PM	R29742
1,1,2,2-Tetrachloroethane	ND	2.0		µg/L	1	10/22/2015 3:33:11 PM	R29742
Tetrachloroethene (PCE)	ND	1.0		µg/L	1	10/22/2015 3:33:11 PM	R29742
trans-1,2-DCE	ND	1.0		µg/L	1	10/22/2015 3:33:11 PM	R29742
trans-1,3-Dichloropropene	ND	1.0		µg/L	1	10/22/2015 3:33:11 PM	R29742
1,2,3-Trichlorobenzene	ND	1.0		µg/L	1	10/22/2015 3:33:11 PM	R29742
1,2,4-Trichlorobenzene	ND	1.0		µg/L	1	10/22/2015 3:33:11 PM	R29742
1,1,1-Trichloroethane	ND	1.0		µg/L	1	10/22/2015 3:33:11 PM	R29742
1,1,2-Trichloroethane	ND	1.0		µg/L	1	10/22/2015 3:33:11 PM	R29742
Trichloroethene (TCE)	ND	1.0		µg/L	1	10/22/2015 3:33:11 PM	R29742
Trichlorofluoromethane	ND	1.0		µg/L	1	10/22/2015 3:33:11 PM	R29742
1,2,3-Trichloropropane	ND	2.0		µg/L	1	10/22/2015 3:33:11 PM	R29742
Vinyl chloride	ND	1.0		µg/L	1	10/22/2015 3:33:11 PM	R29742
Xylenes, Total	61	1.5		µg/L	1	10/22/2015 3:33:11 PM	R29742
Surr: 1,2-Dichloroethane-d4	95.4	70-130		%REC	1	10/22/2015 3:33:11 PM	R29742
Surr: 4-Bromofluorobenzene	107	70-130		%REC	1	10/22/2015 3:33:11 PM	R29742
Surr: Dibromofluoromethane	103	70-130		%REC	1	10/22/2015 3:33:11 PM	R29742
Surr: Toluene-d8	99.6	70-130		%REC	1	10/22/2015 3:33:11 PM	R29742

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	* Value exceeds Maximum Contaminant Level.	B Analyte detected in the associated Method Blank
	D Sample Diluted Due to Matrix	E Value above quantitation range
	H Holding times for preparation or analysis exceeded	J Analyte detected below quantitation limits
	ND Not Detected at the Reporting Limit	P Sample pH Not In Range
	R RPD outside accepted recovery limits	RL Reporting Detection Limit
	S % Recovery outside of range due to dilution or matrix	

Analytical Report

Lab Order 1510A28

Date Reported: 10/28/2015

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Southwest, Inc.

Client Sample ID: SR-III

Project: West Line Test Water 10-20-15

Collection Date: 10/20/2015 1:25:00 PM

Lab ID: 1510A28-004

Matrix: AQUEOUS

Received Date: 10/22/2015 7:30:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8260B: VOLATILES				Analyst: DJF			
Benzene	19	1.0		µg/L	1	10/22/2015 3:33:11 PM	R29742
Toluene	19	1.0		µg/L	1	10/22/2015 3:33:11 PM	R29742
Ethylbenzene	ND	1.0		µg/L	1	10/22/2015 3:33:11 PM	R29742
Methyl tert-butyl ether (MTBE)	ND	1.0		µg/L	1	10/22/2015 3:33:11 PM	R29742
1,2,4-Trimethylbenzene	24	1.0		µg/L	1	10/22/2015 3:33:11 PM	R29742
1,3,5-Trimethylbenzene	38	1.0		µg/L	1	10/22/2015 3:33:11 PM	R29742
1,2-Dichloroethane (EDC)	ND	1.0		µg/L	1	10/22/2015 3:33:11 PM	R29742
1,2-Dibromoethane (EDB)	ND	1.0		µg/L	1	10/22/2015 3:33:11 PM	R29742
Naphthalene	ND	2.0		µg/L	1	10/22/2015 3:33:11 PM	R29742
1-Methylnaphthalene	ND	4.0		µg/L	1	10/22/2015 3:33:11 PM	R29742
2-Methylnaphthalene	ND	4.0		µg/L	1	10/22/2015 3:33:11 PM	R29742
Acetone	ND	10		µg/L	1	10/22/2015 3:33:11 PM	R29742
Bromobenzene	ND	1.0		µg/L	1	10/22/2015 3:33:11 PM	R29742
Bromodichloromethane	ND	1.0		µg/L	1	10/22/2015 3:33:11 PM	R29742
Bromoform	ND	1.0		µg/L	1	10/22/2015 3:33:11 PM	R29742
Bromomethane	ND	3.0		µg/L	1	10/22/2015 3:33:11 PM	R29742
2-Butanone	ND	10		µg/L	1	10/22/2015 3:33:11 PM	R29742
Carbon disulfide	ND	10		µg/L	1	10/22/2015 3:33:11 PM	R29742
Carbon Tetrachloride	ND	1.0		µg/L	1	10/22/2015 3:33:11 PM	R29742
Chlorobenzene	ND	1.0		µg/L	1	10/22/2015 3:33:11 PM	R29742
Chloroethane	ND	2.0		µg/L	1	10/22/2015 3:33:11 PM	R29742
Chloroform	ND	1.0		µg/L	1	10/22/2015 3:33:11 PM	R29742
Chloromethane	ND	3.0		µg/L	1	10/22/2015 3:33:11 PM	R29742
2-Chlorotoluene	ND	1.0		µg/L	1	10/22/2015 3:33:11 PM	R29742
4-Chlorotoluene	ND	1.0		µg/L	1	10/22/2015 3:33:11 PM	R29742
cis-1,2-DCE	ND	1.0		µg/L	1	10/22/2015 3:33:11 PM	R29742
cis-1,3-Dichloropropene	ND	1.0		µg/L	1	10/22/2015 3:33:11 PM	R29742
1,2-Dibromo-3-chloropropane	ND	2.0		µg/L	1	10/22/2015 3:33:11 PM	R29742
Dibromochloromethane	ND	1.0		µg/L	1	10/22/2015 3:33:11 PM	R29742
Dibromomethane	ND	1.0		µg/L	1	10/22/2015 3:33:11 PM	R29742
1,2-Dichlorobenzene	ND	1.0		µg/L	1	10/22/2015 3:33:11 PM	R29742
1,3-Dichlorobenzene	ND	1.0		µg/L	1	10/22/2015 3:33:11 PM	R29742
1,4-Dichlorobenzene	ND	1.0		µg/L	1	10/22/2015 3:33:11 PM	R29742
Dichlorodifluoromethane	ND	1.0		µg/L	1	10/22/2015 3:33:11 PM	R29742
1,1-Dichloroethane	ND	1.0		µg/L	1	10/22/2015 3:33:11 PM	R29742
1,1-Dichloroethene	ND	1.0		µg/L	1	10/22/2015 3:33:11 PM	R29742
1,2-Dichloropropane	ND	1.0		µg/L	1	10/22/2015 3:33:11 PM	R29742
1,3-Dichloropropane	ND	1.0		µg/L	1	10/22/2015 3:33:11 PM	R29742
2,2-Dichloropropane	ND	2.0		µg/L	1	10/22/2015 3:33:11 PM	R29742

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	* Value exceeds Maximum Contaminant Level.	B Analyte detected in the associated Method Blank
	D Sample Diluted Due to Matrix	E Value above quantitation range
	H Holding times for preparation or analysis exceeded	J Analyte detected below quantitation limits
	ND Not Detected at the Reporting Limit	P Sample pH Not In Range
	R RPD outside accepted recovery limits	RL Reporting Detection Limit
	S % Recovery outside of range due to dilution or matrix	

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1510A28

Date Reported: 10/28/2015

CLIENT: Western Refining Southwest, Inc.

Client Sample ID: SR-II

Project: West Line Test Water 10-20-15

Collection Date: 10/20/2015 1:20:00 PM

Lab ID: 1510A28-003

Matrix: AQUEOUS

Received Date: 10/22/2015 7:30:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8260B: VOLATILES							Analyst: DJF
1,1-Dichloropropene	ND	1.0		µg/L	1	10/22/2015 3:05:32 PM	R29742
Hexachlorobutadiene	ND	1.0		µg/L	1	10/22/2015 3:05:32 PM	R29742
2-Hexanone	ND	10		µg/L	1	10/22/2015 3:05:32 PM	R29742
Isopropylbenzene	ND	1.0		µg/L	1	10/22/2015 3:05:32 PM	R29742
4-Isopropyltoluene	2.8	1.0		µg/L	1	10/22/2015 3:05:32 PM	R29742
4-Methyl-2-pentanone	ND	10		µg/L	1	10/22/2015 3:05:32 PM	R29742
Methylene Chloride	ND	3.0		µg/L	1	10/22/2015 3:05:32 PM	R29742
n-Butylbenzene	ND	3.0		µg/L	1	10/22/2015 3:05:32 PM	R29742
n-Propylbenzene	ND	1.0		µg/L	1	10/22/2015 3:05:32 PM	R29742
sec-Butylbenzene	ND	1.0		µg/L	1	10/22/2015 3:05:32 PM	R29742
Styrene	ND	1.0		µg/L	1	10/22/2015 3:05:32 PM	R29742
tert-Butylbenzene	ND	1.0		µg/L	1	10/22/2015 3:05:32 PM	R29742
1,1,1,2-Tetrachloroethane	ND	1.0		µg/L	1	10/22/2015 3:05:32 PM	R29742
1,1,2,2-Tetrachloroethane	ND	2.0		µg/L	1	10/22/2015 3:05:32 PM	R29742
Tetrachloroethene (PCE)	ND	1.0		µg/L	1	10/22/2015 3:05:32 PM	R29742
trans-1,2-DCE	ND	1.0		µg/L	1	10/22/2015 3:05:32 PM	R29742
trans-1,3-Dichloropropene	ND	1.0		µg/L	1	10/22/2015 3:05:32 PM	R29742
1,2,3-Trichlorobenzene	ND	1.0		µg/L	1	10/22/2015 3:05:32 PM	R29742
1,2,4-Trichlorobenzene	ND	1.0		µg/L	1	10/22/2015 3:05:32 PM	R29742
1,1,1-Trichloroethane	ND	1.0		µg/L	1	10/22/2015 3:05:32 PM	R29742
1,1,2-Trichloroethane	ND	1.0		µg/L	1	10/22/2015 3:05:32 PM	R29742
Trichloroethene (TCE)	ND	1.0		µg/L	1	10/22/2015 3:05:32 PM	R29742
Trichlorofluoromethane	ND	1.0		µg/L	1	10/22/2015 3:05:32 PM	R29742
1,2,3-Trichloropropane	ND	2.0		µg/L	1	10/22/2015 3:05:32 PM	R29742
Vinyl chloride	ND	1.0		µg/L	1	10/22/2015 3:05:32 PM	R29742
Xylenes, Total	30	1.5		µg/L	1	10/22/2015 3:05:32 PM	R29742
Surr: 1,2-Dichloroethane-d4	92.5	70-130		%REC	1	10/22/2015 3:05:32 PM	R29742
Surr: 4-Bromofluorobenzene	110	70-130		%REC	1	10/22/2015 3:05:32 PM	R29742
Surr: Dibromofluoromethane	102	70-130		%REC	1	10/22/2015 3:05:32 PM	R29742
Surr: Toluene-d8	96.3	70-130		%REC	1	10/22/2015 3:05:32 PM	R29742

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	* Value exceeds Maximum Contaminant Level.	B Analyte detected in the associated Method Blank
	D Sample Diluted Due to Matrix	E Value above quantitation range
	H Holding times for preparation or analysis exceeded	J Analyte detected below quantitation limits
	ND Not Detected at the Reporting Limit	P Sample pH Not In Range
	R RPD outside accepted recovery limits	RL Reporting Detection Limit
	S % Recovery outside of range due to dilution or matrix	

Analytical Report

Lab Order 1510A28

Date Reported: 10/28/2015

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Southwest, Inc.

Client Sample ID: SR-II

Project: West Line Test Water 10-20-15

Collection Date: 10/20/2015 1:20:00 PM

Lab ID: 1510A28-003

Matrix: AQUEOUS

Received Date: 10/22/2015 7:30:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8260B: VOLATILES							Analyst: DJF
Benzene	13	1.0		µg/L	1	10/22/2015 3:05:32 PM	R29742
Toluene	16	1.0		µg/L	1	10/22/2015 3:05:32 PM	R29742
Ethylbenzene	ND	1.0		µg/L	1	10/22/2015 3:05:32 PM	R29742
Methyl tert-butyl ether (MTBE)	ND	1.0		µg/L	1	10/22/2015 3:05:32 PM	R29742
1,2,4-Trimethylbenzene	1.2	1.0		µg/L	1	10/22/2015 3:05:32 PM	R29742
1,3,5-Trimethylbenzene	13	1.0		µg/L	1	10/22/2015 3:05:32 PM	R29742
1,2-Dichloroethane (EDC)	ND	1.0		µg/L	1	10/22/2015 3:05:32 PM	R29742
1,2-Dibromoethane (EDB)	ND	1.0		µg/L	1	10/22/2015 3:05:32 PM	R29742
Naphthalene	ND	2.0		µg/L	1	10/22/2015 3:05:32 PM	R29742
1-Methylnaphthalene	ND	4.0		µg/L	1	10/22/2015 3:05:32 PM	R29742
2-Methylnaphthalene	ND	4.0		µg/L	1	10/22/2015 3:05:32 PM	R29742
Acetone	ND	10		µg/L	1	10/22/2015 3:05:32 PM	R29742
Bromobenzene	ND	1.0		µg/L	1	10/22/2015 3:05:32 PM	R29742
Bromodichloromethane	ND	1.0		µg/L	1	10/22/2015 3:05:32 PM	R29742
Bromoform	ND	1.0		µg/L	1	10/22/2015 3:05:32 PM	R29742
Bromomethane	ND	3.0		µg/L	1	10/22/2015 3:05:32 PM	R29742
2-Butanone	ND	10		µg/L	1	10/22/2015 3:05:32 PM	R29742
Carbon disulfide	ND	10		µg/L	1	10/22/2015 3:05:32 PM	R29742
Carbon Tetrachloride	ND	1.0		µg/L	1	10/22/2015 3:05:32 PM	R29742
Chlorobenzene	ND	1.0		µg/L	1	10/22/2015 3:05:32 PM	R29742
Chloroethane	ND	2.0		µg/L	1	10/22/2015 3:05:32 PM	R29742
Chloroform	ND	1.0		µg/L	1	10/22/2015 3:05:32 PM	R29742
Chloromethane	ND	3.0		µg/L	1	10/22/2015 3:05:32 PM	R29742
2-Chlorotoluene	ND	1.0		µg/L	1	10/22/2015 3:05:32 PM	R29742
4-Chlorotoluene	ND	1.0		µg/L	1	10/22/2015 3:05:32 PM	R29742
cis-1,2-DCE	ND	1.0		µg/L	1	10/22/2015 3:05:32 PM	R29742
cis-1,3-Dichloropropene	ND	1.0		µg/L	1	10/22/2015 3:05:32 PM	R29742
1,2-Dibromo-3-chloropropane	ND	2.0		µg/L	1	10/22/2015 3:05:32 PM	R29742
Dibromochloromethane	ND	1.0		µg/L	1	10/22/2015 3:05:32 PM	R29742
Dibromomethane	ND	1.0		µg/L	1	10/22/2015 3:05:32 PM	R29742
1,2-Dichlorobenzene	ND	1.0		µg/L	1	10/22/2015 3:05:32 PM	R29742
1,3-Dichlorobenzene	ND	1.0		µg/L	1	10/22/2015 3:05:32 PM	R29742
1,4-Dichlorobenzene	ND	1.0		µg/L	1	10/22/2015 3:05:32 PM	R29742
Dichlorodifluoromethane	ND	1.0		µg/L	1	10/22/2015 3:05:32 PM	R29742
1,1-Dichloroethane	ND	1.0		µg/L	1	10/22/2015 3:05:32 PM	R29742
1,1-Dichloroethene	ND	1.0		µg/L	1	10/22/2015 3:05:32 PM	R29742
1,2-Dichloropropane	ND	1.0		µg/L	1	10/22/2015 3:05:32 PM	R29742
1,3-Dichloropropane	ND	1.0		µg/L	1	10/22/2015 3:05:32 PM	R29742
2,2-Dichloropropane	ND	2.0		µg/L	1	10/22/2015 3:05:32 PM	R29742

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix		

Analytical Report

Lab Order 1510A28

Date Reported: 10/28/2015

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Southwest, Inc.

Client Sample ID: SR-I

Project: West Line Test Water 10-20-15

Collection Date: 10/20/2015 1:15:00 PM

Lab ID: 1510A28-002

Matrix: AQUEOUS

Received Date: 10/22/2015 7:30:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8260B: VOLATILES							Analyst: DJF
1,1-Dichloropropene	ND	1.0		µg/L	1	10/22/2015 2:37:55 PM	R29742
Hexachlorobutadiene	ND	1.0		µg/L	1	10/22/2015 2:37:55 PM	R29742
2-Hexanone	ND	10		µg/L	1	10/22/2015 2:37:55 PM	R29742
Isopropylbenzene	ND	1.0		µg/L	1	10/22/2015 2:37:55 PM	R29742
4-Isopropyltoluene	2.6	1.0		µg/L	1	10/22/2015 2:37:55 PM	R29742
4-Methyl-2-pentanone	ND	10		µg/L	1	10/22/2015 2:37:55 PM	R29742
Methylene Chloride	ND	3.0		µg/L	1	10/22/2015 2:37:55 PM	R29742
n-Butylbenzene	ND	3.0		µg/L	1	10/22/2015 2:37:55 PM	R29742
n-Propylbenzene	ND	1.0		µg/L	1	10/22/2015 2:37:55 PM	R29742
sec-Butylbenzene	ND	1.0		µg/L	1	10/22/2015 2:37:55 PM	R29742
Styrene	ND	1.0		µg/L	1	10/22/2015 2:37:55 PM	R29742
tert-Butylbenzene	ND	1.0		µg/L	1	10/22/2015 2:37:55 PM	R29742
1,1,1,2-Tetrachloroethane	ND	1.0		µg/L	1	10/22/2015 2:37:55 PM	R29742
1,1,2,2-Tetrachloroethane	ND	2.0		µg/L	1	10/22/2015 2:37:55 PM	R29742
Tetrachloroethene (PCE)	ND	1.0		µg/L	1	10/22/2015 2:37:55 PM	R29742
trans-1,2-DCE	ND	1.0		µg/L	1	10/22/2015 2:37:55 PM	R29742
trans-1,3-Dichloropropene	ND	1.0		µg/L	1	10/22/2015 2:37:55 PM	R29742
1,2,3-Trichlorobenzene	ND	1.0		µg/L	1	10/22/2015 2:37:55 PM	R29742
1,2,4-Trichlorobenzene	ND	1.0		µg/L	1	10/22/2015 2:37:55 PM	R29742
1,1,1-Trichloroethane	ND	1.0		µg/L	1	10/22/2015 2:37:55 PM	R29742
1,1,2-Trichloroethane	ND	1.0		µg/L	1	10/22/2015 2:37:55 PM	R29742
Trichloroethene (TCE)	ND	1.0		µg/L	1	10/22/2015 2:37:55 PM	R29742
Trichlorofluoromethane	ND	1.0		µg/L	1	10/22/2015 2:37:55 PM	R29742
1,2,3-Trichloropropane	ND	2.0		µg/L	1	10/22/2015 2:37:55 PM	R29742
Vinyl chloride	ND	1.0		µg/L	1	10/22/2015 2:37:55 PM	R29742
Xylenes, Total	27	1.5		µg/L	1	10/22/2015 2:37:55 PM	R29742
Surr: 1,2-Dichloroethane-d4	93.4	70-130		%REC	1	10/22/2015 2:37:55 PM	R29742
Surr: 4-Bromofluorobenzene	107	70-130		%REC	1	10/22/2015 2:37:55 PM	R29742
Surr: Dibromofluoromethane	106	70-130		%REC	1	10/22/2015 2:37:55 PM	R29742
Surr: Toluene-d8	100	70-130		%REC	1	10/22/2015 2:37:55 PM	R29742

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix		

Analytical Report

Lab Order 1510A28

Date Reported: 10/28/2015

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Southwest, Inc.

Client Sample ID: SR-I

Project: West Line Test Water 10-20-15

Collection Date: 10/20/2015 1:15:00 PM

Lab ID: 1510A28-002

Matrix: AQUEOUS

Received Date: 10/22/2015 7:30:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8260B: VOLATILES							Analyst: DJF
Benzene	12	1.0		µg/L	1	10/22/2015 2:37:55 PM	R29742
Toluene	12	1.0		µg/L	1	10/22/2015 2:37:55 PM	R29742
Ethylbenzene	ND	1.0		µg/L	1	10/22/2015 2:37:55 PM	R29742
Methyl tert-butyl ether (MTBE)	ND	1.0		µg/L	1	10/22/2015 2:37:55 PM	R29742
1,2,4-Trimethylbenzene	2.0	1.0		µg/L	1	10/22/2015 2:37:55 PM	R29742
1,3,5-Trimethylbenzene	14	1.0		µg/L	1	10/22/2015 2:37:55 PM	R29742
1,2-Dichloroethane (EDC)	ND	1.0		µg/L	1	10/22/2015 2:37:55 PM	R29742
1,2-Dibromoethane (EDB)	ND	1.0		µg/L	1	10/22/2015 2:37:55 PM	R29742
Naphthalene	ND	2.0		µg/L	1	10/22/2015 2:37:55 PM	R29742
1-Methylnaphthalene	ND	4.0		µg/L	1	10/22/2015 2:37:55 PM	R29742
2-Methylnaphthalene	ND	4.0		µg/L	1	10/22/2015 2:37:55 PM	R29742
Acetone	ND	10		µg/L	1	10/22/2015 2:37:55 PM	R29742
Bromobenzene	ND	1.0		µg/L	1	10/22/2015 2:37:55 PM	R29742
Bromodichloromethane	ND	1.0		µg/L	1	10/22/2015 2:37:55 PM	R29742
Bromoform	ND	1.0		µg/L	1	10/22/2015 2:37:55 PM	R29742
Bromomethane	ND	3.0		µg/L	1	10/22/2015 2:37:55 PM	R29742
2-Butanone	ND	10		µg/L	1	10/22/2015 2:37:55 PM	R29742
Carbon disulfide	ND	10		µg/L	1	10/22/2015 2:37:55 PM	R29742
Carbon Tetrachloride	ND	1.0		µg/L	1	10/22/2015 2:37:55 PM	R29742
Chlorobenzene	ND	1.0		µg/L	1	10/22/2015 2:37:55 PM	R29742
Chloroethane	ND	2.0		µg/L	1	10/22/2015 2:37:55 PM	R29742
Chloroform	ND	1.0		µg/L	1	10/22/2015 2:37:55 PM	R29742
Chloromethane	ND	3.0		µg/L	1	10/22/2015 2:37:55 PM	R29742
2-Chlorotoluene	ND	1.0		µg/L	1	10/22/2015 2:37:55 PM	R29742
4-Chlorotoluene	ND	1.0		µg/L	1	10/22/2015 2:37:55 PM	R29742
cis-1,2-DCE	ND	1.0		µg/L	1	10/22/2015 2:37:55 PM	R29742
cis-1,3-Dichloropropene	ND	1.0		µg/L	1	10/22/2015 2:37:55 PM	R29742
1,2-Dibromo-3-chloropropane	ND	2.0		µg/L	1	10/22/2015 2:37:55 PM	R29742
Dibromochloromethane	ND	1.0		µg/L	1	10/22/2015 2:37:55 PM	R29742
Dibromomethane	ND	1.0		µg/L	1	10/22/2015 2:37:55 PM	R29742
1,2-Dichlorobenzene	ND	1.0		µg/L	1	10/22/2015 2:37:55 PM	R29742
1,3-Dichlorobenzene	ND	1.0		µg/L	1	10/22/2015 2:37:55 PM	R29742
1,4-Dichlorobenzene	ND	1.0		µg/L	1	10/22/2015 2:37:55 PM	R29742
Dichlorodifluoromethane	ND	1.0		µg/L	1	10/22/2015 2:37:55 PM	R29742
1,1-Dichloroethane	ND	1.0		µg/L	1	10/22/2015 2:37:55 PM	R29742
1,1-Dichloroethene	ND	1.0		µg/L	1	10/22/2015 2:37:55 PM	R29742
1,2-Dichloropropane	ND	1.0		µg/L	1	10/22/2015 2:37:55 PM	R29742
1,3-Dichloropropane	ND	1.0		µg/L	1	10/22/2015 2:37:55 PM	R29742
2,2-Dichloropropane	ND	2.0		µg/L	1	10/22/2015 2:37:55 PM	R29742

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	* Value exceeds Maximum Contaminant Level.	B Analyte detected in the associated Method Blank
	D Sample Diluted Due to Matrix	E Value above quantitation range
	H Holding times for preparation or analysis exceeded	J Analyte detected below quantitation limits
	ND Not Detected at the Reporting Limit	P Sample pH Not In Range
	R RPD outside accepted recovery limits	RL Reporting Detection Limit
	S % Recovery outside of range due to dilution or matrix	

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1510A28

Date Reported: 10/28/2015

CLIENT: Western Refining Southwest, Inc.

Client Sample ID: SR-I

Project: West Line Test Water 10-20-15

Collection Date: 10/20/2015 1:15:00 PM

Lab ID: 1510A28-002

Matrix: AQUEOUS

Received Date: 10/22/2015 7:30:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8270C: SEMIVOLATILES							Analyst: DAM
2,4-Dinitrotoluene	ND	10		µg/L	1	10/26/2015 4:33:33 PM	22016
2,6-Dinitrotoluene	ND	10		µg/L	1	10/26/2015 4:33:33 PM	22016
Fluoranthene	ND	10		µg/L	1	10/26/2015 4:33:33 PM	22016
Fluorene	ND	10		µg/L	1	10/26/2015 4:33:33 PM	22016
Hexachlorobenzene	ND	10		µg/L	1	10/26/2015 4:33:33 PM	22016
Hexachlorobutadiene	ND	10		µg/L	1	10/26/2015 4:33:33 PM	22016
Hexachlorocyclopentadiene	ND	10		µg/L	1	10/26/2015 4:33:33 PM	22016
Hexachloroethane	ND	10		µg/L	1	10/26/2015 4:33:33 PM	22016
Indeno(1,2,3-cd)pyrene	ND	10		µg/L	1	10/26/2015 4:33:33 PM	22016
Isophorone	ND	10		µg/L	1	10/26/2015 4:33:33 PM	22016
1-Methylnaphthalene	ND	10		µg/L	1	10/26/2015 4:33:33 PM	22016
2-Methylnaphthalene	ND	10		µg/L	1	10/26/2015 4:33:33 PM	22016
2-Methylphenol	ND	10		µg/L	1	10/26/2015 4:33:33 PM	22016
3+4-Methylphenol	ND	10		µg/L	1	10/26/2015 4:33:33 PM	22016
N-Nitrosodi-n-propylamine	ND	10		µg/L	1	10/26/2015 4:33:33 PM	22016
N-Nitrosodimethylamine	ND	10		µg/L	1	10/26/2015 4:33:33 PM	22016
N-Nitrosodiphenylamine	ND	10		µg/L	1	10/26/2015 4:33:33 PM	22016
Naphthalene	ND	10		µg/L	1	10/26/2015 4:33:33 PM	22016
2-Nitroaniline	ND	10		µg/L	1	10/26/2015 4:33:33 PM	22016
3-Nitroaniline	ND	10		µg/L	1	10/26/2015 4:33:33 PM	22016
4-Nitroaniline	ND	10		µg/L	1	10/26/2015 4:33:33 PM	22016
Nitrobenzene	ND	10		µg/L	1	10/26/2015 4:33:33 PM	22016
2-Nitrophenol	ND	10		µg/L	1	10/26/2015 4:33:33 PM	22016
4-Nitrophenol	ND	10		µg/L	1	10/26/2015 4:33:33 PM	22016
Pentachlorophenol	ND	20		µg/L	1	10/26/2015 4:33:33 PM	22016
Phenanthrene	ND	10		µg/L	1	10/26/2015 4:33:33 PM	22016
Phenol	ND	10		µg/L	1	10/26/2015 4:33:33 PM	22016
Pyrene	ND	10		µg/L	1	10/26/2015 4:33:33 PM	22016
Pyridine	ND	10		µg/L	1	10/26/2015 4:33:33 PM	22016
1,2,4-Trichlorobenzene	ND	10		µg/L	1	10/26/2015 4:33:33 PM	22016
2,4,5-Trichlorophenol	ND	10		µg/L	1	10/26/2015 4:33:33 PM	22016
2,4,6-Trichlorophenol	ND	10		µg/L	1	10/26/2015 4:33:33 PM	22016
Surr: 2-Fluorophenol	85.2	4.63-113		%REC	1	10/26/2015 4:33:33 PM	22016
Surr: Phenol-d5	69.5	4.13-124		%REC	1	10/26/2015 4:33:33 PM	22016
Surr: 2,4,6-Tribromophenol	100	5.14-132		%REC	1	10/26/2015 4:33:33 PM	22016
Surr: Nitrobenzene-d5	98.7	9.13-140		%REC	1	10/26/2015 4:33:33 PM	22016
Surr: 2-Fluorobiphenyl	98.1	10.8-132		%REC	1	10/26/2015 4:33:33 PM	22016
Surr: 4-Terphenyl-d14	48.5	12.9-107		%REC	1	10/26/2015 4:33:33 PM	22016

EPA METHOD 8260B: VOLATILES

Analyst: DJF

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	* Value exceeds Maximum Contaminant Level.	B Analyte detected in the associated Method Blank
	D Sample Diluted Due to Matrix	E Value above quantitation range
	H Holding times for preparation or analysis exceeded	J Analyte detected below quantitation limits
	ND Not Detected at the Reporting Limit	P Sample pH Not In Range
	R RPD outside accepted recovery limits	RL Reporting Detection Limit
	S % Recovery outside of range due to dilution or matrix	



Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com

October 28, 2015

Kelly Robinson

Western Refining Southwest, Inc.

#50 CR 4990

Bloomfield, NM 87413

TEL: (505) 632-4166

FAX (505) 632-3911

RE: West Line Test Water 10-20-15

OrderNo.: 1510A28

Dear Kelly Robinson:

Hall Environmental Analysis Laboratory received 5 sample(s) on 10/22/2015 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent. To access our accredited tests please go to www.hallenvironmental.com or the state specific web sites. In order to properly interpret your results it is imperative that you review this report in its entirety. See the sample checklist and/or the Chain of Custody for information regarding the sample receipt temperature and preservation. Data qualifiers or a narrative will be provided if the sample analysis or analytical quality control parameters require a flag. When necessary, data qualifiers are provided on both the sample analysis report and the QC summary report, both sections should be reviewed. All samples are reported, as received, unless otherwise indicated. Lab measurement of analytes considered field parameters that require analysis within 15 minutes of sampling such as pH and residual chlorine are qualified as being analyzed outside of the recommended holding time.

Please don't hesitate to contact HEAL for any additional information or clarifications.

ADHS Cert #AZ0682 -- NMED-DWB Cert #NM9425 -- NMED-Micro Cert #NM0190

Sincerely,

Andy Freeman

Laboratory Manager

4901 Hawkins NE

Albuquerque, NM 87109

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

Submitted 10/27/15 Form C-138
Revised August 1, 2011
*Surface Waste Management Facility Operator
and Generator shall maintain and make this
documentation available for Division inspection.

REQUEST FOR APPROVAL TO ACCEPT SOLID WASTE

1. Generator Name and Address: Western Refining Pipeline, LLC 111 CR 4009, Bloomfield, NM, 87413
2. Originating Site: Western Refining – Standing Rock Pipeline Station, McKinley County, SWNE Sec 22, T19N, R15W
3. Location of Material (Street Address, City, State or ULSTR): Same as originating Site
4. Source and Description of Waste: The crude impacted soil was generated during general maintenance and facility clean-up activities. Estimated Volume <u>1800</u> bbl Known Volume (to be entered by the operator at the end of the haul) <u>1865</u> yd ³ / bbls
5. GENERATOR CERTIFICATION STATEMENT OF WASTE STATUS I, <u>Kelly Robinson</u> <u>Kelly Robinson</u> , representative or authorized agent for <u>Western Refining Pipeline, LLC</u> do hereby PRINT & SIGN NAME COMPANY NAME certify that according to the Resource Conservation and Recovery Act (RCRA) and the US Environmental Protection Agency's July 1988 regulatory determination, the above described waste is: (Check the appropriate classification) ☐ RCRA Exempt: Oil field wastes generated from oil and gas exploration and production operations and are not mixed with non- exempt waste. <u>Operator Use Only: Waste Acceptance Frequency</u> ☐ Monthly ☐ Weekly ☐ Per Load ☒ RCRA Non-Exempt: Oil field waste which is non-hazardous that does not exceed the minimum standards for waste hazardous by characteristics established in RCRA regulations, 40 CFR 261.21-261.24, or listed hazardous waste as defined in 40 CFR, part 261, subpart D, as amended. The following documentation is attached to demonstrate the above-described waste is non-hazardous. (Check the appropriate items) ☐ MSDS Information ☒ RCRA Hazardous Waste Analysis ☒ Process Knowledge ☐ Other (Provide description in Box 4) GENERATOR 19.15.36.15 WASTE TESTING CERTIFICATION STATEMENT FOR LANDFARMS I, <u>Kelly Robinson</u> <u>Kelly Robinson</u> , representative for <u>Western Refining Pipeline, LLC</u> do hereby certify that representative samples of the oil field waste have been subjected to the paint filter test and tested for chloride content and that the samples have been found to conform to the specific requirements applicable to landfarms pursuant to Section 15 of 19.15.36 NMAC. The results of the representative samples are attached to demonstrate the above-described waste conform to the requirements of Section 15 of 19.15.36 NMAC.
5. Transporter: SSS <u>SSS TRUCKING</u>

OCD Permitted Surface Waste Management Facility

Name and Facility Permit #: Agua Moss, LLC Permit # UICI-005 (Class I Non-Hazardous Well)

Address of Facility: 345 CR 350, San Juan County, Aztec, NM 87410

Method of Treatment and/or Disposal:

☐ Evaporation ☒ Injection ☐ Treating Plant ☐ Landfarm ☐ Landfill ☐ Other

Waste Acceptance Status:

☒ **APPROVED**

☐ **DENIED (Must Be Maintained As Permanent Record)**

PRINT NAME: Adrian Hudson

TITLE: Operator

DATE: 11/13/15

SIGNATURE: [Signature]
Surface Waste Management Facility Authorized Agent

TELEPHONE NO.: (505) 334-6186

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1510A28

Date Reported:

CLIENT: Western Refining Southwest, Inc.

Client Sample ID: SR-IV

Project: West Line Test Water 10-20-15

Collection Date: 10/20/2015 1:30:00 PM

Lab ID: 1510A28-005

Matrix: AQUEOUS

Received Date: 10/22/2015 7:30:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8260B: VOLATILES							Analyst: DJF
1,1-Dichloropropene	ND	1.0		µg/L	1	10/22/2015 4:00:46 PM	R29742
Hexachlorobutadiene	ND	1.0		µg/L	1	10/22/2015 4:00:46 PM	R29742
2-Hexanone	ND	10		µg/L	1	10/22/2015 4:00:46 PM	R29742
Isopropylbenzene	ND	1.0		µg/L	1	10/22/2015 4:00:46 PM	R29742
4-Isopropyltoluene	5.0	1.0		µg/L	1	10/22/2015 4:00:46 PM	R29742
4-Methyl-2-pentanone	ND	10		µg/L	1	10/22/2015 4:00:46 PM	R29742
Methylene Chloride	ND	3.0		µg/L	1	10/22/2015 4:00:46 PM	R29742
n-Butylbenzene	ND	3.0		µg/L	1	10/22/2015 4:00:46 PM	R29742
n-Propylbenzene	ND	1.0		µg/L	1	10/22/2015 4:00:46 PM	R29742
sec-Butylbenzene	ND	1.0		µg/L	1	10/22/2015 4:00:46 PM	R29742
Styrene	ND	1.0		µg/L	1	10/22/2015 4:00:46 PM	R29742
tert-Butylbenzene	ND	1.0		µg/L	1	10/22/2015 4:00:46 PM	R29742
1,1,1,2-Tetrachloroethane	ND	1.0		µg/L	1	10/22/2015 4:00:46 PM	R29742
1,1,2,2-Tetrachloroethane	ND	2.0		µg/L	1	10/22/2015 4:00:46 PM	R29742
Tetrachloroethene (PCE)	ND	1.0		µg/L	1	10/22/2015 4:00:46 PM	R29742
trans-1,2-DCE	ND	1.0		µg/L	1	10/22/2015 4:00:46 PM	R29742
trans-1,3-Dichloropropene	ND	1.0		µg/L	1	10/22/2015 4:00:46 PM	R29742
1,2,3-Trichlorobenzene	ND	1.0		µg/L	1	10/22/2015 4:00:46 PM	R29742
1,2,4-Trichlorobenzene	ND	1.0		µg/L	1	10/22/2015 4:00:46 PM	R29742
1,1,1-Trichloroethane	ND	1.0		µg/L	1	10/22/2015 4:00:46 PM	R29742
1,1,2-Trichloroethane	ND	1.0		µg/L	1	10/22/2015 4:00:46 PM	R29742
Trichloroethene (TCE)	ND	1.0		µg/L	1	10/22/2015 4:00:46 PM	R29742
Trichlorofluoromethane	ND	1.0		µg/L	1	10/22/2015 4:00:46 PM	R29742
1,2,3-Trichloropropane	ND	2.0		µg/L	1	10/22/2015 4:00:46 PM	R29742
Vinyl chloride	ND	1.0		µg/L	1	10/22/2015 4:00:46 PM	R29742
Xylenes, Total	170	1.5		µg/L	1	10/22/2015 4:00:46 PM	R29742
Surr: 1,2-Dichloroethane-d4	92.8	70-130		%REC	1	10/22/2015 4:00:46 PM	R29742
Surr: 4-Bromofluorobenzene	103	70-130		%REC	1	10/22/2015 4:00:46 PM	R29742
Surr: Dibromofluoromethane	101	70-130		%REC	1	10/22/2015 4:00:46 PM	R29742
Surr: Toluene-d8	101	70-130		%REC	1	10/22/2015 4:00:46 PM	R29742

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	* Value exceeds Maximum Contaminant Level.	B Analyte detected in the associated Method Blank
	D Sample Diluted Due to Matrix	E Value above quantitation range
	H Holding times for preparation or analysis exceeded	J Analyte detected below quantitation limits
	ND Not Detected at the Reporting Limit	P Sample pH Not In Range
	R RPD outside accepted recovery limits	RL Reporting Detection Limit
	S % Recovery outside of range due to dilution or matrix	

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1510A28

Date Reported:

CLIENT: Western Refining Southwest, Inc.

Client Sample ID: SR-IV

Project: West Line Test Water 10-20-15

Collection Date: 10/20/2015 1:30:00 PM

Lab ID: 1510A28-005

Matrix: AQUEOUS

Received Date: 10/22/2015 7:30:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8260B: VOLATILES							Analyst: DJF
Benzene	36	1.0		µg/L	1	10/22/2015 4:00:46 PM	R29742
Toluene	30	1.0		µg/L	1	10/22/2015 4:00:46 PM	R29742
Ethylbenzene	ND	1.0		µg/L	1	10/22/2015 4:00:46 PM	R29742
Methyl tert-butyl ether (MTBE)	ND	1.0		µg/L	1	10/22/2015 4:00:46 PM	R29742
1,2,4-Trimethylbenzene	76	1.0		µg/L	1	10/22/2015 4:00:46 PM	R29742
1,3,5-Trimethylbenzene	49	1.0		µg/L	1	10/22/2015 4:00:46 PM	R29742
1,2-Dichloroethane (EDC)	ND	1.0		µg/L	1	10/22/2015 4:00:46 PM	R29742
1,2-Dibromoethane (EDB)	ND	1.0		µg/L	1	10/22/2015 4:00:46 PM	R29742
Naphthalene	ND	2.0		µg/L	1	10/22/2015 4:00:46 PM	R29742
1-Methylnaphthalene	ND	4.0		µg/L	1	10/22/2015 4:00:46 PM	R29742
2-Methylnaphthalene	ND	4.0		µg/L	1	10/22/2015 4:00:46 PM	R29742
Acetone	ND	10		µg/L	1	10/22/2015 4:00:46 PM	R29742
Bromobenzene	ND	1.0		µg/L	1	10/22/2015 4:00:46 PM	R29742
Bromodichloromethane	ND	1.0		µg/L	1	10/22/2015 4:00:46 PM	R29742
Bromoform	ND	1.0		µg/L	1	10/22/2015 4:00:46 PM	R29742
Bromomethane	ND	3.0		µg/L	1	10/22/2015 4:00:46 PM	R29742
2-Butanone	ND	10		µg/L	1	10/22/2015 4:00:46 PM	R29742
Carbon disulfide	21	10		µg/L	1	10/22/2015 4:00:46 PM	R29742
Carbon Tetrachloride	ND	1.0		µg/L	1	10/22/2015 4:00:46 PM	R29742
Chlorobenzene	ND	1.0		µg/L	1	10/22/2015 4:00:46 PM	R29742
Chloroethane	ND	2.0		µg/L	1	10/22/2015 4:00:46 PM	R29742
Chloroform	ND	1.0		µg/L	1	10/22/2015 4:00:46 PM	R29742
Chloromethane	ND	3.0		µg/L	1	10/22/2015 4:00:46 PM	R29742
2-Chlorotoluene	ND	1.0		µg/L	1	10/22/2015 4:00:46 PM	R29742
4-Chlorotoluene	ND	1.0		µg/L	1	10/22/2015 4:00:46 PM	R29742
cis-1,2-DCE	ND	1.0		µg/L	1	10/22/2015 4:00:46 PM	R29742
cis-1,3-Dichloropropene	ND	1.0		µg/L	1	10/22/2015 4:00:46 PM	R29742
1,2-Dibromo-3-chloropropane	ND	2.0		µg/L	1	10/22/2015 4:00:46 PM	R29742
Dibromochloromethane	ND	1.0		µg/L	1	10/22/2015 4:00:46 PM	R29742
Dibromomethane	ND	1.0		µg/L	1	10/22/2015 4:00:46 PM	R29742
1,2-Dichlorobenzene	ND	1.0		µg/L	1	10/22/2015 4:00:46 PM	R29742
1,3-Dichlorobenzene	ND	1.0		µg/L	1	10/22/2015 4:00:46 PM	R29742
1,4-Dichlorobenzene	ND	1.0		µg/L	1	10/22/2015 4:00:46 PM	R29742
Dichlorodifluoromethane	ND	1.0		µg/L	1	10/22/2015 4:00:46 PM	R29742
1,1-Dichloroethane	ND	1.0		µg/L	1	10/22/2015 4:00:46 PM	R29742
1,1-Dichloroethene	ND	1.0		µg/L	1	10/22/2015 4:00:46 PM	R29742
1,2-Dichloropropane	ND	1.0		µg/L	1	10/22/2015 4:00:46 PM	R29742
1,3-Dichloropropane	ND	1.0		µg/L	1	10/22/2015 4:00:46 PM	R29742
2,2-Dichloropropane	ND	2.0		µg/L	1	10/22/2015 4:00:46 PM	R29742

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	* Value exceeds Maximum Contaminant Level.	B Analyte detected in the associated Method Blank
	D Sample Diluted Due to Matrix	E Value above quantitation range
	H Holding times for preparation or analysis exceeded	J Analyte detected below quantitation limits
	ND Not Detected at the Reporting Limit	P Sample pH Not In Range
	R RPD outside accepted recovery limits	RL Reporting Detection Limit
	S % Recovery outside of range due to dilution or matrix	

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1510A28

Date Reported:

CLIENT: Western Refining Southwest, Inc.

Client Sample ID: SR-III

Project: West Line Test Water 10-20-15

Collection Date: 10/20/2015 1:25:00 PM

Lab ID: 1510A28-004

Matrix: AQUEOUS

Received Date: 10/22/2015 7:30:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8260B: VOLATILES							Analyst: DJF
1,1-Dichloropropene	ND	1.0		µg/L	1	10/22/2015 3:33:11 PM	R29742
Hexachlorobutadiene	ND	1.0		µg/L	1	10/22/2015 3:33:11 PM	R29742
2-Hexanone	ND	10		µg/L	1	10/22/2015 3:33:11 PM	R29742
Isopropylbenzene	ND	1.0		µg/L	1	10/22/2015 3:33:11 PM	R29742
4-Isopropyltoluene	4.5	1.0		µg/L	1	10/22/2015 3:33:11 PM	R29742
4-Methyl-2-pentanone	ND	10		µg/L	1	10/22/2015 3:33:11 PM	R29742
Methylene Chloride	ND	3.0		µg/L	1	10/22/2015 3:33:11 PM	R29742
n-Butylbenzene	ND	3.0		µg/L	1	10/22/2015 3:33:11 PM	R29742
n-Propylbenzene	ND	1.0		µg/L	1	10/22/2015 3:33:11 PM	R29742
sec-Butylbenzene	ND	1.0		µg/L	1	10/22/2015 3:33:11 PM	R29742
Styrene	ND	1.0		µg/L	1	10/22/2015 3:33:11 PM	R29742
tert-Butylbenzene	ND	1.0		µg/L	1	10/22/2015 3:33:11 PM	R29742
1,1,1,2-Tetrachloroethane	ND	1.0		µg/L	1	10/22/2015 3:33:11 PM	R29742
1,1,2,2-Tetrachloroethane	ND	2.0		µg/L	1	10/22/2015 3:33:11 PM	R29742
Tetrachloroethene (PCE)	ND	1.0		µg/L	1	10/22/2015 3:33:11 PM	R29742
trans-1,2-DCE	ND	1.0		µg/L	1	10/22/2015 3:33:11 PM	R29742
trans-1,3-Dichloropropene	ND	1.0		µg/L	1	10/22/2015 3:33:11 PM	R29742
1,2,3-Trichlorobenzene	ND	1.0		µg/L	1	10/22/2015 3:33:11 PM	R29742
1,2,4-Trichlorobenzene	ND	1.0		µg/L	1	10/22/2015 3:33:11 PM	R29742
1,1,1-Trichloroethane	ND	1.0		µg/L	1	10/22/2015 3:33:11 PM	R29742
1,1,2-Trichloroethane	ND	1.0		µg/L	1	10/22/2015 3:33:11 PM	R29742
Trichloroethene (TCE)	ND	1.0		µg/L	1	10/22/2015 3:33:11 PM	R29742
Trichlorofluoromethane	ND	1.0		µg/L	1	10/22/2015 3:33:11 PM	R29742
1,2,3-Trichloropropane	ND	2.0		µg/L	1	10/22/2015 3:33:11 PM	R29742
Vinyl chloride	ND	1.0		µg/L	1	10/22/2015 3:33:11 PM	R29742
Xylenes, Total	61	1.5		µg/L	1	10/22/2015 3:33:11 PM	R29742
Surr: 1,2-Dichloroethane-d4	95.4	70-130		%REC	1	10/22/2015 3:33:11 PM	R29742
Surr: 4-Bromofluorobenzene	107	70-130		%REC	1	10/22/2015 3:33:11 PM	R29742
Surr: Dibromofluoromethane	103	70-130		%REC	1	10/22/2015 3:33:11 PM	R29742
Surr: Toluene-d8	99.6	70-130		%REC	1	10/22/2015 3:33:11 PM	R29742

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	* Value exceeds Maximum Contaminant Level.	B Analyte detected in the associated Method Blank
	D Sample Diluted Due to Matrix	E Value above quantitation range
	H Holding times for preparation or analysis exceeded	J Analyte detected below quantitation limits
	ND Not Detected at the Reporting Limit	P Sample pH Not In Range
	R RPD outside accepted recovery limits	RL Reporting Detection Limit
	S % Recovery outside of range due to dilution or matrix	

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1510A28

Date Reported:

CLIENT: Western Refining Southwest, Inc.

Client Sample ID: SR-III

Project: West Line Test Water 10-20-15

Collection Date: 10/20/2015 1:25:00 PM

Lab ID: 1510A28-004

Matrix: AQUEOUS

Received Date: 10/22/2015 7:30:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8260B: VOLATILES							Analyst: DJF
Benzene	19	1.0		µg/L	1	10/22/2015 3:33:11 PM	R29742
Toluene	19	1.0		µg/L	1	10/22/2015 3:33:11 PM	R29742
Ethylbenzene	ND	1.0		µg/L	1	10/22/2015 3:33:11 PM	R29742
Methyl tert-butyl ether (MTBE)	ND	1.0		µg/L	1	10/22/2015 3:33:11 PM	R29742
1,2,4-Trimethylbenzene	24	1.0		µg/L	1	10/22/2015 3:33:11 PM	R29742
1,3,5-Trimethylbenzene	38	1.0		µg/L	1	10/22/2015 3:33:11 PM	R29742
1,2-Dichloroethane (EDC)	ND	1.0		µg/L	1	10/22/2015 3:33:11 PM	R29742
1,2-Dibromoethane (EDB)	ND	1.0		µg/L	1	10/22/2015 3:33:11 PM	R29742
Naphthalene	ND	2.0		µg/L	1	10/22/2015 3:33:11 PM	R29742
1-Methylnaphthalene	ND	4.0		µg/L	1	10/22/2015 3:33:11 PM	R29742
2-Methylnaphthalene	ND	4.0		µg/L	1	10/22/2015 3:33:11 PM	R29742
Acetone	ND	10		µg/L	1	10/22/2015 3:33:11 PM	R29742
Bromobenzene	ND	1.0		µg/L	1	10/22/2015 3:33:11 PM	R29742
Bromodichloromethane	ND	1.0		µg/L	1	10/22/2015 3:33:11 PM	R29742
Bromoform	ND	1.0		µg/L	1	10/22/2015 3:33:11 PM	R29742
Bromomethane	ND	3.0		µg/L	1	10/22/2015 3:33:11 PM	R29742
2-Butanone	ND	10		µg/L	1	10/22/2015 3:33:11 PM	R29742
Carbon disulfide	ND	10		µg/L	1	10/22/2015 3:33:11 PM	R29742
Carbon Tetrachloride	ND	1.0		µg/L	1	10/22/2015 3:33:11 PM	R29742
Chlorobenzene	ND	1.0		µg/L	1	10/22/2015 3:33:11 PM	R29742
Chloroethane	ND	2.0		µg/L	1	10/22/2015 3:33:11 PM	R29742
Chloroform	ND	1.0		µg/L	1	10/22/2015 3:33:11 PM	R29742
Chloromethane	ND	3.0		µg/L	1	10/22/2015 3:33:11 PM	R29742
2-Chlorotoluene	ND	1.0		µg/L	1	10/22/2015 3:33:11 PM	R29742
4-Chlorotoluene	ND	1.0		µg/L	1	10/22/2015 3:33:11 PM	R29742
cis-1,2-DCE	ND	1.0		µg/L	1	10/22/2015 3:33:11 PM	R29742
cis-1,3-Dichloropropene	ND	1.0		µg/L	1	10/22/2015 3:33:11 PM	R29742
1,2-Dibromo-3-chloropropane	ND	2.0		µg/L	1	10/22/2015 3:33:11 PM	R29742
Dibromochloromethane	ND	1.0		µg/L	1	10/22/2015 3:33:11 PM	R29742
Dibromomethane	ND	1.0		µg/L	1	10/22/2015 3:33:11 PM	R29742
1,2-Dichlorobenzene	ND	1.0		µg/L	1	10/22/2015 3:33:11 PM	R29742
1,3-Dichlorobenzene	ND	1.0		µg/L	1	10/22/2015 3:33:11 PM	R29742
1,4-Dichlorobenzene	ND	1.0		µg/L	1	10/22/2015 3:33:11 PM	R29742
Dichlorodifluoromethane	ND	1.0		µg/L	1	10/22/2015 3:33:11 PM	R29742
1,1-Dichloroethane	ND	1.0		µg/L	1	10/22/2015 3:33:11 PM	R29742
1,1-Dichloroethene	ND	1.0		µg/L	1	10/22/2015 3:33:11 PM	R29742
1,2-Dichloropropane	ND	1.0		µg/L	1	10/22/2015 3:33:11 PM	R29742
1,3-Dichloropropane	ND	1.0		µg/L	1	10/22/2015 3:33:11 PM	R29742
2,2-Dichloropropane	ND	2.0		µg/L	1	10/22/2015 3:33:11 PM	R29742

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	* Value exceeds Maximum Contaminant Level.	B Analyte detected in the associated Method Blank
	D Sample Diluted Due to Matrix	E Value above quantitation range
	H Holding times for preparation or analysis exceeded	J Analyte detected below quantitation limits
	ND Not Detected at the Reporting Limit	P Sample pH Not In Range
	R RPD outside accepted recovery limits	RL Reporting Detection Limit
	S % Recovery outside of range due to dilution or matrix	

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1510A28

Date Reported:

CLIENT: Western Refining Southwest, Inc.

Client Sample ID: SR-II

Project: West Line Test Water 10-20-15

Collection Date: 10/20/2015 1:20:00 PM

Lab ID: 1510A28-003

Matrix: AQUEOUS

Received Date: 10/22/2015 7:30:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8260B: VOLATILES							Analyst: DJF
1,1-Dichloropropene	ND	1.0		µg/L	1	10/22/2015 3:05:32 PM	R29742
Hexachlorobutadiene	ND	1.0		µg/L	1	10/22/2015 3:05:32 PM	R29742
2-Hexanone	ND	10		µg/L	1	10/22/2015 3:05:32 PM	R29742
Isopropylbenzene	ND	1.0		µg/L	1	10/22/2015 3:05:32 PM	R29742
4-Isopropyltoluene	2.8	1.0		µg/L	1	10/22/2015 3:05:32 PM	R29742
4-Methyl-2-pentanone	ND	10		µg/L	1	10/22/2015 3:05:32 PM	R29742
Methylene Chloride	ND	3.0		µg/L	1	10/22/2015 3:05:32 PM	R29742
n-Butylbenzene	ND	3.0		µg/L	1	10/22/2015 3:05:32 PM	R29742
n-Propylbenzene	ND	1.0		µg/L	1	10/22/2015 3:05:32 PM	R29742
sec-Butylbenzene	ND	1.0		µg/L	1	10/22/2015 3:05:32 PM	R29742
Styrene	ND	1.0		µg/L	1	10/22/2015 3:05:32 PM	R29742
tert-Butylbenzene	ND	1.0		µg/L	1	10/22/2015 3:05:32 PM	R29742
1,1,1,2-Tetrachloroethane	ND	1.0		µg/L	1	10/22/2015 3:05:32 PM	R29742
1,1,2,2-Tetrachloroethane	ND	2.0		µg/L	1	10/22/2015 3:05:32 PM	R29742
Tetrachloroethene (PCE)	ND	1.0		µg/L	1	10/22/2015 3:05:32 PM	R29742
trans-1,2-DCE	ND	1.0		µg/L	1	10/22/2015 3:05:32 PM	R29742
trans-1,3-Dichloropropene	ND	1.0		µg/L	1	10/22/2015 3:05:32 PM	R29742
1,2,3-Trichlorobenzene	ND	1.0		µg/L	1	10/22/2015 3:05:32 PM	R29742
1,2,4-Trichlorobenzene	ND	1.0		µg/L	1	10/22/2015 3:05:32 PM	R29742
1,1,1-Trichloroethane	ND	1.0		µg/L	1	10/22/2015 3:05:32 PM	R29742
1,1,2-Trichloroethane	ND	1.0		µg/L	1	10/22/2015 3:05:32 PM	R29742
Trichloroethene (TCE)	ND	1.0		µg/L	1	10/22/2015 3:05:32 PM	R29742
Trichlorofluoromethane	ND	1.0		µg/L	1	10/22/2015 3:05:32 PM	R29742
1,2,3-Trichloropropane	ND	2.0		µg/L	1	10/22/2015 3:05:32 PM	R29742
Vinyl chloride	ND	1.0		µg/L	1	10/22/2015 3:05:32 PM	R29742
Xylenes, Total	30	1.5		µg/L	1	10/22/2015 3:05:32 PM	R29742
Surr: 1,2-Dichloroethane-d4	92.5	70-130		%REC	1	10/22/2015 3:05:32 PM	R29742
Surr: 4-Bromofluorobenzene	110	70-130		%REC	1	10/22/2015 3:05:32 PM	R29742
Surr: Dibromofluoromethane	102	70-130		%REC	1	10/22/2015 3:05:32 PM	R29742
Surr: Toluene-d8	96.3	70-130		%REC	1	10/22/2015 3:05:32 PM	R29742

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	* Value exceeds Maximum Contaminant Level.	B Analyte detected in the associated Method Blank
	D Sample Diluted Due to Matrix	E Value above quantitation range
	H Holding times for preparation or analysis exceeded	J Analyte detected below quantitation limits
	ND Not Detected at the Reporting Limit	P Sample pH Not In Range
	R RPD outside accepted recovery limits	RL Reporting Detection Limit
	S % Recovery outside of range due to dilution or matrix	

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1510A28

Date Reported:

CLIENT: Western Refining Southwest, Inc.

Client Sample ID: SR-II

Project: West Line Test Water 10-20-15

Collection Date: 10/20/2015 1:20:00 PM

Lab ID: 1510A28-003

Matrix: AQUEOUS

Received Date: 10/22/2015 7:30:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8260B: VOLATILES							Analyst: DJF
Benzene	13	1.0		µg/L	1	10/22/2015 3:05:32 PM	R29742
Toluene	16	1.0		µg/L	1	10/22/2015 3:05:32 PM	R29742
Ethylbenzene	ND	1.0		µg/L	1	10/22/2015 3:05:32 PM	R29742
Methyl tert-butyl ether (MTBE)	ND	1.0		µg/L	1	10/22/2015 3:05:32 PM	R29742
1,2,4-Trimethylbenzene	1.2	1.0		µg/L	1	10/22/2015 3:05:32 PM	R29742
1,3,5-Trimethylbenzene	13	1.0		µg/L	1	10/22/2015 3:05:32 PM	R29742
1,2-Dichloroethane (EDC)	ND	1.0		µg/L	1	10/22/2015 3:05:32 PM	R29742
1,2-Dibromoethane (EDB)	ND	1.0		µg/L	1	10/22/2015 3:05:32 PM	R29742
Naphthalene	ND	2.0		µg/L	1	10/22/2015 3:05:32 PM	R29742
1-Methylnaphthalene	ND	4.0		µg/L	1	10/22/2015 3:05:32 PM	R29742
2-Methylnaphthalene	ND	4.0		µg/L	1	10/22/2015 3:05:32 PM	R29742
Acetone	ND	10		µg/L	1	10/22/2015 3:05:32 PM	R29742
Bromobenzene	ND	1.0		µg/L	1	10/22/2015 3:05:32 PM	R29742
Bromodichloromethane	ND	1.0		µg/L	1	10/22/2015 3:05:32 PM	R29742
Bromoform	ND	1.0		µg/L	1	10/22/2015 3:05:32 PM	R29742
Bromomethane	ND	3.0		µg/L	1	10/22/2015 3:05:32 PM	R29742
2-Butanone	ND	10		µg/L	1	10/22/2015 3:05:32 PM	R29742
Carbon disulfide	ND	10		µg/L	1	10/22/2015 3:05:32 PM	R29742
Carbon Tetrachloride	ND	1.0		µg/L	1	10/22/2015 3:05:32 PM	R29742
Chlorobenzene	ND	1.0		µg/L	1	10/22/2015 3:05:32 PM	R29742
Chloroethane	ND	2.0		µg/L	1	10/22/2015 3:05:32 PM	R29742
Chloroform	ND	1.0		µg/L	1	10/22/2015 3:05:32 PM	R29742
Chloromethane	ND	3.0		µg/L	1	10/22/2015 3:05:32 PM	R29742
2-Chlorotoluene	ND	1.0		µg/L	1	10/22/2015 3:05:32 PM	R29742
4-Chlorotoluene	ND	1.0		µg/L	1	10/22/2015 3:05:32 PM	R29742
cis-1,2-DCE	ND	1.0		µg/L	1	10/22/2015 3:05:32 PM	R29742
cis-1,3-Dichloropropene	ND	1.0		µg/L	1	10/22/2015 3:05:32 PM	R29742
1,2-Dibromo-3-chloropropane	ND	2.0		µg/L	1	10/22/2015 3:05:32 PM	R29742
Dibromochloromethane	ND	1.0		µg/L	1	10/22/2015 3:05:32 PM	R29742
Dibromomethane	ND	1.0		µg/L	1	10/22/2015 3:05:32 PM	R29742
1,2-Dichlorobenzene	ND	1.0		µg/L	1	10/22/2015 3:05:32 PM	R29742
1,3-Dichlorobenzene	ND	1.0		µg/L	1	10/22/2015 3:05:32 PM	R29742
1,4-Dichlorobenzene	ND	1.0		µg/L	1	10/22/2015 3:05:32 PM	R29742
Dichlorodifluoromethane	ND	1.0		µg/L	1	10/22/2015 3:05:32 PM	R29742
1,1-Dichloroethane	ND	1.0		µg/L	1	10/22/2015 3:05:32 PM	R29742
1,1-Dichloroethene	ND	1.0		µg/L	1	10/22/2015 3:05:32 PM	R29742
1,2-Dichloropropane	ND	1.0		µg/L	1	10/22/2015 3:05:32 PM	R29742
1,3-Dichloropropane	ND	1.0		µg/L	1	10/22/2015 3:05:32 PM	R29742
2,2-Dichloropropane	ND	2.0		µg/L	1	10/22/2015 3:05:32 PM	R29742

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	* Value exceeds Maximum Contaminant Level.	B Analyte detected in the associated Method Blank
	D Sample Diluted Due to Matrix	E Value above quantitation range
	H Holding times for preparation or analysis exceeded	J Analyte detected below quantitation limits
	ND Not Detected at the Reporting Limit	P Sample pH Not In Range
	R RPD outside accepted recovery limits	RL Reporting Detection Limit
	S % Recovery outside of range due to dilution or matrix	

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1510A28

Date Reported:

CLIENT: Western Refining Southwest, Inc.

Client Sample ID: SR-I

Project: West Line Test Water 10-20-15

Collection Date: 10/20/2015 1:15:00 PM

Lab ID: 1510A28-002

Matrix: AQUEOUS

Received Date: 10/22/2015 7:30:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8260B: VOLATILES							Analyst: DJF
1,1-Dichloropropene	ND	1.0		µg/L	1	10/22/2015 2:37:55 PM	R29742
Hexachlorobutadiene	ND	1.0		µg/L	1	10/22/2015 2:37:55 PM	R29742
2-Hexanone	ND	10		µg/L	1	10/22/2015 2:37:55 PM	R29742
Isopropylbenzene	ND	1.0		µg/L	1	10/22/2015 2:37:55 PM	R29742
4-Isopropyltoluene	2.6	1.0		µg/L	1	10/22/2015 2:37:55 PM	R29742
4-Methyl-2-pentanone	ND	10		µg/L	1	10/22/2015 2:37:55 PM	R29742
Methylene Chloride	ND	3.0		µg/L	1	10/22/2015 2:37:55 PM	R29742
n-Butylbenzene	ND	3.0		µg/L	1	10/22/2015 2:37:55 PM	R29742
n-Propylbenzene	ND	1.0		µg/L	1	10/22/2015 2:37:55 PM	R29742
sec-Butylbenzene	ND	1.0		µg/L	1	10/22/2015 2:37:55 PM	R29742
Styrene	ND	1.0		µg/L	1	10/22/2015 2:37:55 PM	R29742
tert-Butylbenzene	ND	1.0		µg/L	1	10/22/2015 2:37:55 PM	R29742
1,1,1,2-Tetrachloroethane	ND	1.0		µg/L	1	10/22/2015 2:37:55 PM	R29742
1,1,2,2-Tetrachloroethane	ND	2.0		µg/L	1	10/22/2015 2:37:55 PM	R29742
Tetrachloroethene (PCE)	ND	1.0		µg/L	1	10/22/2015 2:37:55 PM	R29742
trans-1,2-DCE	ND	1.0		µg/L	1	10/22/2015 2:37:55 PM	R29742
trans-1,3-Dichloropropene	ND	1.0		µg/L	1	10/22/2015 2:37:55 PM	R29742
1,2,3-Trichlorobenzene	ND	1.0		µg/L	1	10/22/2015 2:37:55 PM	R29742
1,2,4-Trichlorobenzene	ND	1.0		µg/L	1	10/22/2015 2:37:55 PM	R29742
1,1,1-Trichloroethane	ND	1.0		µg/L	1	10/22/2015 2:37:55 PM	R29742
1,1,2-Trichloroethane	ND	1.0		µg/L	1	10/22/2015 2:37:55 PM	R29742
Trichloroethene (TCE)	ND	1.0		µg/L	1	10/22/2015 2:37:55 PM	R29742
Trichlorofluoromethane	ND	1.0		µg/L	1	10/22/2015 2:37:55 PM	R29742
1,2,3-Trichloropropane	ND	2.0		µg/L	1	10/22/2015 2:37:55 PM	R29742
Vinyl chloride	ND	1.0		µg/L	1	10/22/2015 2:37:55 PM	R29742
Xylenes, Total	27	1.5		µg/L	1	10/22/2015 2:37:55 PM	R29742
Surr: 1,2-Dichloroethane-d4	93.4	70-130		%REC	1	10/22/2015 2:37:55 PM	R29742
Surr: 4-Bromofluorobenzene	107	70-130		%REC	1	10/22/2015 2:37:55 PM	R29742
Surr: Dibromofluoromethane	106	70-130		%REC	1	10/22/2015 2:37:55 PM	R29742
Surr: Toluene-d8	100	70-130		%REC	1	10/22/2015 2:37:55 PM	R29742

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	* Value exceeds Maximum Contaminant Level.	B Analyte detected in the associated Method Blank
	D Sample Diluted Due to Matrix	E Value above quantitation range
	H Holding times for preparation or analysis exceeded	J Analyte detected below quantitation limits
	ND Not Detected at the Reporting Limit	P Sample pH Not In Range
	R RPD outside accepted recovery limits	RL Reporting Detection Limit
	S % Recovery outside of range due to dilution or matrix	

Hall Environmental Analysis Laboratory, Inc.**Analytical Report**

Lab Order 1510A28

Date Reported:

CLIENT: Western Refining Southwest, Inc.**Client Sample ID:** SR-I**Project:** West Line Test Water 10-20-15**Collection Date:** 10/20/2015 1:15:00 PM**Lab ID:** 1510A28-002**Matrix:** AQUEOUS**Received Date:** 10/22/2015 7:30:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8260B: VOLATILES							Analyst: DJF
Benzene	12	1.0		µg/L	1	10/22/2015 2:37:55 PM	R29742
Toluene	12	1.0		µg/L	1	10/22/2015 2:37:55 PM	R29742
Ethylbenzene	ND	1.0		µg/L	1	10/22/2015 2:37:55 PM	R29742
Methyl tert-butyl ether (MTBE)	ND	1.0		µg/L	1	10/22/2015 2:37:55 PM	R29742
1,2,4-Trimethylbenzene	2.0	1.0		µg/L	1	10/22/2015 2:37:55 PM	R29742
1,3,5-Trimethylbenzene	14	1.0		µg/L	1	10/22/2015 2:37:55 PM	R29742
1,2-Dichloroethane (EDC)	ND	1.0		µg/L	1	10/22/2015 2:37:55 PM	R29742
1,2-Dibromoethane (EDB)	ND	1.0		µg/L	1	10/22/2015 2:37:55 PM	R29742
Naphthalene	ND	2.0		µg/L	1	10/22/2015 2:37:55 PM	R29742
1-Methylnaphthalene	ND	4.0		µg/L	1	10/22/2015 2:37:55 PM	R29742
2-Methylnaphthalene	ND	4.0		µg/L	1	10/22/2015 2:37:55 PM	R29742
Acetone	ND	10		µg/L	1	10/22/2015 2:37:55 PM	R29742
Bromobenzene	ND	1.0		µg/L	1	10/22/2015 2:37:55 PM	R29742
Bromodichloromethane	ND	1.0		µg/L	1	10/22/2015 2:37:55 PM	R29742
Bromoform	ND	1.0		µg/L	1	10/22/2015 2:37:55 PM	R29742
Bromomethane	ND	3.0		µg/L	1	10/22/2015 2:37:55 PM	R29742
2-Butanone	ND	10		µg/L	1	10/22/2015 2:37:55 PM	R29742
Carbon disulfide	ND	10		µg/L	1	10/22/2015 2:37:55 PM	R29742
Carbon Tetrachloride	ND	1.0		µg/L	1	10/22/2015 2:37:55 PM	R29742
Chlorobenzene	ND	1.0		µg/L	1	10/22/2015 2:37:55 PM	R29742
Chloroethane	ND	2.0		µg/L	1	10/22/2015 2:37:55 PM	R29742
Chloroform	ND	1.0		µg/L	1	10/22/2015 2:37:55 PM	R29742
Chloromethane	ND	3.0		µg/L	1	10/22/2015 2:37:55 PM	R29742
2-Chlorotoluene	ND	1.0		µg/L	1	10/22/2015 2:37:55 PM	R29742
4-Chlorotoluene	ND	1.0		µg/L	1	10/22/2015 2:37:55 PM	R29742
cis-1,2-DCE	ND	1.0		µg/L	1	10/22/2015 2:37:55 PM	R29742
cis-1,3-Dichloropropene	ND	1.0		µg/L	1	10/22/2015 2:37:55 PM	R29742
1,2-Dibromo-3-chloropropane	ND	2.0		µg/L	1	10/22/2015 2:37:55 PM	R29742
Dibromochloromethane	ND	1.0		µg/L	1	10/22/2015 2:37:55 PM	R29742
Dibromomethane	ND	1.0		µg/L	1	10/22/2015 2:37:55 PM	R29742
1,2-Dichlorobenzene	ND	1.0		µg/L	1	10/22/2015 2:37:55 PM	R29742
1,3-Dichlorobenzene	ND	1.0		µg/L	1	10/22/2015 2:37:55 PM	R29742
1,4-Dichlorobenzene	ND	1.0		µg/L	1	10/22/2015 2:37:55 PM	R29742
Dichlorodifluoromethane	ND	1.0		µg/L	1	10/22/2015 2:37:55 PM	R29742
1,1-Dichloroethane	ND	1.0		µg/L	1	10/22/2015 2:37:55 PM	R29742
1,1-Dichloroethene	ND	1.0		µg/L	1	10/22/2015 2:37:55 PM	R29742
1,2-Dichloropropane	ND	1.0		µg/L	1	10/22/2015 2:37:55 PM	R29742
1,3-Dichloropropane	ND	1.0		µg/L	1	10/22/2015 2:37:55 PM	R29742
2,2-Dichloropropane	ND	2.0		µg/L	1	10/22/2015 2:37:55 PM	R29742

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	* Value exceeds Maximum Contaminant Level.	B Analyte detected in the associated Method Blank
	D Sample Diluted Due to Matrix	E Value above quantitation range
	H Holding times for preparation or analysis exceeded	J Analyte detected below quantitation limits
	ND Not Detected at the Reporting Limit	P Sample pH Not In Range
	R RPD outside accepted recovery limits	RL Reporting Detection Limit
	S % Recovery outside of range due to dilution or matrix	

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1510A28

Date Reported:

CLIENT: Western Refining Southwest, Inc.

Client Sample ID: SR-1

Project: West Line Test Water 10-20-15

Collection Date: 10/20/2015 1:15:00 PM

Lab ID: 1510A28-002

Matrix: AQUEOUS

Received Date: 10/22/2015 7:30:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8270C: SEMIVOLATILES							Analyst: DAM
2,4-Dinitrotoluene	ND	10		µg/L	1	10/26/2015 4:33:33 PM	22016
2,6-Dinitrotoluene	ND	10		µg/L	1	10/26/2015 4:33:33 PM	22016
Fluoranthene	ND	10		µg/L	1	10/26/2015 4:33:33 PM	22016
Fluorene	ND	10		µg/L	1	10/26/2015 4:33:33 PM	22016
Hexachlorobenzene	ND	10		µg/L	1	10/26/2015 4:33:33 PM	22016
Hexachlorobutadiene	ND	10		µg/L	1	10/26/2015 4:33:33 PM	22016
Hexachlorocyclopentadiene	ND	10		µg/L	1	10/26/2015 4:33:33 PM	22016
Hexachloroethane	ND	10		µg/L	1	10/26/2015 4:33:33 PM	22016
Indeno(1,2,3-cd)pyrene	ND	10		µg/L	1	10/26/2015 4:33:33 PM	22016
Isophorone	ND	10		µg/L	1	10/26/2015 4:33:33 PM	22016
1-Methylnaphthalene	ND	10		µg/L	1	10/26/2015 4:33:33 PM	22016
2-Methylnaphthalene	ND	10		µg/L	1	10/26/2015 4:33:33 PM	22016
2-Methylphenol	ND	10		µg/L	1	10/26/2015 4:33:33 PM	22016
3+4-Methylphenol	ND	10		µg/L	1	10/26/2015 4:33:33 PM	22016
N-Nitrosodi-n-propylamine	ND	10		µg/L	1	10/26/2015 4:33:33 PM	22016
N-Nitrosodimethylamine	ND	10		µg/L	1	10/26/2015 4:33:33 PM	22016
N-Nitrosodiphenylamine	ND	10		µg/L	1	10/26/2015 4:33:33 PM	22016
Naphthalene	ND	10		µg/L	1	10/26/2015 4:33:33 PM	22016
2-Nitroaniline	ND	10		µg/L	1	10/26/2015 4:33:33 PM	22016
3-Nitroaniline	ND	10		µg/L	1	10/26/2015 4:33:33 PM	22016
4-Nitroaniline	ND	10		µg/L	1	10/26/2015 4:33:33 PM	22016
Nitrobenzene	ND	10		µg/L	1	10/26/2015 4:33:33 PM	22016
2-Nitrophenol	ND	10		µg/L	1	10/26/2015 4:33:33 PM	22016
4-Nitrophenol	ND	10		µg/L	1	10/26/2015 4:33:33 PM	22016
Pentachlorophenol	ND	20		µg/L	1	10/26/2015 4:33:33 PM	22016
Phenanthrene	ND	10		µg/L	1	10/26/2015 4:33:33 PM	22016
Phenol	ND	10		µg/L	1	10/26/2015 4:33:33 PM	22016
Pyrene	ND	10		µg/L	1	10/26/2015 4:33:33 PM	22016
Pyridine	ND	10		µg/L	1	10/26/2015 4:33:33 PM	22016
1,2,4-Trichlorobenzene	ND	10		µg/L	1	10/26/2015 4:33:33 PM	22016
2,4,5-Trichlorophenol	ND	10		µg/L	1	10/26/2015 4:33:33 PM	22016
2,4,6-Trichlorophenol	ND	10		µg/L	1	10/26/2015 4:33:33 PM	22016
Surr: 2-Fluorophenol	85.2	4.63-113		%REC	1	10/26/2015 4:33:33 PM	22016
Surr: Phenol-d5	69.5	4.13-124		%REC	1	10/26/2015 4:33:33 PM	22016
Surr: 2,4,6-Tribromophenol	100	5.14-132		%REC	1	10/26/2015 4:33:33 PM	22016
Surr: Nitrobenzene-d5	98.7	9.13-140		%REC	1	10/26/2015 4:33:33 PM	22016
Surr: 2-Fluorobiphenyl	98.1	10.8-132		%REC	1	10/26/2015 4:33:33 PM	22016
Surr: 4-Terphenyl-d14	48.5	12.9-107		%REC	1	10/26/2015 4:33:33 PM	22016

EPA METHOD 8260B: VOLATILES

Analyst: DJF

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	* Value exceeds Maximum Contaminant Level.	B Analyte detected in the associated Method Blank
	D Sample Diluted Due to Matrix	E Value above quantitation range
	H Holding times for preparation or analysis exceeded	J Analyte detected below quantitation limits
	ND Not Detected at the Reporting Limit	P Sample pH Not In Range
	R RPD outside accepted recovery limits	RL Reporting Detection Limit
	S % Recovery outside of range due to dilution or matrix	

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1510A28

Date Reported:

CLIENT: Western Refining Southwest, Inc.

Client Sample ID: SR-I

Project: West Line Test Water 10-20-15

Collection Date: 10/20/2015 1:15:00 PM

Lab ID: 1510A28-002

Matrix: AQUEOUS

Received Date: 10/22/2015 7:30:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8270C: SEMIVOLATILES							Analyst: DAM
Acenaphthene	ND	10		µg/L	1	10/26/2015 4:33:33 PM	22016
Acenaphthylene	ND	10		µg/L	1	10/26/2015 4:33:33 PM	22016
Aniline	ND	10		µg/L	1	10/26/2015 4:33:33 PM	22016
Anthracene	ND	10		µg/L	1	10/26/2015 4:33:33 PM	22016
Azobenzene	ND	10		µg/L	1	10/26/2015 4:33:33 PM	22016
Benz(a)anthracene	ND	10		µg/L	1	10/26/2015 4:33:33 PM	22016
Benzo(a)pyrene	ND	10		µg/L	1	10/26/2015 4:33:33 PM	22016
Benzo(b)fluoranthene	ND	10		µg/L	1	10/26/2015 4:33:33 PM	22016
Benzo(g,h,i)perylene	ND	10		µg/L	1	10/26/2015 4:33:33 PM	22016
Benzo(k)fluoranthene	ND	10		µg/L	1	10/26/2015 4:33:33 PM	22016
Benzoic acid	ND	20		µg/L	1	10/26/2015 4:33:33 PM	22016
Benzyl alcohol	ND	10		µg/L	1	10/26/2015 4:33:33 PM	22016
Bis(2-chloroethoxy)methane	ND	10		µg/L	1	10/26/2015 4:33:33 PM	22016
Bis(2-chloroethyl)ether	ND	10		µg/L	1	10/26/2015 4:33:33 PM	22016
Bis(2-chloroisopropyl)ether	ND	10		µg/L	1	10/26/2015 4:33:33 PM	22016
Bis(2-ethylhexyl)phthalate	ND	10		µg/L	1	10/26/2015 4:33:33 PM	22016
4-Bromophenyl phenyl ether	ND	10		µg/L	1	10/26/2015 4:33:33 PM	22016
Butyl benzyl phthalate	ND	10		µg/L	1	10/26/2015 4:33:33 PM	22016
Carbazole	ND	10		µg/L	1	10/26/2015 4:33:33 PM	22016
4-Chloro-3-methylphenol	ND	10		µg/L	1	10/26/2015 4:33:33 PM	22016
4-Chloroaniline	ND	10		µg/L	1	10/26/2015 4:33:33 PM	22016
2-Chloronaphthalene	ND	10		µg/L	1	10/26/2015 4:33:33 PM	22016
2-Chlorophenol	ND	10		µg/L	1	10/26/2015 4:33:33 PM	22016
4-Chlorophenyl phenyl ether	ND	10		µg/L	1	10/26/2015 4:33:33 PM	22016
Chrysene	ND	10		µg/L	1	10/26/2015 4:33:33 PM	22016
Di-n-butyl phthalate	ND	10		µg/L	1	10/26/2015 4:33:33 PM	22016
Di-n-octyl phthalate	ND	10		µg/L	1	10/26/2015 4:33:33 PM	22016
Dibenz(a,h)anthracene	ND	10		µg/L	1	10/26/2015 4:33:33 PM	22016
Dibenzofuran	ND	10		µg/L	1	10/26/2015 4:33:33 PM	22016
1,2-Dichlorobenzene	ND	10		µg/L	1	10/26/2015 4:33:33 PM	22016
1,3-Dichlorobenzene	ND	10		µg/L	1	10/26/2015 4:33:33 PM	22016
1,4-Dichlorobenzene	ND	10		µg/L	1	10/26/2015 4:33:33 PM	22016
3,3'-Dichlorobenzidine	ND	10		µg/L	1	10/26/2015 4:33:33 PM	22016
Diethyl phthalate	ND	10		µg/L	1	10/26/2015 4:33:33 PM	22016
Dimethyl phthalate	ND	10		µg/L	1	10/26/2015 4:33:33 PM	22016
2,4-Dichlorophenol	ND	20		µg/L	1	10/26/2015 4:33:33 PM	22016
2,4-Dimethylphenol	ND	10		µg/L	1	10/26/2015 4:33:33 PM	22016
4,6-Dinitro-2-methylphenol	ND	20		µg/L	1	10/26/2015 4:33:33 PM	22016
2,4-Dinitrophenol	ND	20		µg/L	1	10/26/2015 4:33:33 PM	22016

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	* Value exceeds Maximum Contaminant Level.	B Analyte detected in the associated Method Blank	Page 6 of 0
	D Sample Diluted Due to Matrix	E Value above quantitation range	
	H Holding times for preparation or analysis exceeded	J Analyte detected below quantitation limits	
	ND Not Detected at the Reporting Limit	P Sample pH Not In Range	
	R RPD outside accepted recovery limits	RL Reporting Detection Limit	
	S % Recovery outside of range due to dilution or matrix		

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-138
Revised August 1, 2011

*Surface Waste Management Facility Operator
and Generator shall maintain and make this
documentation available for Division inspection.

REQUEST FOR APPROVAL TO ACCEPT SOLID WASTE

1. Generator Name and Address:

Western Refining Pipeline, LLC
111 County Road 4990, Bloomfield, NM 87413

2. Originating Site:

Western Refining – Star Lake Pipeline Station; NWNE Sec 19, T21N, R7W; Sandoval County

3. Location of Material (Street Address, City, State or ULSTR):

Same as originating Site

4. Source and Description of Waste:

Test water used to hydrotest new facility piping.

Estimated Volume 40 bbls Known Volume (to be entered by the operator at the end of the haul) _____ yd³ / bbls

5. GENERATOR CERTIFICATION STATEMENT OF WASTE STATUS

I, Kelly Robinson, representative or authorized agent for Western Refining Pipeline, LLC. do hereby
PRINT & SIGN NAME COMPANY NAME

certify that according to the Resource Conservation and Recovery Act (RCRA) and the US Environmental Protection Agency's July 1988 regulatory determination, the above described waste is: (Check the appropriate classification)

☐ RCRA Exempt: Oil field wastes generated from oil and gas exploration and production operations and are not mixed with non-exempt waste. Operator Use Only: Waste Acceptance Frequency ☐ Monthly ☐ Weekly ☐ Per Load

☒ RCRA Non-Exempt: Oil field waste which is non-hazardous that does not exceed the minimum standards for waste hazardous by characteristics established in RCRA regulations, 40 CFR 261.21-261.24, or listed hazardous waste as defined in 40 CFR, part 261, subpart D, as amended. The following documentation is attached to demonstrate the above-described waste is non-hazardous. (Check the appropriate items)

☐ MSDS Information ☒ RCRA Hazardous Waste Analysis ☒ Process Knowledge ☐ Other (Provide description in Box 4)

GENERATOR 19.15.36.15 WASTE TESTING CERTIFICATION STATEMENT FOR LANDFARMS

I, Kelly Robinson, representative for Western Refining Pipeline, LLC do hereby certify that representative samples of the oil field waste have been subjected to the paint filter test and tested for chloride content and that the samples have been found to conform to the specific requirements applicable to landfarms pursuant to Section 15 of 19.15.36 NMAC. The results of the representative samples are attached to demonstrate the above-described waste conform to the requirements of Section 15 of 19.15.36 NMAC.

5. Transporter:

To be determined

OCD Permitted Surface Waste Management Facility

Name and Facility Permit #: Agua Moss, LLC Permit # UICI-005 (Class I Non-Hazardous Well)

Address of Facility: 345 CR 350, San Juan County, Aztec NM, 87410

Method of Treatment and/or Disposal:

☐ Evaporation ☒ Injection ☐ Treating Plant ☐ Landfarm ☐ Landfill ☐ Other

Waste Acceptance Status:

☐ APPROVED

☐ DENIED (Must Be Maintained As Permanent Record)

PRINT NAME: Adrian Hudson

TITLE: Operator DATE: _____

SIGNATURE: [Signature]
Surface Waste Management Facility Authorized Agent

TELEPHONE NO.: (505) 334-6186



Analytical Report

Report Summary

Client: Western Refining Southwest, Inc.

Chain Of Custody Number: 16177

Samples Received: 1/30/2015 7:55:00AM

Job Number: 96012-0115

Work Order: P501081

Project Name/Location: Star Lake

Entire Report Reviewed By:

A handwritten signature in black ink, appearing to read 'Tim Cain', is written over a horizontal line.

Tim Cain, Laboratory Manager

Date: 2/3/15

The results in this report apply to the samples submitted to Envirotech's Analytical Laboratory and were analyzed in accordance with the chain of custody document supplied by you, the client, and as such are for your exclusive use only. The results in this report are based on the sample as received unless otherwise noted. Partial or incomplete reproduction of this report is prohibited, unless approved by Envirotech, Inc. If you have any questions regarding this analytical report, please don't hesitate to contact Envirotech's Laboratory Staff.



Western Refining Southwest, Inc.
PO Box 159
Bloomfield NM, 87413

Project Name: Star Lake
Project Number: 96012-0115
Project Manager: Kelly Robinson

Reported:
03-Feb-15 12:40

Analytical Report for Samples

Client Sample ID	Lab Sample ID	Matrix	Sampled	Received	Container
Test Water	P501081-01A	Aqueous	01/29/15	01/30/15	Poly 500mL
	P501081-01B	Aqueous	01/29/15	01/30/15	Poly 500mL; HNO ₃
	P501081-01C	Aqueous	01/29/15	01/30/15	Poly 500mL; NaOH

Partial or incomplete reproduction of this report is prohibited, unless approved by Envirotech, Inc.

5796 US Highway 64, Farmington, NM 87401

Ph (505) 632-0615 Fx (505) 632-1865

Three Springs • 65 Mercado Street, Suite 115, Durango, CO 81301

Ph (970) 259-0615 Fr (800) 362-1879

envirotech-inc.com
laboratory@envirotech-inc.com



Western Refining Southwest, Inc.
PO Box 159
Bloomfield NM, 87413

Project Name: Star Lake
Project Number: 96012-0115
Project Manager: Kelly Robinson

Reported:
03-Feb-15 12:40

Test Water
P501081-01 (Water)

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Total Metals by 6010										
Arsenic	ND	0.01	mg/L	1		1505025	01/30/15	01/30/15	EPA 6010C	
Barium	0.09	0.05	mg/L	1		1505025	01/30/15	01/30/15	EPA 6010C	
Cadmium	ND	0.01	mg/L	1		1505025	01/30/15	01/30/15	EPA 6010C	
Chromium	ND	0.01	mg/L	1		1505025	01/30/15	01/30/15	EPA 6010C	
Lead	ND	0.01	mg/L	1		1505025	01/30/15	01/30/15	EPA 6010C	
Selenium	ND	0.01	mg/L	1		1505025	01/30/15	01/30/15	EPA 6010C	
Silver	ND	0.01	mg/L	1		1505025	01/30/15	01/30/15	EPA 6010C	
Cation/Anion Analysis										
pH @7.3°C	7.51		pH Units	1		1505024	01/30/15 09:50	01/30/15 09:50	150.1/4500H	
Suspected Hazardous Waste										
Flash Point	>95		°C	1		1505027	01/30/15	01/30/15	ASTM D93-10a	
Reactivity	Negative		N/A	1		1505024	01/30/15	01/30/15		
Total Mercury by EPA 7470A										
Mercury	ND	0.0002	mg/L	1		1505028	01/30/15	02/02/15	EPA 7470A	

Partial or incomplete reproduction of this report is prohibited, unless approved by Envirotech, Inc.

5796 US Highway 64, Farmington, NM 87401
Three Springs • 65 Mercado Street, Suite 115, Durango, CO 81301

Ph (505) 632-0615 Fx (505) 632-1865
Ph (970) 259-0615 Fr (800) 362-1879

envirotech-inc.com
laboratory@envirotech-inc.com



Western Refining Southwest, Inc.
PO Box 159
Bloomfield NM, 87413

Project Name: Star Lake
Project Number: 96012-0115
Project Manager: Kelly Robinson

Reported:
03-Feb-15 12:40

Total Metals by 6010 - Quality Control

Envirotech Analytical Laboratory

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
---------	--------	-----------------	-------	-------------	---------------	------	-------------	-----	-----------	-------

Batch 1505025 - Metal Water/TCLP (EPA 1311) Digestion EPA 3015A

Blank (1505025-BLK1)

Prepared & Analyzed: 30-Jan-15

Arsenic	ND	0.01	mg/L
Barium	ND	0.05	"
Cadmium	ND	0.01	"
Chromium	ND	0.01	"
Lead	ND	0.01	"
Selenium	ND	0.01	"
Silver	ND	0.01	"

Duplicate (1505025-DUP1)

Source: P501081-01

Prepared & Analyzed: 30-Jan-15

Arsenic	ND	0.01	mg/L	ND			30
Barium	0.09	0.05	"	0.09		1.81	30
Cadmium	ND	0.01	"	ND			30
Chromium	ND	0.01	"	ND			30
Lead	ND	0.01	"	ND			30
Selenium	ND	0.01	"	ND			30
Silver	ND	0.01	"	ND			30

Matrix Spike (1505025-MS1)

Source: P501081-01

Prepared & Analyzed: 30-Jan-15

Arsenic	0.24		mg/L	0.250	0.003	96.1	75-125
Barium	5.72		"	5.00	0.08	113	75-125
Cadmium	0.25		"	0.250	0.0005	98.8	75-125
Chromium	0.51		"	0.500	0.002	101	75-125
Lead	0.49		"	0.500	-0.001	97.5	75-125
Selenium	0.09		"	0.100	ND	89.5	75-125
Silver	0.10		"	0.100	-0.0005	96.6	75-125

Partial or incomplete reproduction of this report is prohibited, unless approved by Envirotech, Inc.

5796 US Highway 64, Farmington, NM 87401

Ph (505) 632-0615 Fx (505) 632-1865

Three Springs - 65 Mercado Street, Suite 115, Durango, CO 81301

Ph (970) 259-0615 Fr (800) 362-1879

envirotech-inc.com

laboratory@envirotech-inc.com



Western Refining Southwest, Inc.
PO Box 159
Bloomfield NM, 87413

Project Name: Star Lake
Project Number: 96012-0115
Project Manager: Kelly Robinson

Reported:
03-Feb-15 12:40

Total Mercury by EPA 7470A - Quality Control
Envirotech Analytical Laboratory

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 1505028 - Mercury Water/TCLP Digestion KMNO4										
Blank (1505028-BLK1)				Prepared: 30-Jan-15 Analyzed: 02-Feb-15						
Mercury	ND	0.0002	mg/L							
LCS (1505028-BS1)				Prepared: 30-Jan-15 Analyzed: 02-Feb-15						
Mercury	0.002	0.0002	mg/L	0.00229		98.6	80-120			
Matrix Spike (1505028-MS1)				Source: P501081-01 Prepared: 30-Jan-15 Analyzed: 02-Feb-15						
Mercury	0.002	0.0002	mg/L	0.00229	ND	97.7	75-125			
Matrix Spike Dup (1505028-MSD1)				Source: P501081-01 Prepared: 30-Jan-15 Analyzed: 02-Feb-15						
Mercury	0.002	0.0002	mg/L	0.00229	ND	98.1	75-125	0.383	15	

Partial or incomplete reproduction of this report is prohibited, unless approved by Envirotech, Inc.

5796 US Highway 64, Farmington, NM 87401

Ph (505) 632-0615 Fx (505) 632-1865

Three Springs • 65 Mercado Street, Suite 115, Durango, CO 81301

Ph (970) 259-0615 Fr (800) 362-1879

envirotech-inc.com
laboratory@envirotech-inc.com



Western Refining Southwest, Inc.
PO Box 159
Bloomfield NM, 87413

Project Name: Star Lake
Project Number: 96012-0115
Project Manager: Kelly Robinson

Reported:
03-Feb-15 12:40

Notes and Definitions

FP1 >95
DET Analyte DETECTED
ND Analyte NOT DETECTED at or above the reporting limit
NR Not Reported
dry Sample results reported on a dry weight basis
RPD Relative Percent Difference

Partial or incomplete reproduction of this report is prohibited, unless approved by Envirotech, Inc.

5796 US Highway 64, Farmington, NM 87401

Three Springs - 65 Mercado Street, Suite 115, Durango, CO 81301

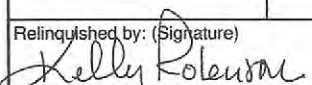
Ph (505) 632-0615 Fx (505) 632-1865

Ph (970) 259-0615 Fr (800) 362-1879

envirotech-inc.com
laboratory@envirotech-inc.com

CHAIN OF CUSTODY RECORD

16177

Client: WESTERN REFINING			Project Name / Location: STAR LAKE			ANALYSIS / PARAMETERS																																									
Email results to: Kelly.Robinson@wnr.com			Sampler Name: TERRY HOPKIN			<table border="1"> <tr> <th>TPH (Method 8015)</th> <th>BTEX (Method 8021)</th> <th>VOC (Method 8260)</th> <th>PCRA 8 Metals + TC 121</th> <th>Cation / Anion</th> <th>FCI</th> <th>TCLP with H/P</th> <th>CO Table 910-1</th> <th>TPH (418.1)</th> <th>CHLORIDE</th> <th>Ignitability</th> <th>Corrosivity</th> <th>Reactivity</th> <th>Sample Cool</th> <th>Sample Intact</th> </tr> <tr> <td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td> </tr> </table>												TPH (Method 8015)	BTEX (Method 8021)	VOC (Method 8260)	PCRA 8 Metals + TC 121	Cation / Anion	FCI	TCLP with H/P	CO Table 910-1	TPH (418.1)	CHLORIDE	Ignitability	Corrosivity	Reactivity	Sample Cool	Sample Intact															
TPH (Method 8015)	BTEX (Method 8021)	VOC (Method 8260)	PCRA 8 Metals + TC 121	Cation / Anion	FCI													TCLP with H/P	CO Table 910-1	TPH (418.1)	CHLORIDE	Ignitability	Corrosivity	Reactivity	Sample Cool	Sample Intact																					
Client Phone No.: (505) 632-4166			Client No.: 96012-0115																																												
Sample No./ Identification	Sample Date	Sample Time	Lab No.	No./Volume of Containers	Preservative																																										
					HNO ₃	HCl	H ₂ O ₂																																								
TEST WATER	1/29/15	17:00	P501081-01	1-500mL			X																																								
↓	↓	↓	↓	1-500mL																																											
↓	↓	↓	↓	1-500mL	X																																										
Relinquished by: (Signature)  Relinquished by: (Signature) Date 1/30/15 Time 7:55 Received by: (Signature)  Received by: (Signature) Date 1/30/15 Time 7:55																																															
Sample Matrix Soil ☐ Solid ☐ Sludge ☐ Aqueous ☒ Other ☐																																															
☐ Sample(s) dropped off after hours to secure drop off area. P.O. 12610466 5795 US Highway 64 • Farmington, NM 87401 • 505-632-0615 • Three Springs • 65 Mercado Street, Suite 115, Durango, CO 81301 • laboratory@envirotech-inc.com  envirotech Analytical Laboratory RUSH ASAP Please Call w/ Verbal 14.3, 7.1, 5.4																																															

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

Form C-138
Revised August 1, 2011

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

*Surface Waste Management Facility Operator
and Generator shall maintain and make this
documentation available for Division inspection.

REQUEST FOR APPROVAL TO ACCEPT SOLID WASTE

1. Generator Name and Address: Western Refining Pipeline, LLC. 111 CR 4009, Bloomfield, NM, 87413
2. Originating Site: Western Refining – Bisti Pipeline Station, San Juan County, NESE Sec 17, T26N, R12W
3. Location of Material (Street Address, City, State or ULSTR): Same as originating Site
4. Source and Description of Waste: Crude paraffin from the clean-up of crude tank roof.
Estimated Volume <u>3600</u> bbls Known Volume (to be entered by the operator at the end of the haul) _____ yd ³ / bbls
5. GENERATOR CERTIFICATION STATEMENT OF WASTE STATUS I, <u>Kelly Robinson</u> <i>Kelly Robinson</i> , representative or authorized agent for <u>Western Refining Pipeline, LLC.</u> do hereby PRINT & SIGN NAME COMPANY NAME certify that according to the Resource Conservation and Recovery Act (RCRA) and the US Environmental Protection Agency's July 1988 regulatory determination, the above described waste is: (Check the appropriate classification) ☐ RCRA Exempt: Oil field wastes generated from oil and gas exploration and production operations and are not mixed with non- exempt waste. Operator Use Only: Waste Acceptance Frequency ☐ Monthly ☐ Weekly ☐ Per Load ☒ RCRA Non-Exempt: Oil field waste which is non-hazardous that does not exceed the minimum standards for waste hazardous by characteristics established in RCRA regulations, 40 CFR 261.21-261.24, or listed hazardous waste as defined in 40 CFR, part 261, subpart D, as amended. The following documentation is attached to demonstrate the above-described waste is non-hazardous. (Check the appropriate items) ☐ MSDS Information ☒ RCRA Hazardous Waste Analysis ☒ Process Knowledge ☐ Other (Provide description in Box 4) GENERATOR 19.15.36.15 WASTE TESTING CERTIFICATION STATEMENT FOR LANDFARMS I, <u>Kelly Robinson</u> <i>Kelly Robinson</i> , representative for <u>Western Refining Pipeline, LLC.</u> do hereby certify that representative samples of the oil field waste have been subjected to the paint filter test and tested for chloride content and that the samples have been found to conform to the specific requirements applicable to landfarms pursuant to Section 15 of 19.15.36 NMAC. The results of the representative samples are attached to demonstrate the above-described waste conform to the requirements of Section 15 of 19.15.36 NMAC.
5. Transporter: SSS Trucking

OCD Permitted Surface Waste Management Facility

Name and Facility Permit #: Agua Moss, LLC Permit # UICI-005 (Class I Non-Hazardous Well)

Address of Facility: #345 CR 350, San Juan County, Aztec, NM 87410

Method of Treatment and/or Disposal:

☐ Evaporation ☒ Injection ☐ Treating Plant ☒ Landfarm ☐ Landfill ☐ Other

Waste Acceptance Status:

☒ **APPROVED**

☐ **DENIED** (Must Be Maintained As Permanent Record)

PRINT NAME: Adrian Hudson TITLE: Operator DATE: _____
SIGNATURE: *[Signature]* TELEPHONE NO.: (505) 334-486
Surface Waste Management Facility Authorized Agent

Sample Log-In Check List

Client Name: Western Refining Southw

Work Order Number: 1509734

RcptNo: 1

Received by/date:

MG 09/16/15

Logged By: Anne Thorne

9/16/2015 9:45:00 AM

Anne Thorne

Completed By: Anne Thorne

9/16/2015

Anne Thorne

Reviewed By:

mg

09/16/15

Chain of Custody

1. Custody seals intact on sample bottles?

Yes ☐

No ☐

Not Present ☒

2. Is Chain of Custody complete?

Yes ☒

No ☐

Not Present ☐

3. How was the sample delivered?

UPS

Log In

4. Was an attempt made to cool the samples?

Yes ☒

No ☐

NA ☐

5. Were all samples received at a temperature of $>0^{\circ}\text{C}$ to 6.0°C

Yes ☒

No ☐

NA ☐

6. Sample(s) in proper container(s)?

Yes ☒

No ☐

7. Sufficient sample volume for indicated test(s)?

Yes ☒

No ☐

8. Are samples (except VOA and ONG) properly preserved?

Yes ☒

No ☐

9. Was preservative added to bottles?

Yes ☐

No ☒

NA ☐

10. VOA vials have zero headspace?

Yes ☒

No ☐

No VOA Vials ☐

11. Were any sample containers received broken?

Yes ☐

No ☒

12. Does paperwork match bottle labels?
(Note discrepancies on chain of custody)

Yes ☒

No ☐

13. Are matrices correctly identified on Chain of Custody?

Yes ☒

No ☐

14. Is it clear what analyses were requested?

Yes ☒

No ☐

15. Were all holding times able to be met?
(If no, notify customer for authorization.)

Yes ☒

No ☐

of preserved
bottles checked
for pH:

12 or >12 unless noted

Adjusted? ☐

Checked by AT 09/16/15

Special Handling (if applicable)

16. Was client notified of all discrepancies with this order?

Yes ☐

No ☐

NA ☒

Person Notified:

Date

By Whom:

Via:

☐ eMail ☐ Phone ☐ Fax ☐ In Person

Regarding:

Client Instructions:

17. Additional remarks:

18. Cooler Information

Cooler No	Temp $^{\circ}\text{C}$	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	1.0	Good	Yes			

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1509734

22-Sep-15

Client: Western Refining Southwest, Inc.

Project: Hill Top

Sample ID	1509734-001A MS	SampType:	MS	TestCode:	EPA Method 8015D: Gasoline Range					
Client ID:	Hill Top Water	Batch ID:	A28954	RunNo:	28954					
Prep Date:		Analysis Date:	9/18/2015	SeqNo:	878793	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	0.50	0.050	0.5000	0	101	53.8	128			
Surr: BFB	9.9		10.00		98.8	70	130			

Sample ID	1509734-001A MSD	SampType:	MSD	TestCode:	EPA Method 8015D: Gasoline Range					
Client ID:	Hill Top Water	Batch ID:	A28954	RunNo:	28954					
Prep Date:		Analysis Date:	9/18/2015	SeqNo:	878794	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	0.46	0.050	0.5000	0	91.8	53.8	128	9.15	20	
Surr: BFB	9.7		10.00		97.4	70	130	0	0	

Sample ID	2.5ug gro lcs	SampType:	LCS	TestCode:	EPA Method 8015D: Gasoline Range					
Client ID:	LCSW	Batch ID:	A28954	RunNo:	28954					
Prep Date:		Analysis Date:	9/18/2015	SeqNo:	878796	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	0.48	0.050	0.5000	0	95.2	80.6	122			
Surr: BFB	10		10.00		102	70	130			

Sample ID	rb	SampType:	MBLK	TestCode:	EPA Method 8015D: Gasoline Range					
Client ID:	PBW	Batch ID:	A28954	RunNo:	28954					
Prep Date:		Analysis Date:	9/18/2015	SeqNo:	878797	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	ND	0.050								
Surr: BFB	10		10.00		99.9	70	130			

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- D Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- R RPD outside accepted recovery limits
- S % Recovery outside of range due to dilution or matrix

- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- J Analyte detected below quantitation limits
- P Sample pH Not In Range
- RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1509734

22-Sep-15

Client: Western Refining Southwest, Inc.

Project: Hill Top

Sample ID	1509734-001BMS	SampType:	MS	TestCode:	EPA 6010B: Total Recoverable Metals					
Client ID:	Hill Top Water	Batch ID:	21379	RunNo:	28990					
Prep Date:	9/18/2015	Analysis Date:	9/21/2015	SeqNo:	879694	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Manganese	0.50	0.0020	0.5000	0.006910	99.6	75	125			
Selenium	0.52	0.050	0.5000	0	104	75	125			
Silver	0.11	0.0050	0.1000	0	105	75	125			
Uranium	0.51	0.10	0.5000	0	102	75	125			
Zinc	0.49	0.020	0.5000	0	98.0	75	125			

Sample ID	1509734-001BMSD			SampType:	MSD		TestCode:	EPA 6010B: Total Recoverable Metals			
Client ID:	Hill Top Water		Batch ID:	21379		RunNo:	28990				
Prep Date:	9/18/2015		Analysis Date:	9/21/2015		SeqNo:	879695		Units: mg/L		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Arsenic	0.54	0.020	0.5000	0	107	75	125	0.748	20		
Barium	0.52	0.020	0.5000	0.02322	100	75	125	0.917	20		
Cadmium	0.51	0.0020	0.5000	0	102	75	125	0.468	20		
Chromium	0.50	0.0060	0.5000	0	99.7	75	125	0.0301	20		
Copper	0.55	0.0060	0.5000	0	110	75	125	0.409	20		
Lead	0.50	0.0050	0.5000	0	99.9	75	125	0.370	20		
Manganese	0.50	0.0020	0.5000	0.006910	98.7	75	125	0.887	20		
Selenium	0.50	0.050	0.5000	0	100	75	125	3.52	20		
Silver	0.10	0.0050	0.1000	0	104	75	125	1.33	20		
Uranium	0.51	0.10	0.5000	0	102	75	125	0.482	20		
Zinc	0.49	0.020	0.5000	0	97.2	75	125	0.877	20		

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- D Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- R RPD outside accepted recovery limits
- S % Recovery outside of range due to dilution or matrix

- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- J Analyte detected below quantitation limits
- P Sample pH Not In Range
- RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1509734

22-Sep-15

Client: Western Refining Southwest, Inc.

Project: Hill Top

Sample ID	MB-21379	SampType:	MBLK		TestCode:	EPA 6010B: Total Recoverable Metals				
Client ID:	PBW	Batch ID:	21379		RunNo:	28990				
Prep Date:	9/18/2015	Analysis Date:	9/21/2015		SeqNo:	879680		Units: mg/L		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	ND	0.020								
Barium	ND	0.020								
Cadmium	ND	0.0020								
Chromium	ND	0.0060								
Copper	ND	0.0060								
Lead	ND	0.0050								
Manganese	ND	0.0020								
Selenium	ND	0.050								
Silver	ND	0.0050								
Uranium	ND	0.10								
Zinc	ND	0.020								

Sample ID	LCS-21379		SampType: LCS		TestCode: EPA 6010B: Total Recoverable Metals					
Client ID:	LCSW		Batch ID: 21379		RunNo: 28990					
Prep Date:	9/18/2015		Analysis Date: 9/21/2015		SeqNo: 879681		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	0.50	0.020	0.5000	0	101	80	120			
Barium	0.48	0.020	0.5000	0	96.7	80	120			
Cadmium	0.48	0.0020	0.5000	0	96.9	80	120			
Chromium	0.48	0.0060	0.5000	0	96.6	80	120			
Copper	0.50	0.0060	0.5000	0	101	80	120			
Lead	0.48	0.0050	0.5000	0	96.5	80	120			
Manganese	0.47	0.0020	0.5000	0	94.7	80	120			
Selenium	0.50	0.050	0.5000	0	99.6	80	120			
Silver	0.099	0.0050	0.1000	0	99.2	80	120			
Uranium	0.49	0.10	0.5000	0	98.8	80	120			
Zinc	0.47	0.020	0.5000	0	94.2	80	120			

Sample ID	1509734-001BMS		SampType:	MS		TestCode:	EPA 6010B: Total Recoverable Metals				
Client ID:	Hill Top Water		Batch ID:	21379		RunNo:	28990				
Prep Date:	9/18/2015		Analysis Date:	9/21/2015		SeqNo:	879694		Units: mg/L		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Arsenic	0.54	0.020	0.5000	0	108	75	125				
Barium	0.53	0.020	0.5000	0.02322	101	75	125				
Cadmium	0.51	0.0020	0.5000	0	102	75	125				
Chromium	0.50	0.0060	0.5000	0	99.7	75	125				
Copper	0.55	0.0060	0.5000	0	110	75	125				
Lead	0.50	0.0050	0.5000	0	100	75	125				

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- D Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- R RPD outside accepted recovery limits
- S % Recovery outside of range due to dilution or matrix
- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- J Analyte detected below quantitation limits
- P Sample pH Not In Range
- RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1509734

22-Sep-15

Client: Western Refining Southwest, Inc.

Project: Hill Top

Sample ID	MB-21377	SampType:	MBLK	TestCode:	EPA Method 7470: Mercury					
Client ID:	PBW	Batch ID:	21377	RunNo:	28965					
Prep Date:	9/18/2015	Analysis Date:	9/18/2015	SeqNo:	878715	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	ND	0.00020								

Sample ID	LCS-21377		SampType:	LCS		TestCode:	EPA Method 7470: Mercury				
Client ID:	LCSW		Batch ID:	21377		RunNo:	28965				
Prep Date:	9/18/2015		Analysis Date:	9/18/2015		SeqNo:	878716		Units:	mg/L	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Mercury	0.0049	0.00020	0.005000	0	97.8	80	120				

Sample ID	1509734-001BMS	SampType:	MS	TestCode:	EPA Method 7470: Mercury					
Client ID:	Hill Top Water	Batch ID:	21377	RunNo:	28965					
Prep Date:	9/18/2015	Analysis Date:	9/18/2015	SeqNo:	878718	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	0.0052	0.00020	0.005000	0.0001197	101	75	125			

Sample ID	1509734-001BMSD	SampType:	MSD	TestCode:	EPA Method 7470: Mercury					
Client ID:	Hill Top Water	Batch ID:	21377	RunNo:	28965					
Prep Date:	9/18/2015	Analysis Date:	9/18/2015	SeqNo:	878719	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	0.0052	0.00020	0.005000	0.0001197	101	75	125	0.154	20	

Qualifiers:

* Value exceeds Maximum Contaminant Level.
D Sample Diluted Due to Matrix
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
R RPD outside accepted recovery limits
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank
E Value above quantitation range
J Analyte detected below quantitation limits
P Sample pH Not In Range
RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1509734

22-Sep-15

Client: Western Refining Southwest, Inc.

Project: Hill Top

Sample ID: 100ng lcs	SampType: LCS	TestCode: EPA Method 8260: Volatiles Short List								
Client ID: LCSW	Batch ID: B28954	RunNo: 28954								
Prep Date:	Analysis Date: 9/18/2015	SeqNo: 878809 Units: µg/L								
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	21	1.0	20.00	0	104	70	130			
Toluene	20	1.0	20.00	0	99.3	70	130			
Surr: 1,2-Dichloroethane-d4	9.7		10.00		97.4	70	130			
Surr: 4-Bromofluorobenzene	11		10.00		107	70	130			
Surr: Dibromofluoromethane	10		10.00		99.6	70	130			
Surr: Toluene-d8	9.9		10.00		99.0	70	130			

Sample ID: rb	SampType: MBLK	TestCode: EPA Method 8260: Volatiles Short List								
Client ID: PBW	Batch ID: B28954	RunNo: 28954								
Prep Date:	Analysis Date: 9/18/2015	SeqNo: 878810			Units: µg/L					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	1.0								
Toluene	ND	1.0								
Ethylbenzene	ND	1.0								
Methyl tert-butyl ether (MTBE)	ND	1.0								
Xylenes, Total	ND	1.5								
Surr: 1,2-Dichloroethane-d4	9.8		10.00		98.3	70	130			
Surr: 4-Bromofluorobenzene	10		10.00		101	70	130			
Surr: Dibromofluoromethane	9.8		10.00		97.9	70	130			
Surr: Toluene-d8	9.7		10.00		97.3	70	130			

Qualifiers:

* Value exceeds Maximum Contaminant Level.
D Sample Diluted Due to Matrix
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
R RPD outside accepted recovery limits
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank
E Value above quantitation range
J Analyte detected below quantitation limits
P Sample pH Not In Range
RL Reporting Detection Limit

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1509734

Date Reported: 9/22/2015

CLIENT: Western Refining Southwest, Inc.

Client Sample ID: Hill Top Water

Project: Hill Top

Collection Date: 9/15/2015 11:30:00 AM

Lab ID: 1509734-001

Matrix: AQUEOUS

Received Date: 9/16/2015 9:45:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 7470: MERCURY							Analyst: JLF
Mercury	ND	0.00020		mg/L	1	9/18/2015 2:26:31 PM	21377
EPA 6010B: TOTAL RECOVERABLE METALS							Analyst: MED
Arsenic	ND	0.020		mg/L	1	9/21/2015 11:07:16 AM	21379
Barium	0.023	0.020		mg/L	1	9/21/2015 11:07:16 AM	21379
Cadmium	ND	0.0020		mg/L	1	9/21/2015 11:07:16 AM	21379
Chromium	ND	0.0060		mg/L	1	9/21/2015 11:07:16 AM	21379
Copper	ND	0.0060		mg/L	1	9/21/2015 11:07:16 AM	21379
Lead	ND	0.0050		mg/L	1	9/21/2015 11:07:16 AM	21379
Manganese	0.0069	0.0020		mg/L	1	9/21/2015 11:07:16 AM	21379
Selenium	ND	0.050		mg/L	1	9/21/2015 11:07:16 AM	21379
Silver	ND	0.0050		mg/L	1	9/21/2015 11:07:16 AM	21379
Uranium	ND	0.10		mg/L	1	9/21/2015 11:07:16 AM	21379
Zinc	ND	0.020		mg/L	1	9/21/2015 11:07:16 AM	21379
EPA METHOD 8015D: GASOLINE RANGE							Analyst: RAA
Gasoline Range Organics (GRO)	ND	0.050		mg/L	1	9/18/2015 11:36:59 AM	A28954
Surr: BFB	98.7	70-130		%REC	1	9/18/2015 11:36:59 AM	A28954
EPA METHOD 8260: VOLATILES SHORT LIST							Analyst: RAA
Benzene	ND	1.0		µg/L	1	9/18/2015 11:36:59 AM	B28954
Toluene	ND	1.0		µg/L	1	9/18/2015 11:36:59 AM	B28954
Ethylbenzene	ND	1.0		µg/L	1	9/18/2015 11:36:59 AM	B28954
Methyl tert-butyl ether (MTBE)	ND	1.0		µg/L	1	9/18/2015 11:36:59 AM	B28954
Xylenes, Total	ND	1.5		µg/L	1	9/18/2015 11:36:59 AM	B28954
Surr: 1,2-Dichloroethane-d4	93.0	70-130		%REC	1	9/18/2015 11:36:59 AM	B28954
Surr: 4-Bromofluorobenzene	103	70-130		%REC	1	9/18/2015 11:36:59 AM	B28954
Surr: Dibromofluoromethane	96.1	70-130		%REC	1	9/18/2015 11:36:59 AM	B28954
Surr: Toluene-d8	98.5	70-130		%REC	1	9/18/2015 11:36:59 AM	B28954

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	* Value exceeds Maximum Contaminant Level.	B Analyte detected in the associated Method Blank
	D Sample Diluted Due to Matrix	E Value above quantitation range
	H Holding times for preparation or analysis exceeded	J Analyte detected below quantitation limits
	ND Not Detected at the Reporting Limit	P Sample pH Not In Range
	R RPD outside accepted recovery limits	RL Reporting Detection Limit
	S % Recovery outside of range due to dilution or matrix	



Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com

September 22, 2015

Kelly Robinson

Western Refining Southwest, Inc.

#50 CR 4990

Bloomfield, NM 87413

TEL: (505) 632-4166

FAX (505) 632-3911

RE: Hill Top

OrderNo.: 1509734

Dear Kelly Robinson:

Hall Environmental Analysis Laboratory received 1 sample(s) on 9/16/2015 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent. To access our accredited tests please go to www.hallenvironmental.com or the state specific web sites. In order to properly interpret your results it is imperative that you review this report in its entirety. See the sample checklist and/or the Chain of Custody for information regarding the sample receipt temperature and preservation. Data qualifiers or a narrative will be provided if the sample analysis or analytical quality control parameters require a flag. When necessary, data qualifiers are provided on both the sample analysis report and the QC summary report, both sections should be reviewed. All samples are reported, as received, unless otherwise indicated. Lab measurement of analytes considered field parameters that require analysis within 15 minutes of sampling such as pH and residual chlorine are qualified as being analyzed outside of the recommended holding time.

Please don't hesitate to contact HEAL for any additional information or clarifications.

ADHS Cert #AZ0682 -- NMED-DWB Cert #NM9425 -- NMED-Micro Cert #NM0190

Sincerely,

Andy Freeman

Laboratory Manager

4901 Hawkins NE

Albuquerque, NM 87109

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-138
Revised August 1, 2011
Submitted 10/27/15
*Surface Waste Management Facility Operator
and Generator shall maintain and make this
documentation available for Division inspection.

REQUEST FOR APPROVAL TO ACCEPT SOLID WASTE

1. Generator Name and Address:

Western Refining Pipeline, LLC. 111 CR 4009, Bloomfield, NM, 87413

2. Originating Site:

Western Refining - Bisti Pipeline Station, San Juan County, NESE Sec 17, T26N, R12W

3. Location of Material (Street Address, City, State or ULSTR):

Same as originating Site

4. Source and Description of Waste:

Estimated Volume 550 bbls Known Volume (to be entered by the operator at the end of the haul) 325 yd³ / bbls

5. GENERATOR CERTIFICATION STATEMENT OF WASTE STATUS

I, Kelly Robinson Kelly Robinson representative or authorized agent for Western Refining Pipeline, LLC. do hereby
PRINT & SIGN NAME COMPANY NAME

certify that according to the Resource Conservation and Recovery Act (RCRA) and the US Environmental Protection Agency's July 1988 regulatory determination, the above described waste is: (Check the appropriate classification)

☐ RCRA Exempt: Oil field wastes generated from oil and gas exploration and production operations and are not mixed with non-exempt waste. Operator Use Only: Waste Acceptance Frequency ☐ Monthly ☐ Weekly ☐ Per Load

☒ RCRA Non-Exempt: Oil field waste which is non-hazardous that does not exceed the minimum standards for waste hazardous by characteristics established in RCRA regulations, 40 CFR 261.21-261.24, or listed hazardous waste as defined in 40 CFR, part 261, subpart D, as amended. The following documentation is attached to demonstrate the above-described waste is non-hazardous. (Check the appropriate items)

☐ MSDS Information ☒ RCRA Hazardous Waste Analysis ☒ Process Knowledge ☐ Other (Provide description in Box 4)

GENERATOR 19.15.36.15 WASTE TESTING CERTIFICATION STATEMENT FOR LANDFARMS

I, Kelly Robinson Kelly Robinson representative for Western Refining Pipeline, LLC. do hereby certify that representative samples of the oil field waste have been subjected to the paint filter test and tested for chloride content and that the samples have been found to conform to the specific requirements applicable to landfarms pursuant to Section 15 of 19.15.36 NMAC. The results of the representative samples are attached to demonstrate the above-described waste conform to the requirements of Section 15 of 19.15.36 NMAC.

5. Transporter:

SSS Trucking

OCD Permitted Surface Waste Management Facility

Name and Facility Permit #: Agua Moss, LLC Permit # UICI-005 (Class I Non-Hazardous Well)

Address of Facility: 345 CR 350 San Juan County, Aztec, NM 87410

Method of Treatment and/or Disposal:

☐ Evaporation ☒ Injection ☐ Treating Plant ☐ Landfarm ☐ Landfill ☐ Other

Waste Acceptance Status:

☐ APPROVED

☐ DENIED (Must Be Maintained As Permanent Record)

PRINT NAME:

Adrian Hudson

TITLE:

Operator

DATE:

11/13/15

SIGNATURE:

[Signature]

TELEPHONE NO.:

(505) 334-6186

Surface Waste Management Facility Authorized Agent

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1510A28

Date Reported:

CLIENT: Western Refining Southwest, Inc.

Client Sample ID: Bisti

Project: West Line Test Water 10-20-15

Collection Date: 10/20/2015 9:30:00 AM

Lab ID: 1510A28-001

Matrix: AQUEOUS

Received Date: 10/22/2015 7:30:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8260B: VOLATILES							Analyst: DJF
Surr: Dibromofluoromethane	113	70-130		%REC	1	10/22/2015 2:10:17 PM	R29742
Surr: Toluene-d8	99.2	70-130		%REC	1	10/22/2015 2:10:17 PM	R29742

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	* Value exceeds Maximum Contaminant Level.	B Analyte detected in the associated Method Blank
	D Sample Diluted Due to Matrix	E Value above quantitation range
	H Holding times for preparation or analysis exceeded	J Analyte detected below quantitation limits
	ND Not Detected at the Reporting Limit	P Sample pH Not In Range
	R RPD outside accepted recovery limits	RL Reporting Detection Limit
	S % Recovery outside of range due to dilution or matrix	

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1510A28

Date Reported:

CLIENT: Western Refining Southwest, Inc.

Client Sample ID: Bisti

Project: West Line Test Water 10-20-15

Collection Date: 10/20/2015 9:30:00 AM

Lab ID: 1510A28-001

Matrix: AQUEOUS

Received Date: 10/22/2015 7:30:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8260B: VOLATILES							Analyst: DJF
Dibromochloromethane	ND	1.0		µg/L	1	10/22/2015 2:10:17 PM	R29742
Dibromomethane	ND	1.0		µg/L	1	10/22/2015 2:10:17 PM	R29742
1,2-Dichlorobenzene	ND	1.0		µg/L	1	10/22/2015 2:10:17 PM	R29742
1,3-Dichlorobenzene	ND	1.0		µg/L	1	10/22/2015 2:10:17 PM	R29742
1,4-Dichlorobenzene	ND	1.0		µg/L	1	10/22/2015 2:10:17 PM	R29742
Dichlorodifluoromethane	ND	1.0		µg/L	1	10/22/2015 2:10:17 PM	R29742
1,1-Dichloroethane	ND	1.0		µg/L	1	10/22/2015 2:10:17 PM	R29742
1,1-Dichloroethene	ND	1.0		µg/L	1	10/22/2015 2:10:17 PM	R29742
1,2-Dichloropropane	ND	1.0		µg/L	1	10/22/2015 2:10:17 PM	R29742
1,3-Dichloropropane	ND	1.0		µg/L	1	10/22/2015 2:10:17 PM	R29742
2,2-Dichloropropane	ND	2.0		µg/L	1	10/22/2015 2:10:17 PM	R29742
1,1-Dichloropropene	ND	1.0		µg/L	1	10/22/2015 2:10:17 PM	R29742
Hexachlorobutadiene	ND	1.0		µg/L	1	10/22/2015 2:10:17 PM	R29742
2-Hexanone	ND	10		µg/L	1	10/22/2015 2:10:17 PM	R29742
Isopropylbenzene	ND	1.0		µg/L	1	10/22/2015 2:10:17 PM	R29742
4-Isopropyltoluene	ND	1.0		µg/L	1	10/22/2015 2:10:17 PM	R29742
4-Methyl-2-pentanone	ND	10		µg/L	1	10/22/2015 2:10:17 PM	R29742
Methylene Chloride	ND	3.0		µg/L	1	10/22/2015 2:10:17 PM	R29742
n-Butylbenzene	ND	3.0		µg/L	1	10/22/2015 2:10:17 PM	R29742
n-Propylbenzene	ND	1.0		µg/L	1	10/22/2015 2:10:17 PM	R29742
sec-Butylbenzene	ND	1.0		µg/L	1	10/22/2015 2:10:17 PM	R29742
Styrene	ND	1.0		µg/L	1	10/22/2015 2:10:17 PM	R29742
tert-Butylbenzene	ND	1.0		µg/L	1	10/22/2015 2:10:17 PM	R29742
1,1,1,2-Tetrachloroethane	ND	1.0		µg/L	1	10/22/2015 2:10:17 PM	R29742
1,1,2,2-Tetrachloroethane	ND	2.0		µg/L	1	10/22/2015 2:10:17 PM	R29742
Tetrachloroethene (PCE)	ND	1.0		µg/L	1	10/22/2015 2:10:17 PM	R29742
trans-1,2-DCE	ND	1.0		µg/L	1	10/22/2015 2:10:17 PM	R29742
trans-1,3-Dichloropropene	ND	1.0		µg/L	1	10/22/2015 2:10:17 PM	R29742
1,2,3-Trichlorobenzene	ND	1.0		µg/L	1	10/22/2015 2:10:17 PM	R29742
1,2,4-Trichlorobenzene	ND	1.0		µg/L	1	10/22/2015 2:10:17 PM	R29742
1,1,1-Trichloroethane	ND	1.0		µg/L	1	10/22/2015 2:10:17 PM	R29742
1,1,2-Trichloroethane	ND	1.0		µg/L	1	10/22/2015 2:10:17 PM	R29742
Trichloroethene (TCE)	ND	1.0		µg/L	1	10/22/2015 2:10:17 PM	R29742
Trichlorofluoromethane	ND	1.0		µg/L	1	10/22/2015 2:10:17 PM	R29742
1,2,3-Trichloropropane	ND	2.0		µg/L	1	10/22/2015 2:10:17 PM	R29742
Vinyl chloride	ND	1.0		µg/L	1	10/22/2015 2:10:17 PM	R29742
Xylenes, Total	ND	1.5		µg/L	1	10/22/2015 2:10:17 PM	R29742
Surr: 1,2-Dichloroethane-d4	95.0	70-130		%REC	1	10/22/2015 2:10:17 PM	R29742
Surr: 4-Bromofluorobenzene	104	70-130		%REC	1	10/22/2015 2:10:17 PM	R29742

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	* Value exceeds Maximum Contaminant Level.	B Analyte detected in the associated Method Blank
	D Sample Diluted Due to Matrix	E Value above quantitation range
	H Holding times for preparation or analysis exceeded	J Analyte detected below quantitation limits
	ND Not Detected at the Reporting Limit	P Sample pH Not In Range
	R RPD outside accepted recovery limits	RL Reporting Detection Limit
	S % Recovery outside of range due to dilution or matrix	

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1510A28

Date Reported:

CLIENT: Western Refining Southwest, Inc.

Client Sample ID: Bisti

Project: West Line Test Water 10-20-15

Collection Date: 10/20/2015 9:30:00 AM

Lab ID: 1510A28-001

Matrix: AQUEOUS

Received Date: 10/22/2015 7:30:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8270C: SEMIVOLATILES							Analyst: DAM
Pyridine	ND	10		µg/L	1	10/26/2015 4:03:54 PM	22016
1,2,4-Trichlorobenzene	ND	10		µg/L	1	10/26/2015 4:03:54 PM	22016
2,4,5-Trichlorophenol	ND	10		µg/L	1	10/26/2015 4:03:54 PM	22016
2,4,6-Trichlorophenol	ND	10		µg/L	1	10/26/2015 4:03:54 PM	22016
Surr: 2-Fluorophenol	91.8	4.63-113		%REC	1	10/26/2015 4:03:54 PM	22016
Surr: Phenol-d5	71.9	4.13-124		%REC	1	10/26/2015 4:03:54 PM	22016
Surr: 2,4,6-Tribromophenol	97.4	5.14-132		%REC	1	10/26/2015 4:03:54 PM	22016
Surr: Nitrobenzene-d5	94.0	9.13-140		%REC	1	10/26/2015 4:03:54 PM	22016
Surr: 2-Fluorobiphenyl	102	10.8-132		%REC	1	10/26/2015 4:03:54 PM	22016
Surr: 4-Terphenyl-d14	52.0	12.9-107		%REC	1	10/26/2015 4:03:54 PM	22016
EPA METHOD 8260B: VOLATILES							Analyst: DJF
Benzene	ND	1.0		µg/L	1	10/22/2015 2:10:17 PM	R29742
Toluene	ND	1.0		µg/L	1	10/22/2015 2:10:17 PM	R29742
Ethylbenzene	ND	1.0		µg/L	1	10/22/2015 2:10:17 PM	R29742
Methyl tert-butyl ether (MTBE)	ND	1.0		µg/L	1	10/22/2015 2:10:17 PM	R29742
1,2,4-Trimethylbenzene	ND	1.0		µg/L	1	10/22/2015 2:10:17 PM	R29742
1,3,5-Trimethylbenzene	ND	1.0		µg/L	1	10/22/2015 2:10:17 PM	R29742
1,2-Dichloroethane (EDC)	ND	1.0		µg/L	1	10/22/2015 2:10:17 PM	R29742
1,2-Dibromoethane (EDB)	ND	1.0		µg/L	1	10/22/2015 2:10:17 PM	R29742
Naphthalene	ND	2.0		µg/L	1	10/22/2015 2:10:17 PM	R29742
1-Methylnaphthalene	ND	4.0		µg/L	1	10/22/2015 2:10:17 PM	R29742
2-Methylnaphthalene	ND	4.0		µg/L	1	10/22/2015 2:10:17 PM	R29742
Acetone	ND	10		µg/L	1	10/22/2015 2:10:17 PM	R29742
Bromobenzene	ND	1.0		µg/L	1	10/22/2015 2:10:17 PM	R29742
Bromodichloromethane	2.3	1.0		µg/L	1	10/22/2015 2:10:17 PM	R29742
Bromoform	ND	1.0		µg/L	1	10/22/2015 2:10:17 PM	R29742
Bromomethane	ND	3.0		µg/L	1	10/22/2015 2:10:17 PM	R29742
2-Butanone	ND	10		µg/L	1	10/22/2015 2:10:17 PM	R29742
Carbon disulfide	ND	10		µg/L	1	10/22/2015 2:10:17 PM	R29742
Carbon Tetrachloride	ND	1.0		µg/L	1	10/22/2015 2:10:17 PM	R29742
Chlorobenzene	ND	1.0		µg/L	1	10/22/2015 2:10:17 PM	R29742
Chloroethane	ND	2.0		µg/L	1	10/22/2015 2:10:17 PM	R29742
Chloroform	13	1.0		µg/L	1	10/22/2015 2:10:17 PM	R29742
Chloromethane	ND	3.0		µg/L	1	10/22/2015 2:10:17 PM	R29742
2-Chlorotoluene	ND	1.0		µg/L	1	10/22/2015 2:10:17 PM	R29742
4-Chlorotoluene	ND	1.0		µg/L	1	10/22/2015 2:10:17 PM	R29742
cis-1,2-DCE	ND	1.0		µg/L	1	10/22/2015 2:10:17 PM	R29742
cis-1,3-Dichloropropene	ND	1.0		µg/L	1	10/22/2015 2:10:17 PM	R29742
1,2-Dibromo-3-chloropropene	ND	2.0		µg/L	1	10/22/2015 2:10:17 PM	R29742

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	* Value exceeds Maximum Contaminant Level.	B Analyte detected in the associated Method Blank
	D Sample Diluted Due to Matrix	E Value above quantitation range
	H Holding times for preparation or analysis exceeded	J Analyte detected below quantitation limits
	ND Not Detected at the Reporting Limit	P Sample pH Not In Range
	R RPD outside accepted recovery limits	RL Reporting Detection Limit
	S % Recovery outside of range due to dilution or matrix	

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1510A28

Date Reported:

CLIENT: Western Refining Southwest, Inc.

Client Sample ID: Bisti

Project: West Line Test Water 10-20-15

Collection Date: 10/20/2015 9:30:00 AM

Lab ID: 1510A28-001

Matrix: AQUEOUS

Received Date: 10/22/2015 7:30:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8270C: SEMIVOLATILES							Analyst: DAM
Dibenzofuran	ND	10		µg/L	1	10/26/2015 4:03:54 PM	22016
1,2-Dichlorobenzene	ND	10		µg/L	1	10/26/2015 4:03:54 PM	22016
1,3-Dichlorobenzene	ND	10		µg/L	1	10/26/2015 4:03:54 PM	22016
1,4-Dichlorobenzene	ND	10		µg/L	1	10/26/2015 4:03:54 PM	22016
3,3'-Dichlorobenzidine	ND	10		µg/L	1	10/26/2015 4:03:54 PM	22016
Diethyl phthalate	ND	10		µg/L	1	10/26/2015 4:03:54 PM	22016
Dimethyl phthalate	ND	10		µg/L	1	10/26/2015 4:03:54 PM	22016
2,4-Dichlorophenol	ND	20		µg/L	1	10/26/2015 4:03:54 PM	22016
2,4-Dimethylphenol	ND	10		µg/L	1	10/26/2015 4:03:54 PM	22016
4,6-Dinitro-2-methylphenol	ND	20		µg/L	1	10/26/2015 4:03:54 PM	22016
2,4-Dinitrophenol	ND	20		µg/L	1	10/26/2015 4:03:54 PM	22016
2,4-Dinitrotoluene	ND	10		µg/L	1	10/26/2015 4:03:54 PM	22016
2,6-Dinitrotoluene	ND	10		µg/L	1	10/26/2015 4:03:54 PM	22016
Fluoranthene	ND	10		µg/L	1	10/26/2015 4:03:54 PM	22016
Fluorene	ND	10		µg/L	1	10/26/2015 4:03:54 PM	22016
Hexachlorobenzene	ND	10		µg/L	1	10/26/2015 4:03:54 PM	22016
Hexachlorobutadiene	ND	10		µg/L	1	10/26/2015 4:03:54 PM	22016
Hexachlorocyclopentadiene	ND	10		µg/L	1	10/26/2015 4:03:54 PM	22016
Hexachloroethane	ND	10		µg/L	1	10/26/2015 4:03:54 PM	22016
Indeno(1,2,3-cd)pyrene	ND	10		µg/L	1	10/26/2015 4:03:54 PM	22016
Isophorone	ND	10		µg/L	1	10/26/2015 4:03:54 PM	22016
1-Methylnaphthalene	ND	10		µg/L	1	10/26/2015 4:03:54 PM	22016
2-Methylnaphthalene	ND	10		µg/L	1	10/26/2015 4:03:54 PM	22016
2-Methylphenol	ND	10		µg/L	1	10/26/2015 4:03:54 PM	22016
3+4-Methylphenol	ND	10		µg/L	1	10/26/2015 4:03:54 PM	22016
N-Nitrosodi-n-propylamine	ND	10		µg/L	1	10/26/2015 4:03:54 PM	22016
N-Nitrosodimethylamine	ND	10		µg/L	1	10/26/2015 4:03:54 PM	22016
N-Nitrosodiphenylamine	ND	10		µg/L	1	10/26/2015 4:03:54 PM	22016
Naphthalene	ND	10		µg/L	1	10/26/2015 4:03:54 PM	22016
2-Nitroaniline	ND	10		µg/L	1	10/26/2015 4:03:54 PM	22016
3-Nitroaniline	ND	10		µg/L	1	10/26/2015 4:03:54 PM	22016
4-Nitroaniline	ND	10		µg/L	1	10/26/2015 4:03:54 PM	22016
Nitrobenzene	ND	10		µg/L	1	10/26/2015 4:03:54 PM	22016
2-Nitrophenol	ND	10		µg/L	1	10/26/2015 4:03:54 PM	22016
4-Nitrophenol	ND	10		µg/L	1	10/26/2015 4:03:54 PM	22016
Pentachlorophenol	ND	20		µg/L	1	10/26/2015 4:03:54 PM	22016
Phenanthrene	ND	10		µg/L	1	10/26/2015 4:03:54 PM	22016
Phenol	ND	10		µg/L	1	10/26/2015 4:03:54 PM	22016
Pyrene	ND	10		µg/L	1	10/26/2015 4:03:54 PM	22016

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	* Value exceeds Maximum Contaminant Level.	B Analyte detected in the associated Method Blank
	D Sample Diluted Due to Matrix	E Value above quantitation range
	H Holding times for preparation or analysis exceeded	J Analyte detected below quantitation limits
	ND Not Detected at the Reporting Limit	P Sample pH Not In Range
	R RPD outside accepted recovery limits	RL Reporting Detection Limit
	S % Recovery outside of range due to dilution or matrix	

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1510A28

Date Reported:

CLIENT: Western Refining Southwest, Inc.

Client Sample ID: Bisti

Project: West Line Test Water 10-20-15

Collection Date: 10/20/2015 9:30:00 AM

Lab ID: 1510A28-001

Matrix: AQUEOUS

Received Date: 10/22/2015 7:30:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 7470: MERCURY							Analyst: JLF
Mercury	ND	0.00020		mg/L	1	10/23/2015 2:39:09 PM	21998
EPA 6010B: TOTAL RECOVERABLE METALS							Analyst: MED
Arsenic	ND	0.020		mg/L	1	10/27/2015 7:52:17 AM	22029
Barium	0.056	0.020		mg/L	1	10/27/2015 7:52:17 AM	22029
Cadmium	ND	0.0020		mg/L	1	10/27/2015 7:52:17 AM	22029
Chromium	ND	0.0060		mg/L	1	10/27/2015 7:52:17 AM	22029
Lead	ND	0.0050		mg/L	1	10/27/2015 7:52:17 AM	22029
Selenium	ND	0.050		mg/L	1	10/27/2015 7:52:17 AM	22029
Silver	ND	0.0050		mg/L	1	10/27/2015 7:52:17 AM	22029
EPA METHOD 8270C: SEMIVOLATILES							Analyst: DAM
Acenaphthene	ND	10		µg/L	1	10/26/2015 4:03:54 PM	22016
Acenaphthylene	ND	10		µg/L	1	10/26/2015 4:03:54 PM	22016
Aniline	ND	10		µg/L	1	10/26/2015 4:03:54 PM	22016
Anthracene	ND	10		µg/L	1	10/26/2015 4:03:54 PM	22016
Azobenzene	ND	10		µg/L	1	10/26/2015 4:03:54 PM	22016
Benz(a)anthracene	ND	10		µg/L	1	10/26/2015 4:03:54 PM	22016
Benzo(a)pyrene	ND	10		µg/L	1	10/26/2015 4:03:54 PM	22016
Benzo(b)fluoranthene	ND	10		µg/L	1	10/26/2015 4:03:54 PM	22016
Benzo(g,h,i)perylene	ND	10		µg/L	1	10/26/2015 4:03:54 PM	22016
Benzo(k)fluoranthene	ND	10		µg/L	1	10/26/2015 4:03:54 PM	22016
Benzoic acid	ND	20		µg/L	1	10/26/2015 4:03:54 PM	22016
Benzyl alcohol	ND	10		µg/L	1	10/26/2015 4:03:54 PM	22016
Bis(2-chloroethoxy)methane	ND	10		µg/L	1	10/26/2015 4:03:54 PM	22016
Bis(2-chloroethyl)ether	ND	10		µg/L	1	10/26/2015 4:03:54 PM	22016
Bis(2-chloroisopropyl)ether	ND	10		µg/L	1	10/26/2015 4:03:54 PM	22016
Bis(2-ethylhexyl)phthalate	ND	10		µg/L	1	10/26/2015 4:03:54 PM	22016
4-Bromophenyl phenyl ether	ND	10		µg/L	1	10/26/2015 4:03:54 PM	22016
Butyl benzyl phthalate	ND	10		µg/L	1	10/26/2015 4:03:54 PM	22016
Carbazole	ND	10		µg/L	1	10/26/2015 4:03:54 PM	22016
4-Chloro-3-methylphenol	ND	10		µg/L	1	10/26/2015 4:03:54 PM	22016
4-Chloroaniline	ND	10		µg/L	1	10/26/2015 4:03:54 PM	22016
2-Chloronaphthalene	ND	10		µg/L	1	10/26/2015 4:03:54 PM	22016
2-Chlorophenol	ND	10		µg/L	1	10/26/2015 4:03:54 PM	22016
4-Chlorophenyl phenyl ether	ND	10		µg/L	1	10/26/2015 4:03:54 PM	22016
Chrysene	ND	10		µg/L	1	10/26/2015 4:03:54 PM	22016
Di-n-butyl phthalate	ND	10		µg/L	1	10/26/2015 4:03:54 PM	22016
Di-n-octyl phthalate	ND	10		µg/L	1	10/26/2015 4:03:54 PM	22016
Dibenz(a,h)anthracene	ND	10		µg/L	1	10/26/2015 4:03:54 PM	22016

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	* Value exceeds Maximum Contaminant Level.	B Analyte detected in the associated Method Blank
	D Sample Diluted Due to Matrix	E Value above quantitation range
	H Holding times for preparation or analysis exceeded	J Analyte detected below quantitation limits
	ND Not Detected at the Reporting Limit	P Sample pH Not In Range
	R RPD outside accepted recovery limits	RL Reporting Detection Limit
	S % Recovery outside of range due to dilution or matrix	